

# MASSACHUSETTS.

## GENERAL STATISTICS.

**General character of the state.**—Massachusetts has a gross area of 8,266 square miles, of which 8,039 represent land surface. The inhabitants of the state in 1900 numbered 2,805,346; in 1910, 3,366,416; and in 1920, 3,852,356. In total population Massachusetts ranked sixth among the states in 1920. The number of inhabitants per square mile in 1910 was 418.8, the corresponding figure for 1920 being 479.2.

In 1920 there were 66 cities in the state having more than 10,000 inhabitants. (See Table 6.) The combined population of these 66 cities in that year was 3,144,077, which formed 81.6 per cent of the total for Massachusetts. In 1919, 86.3 per cent of the value of the state's manufactured products were reported from these cities.

**Importance and growth of manufactures** (Table 1).—The increases in wages, cost of materials, and value of products, from 1914 to 1919, as presented in Table 1, are in a great measure due to the changes in industrial conditions brought about by the World War. The addition of the Federal income tax since 1914 accounts for the large increase in "Rent and taxes."

**Statistics for the state, by counties** (Table 2).—Figures are not available for comparison of county totals for 1919 with those for prior censuses. Measured by the value of products, Table 2 shows that for 1919 the five leading counties were Middlesex, Essex, Suffolk, Worcester, and Bristol, in the order named.

**Principal industries, ranked by value of products** (Table 3).—The ranking of industries by value of products is not always conclusive as indicating their importance from a manufacturing standpoint. In many instances their ranking would change materially if based upon the average number of wage earners or value added by manufacture.

**Persons engaged in manufacturing industries** (Table 4).—The age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms." The classification by sex, for 1919, was reported separately, but for 1914 and 1909 was obtained in the same manner as the distribution by age. Figures for individual industries will be found in Table 40.

**Average number of wage earners for selected industries** (Table 5).—The industries covered by this table are those which employed 2,000 or more wage earners in 1919, and for which statistics can be shown

without the possibility of disclosing the operations of individual establishments.

**Average number of wage earners, by sex and age, and value of products for cities of 10,000 inhabitants or more** (Table 6).—During the census period 1914-1919, each of the cities for which comparative figures are presented shows increases in value of products, due largely to the increased value of commodities at the latter period. With the exception of six cities—Arlington, Gloucester, Lawrence, Marlborough, Wakefield, and Westfield—there were increases also in the average number of wage earners.

**Wage earners, by months** (Table 7).—The statistics for wage earners in this table are intended to show the steadiness of employment, or the reverse, in accordance with the industrial conditions existing during the several census years.

**Wage earners, by months, for selected industries and for cities** (Table 8).—In addition to the number of wage earners employed by months for selected industries, similar data are given for males and females for all industries combined, and also for the 66 cities in the state having 10,000 inhabitants or more. The table shows that there were a number of industries in the state in 1919 in which female wage earners predominated.

**Prevailing hours of labor** (Table 9).—Since 1914 there has been a marked shortening of the working day in Massachusetts. In that year only 8.1 per cent of the wage earners were reported in the group "48 and under" as against 74.3 per cent in 1919. In 1914, the "60" and "Over 60" groups constituted 4.2 per cent of the total wage earners, as compared with nine-tenths of 1 per cent in 1919.

**Size of establishments, by average number of wage earners, for selected industries and for cities** (Table 10).—The predominance of the number of small establishments, when based on the number of wage earners employed, is evidenced in this table by the fact that of the total number of establishments in the state, 89.3 per cent were in the several classes having fewer than 101 wage earners, while such establishments employed but 20.3 per cent of the total number of wage earners. On the other hand, the establishments employing an average of more than 100 wage earners represented only 10.7 per cent of the total manufacturing establishments in the state, but reported 79.7 per cent of the total number of wage earners.



Size of establishments, by value of products (Table 11).—At the censuses of 1909 and 1914 establishments with products valued at "\$100,000 to \$1,000,000" constituted one group, but at the census of 1919 this group was subdivided into "\$100,000 to \$500,000" and "\$500,000 to \$1,000,000." Separate figures for the number of establishments and value of products have been compiled, however, from the returns for 1914. The table, therefore, gives combined figures for these two groups for all items for 1909, and in the case of average number of wage earners and value added by manufacture for 1914.

Size of establishments, by value of products, for selected industries (Table 12).—In the preparation of this table it was necessary in some instances to combine the establishments of one group of the industry with those of some other group of that industry to avoid the possibility of disclosing the operations of individual establishments.

Size of establishments, by value of products, for cities of 10,000 inhabitants or more (Table 13).—This table strikingly illustrates the fact that the number of establishments of itself is no real index of the extent of manufacturing activities.

Character of ownership (Table 14).—The predominance of corporate ownership is clearly brought out in this table. Although corporations owned but 39.5 per cent of the number of establishments in the state in 1919, they reported 87.1 per cent of the average number of wage earners and 86.8 per cent of the total value of products. During the five-year period 1914 to 1919, the average number of wage earners in corporations increased 121,072, or 24.2 per cent, and the value of products, \$2,136,719,997, or 158.7 per cent.

Manufactures, by population groups, in cities of 10,000 inhabitants or more (Table 15).—This table

shows that the combined number of establishments in the 66 cities in 1919 represented 83.5 per cent of the total in the state. They reported in that year 85.4 per cent of the average number of wage earners, and 86.3 per cent of the value of products and also of the value added by manufacture.

Principal industries in each of the 13 cities in the state having more than 50,000 inhabitants, with per cent of total for state (Table 16).—This table presents the principal industries in these cities, the figures being given for those which can be shown without disclosing the operations of individual establishments.

Number and horsepower of types of prime movers (Table 17).—The total horsepower reported in 1919, as compared with that for 1914, shows an increase of 333,156 horsepower, or 23.9 per cent. This increase was wholly in rented power which increased 348,268 horsepower, or 161.1 per cent; while owned power decreased 15,112 horsepower, or 1.3 per cent, during the five-year period.

Fuel consumed (Table 18).—This table shows the principal kinds of fuel used by the manufacturing plants in the state in 1919 and 1914, and gives separately for 1919 the amounts consumed by a number of important industries which use considerable quantities of fuel. Of the anthracite coal, the largest quantity shown for any single industry was 116,577 tons, or 16.8 per cent, used in the manufacture of gas. This industry was also the largest consumer of fuel oils, with 1,785,175 barrels, or 48.7 per cent, and the second largest consumer of bituminous coal and of coke, with 10.2 per cent and 23.9 per cent, respectively. The largest consumption of bituminous coal was in the cotton-goods industry, 1,089,589 tons, or 19.3 per cent; while steam-railroad repair shops were the largest consumers of coke, with 200,271 tons, or 40 per cent.

TABLE 1.—COMPARATIVE SUMMARY: 1919, 1914, 1909, 1904, AND 1899.

	MANUFACTURING INDUSTRIES.					PER CENT OF INCREASE. <sup>1</sup>			
	1919	1914	1909	1904	1899	1914-1919	1909-1914	1904-1909	1899-1904
Number of establishments.....	11,906	12,013	11,684	10,723	10,020	-0.9	2.8	9.0	-1.9
Persons engaged.....	812,521	678,642	644,399	532,481	( <sup>2</sup> )	20.1	5.0	21.0	.....
Proprietors and firm members.....	9,451	10,710	11,194	11,268	( <sup>2</sup> )	-11.8	-4.3	-0.6	.....
Salaried employees.....	89,234	59,234	48,646	32,824	25,256	50.6	21.8	48.2	30.0
Wage earners (average number).....	713,336	606,698	584,559	488,399	438,234	17.7	3.8	19.7	11.4
Primary horsepower.....	1,729,878	1,396,722	1,175,071	938,007	796,061	23.9	18.9	25.3	17.8
Capital.....	\$2,947,108,527	\$1,548,960,733	\$1,279,686,558	\$965,948,887	\$781,867,715	90.3	21.0	32.5	23.5
Salaries and wages.....	950,058,742	425,024,201	364,452,007	272,043,570	224,758,018	123.5	16.6	34.0	21.0
Salaries.....	183,435,405	83,714,684	63,278,543	39,654,624	29,479,742	119.1	32.3	59.6	34.5
Wages.....	766,623,337	341,309,517	301,173,464	232,388,946	195,278,276	124.6	13.3	29.6	19.0
Paid for contract work.....	22,744,566	9,834,358	12,092,607	6,568,938	( <sup>2</sup> )	131.3	-18.7	84.1	.....
Rent and taxes.....	163,471,020	30,376,744	21,295,364	<sup>3</sup> 12,320,129	( <sup>2</sup> )	438.1	42.6	.....	.....
Cost of materials.....	2,260,713,036	631,383,793	830,764,943	626,410,431	498,655,033	142.7	12.1	32.6	25.6
Value of products.....	4,011,181,532	1,641,373,047	1,490,529,386	1,124,092,051	907,626,439	144.4	10.1	32.6	23.8
Value added by manufacture.....	1,750,468,496	709,989,254	659,764,443	497,681,620	408,971,406	146.5	7.0	32.6	21.7

<sup>1</sup> A minus sign (-) denotes decrease.

<sup>2</sup> Figures not available.

<sup>3</sup> Exclusive of internal revenue.

<sup>4</sup> Value of products less cost of materials.



# MANUFACTURES—MASSACHUSETTS.

589

TABLE 2.—STATISTICS FOR THE STATE, BY COUNTIES: 1919.

COUNTY.	Number of establishments.	WAGE EARNERS.		Rent and taxes.	Cost of materials.	Value of products.	Value added by manufacture.	Primary horse-power.
		Average number.	Wages.					
The state.....	11,906	713,836	\$766,623,337	\$168,471,020	\$2,260,713,036	\$4,011,181,532	\$1,750,468,496	1,729,878
Barnstable.....	47	720	993,201	21,184	4,093,542	5,515,139	1,421,597	1,306
Berkshire.....	301	22,505	23,127,671	5,181,556	61,925,743	114,805,837	52,880,094	77,662
Bristol.....	1,039	102,466	95,469,812	28,889,852	284,075,770	495,424,479	210,748,709	345,311
Dukes.....	17	26	25,152	2,025	31,068	80,432	48,764	107
Essex.....	1,754	114,475	130,033,899	26,240,501	380,559,270	660,697,988	280,138,716	245,772
Franklin.....	207	6,848	7,452,832	1,205,501	11,489,553	27,808,057	16,318,504	30,407
Hampden.....	869	62,235	66,388,002	13,571,618	182,924,346	355,359,435	172,435,039	217,689
Hampshire.....	193	11,410	10,621,007	3,764,391	48,399,901	76,198,635	27,798,734	43,024
Middlesex.....	1,787	119,634	122,957,235	23,035,917	409,237,191	689,166,490	279,929,209	262,683
Nantucket.....	9	15	15,613	3,309	36,604	35,038	48,434	195
Norfolk.....	505	39,154	56,089,659	5,560,026	99,029,102	198,568,273	98,939,171	65,963
Plymouth.....	453	33,497	37,925,101	7,724,431	140,925,269	221,008,316	90,983,047	46,262
Suffolk.....	3,255	98,111	107,548,579	27,429,327	368,995,540	659,250,375	290,254,835	120,745
Worcester.....	1,470	102,740	107,975,484	20,860,782	267,789,537	506,313,130	238,523,593	271,752

TABLE 3.—PRINCIPAL INDUSTRIES, RANKED BY VALUE OF PRODUCTS: 1919.

INDUSTRY.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		INDUSTRY.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.	
		Average number.	Per cent distribution.	Amount (expressed in thousands of dollars).	Per cent distribution.	Amount (expressed in thousands of dollars).	Per cent distribution.			Average number.	Per cent distribution.	Amount (expressed in thousands of dollars).	Per cent distribution.	Amount (expressed in thousands of dollars).	Per cent distribution.
All industries.....	11,906	713,836	100.0	4,011,182	100.0	1,750,468	100.0	Ordnance and accessories.....	4	1,805	0.3	18,347	0.5	11,019	0.7
Cotton goods.....	191	122,499	17.2	599,087	14.9	237,012	13.5	Chemicals.....	27	2,483	0.3	17,305	0.4	9,204	0.5
Boots and shoes, not including rubber boots and shoes.....	493	80,166	11.2	442,466	11.0	173,115	9.9	Coffee and spice, roasting and grinding.....	23	512	0.1	16,978	0.4	2,978	0.2
Worsted goods.....	71	36,296	5.1	237,443	5.9	86,827	5.0	Brass, bronze, and copper products.....	72	2,332	0.4	16,943	0.4	7,576	0.4
Leather, tanned, curried, and finished.....	131	15,180	2.1	129,595	3.2	47,578	2.7	Motorcycles, bicycles, and parts.....	8	3,000	0.4	16,000	0.4	7,591	0.4
Foundry and machine-shop products.....	574	27,712	3.9	111,853	2.8	72,643	4.2	Boxes, paper and other, not elsewhere specified.....	102	4,711	0.7	15,666	0.4	8,208	0.5
Slaughtering and meat packing.....	40	4,307	0.6	110,238	2.8	9,003	0.5	Stationery goods, not elsewhere specified.....	30	3,305	0.5	15,162	0.4	7,897	0.5
Woolen goods.....	111	17,568	2.5	105,183	2.6	43,090	2.5	Boxes, wooden packing, except cigar boxes.....	75	3,232	0.5	15,051	0.4	6,079	0.4
Rubber tires, tubes, and rubber goods, not elsewhere specified.....	47	9,406	1.3	93,377	2.3	40,301	2.6	Suspenders, garters, and elastic woven goods.....	29	2,965	0.4	14,972	0.4	6,621	0.4
Electrical machinery, apparatus, and supplies.....	110	23,889	3.3	91,939	2.3	60,102	3.4	Liquors, malt.....	19	1,328	0.2	14,713	0.4	10,525	0.6
Paper and wood pulp.....	78	12,960	1.8	87,160	2.2	33,396	1.9	Automobile bodies and parts.....	88	3,541	0.5	14,483	0.4	7,771	0.4
Boot and shoe cut stock.....	182	4,631	0.6	86,214	2.2	16,732	1.0	Belt and hose, rubber.....	3	2,441	0.3	13,860	0.3	6,077	0.3
Dyeing and finishing textiles, exclusive of that done in textile mills.....	62	12,321	1.7	75,262	1.9	31,052	1.8	Carpets and rugs, other than rag.....	10	3,134	0.4	13,594	0.3	5,573	0.3
Confectionery and ice cream.....	278	11,585	1.6	68,897	1.7	28,543	1.6	Paper goods, not elsewhere specified.....	44	1,969	0.3	13,552	0.3	4,972	0.3
Bread and other bakery products.....	1,309	8,583	1.2	66,017	1.7	25,430	1.5	Steam fittings and steam and hot-water heating apparatus.....	23	3,521	0.5	13,473	0.3	8,028	0.5
Textile machinery and parts.....	116	17,413	2.4	65,901	1.6	42,424	2.4	Iron and steel forgings, not made in steel works or rolling mills.....	14	2,172	0.3	13,299	0.3	8,021	0.5
Knit goods.....	77	12,751	1.8	52,424	1.3	21,252	1.2	Emery and other abrasive wheels.....	14	2,443	0.3	13,118	0.3	8,105	0.5
Printing and publishing, newspapers and periodicals.....	412	5,885	0.8	46,801	1.2	30,328	1.7	Canning and preserving, fish.....	22	1,404	0.2	12,763	0.3	3,339	0.2
Boot and shoe findings.....	254	5,806	0.8	44,357	1.1	15,971	0.9	Lumber, planing-mill products, not including planing mills connected with sawmills.....	146	2,245	0.3	12,625	0.3	5,412	0.3
Boots and shoes, rubber.....	8	13,062	1.8	44,308	1.1	26,687	1.5	Automobiles.....	8	989	0.1	12,548	0.3	2,978	0.2
Printing and publishing, book and job.....	768	7,634	1.1	41,627	1.0	28,692	1.6	Optical goods.....	29	4,082	0.6	12,038	0.3	8,632	0.5
Clothing, men's.....	207	6,856	1.0	41,475	1.0	17,875	1.0	Tobacco, cigars and cigarettes.....	262	2,946	0.4	11,560	0.3	6,704	0.4
Jewelry.....	165	6,786	1.0	34,817	0.9	16,452	0.9	Envelopes.....	13	1,617	0.3	10,860	0.3	4,310	0.2
Silk goods, including throwsters.....	21	5,697	0.8	34,194	0.9	14,950	0.9	Pumps, steam.....	7	2,280	0.3	10,336	0.3	5,648	0.3
Iron and steel, steel works and rolling mills.....	11	3,684	0.5	30,970	0.8	11,733	0.7	Felt goods.....	15	1,086	0.2	10,286	0.3	3,647	0.2
Clothing, women's.....	258	6,271	0.9	30,428	0.8	12,454	0.7	Druggists' preparations.....	24	1,699	0.2	9,990	0.3	5,087	0.3
Chocolate and cocoa products.....	6	2,007	0.3	30,327	0.8	6,338	0.4	Food preparations, not elsewhere specified.....	81	848	0.1	9,603	0.3	3,531	0.2
Tools, not elsewhere specified.....	117	7,226	1.0	29,159	0.7	21,171	1.2	Patent medicines and compounds.....	97	604	0.1	9,108	0.2	6,051	0.3
Cordage and twine.....	13	2,743	0.4	28,088	0.7	8,655	0.5	Silversmithing and silverware.....	18	1,870	0.3	8,485	0.2	4,654	0.3
Wire.....	9	5,203	0.7	24,552	0.6	12,679	0.7	Copper, tin, and sheet-iron work.....	137	1,533	0.2	8,316	0.2	5,088	0.3
Gas, illuminating and heating.....	51	2,654	0.4	24,231	0.6	13,458	0.8	Cotton small wares.....	40	1,651	0.2	8,250	0.2	3,005	0.2
Furniture.....	101	6,342	0.9	23,689	0.6	13,031	0.7	Bookbinding and blank-book making.....	94	2,936	0.4	8,180	0.2	5,147	0.3
Machine tools.....	46	6,471	0.9	23,443	0.6	16,534	0.9	Mineral and soda waters.....	172	763	0.1	8,177	0.2	4,007	0.2
Cars and general shop construction and repairs by steam-railroad companies.....	14	7,724	1.1	22,638	0.6	12,347	0.7	Musical instruments, pianos.....	14	2,228	0.3	8,123	0.2	4,699	0.3
Cutlery and edge tools.....	51	3,988	0.6	19,673	0.5	14,261	0.8	Fancy articles, not elsewhere specified.....	39	1,929	0.3	7,932	0.2	3,443	0.2
Soap.....	27	1,008	0.1	18,730	0.5	7,556	0.4								



## MANUFACTURES—MASSACHUSETTS.

TABLE 3.—PRINCIPAL INDUSTRIES, RANKED BY VALUE OF PRODUCTS: 1919—Continued.

INDUSTRY.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		INDUSTRY.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.	
		Average number.	Per cent distribution.	Amount (expressed in thousands of dollars).	Per cent distribution.	Amount (expressed in thousands of dollars).	Per cent distribution.			Average number.	Per cent distribution.	Amount (expressed in thousands of dollars).	Per cent distribution.	Amount (expressed in thousands of dollars).	Per cent distribution.
Iron and steel, nails and spikes, cut and wrought, including wire nails, not made in steel works or rolling mills.....	25	1,537	0.2	7,853	0.2	4,012	0.2	Dyestuffs and extracts—natural... Sporting and athletic goods.....	27 14	165 1,397	(1) 0.2	5,812 5,774	0.1 0.1	1,336 2,771	0.1 0.2
House-furnishing goods, not elsewhere specified.....	54	1,081	0.2	7,708	0.2	2,579	0.1	Iron and steel, bolts, nuts, washers, and rivets, not made in rolling mills.....	11	1,471	0.2	5,763	0.1	2,613	0.1
Grease and tallow, not including lubricating greases.....	24	825	0.1	7,323	0.2	2,488	0.1	Oilcloth, enameled.....	4	342	(1)	5,747	0.1	1,405	0.1
Marble and stone work.....	239	1,936	0.3	7,125	0.2	4,606	0.3	Lumber and timber products.....	244	1,582	0.2	5,733	0.1	3,607	0.2
Blacking, stains, and dressings.....	56	686	0.1	7,108	0.2	2,936	0.2	Firearms.....	5	2,253	0.3	5,645	0.1	4,578	0.3
Brushes.....	30	1,613	0.2	6,857	0.2	3,524	0.2	Stoves and hot-air furnaces.....	15	1,386	0.2	5,577	0.1	3,906	0.2
Corsets.....	11	1,555	0.2	6,704	0.2	3,397	0.2	Wool shoddy.....	23	623	0.1	5,515	0.1	1,815	0.1
Roofing materials.....	8	695	0.1	6,706	0.2	2,712	0.2	Hats, straw.....	13	1,490	0.2	5,486	0.1	2,505	0.1
Structural ironwork, not made in steel works or rolling mills.....	55	1,188	0.2	6,687	0.2	3,340	0.2	Sausage, not made in slaughtering and meat-packing establishments.....	56	306	(1)	5,296	0.1	1,074	0.1
Surgical appliances.....	14	609	0.1	6,572	0.2	2,226	0.1	Carriages and sleds, children's.....	13	1,449	0.2	5,254	0.1	2,703	0.2
Glue, not elsewhere specified.....	13	826	0.1	6,451	0.2	2,822	0.2	Combs and hairpins, not made from metal or rubber.....	26	1,766	0.3	5,179	0.1	2,645	0.2
Pickles, preserves, and sauces.....	33	480	0.1	6,254	0.2	2,245	0.1	Linen goods.....	4	1,219	0.2	5,178	0.1	1,849	0.1
Varnishes.....	14	316	(1)	6,159	0.2	2,558	0.1	Shirts.....	12	1,090	0.2	5,108	0.1	2,243	0.1
Automobile repairing.....	279	1,582	0.2	5,973	0.1	3,929	0.2	All other industries <sup>2</sup> .....	2,215	74,345	10.4	370,904	9.2	171,557	9.8
Ammunition.....	6	2,440	0.3	5,961	0.1	4,794	0.3								
Millinery and lace goods, not elsewhere specified.....	60	1,396	0.2	5,959	0.1	2,806	0.2								
Lasts.....	31	1,299	0.2	5,886	0.1	4,049	0.2								

<sup>1</sup> Less than one-tenth of 1 per cent.<sup>2</sup> Among the industries for which statistics can not be shown separately without the possibility of disclosing the operations of individual establishments are six having products in excess of some for which figures are shown in the table. These industries are as follows: "Cars, steam-railroad, not including operations of railroad companies"; "jute goods"; "labels and tags"; "shipbuilding, steel"; "sugar, refining, not including beet sugar"; and "watches."

TABLE 4.—PERSONS ENGAGED IN MANUFACTURING INDUSTRIES: 1919, 1914, AND 1909.

CLASS.	Census year.	Total.	Male.	Female.	PER CENT OF TOTAL.		CLASS.	Census year.	Total.	Male.	Female.	PER CENT OF TOTAL.	
					Male.	Female.						Male.	Female.
All classes.....	1919	812,521	556,185	256,336	68.5	31.5	Clerks and other subordinate salaried employees.....	1919	63,550	32,788	30,768	51.6	48.4
	1914	676,642	470,494	206,148	69.5	30.5		1914	44,762	28,620	16,142	63.9	36.1
	1909	644,399	447,267	197,132	69.4	30.6		1909	35,855	22,914	12,941	63.9	36.1
Proprietors and officials.....	1919	35,129	33,391	1,738	95.1	4.9	Wage earners (average number).....	1919	713,836	400,006	223,830	68.6	31.4
	1914	25,182	23,982	1,200	95.2	4.8		1914	606,698	417,892	188,806	68.9	31.1
	1909	23,985	23,181	804	96.6	3.4		1909	584,559	401,172	183,387	68.6	31.4
Proprietors and firm members.....	1919	9,451	8,944	507	94.6	5.4	16 years of age and over.....	1919	690,400	478,449	211,951	69.3	30.7
	1914	10,710	10,122	588	94.5	5.5		1914	594,386	411,709	182,677	69.3	30.7
	1909	11,194	10,695	499	95.5	4.5		1909	563,824	390,544	173,280	69.3	30.7
Salaried officers of corporations.....	1919	7,105	6,787	318	95.5	4.5	Under 16 years of age.....	1919	23,436	11,557	11,879	49.3	50.7
	1914	5,260	5,071	179	96.6	3.4		1914	12,312	6,183	6,129	50.2	49.8
	1909	4,615	4,481	134	97.1	2.9		1909	20,735	10,628	10,107	51.3	48.7
Superintendents and managers.....	1919	18,573	17,660	913	95.1	4.9							
	1914	9,222	8,789	433	95.3	4.7							
	1909	8,176	8,005	171	97.9	2.1							



## MANUFACTURES—MASSACHUSETTS.

591

TABLE 5.—AVERAGE NUMBER OF WAGE EARNERS FOR SELECTED INDUSTRIES, WITH PER CENT, BY SEX AND AGE: 1919 AND 1914.

INDUSTRY.	Cen- sus year.	Wage earners (aver- age num- ber).	PER CENT OF TOTAL.			INDUSTRY.	Cen- sus year.	Wage earners (aver- age num- ber).	PER CENT OF TOTAL.		
			16 years of age and over.		Un- der 16 years of age.				16 years of age and over.		Un- der 16 years of age.
			Male.	Fe- male.					Male.	Fe- male.	
All industries .....	1919	713,836	67.0	29.7	3.3	Furniture.....	1919	6,342	87.4	9.9	2.6
	1914	606,098	67.9	30.1	2.0		1914	6,813	90.1	8.8	1.1
	1909	584,559	66.8	29.6	3.5	Gas, illuminating and heating.....	1919	2,654	99.8	.....	0.2
Ammunition <sup>1</sup> .....	1919	2,449	35.2	62.8	2.0		1914	3,182	97.9	2.1	.....
Automobile bodies and parts.....	1919	3,541	95.3	3.6	1.1	Iron and steel, steel works and rolling mills.....	1919	3,684	96.1	3.7	0.1
	1914	1,341	97.9	1.9	0.1		1914	2,889	100.0	.....	.....
Belting and hose, rubber <sup>1</sup> .....	1919	2,441	83.6	15.0	1.4	Iron and steel, forgings, not made in steel works or rolling mills.....	1919	2,172	97.4	1.9	0.6
Bookbinding and blank-book making.....	1919	2,036	45.7	47.7	6.5		1914	683	97.1	2.3	0.6
	1914	3,317	52.1	46.8	1.1	Jewelry.....	1919	6,786	61.9	34.0	3.5
Boot and shoe cut stock.....	1919	4,681	72.3	23.5	4.1		1914	6,505	66.5	23.7	4.9
	1914	3,781	71.4	27.4	1.2	Knit goods.....	1919	12,751	27.5	67.8	4.6
Boot and shoe findings.....	1919	5,896	63.1	33.6	3.4		1914	10,635	25.9	72.2	1.9
	1914	4,389	66.5	31.6	1.9	Leather, tanned, curried, and finished.....	1919	15,180	90.8	8.2	1.0
Boots and shoes, not including rubber boots and shoes.....	1919	80,166	60.3	35.7	4.0		1914	10,164	98.2	1.6	0.3
	1914	76,044	64.7	33.7	1.6	Lumber, planing-mill products, not includ- ing planing mills connected with sawmills.....	1919	2,245	98.4	0.4	1.1
Boots and shoes, rubber.....	1919	13,062	57.3	40.1	2.6		1914	3,423	98.7	0.6	0.6
	1914	8,087	61.0	37.9	1.1	Motorcycles, bicycles, and parts.....	1919	3,000	84.9	12.3	2.8
Boxes, paper and other, not elsewhere speci- fied.....	1919	4,711	33.2	58.0	8.8		1914	2,135	98.5	1.0	0.5
	1914	4,244	32.9	63.6	3.5	Musical instruments, pianos.....	1919	2,228	92.0	5.3	2.7
Boxes, wooden packing, except cigar boxes..	1919	3,232	86.6	11.2	2.2		1914	2,352	96.2	2.3	1.5
	1914	2,995	92.0	6.4	1.6	Optical goods.....	1919	4,082	52.0	42.7	5.3
Brass, bronze, and copper products.....	1919	2,832	97.4	1.9	0.7		1914	2,356	70.7	25.0	4.3
	1914	1,620	97.5	2.0	0.5	Paper and wood pulp.....	1919	12,960	73.7	25.9	0.4
Bread and other bakery products.....	1919	8,533	71.9	26.5	1.6		1914	13,401	69.3	30.5	0.1
	1914	8,083	75.5	23.2	1.2	Printing and publishing, book and job.....	1919	7,634	70.4	26.4	3.3
Carpets and rugs, other than rag.....	1919	3,134	53.3	38.3	8.4		1914	7,062	70.7	27.1	2.3
	1914	5,319	53.2	43.3	3.5	Printing and publishing, newspapers and periodicals.....	1919	5,885	82.4	14.1	3.6
Cars and general shop construction and repairs by steam-railroad companies.....	1919	7,724	99.2	0.7	0.1		1914	6,032	86.9	11.5	1.8
	1914	6,264	99.6	0.3	0.1	Pumps, steam.....	1919	2,280	94.9	5.0	0.1
Chemicals.....	1919	2,483	80.4	19.3	0.4		1914	1,194	97.4	2.4	0.2
	1914	1,395	92.7	6.7	0.6	Rubber tires, tubes, and rubber goods, not elsewhere specified.....	1919	9,406	85.0	14.0	1.0
Chocolate and cocoa products.....	1919	2,007	69.6	28.9	1.5		1914	4,743	83.2	14.8	2.0
	1914	943	70.6	29.1	0.3	Silk goods, including throwsters.....	1919	5,697	33.6	59.9	6.4
Clothing, men's.....	1919	6,856	43.3	55.5	1.1		1914	4,495	30.9	66.6	2.5
	1914	5,760	47.7	51.6	0.7	Slaughtering and meat packing.....	1919	4,307	97.7	2.1	0.2
Clothing, women's.....	1919	6,271	20.0	77.4	2.7		1914	3,233	98.8	1.1	0.1
	1914	6,078	24.5	74.7	0.7	Stationery goods, not elsewhere specified....	1919	3,305	37.8	53.5	3.7
Confectionery and ice cream.....	1919	11,585	31.0	58.2	10.9		1914	2,467	42.0	56.5	1.5
	1914	7,260	30.1	65.7	4.2	Steam fittings and steam and hot-water heating apparatus.....	1919	3,521	94.5	5.2	0.3
Cordage and twine <sup>1</sup> .....	1919	2,743	70.3	26.8	2.9		1914	3,175	97.3	2.7	( <sup>2</sup> )
Cotton goods.....	1919	122,499	51.0	43.2	5.8	Suspenders, garters, and elastic woven goods.....	1919	2,965	31.3	64.7	4.0
	1914	112,009	52.1	44.0	3.9		1914	2,928	35.1	60.7	4.2
Cutlery and edge tools.....	1919	3,088	65.7	32.1	2.3	Tobacco, cigars and cigarettes.....	1919	2,946	73.2	26.7	0.1
	1914	1,947	77.7	20.4	1.9		1914	3,895	72.9	26.9	0.3
Dyeing and finishing textiles, exclusive of that done in textile mills.....	1919	12,321	75.5	22.7	1.8	Tools, not elsewhere specified.....	1919	7,226	86.7	11.1	2.2
	1914	11,437	80.7	17.5	1.9		1914	4,538	93.5	5.5	1.1
Electrical machinery, apparatus, and sup- plies.....	1919	23,889	74.4	24.8	0.8	Wire.....	1919	5,203	93.6	5.4	0.9
	1914	17,125	80.0	19.5	0.5		1914	2,899	96.8	3.1	0.1
Emery and other abrasive wheels.....	1919	2,443	89.7	9.5	0.8	Woolen goods.....	1919	17,568	68.4	29.3	2.3
	1914	902	95.7	4.1	0.2		1914	13,844	67.8	30.9	1.3
Firearms.....	1919	2,253	95.0	3.2	1.8	Worsted goods.....	1919	36,206	51.8	41.9	6.3
	1914	2,161	97.4	1.2	1.3		1914	39,533	55.8	40.0	3.3
Foundry and machine-shop products <sup>2</sup> .....	1919	51,680	94.7	4.5	0.8	All other industries.....	1919	129,157	74.8	22.9	2.4
	1914	32,687	97.8	1.6	0.6		1914	115,446	74.6	23.7	1.7

<sup>1</sup> Not shown separately in 1914.<sup>2</sup> Includes "iron and steel, tempering and welding"; "machine tools"; and "textile machinery and parts."<sup>3</sup> Less than one-tenth of 1 per cent.



## MANUFACTURES—MASSACHUSETTS.

TABLE 6.—AVERAGE NUMBER OF WAGE EARNERS, BY SEX AND AGE, AND VALUE OF PRODUCTS FOR CITIES OF 10,000 INHABITANTS OR MORE: 1919, 1914, AND 1909.

CITY.	AVERAGE NUMBER OF WAGE EARNERS IN MANUFACTURING INDUSTRIES.												VALUE OF PRODUCTS.		
	Total.			16 years of age and over.						Under 16 years of age.					
				Male.			Female.								
	1919	1914	1909	1919	1914	1909	1919	1914	1909	1919	1914	1909	1919	1914	1909
Adams.....	3,974	3,930	3,991	2,376	2,223	2,026	1,416	1,580	1,478	182	127	487	\$15,070,858	\$6,530,232	\$6,410,054
Amesbury.....	3,173	1,451	.....	2,712	1,264	.....	430	172	.....	31	15	.....	10,309,509	3,551,434	.....
Arlington.....	228	246	283	202	233	259	24	10	22	2	3	2	1,006,207	641,092	695,356
Attleboro.....	6,763	6,058	6,429	4,798	4,434	4,396	1,684	1,542	1,853	281	82	180	34,471,577	13,940,884	15,160,359
Belmont.....	93	.....	.....	81	.....	.....	11	.....	.....	1	.....	.....	374,686	.....	.....
Beverly.....	6,495	4,641	4,487	5,274	3,904	3,679	1,134	717	752	87	20	56	21,829,684	8,774,187	8,652,547
Boston.....	88,759	78,894	73,957	57,736	53,046	49,146	28,057	24,603	22,407	2,966	1,240	2,404	618,921,962	284,802,479	244,793,556
Braintree.....	2,176	.....	.....	1,416	.....	.....	593	.....	.....	167	.....	.....	11,974,839	.....	.....
Brockton.....	18,059	16,246	14,737	11,978	11,798	10,661	5,627	4,253	3,834	454	165	242	117,855,025	51,259,131	45,972,388
Brookline.....	484	335	340	254	296	280	200	38	54	30	1	6	2,243,311	658,502	532,303
Cambridge.....	22,550	16,749	15,260	14,953	11,826	10,630	6,964	4,741	4,211	633	182	419	127,804,901	57,483,949	44,227,395
Chelsea.....	6,580	6,241	5,954	4,576	4,444	4,213	1,753	1,741	1,611	251	56	130	32,536,518	16,071,028	17,002,492
Chicopee.....	10,068	8,426	7,260	7,684	6,365	4,994	2,114	1,916	2,020	270	145	246	89,772,534	28,869,152	19,219,166
Clinton.....	4,155	4,064	4,123	2,353	2,300	2,264	1,454	1,640	1,670	318	124	189	15,179,819	9,735,297	7,844,513
Danvers.....	1,474	.....	.....	966	.....	.....	442	.....	.....	66	.....	.....	11,541,839	.....	.....
Dedham.....	463	256	.....	267	193	.....	157	58	.....	39	5	.....	1,737,073	427,690	.....
Easthampton.....	4,142	.....	.....	2,412	.....	.....	1,519	.....	.....	211	.....	.....	37,942,121	.....	.....
Everett.....	4,523	3,226	2,680	3,777	2,717	2,353	611	463	257	135	46	70	35,775,728	13,210,200	8,746,923
Fall River.....	37,015	36,834	37,139	19,335	19,808	20,459	15,476	14,899	14,949	2,204	2,067	1,731	163,246,082	64,663,146	64,145,726
Fitchburg.....	9,007	8,837	8,497	6,697	6,088	5,825	2,780	2,470	2,271	430	279	401	58,164,842	23,983,352	23,252,155
Frammingham.....	4,362	3,982	3,069	2,766	2,460	1,797	1,492	1,477	1,156	104	45	116	18,842,173	8,726,574	6,916,864
Gardner.....	4,036	3,964	3,617	3,161	3,440	3,100	689	481	415	186	43	102	13,599,682	7,449,987	6,485,148
Gloucester.....	2,684	2,814	2,181	1,951	2,082	1,658	683	661	482	50	71	41	18,803,673	8,533,064	7,753,463
Greenfield.....	2,750	1,602	1,251	2,239	1,436	1,043	480	134	139	31	32	69	9,481,382	3,527,101	2,801,011
Haverhill.....	15,783	13,281	11,689	10,139	8,810	7,688	5,354	4,325	3,762	290	146	241	96,276,853	42,409,246	35,376,617
Holyoke.....	17,773	17,493	16,513	9,835	10,219	8,906	6,989	6,751	6,458	949	523	1,149	93,426,775	44,041,155	40,097,224
Lawrence.....	30,319	31,043	30,542	17,946	19,300	17,493	10,900	11,183	11,444	1,478	600	1,605	183,449,096	73,177,803	79,992,668
Leominster.....	5,793	4,929	5,601	3,600	3,638	3,708	1,999	1,202	1,746	194	89	147	24,028,700	10,838,024	10,530,815
Lowell.....	30,111	29,004	32,333	16,513	16,934	20,222	12,577	12,432	10,833	1,021	538	1,228	137,801,538	56,018,641	59,087,714
Lynn.....	27,355	25,339	27,368	18,852	17,469	10,077	8,188	7,782	8,063	315	88	228	160,905,792	69,783,418	71,503,140
Malden.....	4,723	2,850	2,900	2,575	1,622	1,649	1,981	1,171	1,222	167	57	29	22,077,624	8,366,344	8,205,852
Marlborough.....	3,798	3,822	4,265	2,425	2,624	2,787	1,227	1,062	1,201	146	106	277	19,044,907	9,083,632	10,382,277
Medford.....	1,031	559	560	694	480	436	305	77	66	32	2	8	5,665,723	2,618,893	2,045,289
Melrose.....	1,606	962	1,038	709	446	438	845	490	591	52	20	9	6,083,698	2,499,029	2,824,009
Methuen.....	2,571	1,940	1,572	936	786	653	1,421	1,116	793	214	38	126	14,214,005	4,401,111	3,476,702
Milford.....	1,800	1,749	1,801	1,157	1,274	1,045	578	458	710	74	17	46	8,408,531	4,028,492	4,442,140
Natick.....	1,463	1,347	.....	1,089	1,042	.....	361	300	.....	13	5	.....	7,893,397	4,606,253	.....
New Bedford.....	41,630	33,343	26,566	23,906	19,282	15,700	15,896	13,012	9,516	1,828	1,049	1,350	210,773,312	65,575,005	53,237,839
Newburyport.....	3,960	3,349	3,215	2,418	2,135	2,083	1,438	1,171	1,035	104	43	97	20,595,015	8,245,998	6,931,049
Newton.....	2,547	2,154	2,174	1,691	1,472	1,604	791	669	520	65	13	50	15,524,567	5,822,853	6,278,714
North Adams.....	6,023	5,288	5,414	3,891	3,509	3,508	1,899	1,620	1,560	233	159	346	30,203,767	10,922,575	10,314,847
Northampton.....	3,532	3,446	3,150	2,119	2,225	2,012	1,216	1,092	977	197	129	161	17,960,620	8,580,730	6,998,992
Northbridge.....	3,871	.....	.....	3,185	.....	.....	534	.....	.....	152	.....	.....	13,848,807	.....	.....
Norwood.....	2,835	.....	.....	2,221	.....	.....	570	.....	.....	44	.....	.....	20,350,242	.....	.....
Peabody.....	8,013	5,485	4,850	7,156	5,126	4,270	787	356	518	70	3	62	52,000,722	18,441,906	15,548,732
Pittsfield.....	8,570	7,490	6,353	6,267	5,455	4,508	2,124	1,973	1,679	179	62	166	41,613,356	22,241,237	15,215,202
Plymouth.....	2,971	2,845	2,912	2,299	1,873	2,124	647	673	665	25	299	123	31,310,553	13,904,545	11,018,020
Quincy.....	19,658	5,783	5,492	19,103	6,353	4,769	521	409	500	29	21	103	68,535,406	12,097,452	10,505,493
Revere.....	126	80	101	110	71	98	15	9	3	1	.....	.....	767,294	349,690	407,336
Salem.....	5,672	5,294	6,338	3,422	3,587	4,070	2,048	1,627	1,985	202	80	283	36,437,957	13,652,686	14,576,276
Saugus.....	126	.....	.....	95	.....	.....	24	.....	.....	7	.....	.....	1,157,215	.....	.....
Somerville.....	6,111	5,429	5,280	5,669	5,180	4,841	476	219	370	66	30	69	90,558,513	43,971,291	38,686,527
Southbridge.....	5,329	4,332	4,037	3,009	2,736	2,680	2,066	1,421	1,183	254	175	174	18,252,814	7,960,430	6,269,131
Springfield.....	18,429	14,240	11,855	13,331	10,976	8,715	4,613	3,130	2,726	485	128	414	98,332,955	44,428,854	31,772,815
Taunton.....	8,981	7,371	7,407	6,318	5,441	5,345	2,322	1,823	1,820	341	107	242	48,330,638	15,885,812	15,379,821
Wakefield.....	1,869	2,008	2,230	1,138	1,241	1,200	698	747	994	33	20	36	8,977,010	6,057,059	5,527,102
Waltham.....	8,069	6,465	6,037	4,995	4,305	3,580	2,969	2,138	2,369	105	22	88	20,878,515	10,236,912	7,814,178
Watertown.....	8,420	4,787	4,335	5,351	3,134	2,817	2,912	1,642	1,372	157	11	146	47,297,519	14,764,326	11,545,555
Webster.....	3,849	3,246	3,019	2,408	2,096	1,879	1,097	972	901	344	178	239	28,400,765	9,233,919	10,027,086
Westfield.....	3,243	3,584	3,060	2,488	3,026	2,390	664	517	594	91	41	76	14,278,973	8,420,439	7,361,528
West Springfield.....	2,791	2,209	.....	2,482	1,876	.....	301	332	.....	8	1	.....	12,386,556	5,039,953	.....
Weymouth.....	2,146	2,074	1,991	1,389	1,505	1,398	637	551	554	120	18	39	16,836,997	8,251,041	6,627,168
Winchester.....	1,112	1,048	.....	985	952	.....	122	96	.....	5	.....	.....	9,697,701	5,159,479	.....
Winthrop.....	61	16	7	30	12	7	31	4	.....	.....	.....	.....	330,234	77,994	42,168
Woburn.....	2,011	1,565	1,653	1,705	1,463	1,528	284	98	111	22	4	14	13,980,185	5,517,806	5,408,081
Worcester.....	38,673	29,452	28,221	29,705	22,402	21,355	7,944	6,646	5,745	1,024	404	1,121	208,705,773	82,820,356	77,147,884

TABLE 7.—WAGE EARNERS, BY MONTHS: 1919, 1914, AND 1909.

MONTH.	NUMBER. <sup>1</sup>			PER CENT OF MAXIMUM.			MONTH.	NUMBER. <sup>1</sup>			PER CENT OF MAXIMUM.		
	1919	1914	1909	1919	1914	1909		1919	1914	1909	1919	1914	1909
January.....	695,713	626,776	565,750	90.9	98.9	92.4	July.....	715,599	595,609	573,462	93.5	94.0	93.6
February.....	677,294	628,555	572,618	88.4	99.2	93.5	August.....	726,537	588,703	581,008	94.9	92.9	94.8
March.....	680,825	633,583	579,519	88.9	100.0	94.6	September.....	736,391	589,194	594,686	96.2	93.0	97.1
April.....	679,235	628,344	576,618	88.7	99.2	94.1	October.....	741,911	590,992	601,533	96.9	93.3	98.2
May.....	689,490	619,082	576,379	90.0	97.7	94.1	November.....	751,909	587,141	604,465	98.2	92.7	98.7
June.....	705,382	611,928	576,059	92.1	96.6	94.0	December.....	765,746	680,489	612,616	100.0	91.6	100.0



## MANUFACTURES—MASSACHUSETTS.

593

TABLE 8.—WAGE EARNERS, BY MONTHS, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919.

[The month of maximum employment for each industry is indicated by bold-faced figures and that of minimum employment by italic figures.]

INDUSTRY AND CITY.	Average number employed during year.	NUMBER EMPLOYED ON 15TH DAY OF THE MONTH OR NEAREST REPRESENTATIVE DAY.												Percent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
All industries.....	713,836	695,713	677,294	680,825	679,235	689,490	705,382	715,599	726,537	736,391	741,911	751,909	765,746	88.4
Males.....	490,006	474,934	465,975	467,873	467,350	474,939	485,726	492,106	500,327	505,820	509,413	513,629	523,982	88.5
Females.....	223,830	220,779	213,321	212,952	211,885	214,551	219,656	223,493	226,210	230,571	232,498	238,280	241,764	87.6
Ammunition.....	2,449	9,111	4,398	2,316	1,905	1,665	1,617	1,463	1,406	1,441	1,418	1,383	1,325	14.5
Automobile bodies and parts.....	3,541	3,740	3,811	3,820	3,190	3,243	3,152	3,218	3,527	3,566	3,728	3,641	3,856	81.7
Belt and hose, rubber.....	2,441	2,827	2,353	2,367	2,159	2,152	2,089	2,282	2,579	2,558	2,473	2,600	2,851	71.1
Bookbinding and blank-book making.....	2,936	2,709	2,765	2,837	2,857	2,917	3,006	2,995	2,908	2,980	3,011	3,090	3,097	87.5
Boot and shoe cut stock.....	4,631	4,480	4,532	4,527	4,439	4,491	4,593	4,783	4,678	4,744	4,871	4,733	4,761	90.7
Boot and shoe findings.....	5,896	5,201	5,495	5,538	5,639	5,565	5,772	5,848	6,036	6,184	6,326	6,457	6,601	80.2
Boots and shoes, not including rubber boots and shoes.....	80,166	77,871	78,498	78,698	77,018	77,523	77,620	79,047	80,737	81,388	82,235	84,653	86,704	88.8
Boots and shoes, rubber.....	13,062	14,308	14,413	13,742	12,834	12,209	11,755	11,835	12,042	12,136	13,031	13,979	14,435	81.4
Boxes, paper and other, not elsewhere specified.....	4,711	4,281	4,401	4,493	4,570	4,621	4,650	4,725	4,751	5,007	5,099	5,163	5,163	82.9
Boxes, wooden packing, except cigar boxes.....	3,232	3,210	3,162	3,140	3,072	3,048	3,065	3,177	3,254	3,331	3,398	3,422	3,496	87.2
Brass, bronze, and copper products.....	2,832	2,929	2,872	2,790	2,681	2,605	2,688	2,756	2,825	2,872	2,936	2,998	3,032	85.9
Bread and other bakery products.....	8,583	8,180	8,145	8,108	8,259	8,414	8,653	8,790	8,740	8,705	8,705	8,904	9,026	89.7
Carpets and rugs, other than rag.....	3,134	2,553	2,410	2,504	2,644	3,117	3,442	3,645	3,726	2,853	3,491	3,563	3,660	64.7
Cars and general shop construction and repairs by steam-railroad companies.....	7,724	7,781	7,917	7,843	7,642	7,479	7,414	7,645	7,512	7,749	7,735	7,870	8,101	91.5
Chemicals.....	2,483	2,526	2,415	2,329	2,345	2,367	2,371	2,431	2,463	2,530	2,623	2,666	2,729	85.3
Chocolate and cocoa products.....	2,007	1,969	2,020	2,080	2,030	1,844	1,870	2,127	2,053	2,144	2,111	1,949	1,887	86.0
Clothing, men's.....	6,856	6,088	5,292	5,462	6,642	6,863	6,966	7,253	7,530	7,715	7,722	7,823	7,918	64.3
Clothing, women's.....	6,271	6,236	5,771	6,123	6,349	6,521	6,499	6,289	6,284	6,588	6,773	6,524	6,295	77.3
Confectionery and ice cream.....	11,585	10,708	11,506	11,783	11,466	11,132	10,826	10,733	11,982	12,103	12,593	12,428	11,770	85.0
Cordage and twine.....	2,743	2,574	2,731	2,948	2,853	2,753	2,706	2,756	2,765	2,693	2,685	2,667	2,720	87.3
Cotton goods.....	123,499	122,627	118,686	118,567	118,106	119,922	122,886	124,315	123,798	125,211	123,281	125,572	127,017	93.0
Cutlery and edge tools.....	3,988	3,698	3,818	3,882	3,917	3,902	3,991	4,024	3,699	4,018	4,153	4,337	4,457	80.7
Dyeing and finishing textiles, exclusive of that done in textile mills.....	12,321	12,103	10,908	10,800	10,800	11,508	12,264	12,850	13,077	13,148	12,854	13,609	13,931	77.5
Electrical machinery, apparatus, and supplies.....	23,889	22,042	22,543	21,716	21,582	22,019	22,353	23,219	24,362	25,250	26,294	27,198	28,024	77.0
Emery and other abrasive wheels.....	2,443	2,483	2,441	2,420	2,383	2,294	2,283	2,214	2,360	2,440	2,558	2,664	2,776	79.8
Firearms.....	2,253	1,886	1,704	2,124	2,385	2,498	2,570	2,312	2,351	2,363	2,397	2,435	2,451	53.9
Foundry and machine-shop products.....	27,712	27,308	26,517	26,196	26,135	25,901	26,454	27,019	27,922	28,078	29,172	30,578	31,263	82.8
Furniture.....	6,342	5,690	5,590	5,781	5,854	5,969	5,964	6,347	6,580	6,804	7,017	7,236	7,402	75.1
Gas, illuminating and heating.....	2,654	2,739	2,729	2,680	2,686	2,726	2,687	2,696	2,656	2,424	2,606	2,581	2,638	88.5
Iron and steel, steel works and rolling mills.....	3,684	3,825	3,599	3,885	3,221	3,390	3,407	3,673	3,786	3,940	3,991	3,962	4,029	79.9
Iron and steel, forgings, not made in steel works or rolling mills.....	2,172	2,067	2,024	2,050	2,068	2,032	2,061	2,119	2,200	2,193	2,321	2,438	2,491	81.3
Jewelry.....	6,786	6,806	6,003	6,202	6,222	6,439	6,124	7,075	7,123	7,244	7,380	7,001	7,713	75.3
Knit goods.....	12,751	12,722	12,501	12,484	12,402	11,970	12,117	12,432	12,603	12,954	13,353	13,469	13,975	85.7
Leather, tanned, curried, and finished.....	15,180	13,878	13,801	13,598	13,668	14,375	15,105	15,241	16,355	16,736	16,791	17,093	17,379	76.2
Lumber, planing-mill products, not including planing mills connected with sawmills.....	2,245	2,021	1,960	1,972	2,054	2,080	1,993	2,286	2,392	2,445	2,546	2,577	2,614	75.0
Machine tools.....	6,471	6,915	6,626	6,497	6,253	6,032	6,045	6,353	6,131	6,815	6,704	6,974	7,297	80.3
Motorcycles, bicycles, and parts.....	3,000	3,019	3,047	3,066	3,066	3,081	2,980	2,969	2,924	2,794	2,928	3,080	3,128	89.3
Musical instruments, pianos.....	2,228	1,886	1,952	2,060	2,167	2,276	2,283	2,338	2,301	2,342	2,349	2,389	2,394	78.7
Optical goods.....	4,082	3,980	4,087	3,789	3,907	3,954	4,143	3,683	4,206	4,218	4,289	4,355	4,373	84.2
Paper and wood pulp.....	12,960	12,651	11,971	12,432	12,220	12,192	12,643	12,949	13,020	13,575	13,845	13,929	14,093	84.9
Printing and publishing, book and job.....	7,634	7,141	7,258	7,423	7,573	7,589	7,008	7,544	7,531	7,705	7,901	8,118	8,217	86.9
Printing and publishing, newspapers and periodicals.....	5,885	5,650	5,700	5,709	5,833	5,922	5,884	5,859	5,825	5,944	6,085	6,101	6,105	92.5
Pumps, steam.....	2,280	2,881	2,730	2,707	2,592	2,247	2,054	1,959	2,013	2,024	2,031	2,065	2,057	68.0
Rubber tires, tubes, and rubber goods, not elsewhere specified.....	9,406	7,728	7,959	8,842	9,517	9,532	9,212	9,353	9,586	9,692	10,115	10,532	10,804	71.5
Silk goods, including throwsters.....	5,697	4,665	4,618	4,760	5,053	5,398	5,482	5,900	6,140	6,410	6,512	6,629	6,777	68.1
Slaughtering and meat packing.....	4,807	5,354	5,319	5,165	4,608	4,453	4,624	4,741	4,523	4,232	3,655	1,601	3,600	28.0
Stationery goods, not elsewhere specified.....	3,305	3,125	3,133	3,132	3,077	3,257	3,205	3,252	3,271	3,417	3,568	3,605	3,628	84.8
Steam fittings and steam and hot-water heating apparatus.....	3,521	3,402	3,501	3,630	3,520	3,443	3,142	3,181	3,424	3,518	3,713	3,846	3,902	80.0
Suspenders, garters, and elastic woven goods.....	2,065	2,766	2,753	2,758	2,791	2,781	2,839	3,000	3,027	3,108	3,220	3,275	3,282	83.3
Textile machinery and parts.....	17,413	16,740	16,181	15,737	15,399	15,780	16,706	17,739	18,226	19,082	19,297	18,816	19,253	79.8
Tobacco, cigars and cigarettes.....	2,040	3,324	3,412	3,354	2,860	3,102	3,170	1,582	1,744	3,095	3,255	3,315	3,339	40.5
Tools, not elsewhere specified.....	7,226	7,169	7,226	7,354	7,204	7,123	7,035	7,128	7,119	7,157	7,241	7,381	7,525	94.2
Wire.....	5,203	5,201	5,105	5,089	4,970	4,935	4,910	4,960	5,050	5,238	5,372	5,701	5,905	83.1
Woolen goods.....	17,568	13,873	12,544	13,532	16,428	17,631	19,216	19,747	19,859	20,235	19,572	19,046	18,533	62.0
Worsted goods.....	36,296	31,702	25,735	27,552	28,520	32,735	39,827	41,786	41,570	42,532	40,416	40,985	43,872	54.1
All other industries.....	120,241	128,866	128,581	128,689	127,524	128,418	128,724	130,679	129,998	129,437	130,207	129,701	130,168	97.7
Industries showing large proportion of females.														
Ammunition.....	1,553	5,744	2,830	1,448	1,190	1,049	1,023	934	897	915	918	848	840	14.6
Bookbinding and blank-book making.....	1,473	1,345	1,402	1,429	1,461	1,488	1,513	1,535	1,407	1,496	1,501	1,515	1,524	87.6
Boot and shoe cut stock.....	1,138	1,122	1,164	1,155	1,096	1,089	1,083	1,173	1,193	1,110	1,161	1,160	1,148	91.0
Boot and shoe findings.....	2,070	1,915	2,010	2,045	2,045	2,020	2,029							



TABLE 8.—WAGE EARNERS, BY MONTHS, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919—Continued.

[The month of maximum employment for each industry is indicated by bold-faced figures and that of minimum employment by *italic* figures.]

INDUSTRY AND CITY.	Average number employed during year.	NUMBER EMPLOYED ON 15TH DAY OF THE MONTH OR NEAREST REPRESENTATIVE DAY.												Per cent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Dyeing and finishing textiles, exclusive of that done in textile mills.	2,884	2,704	2,683	2,631	<i>2,611</i>	2,603	2,854	2,949	2,990	3,038	2,875	3,200	3,290	79.4
Electrical machinery, apparatus, and supplies.	5,994	5,689	5,711	5,507	<i>5,503</i>	5,378	5,501	5,730	6,103	6,393	6,707	6,958	6,968	76.1
Furniture.	663	594	<i>605</i>	579	605	631	631	677	675	695	732	771	801	70.5
Jewelry.	2,454	<i>2,107</i>	2,140	2,216	2,230	2,296	2,332	2,602	2,613	2,639	2,691	2,763	2,819	74.7
Knit goods.	9,074	9,072	8,918	8,875	8,774	<i>8,502</i>	8,613	8,898	8,988	9,220	9,521	9,581	<i>9,026</i>	85.7
Leather, tanned, curried, and finished.	1,271	1,291	1,182	1,107	1,129	1,209	1,261	<i>953</i>	1,393	1,387	1,409	1,450	1,472	64.7
Optical goods.	1,844	1,864	1,857	1,783	1,788	1,798	1,877	<i>1,586</i>	1,867	1,876	1,930	1,986	1,980	70.9
Paper and wood pulp.	3,393	3,342	<i>3,167</i>	3,297	3,183	3,218	3,336	3,416	3,393	3,571	3,553	3,648	3,597	86.5
Printing and publishing, book and job.	2,059	1,978	2,020	2,056	2,100	2,056	2,060	1,999	<i>1,967</i>	2,022	2,099	2,176	2,170	90.4
Printing and publishing, newspapers and periodicals.	838	815	829	845	826	832	828	817	<i>812</i>	853	872	871	856	93.1
Rubber tires, tubes, and rubber goods, not elsewhere specified.	1,354	1,222	<i>1,198</i>	1,290	1,269	1,264	1,304	1,361	1,345	1,396	1,496	1,554	1,540	77.1
Silk goods, including throwsters.	3,668	<i>3,637</i>	3,640	3,124	3,344	3,570	3,710	3,832	3,995	4,053	4,038	4,074	4,149	73.2
Stationery goods, not elsewhere specified.	2,017	1,872	1,872	1,866	<i>1,867</i>	2,021	1,966	2,007	2,030	2,148	2,171	2,212	2,182	84.0
Suspenders, garters, and elastic woven goods.	2,012	1,862	<i>1,843</i>	1,844	1,895	1,883	1,929	2,040	2,044	2,100	2,208	2,261	2,235	81.5
Textile machinery and parts.	1,017	1,054	1,005	1,008	<i>955</i>	967	994	997	1,002	993	1,048	1,093	1,088	87.4
Tobacco, cigars and cigarettes.	787	812	858	853	668	758	765	<i>455</i>	566	867	913	947	982	46.3
Tools, not elsewhere specified.	853	889	883	954	905	881	853	821	780	795	803	840	832	81.8
Woolen goods.	5,341	4,478	<i>3,967</i>	4,134	4,809	5,361	5,776	5,970	6,048	6,166	5,898	5,927	5,468	64.3
Worsted goods.	16,558	13,894	<i>11,312</i>	12,951	13,344	15,228	18,033	18,882	18,733	19,336	18,343	18,076	19,964	66.7
Total for cities.	609,671	595,839	<i>578,499</i>	581,502	579,290	587,408	601,508	609,857	619,954	629,229	634,252	642,833	655,881	88.2
Males.	415,106	403,437	<i>393,246</i>	396,805	395,735	401,491	410,973	416,047	423,707	428,446	431,622	434,944	444,819	88.4
Females.	194,565	192,402	<i>185,253</i>	184,697	<i>183,555</i>	185,917	190,535	193,810	196,247	200,783	202,630	207,889	211,062	87.0
ADAMS.	3,974	3,889	3,866	3,893	4,027	4,022	4,027	4,004	<i>3,524</i>	4,079	4,078	4,094	4,185	84.2
Males.	2,472	2,345	2,345	2,402	2,496	2,493	2,525	2,488	<i>2,258</i>	2,558	2,540	2,577	2,648	84.5
Females.	1,502	1,544	1,521	1,491	1,531	1,529	1,502	1,516	<i>1,266</i>	1,521	1,520	1,517	1,537	83.3
AMESBURY.	3,173	3,246	3,283	3,204	<i>2,710</i>	2,875	2,890	2,990	3,244	3,241	3,335	3,397	3,565	76.0
Males.	2,734	2,837	2,839	2,862	<i>2,319</i>	2,465	2,482	2,552	2,809	2,777	2,854	2,933	3,079	75.3
Females.	439	409	444	432	<i>391</i>	410	414	438	435	464	481	464	486	80.5
ARLINGTON.	228	<i>208</i>	220	227	228	239	234	236	233	223	211	237	240	86.7
Males.	204	<i>185</i>	196	203	205	215	210	212	209	197	187	213	216	85.6
Females.	24	<i>23</i>	24	24	<i>23</i>	24	24	24	24	26	24	24	24	88.5
ATTLEBORO.	6,763	<i>5,842</i>	5,988	6,142	6,292	6,496	6,638	6,887	6,997	7,189	7,399	7,597	7,719	75.7
Males.	4,946	<i>4,268</i>	4,380	4,445	4,555	4,719	4,840	5,045	5,132	5,288	5,446	5,600	5,662	75.4
Females.	1,817	<i>1,574</i>	1,608	1,697	1,737	1,777	1,792	1,842	1,865	1,901	1,953	2,001	2,057	70.5
BELMONT.	93	104	<i>52</i>	58	97	102	103	97	98	99	98	102	103	40.1
Males.	82	94	<i>42</i>	47	87	92	90	86	85	80	88	91	93	44.7
Females.	11	<i>10</i>	10	11	<i>10</i>	10	13	11	13	10	10	11	13	70.9
BEVERLY.	6,495	5,654	5,794	<i>5,615</i>	5,699	5,772	6,305	6,582	6,850	6,947	7,312	7,644	7,766	72.3
Males.	5,333	<i>4,349</i>	4,491	4,374	4,512	4,700	5,227	5,474	5,760	5,883	6,203	6,482	6,541	66.5
Females.	1,162	<i>1,305</i>	1,303	1,241	1,187	1,072	1,078	1,108	1,090	<i>1,064</i>	1,109	1,162	1,225	81.5
BOSTON.	88,759	86,708	88,327	88,442	87,560	87,628	<i>85,280</i>	85,413	86,843	90,068	92,087	93,290	93,522	91.1
Males.	58,974	58,184	58,388	58,384	58,120	58,374	<i>57,322</i>	57,466	58,078	60,439	61,279	61,920	61,920	92.6
Females.	29,785	28,524	29,939	30,058	29,440	29,254	<i>27,958</i>	27,947	28,765	30,334	31,048	32,011	31,602	87.2
BRAINTREE.	2,176	2,085	2,114	2,152	2,088	2,110	2,088	2,162	2,280	2,242	2,200	2,276	2,386	84.5
Males.	1,521	1,490	1,487	1,526	1,456	1,502	<i>1,442</i>	1,530	1,572	1,556	1,521	1,553	1,617	89.2
Females.	655	595	627	626	<i>561</i>	608	646	632	708	686	679	723	769	73.0
BROCKTON.	18,059	<i>17,156</i>	17,765	17,599	17,752	17,331	17,924	18,336	18,784	18,117	18,373	18,035	18,936	90.6
Males.	12,210	<i>11,687</i>	11,966	11,890	11,991	11,753	12,163	12,404	12,650	12,238	12,480	12,009	12,789	90.6
Females.	5,849	<i>5,469</i>	5,799	5,709	5,761	5,578	5,761	5,932	6,134	5,879	5,893	6,026	6,147	90.6
BROOKLINE.	484	822	782	559	430	364	560	367	372	387	435	444	480	43.8
Males.	260	270	269	274	257	260	250	249	249	252	265	261	273	90.9
Females.	224	552	513	285	173	104	110	118	123	135	179	183	213	18.8
CAMBRIDGE.	22,550	21,782	21,132	21,123	<i>21,038</i>	21,569	21,641	22,288	22,988	23,489	24,011	24,781	24,758	84.9
Males.	16,227	14,419	<i>14,046</i>	14,163	14,034	14,524	14,579	15,133	15,750	16,173	16,366	16,844	16,653	83.4
Females.	7,323	7,363	7,086	6,960	<i>6,964</i>	7,045	7,062	7,155	7,238	7,316	7,655	7,937	8,105	85.8
CHELSEA.	6,580	6,615	6,408	6,435	6,321	<i>6,249</i>	6,483	6,559	6,919	6,641	6,636	6,783	6,911	90.3
Males.	4,693	4,680	4,516	4,569	4,466	<i>4,415</i>	4,550	4,621	4,954	4,797	4,822	4,915	5,011	88.1
Females.	1,887	1,935	1,892	1,866	1,855	1,834	1,933	1,938	1,965	1,844	1,814	1,868	1,900	92.3
CHICOPEE.	10,068	9,980	9,736	9,913	9,961	10,029	<i>9,634</i>	9,636	9,640	9,980	10,451	10,813	11,043	87.2
Males.	7,809	7,709	7,516	7,653	7,806	7,826	7,446	7,418	7,599	7,640	8,114	8,405	8,776	84.3
Females.	2,259	2,271	2,220	2,260	<i>2,155</i>	2,203	2,188	2,218	2,241	2,340	2,337	2,408	2,267	80.5
CLINTON.	4,155	3,902	<i>3,847</i>	3,866	3,934	4,039	4,247	4,283	4,342	4,334	4,265	4,360	4,441	86.6
Males.	2,543	2,397	<i>2,305</i>	2,395	2,419	2,477	2,666	2,668	2,623	2,623	2,581	2,640	2,670	80.7
Females.	1,612	1,505	<i>1,452</i>	1,471	1,515	1,562	1,581	1,617	1,704	1,711	1,684	1,711	1,771	82.0
DANVERS.	1,474	1,513	1,515	1,474	1,442	<i>1,450</i>	1,487	1,482	1,475	1,460	1,457	1,481	1,472	94.4
Males.	903	1,029	1,016	984	<i>956</i>	995	999	997	997	979	974	1,010	1,021	92.9
Females.	481	484	499	490	486	474	492	483	478	481	483	471	451	90.4
DEDHAM.	463	<i>372</i>	376	387	399	427	462	503	542	532	507	514	535	68.6
Males.	286	<i>253</i>	247	251	243	265	282	297	327	327	305	309	326	74.3
Females.	177	<i>119</i>	129	136	156	162	180	206	215	205	202	205	209	55.3
EASTHAMPTON.	4,142	<i>3,913</i>	3,968	4,036	4,041	4,060	4,126	4,211	4,235	4,221	4,253	4,276	4,359	80.9
Males.	2,528	<i>2,557</i>	2,400	2,479	2,487	2,497	2,526	2,555	2,602	2,558	2,633	2,584	2,658	88.7
Females.	1,614	<i>1,356</i>	1,568	1,557	<i>1,554</i>	1,563	1,600	1,656	1,633	1,663	1,620	1,692	1,701	91.4



TABLE 8.—WAGE EARNERS, BY MONTHS, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919—Continued

(The month of maximum employment for each industry is indicated by bold-faced figures and that of minimum employment by italic figures.)

INDUSTRY AND CITY.	Average number employed during year.	NUMBER EMPLOYED ON 15TH DAY OF THE MONTH OR NEAREST REPRESENTATIVE DAY.												Per cent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
EVERETT.....	4,523	4,536	4,373	4,276	4,155	<i>4,147</i>	4,211	4,509	4,651	4,753	4,874	4,830	4,961	83.6
Males.....	3,854	3,850	3,725	3,636	3,560	<i>3,552</i>	3,606	3,827	3,937	4,042	4,161	4,112	4,240	83.8
Females.....	669	686	648	640	595	<i>595</i>	605	682	714	711	713	718	721	82.5
FALL RIVER.....	37,015	36,958	36,280	<i>35,909</i>	36,288	36,825	36,915	37,145	37,073	37,460	37,415	38,065	37,847	94.3
Males.....	20,374	20,269	19,857	<i>19,739</i>	19,879	20,211	20,287	20,382	20,385	20,695	20,679	21,063	21,012	93.6
Females.....	16,641	16,689	16,423	<i>16,170</i>	16,409	16,614	16,628	16,763	16,688	16,765	16,736	16,972	16,835	95.3
FITCHBURG.....	9,907	10,107	9,826	<i>9,409</i>	9,733	9,843	9,813	9,740	9,781	9,918	9,957	10,223	10,534	80.3
Males.....	6,911	7,218	6,977	<i>6,735</i>	6,918	6,925	6,832	<i>6,679</i>	6,708	6,808	6,858	7,021	7,253	92.1
Females.....	2,996	2,889	2,849	<i>2,674</i>	2,815	2,918	2,981	3,061	3,073	3,110	3,099	3,202	3,281	81.5
FRAMINGHAM.....	4,362	<i>5,549</i>	3,591	3,738	3,789	3,896	4,110	4,292	4,660	4,821	5,102	5,239	5,557	63.9
Males.....	2,814	<i>2,169</i>	2,224	2,337	2,380	2,531	2,638	2,700	3,045	3,207	3,406	3,501	3,621	59.9
Females.....	1,548	1,380	1,367	1,401	1,409	1,365	1,472	1,583	1,615	1,614	1,696	1,738	1,936	70.5
GARDNER.....	4,036	3,713	3,641	3,639	<i>3,638</i>	3,662	3,846	4,020	4,185	4,319	4,451	4,595	4,723	77.0
Males.....	3,289	3,087	3,040	3,026	<i>2,996</i>	3,000	3,159	3,230	3,363	3,486	3,585	3,695	3,801	78.8
Females.....	747	626	601	613	642	662	687	790	822	833	866	900	922	65.2
GLOUCESTER.....	2,684	2,731	2,642	2,606	<i>2,531</i>	2,589	2,667	2,674	2,551	2,701	2,670	2,823	3,023	83.7
Males.....	1,967	2,074	1,963	1,911	1,842	1,887	1,975	1,984	<i>1,796</i>	1,957	1,927	2,056	2,182	82.3
Females.....	717	657	659	695	689	702	692	690	755	744	743	737	841	78.1
GREENFIELD.....	2,750	2,782	2,722	2,693	2,610	2,583	2,592	<i>2,569</i>	2,600	2,701	2,910	3,113	3,125	82.2
Males.....	2,259	2,295	2,201	2,182	2,153	2,129	2,137	<i>2,113</i>	2,134	2,207	2,404	2,581	2,602	81.2
Females.....	491	517	521	511	457	454	455	456	466	494	506	532	523	85.3
HAVERHILL.....	15,783	15,454	15,229	15,795	15,499	15,101	14,963	<i>14,198</i>	14,771	15,845	16,923	17,529	18,089	78.5
Males.....	10,314	9,942	9,844	10,335	10,236	9,895	9,941	<i>9,449</i>	9,775	10,487	10,829	11,346	11,689	80.8
Females.....	5,469	5,512	5,385	5,460	5,263	5,206	5,022	<i>4,749</i>	4,996	5,358	6,094	6,183	6,400	74.2
HOLYOKE.....	17,773	17,481	<i>16,685</i>	16,959	16,872	17,120	17,594	17,899	17,930	18,418	18,567	18,820	18,922	88.2
Males.....	10,234	10,178	<i>9,588</i>	9,781	9,723	9,713	10,045	10,210	10,335	10,589	10,708	10,891	10,937	87.3
Females.....	7,539	7,303	<i>7,097</i>	7,178	7,149	7,407	7,549	7,689	7,595	7,829	7,799	7,938	7,985	89.4
LAWRENCE.....	30,319	28,380	<i>18,269</i>	22,491	22,229	25,967	34,144	35,674	35,532	30,078	33,583	34,398	37,083	49.3
Males.....	18,636	18,093	<i>11,287</i>	13,871	13,790	16,151	20,887	21,846	21,788	21,970	20,487	20,978	22,489	50.2
Females.....	11,683	10,287	<i>6,982</i>	8,620	8,439	9,816	13,257	13,828	13,749	14,108	13,096	13,420	14,594	47.8
LEOMINSTER.....	5,793	5,707	5,447	5,622	5,678	5,731	5,768	5,697	5,712	5,889	5,995	6,190	6,480	81.9
Males.....	3,715	<i>3,306</i>	3,402	3,543	3,642	3,694	3,767	<i>3,719</i>	3,731	3,809	3,831	3,978	4,158	79.5
Females.....	2,078	2,001	2,045	2,079	2,036	2,037	2,001	<i>1,978</i>	1,981	2,080	2,164	2,212	2,322	85.2
LOWELL.....	30,111	<i>34,851</i>	20,736	<i>27,896</i>	27,049	28,304	20,718	29,868	29,772	30,658	31,202	30,486	30,892	80.0
Males.....	17,024	<i>18,339</i>	16,533	<i>15,864</i>	16,830	16,151	17,037	17,137	17,214	17,074	17,919	17,152	17,438	86.3
Females.....	13,087	<i>16,512</i>	13,203	<i>12,032</i>	12,119	12,153	12,681	12,731	12,558	12,984	13,283	13,334	13,454	72.9
LYNN.....	27,355	26,358	26,396	25,887	<i>25,531</i>	25,592	26,322	27,080	28,095	28,546	28,882	29,462	30,409	84.0
Males.....	19,042	18,002	18,319	<i>17,847</i>	17,958	17,998	18,387	18,998	19,482	19,680	20,191	20,350	21,292	83.8
Females.....	8,313	8,056	8,077	8,040	<i>7,573</i>	7,594	7,935	8,082	8,613	8,866	8,691	9,112	9,117	83.1
MALDEN.....	4,723	4,066	5,027	4,830	4,529	4,449	4,538	4,459	4,406	4,560	4,820	5,033	5,169	83.9
Males.....	2,633	2,747	2,739	2,658	2,452	2,446	<i>2,422</i>	2,494	2,515	2,545	2,712	2,845	2,991	81.0
Females.....	2,090	2,219	2,288	2,172	2,047	2,003	<i>1,916</i>	1,965	1,981	2,015	2,108	2,188	2,178	83.7
MARLBOROUGH.....	3,798	3,808	3,691	3,545	<i>3,466</i>	3,659	3,780	3,882	3,852	3,926	3,943	3,987	4,037	85.9
Males.....	2,510	2,482	2,432	2,382	<i>2,314</i>	2,433	2,497	2,562	2,548	2,624	2,604	2,616	2,626	88.1
Females.....	1,288	1,326	1,259	1,163	<i>1,152</i>	1,226	1,283	1,320	1,304	1,302	1,339	1,371	1,411	81.6
MEDFORD.....	1,031	<i>922</i>	958	997	1,028	981	962	997	989	1,020	1,080	1,182	1,260	73.2
Males.....	706	<i>629</i>	646	687	705	689	675	688	687	710	731	784	841	74.8
Females.....	325	293	312	310	323	292	277	300	302	310	355	398	419	66.1
MELROSE.....	1,606	<i>1,787</i>	1,785	1,734	1,574	1,550	1,477	<i>1,469</i>	1,465	1,480	1,567	1,672	1,722	81.6
Males.....	720	<i>817</i>	881	820	694	662	640	<i>611</i>	623	630	670	720	772	66.6
Females.....	886	970	904	914	880	888	837	848	842	850	897	952	950	87.0
METHUEN.....	2,571	2,588	<i>2,149</i>	2,301	2,346	2,457	2,574	2,649	2,664	2,722	2,722	2,800	2,830	75.9
Males.....	1,040	1,041	<i>842</i>	918	934	987	1,045	1,067	1,102	1,107	1,128	1,144	1,165	72.3
Females.....	1,531	1,547	<i>1,307</i>	1,383	1,412	1,470	1,529	1,582	1,562	1,615	1,644	1,656	1,665	78.5
MILFORD.....	1,809	1,812	1,781	1,828	1,740	1,671	1,690	1,684	1,733	1,772	1,900	1,965	2,132	78.4
Males.....	1,198	1,161	1,108	1,147	1,098	1,094	1,134	1,153	1,199	1,215	1,284	1,341	1,442	75.9
Females.....	611	651	673	681	642	577	556	531	534	557	616	624	690	77.0
NATICK.....	1,463	<i>1,196</i>	1,274	1,305	1,334	1,413	1,489	1,511	1,528	1,558	1,590	1,668	1,690	70.8
Males.....	1,099	<i>917</i>	975	980	1,001	1,056	1,102	1,115	1,133	1,171	1,185	1,260	1,293	70.9
Females.....	364	<i>279</i>	299	325	333	357	387	396	395	387	405	408	397	68.4
NEW BEDFORD.....	41,630	40,821	40,152	40,403	<i>39,852</i>	40,739	41,260	42,352	42,102	42,854	42,246	42,582	44,197	90.2
Males.....	24,773	24,074	23,609	23,757	<i>23,549</i>	24,168	24,476	25,255	25,239	25,629	25,530	25,492	26,498	88.9
Females.....	16,857	16,747	16,543	16,646	<i>16,303</i>	16,571	16,784	17,097	16,863	17,225	16,716	17,090	17,699	92.1
NEWBURYPORT.....	3,960	3,899	3,932	4,021	4,044	3,981	3,960	3,942	<i>3,848</i>	3,886	3,954	4,023	4,036	95.0
Males.....	2,460	2,393	2,392	2,450	2,408	2,511	2,463	2,454	2,418	2,462	2,451	2,511	2,512	95.2
Females.....	1,500	1,506	1,540	1,571	1,546	1,470	1,497	1,488	<i>1,424</i>	1,424	1,503	1,512	1,524	90.0
Newton.....	2,547	2,372	2,368	<i>2,319</i>	2,344	2,346	2,474	2,599	2,700	2,751	2,755	2,750	2,777	83.5
Males.....	1,729	1,651	1,639	<i>1,674</i>	1,600	1,603	1,671	1,742	1,819	1,861	1,849	1,854	1,885	83.5
Females.....	818	721	729	745	744	743	803	857	881	890	906	905	892	70.6
NORTH ADAMS.....	6,023	5,932	5,681	5,675	5,788	5,451	6,013	6,139	6,223	6,225	6,230	6,420	6,499	83.9
Males.....	4,020	3,964	3,793	3,789	3,845	<i>3,615</i>	3,993	4,068	4,158	4,166	4,173	4,331	4,370	82.7
Females.....	2,003	1,968	1,913	1,886	1,943	1,836	2,020	2,071	2,065	2,059	2,057	2,089	2,129	86.2



## MANUFACTURES—MASSACHUSETTS.

TABLE 8.—WAGE EARNERS, BY MONTHS, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919—Continued.

[The month of maximum employment for each industry is indicated by bold-faced figures and that of minimum employment by *italic* figures.]

INDUSTRY AND CITY.	Average number employed during year.	NUMBER EMPLOYED ON 15TH DAY OF THE MONTH OR NEAREST REPRESENTATIVE DAY.												Per cent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
NORTHAMPTON.....	3,532	<i>3,274</i>	3,350	3,343	3,389	3,495	3,400	3,587	3,655	3,604	3,732	3,757	3,797	86.2
Males.....	2,231	<i>2,068</i>	2,109	2,101	2,140	2,214	2,147	2,281	2,348	2,303	2,346	2,358	2,357	87.7
Females.....	1,301	<i>1,206</i>	1,241	1,242	1,249	1,282	1,253	1,306	1,307	1,301	1,386	1,399	1,440	83.8
NORTHBRIDGE.....	3,871	3,713	3,711	<i>3,603</i>	3,613	3,650	3,780	3,917	3,927	3,977	4,004	4,208	4,259	84.6
Males.....	3,273	3,054	3,001	<i>3,039</i>	3,054	3,101	3,207	3,361	3,345	3,394	3,470	3,550	3,610	84.2
Females.....	598	659	710	<i>564</i>	559	549	573	556	582	583	534	658	649	83.3
NORWOOD.....	2,835	<i>2,512</i>	2,565	2,575	2,616	2,670	2,711	2,805	3,020	3,080	3,113	3,134	3,159	70.5
Males.....	2,250	<i>2,014</i>	2,048	2,081	2,093	2,111	2,138	2,271	2,371	2,449	2,465	2,460	2,490	80.9
Females.....	585	498	517	<i>494</i>	523	559	573	534	649	631	648	674	669	73.8
PEABODY.....	8,013	<i>7,803</i>	7,497	7,483	7,396	7,707	8,011	8,050	8,468	8,559	8,212	8,064	8,801	83.0
Males.....	7,206	<i>6,911</i>	6,699	6,692	6,611	6,907	7,171	7,224	7,643	7,740	7,587	7,764	7,993	82.2
Females.....	807	792	798	796	785	800	840	826	825	819	625	900	878	69.4
PITTSFIELD.....	8,570	<i>6,768</i>	7,618	7,669	8,069	8,367	8,312	8,568	8,810	9,128	9,442	9,834	10,258	65.9
Males.....	6,330	<i>5,072</i>	5,772	5,766	6,085	6,170	6,158	6,349	6,469	6,621	6,822	7,174	7,582	67.4
Females.....	2,240	<i>1,696</i>	1,846	1,903	2,004	2,197	2,154	2,219	2,350	2,507	2,620	2,660	2,736	61.5
PLYMOUTH.....	2,971	<i>2,516</i>	2,562	2,997	2,887	2,854	2,904	3,135	3,165	3,136	3,075	3,107	3,225	78.0
Males.....	2,815	<i>2,404</i>	2,425	2,895	2,838	2,809	2,836	3,062	3,092	3,062	2,995	3,027	3,145	79.0
Females.....	656	599	637	602	599	645	658	723	717	724	632	705	761	70.0
QUINCY.....	19,653	21,143	21,755	<i>22,979</i>	22,048	22,128	21,605	21,162	20,162	18,611	17,050	14,518	<i>12,666</i>	55.1
Males.....	19,122	20,678	21,292	<i>22,482</i>	21,533	21,623	21,058	20,625	19,599	18,071	16,488	13,922	<i>12,080</i>	53.7
Females.....	531	465	463	<i>487</i>	515	502	547	537	563	540	571	596	<i>586</i>	77.7
REVERE.....	126	127	128	112	89	101	121	133	134	136	124	148	161	55.3
Males.....	111	117	116	100	77	85	99	121	112	118	112	136	139	55.4
Females.....	15	10	12	12	12	16	22	12	22	18	12	12	22	45.5
SALEM.....	5,672	5,575	5,494	5,250	5,242	<i>4,894</i>	5,479	5,806	6,102	6,162	5,147	6,390	6,523	75.0
Males.....	3,521	3,435	3,382	3,229	3,204	<i>3,043</i>	3,380	3,553	3,740	3,782	3,440	3,940	4,064	74.9
Females.....	2,151	2,140	2,112	2,021	1,978	1,851	2,099	2,253	2,362	2,380	1,707	2,450	2,459	60.4
SAUGUS.....	126	87	90	81	60	89	92	135	160	150	187	193	182	34.2
Males.....	97	57	60	59	45	63	65	102	125	120	155	162	151	27.8
Females.....	29	30	30	22	15	26	27	33	35	30	32	31	31	60.0
SOMERVILLE.....	6,111	6,833	6,853	6,783	6,338	6,249	6,381	6,517	6,342	6,132	5,635	<i>5,764</i>	5,505	54.9
Males.....	5,614	6,290	6,358	6,276	5,841	5,774	5,902	6,021	5,877	5,655	5,132	<i>5,286</i>	4,956	51.7
Females.....	497	543	495	507	497	475	479	496	465	477	503	478	549	84.7
SOUTHBRIDGE.....	5,329	5,117	5,207	<i>4,955</i>	5,022	5,072	5,409	5,181	5,009	5,670	5,433	5,618	5,675	87.0
Males.....	3,147	2,995	3,075	<i>2,825</i>	2,967	3,019	3,179	3,002	3,300	3,331	3,238	3,305	3,368	80.8
Females.....	2,182	2,122	2,132	<i>2,010</i>	2,055	2,053	2,230	2,119	2,309	2,339	2,195	2,313	2,307	85.9
SPRINGFIELD.....	18,420	<i>15,469</i>	15,009	16,102	17,639	18,011	18,482	19,029	19,483	19,338	20,100	20,723	<i>21,083</i>	73.3
Males.....	13,548	<i>11,009</i>	11,783	12,250	13,216	13,595	14,063	14,378	14,378	13,993	14,511	14,896	<i>15,339</i>	75.7
Females.....	4,881	3,850	3,226	3,852	4,423	4,795	4,887	4,966	5,105	5,345	5,679	5,827	5,744	65.7
TAUNTON.....	8,981	8,799	8,524	<i>8,521</i>	8,634	8,645	8,511	9,165	9,302	9,296	9,325	9,385	9,365	90.8
Males.....	6,500	6,303	6,040	<i>6,066</i>	6,200	6,260	6,370	6,620	6,810	6,782	6,833	6,880	6,827	87.8
Females.....	2,481	2,496	2,484	2,455	2,434	2,385	2,441	2,545	2,492	2,514	2,492	2,505	2,538	93.7
WAKEFIELD.....	1,869	1,887	1,805	1,710	<i>1,666</i>	1,789	1,784	1,863	1,882	1,910	2,000	2,046	2,126	78.4
Males.....	1,152	1,062	1,048	<i>1,038</i>	1,040	1,064	1,114	1,190	1,182	1,182	1,236	1,290	1,348	77.0
Females.....	717	805	757	672	<i>626</i>	675	670	673	700	728	764	756	778	77.8
WALTHAM.....	8,060	7,503	7,583	<i>7,430</i>	7,551	7,735	7,743	8,066	8,283	8,525	8,650	8,790	8,909	83.4
Males.....	5,061	4,562	4,627	<i>4,479</i>	4,641	4,756	4,802	5,062	5,250	5,437	5,570	5,677	5,789	77.9
Females.....	3,008	3,001	2,956	2,951	2,910	2,979	2,941	3,014	3,033	3,088	3,080	3,113	3,120	91.4
WATERTOWN.....	8,420	8,770	8,741	8,270	8,119	7,854	<i>7,720</i>	8,032	8,189	8,095	8,570	9,241	<i>9,439</i>	81.8
Males.....	5,455	5,412	5,432	5,252	5,237	<i>5,208</i>	5,351	5,384	5,310	5,573	5,901	6,079	<i>6,079</i>	85.7
Females.....	2,965	3,358	3,309	3,018	2,882	2,646	<i>2,468</i>	2,681	2,805	2,779	2,907	3,250	3,360	74.3
WEBSTER.....	3,840	3,473	3,362	<i>3,288</i>	3,542	3,714	3,837	4,074	4,137	4,245	4,345	4,030	4,143	75.6
Males.....	2,581	2,240	2,175	<i>2,120</i>	2,328	2,455	2,591	2,755	2,800	2,903	2,971	2,708	2,857	71.4
Females.....	1,259	1,233	1,187	<i>1,168</i>	1,214	1,259	1,246	1,319	1,337	1,342	1,374	1,322	1,286	84.0
WESTFIELD.....	3,243	3,048	3,000	3,132	3,118	3,109	<i>2,918</i>	2,982	3,245	3,406	3,535	3,607	3,701	78.7
Males.....	2,528	2,351	2,300	2,467	2,470	2,515	<i>2,274</i>	2,274	2,523	2,646	2,750	2,815	2,918	77.0
Females.....	715	697	700	665	648	594	<i>644</i>	708	722	760	785	792	783	81.8
WEST SPRINGFIELD.....	2,791	2,502	<i>2,430</i>	2,645	2,460	2,562	2,790	2,950	2,785	2,977	3,051	3,104	3,171	76.5
Males.....	2,487	2,200	<i>2,133</i>	2,353	2,244	2,364	2,492	2,627	2,490	2,636	2,729	2,704	2,827	77.2
Females.....	304	302	297	292	216	198	298	323	289	341	322	370	344	60.8
WEYMOUTH.....	2,146	<i>1,977</i>	2,024	2,039	2,011	2,056	2,101	2,271	2,298	2,251	2,170	2,266	2,288	86.0
Males.....	1,453	<i>1,345</i>	1,366	1,391	1,385	1,380	1,417	1,501	1,529	1,497	1,479	1,560	1,586	84.8
Females.....	693	632	658	648	626	676	684	770	769	754	691	706	702	81.3
WINCHESTER.....	1,112	1,021	<i>1,009</i>	1,039	1,040	1,117	1,156	1,085	1,184	1,163	1,155	1,177	1,198	84.2
Males.....	990	893	<i>893</i>	916	930	997	1,034	959	1,001	1,041	1,030	1,048	1,069	83.5
Females.....	122	119	116	123	110	120	122	126	123	122	125	129	129	85.3
WINTHROP.....	61	<i>59</i>	<i>59</i>	<i>59</i>	<i>59</i>	<i>59</i>	60	62	64	61	62	64	64	92.2
Males.....	30	<i>28</i>	<i>28</i>	<i>28</i>	<i>28</i>	<i>28</i>	30	32	31	31	31	31	31	87.5
Females.....	31	31	31	31	31	31	30	30	33	30	31	33	33	90.9
WORURN.....	2,011	1,824	1,804	1,780	<i>1,688</i>	1,878	2,034	2,054	2,129	2,182	2,104	2,242	2,323	72.7
Males.....	1,719	1,592	1,554	1,524	<i>1,437</i>	1,610	1,730	1,725	1,793	1,894	1,876	1,914	2,003	71.7
Females.....	292	232	250	256	<i>251</i>	268	304	329	336	318	318	328	320	69.0
WORCESTER.....	38,073	38,716	36,857	36,581	36,484	36,763	37,237	<i>36,094</i>	36,137	36,325	41,250	42,106	<i>43,436</i>	83.1
Males.....	30,249	30,350	29,181	28,895	28,787	28,745	28,979	<i>27,889</i>	28,000	28,022	32,165	32,850	<i>33,910</i>	82.2
Females.....	8,424	8,357	<i>7,676</i>	7,686	7,697	8,018	8,258	8,205	8,631	8,303	9,085	9,256	<i>9,526</i>	80.6



## MANUFACTURES—MASSACHUSETTS.

597

TABLE 9.—AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919 AND 1914.

INDUSTRY AND CITY.	Census year.	Total.	IN ESTABLISHMENTS WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—							
			44 and under.	Between 44 and 48.	48.1	Between 48 and 54.	54.	Between 54 and 60.	60.	Over 60.
All industries.....	1919	713,836	54,454	38,904	436,806	109,036	40,902	27,012	5,655	1,067
	1914	606,698	( <sup>2</sup> )	( <sup>2</sup> )	49,358	68,221	340,219	123,488	21,614	3,798
	1909	584,559	( <sup>2</sup> )	( <sup>2</sup> )	29,484	28,555	103,114	380,223	35,887	7,296
Ammunition <sup>1</sup> .....	1919	2,449			2,304	110			35	
Automobile bodies and parts.....	1919	3,541	114	138	1,192	1,992	82	3		20
	1914	1,341	( <sup>2</sup> )	( <sup>2</sup> )	13	363	910	17	38	
Belting and hose, rubber <sup>1</sup> .....	1919	2,441			2,118	323				
Bookbinding and blank-book making.....	1919	2,936	445	37	2,321	6	113		14	
	1914	3,817	( <sup>2</sup> )	( <sup>2</sup> )	2,185	315	300	517		
Boot and shoe cut stock.....	1919	4,631	130	1,152	1,934	1,142	226	47		
	1914	3,781	( <sup>2</sup> )	( <sup>2</sup> )	80	1,109	1,438	1,037	117	
Boot and shoe findings.....	1919	5,896	269	1,134	2,619	1,234	226	130	284	
	1914	4,389	( <sup>2</sup> )	( <sup>2</sup> )	314	371	2,025	1,575	104	
Boots and shoes, not including rubber boots and shoes.....	1919	80,166	4,325	23,955	40,506	8,086	3,137	156		
	1914	76,944	( <sup>2</sup> )	( <sup>2</sup> )	1,089	12,224	42,064	21,292	275	
Boots and shoes, rubber.....	1919	13,062			13,056	6				
	1914	8,087					8,087			
Boxes, paper and other, not elsewhere specified.....	1919	4,711	339	561	2,780	965	66			
	1914	4,244	( <sup>2</sup> )	( <sup>2</sup> )	106	1,347	2,103	565	123	
Boxes, wooden packing, except cigar boxes.....	1919	3,232	1	70	594	2,009	248	310		
	1914	2,995	( <sup>2</sup> )	( <sup>2</sup> )	20	624	936	1,338	77	
Brass, bronze, and copper products.....	1919	2,832	100	50	909	1,112	42	610	9	
	1914	1,620	( <sup>2</sup> )	( <sup>2</sup> )	3	111	453	470	583	
Bread and other bakery products.....	1919	8,583	139	663	5,099	529	1,689	176	251	37
	1914	8,083	( <sup>2</sup> )	( <sup>2</sup> )	614	182	3,889	1,969	1,286	143
Carpets and rugs, other than rag.....	1919	3,134	32		2,525	577				
	1914	5,319				103	5,046	170		
Cars and general shop construction and repairs by steam-railroad companies.....	1919	7,724			7,724					
	1914	6,264				4,039	2,225			
Chemicals.....	1919	2,483	1	4	838	1,430	74	117	19	
	1914	1,395	( <sup>2</sup> )	( <sup>2</sup> )	17	10	535	811	11	11
Chocolate and cocoa products.....	1919	2,007			1,900		107			
	1914	943	( <sup>2</sup> )	( <sup>2</sup> )	1	312	592	38		
Clothing, men's.....	1919	6,856	4,127	99	2,206	406	15		3	
	1914	5,760	( <sup>2</sup> )	( <sup>2</sup> )	634	2,835	2,228	60	8	
Clothing, women's.....	1919	6,271	3,549	280	2,336	88	12			
	1914	6,070	( <sup>2</sup> )	( <sup>2</sup> )	379	3,688	2,100	9		
Confectionery and ice cream.....	1919	11,585	271	2,941	7,211	692	406	18	23	23
	1914	7,250	( <sup>2</sup> )	( <sup>2</sup> )	1,646	3,874	1,222	240	235	33
Cordage and twine <sup>1</sup> .....	1919	2,743			933	12	1,798			
Cotton goods.....	1919	122,499	363	10	109,859	3,174	7,750	1,343		
	1914	112,609	( <sup>2</sup> )	( <sup>2</sup> )	1,051	793	109,662	1,103		
Cutlery and edge tools.....	1919	3,988	7	14	2,019	1,054	428	432	34	
	1914	1,947	( <sup>2</sup> )	( <sup>2</sup> )	170	1,085	413	279		
Dyeing and finishing textiles, exclusive of that done in textile mills.....	1919	12,321	186		8,559	877	1,540	1,013	43	103
	1914	11,437	( <sup>2</sup> )	( <sup>2</sup> )	19	157	5,573	5,610	144	34
Electrical machinery, apparatus, and supplies.....	1919	23,889	250	878	19,330	3,060	112	39	170	
	1914	17,125	( <sup>2</sup> )	( <sup>2</sup> )	637	2,205	10,519	3,763	1	
Emery and other abrasive wheels.....	1919	2,443	2	4	81	2,302		54		
	1914	902					26	857	19	
Firearms.....	1919	2,253	1		691		712	849		
	1914	2,161					470	1,068	623	
Foundry and machine-shop products <sup>1</sup> .....	1919	51,680	5,252	450	15,232	20,989	3,783	5,926	48	
	1914	32,687	( <sup>2</sup> )	( <sup>2</sup> )	586	7,536	10,232	13,690	643	
Furniture.....	1919	6,342	728	63	1,202	3,839	162	334	14	
	1914	6,813	( <sup>2</sup> )	( <sup>2</sup> )	612	882	577	2,832	1,910	
Gas, illuminating and heating.....	1919	2,654	1		633	42	16	1,954		8
	1914	3,182	( <sup>2</sup> )	( <sup>2</sup> )	329		22	749	437	1,645
Iron and steel, steel works and rolling mills.....	1919	3,084		417	340	36	89	417	2,376	
	1914	2,889	( <sup>2</sup> )	( <sup>2</sup> )	15	55	257	368	2,194	
Iron and steel, forgings, not made in steel works or rolling mills.....	1919	2,172			1,042	1,004	105	21		
	1914	683				47	419	217		
Jewelry.....	1919	6,786	239	6	4,114	1,733	275	419		
	1914	6,505	( <sup>2</sup> )	( <sup>2</sup> )	334	451	1,453	4,267		
Knit goods.....	1919	12,751	25	14	12,292	60	236	124		
	1914	10,635	( <sup>2</sup> )	( <sup>2</sup> )	9	496	9,702	403	19	

<sup>1</sup> Includes 48 and under for 1914 and 1909.  
<sup>2</sup> Corresponding figures not available.

<sup>3</sup> Not shown separately in 1914.  
<sup>4</sup> Includes "iron and steel, tempering and welding"; "machine tools"; and "textile machinery and parts."



## MANUFACTURES—MASSACHUSETTS.

TABLE 9.—AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919 AND 1914—Continued.

INDUSTRY AND CITY.	Census year.	Total.	IN ESTABLISHMENTS WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—							
			44 and under.	Between 44 and 48.	48. <sup>1</sup>	Between 48 and 54.	54.	Between 54 and 60.	60.	Over 60.
Leather, tanned, curried, and finished.....	1919	15,180	288	63	11,240	2,829	298	462	—	—
	1914	10,164	( <sup>2</sup> )	( <sup>2</sup> )	244	283	4,071	5,043	523	—
Lumber, planing-mill products, not including planing mills connected with sawmills.	1919	2,245	601	1	944	444	96	159	—	—
	1914	3,423	( <sup>2</sup> )	( <sup>2</sup> )	893	1,368	754	233	175	—
Motorcycles, bicycles, and parts.....	1919	3,000	—	—	2,220	45	572	163	—	—
	1914	2,135	—	—	—	1	573	1,561	—	—
Musical instruments, pianos.....	1919	2,228	171	—	1,267	690	—	—	—	—
	1914	2,352	( <sup>2</sup> )	( <sup>2</sup> )	240	448	1,567	97	—	—
Optical goods.....	1919	4,082	9	62	3,880	107	4	20	—	—
	1914	2,356	( <sup>2</sup> )	( <sup>2</sup> )	4	18	2,050	279	5	—
Paper and wood pulp.....	1919	12,960	2,453	—	7,533	2,263	—	74	359	278
	1914	13,401	( <sup>2</sup> )	( <sup>2</sup> )	5,171	1,705	3,149	2,006	620	750
Printing and publishing, book and job.....	1919	7,634	370	104	6,485	601	54	13	7	—
	1914	7,062	( <sup>2</sup> )	( <sup>2</sup> )	5,570	967	452	73	—	—
Printing and publishing, newspapers and periodicals.....	1919	5,885	1,408	138	4,155	107	62	6	9	—
	1914	6,032	( <sup>2</sup> )	( <sup>2</sup> )	5,116	353	512	45	0	—
Pumps, steam.....	1919	2,280	—	—	1,370	828	—	82	—	—
	1914	1,194	—	—	—	—	646	548	—	—
Rubber tires, tubes, and rubber goods, not elsewhere specified.....	1919	9,406	6	190	3,519	5,214	225	252	—	—
	1914	4,743	—	—	—	246	143	4,348	6	—
Silk goods, including throwsters.....	1919	5,697	—	205	2,915	2,567	—	10	—	—
	1914	4,405	( <sup>2</sup> )	( <sup>2</sup> )	330	22	4,123	—	—	20
Slaughtering and meat packing.....	1919	4,307	409	—	3,832	36	27	—	3	—
	1914	3,233	( <sup>2</sup> )	( <sup>2</sup> )	42	28	995	967	1,201	—
Stationery goods, not elsewhere specified.....	1919	3,305	10	3	3,172	120	—	—	—	—
	1914	2,467	( <sup>2</sup> )	( <sup>2</sup> )	430	151	1,088	798	—	—
Steam fittings and steam and hot-water heating apparatus.....	1919	3,521	24	—	1,956	1,541	—	—	—	—
	1914	3,175	( <sup>2</sup> )	( <sup>2</sup> )	219	203	549	1,118	1,086	—
Suspenders, garters, and elastic woven goods.....	1919	2,965	44	457	2,120	85	126	—	133	—
	1914	2,928	( <sup>2</sup> )	( <sup>2</sup> )	547	592	703	1,086	—	—
Tobacco, cigars and cigarettes.....	1919	2,946	1,155	860	855	—	76	—	—	—
	1914	3,895	( <sup>2</sup> )	( <sup>2</sup> )	3,098	46	151	—	—	—
Tools, not elsewhere specified.....	1919	7,226	52	461	561	2,410	1,849	1,892	1	—
	1914	4,538	( <sup>2</sup> )	( <sup>2</sup> )	89	417	1,149	2,859	24	—
Wire.....	1919	5,203	—	—	—	493	—	4,710	—	—
	1914	2,899	—	—	—	—	—	870	2,020	—
Woolen goods.....	1919	17,568	215	6	15,114	594	1,596	43	—	—
	1914	13,844	( <sup>2</sup> )	( <sup>2</sup> )	50	193	7,771	4,752	1,078	—
Worsted goods.....	1919	36,296	—	—	33,436	931	1,437	250	—	242
	1914	39,533	—	—	—	1,411	35,133	2,473	516	—
All other industries.....	1919	129,157	26,333	3,408	53,583	28,242	11,031	4,384	1,820	356
	1914	115,446	( <sup>2</sup> )	( <sup>2</sup> )	15,852	14,655	40,167	20,112	5,498	1,162
Total for cities.....	1919	609,671	51,228	38,231	374,462	92,850	30,674	10,746	5,051	429
	1914	506,397	( <sup>2</sup> )	( <sup>2</sup> )	41,618	64,930	284,492	95,955	16,179	3,223
ADAMS.....	1919	3,974	1	—	3,760	74	89	—	10	40
	1914	3,930	( <sup>2</sup> )	( <sup>2</sup> )	13	3	3,507	241	163	3
AMESBURY.....	1919	3,173	1	25	241	2,532	327	47	—	—
	1914	1,451	( <sup>2</sup> )	( <sup>2</sup> )	80	7	1,340	—	11	13
ARLINGTON.....	1919	228	7	—	46	130	13	32	—	—
	1914	246	( <sup>2</sup> )	( <sup>2</sup> )	85	14	97	50	—	—
ATTLEBORO.....	1919	6,763	44	16	4,260	2,030	118	290	—	5
	1914	6,058	( <sup>2</sup> )	( <sup>2</sup> )	28	89	1,821	3,992	143	15
BELMONT.....	1919	93	16	—	55	22	—	—	—	—
BEVERLY.....	1919	6,495	4,656	1,442	111	250	36	—	—	—
	1914	4,641	( <sup>2</sup> )	( <sup>2</sup> )	21	3,129	846	527	118	—
BOSTON.....	1919	88,759	15,132	7,934	46,861	13,398	3,457	534	1,422	21
	1914	78,894	( <sup>2</sup> )	( <sup>2</sup> )	18,002	30,167	21,902	6,881	738	484
BRAINTREE.....	1919	2,176	12	1	849	41	1,254	19	—	—
BROCKTON.....	1919	18,059	106	3,002	13,801	906	174	47	23	—
	1914	10,246	( <sup>2</sup> )	( <sup>2</sup> )	586	478	14,862	306	14	—
BROOKLINE.....	1919	484	22	188	217	48	4	—	5	—
	1914	335	( <sup>2</sup> )	( <sup>2</sup> )	35	241	59	—	—	—
CAMBRIDGE.....	1919	22,550	2,175	1,900	12,296	4,523	1,107	410	127	12
	1914	16,749	( <sup>2</sup> )	( <sup>2</sup> )	3,430	2,880	8,024	602	570	253
CHELSEA.....	1919	6,580	112	—	3,364	2,623	458	22	—	1
	1914	6,241	( <sup>2</sup> )	( <sup>2</sup> )	1,000	2,203	1,962	884	189	3

<sup>1</sup>Includes 48 and under for 1914 and 1909.<sup>2</sup>Corresponding figures not available.



# MANUFACTURES—MASSACHUSETTS.

599

TABLE 9.—AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919 AND 1914—Continued.

INDUSTRY AND CITY.	Census year.	Total.	IN ESTABLISHMENTS WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—							
			44 and under.	Between 44 and 48.	48.1	Between 48 and 54.	54.	Between 54 and 60.	60.	Over 60.
CHICOPEE.....	1919	10,068	60	—	2,185	5,027	2,779	—	14	3
	1914	8,426	(2)	(2)	70	269	5,425	2,218	440	4
CLINTON.....	1919	4,155	1	2	3,424	88	15	624	1	—
	1914	4,064	—	—	—	13	3,493	540	12	6
DANVERS.....	1919	1,474	19	116	608	516	6	209	—	—
DEDHAM.....	1919	463	7	4	332	3	—	117	—	—
	1914	256	(2)	(2)	14	8	11	221	2	—
EASTHAMPTON.....	1919	4,142	5	—	4,027	45	14	10	41	—
EVERETT.....	1919	4,523	69	645	1,009	1,691	143	360	6	—
	1914	3,226	(2)	(2)	147	432	1,509	469	24	645
FALL RIVER.....	1919	37,015	229	6	35,968	360	257	176	19	—
	1914	36,834	(2)	(2)	535	559	33,203	2,207	310	20
FITCHBURG.....	1919	9,907	30	10	6,725	2,044	424	652	22	—
	1914	8,837	(2)	(2)	1,257	672	5,473	635	718	82
FRAMINGHAM.....	1919	4,362	30	5	3,875	394	7	—	—	51
	1914	3,982	(2)	(2)	236	1,929	1,224	446	137	10
GARDNER.....	1919	4,036	10	—	213	3,500	163	—	—	—
	1914	3,964	(2)	(2)	17	—	547	1,720	1,676	4
GLOUCESTER.....	1919	2,684	12	58	463	1,860	236	25	30	—
	1914	2,814	(2)	(2)	409	202	1,993	192	18	—
GREENFIELD.....	1919	2,750	13	7	135	1,593	136	839	12	15
	1914	1,602	(2)	(2)	151	21	108	1,172	79	11
HAVERHILL.....	1919	15,783	1,004	10,318	2,329	1,152	605	96	276	3
	1914	13,281	(2)	(2)	842	537	5,618	5,808	469	7
HOLYOKE.....	1919	17,773	2,270	10	10,816	4,589	86	—	—	—
	1914	17,493	(2)	(2)	2,679	1,149	9,661	3,644	430	30
LAWRENCE.....	1919	30,319	19	7	29,068	761	480	—	4	—
	1914	31,043	(2)	(2)	350	497	29,405	259	68	464
LEOMINSTER.....	1919	5,793	24	—	1,385	3,995	292	97	—	—
	1914	4,929	(2)	(2)	5	343	2,116	2,244	221	—
LOWELL.....	1919	30,111	242	115	27,890	1,186	370	196	9	103
	1914	29,904	(2)	(2)	584	1,974	25,114	1,906	50	188
LYNN.....	1919	27,355	1,409	10,456	12,031	2,832	180	486	11	—
	1914	25,339	(2)	(2)	724	2,173	11,844	10,639	54	5
MALDEN.....	1919	4,723	453	46	3,485	201	390	144	3	1
	1914	2,850	(2)	(2)	186	524	1,898	82	1	159
MARLBOROUGH.....	1919	3,768	7	5	3,775	1	4	—	—	—
	1914	3,822	(2)	(2)	77	24	221	3,496	4	—
MEDFORD.....	1919	1,031	28	12	845	127	19	—	—	—
	1914	559	(2)	(2)	26	167	213	118	85	—
MELROSE.....	1919	1,606	85	4	1,486	15	16	—	—	—
	1914	902	(2)	(2)	16	142	776	28	—	—
METHUEN.....	1919	2,571	4	2	2,402	6	151	—	6	—
	1914	1,940	(2)	(2)	1	1	1,889	17	32	—
MILFORD.....	1919	1,809	62	—	1,537	20	182	8	—	—
	1914	1,749	(2)	(2)	246	209	1,042	224	22	6
NATICK.....	1919	1,463	306	17	1,048	80	5	7	—	—
	1914	1,347	(2)	(2)	124	75	971	168	19	—
NEW BEDFORD.....	1919	41,630	69	26	32,763	4,108	3,872	408	348	36
	1914	33,343	(2)	(2)	635	249	30,286	1,701	370	102
NEWBURYPORT.....	1919	3,960	18	364	1,443	1,639	328	168	—	—
	1914	3,349	(2)	(2)	28	127	1,369	1,800	9	16
NEWTON.....	1919	2,547	70	11	1,528	885	25	5	23	—
	1914	2,154	(2)	(2)	330	863	759	144	58	—
NORTH ADAMS.....	1919	6,023	29	—	5,291	74	428	201	—	29
	1914	5,288	(2)	(2)	1,165	489	1,309	2,259	37	—
NORTHAMPTON.....	1919	3,532	1	—	2,526	718	247	—	—	—
	1914	3,446	(2)	(2)	151	299	2,399	542	36	19
NORTHBRIDGE.....	1919	3,871	2	—	1,279	2,584	6	—	—	—
NORWOOD.....	1919	2,835	252	—	2,455	104	17	7	—	—
PEABODY.....	1919	8,013	250	79	6,745	897	540	—	2	—
	1914	5,485	(2)	(2)	19	105	3,279	1,479	603	—
PITTSFIELD.....	1919	8,570	19	—	7,933	494	27	82	15	—
	1914	7,490	(2)	(2)	228	31	1,295	5,832	104	—
PLYMOUTH.....	1919	2,971	—	—	1,073	5	1,887	—	—	6
	1914	2,845	(2)	(2)	6	2	2,292	526	—	19

1 Includes 48 and under for 1914 and 1909.

2 Corresponding figures not available.



## MANUFACTURES—MASSACHUSETTS.

TABLE 9.—AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919 AND 1914—Continued.

INDUSTRY AND CITY.	Census year.	Total.	IN ESTABLISHMENTS WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—							
			44 and under.	Between 44 and 48.	48.1	Between 48 and 54.	54.	Between 54 and 60.	60.	Over 60.
QUINCY.....	1919	19,653	17,780	3	1,157	320	381	3	3	.....
	1914	5,783	(2)	(2)	1,244	3,364	1,125	36	14	.....
REVERE.....	1919	126	1	3	95	11	11	5	5	.....
	1914	80	(2)	(2)	11	1	55	13	.....	.....
SALEM.....	1919	5,672	1,096	313	3,079	460	724	.....	.....	.....
	1914	5,294	(2)	(2)	128	701	2,807	1,383	275	.....
SAUGUS.....	1919	126	1	3	83	8	31	.....	.....	.....
SOMERVILLE.....	1919	6,111	450	106	3,728	1,207	264	232	34	21
	1914	5,429	(2)	(2)	351	1,032	1,625	1,254	1,167	.....
SOUTHBRIDGE.....	1919	5,329	3	.....	3,441	535	1,310	35	5	.....
	1914	4,332	(2)	(2)	10	3,712	3,712	603	7	.....
SPRINGFIELD.....	1919	18,429	1,124	37	14,616	1,876	485	278	13	.....
	1914	14,240	(2)	(2)	1,716	1,955	5,381	4,379	560	249
TAUNTON.....	1919	8,981	66	41	5,313	1,831	731	921	76	2
	1914	7,371	(2)	(2)	212	257	4,741	2,025	37	99
WAKEFIELD.....	1919	1,869	5	247	1,427	190	.....	.....	.....	.....
	1914	2,008	(2)	(2)	38	28	1,158	770	5	.....
WALTHAM.....	1919	8,069	285	286	6,418	548	478	44	.....	10
	1914	6,465	(2)	(2)	70	90	1,483	4,806	16	.....
WATERTOWN.....	1919	8,420	2	2	8,012	362	42	.....	.....	.....
	1914	4,787	(2)	(2)	5	7	4,350	416	3	.....
WEBSTER.....	1919	3,849	8	.....	2,736	550	548	.....	7	.....
	1914	3,246	(2)	(2)	13	1,776	839	573	45	.....
WESTFIELD.....	1919	3,243	33	7	1,221	571	1,330	13	.....	68
	1914	3,584	(2)	(2)	152	27	891	1,223	1,201	.....
WEST SPRINGFIELD.....	1919	2,701	193	.....	2,508	63	12	15	.....	.....
	1914	2,209	(2)	(2)	634	202	1,287	55	31	.....
WEYMOUTH.....	1919	2,146	61	.....	1,658	160	267	.....	.....	.....
	1914	2,074	(2)	(2)	15	423	1,184	452	.....	.....
WINCHESTER.....	1919	1,112	19	.....	972	119	.....	.....	2	.....
	1914	1,048	(2)	(2)	166	53	28	792	9	.....
WINTHROP.....	1919	61	8	.....	42	2	9	.....	8	.....
	1914	16	(2)	(2)	3	.....	5	.....	.....	.....
WOBURN.....	1919	2,011	154	44	1,231	522	42	14	4	.....
	1914	1,565	(2)	(2)	260	59	420	809	11	.....
WORCESTER.....	1919	38,673	529	306	10,167	13,784	2,705	8,712	2,458	12
	1914	29,452	(2)	(2)	1,392	1,659	11,307	10,098	4,716	280

<sup>1</sup> Includes 48 and under for 1914 and 1909.<sup>2</sup> Corresponding figures not available.



## MANUFACTURES—MASSACHUSETTS.

601

TABLE 10.—SIZE OF ESTABLISHMENTS, BY AVERAGE NUMBER OF WAGE EARNERS, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919.

INDUSTRY AND CITY	TOTAL.		ESTABLISHMENTS EMPLOYING—																
	Establishments.	Wage earners (average number).	No wage earners.	1 to 5 wage earners, inclusive.	6 to 20 wage earners, inclusive.	21 to 50 wage earners, inclusive.	51 to 100 wage earners, inclusive.	101 to 250 wage earners, inclusive.	251 to 500 wage earners, inclusive.	501 to 1,000 wage earners, inclusive.	Over 1,000 wage earners.								
			Establishments.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.		
All industries.....	11,906	713,836	1,086	4,670	11,497	2,680	30,753	1,410	46,214	791	50,499	689	108,715	293	102,019	169	114,094	118	244,045
Ammunition.....	6	2,449				2	15			1	73							1	2,304
Automobile bodies and parts.....	88	3,541	3	34	77	27	338	9	293	7	496	5	738	2	676	1	923		
Belt and hose, rubber.....	3	2,441												1	323		880	1	1,238
Bookbinding and blank-book making.....	94	2,936	7	22	67	41	441	12	381	2	136	9	1,233			1	675		
Boot and shoe cut stock.....	182	4,631	4	55	160	67	736	32	1,014	14	1,014	8	1,105	2	602				
Boot and shoe findings.....	254	5,896	10	67	174	92	1,132	61	1,966	14	958	9	1,382	1	284				
Boots and shoes, not including rubber boots and shoes.....	493	80,166	6	48	136	62	783	93	3,205	89	6,715	103	17,074	57	20,097	26	17,292	9	14,864
Boots and shoes, rubber.....	8	13,062				1	6							2	1,668	5	11,888		
Boxes, paper and other, not elsewhere specified.....	102	4,711		6	20	31	438	39	1,352	14	979	12	1,922						
Boxes, wooden packing, except cigar boxes.....	75	3,232	3	16	47	14	179	23	780	9	671	9	1,223	1	332				
Brass, bronze, and copper products.....	72	2,832	2	20	83	23	204	11	312	2	170	1	151	2	600	2	1,222		
Bread and other bakery products.....	1,909	8,583	102	979	2,333	179	1,046	28	855	8	572	10	1,491	1	340	2	1,346		
Carpets and rugs, other than rag.....	10	3,134		1				1	32	2	136	1	189	2	650	2	1,098	1	1,028
Cars and general shop construction and repairs by steam-railroad companies.....	14	7,724						1	36	2	160	5	849	2	814	1	927	3	4,938
Chemicals.....	27	2,483	3	7	20	6	62	5	165	1	72	1	113	3	1,263	1	788		
Chocolate and cocoa products.....	6	2,007		1								2	287	1	255	2	1,404		
Clothing, men's.....	207	6,856	6	56	154	80	952	42	1,431	11	776	6	930	5	1,861	1	732		
Clothing, women's.....	258	6,271	5	42	155	104	1,289	84	2,637	17	1,056	4	463	2	641				
Confectionery and ice cream.....	278	11,585	16	143	315	61	656	23	819	11	696	13	2,181	6	2,151	3	2,030	2	2,731
Cordage and twine.....	13	2,743		2	3	4	55	2	75			2	275	2	539				1,796
Cotton goods.....	191	122,499	4	15	14	167	11	398	17	1,225	19	3,158	35	13,192	49	34,065	42	70,279	
Cutlery and edge tools.....	51	3,988	1	13	34	21	238	3	106	3	217	7	963	2	567			1	1,893
Dyeing and finishing textiles, exclusive of that done in textile mills.....	62	12,321		8	20	8	111	9	207	11	829	12	1,770	6	2,110	6	3,828	2	3,356
Electrical machinery, apparatus, and supplies.....	110	23,889	3	21	71	32	393	17	555	15	1,034	10	1,688	6	1,948	2	1,261	4	16,939
Emery and other abrasive wheels.....	14	2,443		4	9	1	6	4	113	3	167	1	116					1	2,032
Firearms.....	5	2,253		1										1	316	3	1,980		
Foundry and machine-shop products.....	574	27,712	17	172	449	162	1,959	101	3,218	65	4,385	39	5,899	14	4,660	2	1,554	2	5,588
Furniture.....	161	6,342	5	49	143	45	592	33	1,060	19	1,328	6	902	2	589	1	644	1	1,084
Gas, illuminating and heating.....	51	2,654	1	10	27	16	203	11	387	4	277	6	875	3	885				
Iron and steel, steel works and rolling mills.....	11	3,684				3	29	2	69	1	89	2	417	2	704			1	2,376
Iron and steel, forgings, not made in steel works or rolling mills.....	14	2,172		2	7	3	45	2	84	2	118			5	1,918				
Jewelry.....	165	6,786	4	39	89	33	414	39	1,335	35	2,310	14	2,236	1	402				
Knit goods.....	77	12,751	3	13	43	12	149	13	1,483	12	809	13	1,982	5	1,716	4	2,299	2	5,270
Leather, tanned, curried, and finished.....	131	15,180	1	10	25	32	431	37	1,203	20	1,533	22	3,354	3	938	4	2,560	2	5,136
Lumber, planing-mill products, not including planing mills connected with saw-mills.....	146	2,245	3	55	140	59	690	20	647	8	586	1	173			3	1,744	1	1,293
Machine tools.....	46	6,471		4	6	7	103	12	442	10	721	5	850	4	1,312	3	1,572	1	1,958
Motorcycles, bicycles, and parts.....	8	3,000		1	3			2	68					1	262	1			
Musical instruments, pianos.....	14	2,228				3	34			3	243	4	686	4	1,205				
Optical goods.....	29	4,082		8	23	5	62	10	339	2	134	2	362	1	324			1	2,838
Paper and wood pulp.....	78	12,960				4	42	9	309	15	1,117	37	6,309	11	3,694	2	1,489		
Printing and publishing, book and job.....	768	7,034	172	382	876	148	1,605	45	1,894	11	778	7	1,105			3	1,376		
Printing and publishing, newspapers and periodicals.....	412	5,885	171	117	324	76	823	23	779	14	962	5	776	5	1,690	1	531		
Pumps, steam.....	7	2,280				1	7	3	86	1	82					1	796	1	1,309
Rubber tires, tubes, and rubber goods, not elsewhere specified.....	47	9,406	1	5	14	7	96	9	289	10	721	10	1,365	2	823	1	571	2	5,527
Silk goods, including throwsters.....	21	5,697				3	34	5	164	4	281	5	865	1	473	1	817	2	3,063
Slaughtering and meat packing.....	40	4,307	3	19	37	8	88	3	108	1	74	1	153	3	1,008			2	2,839
Stationery goods, not elsewhere specified.....	30	3,305	2	8	22	1	11	3	83	7	504	5	599	2	707	2	1,370		
Steam fittings and steam and hot-water heating apparatus.....	23	3,521	2	5	14	5	72	3	87			5	859	1	332	1	836	1	1,321
Suspenders, garters, and elastic woven goods.....	20	2,965		3	12	7	86	4	129	2	180	10	1,385	2	648	1	525		
Textile machinery and parts.....	116	17,413	1	20	91	32	356	16	503	13	916	14	2,240	3	995	3	2,362	5	9,950
Tobacco, cigars and cigarettes.....	262	2,948	104	117	220	21	205	9	300	5	352	3	451	1	384	2	1,034		
Tools, not elsewhere specified.....	117	7,226	5	48	122	31	369	14	487	5	346	6	1,089	4	1,540	4	3,267		
Wire.....	9	5,203				2	26	1	45			2	876	1	274	1	711	2	3,771
Woolen goods.....	111	17,598		4	16	5	55	16	595	27	2,081	42	7,100	16	5,163	1	721	1	1,837
Worsted goods.....	71	36,296				3	46	6	182	13	985	22	3,558	12	4,109	5	3,011	10	24,405
All other industries.....	4,406	120,241	420	2,011	4,898	1,076	12,205	448	14,427	227	16,268	152	23,445	44	15,637	20	12,640	8	29,721
Total for cities.....	9,947	609,671	865	3,904	9,895	2,330	20,749	1,195	38,708	633	45,044	528	83,151	243	84,525	142	95,812	107	225,787
ADAMS.....	32	3,974	5	14	30	4	47	1	38	3	225	3	557					2	3,077
AMESBURY.....	44	3,173	2	14	34	10	111	6	189	5	304	3	391	3	1,130	1	924		
ARLINGTON.....	27	228	3	11	35	11	111	2	82										
ATTLEBORO.....	144	6,768	9	45	109	29	332	22	724	21	1,448	15	2,465	2	743	1	942		
BELMONT.....	6	93	1	2	8	2	31			1	54								
BEVERLY.....	70	6,495	10	22	60	20	223	9	824	2	146	4	650	2	781			1	4,311
BOSTON.....	3,077	88,759	322	1,211	3,267	844	9,627	384	12,052	151	10,135	101	15,207	41	14,736	14	9,425	9	14,310
BRAINTREE.....	19	2,170	1	7	13	5	55	2	71	1	70	1	238			1	504	1	1,225
BROCKTON.....	217	18,059	8	67	177	54	697	33	1,079	19	1,411	21	3,365	6	2,127	7	4,882	2	4,321
BROOKLINE.....	32	484	4	14	44	9	120	4	137			1	183						
CAMBRIDGE.....	339	22,550	23	106	259	89	994	35	1,228	33	2,205	31	4,817	13	4,459	5	2,858	4	5,730
CHELSEA.....	123	6,580	12	43	103	31	355	19	642										



## MANUFACTURES—MASSACHUSETTS.

TABLE 10.—SIZE OF ESTABLISHMENTS, BY AVERAGE NUMBER OF WAGE EARNERS, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919—Continued.

INDUSTRY AND CITY.	TOTAL.		ESTABLISHMENTS EMPLOYING—																	
	Establishments.	Wage earners (average number).	No wage earners.		1 to 5 wage earners, inclusive.		6 to 20 wage earners, inclusive.		21 to 50 wage earners, inclusive.		51 to 100 wage earners, inclusive.		101 to 250 wage earners, inclusive.		251 to 500 wage earners, inclusive.		501 to 1,000 wage earners, inclusive.		Over 1,000 wage earners.	
			Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.
DEDHAM.....	20	403	4	8	18	5	38	2	80	1	88	2	310	2	703	2	1,202	1	2,437	1
EASTHAMPTON.....	28	4,142	4	10	18	6	52	2	160	1	103	1	1,083	3	1,185	1	535	7	11,042	1
EVERETT.....	104	4,523	4	35	98	24	293	21	623	10	706	6	1,209	18	6,775	22	14,950	7	11,042	1
FALL RIVER.....	293	37,015	19	135	323	55	617	17	502	12	847	8	1,200	8	2,805	4	2,541	1	1,305	1
FITCHBURG.....	121	9,907	8	40	103	24	257	13	481	10	1,203	7	1,172	8	2,805	4	2,541	1	1,305	1
FRAMINGHAM.....	59	4,362	2	28	55	12	118	5	210	3	234	6	1,064	2	703	2	1,202	1	1,909	1
GARDNER.....	73	4,036	3	24	50	16	207	11	387	0	643	7	1,052	2	613	1	506	1	1,084	1
GLOUCESTER.....	90	2,684	5	45	112	21	244	11	340	3	227	3	431	1	329	1	506	1	1,001	1
GREENFIELD.....	53	2,750	5	24	52	17	216	5	154	3	177	2	262	1	506	1	506	1	1,203	1
HAVERTHILL.....	405	15,783	19	133	355	97	1,118	82	2,728	31	2,390	31	4,742	11	3,661	1	789	1	1,203	1
HOLYOKE.....	176	17,773	10	72	177	27	320	13	414	16	1,110	26	4,019	4	1,402	4	2,627	4	7,704	1
LAWRENCE.....	194	30,319	12	98	215	28	327	21	681	8	578	7	1,352	8	2,865	3	1,700	9	22,561	1
LEOMINSTER.....	92	5,793	9	19	41	19	259	16	500	12	874	11	1,710	5	1,003	1	506	1	1,001	1
LOWELL.....	291	30,111	18	141	314	50	619	30	969	15	1,074	18	2,929	4	1,116	6	3,396	9	10,064	1
LYNN.....	442	27,355	26	167	427	111	1,191	61	2,055	34	2,526	26	4,106	11	4,017	5	3,124	1	9,909	1
MALDEN.....	108	4,723	14	48	106	21	258	14	451	6	445	3	510	3	1,249	1	920	2	2,944	1
MARLBOROUGH.....	48	3,798	3	28	61	8	84	2	53	2	190	3	511	1	295	1	779	1	1,080	1
MEDFORD.....	54	1,031	8	25	55	12	121	2	51	4	203	3	511	1	295	1	779	1	1,080	1
MELROSE.....	27	1,006	1	15	40	6	83	3	108	2	128	2	334	1	295	1	779	1	1,080	1
METHUEN.....	33	2,571	5	17	45	3	37	2	65	2	128	2	334	1	295	1	779	1	1,080	1
MILFORD.....	48	1,899	6	22	49	9	102	3	113	8	772	5	753	3	792	1	592	2	2,160	1
NATICK.....	49	1,463	9	18	46	6	56	4	152	8	572	4	684	4	1,284	10	12,082	15	25,499	1
NEW BEDFORD.....	267	41,630	11	136	324	55	623	18	578	8	550	4	684	4	1,284	10	12,082	15	25,499	1
NEWBURYPORT.....	64	3,900	7	22	51	11	146	4	141	9	604	6	1,065	4	1,259	1	634	1	1,080	1
NEWTON.....	49	2,547	8	20	50	9	127	4	120	1	75	5	810	1	1,347	2	1,347	1	1,347	1
NORTH ADAMS.....	65	6,023	11	20	55	15	152	5	175	1	51	4	611	6	2,227	1	592	2	2,160	1
NORTHAMPTON.....	63	3,532	8	25	72	15	146	3	84	3	227	5	754	2	754	2	1,495	1	2,584	1
NORTHBIDGE.....	13	3,871	8	12	12	1	12	2	155	1	205	1	205	1	205	1	855	1	2,584	1
NORWOOD.....	26	2,835	1	7	24	5	60	1	32	4	304	5	740	1	887	2	1,288	1	2,909	1
PEABODY.....	91	8,013	5	23	64	17	190	20	632	11	837	10	1,543	3	959	1	789	1	2,909	1
PITTSFIELD.....	90	8,570	8	47	109	12	127	6	178	6	400	4	551	5	1,811	1	835	1	4,520	1
PLYMOUTH.....	31	2,971	3	13	29	5	53	3	105	4	315	1	223	1	450	1	887	1	1,796	1
QUINCY.....	162	19,653	19	77	238	51	575	7	178	2	119	2	271	1	267	1	887	2	17,118	1
REVERE.....	31	1,268	8	18	40	4	40	1	46	0	665	6	901	3	908	1	726	1	1,048	1
SALEM.....	153	5,672	12	56	121	39	487	26	810	9	665	6	901	3	908	1	726	1	1,048	1
SAUGUS.....	14	126	3	7	7	2	18	1	28	1	73	4	679	1	369	1	680	2	2,840	1
SOMERVILLE.....	140	6,111	14	63	177	27	312	23	706	5	348	4	679	1	369	1	680	2	2,840	1
SOUTHBRIDGE.....	41	5,329	6	14	31	7	83	4	135	2	134	6	802	1	802	1	1,174	2	4,144	1
SPRINGFIELD.....	401	18,429	49	163	435	87	962	37	1,211	22	1,567	23	3,467	11	3,259	7	4,556	2	2,972	1
TAUNTON.....	167	8,981	11	78	127	16	168	27	953	13	947	12	1,725	6	2,154	3	1,701	1	1,140	1
WAKEFIELD.....	32	1,869	2	13	25	6	77	5	145	3	202	1	246	2	1,174	2	1,174	1	1,140	1
WALTHAM.....	93	8,069	5	38	97	22	254	10	356	9	574	3	334	4	1,266	1	795	1	4,363	1
WATERTOWN.....	25	8,420	2	7	19	4	50	3	80	1	60	3	537	3	951	2	951	2	6,723	1
WEBSTER.....	24	3,840	1	9	27	4	38	2	78	2	152	1	178	3	1,245	1	550	1	1,581	1
WESTFIELD.....	85	3,243	6	37	91	18	213	13	412	6	449	2	389	1	281	2	1,408	1	1,146	1
WEST SPRINGFIELD.....	23	2,791	4	12	18	5	37	2	150	1	191	1	191	1	283	1	906	1	1,146	1
WEYMOUTH.....	34	2,146	4	11	26	5	61	6	188	3	197	1	222	4	1,452	1	1,452	1	1,452	1
WINCHESTER.....	17	1,112	1	8	7	4	45	3	97	5	395	5	741	1	364	1	508	1	508	1
WINTHROP.....	19	61	7	10	30	1	8	1	23	1	23	1	23	1	23	1	23	1	23	1
WOBURN.....	53	2,011	2	14	42	17	207	9	279	5	375	5	741	1	364	1	508	1	508	1
WORCESTER.....	618	38,673	52	203	519	159	1,942	85	2,841	47	3,531	39	6,422	19	6,241	8	4,824	0	12,353	1

TABLE 11.—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS: 1919, 1914, AND 1909.

VALUE OF PRODUCT.	NUMBER OF ESTABLISHMENTS.			AVERAGE NUMBER OF WAGE EARNERS.			VALUE OF PRODUCTS.			VALUE ADDED BY MANUFACTURE.		
	1919	1914	1909	1919	1914	1909	1919	1914	1909	1919	1914	1909
All classes.....	11,906	12,013	11,684	713,836	606,698	584,550	\$4,011,181,532	\$1,641,373,047	\$1,490,520,386	\$1,750,468,496	\$709,089,254	\$650,704,443
Less than \$5,000.....	1,645	2,885	2,760	990	3,158	3,508	4,384,884	7,434,572	7,162,781	2,864,437	4,860,002	4,767,415
\$5,000 to \$20,000.....	3,211	3,903	3,826	9,526	18,044	19,912	36,152,704	40,782,361	40,731,897	21,034,052	23,879,757	24,000,431
\$20,000 to \$100,000.....	3,511	2,926	2,932	39,270	56,378	61,041	164,770,693	134,938,198	136,992,841	85,780,694	70,427,005	73,120,246
\$100,000 to \$500,000.....	2,149	1,593	1,873	102,035	229,504	222,808	498,807,877	355,053,098	585,830,505	240,921,403	270,904,073	201,501,513
\$500,000 to \$1,000,000.....	675	366	293	73,906	229,504	222,808	410,219,829	261,215,922	585,830,505	181,962,468	270,904,073	201,501,513
\$1,000,000 and over.....	815	340	293	488,109	299,614	277,208	2,890,755,545	841,948,896	719,811,362	1,217,905,442	330,918,417	296,365,838
PER CENT DISTRIBUTION.												
All classes.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than \$5,000.....	13.8	24.0	23.6	0.1	0.5	0.6	0.1	0.5	0.5	0.2	0.7	0.7
\$5,000 to \$20,000.....	27.0	32.5	32.7	1.3	3.0	3.4	0.9	2.5	2.7	1.2	3.3	3.6
\$20,000 to \$100,000.....	29.5	24.4	25.1	5.5	9.3	10.4	4.1	8.2	9.2	4.9	9.9	11.1
\$100,000 to \$500,000.....	18.0	13.3	16.0	14.3	37.8	38.1	12.4	21.6	39.3	13.8	38.2	39.6
\$500,000 to \$1,000,000.....	4.8	3.0	2.5	10.4	49.4	47.4	10.2	15.9	48.3	10.4	47.9	44.9
\$1,000,000 and over.....	6.8	2.8	2.5	68.4	49.4	47.4	72.2	51.3	48.3	69.0	47.9	44.9



## MANUFACTURES—MASSACHUSETTS.

603

TABLE 12.—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS, FOR SELECTED INDUSTRIES: 1919 AND 1914.

INDUSTRY AND VALUE OF PRODUCT.	NUMBER OF ESTABLISHMENTS.				AVERAGE NUMBER OF WAGE EARNERS.				VALUE OF PRODUCTS.				VALUE ADDED BY MANUFACTURE.			
	1919	1914	Per cent distribution.		1919	1914	Per cent distribution.		1919	1914	Per cent distribution.		1919	1914	Per cent distribution.	
			1919	1914			1919	1914			1919	1914			1919	1914
BOOT AND SHOE CUT STOCK.....	182	180	100.0	100.0	4,631	3,781	100.0	100.0	\$86,214,106	\$35,636,846	100.0	100.0	\$16,782,140	\$5,224,241	100.0	100.0
Less than \$5,000.....	7	25	3.8	13.9	10	33	0.2	0.9	24,172	68,177	(1)	0.2	15,431	23,214	0.1	0.6
\$5,000 to \$20,000.....	25	34	13.7	18.9	71	236	1.5	6.2	293,564	381,301	0.3	1.1	137,250	181,687	0.8	3.1
\$20,000 to \$100,000.....	62	50	34.1	32.8	584	865	12.6	22.9	3,245,463	2,907,542	3.8	8.2	1,244,027	876,703	7.4	16.8
\$100,000 to \$500,000.....	46	38	25.3	21.1	1,461	1,948	31.5	51.5	11,014,026	8,994,073	12.8	25.2	3,311,770	2,918,329	19.8	55.9
\$500,000 to \$1,000,000.....	18	17	9.9	9.4	695	—	15.0	—	13,401,565	11,282,070	15.5	31.7	2,801,781	—	14.1	—
\$1,000,000 and over.....	24	7	13.2	3.9	1,810	699	39.1	18.5	58,235,316	12,003,683	67.5	33.7	9,661,881	1,234,308	57.7	23.6
BOOT AND SHOE FINDINGS.....	254	240	100.0	100.0	5,896	4,389	100.0	100.0	44,357,147	19,021,309	100.0	100.0	15,970,929	5,517,758	100.0	100.0
Less than \$5,000.....	19	38	7.5	15.8	10	62	0.2	1.4	51,600	104,253	0.1	0.5	33,135	64,273	0.2	1.2
\$5,000 to \$20,000.....	42	71	16.5	29.6	147	333	2.5	8.7	445,766	775,639	1.0	4.1	250,475	352,824	1.6	6.4
\$20,000 to \$100,000.....	96	81	37.8	33.8	1,186	1,294	20.1	29.5	5,074,818	3,978,505	11.4	20.9	2,215,499	988,142	13.9	17.9
\$100,000 to \$500,000.....	81	47	31.0	19.6	2,899	2,158	49.2	49.2	19,275,028	10,127,774	43.5	53.2	7,009,363	3,565,545	43.0	64.6
\$500,000 to \$1,000,000.....	10	—	3.9	—	520	—	8.8	—	6,726,204	—	15.2	—	2,115,947	—	13.2	—
\$1,000,000 and over.....	6	3	2.4	1.2	1,134	492	19.2	11.2	12,782,831	4,036,078	28.8	21.2	4,340,520	546,974	27.2	9.9
BOOTS AND SHOES, NOT INCLUDING RUBBER BOOTS AND SHOES.....	493	404	100.0	100.0	80,166	76,944	100.0	100.0	442,466,236	200,520,858	100.0	100.0	173,115,841	80,204,178	100.0	100.0
Less than \$5,000.....	9	41	1.8	8.8	18	100	(1)	0.1	24,907	107,989	(1)	0.1	16,611	78,547	(1)	0.1
\$5,000 to \$20,000.....	50	67	10.1	14.4	216	465	0.3	0.6	540,075	689,635	0.1	0.3	331,725	419,109	0.2	0.5
\$20,000 to \$100,000.....	81	97	16.4	20.9	1,440	2,588	1.8	3.4	4,380,642	4,974,207	1.0	2.5	2,303,754	2,394,918	1.3	3.0
\$100,000 to \$500,000.....	149	137	30.2	29.5	8,740	230,590	10.9	39.8	39,604,025	34,292,689	9.0	17.1	16,857,843	31,383,466	9.7	39.1
\$500,000 to \$1,000,000.....	78	62	14.8	13.4	9,517	—	11.9	—	52,390,673	45,895,472	11.8	22.9	22,103,940	—	12.8	—
\$1,000,000 and over.....	131	60	26.6	12.9	60,235	43,201	75.1	56.1	345,525,314	114,569,806	78.1	57.1	131,501,468	45,928,140	76.0	57.3
BOXES, PAPER AND OTHER, NOT ELSEWHERE SPECIFIED.....	102	97	100.0	100.0	4,711	4,244	100.0	100.0	15,666,081	7,084,975	100.0	100.0	8,202,591	3,413,102	100.0	100.0
Less than \$5,000.....	14	5	13.7	5.2	122	16	2.6	0.4	184,862	14,772	—	0.2	10,447	—	—	0.3
\$5,000 to \$20,000.....	45	49	44.1	50.5	1,047	1,621	22.2	38.2	2,484,587	2,339,454	15.9	33.0	1,404,442	1,220,631	17.1	35.8
\$20,000 to \$100,000.....	39	40	38.2	20.6	2,928	2,323	62.2	54.7	8,399,360	4,433,806	53.6	62.6	4,630,186	2,002,505	56.4	58.7
\$100,000 to \$500,000.....	4	—	3.9	—	614	—	13.0	—	4,697,772	—	29.3	—	2,054,168	—	25.0	—
\$500,000 and over.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
BOXES, WOODEN PACKING, EXCEPT CIGAR BOXES.....	75	91	100.0	100.0	3,232	2,995	100.0	100.0	15,050,531	7,710,614	100.0	100.0	6,078,690	2,934,345	100.0	100.0
Less than \$5,000.....	7	11	9.3	12.1	3	13	0.1	0.4	18,071	23,351	0.1	0.3	11,766	12,279	0.2	0.4
\$5,000 to \$20,000.....	6	17	8.0	18.7	16	76	0.5	2.5	70,167	170,263	0.5	2.2	24,048	60,370	0.4	2.1
\$20,000 to \$100,000.....	20	38	26.7	41.8	262	806	8.1	26.9	1,107,541	2,071,992	7.4	26.9	460,871	770,835	6.9	26.6
\$100,000 to \$500,000.....	35	25	46.7	27.5	1,739	2,100	53.8	70.1	7,827,351	5,445,008	52.0	70.6	3,129,056	2,081,861	46.8	70.9
\$500,000 and over.....	7	—	9.3	—	1,212	—	37.6	—	6,027,401	—	40.0	—	3,052,958	—	45.7	—
BRASS, BRONZE, AND COPPER PRODUCTS.....	72	73	100.0	100.0	2,832	1,620	100.0	100.0	16,943,199	5,958,863	100.0	100.0	7,576,434	2,244,067	100.0	100.0
Less than \$5,000.....	22	13	30.6	17.8	144	15	1.0	0.9	248,266	37,484	—	0.6	24,357	—	—	1.1
\$5,000 to \$20,000.....	30	33	41.7	45.2	291	154	10.3	9.5	400,940	400,940	1.5	6.7	132,804	205,109	1.8	9.1
\$20,000 to \$100,000.....	15	4	20.8	5.5	603	1,171	21.3	72.3	1,859,429	828,428	8.0	18.9	670,666	374,902	8.9	16.7
\$100,000 to \$500,000.....	5	3	6.9	4.1	1,894	—	66.9	—	3,436,245	1,039,621	20.3	17.4	1,490,198	1,639,699	19.7	73.1
\$500,000 and over.....	—	—	—	—	—	—	—	—	11,899,259	3,632,390	70.2	61.3	5,282,766	—	69.7	—
BREAD AND OTHER BAKERY PRODUCTS.....	1,309	1,419	100.0	100.0	8,583	8,083	100.0	100.0	66,017,267	33,309,051	100.0	100.0	25,430,484	15,037,903	100.0	100.0
Less than \$5,000.....	90	328	6.9	23.1	39	202	0.5	2.5	283,584	1,036,868	0.4	8.1	112,753	466,768	0.4	3.1
\$5,000 to \$20,000.....	647	868	49.4	61.2	1,117	2,173	13.0	26.9	7,806,096	8,710,072	11.8	26.1	3,027,465	3,698,822	11.9	24.6
\$20,000 to \$100,000.....	495	189	37.8	13.3	2,464	1,887	28.7	23.3	18,135,828	7,242,027	27.5	21.7	6,411,768	2,894,531	25.2	19.3
\$100,000 to \$500,000.....	88	27	4.4	1.9	1,889	8,821	16.2	47.3	11,944,423	6,186,724	18.1	18.6	4,500,685	7,977,482	17.7	53.0
\$500,000 to \$1,000,000.....	11	7	0.8	0.5	1,070	—	12.5	—	7,729,155	10,133,360	11.7	30.5	2,876,932	—	11.3	—
\$1,000,000 and over.....	8	—	0.6	—	2,604	—	29.2	—	20,118,181	—	30.4	—	8,500,881	—	33.4	—
CHEMICALS.....	27	24	100.0	100.0	2,483	1,395	100.0	100.0	17,305,166	6,684,918	100.0	100.0	9,203,740	3,330,297	100.0	100.0
Less than \$5,000.....	4	4	14.8	16.7	5	5	0.2	0.4	10,027	—	0.1	—	8,595	—	—	0.3
\$5,000 to \$20,000.....	8	7	26.0	29.2	31	47	1.2	3.4	33,083	107,006	0.2	1.6	9,784	31,382	0.1	0.9
\$20,000 to \$100,000.....	21	3	40.7	12.5	395	2170	15.9	12.8	442,996	395,347	2.6	5.9	181,077	235,406	2.0	7.1
\$100,000 to \$500,000.....	4	4	14.8	16.7	2,052	1,144	82.6	82.0	2,803,432	2,948,683	16.2	14.2	1,655,971	2,304,077	18.0	10.9
\$500,000 and over.....	—	—	—	—	—	—	—	—	14,025,655	5,223,855	81.0	78.1	7,356,917	2,690,837	79.9	80.8
CLOTHING, MEN'S.....	207	213	100.0	100.0	6,856	5,760	100.0	100.0	41,475,028	16,217,687	100.0	100.0	17,874,966	7,184,530	100.0	100.0
Less than \$5,000.....	13	37	6.3	17.4	14	138	0.2	2.4	39,625	109,773	0.1	0.7	25,362	90,339	0.1	1.3
\$5,000 to \$20,000.....	51	81	24.6	38.0	208	983	4.3	17.1	508,827	938,047	1.4	5.8	515,044	735,849	2.9	10.2
\$20,000 to \$100,000.....	76	57	36.7	26.8	1,226	1,117	17.9	19.4	3,820,447	2,605,165	9.2	16.1	2,285,181	1,300,014	12.8	18.1
\$100,000 to \$500,000.....	46	31	22.2	14.6	1,389	3,522	20.3	61.1	10,187,513	6,436,174	24.6	39.7	3,891,454	5,052,328	21.8	70.3
\$500,000 to \$1,000,000.....	10	7	4.8	3.3	755	—										



## MANUFACTURES—MASSACHUSETTS.

TABLE 12.—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS, FOR SELECTED INDUSTRIES: 1919 AND 1914—Continued.

INDUSTRY AND VALUE OF PRODUCT.	NUMBER OF ESTABLISHMENTS.				AVERAGE NUMBER OF WAGE EARNERS.				VALUE OF PRODUCTS.				VALUE ADDED BY MANUFACTURE.			
	1919	1914	Per cent distribution.		1919	1914	Per cent distribution.		1919	1914	Per cent distribution.		1919	1914	Per cent distribution.	
			1919	1914			1919	1914			1919	1914			1919	1914
CONFECTIONERY AND ICE CREAM.	278	273	100.0	100.0	11,585	7,250	100.0	100.0	\$68,896,885	\$22,901,916	100.0	100.0	\$28,542,876	\$9,061,208	100.0	100.0
Less than \$5,000.	24	70	8.6	25.6	13	54	0.1	0.7	70,433	178,267	0.1	0.8	31,039	91,580	0.1	1.0
\$5,000 to \$20,000.	80	103	28.8	37.7	143	312	1.2	4.3	937,685	1,045,712	1.4	4.6	407,672	482,664	1.4	5.3
\$20,000 to \$100,000.	102	61	36.7	22.3	654	667	5.6	9.2	4,668,899	2,442,328	6.8	10.7	1,779,871	1,060,441	6.2	11.7
\$100,000 to \$500,000.	47	31	16.9	11.4	1,660	1,289	14.3	45.4	10,888,687	6,019,993	15.8	30.2	3,993,545	1,573,888	13.7	39.4
\$500,000 to \$1,000,000.	6	3	2.2	1.1	758	—	6.6	—	4,429,122	2,479,424	6.4	10.8	1,613,015	—	5.7	—
\$1,000,000 and over.	19	5	6.8	1.8	8,357	2,928	72.1	40.4	47,902,059	9,836,192	69.5	42.9	20,807,734	3,852,635	72.9	42.5
COTTON GOODS.	191	165	100.0	100.0	122,499	112,609	100.0	100.0	596,687,441	195,481,626	100.0	100.0	237,012,202	76,754,374	100.0	100.0
Less than \$100,000.	11	14	5.8	8.5	119	731	0.1	0.6	603,919	1,243,516	0.1	0.6	252,710	498,015	0.1	0.6
\$100,000 to \$500,000.	25	41	13.1	24.8	1,248	124,045	1.0	21.4	7,226,475	11,342,770	1.2	5.8	2,393,553	14,745,407	1.0	19.2
\$500,000 to \$1,000,000.	25	37	13.1	22.4	3,570	—	2.9	—	18,398,048	28,172,754	3.1	14.4	5,938,009	—	2.5	—
\$1,000,000 and over.	130	73	68.1	44.2	117,562	87,833	96.0	78.0	570,458,999	154,722,586	95.6	79.1	228,427,930	61,510,952	96.4	80.1
CUTLERY AND EDGE TOOLS.	51	37	100.0	100.0	3,988	1,947	100.0	100.0	19,672,750	4,354,119	100.0	100.0	14,261,413	3,520,968	100.0	100.0
Less than \$5,000.	3	9	5.9	24.3	3	16	0.1	0.8	8,033	32,211	(*)	0.7	6,015	23,489	(*)	0.7
\$5,000 to \$20,000.	14	11	27.5	29.7	50	92	1.4	4.7	138,314	147,222	0.7	3.4	55,691	100,557	0.6	3.0
\$20,000 to \$100,000.	17	9	33.3	24.3	204	355	5.1	18.2	670,910	570,152	3.4	13.1	479,353	422,211	3.4	12.0
\$100,000 and over.	17	8	33.3	21.6	3,725	1,484	93.4	76.2	18,855,493	3,604,534	95.8	82.8	13,690,354	2,968,711	96.0	84.3
DYEING AND FINISHING TEXTILES, EXCLUSIVE OF THAT DONE IN TEXTILE MILLS.	62	57	100.0	100.0	12,321	11,437	100.0	100.0	75,261,815	22,455,080	100.0	100.0	31,052,277	11,466,083	100.0	100.0
Less than \$5,000.	4	—	6.5	—	7	—	0.1	—	11,817	—	(*)	—	8,028	—	(*)	—
\$5,000 to \$20,000.	3	5	4.8	8.8	—	26	0.1	0.2	24,992	33,380	(*)	0.1	13,608	21,450	(*)	0.2
\$20,000 to \$100,000.	11	20	17.7	35.1	251	505	2.0	4.4	666,706	924,240	0.9	4.1	331,579	449,817	1.1	3.9
\$100,000 to \$500,000.	16	21	25.8	36.8	1,168	1,476	9.5	43.5	4,333,785	5,506,201	5.8	24.5	2,424,729	1,474,245	7.8	41.3
\$500,000 to \$1,000,000.	15	5	24.2	8.8	2,417	—	19.6	—	10,665,853	8,200,653	14.2	14.7	5,152,569	—	16.6	—
\$1,000,000 and over.	13	6	21.0	10.5	8,469	5,930	68.7	51.8	50,558,682	12,700,612	79.1	56.6	23,121,734	6,253,541	74.5	54.5
ELECTRICAL MACHINERY, APPARATUS, AND SUPPLIES.	110	91	100.0	100.0	23,889	17,125	100.0	100.0	91,938,738	43,869,294	100.0	100.0	60,101,662	26,172,387	100.0	100.0
Less than \$5,000.	7	9	6.4	9.9	13	9	0.1	0.1	23,788	25,799	(*)	0.1	13,985	15,179	(*)	0.1
\$5,000 to \$20,000.	14	20	12.7	22.0	73	102	0.3	0.6	108,054	211,311	0.2	0.5	112,741	115,840	0.2	0.6
\$20,000 to \$100,000.	37	30	33.6	33.0	491	606	2.1	4.1	1,656,346	1,504,018	1.8	3.6	1,013,713	923,058	1.7	3.6
\$100,000 to \$500,000.	30	23	27.3	25.3	1,712	1,393	7.2	19.8	6,005,059	5,325,128	7.5	12.1	3,821,343	1,494,613	6.4	18.9
\$500,000 to \$1,000,000.	11	4	10.0	4.4	1,820	—	7.6	—	7,580,377	2,648,038	8.3	5.8	4,193,503	—	7.0	—
\$1,000,000 and over.	11	5	10.0	5.5	19,780	12,925	82.8	75.5	75,509,114	34,194,980	82.2	77.9	50,946,377	20,167,897	84.8	77.0
FOUNDRY AND MACHINE-SHOP PRODUCTS.	765	705	100.0	100.0	51,680	32,687	100.0	100.0	201,538,303	65,605,499	100.0	100.0	131,842,083	42,310,005	100.0	100.0
Less than \$5,000.	72	120	9.4	17.0	61	161	0.1	0.5	205,375	324,754	0.1	0.5	151,115	240,635	0.1	0.6
\$5,000 to \$20,000.	157	232	20.5	32.9	528	1,306	1.0	4.0	1,848,720	2,480,000	0.9	3.8	1,249,845	1,732,390	0.9	4.1
\$20,000 to \$100,000.	265	220	34.6	31.2	3,533	5,320	7.4	16.3	13,041,565	10,299,385	6.5	15.7	8,209,172	6,410,648	6.3	15.2
\$100,000 to \$500,000.	187	108	24.4	15.3	10,827	15,970	21.0	48.9	41,982,430	21,561,669	20.8	32.9	26,195,614	12,077,355	19.9	48.9
\$500,000 to \$1,000,000.	44	19	5.8	2.7	6,743	—	13.0	—	30,363,084	12,063,006	15.1	10.8	18,881,983	—	14.3	—
\$1,000,000 and over.	40	6	5.2	0.9	20,688	9,980	57.4	30.4	114,097,120	17,970,688	56.0	27.4	77,004,354	13,248,977	58.5	31.3
FURNITURE.	161	134	100.0	100.0	6,342	6,813	100.0	100.0	23,688,923	13,826,765	100.0	100.0	13,030,675	8,178,813	100.0	100.0
Less than \$5,000.	11	15	6.8	11.2	8	27	0.1	0.4	26,004	42,706	0.1	0.3	16,006	20,334	0.1	0.4
\$5,000 to \$20,000.	35	34	21.7	25.4	116	172	1.8	2.5	376,947	350,872	1.6	2.5	222,175	222,329	1.7	2.7
\$20,000 to \$100,000.	60	55	37.3	41.0	892	1,295	14.1	19.0	3,162,959	2,714,001	13.4	19.6	1,704,309	1,608,475	13.1	19.7
\$100,000 to \$500,000.	48	30	29.8	22.4	2,447	5,319	38.6	78.1	9,976,772	6,170,126	42.1	77.5	5,771,532	6,318,675	44.3	77.3
\$500,000 and over.	7	—	4.3	—	2,879	—	45.4	—	10,146,241	—	42.8	—	5,316,553	—	40.8	—
GAS, ILLUMINATING AND HEATING.	51	61	100.0	100.0	2,654	3,182	100.0	100.0	24,231,095	15,751,037	100.0	100.0	13,457,531	9,800,244	100.0	100.0
Less than \$5,000.	3	5	5.9	8.2	2	7	0.1	0.2	10,135	11,959	(*)	0.1	4,360	6,594	(*)	0.1
\$5,000 to \$20,000.	21	7	—	11.5	—	17	—	—	67,410	—	0.4	—	42,354	—	—	—
\$20,000 to \$100,000.	15	28	41.2	45.9	200	398	7.5	12.5	1,182,461	1,568,691	4.9	10.0	626,101	923,050	4.7	9.4
\$100,000 to \$500,000.	15	12	29.4	19.7	548	2,760	20.6	86.7	3,618,046	3,200,143	14.9	20.6	1,905,856	8,828,246	14.2	90.1
\$500,000 to \$1,000,000.	5	9	9.8	14.8	450	—	17.0	—	4,124,205	7,843,434	17.0	68.9	2,342,103	—	17.4	—
\$1,000,000 and over.	7	—	13.7	—	1,454	—	54.8	—	15,296,158	—	63.1	—	8,570,111	—	63.7	—
JEWELRY.	165	202	100.0	100.0	6,786	6,505	100.0	100.0	34,816,822	14,175,857	100.0	100.0	16,452,320	7,465,725	100.0	100.0
Less than \$5,000.	9	32	5.5	15.8	9	36	0.1	0.6	27,817	92,713	0.1	0.7	17,732	67,380	0.1	0.9
\$5,000 to \$20,000.	30	46	18.2	22.8	102	278	1.5	4.3	364,560	504,524	1.0	3.6	247,700	354,001	1.5	4.7
\$20,000 to \$100,000.	45	81	27.3	40.1	752	2,201	11.1	33.8	2,516,791	4,098,979	7.2	28.0	1,550,232	2,682,721	9.5	34.3
\$100,000 to \$500,000.	68	43	41.2	21.3	4,039	3,900	59.5	61.3	15,408,283	6,479,641	44.3	66.9	8,705,050	4,481,617	52.9	60.0
\$500,000 to \$1,000,000.	8	—	4.8	—	991	—	14.6	—	5,495,121	—	15.8	—	2,946,358	—	17.9	—
\$1,000,000 and over.	5	—	3.0	—	893	—	13.2	—	11,004,25,							



TABLE 12.—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS, FOR SELECTED INDUSTRIES: 1919 AND 1914—Continued.

INDUSTRY AND VALUE OF PRODUCT.	NUMBER OF ESTABLISHMENTS.				AVERAGE NUMBER OF WAGE EARNERS.				VALUE OF PRODUCTS.				VALUE ADDED BY MANUFACTURE.			
	1919	1914	Per cent distribution.		1919	1914	Per cent distribution.		1919	1914	Per cent distribution.		1919	1914	Per cent distribution.	
			1919	1914			1919	1914			1919	1914			1919	1914
PRINTING AND PUBLISHING, BOOK AND JOB.....	768	741	100.0	100.0	7,634	7,062	100.0	100.0	\$41,626,859	\$20,245,246	100.0	100.0	\$28,691,774	\$14,731,508	100.0	100.0
Less than \$5,000.....	227	335	29.6	45.2	102	325	1.3	4.6	557,654	794,148	1.3	3.9	387,459	584,232	1.3	4.0
\$5,000 to \$20,000.....	209	256	38.9	34.5	839	1,185	11.0	16.8	3,034,221	2,481,212	7.3	12.3	2,011,580	1,815,767	7.0	12.3
\$20,000 to \$100,000.....	181	116	23.6	15.7	2,030	2,022	26.6	28.6	7,760,693	4,856,948	18.6	24.0	5,250,724	3,329,499	18.3	22.6
\$100,000 to \$500,000.....	48	29	6.2	3.9	2,143	1,530	28.1	50.0	10,123,483	5,914,975	24.3	29.2	7,024,933	1,002,020	24.5	61.1
\$500,000 to \$1,000,000.....	6	25	0.8	0.7	644	.....	8.4	.....	4,050,495	2,197,963	9.7	30.6	3,064,030	.....	10.7	.....
\$1,000,000 and over.....	7	.....	0.9	.....	1,876	.....	24.6	.....	16,100,313	.....	38.7	.....	10,946,448	.....	38.2	.....
PRINTING AND PUBLISHING, NEWSPAPERS AND PERIODICALS.....	412	456	100.0	100.0	5,885	6,032	100.0	100.0	46,801,145	26,719,398	100.0	100.0	30,327,990	18,270,255	100.0	100.0
Less than \$5,000.....	111	127	26.9	27.9	46	88	0.8	1.5	271,024	311,384	0.6	1.2	232,650	277,893	0.8	1.5
\$5,000 to \$20,000.....	141	187	34.2	41.0	384	708	6.5	11.7	1,576,560	1,913,208	3.4	7.2	1,290,530	1,614,075	4.3	8.8
\$20,000 to \$100,000.....	105	106	25.5	23.2	802	1,303	14.6	21.6	4,420,413	4,381,486	9.4	16.4	3,371,457	3,497,129	11.1	19.1
\$100,000 to \$500,000.....	41	26	10.0	5.7	1,656	2,018	28.1	33.5	9,625,956	5,264,983	20.4	19.7	7,208,828	6,017,985	23.8	32.9
\$500,000 to \$1,000,000.....	7	4	1.7	0.9	615	.....	10.5	.....	5,184,382	2,771,884	11.1	10.4	3,734,272	.....	12.3	.....
\$1,000,000 and over.....	7	6	1.7	1.3	2,322	1,915	39.5	31.7	25,813,810	12,076,453	55.2	45.2	14,490,253	6,863,173	47.8	37.6
RUBBER TIRES, TUBES, AND RUBBER GOODS, NOT ELSEWHERE SPECIFIED.....	47	42	100.0	100.0	9,406	4,743	100.0	100.0	93,376,505	23,011,349	100.0	100.0	46,300,522	8,869,611	100.0	100.0
Less than \$5,000.....	45	5	.....	11.9	410	43	0.1	0.9	437,209	13,005	(*)	0.1	418,409	7,493	(*)	0.1
\$5,000 to \$20,000.....	8	11	17.0	20.2	127	187	1.4	3.9	515,615	648,481	0.6	2.8	231,512	252,178	0.5	2.8
\$20,000 to \$100,000.....	17	8	36.2	19.0	994	1,725	10.6	36.4	4,394,900	1,585,974	4.7	6.9	2,115,821	2,299,937	4.6	25.9
\$100,000 to \$500,000.....	8	6	17.0	14.3	751	.....	8.0	.....	6,337,551	4,077,724	6.8	17.7	2,425,621	.....	5.2	.....
\$500,000 to \$1,000,000.....	9	4	19.1	9.5	7,524	2,782	80.0	58.7	82,091,230	16,596,078	87.9	72.1	41,509,159	6,259,070	89.7	70.6
\$1,000,000 and over.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
SILK GOODS, INCLUDING THROWSTERS.....	21	19	100.0	100.0	5,697	4,495	100.0	100.0	34,193,951	10,676,681	100.0	100.0	14,950,468	4,715,544	100.0	100.0
\$20,000 to \$100,000.....	5	8	23.8	42.1	80	142	1.4	3.2	317,775	279,407	0.9	2.6	165,319	113,517	1.1	2.4
\$100,000 to \$500,000.....	4	8	19.0	42.1	213	1,021	3.7	22.7	1,238,900	2,776,905	3.6	26.0	401,654	1,243,065	2.7	26.4
\$500,000 to \$1,000,000.....	6	.....	23.8	.....	555	.....	9.7	.....	3,840,793	.....	11.2	.....	1,303,820	.....	8.7	.....
\$1,000,000 and over.....	7	3	33.3	15.8	4,849	3,332	85.1	74.1	28,706,423	7,620,369	84.2	71.4	13,079,675	3,358,062	87.5	71.2
SLAUGHTERING AND MEAT PACKING.....	40	46	100.0	100.0	4,307	3,233	100.0	100.0	110,238,038	51,724,520	100.0	100.0	9,002,688	6,296,181	100.0	100.0
Less than \$5,000.....	48	4	.....	8.7	45	2	.....	0.1	490,225	14,033	(*)	.....	428,388	4,711	(*)	0.1
\$5,000 to \$20,000.....	12	7	20.0	15.2	37	55	0.9	1.7	594,052	111,636	0.1	0.2	148,673	32,070	0.3	0.5
\$20,000 to \$100,000.....	8	11	20.0	23.9	50	171	1.3	5.3	1,743,174	472,417	0.5	0.9	148,673	120,568	1.7	1.9
\$100,000 to \$500,000.....	3	3	7.5	6.5	60	.....	1.6	.....	2,400,227	2,400,227	1.0	4.8	247,530	435,378	2.7	6.9
\$500,000 to \$1,000,000.....	9	9	22.5	19.6	4,140	2,997	96.1	92.7	105,501,074	1,821,048	2.1	3.5	260,334	.....	2.9	.....
\$1,000,000 and over.....	.....	.....	.....	.....	.....	.....	.....	.....	46,841,569	46,841,569	95.7	90.6	8,317,775	6,703,454	92.4	90.6
SOAP.....	27	32	100.0	100.0	1,008	460	100.0	100.0	18,729,572	4,671,310	100.0	100.0	7,556,340	2,195,290	100.0	100.0
Less than \$5,000.....	3	9	11.1	28.1	1	6	0.1	1.3	6,201	18,995	(*)	0.4	2,961	8,875	(*)	0.4
\$5,000 to \$20,000.....	9	7	33.3	21.9	14	17	1.4	3.7	100,594	70,755	0.5	1.6	38,979	30,359	0.5	1.4
\$20,000 to \$100,000.....	4	6	14.8	18.8	24	49	2.4	10.7	231,825	337,066	1.2	7.2	73,825	84,515	1.0	3.8
\$100,000 to \$500,000.....	8	10	29.6	31.2	161	1,388	16.0	84.3	2,853,376	4,238,794	15.2	90.7	806,017	1,071,541	11.5	91.4
\$500,000 to \$1,000,000.....	3	.....	11.1	.....	808	.....	80.2	.....	15,537,186	.....	83.0	.....	6,574,558	.....	87.0	.....
\$1,000,000 and over.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
STATIONERY GOODS, NOT ELSEWHERE SPECIFIED.....	30	27	100.0	100.0	3,305	2,467	100.0	100.0	15,161,819	6,511,512	100.0	100.0	7,896,802	2,959,442	100.0	100.0
Less than \$5,000.....	47	5	.....	18.5	410	22	0.3	0.9	47,025	11,688	.....	0.2	42,113	8,390	.....	0.3
\$5,000 to \$20,000.....	5	5	16.7	18.5	67	128	2.0	5.2	249,743	52,917	0.3	0.8	142,582	26,968	0.3	0.9
\$20,000 to \$100,000.....	11	8	30.7	29.0	861	1,205	26.1	93.4	3,402,315	341,389	1.6	5.2	140,131	140,131	1.8	4.9
\$100,000 to \$500,000.....	3	4	10.0	14.8	281	.....	8.5	.....	1,597,682	1,597,682	22.4	24.5	1,710,301	1,277,953	21.7	93.0
\$500,000 to \$1,000,000.....	4	.....	13.3	.....	2,080	.....	63.1	.....	2,048,984	4,507,836	13.5	69.2	1,111,327	.....	14.1	.....
\$1,000,000 and over.....	.....	.....	.....	.....	.....	.....	.....	.....	9,413,152	.....	62.1	.....	4,910,419	.....	62.2	.....
TOOLS, NOT ELSEWHERE SPECIFIED.....	117	100	100.0	100.0	7,226	4,538	100.0	100.0	29,158,834	8,619,903	100.0	100.0	21,171,417	6,059,532	100.0	100.0
Less than \$5,000.....	22	36	18.8	36.0	23	53	0.3	1.2	67,434	92,848	0.2	1.1	54,004	70,451	0.3	1.2
\$5,000 to \$20,000.....	30	27	33.3	27.0	103	171	2.3	3.8	435,981	296,414	1.5	3.4	305,961	210,166	1.4	3.5
\$20,000 to \$100,000.....	27	22	23.1	22.0	459	635	6.4	11.8	1,336,764	820,401	4.6	9.6	936,338	646,934	4.4	9.0
\$100,000 to \$500,000.....	15	10	12.8	10.0	678	1,379	9.4	83.3	2,812,393	2,557,041	9.6	29.7	1,820,097	1,521,981	8.6	86.3
\$500,000 to \$1,000,000.....	6	25	4.3	5.0	960	.....	13.3	.....	3,721,382	4,843,509	12.8	56.2	2,461,594	.....	11.6	.....
\$1,000,000 and over.....	9	.....	7.7	.....	4,943	.....	68.4	.....	20,784,880	.....	71.3	.....	15,583,733	.....	73.6	.....
WOOLEN GOODS.....	111	86	100.0	100.0	17,568	13,844	100.0	100.0	105,183,008	28,391,184	100.0	100.0	43,089,550	11,091,906	100.0	100.0
\$5,000 to \$20,000.....	5	13	4.5	15.1	28	425	0.2	0.2	54,515	421,191	0.1	0.1	46,036	40,886	0.1	0.1
\$20,000 to \$100,000.....	5	13	4.5	15.1	64	570	0.4	4.1	231,037	900,148	0.2	3.2	152,590	347,294	0.4	3.0
\$100,000 to \$500,000.....	33	59	29.7	68.6	2,299	10,296	13.1	74.4	9,898,255	15,193,894	9.4	53.5	4,338,279	8,394,566	10.1	71.8
\$500,000 to \$1,000,000.....	20	8	26.1	9.3	3,615	.....	20.6	.....	20,980,540	5,473,180	20.0	19.3	8,468,982	.....	19.6	.....
\$1,000,000 and over.....	30	3	35.1	3.5	11,562	2,953	65.8	21.3	74,012,723	6,802,771	70.4	24.0	30,068,693	2,939,920	69.8	25.1
WORSTED GOODS.....	71	70	100.0	100.0	36,290	30,533	100.0	100.0	237,4							

1 Includes the groups "\$500,000 to \$1,000,000" and "\$1,000,000 and over."  
 2 Includes the group "\$1,000,000 and over."  
 3 Includes the group "\$500,000 to \$1,000,000."  
 4 Includes the group "Less than \$5,000."

5 Less than one-tenth of 1 per cent.  
 6 Includes the group "\$5,000 to \$20,000."  
 7 Includes the group "\$20,000 to \$100,000."



## MANUFACTURES—MASSACHUSETTS.

TABLE 13.—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS, FOR CITIES OF 10,000 INHABITANTS OR MORE: 1919.

CITY AND VALUE OF PRODUCT.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		CITY AND VALUE OF PRODUCT.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.	
		Average number.	Per cent of total.	Amount.	Per cent of total.	Amount.	Per cent of total.			Average number.	Per cent of total.	Amount.	Per cent of total.	Amount.	Per cent of total.
ADAMS.....	32	3,974	100.0	\$15,076,858	100.0	\$6,937,344	100.0	CLINTON.....	33	4,155	100.0	\$15,179,819	100.0	\$6,909,775	100.0
Less than \$5,000.....	8	2	0.1	18,565	0.1	8,939	0.1	Less than \$5,000.....	3	—	—	3,825	(*)	2,655	(*)
\$5,000 to \$20,000.....	8	34	0.9	88,510	0.6	43,700	0.6	\$5,000 to \$20,000.....	16	40	1.0	192,333	1.3	105,450	1.5
\$20,000 to \$100,000.....	7	42	1.0	260,735	1.7	101,703	1.5	\$20,000 to \$100,000.....	6	85	2.0	201,708	1.9	157,195	2.3
\$100,000 to \$500,000.....	6	639	16.1	3,494,894	23.2	1,374,057	19.8	\$100,000 to \$500,000.....	4	227	5.5	1,584,728	10.4	483,502	7.0
\$1,000,000 and over.....	3	3,257	82.0	11,214,154	74.4	5,408,045	78.0	\$1,000,000 and over.....	4	3,803	91.5	13,107,225	86.3	6,160,973	89.2
AMESBURY.....	44	3,173	100.0	16,309,509	100.0	6,892,541	100.0	DANVERS.....	25	1,474	100.0	11,541,839	100.0	3,874,052	100.0
Less than \$5,000.....	6	4	0.1	19,707	0.1	11,904	0.2	Less than \$20,000.....	10	37	2.5	105,732	0.9	59,363	1.5
\$5,000 to \$20,000.....	9	29	0.9	117,893	0.7	59,946	0.9	\$20,000 to \$100,000.....	7	69	4.7	259,388	2.2	108,630	2.8
\$20,000 to \$100,000.....	11	158	5.0	584,401	3.6	217,712	3.2	\$100,000 to \$500,000.....	5	707	48.0	2,266,438	19.6	1,142,720	29.5
\$100,000 to \$500,000.....	11	610	19.2	4,681,882	28.7	1,453,063	21.1	\$1,000,000 and over.....	3	601	44.8	8,910,281	77.2	2,563,339	66.2
\$500,000 and over.....	7	2,372	74.8	10,905,626	66.9	5,149,916	74.7	DEDHAM.....	20	403	100.0	1,787,673	100.0	923,905	100.0
ARLINGTON.....	27	228	100.0	1,006,207	100.0	583,587	100.0	Less than \$5,000.....	4	5	1.1	15,549	0.9	10,758	1.2
Less than \$5,000.....	4	2	0.9	9,884	1.0	5,936	1.0	\$5,000 to \$20,000.....	9	27	5.8	97,162	5.6	68,181	7.4
\$5,000 to \$20,000.....	11	38	16.7	136,750	13.6	66,767	11.4	\$20,000 to \$100,000.....	4	24	5.2	108,116	9.7	63,452	6.9
\$20,000 and over.....	12	188	82.5	859,573	85.4	510,884	87.5	\$100,000 and over.....	3	407	87.9	1,456,846	83.8	781,514	84.6
ATTLEBORO.....	144	6,763	100.0	34,471,577	100.0	15,901,897	100.0	EASTHAMPTON.....	28	4,142	100.0	37,942,121	100.0	10,898,213	100.0
Less than \$5,000.....	19	14	0.2	56,083	0.2	44,232	0.3	Less than \$5,000.....	8	5	0.1	15,469	(*)	10,864	0.1
\$5,000 to \$20,000.....	36	135	2.0	424,058	1.2	306,847	1.9	\$5,000 to \$20,000.....	7	29	0.7	103,549	0.3	50,478	0.5
\$20,000 to \$100,000.....	29	330	5.6	1,462,636	4.1	786,610	4.9	\$20,000 to \$100,000.....	5	36	0.9	210,407	0.6	85,247	0.8
\$100,000 to \$500,000.....	47	3,219	47.6	17,219,766	50.0	7,604,733	48.2	\$100,000 to \$500,000.....	4	240	5.8	1,923,718	5.1	932,359	8.6
\$500,000 and over.....	13	3,015	44.6	15,369,034	44.6	7,099,475	44.6	\$1,000,000 and over.....	4	3,832	92.5	35,688,918	94.1	9,812,359	90.1
BELMONT.....	6	93	100.0	374,586	100.0	166,388	100.0	EVERETT.....	104	4,523	100.0	35,775,728	100.0	16,716,647	100.0
BEVERLY.....	70	6,495	100.0	21,820,684	100.0	13,091,286	100.0	Less than \$5,000.....	7	6	0.1	21,191	0.1	13,699	0.1
Less than \$5,000.....	10	11	0.2	30,151	0.1	20,589	0.2	\$5,000 to \$20,000.....	20	61	1.3	247,905	0.7	149,257	0.9
\$5,000 to \$20,000.....	21	63	1.0	215,596	1.0	115,907	0.9	\$20,000 to \$100,000.....	35	397	8.8	1,774,654	5.0	858,721	5.1
\$20,000 to \$100,000.....	21	232	3.6	943,210	4.3	464,357	3.5	\$100,000 to \$500,000.....	27	956	21.1	5,406,497	15.1	2,370,922	14.2
\$100,000 to \$500,000.....	12	560	8.6	2,464,238	11.3	1,046,881	8.0	\$500,000 to \$1,000,000.....	6	727	16.1	4,414,726	12.3	1,736,022	10.4
\$500,000 to \$1,000,000.....	3	537	8.3	2,557,455	11.7	1,017,331	7.8	\$1,000,000 and over.....	9	2,376	52.5	23,910,755	66.8	11,588,026	69.3
\$1,000,000 and over.....	3	5,092	78.4	15,619,034	71.5	10,427,231	79.7	FALL RIVER.....	203	37,015	100.0	163,246,082	100.0	67,065,698	100.0
BOSTON.....	3,077	88,750	100.0	618,921,962	100.0	269,316,071	100.0	Less than \$5,000.....	38	24	0.1	102,379	0.1	61,252	0.1
Less than \$5,000.....	368	230	0.3	998,872	0.2	663,098	0.2	\$5,000 to \$20,000.....	91	254	0.7	1,025,065	0.6	541,828	0.8
\$5,000 to \$20,000.....	866	2,770	3.1	9,968,945	1.6	6,322,756	2.3	\$20,000 to \$100,000.....	82	812	2.2	3,759,522	2.3	1,904,073	2.4
\$20,000 to \$100,000.....	1,047	11,249	12.7	49,527,440	8.0	27,229,360	10.1	\$100,000 to \$500,000.....	24	1,180	3.2	5,126,391	3.1	2,114,423	3.2
\$100,000 to \$500,000.....	576	21,695	24.4	128,804,601	20.8	62,274,153	23.1	\$500,000 to \$1,000,000.....	10	1,690	4.6	7,654,006	4.6	3,432,307	5.1
\$500,000 to \$1,000,000.....	112	11,165	12.6	79,502,823	12.9	34,329,380	12.8	\$1,000,000 and over.....	48	33,065	89.3	145,647,219	89.2	59,311,215	88.4
\$1,000,000 and over.....	108	41,650	46.9	350,020,185	56.6	138,497,324	51.4	FITCHBURG.....	121	9,907	100.0	58,104,842	100.0	22,100,029	100.0
BRAINTREE.....	19	2,176	100.0	11,974,839	100.0	4,825,514	100.0	Less than \$5,000.....	15	10	0.1	44,401	0.1	21,883	0.1
Less than \$5,000.....	3	2	0.1	8,140	0.1	6,295	0.1	\$5,000 to \$20,000.....	20	70	0.7	243,102	0.4	135,533	0.6
\$5,000 to \$20,000.....	5	15	0.7	48,993	0.4	31,007	0.6	\$20,000 to \$100,000.....	36	308	3.1	1,605,838	2.8	775,729	3.5
\$20,000 to \$100,000.....	4	32	1.5	188,137	1.6	70,559	1.5	\$100,000 to \$500,000.....	23	1,489	15.0	6,758,709	11.6	3,209,429	14.9
\$100,000 to \$500,000.....	4	160	7.4	1,031,459	8.6	407,877	8.5	\$500,000 to \$1,000,000.....	6	838	8.5	4,144,150	7.1	2,048,432	9.3
\$1,000,000 and over.....	3	1,967	90.4	10,698,110	89.3	4,309,776	89.3	\$1,000,000 and over.....	16	7,192	72.6	45,308,522	78.0	15,825,938	71.6
BROCKTON.....	217	18,059	100.0	117,855,025	100.0	43,141,744	100.0	FRAMINGHAM.....	50	4,362	100.0	18,842,173	100.0	8,492,362	100.0
Less than \$5,000.....	14	7	(*)	36,979	(*)	26,753	0.1	Less than \$5,000.....	8	10	0.2	19,250	0.1	13,085	0.2
\$5,000 to \$20,000.....	40	114	0.6	450,790	0.4	261,643	0.6	\$5,000 to \$20,000.....	21	50	1.1	233,112	1.2	132,966	1.6
\$20,000 to \$100,000.....	68	799	4.4	3,634,659	3.1	1,755,739	4.1	\$20,000 to \$100,000.....	11	82	1.9	491,850	2.6	252,096	3.0
\$100,000 to \$500,000.....	53	1,987	11.0	12,788,478	10.9	5,117,010	11.9	\$100,000 to \$500,000.....	9	516	11.8	1,916,066	10.2	841,799	9.9
\$500,000 to \$1,000,000.....	17	2,000	11.1	11,826,878	10.0	5,342,469	12.4	\$500,000 to \$1,000,000.....	6	894	20.5	4,361,445	23.1	2,053,507	24.2
\$1,000,000 and over.....	25	13,152	72.8	89,108,281	75.6	30,638,130	71.0	\$1,000,000 and over.....	4	2,810	64.4	11,820,450	62.7	5,198,909	61.2
BROOKLINE.....	32	484	100.0	2,243,311	100.0	1,201,359	100.0	GARDNER.....	73	4,036	100.0	13,560,682	100.0	8,413,483	100.0
Less than \$20,000.....	14	25	5.2	128,984	5.7	89,103	7.4	Less than \$5,000.....	10	7	0.2	24,967	0.2	16,340	0.2
\$20,000 to \$100,000.....	13	179	37.0	650,691	29.0	362,228	30.2	\$5,000 to \$20,000.....	13	37	0.9	134,118	1.0	77,198	0.9
\$100,000 and over.....	5	280	57.9	1,463,636	65.2	750,028	62.4	\$20,000 to \$100,000.....	24	377	9.3	1,163,150	8.6	674,832	8.0
CAMBRIDGE.....	339	22,550	100.0	127,864,901	100.0	58,737,978	100.0	\$100,000 to \$500,000.....	20	1,344	33.3	4,897,094	36.0	2,971,130	35.3
Less than \$5,000.....	32	16	0.1	91,347	0.1	62,575	0.1	\$500,000 and over.....	6	2,271	56.3	7,380,344	54.3	4,673,983	55.6
\$5,000 to \$20,000.....	82	261	1.2	973,522											



TABLE 13.—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS, FOR CITIES OF 10,000 INHABITANTS OR MORE: 1919—Continued.

CITY AND VALUE OF PRODUCT.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		CITY AND VALUE OF PRODUCT.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.	
		Average number.	Per cent of total.	Amount.	Per cent of total.	Amount.	Per cent of total.			Average number.	Per cent of total.	Amount.	Per cent of total.	Amount.	Per cent of total.
<b>HOLYOKE.....</b>	<b>170</b>	<b>17,773</b>	<b>100.0</b>	<b>\$93,426,775</b>	<b>100.0</b>	<b>\$42,260,703</b>	<b>100.0</b>	<b>NATICK.....</b>	<b>49</b>	<b>1,463</b>	<b>100.0</b>	<b>\$7,393,397</b>	<b>100.0</b>	<b>\$2,440,808</b>	<b>100.0</b>
Less than \$5,000.....	9	1	(1)	22,008	(1)	14,309	(1)	Less than \$5,000.....	10	3	0.2	28,605	0.4	19,447	0.8
\$5,000 to \$20,000.....	58	161	0.9	762,005	0.8	436,449	1.0	\$5,000 to \$20,000.....	11	25	1.7	102,713	1.4	57,073	2.3
\$20,000 to \$100,000.....	40	386	2.2	1,706,629	1.8	736,006	1.7	\$20,000 to \$100,000.....	12	178	12.2	634,647	8.6	262,234	10.7
\$100,000 to \$500,000.....	23	1,445	8.1	7,624,305	8.2	3,400,970	8.1	\$100,000 to \$500,000.....	11	736	50.3	3,078,569	41.7	1,225,674	50.2
\$500,000 to \$1,000,000.....	23	3,020	17.0	17,094,644	18.3	6,822,055	16.1	\$500,000 and over.....	5	521	35.6	3,547,863	48.0	876,380	35.9
\$1,000,000 and over.....	18	12,760	71.8	60,217,004	70.9	30,850,944	73.0								
<b>LAWRENCE.....</b>	<b>104</b>	<b>30,319</b>	<b>100.0</b>	<b>183,449,006</b>	<b>100.0</b>	<b>72,490,486</b>	<b>100.0</b>	<b>NEW BEDFORD.....</b>	<b>267</b>	<b>41,630</b>	<b>100.0</b>	<b>210,773,312</b>	<b>100.0</b>	<b>88,202,554</b>	<b>100.0</b>
Less than \$5,000.....	18	12	(1)	52,148	(1)	33,507	(1)	Less than \$5,000.....	35	25	0.1	99,011	(1)	64,033	0.1
\$5,000 to \$20,000.....	75	158	0.5	866,966	0.5	410,964	0.6	\$5,000 to \$20,000.....	79	200	0.5	917,540	0.4	529,637	0.6
\$20,000 to \$100,000.....	44	417	1.4	2,023,006	1.1	912,599	1.3	\$20,000 to \$100,000.....	79	700	1.7	3,180,297	1.5	1,553,392	1.8
\$100,000 to \$500,000.....	25	856	2.8	5,530,365	3.0	2,822,897	3.9	\$100,000 to \$500,000.....	35	1,589	3.8	7,681,487	3.6	3,907,277	4.4
\$500,000 to \$1,000,000.....	8	859	2.8	5,475,389	3.0	2,539,622	3.6	\$1,000,000 and over.....	39	39,116	94.0	198,894,977	94.4	82,143,215	93.1
\$1,000,000 and over.....	24	28,017	92.4	109,501,102	92.4	65,720,897	90.7								
<b>LEOMINSTER.....</b>	<b>92</b>	<b>5,793</b>	<b>100.0</b>	<b>24,928,790</b>	<b>100.0</b>	<b>11,085,176</b>	<b>100.0</b>	<b>NEWBURYPORT.....</b>	<b>64</b>	<b>3,960</b>	<b>100.0</b>	<b>20,595,015</b>	<b>100.0</b>	<b>7,915,411</b>	<b>100.0</b>
Less than \$5,000.....	15	6	0.1	26,049	0.1	15,073	0.1	Less than \$5,000.....	9	8	0.2	27,795	0.1	17,175	0.2
\$5,000 to \$20,000.....	12	38	0.7	121,945	0.5	66,027	0.6	\$5,000 to \$20,000.....	14	19	0.5	146,260	0.7	60,002	0.8
\$20,000 to \$100,000.....	20	547	9.4	1,564,285	6.3	905,248	8.7	\$100,000 to \$1,000,000.....	18	313	7.9	922,804	4.5	486,433	6.1
\$100,000 to \$500,000.....	22	1,655	28.6	5,374,440	21.6	2,831,901	25.5	\$500,000 to \$1,000,000.....	15	1,102	27.8	3,652,508	17.7	1,750,261	22.1
\$500,000 to \$1,000,000.....	7	949	16.4	5,215,562	20.9	2,016,762	18.2	\$1,000,000 and over.....	8	2,518	63.6	15,845,648	76.9	5,601,540	70.8
\$1,000,000 and over.....	7	2,508	44.8	12,626,509	50.6	5,190,165	46.8								
<b>LOWELL.....</b>	<b>201</b>	<b>30,111</b>	<b>100.0</b>	<b>137,801,538</b>	<b>100.0</b>	<b>60,809,030</b>	<b>100.0</b>	<b>NEWTON.....</b>	<b>49</b>	<b>2,547</b>	<b>100.0</b>	<b>15,524,567</b>	<b>100.0</b>	<b>7,096,098</b>	<b>100.0</b>
Less than \$5,000.....	33	20	0.1	84,588	0.1	58,717	0.1	Less than \$5,000.....	7	2	0.1	18,359	0.1	15,392	0.2
\$5,000 to \$20,000.....	97	250	0.8	1,083,609	0.8	571,609	0.9	\$5,000 to \$20,000.....	12	37	1.5	174,368	1.1	101,855	1.4
\$20,000 to \$100,000.....	81	842	2.8	3,564,038	2.6	1,076,185	2.8	\$100,000 to \$1,000,000.....	18	171	6.7	790,569	5.1	474,769	6.7
\$100,000 to \$500,000.....	41	2,145	7.1	9,050,810	6.6	4,616,834	7.6	\$500,000 to \$1,000,000.....	7	443	17.4	2,804,810	18.1	1,087,378	15.3
\$500,000 to \$1,000,000.....	15	1,080	6.6	11,346,492	8.2	5,336,142	8.8	\$1,000,000 and over.....	5	1,894	74.4	11,736,461	75.6	5,416,794	76.3
\$1,000,000 and over.....	24	24,874	82.0	112,666,001	81.8	48,540,543	79.8								
<b>LYNN.....</b>	<b>442</b>	<b>27,355</b>	<b>100.0</b>	<b>160,905,792</b>	<b>100.0</b>	<b>75,896,446</b>	<b>100.0</b>	<b>NORTH ADAMS.....</b>	<b>65</b>	<b>6,023</b>	<b>100.0</b>	<b>36,203,767</b>	<b>100.0</b>	<b>13,917,945</b>	<b>100.0</b>
Less than \$5,000.....	36	21	0.1	97,542	0.1	70,442	0.1	Less than \$5,000.....	12	6	0.1	38,974	0.1	25,630	0.2
\$5,000 to \$20,000.....	104	240	0.9	853,383	0.5	515,811	0.7	\$5,000 to \$20,000.....	16	56	0.9	193,700	0.5	111,250	0.8
\$20,000 to \$100,000.....	105	1,464	5.4	6,594,926	4.1	3,315,464	4.4	\$100,000 to \$1,000,000.....	20	200	3.3	861,529	2.4	387,643	2.8
\$100,000 to \$500,000.....	88	4,252	15.6	22,526,678	14.0	10,119,422	13.3	\$500,000 to \$1,000,000.....	3	1.1	2.0	501,094	1.4	195,761	1.4
\$500,000 to \$1,000,000.....	22	1,863	6.8	14,419,320	9.0	5,545,835	7.3	\$1,000,000 and over.....	4	493	8.2	3,107,688	8.6	1,016,864	7.3
\$1,000,000 and over.....	37	19,515	71.3	116,413,934	72.3	50,329,472	74.2		10	5,147	85.5	31,499,882	87.0	12,181,876	87.5
<b>MALDEN.....</b>	<b>108</b>	<b>4,723</b>	<b>100.0</b>	<b>22,077,624</b>	<b>100.0</b>	<b>12,432,649</b>	<b>100.0</b>	<b>NORTHAMPTON.....</b>	<b>63</b>	<b>3,532</b>	<b>100.0</b>	<b>17,960,620</b>	<b>100.0</b>	<b>8,610,010</b>	<b>100.0</b>
Less than \$5,000.....	19	6	0.1	47,667	0.2	25,957	0.2	Less than \$5,000.....	12	5	0.1	28,590	0.2	20,032	0.2
\$5,000 to \$20,000.....	33	86	1.8	356,572	1.6	183,969	1.5	\$5,000 to \$20,000.....	17	61	1.7	195,751	1.1	113,022	1.3
\$20,000 to \$100,000.....	33	438	9.3	1,617,779	7.3	844,752	6.8	\$100,000 to \$1,000,000.....	20	201	5.7	688,846	3.8	353,257	4.1
\$100,000 to \$500,000.....	17	804	18.3	3,402,386	15.4	1,517,517	12.2	\$500,000 to \$1,000,000.....	9	876	24.8	2,825,848	15.7	1,694,605	18.5
\$1,000,000 and over.....	6	3,329	70.5	16,663,220	75.4	9,860,454	79.3	\$1,000,000 and over.....	5	2,389	67.6	14,221,585	79.2	6,529,094	75.8
<b>MARLBOROUGH.....</b>	<b>48</b>	<b>3,798</b>	<b>100.0</b>	<b>19,044,907</b>	<b>100.0</b>	<b>5,889,669</b>	<b>100.0</b>	<b>NORTHBRIDGE.....</b>	<b>13</b>	<b>3,871</b>	<b>100.0</b>	<b>13,848,897</b>	<b>100.0</b>	<b>8,003,973</b>	<b>100.0</b>
Less than \$5,000.....	9	8	0.2	29,744	0.2	19,771	0.3	Less than \$5,000.....	4	3	0.1	11,430	0.1	3,031	(1)
\$5,000 to \$20,000.....	19	54	1.4	216,289	1.1	114,172	1.9	\$5,000 to \$20,000.....	3	7	0.2	27,886	0.2	13,200	0.2
\$20,000 to \$100,000.....	13	141	3.7	621,975	3.3	303,447	5.2	\$100,000 to \$1,000,000.....	6	3,861	99.7	13,869,581	99.7	7,987,742	99.8
\$100,000 to \$500,000.....	7	3,595	94.7	18,176,899	95.4	5,462,279	92.6								
<b>MEDFORD.....</b>	<b>54</b>	<b>1,031</b>	<b>100.0</b>	<b>5,665,723</b>	<b>100.0</b>	<b>2,476,661</b>	<b>100.0</b>	<b>NORWOOD.....</b>	<b>26</b>	<b>2,835</b>	<b>100.0</b>	<b>20,360,242</b>	<b>100.0</b>	<b>9,599,507</b>	<b>100.0</b>
Less than \$5,000.....	13	4	0.4	34,600	0.6	21,731	0.9	Less than \$5,000.....	3	5	0.2	32,349	0.2	10,718	0.2
\$5,000 to \$20,000.....	18	47	4.6	204,700	3.6	100,405	4.1	\$5,000 to \$20,000.....	11	112	4.0	375,379	1.8	183,140	2.0
\$20,000 to \$100,000.....	14	125	12.1	685,735	12.1	289,493	11.7	\$100,000 to \$1,000,000.....	6	699	24.7	2,631,662	12.9	1,623,698	16.9
\$100,000 to \$500,000.....	5	282	27.4	1,141,427	20.1	448,026	18.1	\$1,000,000 and over.....	6	2,019	71.2	17,319,852	85.1	7,771,051	81.0
\$500,000 and over.....	4	573	55.6	3,599,261	63.5	1,617,006	65.3								
<b>MELROSE.....</b>	<b>27</b>	<b>1,606</b>	<b>100.0</b>	<b>6,083,698</b>	<b>100.0</b>	<b>3,006,861</b>	<b>100.0</b>	<b>PEABODY.....</b>	<b>91</b>	<b>8,013</b>	<b>100.0</b>	<b>52,906,722</b>	<b>100.0</b>	<b>21,590,914</b>	<b>100.0</b>
Less than \$5,000.....	4	4	0.2	15,291	0.3	10,694	0.4	Less than \$5,000.....	4	4	(1)	10,520	(1)	5,847	(1)
\$5,000 to \$20,000.....	9	24	1.5	80,935	1.3	42,211	1.4	\$5,000 to \$20,000.....	27	86	1.1	403,902	0.8	205,782	1.0
\$20,000 to \$100,000.....	7	96	6.0	430,644	7.1	235,522	7.9	\$100,000 to \$1,000,000.....	22	428	5.				



## MANUFACTURES—MASSACHUSETTS.

TABLE 13.—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS, FOR CITIES OF 10,000 INHABITANTS OR MORE: 1919—Continued.

CITY AND VALUE OF PRODUCT.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		CITY AND VALUE OF PRODUCT.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.	
		Average number.	Per cent of total.	Amount.	Per cent of total.	Amount.	Per cent of total.			Average number.	Per cent of total.	Amount.	Per cent of total.	Amount.	Per cent of total.
REVERE.....	31	126	100.0	\$767,294	100.0	\$318,193	100.0	WATERTOWN.....	25	8,420	100.0	\$47,297,519	100.0	\$27,563,346	100.0
Less than \$5,000.....	8	2	1.6	26,303	3.4	10,575	3.3	Less than \$20,000.....	6	7	0.1	30,341	0.1	19,356	0.1
\$5,000 to \$20,000.....	13	20	15.9	130,393	17.0	58,191	18.3	\$20,000 to \$100,000.....	6	62	0.6	268,127	0.6	134,256	0.5
\$20,000 to \$100,000.....	7	32	25.4	218,199	28.4	86,528	27.2	\$100,000 to \$500,000 <sup>1</sup> .....	6	256	3.0	2,176,787	4.6	965,040	2.4
\$100,000 to \$500,000.....	3	72	57.1	302,420	51.1	162,899	51.2	\$1,000,000 and over.....	7	8,105	96.3	44,822,204	94.8	26,743,794	97.0
SALEM.....	153	5,072	100.0	30,437,957	100.0	13,510,464	100.0	WEBSTER.....	24	3,849	100.0	28,400,765	100.0	9,610,046	100.0
Less than \$5,000.....	22	15	0.3	59,487	0.2	39,846	0.3	Less than \$20,000.....	6	12	0.3	74,441	0.3	39,894	0.4
\$5,000 to \$20,000.....	39	123	2.2	436,837	1.4	250,718	1.9	\$20,000 to \$100,000.....	7	47	1.2	205,631	0.7	93,953	1.0
\$20,000 to \$100,000.....	51	702	12.4	2,361,521	7.8	1,275,342	9.4	\$100,000 to \$500,000 <sup>1</sup> .....	5	235	6.1	1,160,030	4.1	488,340	5.1
\$100,000 to \$500,000.....	28	1,307	23.0	6,489,632	21.3	3,463,543	25.6	\$1,000,000 and over.....	6	3,555	92.4	20,900,663	94.9	8,987,859	93.5
\$500,000 to \$1,000,000.....	5	583	10.3	3,509,733	11.5	1,293,641	9.6	WESTFIELD.....	85	3,243	100.0	14,278,973	100.0	7,338,198	100.0
\$1,000,000 and over.....	8	2,942	51.9	17,577,747	57.7	7,187,374	53.2	Less than \$5,000.....	8	2	0.1	18,240	0.1	10,486	0.1
SAUGUS.....	14	126	100.0	1,157,215	100.0	291,602	100.0	\$5,000 to \$20,000.....	31	81	2.5	349,113	2.4	189,570	2.6
Less than \$20,000.....	9	3	2.4	36,243	3.1	15,877	5.4	\$20,000 to \$100,000.....	27	361	11.1	1,135,115	7.9	611,736	8.3
\$20,000 and over.....	5	123	97.6	1,120,972	96.9	275,725	94.6	\$100,000 to \$500,000.....	13	625	19.3	2,595,730	18.2	1,303,180	17.8
SOMERVILLE.....	140	6,111	100.0	99,558,513	100.0	12,461,172	100.0	\$500,000 to \$1,000,000.....	3	486	15.0	2,584,200	18.1	1,335,771	18.2
Less than \$5,000.....	23	18	0.3	63,176	0.1	39,325	0.3	\$1,000,000 and over.....	3	1,688	52.0	7,596,575	53.2	3,887,455	53.0
\$5,000 to \$20,000.....	35	85	1.4	389,365	0.4	193,486	1.6	WEST SPRINGFIELD.....	23	2,791	100.0	12,386,556	100.0	6,001,071	100.0
\$20,000 to \$100,000.....	49	579	9.5	2,312,326	2.3	1,160,726	9.3	Less than \$5,000.....	5	2	0.1	13,412	0.1	8,241	0.1
\$100,000 to \$500,000.....	23	1,071	17.5	5,124,047	5.1	2,350,914	18.9	\$5,000 to \$20,000.....	6	14	0.5	69,663	0.6	31,473	0.6
\$500,000 to \$1,000,000.....	4	322	5.3	2,610,251	2.6	778,579	6.2	\$20,000 to \$100,000.....	6	39	1.4	213,342	1.7	85,471	1.4
\$1,000,000 and over.....	6	4,036	66.0	89,059,348	89.5	7,938,142	63.7	\$100,000 to \$500,000 <sup>1</sup> .....	3	341	12.2	1,516,711	12.2	596,633	9.9
SOUTHBRIDGE.....	41	5,329	100.0	18,252,814	100.0	10,770,641	100.0	\$1,000,000 and over.....	3	2,395	85.8	10,573,428	85.4	5,270,253	88.0
Less than \$5,000.....	9	5	0.1	30,795	0.2	17,383	0.2	WEYMOUTH.....	34	2,146	100.0	16,836,997	100.0	5,708,132	100.0
\$5,000 to \$20,000.....	6	18	0.3	64,856	0.4	40,377	0.4	Less than \$5,000.....	9	7	0.3	22,350	0.1	14,620	0.3
\$20,000 to \$100,000.....	14	160	3.0	606,838	3.3	254,029	2.4	\$5,000 to \$20,000.....	7	32	1.5	76,263	0.5	39,258	0.7
\$100,000 to \$500,000.....	8	681	12.8	2,003,288	11.0	1,342,785	12.5	\$20,000 to \$100,000.....	5	123	5.7	337,282	2.0	156,594	2.7
\$500,000 and over.....	4	4,465	83.8	15,547,537	85.2	9,116,067	84.6	\$100,000 to \$500,000.....	8	310	14.4	2,112,926	12.5	785,492	13.8
SPRINGFIELD.....	401	18,429	100.0	98,332,955	100.0	50,529,775	100.0	\$1,000,000 and over.....	5	1,674	78.0	14,288,176	84.9	4,712,168	82.6
Less than \$5,000.....	53	27	0.1	130,322	0.1	89,637	0.2	WINCHESTER.....	17	1,112	100.0	9,697,701	100.0	3,476,837	100.0
\$5,000 to \$20,000.....	129	307	2.2	1,513,090	1.5	833,337	1.6	\$5,000 to \$20,000.....	4	20	1.8	56,624	0.6	32,290	0.9
\$20,000 to \$100,000.....	123	1,449	7.9	5,571,228	5.7	3,171,052	6.3	\$20,000 to \$100,000.....	6	131	11.8	355,334	3.7	184,284	5.3
\$100,000 to \$500,000.....	56	3,128	17.0	15,168,282	15.4	7,711,514	15.3	\$100,000 and over.....	7	961	86.4	9,285,743	95.8	3,260,254	93.8
\$500,000 to \$1,000,000.....	15	1,052	10.6	10,304,318	10.5	5,349,839	10.6	WINTHROP.....	19	61	100.0	330,234	100.0	126,808	100.0
\$1,000,000 and over.....	25	11,470	62.3	65,645,715	66.8	33,374,396	66.0	Less than \$5,000.....	8	1	1.6	20,798	6.3	13,504	10.6
TAUNTON.....	167	8,981	100.0	48,330,638	100.0	20,544,073	100.0	\$5,000 to \$20,000.....	7	25	41.0	85,805	26.0	39,435	31.1
Less than \$5,000.....	29	21	0.2	101,907	0.2	59,987	0.3	\$20,000 to \$100,000.....	4	35	57.4	223,541	67.7	73,869	58.8
\$5,000 to \$20,000.....	51	87	1.0	484,130	1.0	243,813	1.2	WOBBURN.....	53	2,011	100.0	13,980,185	100.0	6,430,591	100.0
\$20,000 to \$100,000.....	24	268	3.0	1,105,602	2.3	573,720	2.8	Less than \$5,000.....	5	5	0.2	14,754	0.1	9,288	0.1
\$100,000 to \$500,000.....	41	2,114	23.5	9,144,550	18.9	4,471,191	21.8	\$5,000 to \$20,000.....	9	30	1.5	107,165	0.8	53,009	0.8
\$500,000 to \$1,000,000.....	8	829	9.2	5,513,323	11.4	2,024,007	9.9	\$20,000 to \$100,000.....	20	281	14.0	970,308	7.0	490,389	7.6
\$1,000,000 and over.....	14	5,662	63.0	31,981,036	66.2	13,171,355	64.1	\$100,000 to \$500,000.....	12	624	31.0	3,032,868	21.7	1,507,661	24.8
WAKEFIELD.....	32	1,869	100.0	8,977,010	100.0	3,395,222	100.0	\$500,000 to \$1,000,000.....	3	318	15.8	1,995,086	14.3	1,014,702	15.8
Less than \$5,000.....	4	2	0.1	12,871	0.1	8,405	0.2	\$1,000,000 and over.....	4	753	37.4	7,853,994	56.2	3,204,642	50.8
\$5,000 to \$20,000.....	9	17	0.9	88,717	1.0	56,441	1.7	WORCESTER.....	618	38,673	100.0	208,705,773	100.0	102,524,771	100.0
\$20,000 to \$100,000.....	9	124	6.6	606,640	6.8	275,655	8.1	Less than \$5,000.....	84	47	0.1	201,408	0.1	145,454	0.1
\$100,000 to \$500,000.....	7	306	16.4	1,438,703	16.0	538,677	15.9	\$5,000 to \$20,000.....	132	415	1.1	1,550,104	0.7	879,695	0.9
\$1,000,000 and over.....	3	1,420	76.0	6,830,079	76.1	2,516,044	74.1	\$20,000 to \$100,000.....	194	2,271	5.9	9,840,417	4.7	5,393,008	5.2
WALTHAM.....	93	8,069	100.0	20,878,515	100.0	14,044,781	100.0	\$100,000 to \$500,000.....	136	6,945	18.0	31,771,827	15.2	16,066,281	15.7
Less than \$5,000.....	10	6	0.1	30,995	0.1	23,245	0.2	\$500,000 to \$1,000,000.....	35	5,801	15.0	24,984,306	12.0	12,798,305	12.5
\$5,000 to \$20,000.....	31	109	1.4	347,155	1.7	209,904	1.5	\$1,000,000 and over.....	37	23,194	60.0	140,357,651	67.3	67,332,028	65.7
\$20,000 to \$100,000.....	28	443	5.5	1,454,160	7.0	849,313	6.0								
\$100,000 to \$500,000.....	19	1,320	16.4	5,103,231	24.5	3,040,410	21.6								
\$1,000,000 and over.....	5	6,191	76.7	13,936,974	66.8	9,921,909	70.6								

<sup>1</sup> Includes the group "\$500,000 to \$1,000,000."



## MANUFACTURES—MASSACHUSETTS.

609

TABLE 14.—CHARACTER OF OWNERSHIP, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919 AND 1914.

INDUSTRY AND CITY.	Census year.	NUMBER OF ESTABLISHMENTS OWNED BY—			AVERAGE NUMBER OF WAGE EARNERS.									VALUE OF PRODUCTS.								
		Individuals.	Corporations.	All others.	Total.	In establishments owned by—			Per cent of total.			Total.	Of establishments owned by—			Per cent of total.						
						Individuals.	Corporations.	All others.	Individuals.	Corporations.	All others.		Individuals.	Corporations.	All others.	Individuals.	Corporations.	All others.				
All industries.....	1910	5,319	4,697	1,890	713,836	41,322	521,783	50,731	5.8	87.1	7.1	\$4,011,181,532	\$219,327,951	\$3,483,117,043	\$308,736,538	5.5	86.8	7.7				
	1914	5,902	3,984	2,127	806,698	44,683	500,711	61,304	7.4	82.5	10.1	1,641,373,047	117,430,275	1,346,397,046	177,545,726	7.2	82.0	10.8				
	1909	6,015	3,483	2,186	584,559	55,318	468,301	60,940	9.5	80.1	10.4	1,490,529,386	137,804,436	1,182,935,652	169,789,298	9.2	79.4	11.4				
Boot and shoe cut stock....	1910	81	56	45	4,631	983	2,666	982	21.2	57.6	21.2	86,214,106	11,815,892	49,562,078	24,836,136	13.7	57.5	28.8				
	1914	98	38	46	3,781	1,132	1,606	1,043	29.9	42.5	27.6	35,636,846	6,535,914	15,524,218	13,570,714	18.3	43.6	38.1				
Boot and shoe findings....	1910	108	85	61	5,896	1,452	3,046	1,398	24.6	51.7	23.7	44,357,147	9,265,531	22,974,592	12,117,024	20.9	51.8	27.3				
	1914	111	59	70	4,389	1,200	1,954	1,205	27.3	45.2	27.5	19,021,309	4,992,540	9,611,120	4,417,649	26.2	50.5	23.2				
Boots and shoes, not including rubber boots and shoes.	1910	127	284	82	80,166	7,185	65,294	7,687	9.0	81.4	9.6	442,466,236	35,885,805	365,672,087	40,908,344	8.1	82.6	9.2				
	1914	147	188	129	76,944	6,562	56,682	13,700	8.5	73.7	17.8	200,529,858	15,762,303	149,231,773	35,535,782	7.9	74.4	17.7				
Boots and shoes, rubber...	1910	.....	8	.....	13,062	.....	13,062	.....	.....	100.0	.....	44,307,961	.....	44,307,961	.....	100.0	.....	.....				
	1914	.....	9	.....	8,087	.....	8,087	.....	.....	100.0	.....	23,788,788	.....	23,788,788	.....	100.0	.....	.....				
Boxes, paper and other, not elsewhere specified.	1910	29	57	16	4,711	644	3,468	599	13.7	73.6	12.7	15,666,081	1,929,631	11,813,603	1,922,847	12.3	75.4	12.3				
	1914	30	50	17	4,244	553	2,869	822	13.0	67.6	19.4	7,084,975	842,769	4,019,325	2,222,851	11.9	56.7	31.4				
Boxes, wooden packing, except cigar boxes.	1910	24	38	13	3,232	310	2,300	622	9.6	71.2	19.2	15,050,531	1,302,829	10,083,260	3,664,442	8.7	67.0	24.3				
	1914	41	35	15	2,995	853	1,677	465	28.5	56.0	15.5	7,710,614	2,125,012	4,151,317	1,434,285	27.6	53.8	18.6				
Brass, bronze, and copper products.	1910	29	20	14	2,832	165	2,399	268	5.8	84.7	9.5	16,943,199	897,410	14,924,843	1,120,946	5.3	88.1	6.6				
	1914	36	23	14	1,620	179	1,321	120	11.0	81.5	7.4	5,958,863	493,440	5,102,825	362,598	8.3	85.6	6.1				
Bread and other bakery products.	1910	1,018	112	179	8,583	3,175	4,326	1,082	37.0	50.4	12.6	66,017,267	24,271,377	32,628,966	9,116,924	36.8	49.4	13.8				
	1914	1,179	68	172	8,083	3,319	3,394	1,370	41.1	42.0	16.9	33,309,061	13,663,609	14,158,909	5,486,539	41.0	42.5	16.5				
Cars and general shop construction and repairs by steam-railroad companies.	1910	.....	14	.....	7,724	.....	7,724	.....	.....	100.0	.....	22,637,990	.....	22,637,990	.....	100.0	.....	.....				
	1914	.....	15	.....	6,264	.....	6,264	.....	.....	100.0	.....	8,829,665	.....	8,829,665	.....	100.0	.....	.....				
Chemicals.....	1910	3	20	4	2,483	42	2,404	37	1.7	95.8	1.5	17,305,166	169,139	16,866,495	269,532	1.0	97.5	1.6				
	1914	2	17	5	1,395	.....	1,374	21	.....	98.5	1.5	6,684,918	.....	6,524,735	160,183	.....	97.6	2.4				
Chocolate and cocoa products.	1910	.....	6	.....	2,007	.....	2,007	.....	.....	100.0	.....	30,327,397	.....	30,327,397	.....	100.0	.....	.....				
	1914	.....	5	.....	943	.....	943	.....	.....	100.0	.....	10,209,949	.....	10,209,949	.....	100.0	.....	.....				
Clothing, men's.....	1910	85	55	67	6,856	1,412	3,764	1,680	20.6	54.9	24.5	41,475,028	6,457,293	24,095,179	10,922,556	15.6	58.1	28.3				
	1914	106	42	65	5,760	1,535	2,792	1,433	26.6	48.5	24.9	16,217,087	2,783,400	9,967,338	3,466,949	17.2	61.5	21.4				
Clothing, women's.....	1910	96	71	91	6,271	1,542	2,618	2,111	24.6	41.7	33.7	30,427,592	7,232,186	10,457,704	12,737,702	23.8	34.4	41.9				
	1914	85	51	66	6,076	1,475	2,440	2,161	24.3	40.2	35.6	13,982,587	3,391,138	5,386,178	5,205,271	24.3	38.5	37.2				
Coffee and spice, roasting and grinding.	1910	8	10	5	512	30	357	125	5.9	69.7	24.4	16,977,701	758,050	11,506,861	4,712,874	4.5	67.8	27.8				
	1914	5	12	4	466	23	311	132	4.9	66.7	28.3	8,675,047	347,692	5,367,811	2,959,544	4.0	61.9	34.1				
Confectionery and ice cream.	1910	125	90	63	11,585	673	10,291	621	5.8	88.8	5.4	68,896,885	4,755,639	58,830,091	5,302,155	6.9	85.4	7.7				
	1914	155	60	58	7,250	690	6,239	321	9.5	86.1	4.4	22,001,016	2,597,221	19,032,505	1,272,100	11.3	83.1	5.6				
Cotton goods.....	1910	4	182	5	122,499	225	121,909	365	0.2	99.5	0.3	596,687,441	1,405,069	593,637,370	1,645,002	0.2	99.5	0.3				
	1914	4	152	9	112,609	231	110,722	1,656	0.2	98.3	1.5	195,481,626	435,251	191,691,119	3,355,256	0.2	98.1	1.7				
Cutlery and edge tools....	1910	19	28	4	3,988	184	3,772	32	4.6	94.6	0.8	10,672,750	598,538	18,973,074	101,138	3.0	96.4	0.5				
	1914	12	20	5	1,947	102	1,813	32	5.2	93.1	1.6	4,354,119	181,231	4,129,551	43,337	4.2	94.8	1.0				
Dyeing and finishing textiles, exclusive of that done in textile mills.	1910	6	52	4	12,321	224	11,207	890	1.8	91.0	7.2	75,261,815	1,268,201	61,998,544	11,995,070	1.7	82.4	15.9				
	1914	7	45	5	11,437	244	10,376	817	2.1	90.7	7.1	22,455,086	347,305	20,149,734	1,958,047	1.5	89.7	8.7				
Electrical machinery, apparatus, and supplies.	1910	18	80	6	23,889	199	23,655	35	0.8	99.0	0.1	91,938,738	985,985	90,746,156	206,597	1.1	98.7	0.2				
	1914	20	67	4	17,125	200	16,812	53	1.5	98.2	0.3	43,869,294	793,483	42,937,503	138,308	1.8	97.9	0.3				
Foundry and machine-shop products. <sup>1</sup>	1910	258	409	98	51,680	2,944	46,857	1,879	5.7	90.7	3.6	201,538,303	10,294,952	183,332,407	7,910,944	5.1	91.0	3.9				
	1914	248	333	124	32,687	2,534	28,566	1,587	7.8	87.4	4.9	65,605,499	5,027,884	57,395,043	3,182,572	7.7	87.5	4.9				
Furniture.....	1910	42	80	39	6,342	350	5,777	815	5.5	81.6	12.9	23,688,923	1,285,904	19,083,171	3,319,848	5.4	80.6	14.0				
	1914	42	60	32	6,813	557	5,399	866	8.2	79.1	12.7	13,826,765	1,003,925	11,033,584	1,789,256	7.3	79.8	12.9				
Gas, illuminating and heating.	1910	.....	49	2	2,654	.....	2,654	.....	.....	100.0	.....	24,231,095	.....	24,231,095	.....	100.0	.....	.....				
	1914	1	56	4	3,182	.....	3,053	129	.....	95.9	4.1	15,751,637	.....	15,355,909	1,395,728	.....	97.5	2.5				
Iron and steel, steel works and rolling mills.	1910	1	10	.....	3,684	.....	3,684	.....	.....	100.0	.....	30,969,601	.....	30,969,601	.....	100.0	.....	.....				
	1914	1	10	.....	2,889	.....	2,889	.....	.....	100.0	.....	11,376,008	.....	11,376,008	.....	100.0	.....	.....				
Jewelry.....	1910	49	66	50	6,786	887	3,863	2,036	13.1	56.9	30.0	34,816,822	3,890,055	23,178,188	7,748,579	11.2	66.6	22.2				
	1914	67	76	59	6,505	879	3,684	1,942	13.5	56.6	29.9	14,175,857	1,699,658	8,737,846	3,738,353	12.0	61.6	26.4				
Knit goods.....	1910	16	51	10	12,751	223	11,700	828	1.7	91.8	6.5	52,424,235	1,058,752	45,701,425	5,664,058	2.0	87.2	10.8				
	1914	23	44	10	10,635	254	9,601	780	2.4	90.3	7.3	17,419,077	582,750	14,312,311	2,523,980	3.3	82.2	14.5				
Leather, tanned, curried, and finished.	1910	30	75	26	15,180	1,028	13,098	1,054	6.8	86.3	6.9	129,594,962	8,500,681	114,746,529	6,347,752	6.6	88.5	4.9				
	1914	39	61	26	10,164	1,228	7,742	1,194	12.1	76.2	11.7	45,265,434	2,428,279	38,741,662	4,095,493	5.4	85.6	9.0				
Motorcycles, bicycles, and parts.	1910	1	5	2																		

<sup>1</sup> Includes the group "Individuals."<sup>2</sup> Includes "iron and steel, tempering and welding"; "machine tools"; and "textile machinery and parts."<sup>3</sup> Includes the group "All others."<sup>4</sup> Includes the groups "Individuals" and "All others."



## MANUFACTURES—MASSACHUSETTS.

TABLE 14.—CHARACTER OF OWNERSHIP, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919 AND 1914—Continued.

INDUSTRY AND CITY.	Cen- sus year.	NUMBER OF ESTABLISH- MENTS OWNED BY—			AVERAGE NUMBER OF WAGE EARNERS.									VALUE OF PRODUCTS.								
		Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Total.	In establishments owned by—			Per cent of total.			Total.	Of establishments owned by—			Per cent of total.						
						Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.		Individ- uals.	Corpora- tions.	All others.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.				
Printing and publishing, newspapers and period- icals.	1919 1914	143 157	203 227	66 72	5,885 6,032	472 729	4,798 4,776	615 527	8.0 12.1	81.5 79.2	10.5 8.7	\$46,801,145 26,719,398	\$1,916,192 1,599,707	\$39,482,457 22,899,525	\$5,402,496 2,220,166	4.1 6.0	84.4 85.7	11.5 8.3				
Rubber tires, tubes, and rubber goods, not else- where specified.	1919 1914	7 3	39 38	1 1	9,406 4,743	191 17	9,215 4,736	..... .....	2.0 0.1	98.0 99.9	..... .....	93,370,505 23,011,349	1,002,679 141,439	92,373,826 22,969,910	..... .....	1.1 0.2	98.9 99.8	..... .....				
Silk goods, including throwsters.	1919 1914	2 5	16 11	3 3	5,697 4,495	..... 436	5,136 3,814	561 245	9.7 .....	90.2 84.8	9.8 5.5	34,193,951 10,676,681	..... 1,308,624	30,909,691 9,014,503	3,284,260 353,554	..... 12.3	90.4 84.4	9.6 3.3				
Slaughtering and meat packing.	1919 1914	22 23	13 18	5 5	4,307 3,233	83 73	4,178 3,090	40 70	1.9 2.3	97.0 95.6	1.1 2.2	110,238,038 51,724,520	3,030,961 958,181	106,246,649 49,584,273	960,428 1,182,060	2.7 1.9	96.4 95.0	0.9 2.3				
Soap.....	1919 1914	7 10	15 17	5 5	1,008 460	9 18	989 384	10 58	0.9 3.9	98.1 83.5	1.0 12.6	18,729,572 4,671,310	126,236 122,687	18,520,896 4,170,134	82,440 372,489	0.7 2.6	98.9 89.4	0.4 8.0				
Stationery goods, not else- where specified.	1919 1914	9 5	17 18	4 4	3,305 2,467	69 78	2,804 2,020	372 369	2.1 3.2	86.7 81.9	11.3 15.0	15,161,819 6,511,512	278,862 171,805	12,989,840 5,358,260	1,893,117 981,447	1.8 2.0	85.7 82.3	12.5 15.1				
Tools, not elsewhere speci- fied.	1919 1914	48 49	47 37	22 14	7,226 4,538	273 283	6,669 4,138	284 112	3.8 6.3	92.3 91.2	3.9 2.5	29,158,834 8,619,903	1,171,330 470,552	26,934,649 7,961,612	1,052,855 187,739	4.0 5.5	92.4 92.4	3.6 2.2				
Wire.....	1919 1914	..... .....	7 6	2 2	5,203 2,899	..... .....	5,203 2,899	..... .....	100.0 100.0	..... .....	..... .....	24,552,410 8,380,073	..... .....	24,552,410 8,380,073	..... .....	100.0 100.0	..... .....	..... .....				
Woolen goods.....	1919 1914	12 12	82 56	17 18	17,568 13,844	1,140 1,370	14,469 9,759	1,959 2,715	6.5 9.9	82.4 70.5	11.2 19.6	105,183,068 28,391,184	6,570,790 2,075,486	87,280,892 20,261,633	11,331,386 5,454,065	6.2 9.4	83.0 71.4	10.8 19.2				
Worsted goods.....	1919 1914	4 5	59 58	8 7	36,206 39,533	294 136	34,922 38,112	1,140 1,285	0.6 0.3	96.2 96.4	3.1 3.3	237,443,077 98,960,250	1,394,307 192,340	228,132,276 94,679,155	7,916,494 4,088,755	0.6 0.2	96.1 95.7	3.3 4.1				
Total for cities.....	1919 1914	4,388 4,798	3,957 3,314	1,602 1,744	609,671 506,397	35,146 36,065	534,328 424,008	40,197 45,424	5.8 7.1	87.6 83.0	6.6 9.0	3,462,478,225 1,390,652,276	102,042,261 97,940,220	3,016,580,886 1,152,883,060	253,855,078 139,822,987	5.6 7.0	87.1 82.9	7.3 10.1				
ADAMS.....	1919 1914	14 20	12 10	6 5	3,974 3,930	30 47	3,840 3,817	104 66	0.8 1.2	96.0 97.1	2.6 1.7	15,076,858 6,630,232	234,682 180,396	14,251,021 6,098,136	591,155 251,700	1.6 2.8	94.5 93.4	3.9 3.9				
AMESBURY.....	1919 1914	14 26	19 20	11 13	3,173 1,451	106 173	2,770 1,044	297 234	3.3 11.9	87.3 72.0	9.4 16.1	16,300,509 3,651,434	881,998 419,769	14,457,739 2,457,150	909,772 674,519	5.4 11.8	88.6 69.2	5.9 19.0				
ARLINGTON.....	1919 1914	18 10	8 6	1 3	228 246	181 29	147 179	..... 38	35.5 11.8	64.5 72.8	..... 15.4	1,006,207 641,092	402,060 91,465	604,147 448,648	..... 100,079	40.0 14.3	60.0 70.0	..... 15.8				
ATTLEBORO.....	1919 1914	51 64	47 54	46 43	6,763 6,058	582 533	4,105 4,108	1,986 1,417	8.6 8.8	62.0 67.8	29.4 23.4	34,471,577 13,940,884	3,143,610 1,008,207	24,196,883 9,703,405	7,131,084 3,235,272	9.1 7.2	70.2 69.6	20.7 23.2				
BELMONT.....	1919	4	2	.....	93	93	.....	.....	100.0	.....	.....	374,586	374,586	.....	.....	100.0	.....	.....				
BEVERLY.....	1919 1914	36 38	21 14	13 15	6,495 4,641	529 611	5,623 3,560	343 470	8.1 13.2	86.6 76.7	5.3 10.1	21,829,684 8,774,187	1,992,379 1,033,302	18,114,087 6,044,606	1,723,218 1,096,279	9.1 18.6	83.0 68.9	7.9 12.5				
BOSTON.....	1919 1914	1,365 1,537	1,218 1,073	494 528	88,750 78,894	9,552 10,275	71,339 69,222	7,868 9,397	10.8 13.0	80.4 75.1	8.9 11.9	618,921,962 284,802,479	53,395,108 27,547,022	501,765,774 222,159,459	63,761,080 35,095,908	8.6 9.7	81.1 78.0	10.3 12.3				
BRAINTREE.....	1919	8	10	1	2,170	154	2,122	.....	2.5	97.5	.....	11,974,839	1,500,608	11,474,171	.....	4.2	95.8	.....				
BROCKTON.....	1919 1914	62 89	105 92	50 62	18,059 16,246	718 780	16,119 13,510	1,222 1,956	4.0 4.8	89.3 83.2	6.8 12.0	117,855,025 51,269,131	4,652,156 2,556,153	102,611,791 41,620,093	10,691,078 7,082,285	3.9 5.0	87.1 81.2	9.0 13.8				
BROOKLINE.....	1919 1914	18 9	11 5	3 7	484 335	143 54	330 280	11 51	29.5 16.1	68.2 68.7	2.3 15.2	2,243,311 658,502	640,582 104,942	1,374,091 439,939	228,638 113,621	28.6 15.9	61.3 66.8	10.2 17.3				
CAMBRIDGE.....	1919 1914	128 128	167 146	44 42	22,550 16,749	969 1,008	20,225 14,432	1,356 1,309	4.3 6.0	89.7 86.2	6.0 7.8	127,864,901 57,483,949	5,022,880 2,984,020	113,118,372 50,030,803	9,723,649 4,469,117	3.9 5.2	88.5 87.0	7.6 7.8				
CHELSEA.....	1919 1914	49 61	48 41	26 21	6,580 6,241	307 264	5,384 5,148	889 829	4.7 4.2	81.8 82.5	13.5 13.3	32,636,618 10,971,028	1,925,130 870,536	24,801,470 13,932,184	5,800,909 2,168,308	5.9 5.1	76.2 82.1	17.9 12.8				
CHICOPEE.....	1919 1914	25 28	29 26	6 8	10,068 8,420	124 112	9,916 8,254	28 60	1.2 1.3	98.5 98.0	0.3 0.7	89,772,534 28,869,152	546,736 311,935	88,997,232 28,465,373	228,566 91,844	0.6 1.1	99.1 98.6	0.3 0.8				
CLINTON.....	1919 1914	15 23	14 12	4 1	4,155 4,064	28 37	4,115 4,024	12 3	0.7 0.9	99.0 99.0	0.3 0.1	15,179,819 6,735,297	147,937 136,124	14,983,661 6,591,273	48,221 7,000	1.0 2.0	98.7 97.9	0.8 0.1				
DANVERS.....	1919	10	13	2	1,474	125	1,349	.....	8.5	91.5	.....	11,541,839	1,483,627	11,058,212	.....	4.2	95.8	.....				
DEDHAM.....	1919 1914	14 9	5 4	1 2	463 256	140 23	223 227	..... 6	51.8 9.0	48.2 88.7	..... 2.3	1,737,673 427,090	1,008,014 50,320	729,659 361,869	..... 10,011	58.0 13.2	42.0 84.5	..... 2.3				
EASTHAMPTON.....	1919	13	10	5	4,142	31	3,416	695	0.7	82.5	16.8	37,942,121	99,800	28,472,624	9,369,683	0.3	75.0	24.7				
EVERETT.....	1919 1914	29 31	61 42	14 12	4,523 3,226	351 154	3,759 2,616	413 456	7.8 4.7	83.1 81.2	9.1 14.1	35,775,728 13,219,200	1,948,991 495,473	30,906,472 11,423,355	2,830,265 1,300,372	5.4 3.8	86.6 86.0	7.9 9.8				
FALL RIVER.....	1919 1914	150 181	106 92	37 42	37,015 36,834	606 651	36,012 35,753	397 430	1.6 1.8	97.3 97.0	1.1 1.2	163,246,082 64,063,146	3,102,776 2,083,470	157,905,842 61,687,780	2,147,464 891,896	1.9 3.2	96.8 95.4	1.3 1.4				
FITCHBURG.....	1919 1914	46 65	55 53	20 19	9,907 8,837	253 853	8,259 7,442	1,395 542	2.6 9.7	83.4 84.2	14.1 6.1	58,164,842 23,983,362	1,082,331 1,763,213	42,555,087 19,242,753	14,527,424 2,977,386	1.9 7.4	73.2 80.2	25.0 12.4				
FRAMINGHAM.....	1919 1914	24 14	27 27	8 8	4,362 3,982	48 36	4,111 3,809	203 137	1.1 0.9	94.2 95.7	4.7 3.4	18,842,173 8,726,574	260,812 115,397	17,795,907 8,171,075	785,454 439,502	1.4 1.3	94.4 93.7	4.2 5.0				
GARDNER.....	1919 1914	24 31	39 26	10 7	4,030 3,964	226 356	3,623 3,376	187 232	5.6 9.0	89.8 85.2	4.6 5.8	13,599,682 7,449,987	1,057,445 737,059	11,936,294 6,327,244	605,943 385,654	7.8 9.9	87.8 84.9	4.5 5.2				



## MANUFACTURES—MASSACHUSETTS.

611

TABLE 14.—CHARACTER OF OWNERSHIP, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919 AND 1914—Continued.

INDUSTRY AND CITY.	Cen- sus year.	NUMBER OF ESTABLISH- MENTS OWNED BY—			AVERAGE NUMBER OF WAGE EARNERS.									VALUE OF PRODUCTS.								
		Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Total.	In establishments owned by—			Per cent of total.			Total.	Of establishments owned by—			Per cent of total.						
						Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.		Individ- uals.	Corpora- tions.	All others.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.				
GLoucester.....	1919	35	42	13	2,684	105	2,468	111	3.9	92.0	4.1	\$18,803,673	\$773,234	\$17,553,013	\$477,426	4.1	93.3	2.5				
	1914	36	29	22	2,814	229	2,263	322	8.1	80.4	11.5	8,533,964	657,191	6,997,953	578,815	7.7	82.0	10.3				
GREENFIELD.....	1919	19	26	8	2,750	62	2,620	68	2.3	95.3	2.5	9,481,382	506,233	8,808,072	167,077	5.3	92.9	1.8				
	1914	21	23	6	1,602	131	1,424	47	8.2	88.9	2.9	3,527,101	226,500	2,963,334	337,177	6.4	84.0	9.6				
HAVERHILL.....	1919	166	126	113	15,783	3,427	8,794	3,562	21.7	55.7	22.6	96,276,853	20,497,070	51,141,825	24,637,958	21.3	53.1	25.6				
	1914	212	72	114	13,281	2,973	6,003	4,305	22.3	45.2	32.5	42,409,246	9,741,440	17,979,562	14,688,244	23.0	42.4	34.6				
HOLYOKE.....	1919	74	80	22	17,773	351	16,584	838	2.0	93.3	4.7	93,426,775	2,277,460	88,015,938	3,133,377	2.4	94.2	3.4				
	1914	104	88	30	17,493	470	16,558	465	2.7	94.6	2.7	44,041,155	1,057,481	41,413,664	1,570,010	2.4	94.0	3.6				
LAWRENCE.....	1919	102	73	19	30,319	902	29,291	126	3.0	96.6	0.4	183,449,006	3,654,659	179,056,079	738,358	2.0	97.6	0.4				
	1914	135	56	30	31,043	810	29,003	1,230	2.6	93.4	4.0	73,177,803	2,008,687	67,689,014	3,580,102	2.7	92.4	4.9				
LEOMINSTER.....	1919	29	48	15	5,793	386	4,879	528	6.7	84.2	9.1	24,928,790	1,176,775	21,169,230	2,582,785	4.7	84.9	10.4				
	1914	31	44	14	4,929	378	4,098	453	7.7	83.1	9.2	10,838,024	778,585	9,195,460	863,979	7.2	84.8	8.0				
LOWELL.....	1919	144	103	44	30,111	1,042	28,750	319	3.5	95.5	1.1	137,801,538	5,212,282	131,118,104	1,471,152	3.8	95.1	1.1				
	1914	109	91	40	29,904	1,109	28,241	554	3.7	94.4	1.9	56,048,641	2,525,323	52,285,100	1,283,158	4.5	93.3	2.2				
LYNN.....	1919	200	158	84	27,355	4,011	21,585	1,759	14.7	78.9	6.4	160,905,792	26,384,545	117,604,363	16,916,884	16.4	73.1	10.5				
	1914	109	116	114	25,339	3,798	17,047	4,494	15.0	67.3	17.7	69,783,418	11,071,369	42,585,156	16,126,893	15.9	61.0	23.1				
MALDEN.....	1919	54	39	15	4,723	221	4,338	164	4.7	91.8	3.5	22,077,624	1,031,989	20,316,390	729,245	4.7	92.0	3.3				
	1914	46	32	14	2,850	238	2,452	160	8.4	86.0	5.6	8,366,344	656,931	7,358,072	351,341	7.9	87.9	4.2				
MARLBOROUGH.....	1919	25	16	7	3,798	68	3,720	10	1.8	97.8	0.3	19,044,907	353,870	18,592,017	94,020	1.9	97.6	0.5				
	1914	17	18	8	3,822	45	3,758	19	1.2	98.3	0.5	9,983,632	124,973	9,755,694	102,965	1.3	97.7	1.0				
MEDFORD.....	1919	27	23	4	1,031	64	902	65	6.2	87.5	6.3	5,665,723	337,631	5,128,810	199,282	6.0	90.5	3.5				
	1914	33	17	4	559	78	403	78	14.0	72.0	14.0	2,618,893	229,010	2,240,980	142,903	8.7	85.8	5.5				
MELROSE.....	1919	12	12	3	1,006	47	1,513	40	2.9	94.2	2.9	6,083,698	228,276	5,677,361	178,061	3.8	93.3	2.9				
	1914	11	11	4	902	36	767	159	3.8	79.7	16.5	2,499,029	72,227	1,910,386	507,416	2.9	76.8	20.3				
METHUEN.....	1919	23	8	2	2,571	133	2,438	.....	5.2	94.8	.....	14,214,905	1,687,864	13,527,041	.....	4.8	95.2	.....				
	1914	14	8	3	1,940	27	1,904	9	1.4	98.1	0.5	4,461,111	77,932	4,345,889	37,290	1.8	97.4	0.8				
MILFORD.....	1919	24	15	9	1,809	177	1,587	45	9.8	87.7	2.5	8,408,531	736,808	7,452,775	218,948	8.8	88.6	2.6				
	1914	28	18	13	1,749	136	1,535	78	7.8	87.8	4.4	4,028,492	358,034	3,438,320	232,138	8.9	85.3	5.8				
NATICK.....	1919	25	13	11	1,403	204	517	742	13.9	35.3	50.7	7,393,397	1,695,006	2,021,239	3,677,152	22.9	27.3	49.7				
	1914	18	10	10	1,347	229	290	828	17.1	21.5	61.4	4,566,253	1,164,967	985,654	2,415,632	25.5	21.6	52.9				
NEW BEDFORD.....	1919	142	88	37	41,030	753	40,690	187	1.8	97.7	0.4	210,773,312	3,930,618	205,223,466	1,610,228	1.9	97.4	0.8				
	1914	124	71	38	33,343	509	32,486	348	1.5	97.5	1.0	65,575,005	1,607,963	62,341,420	1,625,622	2.4	95.1	2.5				
NEWBURYPORT.....	1919	31	26	7	3,960	671	3,197	92	16.9	80.7	2.3	20,595,015	3,869,699	16,402,081	323,235	18.8	79.6	1.6				
	1914	25	19	10	3,349	544	2,276	529	16.2	68.0	15.8	8,245,998	1,213,138	5,846,296	1,188,564	14.7	70.9	14.4				
NEWTON.....	1919	20	23	6	2,547	142	2,013	392	5.6	79.0	15.4	15,524,567	1,011,492	12,216,925	2,296,150	6.5	78.7	14.8				
	1914	32	19	7	2,154	187	1,630	357	7.7	75.8	16.5	5,822,853	548,958	4,478,654	795,241	9.4	76.9	13.7				
NORTH ADAMS.....	1919	32	23	10	6,023	171	5,816	36	2.8	96.6	0.6	36,203,787	602,812	35,326,378	214,577	1.8	97.6	0.6				
	1914	38	22	15	5,288	106	4,705	417	3.1	89.0	7.9	10,922,575	367,666	9,400,346	1,154,563	3.4	86.0	10.6				
NORTHAMPTON.....	1919	33	21	9	3,532	121	2,649	702	3.4	75.0	21.6	17,960,620	505,265	14,641,189	2,814,160	2.8	81.5	15.7				
	1914	40	24	11	3,446	104	2,731	551	4.8	79.2	16.0	8,580,730	466,529	6,282,244	1,831,957	5.4	73.2	21.4				
NORTHBRIDGE.....	1919	7	3	3	3,871	11	3,860	.....	0.3	99.7	.....	13,848,897	57,098	13,791,799	.....	0.4	99.6	.....				
NORWOOD.....	1919	10	12	4	2,835	115	2,363	357	4.1	83.4	12.6	20,359,242	405,616	17,100,930	2,852,696	2.0	84.0	14.0				
PEABODY.....	1919	36	42	13	8,013	441	7,293	279	5.5	91.0	3.5	52,906,722	1,868,307	48,658,980	2,379,435	3.5	92.0	4.5				
	1914	35	32	10	5,485	684	4,647	154	12.5	84.7	2.8	18,441,906	1,319,131	16,616,101	506,671	7.2	90.1	2.7				
PITTSFIELD.....	1919	39	36	15	8,570	103	7,730	737	1.2	90.2	8.6	41,613,350	709,518	37,440,594	3,463,244	1.7	90.0	8.3				
	1914	42	29	13	7,490	125	6,704	661	1.7	89.5	8.8	22,241,237	452,361	20,309,994	1,478,882	2.0	91.3	6.7				
PLYMOUTH.....	1919	14	15	2	2,971	141	2,930	.....	1.4	98.6	.....	31,319,553	1,318,079	31,001,474	.....	1.0	99.0	.....				
	1914	19	15	3	2,845	40	2,784	21	1.4	97.9	0.7	13,904,545	158,476	13,671,605	74,464	1.2	98.3	0.5				
QUINCY.....	1919	87	30	45	10,653	566	18,818	269	2.9	95.8	1.4	68,535,400	2,528,009	64,505,704	1,501,693	3.7	94.1	2.2				
	1914	91	30	56	5,783	670	4,544	569	11.6	78.0	9.8	12,097,452	1,369,516	9,324,110	1,403,826	11.3	77.1	11.6				
REVERE.....	1919	22	6	3	126	31	91	4	24.6	72.2	3.2	767,294	226,536	506,953	33,805	29.5	66.1	4.4				
	1914	22	3	2	80	30	50	.....	37.5	62.5	.....	349,696	144,242	202,615	2,839	41.3	57.9	0.8				
SALEM.....	1919	64	61	28	5,672	409	3,815	1,448	7.2	67.3	25.5	30,437,957	2,274,729	20,842,377	7,320,851	7.5	68.5	24.1				
	1914	96	46	36	5,294	793	2,992	1,509	15.0	56.5	28.5	13,652,586	1,907,717	3,336,860	3,408,009	14.						



## MANUFACTURES—MASSACHUSETTS.

TABLE 14.—CHARACTER OF OWNERSHIP, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919 AND 1914—Continued.

INDUSTRY AND CITY.	Cen- sus year.	NUMBER OF ESTABLISH- MENTS OWNED BY—			AVERAGE NUMBER OF WAGE EARNERS.									VALUE OF PRODUCTS.								
					Total.	In establishments owned by—			Per cent of total.			Total.	Of establishments owned by—			Per cent of total.						
		Indi- vid- uals.	Cor- pora- tions.	All oth- ers.		Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.		Individ- uals.	Corpora- tions.	All others.	Indi- vid- uals.	Corpora- tions.	All oth- ers.				
WAKEFIELD.....	1919	13	16	3	1,869	30	1,298	541	1.6	69.4	28.9	\$8,977,010	\$213,579	\$5,838,835	\$2,924,596	2.4	65.0	32.6				
	1914	6	12	4	2,008	25	1,398	585	1.3	69.0	29.1	6,057,659	50,262	4,198,384	1,809,013	0.8	69.3	29.9				
WALTHAM.....	1919	43	36	14	8,069	398	7,472	199	4.9	92.6	2.5	20,878,515	1,265,829	18,544,958	1,067,728	6.1	88.8	5.1				
	1914	50	28	10	6,465	303	6,014	148	4.7	93.0	2.3	10,236,012	615,646	9,195,339	425,927	6.0	89.8	4.2				
WATERTOWN.....	1919	4	15	6	8,420	15	8,049	356	0.2	95.6	4.2	47,297,519	93,132	44,907,917	2,236,470	0.2	95.1	4.7				
	1914	10	16	4	4,787	9	4,773	5	0.2	99.7	0.1	14,764,326	27,460	14,698,319	38,547	0.2	99.5	0.3				
WEBSTER.....	1919	12	11	1	3,849	1294	3,555	.....	7.6	92.4	.....	28,400,765	1,097,002	26,702,863	.....	6.0	94.0	.....				
	1914	9	12	2	3,246	39	3,031	176	1.2	93.4	5.4	9,233,919	83,307	8,845,967	304,645	0.9	95.8	3.3				
WESTFIELD.....	1919	39	29	17	3,243	217	2,797	229	6.7	86.2	7.1	14,278,973	798,394	12,458,830	1,021,749	5.6	87.3	7.2				
	1914	51	27	22	3,584	249	3,013	322	6.9	84.1	9.0	8,420,439	1,359,590	6,903,744	757,105	16.1	74.9	9.0				
WEST SPRINGFIELD.....	1919	14	8	1	2,791	139	2,752	.....	1.4	98.0	.....	12,386,556	1236,548	12,150,008	.....	1.9	98.1	.....				
	1914	15	8	6	2,209	24	2,173	12	1.1	98.4	0.5	5,039,953	91,795	4,896,418	51,740	1.8	97.2	1.0				
WEYMOUTH.....	1919	16	15	3	2,146	60	1,969	117	2.8	91.8	5.5	16,836,997	180,092	16,100,842	490,063	1.1	96.0	2.9				
	1914	23	11	6	2,074	90	1,579	405	4.3	76.1	19.6	8,251,041	171,264	6,924,194	1,155,583	2.1	83.9	14.0				
WINCHESTER.....	1919	6	10	1	1,112	185	1,027	.....	7.0	92.4	.....	9,697,701	1234,864	9,462,837	.....	2.4	97.0	.....				
	1914	9	10	.....	1,048	79	969	.....	7.5	92.5	.....	5,159,479	201,804	4,957,675	.....	3.9	96.1	.....				
WINTHROP.....	1919	15	2	2	61	52	19	.....	85.2	14.8	.....	330,234	191,823	138,411	.....	58.1	41.9	.....				
	1914	9	1	.....	16	14	2	.....	87.5	12.5	.....	77,994	50,931	27,003	.....	65.3	34.7	.....				
WOBURN.....	1919	23	25	5	2,011	233	1,633	145	11.6	81.2	7.2	13,980,185	950,394	12,565,146	464,045	6.8	89.9	3.3				
	1914	29	21	7	1,565	340	1,002	223	21.7	64.0	14.3	5,517,806	797,652	3,990,872	729,282	14.5	72.3	13.2				
WORCESTER.....	1919	237	288	93	38,673	1,838	33,864	2,971	4.8	87.6	7.7	208,705,773	8,787,610	184,466,745	15,451,418	4.2	88.4	7.4				
	1914	272	225	109	29,452	2,067	24,195	3,190	7.0	82.2	10.8	82,829,356	4,809,102	69,615,856	8,404,398	5.8	84.1	10.1				

<sup>1</sup> Includes the group "All others."

TABLE 15.—MANUFACTURES, BY POPULATION GROUPS, IN CITIES OF 10,000 INHABITANTS OR MORE: 1919, 1914, AND 1909.

	Cen- sus year.	Aggregate.	CITIES HAVING A POPULATION OF 10,000 OR OVER.								THE STATE OUTSIDE OF CITIES HAVING A POPULATION OF 10,000 OR OVER.	
			Total.		10,000 to 25,000.		25,000 to 100,000.		100,000 and over.			
			Number or amount.	Per cent of aggre- gate.	Number or amount.	Per cent of aggre- gate.	Number or amount.	Per cent of aggre- gate.	Number or amount.	Per cent of aggre- gate.	Number or amount.	Per cent of aggre- gate.
Number of places.....	1919 1914 1909	----- ----- -----	66 59 54	----- ----- -----	39 33 29	----- ----- -----	20 19 20	----- ----- -----	7 7 5	----- ----- -----	----- ----- -----	
Population <sup>1</sup> .....	1920 1915 1910	3,852,356 3,605,522 3,366,416	3,144,077 2,870,682 2,606,380	81.6 79.8 77.4	594,111 494,004 435,391	15.4 13.7 12.9	1,028,383 932,020 1,008,483	26.7 25.9 30.0	1,521,583 1,450,058 1,162,506	39.5 40.2 34.5	708,270 728,840 700,036	18.4 20.2 22.6
Number of establishments.....	1919 1914 1909	11,906 12,013 11,684	9,947 9,851 9,208	83.5 82.0 78.8	1,740 1,617 1,427	14.6 13.6 12.2	2,921 2,931 3,124	24.5 24.4 26.7	5,286 5,303 4,657	44.4 44.1 39.9	1,059 2,162 2,476	16.5 18.0 21.2
Average number of wage earners.....	1919 1914 1909	713,836 606,898 584,560	609,671 506,397 477,134	85.4 83.5 81.6	126,170 93,119 84,242	17.7 15.3 14.4	206,334 173,862 205,982	28.9 28.7 35.2	277,167 239,410 186,910	38.8 39.5 32.0	104,165 100,301 107,425	14.6 16.5 18.4
Value of products.....	1919 1914 1909	\$4,011,181,532 1,641,373,047 1,490,529,386	\$3,462,478,225 1,390,652,276 1,234,417,010	86.3 84.7 82.8	\$673,035,035 235,555,479 201,047,032	16.8 14.4 13.5	\$1,223,796,067 499,265,367 543,367,703	30.5 30.4 30.5	\$1,565,640,523 655,831,430 490,002,275	39.0 40.0 32.9	\$548,703,307 250,720,771 256,112,376	13.7 15.3 17.2
Value added by manufacture.....	1919 1914 1909	1,750,468,496 709,989,254 659,764,443	1,510,299,854 606,736,515 548,219,736	86.3 85.5 83.1	291,944,685 104,061,660 90,791,565	16.7 14.7 13.8	521,169,292 204,494,866 229,499,986	29.8 28.8 34.8	697,185,877 298,179,960 227,928,185	39.8 42.0 34.5	240,168,642 103,252,739 111,544,707	13.7 14.5 16.0

<sup>1</sup> Population of 1920, as of Jan. 1, 1920; 1915, estimated population as of July 1, 1914 (per reports census of manufactures, 1914); 1910, as of Apr. 15, 1910.



TABLE 16.—PRINCIPAL INDUSTRIES IN CITIES OF 50,000 INHABITANTS OR MORE, WITH PER CENT OF TOTAL FOR STATE: 1919.

CITY AND INDUSTRY.	VALUE OF PRODUCTS.				CITY AND INDUSTRY.	VALUE OF PRODUCTS.			
	Amount, 1919.	Per cent of total for the state.	Increase <sup>1</sup> over 1914.			Amount, 1919.	Per cent of total for the state.	Increase <sup>1</sup> over 1914.	
			Amount.	Per cent.				Amount.	Per cent.
BOSTON.					FALL RIVER—Continued.				
Confectionery and ice cream.....	\$46,096,820	66.9	\$30,851,060	202.4	Foundry and machine-shop products <sup>2</sup> .....	\$3,907,201	2.2	\$2,843,244	287.2
Boot and shoe cut stock.....	35,443,382	41.1	24,339,648	219.2	Cotton small wares.....	1,947,518	23.6	1,468,534	306.6
Foundry and machine-shop products <sup>2</sup> .....	34,130,476	19.2	21,796,256	176.7	Bread and other bakery products.....	1,874,956	2.8	857,724	84.3
Printing and publishing, newspapers and periodicals.....	33,607,374	71.8	15,692,204	87.6	Belting, leather.....	738,944	18.7	( <sup>3</sup> )	( <sup>3</sup> )
Clothing, men's.....	31,337,508	75.6	17,008,195	128.3	Bags, other than paper, not including bags made in textile mills.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Boots and shoes, not including rubber boots and shoes.....	27,526,886	6.2	14,273,476	107.7	Cordage and twine.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Chocolate and cocoa products.....	24,277,494	80.1	( <sup>3</sup> )	( <sup>3</sup> )	Gas, illuminating and heating.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Printing and publishing, book and job.....	22,809,951	54.8	10,736,573	88.9	Hats, fur-felt.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Bread and other bakery products.....	21,080,632	32.8	10,267,254	90.0	HAVERHILL.				
Clothing, women's.....	20,655,935	67.9	11,047,177	115.0	Boots and shoes, not including rubber boots and shoes.....	59,699,812	13.5	34,379,859	135.8
Coffee and spice, roasting and grinding.....	16,239,248	95.6	7,775,753	91.9	Boot and shoe cut stock.....	14,924,501	17.3	8,717,528	140.4
Electrical machinery, apparatus, and supplies.....	10,671,247	11.6	7,036,332	193.6	Boot and shoe findings.....	9,424,740	21.2	5,310,321	129.1
Liquors, malt.....	8,956,330	60.9	120,058	1.4	Boxes, wooden packing, except cigar boxes.....	964,350	6.4	366,517	61.3
Druggists' preparations.....	8,661,345	86.7	7,844,992	961.0	Boxes, set-up paper boxes and cartons.....	729,455	4.7	444,223	155.7
Tobacco, cigars and cigarettes.....	8,400,426	72.7	1,772,448	26.7	Bread and other bakery products.....	694,375	1.1	411,643	145.6
Steam fittings and steam and hot-water heating apparatus.....	8,134,716	60.4	5,053,758	164.0	Hats, wool-felt.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Slaughtering and meat packing.....	6,651,615	6.0	1,536,472	30.0	Leather, tanned, curried, and finished.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Food preparations, not elsewhere specified.....	5,660,552	59.0	3,166,395	126.6	Paper and wood pulp.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Furniture.....	5,344,428	22.6	3,116,340	139.9	Woolen goods.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Pickles, preserves, and sauces.....	5,246,494	83.9	3,273,133	165.9	HOLYOKE.				
Cars and general shop construction and repairs by steam-railroad companies.....	4,728,165	20.9	-296,151	-5.9	Paper and wood pulp.....	21,375,894	24.5	8,197,360	62.2
House-furnishing goods, not elsewhere specified.....	4,685,175	60.8	4,468,105	2,058.4	Stationery goods, not elsewhere specified.....	4,491,361	29.6	2,600,352	137.5
Copper, tin, and sheet-iron work.....	4,619,480	55.6	2,343,483	103.0	Paper goods, not elsewhere specified.....	3,644,794	26.9	1,713,230	88.7
Musical instruments, pianos.....	4,552,210	56.0	1,744,634	62.1	Bookbinding and blank-book making.....	2,852,417	34.9	1,577,657	123.8
Cotton goods.....	4,407,623	0.7	3,179,415	258.9	Foundry and machine-shop products.....	2,387,961	2.1	1,299,587	119.4
Knit goods.....	4,204,571	8.0	2,608,890	163.5	Lumber, planing-mill products, not in- cluding planing mills connected with sawmills.....	1,349,854	10.7	708,501	110.5
Cutlery and edge tools.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Bread and other bakery products.....	950,597	1.4	380,823	69.5
Ordnance and accessories.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Cotton goods.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Sugar, refining, not including beet sugar.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Pumps, steam.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
BROCKTON.					Silk goods.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Boots and shoes, not including rubber boots and shoes.....	81,543,541	18.4	46,510,876	132.8	Worsted goods.....	125,760,608	53.0	( <sup>3</sup> )	( <sup>3</sup> )
Boot and shoe findings.....	14,075,800	31.7	8,741,958	163.9	Cotton goods.....	20,937,148	3.5	13,794,021	193.1
Boot and shoe cut stock.....	5,978,865	6.9	2,223,337	59.2	Foundry and machine-shop products <sup>2</sup> .....	3,832,342	2.2	2,619,601	205.8
Lasts.....	1,857,436	31.6	1,273,078	217.9	Paper and wood pulp.....	3,697,646	4.2	( <sup>3</sup> )	( <sup>3</sup> )
Foundry and machine-shop products.....	929,057	0.8	497,732	115.4	Bread and other bakery products.....	1,409,364	2.1	609,625	76.2
Printing, job.....	920,823	2.2	438,619	91.0	Boots and shoes, not including rubber boots and shoes.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Blacking, stains, and dressings.....	837,536	11.8	408,001	95.0	Carpets and rugs, other than rag.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Bread and other bakery products.....	809,788	1.2	-259,732	-24.3	Dyeing and finishing textiles, exclusive of that done in textile mills.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Cotton small wares.....	800,950	9.7	( <sup>3</sup> )	( <sup>3</sup> )	Wool scouring.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Confectionery and ice cream.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Woolen goods.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Gas, illuminating and heating.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	LAWRENCE.				
Iron and steel, mills and spikes, not made in steel works or rolling mills.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Worsted goods.....	125,760,608	53.0	( <sup>3</sup> )	( <sup>3</sup> )
Suspenders, garters, and elastic woven goods.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Cotton goods.....	20,937,148	3.5	13,794,021	193.1
CAMBRIDGE.					Foundry and machine-shop products <sup>2</sup> .....	3,832,342	2.2	2,619,601	205.8
Confectionery and ice cream.....	11,460,261	10.6	7,652,552	201.0	Paper and wood pulp.....	3,697,646	4.2	( <sup>3</sup> )	( <sup>3</sup> )
Bread and other bakery products.....	9,094,101	13.8	5,139,608	130.0	Bread and other bakery products.....	1,409,364	2.1	609,625	76.2
Electrical machinery, apparatus, and supplies.....	8,718,570	9.5	( <sup>3</sup> )	( <sup>3</sup> )	Boots and shoes, not including rubber boots and shoes.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Printing and publishing, book and job.....	7,821,316	18.8	4,956,400	173.0	Carpets and rugs, other than rag.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Foundry and machine-shop products <sup>2</sup> .....	6,766,380	4.3	4,232,666	276.0	Dyeing and finishing textiles, exclusive of that done in textile mills.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Furniture.....	2,178,731	9.2	894,067	69.7	Woolen goods.....	5,368,558	5.1	4,163,095	345.7
Musical instruments, pianos.....	1,601,707	19.7	( <sup>3</sup> )	( <sup>3</sup> )	Worsted goods.....	4,429,638	1.9	1,710,447	62.9
Structural ironwork, not made in steel works or rolling mills.....	1,543,477	23.1	588,207	61.6	Boots and shoes, not including rubber boots and shoes.....	3,137,655	0.7	-411,388	-11.6
Copper, tin, and sheet-iron work.....	1,509,124	18.1	( <sup>3</sup> )	( <sup>3</sup> )	Bread and other bakery products.....	1,723,508	2.6	980,464	134.8
Boxes, set-up paper boxes.....	1,447,157	9.2	848,377	141.7	Patent medicines and compounds.....	1,512,540	16.6	717,299	90.2
Bookbinding and blank-book making.....	1,280,108	15.6	892,544	206.6	Boxes, wooden packing, except cigar boxes.....	1,245,871	8.3	589,652	89.9
Automobiles.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Lumber, planing-mill products, not in- cluding planing mills connected with sawmills.....	1,131,274	9.0	664,640	142.4
Belting and hose, rubber.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Ammunition.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Blacking, stains, and dressings.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Gas, illuminating and heating.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Boots and shoes, rubber.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Leather, tanned, curried, and finished.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Clothing, men's.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Liquors, malt.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Gas, illuminating and heating.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	LYNN.				
Grease and tallow, not including lubri- cating greases.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Boots and shoes, not including rubber boots and shoes.....	66,457,349	15.0	36,390,534	121.0
Ink, writing.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Electrical machinery, apparatus, and supplies.....	33,149,457	36.1	( <sup>3</sup> )	( <sup>3</sup> )
Needles, pins, and hooks and eyes.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Boot and shoe cut stock.....	23,152,402	26.9	12,724,972	122.0
Nets and seines.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Boot and shoe findings.....	15,824,162	12.2	11,975,491	311.2
Oleomargarine, and other butter sub- stitutes.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Leather, tanned, curried, and finished.....	7,057,957	15.9	3,661,144	107.8
Pumps, steam.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Boot and shoe findings.....	1,631,554	2.5	847,521	108.1
Soap.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Bread and other bakery products.....	1,479,362	25.1	1,090,255	280.2
Stationery goods, not elsewhere specified.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Lasts.....	1,209,363	1.1	685,825	131.0
FALL RIVER.					Foundry and machine-shop products.....	942,601	13.3	417,150	79.4
Cotton goods.....	135,783,717	22.8	86,267,690	174.2	Blacking, stains, and dressings.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Dyeing and finishing textiles, exclusive of that done in textile mills.....	8,250,120	11.0	( <sup>3</sup> )	( <sup>3</sup> )	Mucilage, paste, and other adhesives, not elsewhere specified.....	710,039	26.6	( <sup>3</sup> )	( <sup>3</sup> )

<sup>1</sup> A minus sign (-) denotes decrease.<sup>2</sup> Includes "iron and steel, tempering and welding," and "textile machinery and parts."<sup>3</sup> Figures can not be shown without disclosing individual operations.<sup>4</sup> Includes "iron and steel, welding," and "machine tools."<sup>5</sup> Includes "iron and steel, welding," and "textile machinery and parts."<sup>6</sup> Includes "textile machinery and parts."



## MANUFACTURES—MASSACHUSETTS.

TABLE 16.—PRINCIPAL INDUSTRIES IN CITIES OF 50,000 INHABITANTS OR MORE, WITH PER CENT OF TOTAL FOR STATE: 1919—Continued.

CITY AND INDUSTRY.	VALUE OF PRODUCTS.				CITY AND INDUSTRY.	VALUE OF PRODUCTS.			
	Amount, 1919.	Per cent of total for the state.	Increase <sup>1</sup> over 1914.			Amount, 1919.	Per cent of total for the state.	Increase <sup>1</sup> over 1914.	
			Amount.	Per cent.				Amount.	Per cent.
LYNN—Continued.					SPRINGFIELD—Continued.				
Boxes, set-up paper boxes.....	\$505,239	3.2	—\$230,709	—31.3	Chemicals.....				
Printing, job.....	501,081	1.2	156,236	45.3	Chocolate and cocoa products.....				
Boxes, wooden packing, except cigar boxes.....	(2)	(2)	(2)	(2)	Clothing, men's.....				
Gas, illuminating and heating.....									
Patent and proprietary medicines.....									
NEW BEDFORD.						(2)	(2)	(2)	(2)
Cotton goods.....	177,058,520	29.7	125,292,286	242.0	Firearms.....				
Bread and other bakery products.....	2,409,319	3.6	1,190,552	97.7	Gas, illuminating and heating.....				
Oil, animal and composite.....	1,890,030	43.3	(2)	(2)	Iron and steel, forgings, not made in steel works or rolling mills.....	(2)	(2)	(2)	(2)
Foundry and machine-shop products <sup>3</sup> .....	1,385,682	0.8	803,426	165.3	Knit goods.....				
Printing and publishing, newspapers and periodicals.....	659,405	1.4	249,197	60.7	Motorcycles, bicycles, and parts.....				
Sausage, not made in slaughtering and meat-packing establishments.....	573,008	10.8	261,590	84.0	Slaughtering and meat packing.....				
Boot and shoe findings.....					Sporting and athletic goods.....				
Boots and shoes, not including rubber boots and shoes.....					Toys and games.....				
Brass and bronze products.....					WORCESTER.				
Gas, illuminating and heating.....	(2)	(2)	(2)	(2)	Foundry and machine-shop products <sup>4</sup> .....	\$36,104,377	17.9	\$25,200,412	231.1
Glass.....					Boots and shoes, not including rubber boots and shoes.....	7,396,821	1.7	4,769,077	181.5
Paper goods, not elsewhere specified.....					Envelopes.....	6,469,355	59.5	3,605,955	125.9
Silk goods, including throwsters.....					Cotton goods.....	5,804,459	1.0	5,158,482	730.7
Tools, not elsewhere specified.....					Corsets.....	5,235,051	77.4	1,801,544	52.5
SOMERVILLE.					Woolen goods.....	4,782,280	4.5	3,091,795	182.9
Slaughtering and meat packing <sup>4</sup> .....	84,740,246	73.3	48,405,051	133.2	Worsted goods.....	4,082,705	1.7	2,188,047	115.5
Bread and other bakery products.....	1,652,912	2.5	985,038	147.5	Electrical machinery, apparatus, and sup- plies.....	3,110,670	3.4	2,830,592	1,047.5
Grease and tallow, not including lubricating greases.....	609,832	8.3	(2)	(2)	Tools, not elsewhere specified.....	3,020,205	10.4	2,601,571	621.4
Confectionery and ice cream.....	493,031	0.7	181,834	58.4	Bread and other bakery products.....	2,865,707	4.3	1,358,092	90.1
Bags, paper, not including bags made in paper mills.....					Clothing, women's.....	2,701,668	8.9	1,050,115	63.6
Brass, bronze, and copper products.....					Musical instruments, piano and organ ma- terials.....	2,259,802	47.3	1,663,441	278.9
Cars and general shop construction and repairs by steam-railroad companies.....	(2)	(2)	(2)	(2)	Printing and publishing, newspapers and periodicals.....	2,132,957	4.6	1,208,114	130.6
Food preparations, not elsewhere specified.....					Wirework, not elsewhere specified.....	1,750,514	38.7	—\$53,320	—82.8
Furniture, wood, other than rattan and willow.....					Stamped ware, not elsewhere specified.....	1,511,091	57.5	464,202	44.3
SPRINGFIELD.					Clothing, men's.....	1,238,117	3.0	569,687	85.2
Foundry and machine-shop products <sup>5</sup> .....	8,683,567	6.4	5,880,463	210.8	Structural ironwork, not made in steel works or rolling mills.....	1,142,349	17.1	477,460	71.8
Electrical machinery, apparatus, and sup- plies.....	7,276,769	7.9	3,262,092	81.3	Cutlery and edge tools.....	1,132,696	5.8	804,747	376.0
Bread and other bakery products.....	4,347,014	6.6	2,032,913	207.4	Dyeing and finishing textiles, exclusive of that done in textile mills.....	1,016,184	1.4	208,340	35.9
Brass and bronze products.....	3,467,771	20.5	2,987,287	621.7	Carpets and rugs, other than rag.....				
Confectionery and ice cream.....	2,648,450	3.8	1,419,343	115.5	Emery and other abrasive wheels.....				
Stationery goods, not elsewhere specified.....	2,354,496	15.5	(2)	(2)	Gas, illuminating and heating.....				
Printing and publishing, newspapers and periodicals.....	2,297,506	4.9	370,575	19.2	Iron and steel, steel works and rolling mills. Iron and steel, forgings, not made in steel works or rolling mills.....				
Printing and publishing, book and job.....	2,288,133	5.5	1,068,403	87.6	Leather, tanned, curried, and finished.....				
Automobile bodies and parts.....	1,750,735	12.2	1,374,683	357.0	Liquors, malt.....	(2)	(2)	(2)	(2)
Saws.....	1,349,950	32.2	(2)	(2)	Ordinance and accessories.....				
Tobacco, cigars.....	1,250,382	10.8	330,177	35.9	Serews, wood.....				
					Slaughtering and meat packing.....				
					Suspenders, garters, and elastic woven goods.....				
					Trunks and valises.....				
					Wire.....				

<sup>1</sup> A minus sign (—) denotes decrease.<sup>2</sup> Figures can not be shown without disclosing individual operations.<sup>3</sup> Includes "textile machinery and parts."<sup>4</sup> Includes "sausage, not made in slaughtering and meat-packing establishments."<sup>5</sup> Includes "iron and steel, welding," and "machine tools."<sup>6</sup> Includes "machine tools" and "textile machinery and parts."



## MANUFACTURES—MASSACHUSETTS.

615

TABLE 17.—NUMBER AND HORSEPOWER OF TYPES OF PRIME MOVERS: 1919, 1914, AND 1909.

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
	1919	1914	1909	Amount.			Per cent distribution.		
				1919	1914	1909	1919	1914	1909
Primary power, total.....	71,287	33,617	19,279	1,729,878	1,396,722	1,175,071	100.0	100.0	100.0
Owned.....	5,927	7,205	8,485	1,155,461	1,180,573	1,040,438	67.4	84.5	88.5
Steam.....	4,268	4,893	5,784	964,932	970,506	835,596	55.8	69.5	71.1
Engines.....	3,766	(2)	(2)	694,531	(2)	(2)	40.1		
Turbines.....	502	(2)	(2)	270,401	(2)	(2)	15.6		
Internal-combustion engines.....	407	770	896	11,227	20,242	18,326	0.6	1.4	1.6
Water.....	1,252	1,542	1,805	189,302	189,825	186,516	10.9	13.6	15.9
Water wheels and turbines.....	1,243	1,480	1,750	189,210	188,917	185,996	10.9	13.5	15.8
Water motors.....	9	62	55	92	908	520	(3)	0.1	(3)
Rented.....	65,360	26,412	10,794	504,417	216,149	134,633	32.6	15.5	11.5
Electric.....	65,360	26,412	10,794	551,521	200,339	109,996	31.9	14.3	9.4
Other.....				12,896	15,810	24,637	0.7	1.1	2.1
Electric.....	105,056	56,927	29,344	975,795	582,971	402,492	100.0	100.0	100.0
Rented.....	65,360	26,412	10,794	551,521	200,339	109,996	56.5	34.4	27.3
Generated by establishments reporting.....	39,696	30,515	18,550	424,274	382,632	292,496	43.5	65.6	72.7

<sup>1</sup> Figures for horsepower include for 1909 the amount reported under the head of "Other" owned power. <sup>2</sup> Not reported separately. <sup>3</sup> Less than one-tenth of 1 per cent.

TABLE 18.—FUEL CONSUMED, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919.

INDUSTRY AND CITY.	COAL.		Coke (tons, 2,000 pounds).	Fuel oils (barrels).	Gasoline and other volatile oils (barrels).	Gas (1,000 cubic feet).
	Anthracite (tons, 2,240 pounds).	Bituminous (tons, 2,000 pounds).				
All industries..... 1919..	693,750	5,634,701	501,293	3,663,077	90,483	1,222,444
Per cent of increase..... 1914..	664,428	5,506,406	223,132	844,251	(1)	630,455
	4.4	2.3	124.7	344.0	(1)	93.9
Automobile bodies and parts.....	1,452	11,521	15	510	638	1,755
Baling and hose, rubber.....	250	40,205	274		28	
Boot and shoe findings.....	1,879	13,254	83	236	3	3,039
Boots and shoes, not including rubber boots and shoes.....	12,432	76,940	362	20,148	131	9,598
Boots and shoes, rubber.....	12,089	45,902		531	4,561	
Brass, bronze, and copper products.....	12,211	20,904	2,710	30,216	29	6,470
Bread and other bakery products.....	31,810	18,457	34,169	1,208	370	67,991
Brick and tile, terra-cotta, and fire-clay products.....	4,956	16,614	78			444
Carpets and rugs, other than rag.....	3,646	24,861				
Cars and general shop construction and repairs by steam-railroad companies.....	6	42,795	200,271	14,676	116	821
Chemicals.....	16,157	44,699	133	6,775		751
Chocolate and cocoa products.....	3,850	18,861				24,976
Coal-tar products.....	802	10,965	2,861		48	3,167
Coke, not including gas-house coke.....		477,782				
Confectionery and ice cream.....	5,943	29,292	400	19	191	67,051
Cotton goods.....	59,035	1,089,559	1,364	43,262	1,005	9,780
Cutlery and edge tools.....	2,289	9,666	287	4,648	403	3,419
Dyeing and finishing textiles, exclusive of that done in textile mills.....	44,023	231,339		239,373	44	13,328
Electrical machinery, apparatus, and supplies.....	6,707	95,077	6,125	237,720	9,984	171,836
Emery and other abrasive wheels.....	19,714	23,429	289			196
Felt goods.....	1,815	22,080				
Foundry and machine-shop products.....	7,677	103,151	49,826	45,753	1,359	40,585
Furniture.....	1,177	19,824	246	23	7	992
Gas, illuminating and heating.....	116,577	572,102	119,862	1,785,175	17,762	
Glue, not elsewhere specified.....	6,208	25,100	735	44		4,184
Grease and tallow, not including lubricating greases.....	1,266	24,734	52	16	2,725	
Ice, manufactured.....	16	17,824		1,003	33	
Iron and steel, steel works and rolling mills.....	1,342	142,309	1,226	278,441	366	107,817
Iron and steel, forgings, not made in steel works or rolling mills.....	1,216	28,165	20	95,754	184	16,794
Knit goods.....	4,886	42,503	74	8	1	1,339
Leather, tanned, curried, and finished.....	35,421	145,080	152	25	8,188	723
Lime.....	15	30,044	2,802		236	
Liquors, malt.....	1,176	41,405	1,377			
Machine tools.....	1,683	17,452	1,515	7,590	145	19,119
Marble and stone work.....	635	16,983	66	202	164	1,119
Musical instruments, pianos.....		11,365	72			120
Optical goods.....	397	15,123		2,868	510	12,015
Ordnance and accessories.....	40	13,366	451	2,077		
Paper and wood pulp.....	64,120	520,492		62,278		5,000
Paper goods, not elsewhere specified.....	1,261	16,104				354
Plumbers' supplies, not elsewhere specified.....	947	10,642	101	750		533
Printing and publishing, newspapers and periodicals.....	2,851	8,610	27	10,399	46	73,547
Pumps, steam and other power.....		14,745	3,485	10,963	2,105	64
Roofing materials.....	24	10,273	1,518	4,489		
Rubber tires, tubes, and rubber goods, not elsewhere specified.....	853	90,702	2,689	156	4,139	110
Shipbuilding, steel.....	11	41,544	5,132	32,294		15
Silk goods, including throwsters.....	2,000	17,488				38
Slaughtering and meat packing.....	66,313	12,597	120		110	2,024
Steam fittings and steam and hot-water heating apparatus.....	3,385	8,416	10,828	11,073	309	12,549
Sugar, refining, not including beet sugar.....	10,850	110,520				

<sup>1</sup> Included in figures for fuel oils.



## MANUFACTURES—MASSACHUSETTS.

TABLE 18.—FUEL CONSUMED, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919—Continued.

INDUSTRY AND CITY.	COAL.		Coke (tons, 2,000 pounds).	Fuel oils (barrels).	Gasoline and other volatile oils (barrels).	Gas (1,000 cubic feet).
	Anthracite (tons, 2,240 pounds).	Bituminous (tons, 2,000 pounds).				
Suspenders, garters, and elastic woven goods.....	252	12,127				9
Textile machinery and parts.....	2,780	61,183	17,247	14,678	211	25,023
Tools, not elsewhere specified.....	3,021	20,514	485	31,348	305	41,012
Wire.....	2,420	98,647	174	82,970	2,644	6,089
Wool scouring.....	362	20,109	45			
Wool shoddy.....	14	10,959				
Woolen goods.....	8,777	175,588	75	45	21,702	
Worsted goods.....	11,920	345,084	434	404,073	50	947
All other industries.....	91,273	390,516	31,036	88,270	9,636	460,701
Total for cities.....	608,016	4,763,210	282,218	2,422,002	80,520	1,170,353
ADAMS.....	7,835	55,400	2,814			
AMESBURY.....	1,199	11,094	878	4,740	3	985
ARLINGTON.....	4,202	1,843	238		10,594	237
ATTLEBORO.....	1,501	20,045	1,330	5,592	86	70,968
BELMONT.....	2,009	2,428	15			100
BEVERLY.....	1,568	27,474	3,612	4,147		0,704
BOSTON.....	52,827	395,320	27,510	91,689	1,207	390,150
BRAINTREE.....	2,834	7,527	1,427	6,814	1	294
BROCKTON.....	17,900	55,892	1,242	11,314	60	2,487
BROOKLINE.....	297	420	1			4,228
CAMBRIDGE.....	29,639	190,482	10,722	35,369	1,384	19,664
CHELSEA.....	3,806	35,056	8,928	510	56	37,671
CHICOPEE.....	10,090	60,127	324	14,984	3	3,105
CLINTON.....	1,703	34,197	360	1,837	705	407
DANVERS.....	107	15,900	58	1		4,221
DEDHAM.....	1,524	6,937				905
EASTHAMPTON.....	8,003	18,063	144	3,800	3	96
EVERETT.....	24,516	501,706	115,684	388,057	472	6,793
FALL RIVER.....	22,047	425,057	2,375	20,311	409	10,405
FITCHBURG.....	7,635	109,480	1,279	106,718	233	7,153
FRAMINGHAM.....	2,944	22,814	6,312	9,916	2,706	2,791
GARDNER.....	945	10,528	1,584	2,497		744
GLOUCESTER.....	7,170	12,005	295	70	5,381	1,882
GREENFIELD.....	2,617	5,280	512	8,763	142	10,665
HAVERHILL.....	7,217	41,730	3,601	22,647	6	11,491
HOLYOKE.....	12,207	251,018	2,976		20,590	6,488
LAWRENCE.....	9,247	339,701	3,403	607,046	133	5,665
LEOMINSTER.....	3,657	27,636	409	4,875	10	751
LOWELL.....	6,292	255,981	5,433	18,685	21,063	10,853
LYNN.....	52,480	36,750	4,017	259,912	9,439	90,645
MALDEN.....	6,410	51,762	534	57,430	1	13,773
MARLBOROUGH.....	783	5,655	205			3,590
MEDFORD.....	988	4,804	136	1,922	162	986
MELROSE.....	3,301	4,974	643			510
METHUEN.....	103	11,637	136	461	0	
MILFORD.....	368	9,233	108	14	2	305
NATICK.....	386	6,533	110	500	44	1,178
NEW BEDFORD.....	24,432	349,435	738	48,392	3,472	20,174
NEWBURYPORT.....	1,833	13,037	1,005	147	4	9,483
NEWTON.....	1,554	16,876	1,630	1,023	160	1,824
NORTH ADAMS.....	33,726	60,312	125	9,715		2,789
NORTHAMPTON.....	2,875	31,007	275	4,732	47	1,481
NORTHBRIDGE.....		24,422	2,600	3,274	41	
NORWOOD.....	344	28,522	1,655	4,121	178	695
PEABODY.....	33,740	99,139	865	74	705	390
PITTSFIELD.....	8,190	95,771	2,789	15,824	57	44,355
PLYMOUTH.....	319	16,543	17,921		50	44
QUINCY.....	831	50,878	6,001	38,110	117	5,501
REVERE.....	255	5,585	291	300		440
SALEM.....	3,577	33,153	724	16,582	20	10,604
SAUGUS.....	15	929	38			
SOMERVILLE.....	57,065	22,651	4,702	15,026	13	6,143
SOUTHBRIDGE.....	625	35,724		3,414	809	9,092
SPRINGFIELD.....	28,795	115,528	3,179	102,670	300	40,473
TAUNTON.....	7,443	98,045	5,924	30,509	237	12,421
WAKEFIELD.....	737	9,008	342	1,048		300
WALTHAM.....	6,145	33,555	1,174	7,830	988	14,189
WATERTOWN.....	2,198	38,255	1,720	580		384
WEBSTER.....	2,550	42,004		6,509	120	340
WESTFIELD.....	2,416	21,521	6,041	4,145	777	1,460
WEST SPRINGFIELD.....	9,289	29,592	46	8,954	9	
WEYMOUTH.....	1,941	7,372			2	681
WINCHESTER.....	7,581	5,275	521			1,834
WINTHROP.....	143	5	60		130	463
WOBURN.....	4,485	34,354	1,177	14,677	54	259
WORCESTER.....	45,625	356,087	11,302	390,346	2,091	211,094



## SPECIAL STATISTICS.

For a number of important industries the Census Bureau collects, by means of special schedules, certain details which do not appear on the general schedule. Data for 11 of these industries in Massachusetts are here presented.

**Textiles (Table 19).**—This table shows the total value of products relating to the manufacture of textiles in Massachusetts and the comparative importance of the different branches as measured by value of products for 1919, 1914, and 1909. Considered as a whole, this state is the most prominent textile manufacturing center in the United States, and in 1919 ranked first with 21.6 per cent of the total value of the several classes of textiles produced in all states. In 1919 the combined textile industry was the leading industry in Massachusetts, contributing 27.9 per cent to the total value of products for all industries in the state.

The proportions of the textile industry in this state have expanded in many directions until in 1919 the various kinds of textile industries combined, with 587 establishments, gave employment to an average of 209,489 wage earners; the value of their products amounted to \$1,120,543,711 and the value added by manufacture to \$438,098,778. In addition to leading in 1919 in the production of textiles in the aggregate, the state ranked first in 8 of the 17 distinctive branches, namely, cotton goods, worsted goods, woolen goods, cordage and twine, jute goods, oilcloth, enameled, wool shoddy, and linen goods; second in felt goods, and hats, wool-felt; and third in knit goods, carpets and rugs, other than rag, and cotton small wares.

The principal branches of the textile industry for the state are shown in detail in Tables 20, 21, 22, and 23.

TABLE 19.—TEXTILES: 1919, 1914, AND 1909.

INDUSTRY.	VALUE OF PRODUCTS.		
	1919	1914	1909
Total .....	\$1,120,543,711	\$393,463,952	\$388,114,514
Cotton goods, including cotton small wares .....	604,937,749	197,322,111	186,462,313
Wool manufactures <sup>2</sup> .....	306,506,496	141,329,858	153,477,015
Woolen, worsted, and felt goods .....	352,912,506	130,348,514	140,665,034
Carpets and rugs, other than rag .....	13,593,990	10,981,344	12,811,981
Knit goods .....	52,424,235	17,419,077	14,736,025
Silk goods, including throwsters .....	34,193,951	10,676,681	8,942,246
Cordage and twine, and linen goods .....	33,263,723	<sup>3</sup> 23,280,246	<sup>3</sup> 15,979,115
Other textile industries <sup>4</sup> .....	20,217,557	3,435,979	8,517,800

<sup>1</sup> Exclusive of 2 establishments, "oilcloth, enameled," to avoid disclosure of individual operations.

<sup>2</sup> Wool-felt hats included with "other textile industries" to avoid disclosure of individual operations.

<sup>3</sup> Includes "jute goods," to avoid disclosure of individual operations.

<sup>4</sup> Includes "hats, fur-felt"; "hats, wool-felt"; and "wool shoddy" for all years; "jute goods" for 1919; and "oilcloth, enameled," for 1910 and 1909.

**Cotton goods, including cotton small wares (Table 20).**—This table shows the quantity and cost of the

principal materials used and the quantity and value of the chief products for the manufacture of cotton goods, including cotton small wares, for the census years 1919, 1914, and 1909.

Massachusetts, from an early period in the history of the cotton mill, has been the leading state in the consumption of raw cotton. Among the different kinds of materials used in this industry in the state during 1919, raw cotton was of first importance. In 1919 this raw material formed over one-half of the total cost of all materials used in the cotton industry in the state, and showed an increase of 6 per cent over the quantity used in 1914. The mills in the state usually consume about one-half of the total foreign cotton used in the United States. This special cotton, which is mostly Egyptian, is used chiefly in the manufacture of yarn for sale, tire fabrics, and sewing thread, and to a less extent in the manufacture of such fabrics as organdies, lawns, nainsooks, and shirtings. In 1919 Massachusetts was the principal cotton-yarn market of the United States and this material was the second item of cost in the list of component materials used in the manufacture of cotton goods in the state; while silk, in the form of raw silk and silk yarns, chiefly used for decorative purposes in cotton fabrics, was third.

Among the industries in Massachusetts at the census of 1919, cotton goods ranked first in value of products. There are many other large industries within the state, and, as a result, the value of products for this industry represented only 15.1 per cent of the total value of products for all industries. Massachusetts also ranked first among the states in the value of cotton goods, with 27.9 per cent of the total in the United States, or nearly double that of the second largest cotton manufacturing state. Woven goods was the chief outstanding product, with 64.5 per cent of the total value of products for the industry in the state, and 26.2 per cent of the total cotton woven goods in the United States. Yarn, manufactured for sale, was second in importance, with 24.1 per cent of the total value of cotton goods in the state, and 32 per cent of the total for cotton yarn, manufactured for sale, in the United States. The following will enumerate some of the different kinds of woven goods for which the state held first rank in the United States. They are arranged in their order of importance according to the value within the state, followed by the percentage that each bears to the total value of the respective product for the United States: Tire duck and other tire fabrics, 34.7 per cent; lawns, nainsooks, cambrics, and similar muslins, 55.1 per cent; shirtings, 36.9 per cent; gingham, 32.2 per cent; twills, sateens, etc., 24.9 per cent; cotton blankets, 44.8 per cent; and tobacco, cheese, butter, bunting, and bandage cloths, 82.6 per cent.



TABLE 20.—COTTON GOODS, INCLUDING COTTON SMALL WARES:  
1919, 1914, AND 1909.

	1919	1914	1909
<b>MATERIALS.</b>			
Total cost.....	\$364,920,724	\$119,834,334	\$105,150,794
Cotton:			
Pounds.....	662,726,150	624,727,544	622,368,027
Cost.....	\$244,372,261	\$89,326,563	\$77,738,315
Domestic—			
Pounds.....	599,333,702	576,617,532	578,315,382
Cost.....	\$210,935,390	\$80,309,154	\$70,495,332
Foreign—			
Pounds.....	63,392,448	48,110,012	44,052,645
Cost.....	\$33,436,871	\$9,017,409	\$7,242,983
Cotton waste purchased:			
Pounds.....	36,868,630	17,886,518	20,024,977
Cost.....	\$3,707,323	\$860,435	\$1,100,785
Raw silk:			
Pounds.....	384,846	616,943	( <sup>1</sup> )
Cost.....	\$2,146,732	\$1,774,258	( <sup>1</sup> )
Yarns purchased:			
Pounds.....	65,518,728	31,903,653	29,079,341
Cost.....	\$60,476,653	\$10,987,000	\$12,405,031
Cotton—			
Pounds.....	64,214,703	31,117,952	27,175,076
Cost.....	\$53,860,141	\$9,284,324	\$8,279,665
Silk—			
Pounds.....	902,643	( <sup>1</sup> )	872,303
Cost.....	\$4,773,607	( <sup>1</sup> )	\$2,854,181
Spun silk—			
Pounds.....	138,186	445,732	187,601
Cost.....	\$670,911	\$1,542,064	\$802,763
All other—			
Pounds.....	263,196	339,969	844,271
Cost.....	\$1,171,904	\$160,072	\$468,422
Starch, cost.....	\$1,343,057	\$523,338	\$471,045
Chemicals and dyestuffs, cost.....	\$3,322,344	\$1,601,767	\$1,609,908
Fuel and rent of power, cost.....	\$11,721,543	\$4,984,427	\$4,041,092
All other materials, cost.....	\$37,830,811	\$9,776,486	\$7,790,618
<b>PRODUCTS.</b>			
Total value.....	\$604,937,749	\$197,322,111	\$186,462,313
Woven goods (over 12 inches in width):			
Pounds.....	302,314,466	( <sup>2</sup> )	( <sup>2</sup> )
Square yards.....	1,765,948,678	2,066,981,948	1,989,578,059
Value.....	\$389,911,004	\$140,814,418	\$135,626,795
Sheetings—			
Pounds.....	19,590,666		
Square yards.....	81,367,563		
Value.....	\$15,488,544		
Print cloth—			
Pounds.....	55,453,265		
Square yards.....	373,938,032		
Value.....	\$41,574,384		
Tobacco, cheese, butter, bunting, and bandage cloths—			
Pounds.....	18,362,166	( <sup>2</sup> )	( <sup>2</sup> )
Square yards.....	202,401,915	1,385,708,338	1,230,670,320
Value.....	\$14,016,044	\$68,157,420	\$63,025,168
Lawns, nainsooks, cambrics, and similar muslins—			
Pounds.....	29,241,000		
Square yards.....	243,580,824		
Value.....	\$43,709,594		
Shirtings—			
Pounds.....	22,040,735		
Square yards.....	120,927,504		
Value.....	\$30,745,775		
Ginghams—			
Pounds.....	22,568,081	( <sup>2</sup> )	( <sup>2</sup> )
Square yards.....	102,297,902	129,379,233	139,552,491
Value.....	\$27,409,269	\$10,157,707	\$10,753,018
Drills—			
Pounds.....	9,532,041	( <sup>2</sup> )	( <sup>2</sup> )
Square yards.....	30,513,477	12,425,634	17,085,244
Value.....	\$8,670,675	\$1,690,223	\$1,995,819
Twills, satens, etc.—			
Pounds.....	31,270,208	( <sup>2</sup> )	( <sup>2</sup> )
Square yards.....	116,915,845	129,409,523	159,658,540
Value.....	\$25,199,482	\$11,102,661	\$14,889,807
Ticks and denims—			
Pounds.....	15,365,269	( <sup>2</sup> )	( <sup>2</sup> )
Square yards.....	31,588,216	35,128,181	58,716,976
Value.....	\$10,479,031	\$3,941,760	\$6,897,895
Canton flannel, flannelottes, and blanketings—			
Pounds.....	22,754,967	( <sup>2</sup> )	( <sup>2</sup> )
Square yards.....	78,640,678	75,155,157	123,982,755
Value.....	\$17,418,179	\$7,870,070	\$9,470,477
Cotton blankets—			
Pounds.....	17,407,849	( <sup>2</sup> )	( <sup>2</sup> )
Square yards.....	46,470,714	( <sup>1</sup> )	( <sup>1</sup> )
Value.....	\$14,615,019	( <sup>1</sup> )	( <sup>1</sup> )
Tire fabrics (other than duck)—			
Pounds.....	14,567,668	( <sup>2</sup> )	( <sup>2</sup> )
Square yards.....	18,647,503	( <sup>1</sup> )	( <sup>1</sup> )
Value.....	\$15,261,266	( <sup>1</sup> )	( <sup>1</sup> )
Tire duck—			
Pounds.....	42,294,670		
Square yards.....	39,639,018		
Value.....	\$45,722,608		
Ounce duck (except tire)—			
Pounds.....	4,875,125	( <sup>2</sup> )	( <sup>2</sup> )
Square yards.....	8,232,194	35,818,899	29,169,491
Value.....	\$3,848,018	\$10,384,436	\$5,985,828
Numbered duck (except tire)—			
Pounds.....	2,080,468		
Square yards.....	1,972,836		
Value.....	\$1,415,806		

TABLE 20.—COTTON GOODS, INCLUDING COTTON SMALL WARES:  
1919, 1914, AND 1909—Continued.

	1919	1914	1909
<b>PRODUCTS—continued.</b>			
Woven goods—Continued.			
Velvets, corduroys, plushes, etc.—			
Pounds.....	7,710,646	( <sup>2</sup> )	( <sup>2</sup> )
Square yards.....	12,059,895	8,010,211	6,109,238
Value.....	\$9,240,219	\$2,054,181	\$1,707,507
Towelings and terry weaves—			
Pounds.....	1,061,354	( <sup>2</sup> )	( <sup>2</sup> )
Square yards.....	2,697,007	4,279,318	4,155,909
Value.....	\$857,289	\$487,237	\$413,532
Cloth composed of cotton and silk or other vegetable fiber and silk (except silk-striped shirtings)—			
Pounds.....	2,625,171	( <sup>2</sup> )	( <sup>2</sup> )
Square yards.....	21,143,718	( <sup>1</sup> )	( <sup>1</sup> )
Value.....	\$8,192,727	( <sup>1</sup> )	( <sup>1</sup> )
Other woven goods (over 12 inches in width)—			
Pounds.....	53,497,208	( <sup>2</sup> )	( <sup>2</sup> )
Square yards.....	232,913,777	251,067,454	220,465,005
Value.....	\$58,045,275	\$24,878,705	\$23,478,744
Thread—			
Pounds.....	7,226,906	7,713,857	6,563,216
Value.....	\$14,810,825	\$5,310,536	\$5,285,750
Yarns, for sale:			
Pounds.....	154,715,201	112,623,922	108,930,860
Value.....	\$145,888,149	\$38,784,313	\$31,725,074
Cotton waste, for sale:			
Pounds.....	133,500,403	125,034,730	115,907,205
Value.....	\$18,246,641	\$6,793,957	\$4,650,374
Cotton small wares, value.....	\$9,620,273	\$1,272,132	\$884,444
All other products, value.....	\$25,223,264	\$4,346,755	\$5,289,276
Amount received for contract work.....	\$1,228,593	( <sup>2</sup> )	( <sup>2</sup> )

<sup>1</sup> Not reported separately.<sup>2</sup> Not reported in 1914 and 1909.

Wool manufactures (Table 21).—The following table shows in detail the quantity and cost of materials used in wool manufactures, and the quantity and value of the principal products in Massachusetts for 1919, 1914, and 1909.

Wool manufactures as presented in Table 21 includes five branches or types of textile manufacturing, the titles of which are descriptive of their product. These branches and the value of products for 1919 are as follows: Worsted goods, \$237,443,077; woollen goods, \$105,183,068; carpets and rugs, other than rag, \$13,593,990; felt goods, \$10,286,361, and wool-felt hats, which is included in "all other products" to avoid disclosure of individual operations. In 1919 woollen goods and worsted goods combined formed 93.5 per cent of the total value of wool manufactures in the state.

Massachusetts has ranked first in the manufacture of woollen and worsted goods in the United States since the first Federal census of manufactures. The value of woollen and worsted goods produced in this state during 1919 formed 32.2 per cent of the total for the United States, or nearly double that of the second state in rank. During a considerable part of the census year 1919, the operation of the wool manufactures industry for the United States was below normal, and according to the monthly reports of "Active and idle wool machinery," received by the Bureau of the Census, the per cent of idle machinery averaged for the year in sets of woollen cards, 18.3 per cent; combs, 18.5 per cent; woollen spindles, 18.8 per cent; worsted spindles, 23.2 per cent; looms wider than 50-inch reed space, 31.1 per cent; looms under 50-inch reed space, 29.1



per cent; and carpet and rug looms, 46 per cent. Cards, combs, and spindles used in connection with the manufacture of knit goods were included in the "Active and idle wool machinery" reports, but with the comparatively small amount of such machinery in the knit-goods industry they would have little effect on the per cents as shown above.

Wool, forming 47.5 per cent of the total cost of materials, and yarns, forming 21.4 per cent, were the two chief materials used in wool manufactures. The cost of worsted yarn formed 67 per cent of the various kinds of yarns used. Fashion makes many demands upon this industry in the designing of its products, and the fluctuations in the different kinds of materials used, as reported from census to census, might be attributed principally to this cause.

TABLE 21.—WOOL MANUFACTURES: 1919, 1914, AND 1909.

	1919	1914	1909
<b>MATERIALS.</b>			
Total cost.....	\$227,371,147	\$89,745,703	\$94,707,715
<b>Wool:</b>			
In condition purchased—			
Pounds.....	163,264,869	165,039,667	167,993,961
Cost.....	\$108,043,388	\$40,325,600	\$47,193,010
Foreign—			
Pounds.....	88,600,043	79,690,137	71,725,074
Cost.....	\$57,691,453	\$20,302,783	\$21,528,685
Domestic—			
Pounds.....	74,574,826	85,349,530	96,268,287
Cost.....	\$50,351,935	\$20,022,813	\$25,664,325
Equivalent in scoured condition, pounds.....	100,078,489	99,914,078	108,243,103
<b>Cotton:</b>			
Pounds.....	5,084,568	10,814,793	10,143,678
Cost.....	\$1,883,328	\$1,263,058	\$1,237,820
Domestic—			
Pounds.....	3,952,522	8,030,531	9,253,389
Cost.....	\$1,357,408	\$960,836	\$1,036,307
Foreign—			
Pounds.....	1,132,046	1,884,212	890,289
Cost.....	\$525,920	\$303,122	\$151,423
<b>Animal hair:</b>			
Pounds.....	10,843,993	5,309,163	3,876,452
Cost.....	\$4,335,734	\$1,710,701	\$1,100,038
<b>Recovered wool fiber:</b>			
Pounds.....	11,120,116	5,853,328	3,637,530
Cost.....	\$3,930,880	\$602,537	\$547,900
<b>Wool and other noils and wool waste:</b>			
Pounds.....	15,582,931	10,950,863	9,996,811
Cost.....	\$10,896,415	\$2,657,705	\$2,602,110
<b>Tops, purchased:</b>			
Pounds.....	6,766,376	9,110,710	5,039,116
Cost.....	\$11,439,360	\$4,074,310	\$3,461,319
<b>Yarns, purchased:</b>			
Pounds.....	36,445,723	44,334,079	46,077,736
Cost.....	\$48,507,935	\$22,026,410	\$24,461,745
Woolen—			
Pounds.....	3,315,996	3,080,066	1,534,135
Cost.....	\$4,102,542	\$1,085,094	\$208,683
Worsted—			
Pounds.....	14,735,188	19,458,214	21,470,242
Cost.....	\$32,528,849	\$1,324,771	\$18,923,044
Merino (cotton-mixed)—			
Pounds.....	26,208	100,469	33,115
Cost.....	\$102,940	\$50,849	\$6,623
Cotton—			
Pounds.....	15,024,251	14,764,361	15,425,293
Cost.....	\$9,892,865	\$4,222,281	\$4,212,147
Silk—			
Pounds.....	53,250	112,345	30,529
Cost.....	\$482,520	\$386,029	\$126,330
Spun silk—			
Pounds.....	81,114	88,871	74,332
Cost.....	\$689,641	\$271,478	\$240,174
Linen—			
Pounds.....	210,134	944,122	1,105,599
Cost.....	\$83,596	\$183,500	\$215,556
Jute, ramie, and other vegetable fiber—			
Pounds.....	2,939,877	4,789,631	6,314,491
Cost.....	\$654,173	\$502,408	\$403,588
All other yarns—			
Pounds.....	59,705	(1)	(1)
Cost.....	\$130,809	(1)	(1)
<b>Chemicals and dyestuffs, cost.....</b>	\$11,171,643	\$3,931,653	\$3,469,569
<b>Fuel and rent of power, cost.....</b>	\$6,490,026	\$3,218,639	\$2,883,808
<b>All other materials, cost.....</b>	\$20,652,438	\$8,944,094	\$8,063,306

TABLE 21.—WOOL MANUFACTURES: 1919, 1914, AND 1909—Con.

	1919	1914	1909
<b>PRODUCTS.</b>			
Total value.....	\$366,506,496	\$141,329,858	\$153,477,015
<b>Woven goods:</b>			
Pounds.....	114,890,871	(1)	(1)
Square yards.....	217,362,219	220,748,263	223,761,500
Value.....	\$258,491,332	\$97,810,697	\$107,064,593
<b>All-wool—</b>			
Pounds.....	69,022,613	(1)	(1)
Square yards.....	118,667,333	114,830,218	109,221,437
Value.....	\$189,234,850	\$72,163,336	\$78,873,571
<b>Woolen—</b>			
Suitings—			
Pounds.....	23,812,158	(1)	(1)
Square yards.....	29,797,951	14,752,516	
Value.....	\$16,661,766	\$9,854,035	
Dress goods—			
Pounds.....	1,838,951	(1)	(1)
Square yards.....	3,801,777	7,027,640	20,366,745
Value.....	\$5,396,603	\$3,509,627	\$19,026,840
Overcoatings, cloakings, etc.—			
Pounds.....	10,070,935	(1)	(1)
Square yards.....	11,280,553	5,705,283	
Value.....	\$19,647,191	\$5,077,361	
<b>Worsted—</b>			
Suitings—			
Pounds.....	22,623,950	(1)	(1)
Square yards.....	40,608,565	58,385,795	
Value.....	\$79,391,770	\$41,233,778	
Dress goods—			
Pounds.....	8,786,175	(1)	(1)
Square yards.....	24,810,985		78,424,778
Value.....	\$34,226,483		\$59,079,587
Overcoatings, cloakings, etc.—			
Pounds.....	174,900	28,000,855	
Square yards.....	159,000	\$11,938,617	
Value.....	\$611,154		
<b>All other woolen or worsted—</b>			
Pounds.....	1,715,541	(1)	(1)
Square yards.....	2,208,497	958,129	1,420,914
Value.....	\$3,209,913	\$540,623	\$768,144
<b>Wool-and-cotton-mixed—</b>			
Pounds.....	10,287,549	(1)	(1)
Square yards.....	14,112,534	18,264,936	10,236,836
Value.....	\$11,561,031	\$6,143,131	\$3,332,690
<b>Suitings—</b>			
Pounds.....	5,462,346		
Square yards.....	7,604,963		
Value.....	\$6,458,555		
<b>Dress goods—</b>			
Pounds.....	332,753	(1)	(1)
Square yards.....	377,513	11,962,150	6,405,030
Value.....	\$202,093	\$4,319,854	\$2,538,174
<b>Overcoatings, cloakings, etc.—</b>			
Pounds.....	1,230,533		
Square yards.....	1,165,528		
Value.....	\$1,286,359		
<b>All other—</b>			
Pounds.....	890,289	(1)	(1)
Square yards.....	3,261,907	6,302,786	3,831,806
Value.....	\$3,583,454	\$1,823,277	\$794,516
<b>Cotton-warp—</b>			
Pounds.....	35,590,790	(1)	(1)
Square yards.....	84,582,352	87,653,109	104,303,227
Value.....	\$57,665,451	\$19,504,230	\$24,858,337
<b>Woolen-filling—</b>			
Suitings—			
Pounds.....	5,916,574	(1)	(1)
Square yards.....	12,020,303	14,038,511	
Value.....	\$10,169,764	\$3,007,447	
Dress goods—			
Pounds.....	267,983		(1)
Square yards.....	762,496		22,610,651
Value.....	\$775,972		\$5,375,123
Overcoatings, cloakings, etc.—			
Pounds.....	2,895,144	(1)	(1)
Square yards.....	3,335,240	8,779,741	
Value.....	\$3,111,321	\$2,182,468	
<b>Worsted-filling—</b>			
Suitings—			
Pounds.....	5,954,903	(1)	(1)
Square yards.....	13,462,607	3,052,399	
Value.....	\$12,880,495	\$1,135,320	
Dress goods—			
Pounds.....	5,281,001	(1)	(1)
Square yards.....	20,688,789	23,022,664	58,760,120
Value.....	\$11,871,294	\$4,093,123	\$13,373,680
<b>Woolen-filling and worsted-filling—</b>			
Domest flannels and shirtings—			
Pounds.....	3,964,009	(1)	(1)
Square yards.....	6,720,072	2,882,803	794,799
Value.....	\$3,853,342	\$459,888	\$139,605
Blankets—			
Pounds.....	1,218,298	(1)	(1)
Square yards.....	1,941,976	2,837,604	1,547,934
Value.....	\$1,363,278	\$559,522	\$256,530
Satinets and linseys—			
Pounds.....	5,147,623	(1)	(1)
Square yards.....	3,989,170	6,867,360	4,120,737
Value.....	\$2,904,031	\$1,171,708	\$908,202
<b>All other—</b>			
Pounds.....	4,935,174	(1)	(1)
Square yards.....	21,761,699	20,181,097	16,478,986
Value.....	\$10,735,954	\$6,894,754	\$5,110,197

1 Not reported in 1914 and 1909.



TABLE 21.—WOOL MANUFACTURES: 1919, 1914, AND 1909—Con.

	1919	1914	1909
<b>Carpets and rugs:</b>			
Pounds.....	12,952,008	(1)	(1)
Square yards.....	0,487,824	9,479,715	10,236,887
Value.....	\$13,126,841	\$10,482,775	\$12,160,257
<b>Carpets—</b>			
Pounds.....	2,420,313	(1)	(1)
Square yards.....	818,953	5,660,067	7,496,772
Value.....	\$2,054,924	\$8,999,573	\$10,358,191
<b>Rugs—</b>			
Pounds.....	10,522,695	(1)	(1)
Square yards.....	5,668,371	3,819,648	2,740,115
Value.....	\$10,473,917	\$1,483,202	\$1,802,066
<b>Sowed strips—</b>			
Pounds.....	3,023,524		
Square yards.....	972,913		
Value.....	\$3,050,596		
<b>Woven whole—</b>		(2)	(2)
Pounds.....	7,499,171		
Square yards.....	4,695,458		
Value.....	\$7,417,321		
<b>Felt goods:</b>			
Cloth, gunwad felts, etc.—			
Pounds.....	4,697,482	(1)	(1)
Square yards.....	5,475,043	3,375,528	2,062,534
Value.....	\$3,046,698	\$842,782	\$480,838
<b>Boot and shoe linings—</b>			
Pounds.....	1,055,312	(1)	(1)
Square yards.....	1,107,314	2,149,909	1,444,078
Value.....	\$1,047,225	\$1,024,250	\$409,915
<b>All other—</b>			
Pounds.....	4,422,184	1,878,963	(3)
Value.....	\$6,020,982	\$1,099,175	\$1,500,740
<b>Yarns:</b>			
<b>Woolen—</b>			
Pounds.....	3,548,730	1,936,411	1,161,773
Value.....	\$5,145,210	\$962,383	\$455,448
<b>Merino—</b>			
Pounds.....	1,664,758	1,958,912	1,283,261
Value.....	\$3,613,801	\$1,511,984	\$1,043,693
<b>Worsted—</b>			
Pounds.....	20,477,164		
Value.....	\$44,051,595	29,639,383	26,591,701
<b>Worsted tops and slubbing:</b>			
Pounds.....	7,245,830	\$20,420,660	\$22,438,067
Value.....	\$9,360,705		
<b>Nolls:</b>			
Pounds.....	10,149,864	10,955,313	11,250,153
Value.....	\$7,202,421	\$3,133,490	\$3,655,975
<b>Waste, for sale:</b>			
Pounds.....	13,504,681	10,997,975	8,387,654
Value.....	\$2,795,156	\$981,282	\$774,155
<b>All other products, value.....</b>	\$5,254,881	\$1,931,438	\$2,044,900
<b>Contract work, value.....</b>	\$7,347,649	\$1,410,930	\$1,448,393

1 Not reported in 1914 and 1909.

2 Not reported separately.

3 Figures not available.

The products reported for this industry were largely woven fabrics to be used in the manufacture of clothing, the value of such fabrics forming 70.5 per cent of the total for this industry in Massachusetts for 1919. The main divisions of woven fabrics show that in the value of products, all-wool goods was of chief importance; cotton-warp goods, second; and wool and cotton-mixed goods, third; forming 73.2 per cent, 22.3 per cent, and 4.5 per cent, respectively, of the total for this group in 1919.

The carpet and rug branch of the wool manufactures industry has had many interruptions, and has undergone many changes since the census of 1914. Of the total value of the products of the carpet and rug industry in the state in 1909 and 1914, carpets formed 85.2 per cent and 85.9 per cent, respectively. In 1919, however, the reverse condition existed, the value of rugs forming 79.8 per cent of the total for the industry. Large quantities of yarn are usually produced for sale, and in 1919 the value of such products represented 14.4 per cent of the total value of products for this industry in the state.

Knit goods (Table 22).—Cotton is the principal raw material used in the manufacture of knit goods in Massachusetts. According to cost, purchased yarns consist chiefly of cotton, worsted, and artificial silk. In addition to the manufacture of a considerable quantity of cotton yarn for consumption within establishments where it is made, a large amount is purchased.

Of the total value of the knit goods industry in the state in 1919, hosiery contributed 39.1 per cent. Underwear, exclusive of tights, was second, forming 36.4 per cent of the total value. In keeping with the general trend of the industry in the United States, the production of separate shirts and drawers has diminished with the increase in the production of union suits.

TABLE 22.—KNIT GOODS: 1919, 1914, AND 1909.

	1919	1914	1909
<b>MATERIALS.</b>			
Total cost.....	\$31,172,563	\$9,266,671	\$9,971,606
<b>Cotton:</b>			
Pounds.....	16,421,615	13,914,900	16,459,053
Cost.....	\$5,129,928	\$1,926,119	\$1,912,046
<b>Domestic—</b>			
Pounds.....	16,290,530	13,598,064	16,034,818
Cost.....	\$5,063,545	\$1,873,252	\$1,843,846
<b>Foreign—</b>			
Pounds.....	131,085	316,236	424,235
Cost.....	\$66,383	\$52,807	\$68,200
<b>Cotton waste purchased:</b>			
Pounds.....	1,054,916	452,652	(1)
Cost.....	\$293,638	\$48,160	(1)
<b>Wool (in condition purchased):</b>			
Pounds.....	534,068	313,877	440,374
Cost.....	\$599,618	\$154,499	\$195,577
<b>Recovered wool fiber:</b>			
Pounds.....	791,529	226,555	260,443
Cost.....	\$318,610	\$25,568	\$34,382
<b>Wool waste and nolls:</b>			
Pounds.....	648,790	442,225	271,388
Cost.....	\$684,035	\$141,394	\$107,839
<b>Yarns, purchased:</b>			
Pounds.....	13,181,417	9,693,139	8,295,153
Cost.....	\$18,973,385	\$4,894,594	\$3,359,779
<b>Cotton—</b>			
Pounds.....	9,052,074	7,325,269	6,963,775
Cost.....	\$8,031,178	\$2,442,240	\$1,771,206
<b>Woolen—</b>			
Pounds.....	374,808	123,022	113,368
Cost.....	\$604,488	\$75,254	\$87,798
<b>Worsted—</b>			
Pounds.....	1,211,375	1,357,338	619,140
Cost.....	\$3,036,087	\$1,084,700	\$638,014
<b>Merino—</b>			
Pounds.....	764,842	558,104	466,747
Cost.....	\$1,626,978	\$294,263	\$475,769
<b>Silk and spun silk—</b>			
Pounds.....	189,007	180,060	124,715
Cost.....	\$1,593,053	\$718,503	\$369,777
<b>Artificial silk—</b>			
Pounds.....	683,411	129,254	(1)
Cost.....	\$3,182,601	\$251,447	(1)
<b>All other—</b>			
Pounds.....	5,000	25,092	7,408
Cost.....	\$10,000	\$28,487	\$17,215
<b>Sewing thread, cotton:</b>			
Pounds.....	158,948	(1)	(1)
Cost.....	\$267,322	(1)	(1)
<b>Sewing thread, silk:</b>			
Pounds.....	3,392	(1)	(1)
Cost.....	\$32,706	(1)	(1)
<b>Buttons, pearl:</b>			
Gross.....	479,523	(1)	(1)
Cost.....	\$212,351	(1)	(1)
<b>Buttons, other than pearl:</b>			
Gross.....	28,673	(1)	(1)
Cost.....	\$40,823	(1)	(1)
<b>Chemicals and dyestuffs, cost.....</b>	\$613,925	\$221,397	\$242,632
<b>Fuel and rent of power, cost.....</b>	\$441,785	\$234,001	\$174,846
<b>All other materials, cost.....</b>	\$3,673,777	\$1,620,549	\$944,505
<b>Yarns made in mill for use therein:</b>			
Cotton, pounds.....	7,689,061	8,677,894	13,467,586
Woolen, pounds.....	792,028	424,474	254,000
Worsted, pounds.....	10,000		128,000
Merino, pounds.....	1,409,459	748,670	600,616

1 Not reported separately.



TABLE 22.—KNIT GOODS: 1919, 1914, AND 1909—Continued.

PRODUCTS.	1919	1914	1909
Total value.....	\$52,424,235	\$17,419,077	\$14,736,025
Hosiery:			
Dozen pairs.....	5,890,020	4,528,469	4,506,960
Value.....	\$20,474,521	\$5,695,684	\$4,780,351
Cotton—			
Dozen pairs.....	1,456,128	3,791,779	4,280,266
Value.....	\$3,320,380	\$3,540,884	\$3,734,618
Silk and silk-mixed—			
Dozen pairs.....	2,649,134	513,401	63,762
Value.....	\$10,854,323	\$1,845,246	\$765,144
All other—			
Dozen pairs.....	1,784,758	223,280	162,932
Value.....	\$6,299,818	\$309,554	\$280,589
Shirts and drawers:			
Dozens.....	1,343,023	1,354,538	1,667,482
Value.....	\$10,115,392	\$5,034,294	\$6,080,517
Cotton—			
Dozens.....	926,583	1,142,782	1,415,227
Value.....	\$5,610,905	\$3,408,500	\$4,257,591
Merino—			
Dozens.....	287,355	145,781	182,903
Value.....	\$3,340,349	\$957,713	\$1,200,785
Silk and silk-mixed—			
Dozens.....	121,585	32,314	33,998
Value.....	\$1,051,038	\$303,731	\$208,184
All other—			
Dozens.....	7,500	33,661	35,354
Value.....	\$112,500	\$364,350	\$407,957
Union suits:			
Dozens.....	525,187	408,445	183,175
Value.....	\$8,980,931	\$3,279,212	\$2,011,791
Cotton—			
Dozens.....	262,626	238,256	100,024
Value.....	\$3,300,839	\$1,695,784	\$861,787
Merino—			
Dozens.....	73,018	82,990	74,643
Value.....	\$1,487,359	\$851,778	\$968,915
Silk and silk-mixed—			
Dozens.....	189,543	21,972	8,108
Value.....	\$4,192,733	\$383,956	\$173,089
All other—			
Dozens.....		65,227	400
Value.....		\$347,694	\$8,000
Tights:			
Dozens.....	25,934	( <sup>1</sup> )	( <sup>1</sup> )
Value.....	\$200,188	( <sup>1</sup> )	( <sup>1</sup> )
Bathing suits:			
Dozens.....	42,079	6,328	( <sup>1</sup> )
Value.....	\$907,620	\$69,432	( <sup>1</sup> )
Gloves and mittens:			
Dozen pairs.....	23,915	24,932	27,820
Value.....	\$62,614	\$46,704	\$51,156
Headwear:			
Dozens.....	3,734	( <sup>1</sup> )	( <sup>1</sup> )
Value.....	\$17,690	( <sup>1</sup> )	( <sup>1</sup> )
Cardigan jackets, sweaters, etc.:			
Dozens.....	108,719	94,857	40,544
Value.....	\$2,992,021	\$1,394,203	\$718,562
Cotton yarn, made for sale:			
Pounds.....	2,333,020	3,328,625	1,451,711
Value.....	\$1,321,141	\$744,294	\$272,653
All other products, value.....	\$7,292,117	\$1,155,134	\$820,995

<sup>1</sup> Not reported separately.

A general increase in the volume of production is shown, and the most noticeable change from 1914 to 1919 is the increase in the quantity of "silk and silk mixed," and "other hosiery"—largely wool and merino—with the decrease in cotton hosiery manufactured.

Silk manufactures (Table 23).—There were 21 establishments engaged in the silk-manufacturing industry in Massachusetts in 1919.

Table 23 shows the quantity and cost of the principal materials used and the quantity and value of the different products manufactured during 1919, 1914, and 1909.

Massachusetts ranked fifth, in value of products, in the manufacture of silk textiles in the United States during the year 1919. Raw silk, silk waste, and mercerized cotton yarn were among the most important

materials used in 1919 and formed 47.9 per cent, 29 per cent, and 5.7 per cent, respectively, of the total cost of materials. Small quantities of silk yarns were purchased, but the weaving mills did the larger part of their own throwing.

TABLE 23.—SILK MANUFACTURES: 1919, 1914, AND 1909.

MATERIALS.	1919	1914	1909
Total cost.....	\$19,243,483	\$5,961,137	\$5,429,851
Silk:			
Raw—			
Pounds.....	1,109,943	1,121,697	920,308
Cost.....	\$9,219,540	\$4,141,624	\$3,753,207
Spun—			
Pounds.....	33,035	37,458	( <sup>1</sup> )
Cost.....	\$192,498	\$104,875	( <sup>1</sup> )
Artificial—			
Pounds.....	64,183	27,600	( <sup>1</sup> )
Cost.....	\$335,551	\$59,839	( <sup>1</sup> )
Organzine, tram, and hard or crepe twist—			
Pounds.....	42,143	15,998	( <sup>1</sup> )
Cost.....	\$404,464	\$67,697	( <sup>1</sup> )
Frisons, pierced cocoons, noils, and other waste—			
Pounds.....	3,727,260	( <sup>2</sup> )	( <sup>2</sup> )
Cost.....	\$5,582,673	( <sup>2</sup> )	( <sup>2</sup> )
Yarns, other than silk:			
Cotton, not mercerized—			
Pounds.....	752,062	1,046,919	1,225,386
Cost.....	\$749,405	\$530,121	\$535,889
Cotton, mercerized—			
Pounds.....	708,018	221,929	158,399
Cost.....	\$1,091,554	\$181,501	\$113,253
All other—			
Pounds.....	170,630	12,803	( <sup>2</sup> )
Cost.....	\$305,784	\$10,333	( <sup>2</sup> )
Fuel and rent of power, cost.....	\$242,762	\$108,593	\$82,892
All other materials, cost.....	\$1,119,252	\$756,554	\$944,640
PRODUCTS.			
Total value.....	\$34,193,951	\$10,676,681	\$8,942,246
Broad silks:			
Yards.....	9,545,934	8,618,424	9,668,788
Value.....	\$17,672,808	\$6,954,245	\$5,898,231
All silk—			
Yards.....	5,699,475	3,135,430	( <sup>1</sup> )
Value.....	\$10,763,763	\$2,095,738	( <sup>1</sup> )
Yarn-dyed—			
Yards.....	4,872,983	( <sup>2</sup> )	( <sup>2</sup> )
Value.....	\$9,399,008	( <sup>2</sup> )	( <sup>2</sup> )
All other—			
Yards.....	826,492	( <sup>2</sup> )	( <sup>2</sup> )
Value.....	\$1,454,757	( <sup>2</sup> )	( <sup>2</sup> )
Mixed goods—			
Yards.....	3,845,589	5,482,994	( <sup>1</sup> )
Value.....	\$6,909,045	\$4,648,507	( <sup>1</sup> )
Fringes, braids, and trimmings, value.....	\$1,138,964	\$196,375	( <sup>1</sup> )
Organzine, tram, and hard or crepe twist:			
Pounds.....	83,630	79,871	14,592
Value.....	\$830,277	\$375,021	\$54,706
Spun silk:			
Pounds.....	1,402,669	( <sup>2</sup> )	( <sup>2</sup> )
Value.....	\$3,630,122	( <sup>2</sup> )	( <sup>2</sup> )
Machine twist, sewing and embroidery silks, fringe and floss silks:			
Pounds.....	232,443	281,429	356,260
Value.....	\$3,328,594	\$2,015,964	\$2,107,319
All other products, value.....	\$2,431,223	\$1,019,793	\$784,934
Amount received for contract work.....	\$161,963	\$115,283	\$107,038

<sup>1</sup> Figures not available.<sup>2</sup> Figures can not be shown separately without disclosing individual operations.

Broad-silk fabrics was the principal product of the industry reported for the last three census periods and formed over one-half of the total value of products at each census. It will be noted that these fabrics were chiefly all silk in 1919 and that silk-mixed goods predominated in 1914. In 1919 a large share of broad silks composed of all silk was yarn dyed. Next to broad silks in 1919, spun-silk yarn was the most important product of the industry, and the combined values of these two types of products formed 76.9 per cent



of the total. No pronounced variation in the industry has taken place during the last 10 years, except that from 1914 to 1919 broad silks made of all silk increased 81.8 per cent in quantity, while broad-silk mixtures decreased 29.9 per cent and, in common with all industries, inflated values prevailed in 1919.

**Machinery used in textile mills (Table 24).**—The different kinds of machines, which have been accepted by textile manufacturers as best indicating the trend of their industry, are shown in detail in Table 24, for several branches of textiles in Massachusetts for 1919, 1914, and 1909.

A considerable portion of the textile machinery of the United States is located in mills in Massachusetts. At the census of 1919 this state contributed to the total about one-third each of the producing cotton spindles, the producing spindles in wool manufactures, looms in cotton mills, looms in wool manufactures, sets of woolen cards, and wool-combing machines. In these types of machines and spindles Massachusetts is surpassed in number by no other state in the Union.

The number of spindles and looms shown within each industry are without consideration for the kind of fiber upon which they were operating. The total number of producing spindles used in the state in 1919 shows an increase of 6.1 per cent over those used in 1914; the knitting machines, an increase of 2.1 per cent; the sets of woolen cards an increase of 16.1 per cent; the number of looms a decrease of 1.1 per cent; and the number of wool-combing machines a decrease of 6.1 per cent.

TABLE 24.—MACHINERY USED IN TEXTILE MILLS: 1919, 1914, AND 1909.

KIND.	Cen- sus year.	Total.	INDUSTRY.				
			Car- pets and rugs, other than rag.	Cotton goods, including cotton small wares.	Knit goods.	Silk goods, includ- ing throw- sters.	Woolen, worsted, and felt goods.
Producing spindles	1919	13,043,175	52,436	11,217,487	176,266	172,484	1,424,502
	1914	12,288,683	53,07	10,565,801	158,952	122,156	1,383,700
	1909	10,815,478	53,244	9,377,984	163,248	99,699	1,121,303
Looms.....	1919	1 258,439	1,089	226,224	.....	1 3,403	27,723
	1914	261,219	1,474	228,857	.....	3,279	27,609
	1909	263,629	1,778	234,249	.....	2,717	25,185
Knitting machines	1919	2 10,424	.....	.....	2 10,424	.....	.....
	1914	10,209	.....	.....	10,209	.....	.....
	1909	7,741	.....	.....	7,741	.....	.....
Woolen cards (sets). <sup>3</sup>	1919	1,703	33	.....	49	.....	1,621
	1914	1,467	53	.....	28	.....	1,386
	1909	1,519	80	.....	36	.....	1,403
Wool-combing machines.	1919	862	13	.....	.....	.....	849
	1914	918	33	.....	.....	.....	885
	1909	703	46	.....	.....	.....	657

<sup>1</sup> Includes 185 idle looms.

<sup>2</sup> Includes 869 idle knitting machines.

<sup>3</sup> Includes shoddy cards.

The cotton industry in Massachusetts reported 86 per cent of the total number of active producing spindles for the state in 1919, and the woolen, worsted, and felt goods industries, 10.9 per cent. All of the industries show increases in active spindles for the

five-year period with the exception of the carpet and rug industry, which shows a decrease of 9.7 per cent.

**Leather, tanned, curried, and finished (Tables 25 and 26).**—Table 25 shows the quantity and cost of the principal materials used and the quantity and value of the chief products of the leather industry for 1919, 1914, and 1909.

TABLE 25.—LEATHER, TANNED, CURRIED, AND FINISHED: 1919, 1914, AND 1909.

	1919	1914	1909
<b>MATERIALS.</b>			
Total cost.....	\$82,017,255	\$33,194,061	\$28,765,508
Cattle hides:			
Number.....	1,634,538	764,636	1,251,036
Cost.....	\$18,953,933	\$5,205,907	\$6,603,898
Skins:			
Calf and kip—			
Number.....	4,112,790	5,630,003	5,439,236
Cost.....	\$22,021,470	\$11,039,546	\$7,910,409
Goat and kid—			
Number.....	5,739,256	5,137,413	6,299,952
Cost.....	\$10,260,350	\$3,343,748	\$3,935,024
Sheep and lamb—			
Number.....	9,006,655	10,912,063	8,730,684
Cost.....	\$9,237,327	\$7,297,749	\$3,277,748
All other raw stock, cost.....	\$1,574,563	\$428,889	\$129,705
Purchased rough leather used, cost.....	\$4,218,862	\$852,156	\$2,018,080
Fuel and rent of power, cost.....	\$1,934,048	\$615,059	\$607,523
All other materials, cost.....	\$13,811,696	\$4,410,107	\$4,283,121
<b>PRODUCTS.</b>			
Total value.....	\$120,594,962	\$45,265,434	\$40,002,079
Leather, value.....	\$97,654,939	\$37,614,588	\$33,733,326
Cattle side upper (other than patent)—			
Sides.....	1,637,765	989,809	1,509,748
Value.....	\$11,936,255	\$2,810,363	\$4,174,700
Calf and kip skins—			
Number.....	3,933,974	5,549,931	5,457,771
Value.....	\$28,763,801	\$13,276,767	\$10,967,162
Goat and kid skins—			
Number.....	5,048,058	4,483,286	5,837,401
Value.....	\$16,127,854	\$4,267,801	\$4,852,505
Sheep and lamb skins—			
Number.....	7,246,487	16,032,040	8,162,771
Value.....	\$12,389,803	\$9,617,000	\$4,254,219
All other leather, value.....	\$28,447,166	\$7,652,657	\$9,484,740
All other products, value.....	\$10,607,012	\$2,068,790	\$1,499,596
Work on materials for others, value.....	\$21,333,011	\$5,582,056	\$4,769,157

The number of cattle hides treated in 1919, as compared with 1914, shows an increase of 869,902, or 113.8 per cent. The total number of skins treated, however, shows a decrease during this period of 8,820,778, or 31.9 per cent. The falling off was mainly in sheep and lamb skins, which decreased 7,905,408, or 46.7 per cent; there was also a decrease of 1,517,213, or 26.9 per cent, in the number of calf and kip skins. The number of goat and kid skins treated increased by 601,843, or 11.7 per cent. The total cost of hides and skins used in 1919 shows an increase of \$33,591,136, or 124.9 per cent over the cost for 1914, notwithstanding a decrease in the total number. Considering all kinds of hides and skins on a unit cost basis, the increase was from 95 cents in 1914 to \$2.95 in 1919.

The value of products for the industry in the state in 1919 formed 14 per cent of its total for the United States, a larger proportion than for any prior census. From 1914 to 1919 the total value of products increased \$84,329,528, or 186.3 per cent. While each of the four classes of leather shows decided increases



in value during this period, the largest actual increase was in calf and kip skins, \$15,477,034, or 116.6 per cent; but the largest per cent of increase was for goat and kid skins, \$11,870,053, or 278.8 per cent. Most of the skins reported were used in the manufacture of upper leather, although fancy, bookbinders, glove, roller leather, etc., were manufactured to some extent. "All other leather" in Table 25 includes belting, patent, sole, case, bag and strap, finished splits, cabretta skins, etc.

The amount received for work on materials for others, which was 17 per cent greater in 1914 than 1909, was 282.2 per cent greater in 1919 than in 1914. This large increase was due not only to the higher charges for custom work, but also to a larger volume of business done. Of 239 establishments doing custom tanning in the United States, 82 were located in Massachusetts.

Table 26 gives for 1919 the quantity and value for some of the principal finished products of the leather industry. In the preceding Table these products are shown by kinds of skins.

TABLE 26.—QUANTITY AND VALUE OF FINISHED LEATHER: 1919.

KIND.	Quantity.	Value.
Upper leather.....	17,999,231	\$55,931,646
Calf and kip.....skins..	3,714,605	27,232,575
Goat and kid.....skins..	5,705,605	15,392,538
Sheep and lamb.....skins..	6,430,808	10,588,488
Cabretta.....skins..	2,139,213	2,718,045
Patent leather.....		11,320,708
Cattle.....sides..	1,315,293	11,305,132
All other.....		15,576
Fancy leather.....		3,782,012
Sheep and lamb.....skins..	773,991	1,711,590
All other.....		2,070,422
Finished splits.....		2,903,535
Case, bag, strap, roller, glove, bookbinders', and lace leather.....		3,537,819

Boots and shoes (Tables 27 and 28).—Table 27 shows, by classes, the number of pairs of footwear manufactured in the state for 1919, 1914, and 1909, and Table 28 shows for 1919 and 1914 this footwear by method of manufacture.

Massachusetts continues to rank first among the states in the manufacture of footwear. The state's proportion of the total quantity produced for the industry in the United States, however, was 35.3 per cent in 1919, as compared with 39.4 per cent in 1914, and 41.4 per cent in 1909. This proportionate decrease was due to large gains made by some of the other states, since there was an actual increase in Massachusetts of 1,768,529 pairs, or 1.5 per cent, for the period 1914-1919. In contrast to this slight gain in quantity, the aggregate value increased by \$241,936,378, or 120.6 per cent, for the same period. The number of women's shoes increased by 12,955,602 pairs, or 40.1 per cent. All other classes, including slippers, show decreases. "All other footwear" includes moc-

casins, sandals, athletic, sporting, and canvas shoes, and footwear not strictly boots and shoes. Work done for others consists of the making of buttonholes in uppers, stitching, crimping, and general contract work.

TABLE 27.—BOOTS AND SHOES, BY CLASSES: 1919, 1914, AND 1909.

CLASS.	1919	1914	1909
Aggregate value.....	\$442,466,236	\$200,529,858	\$187,045,767
Boots and shoes:			
Total number of pairs.....	102,389,856	98,009,176	102,826,648
Total value.....	\$415,360,600	\$180,763,458	.....
Men's—			
Number of pairs.....	39,610,259	44,750,716	45,155,939
Value.....	\$199,317,054	\$101,334,680	.....
Boys' and youths'—			
Number of pairs.....	5,517,399	8,318,252	9,019,124
Value.....	\$14,504,673	\$11,211,988	.....
Women's—			
Number of pairs.....	45,251,383	32,295,781	30,778,432
Value.....	\$177,425,587	\$54,955,189	.....
Misses' and children's—			
Number of pairs.....	12,010,815	12,644,427	11,873,153
Value.....	\$24,113,288	\$13,261,595	.....
Slippers:			
Total number of pairs.....	5,620,573	11,799,532	10,155,324
Total value.....	\$11,584,870	\$13,795,841	.....
Men's, boys', and youths'—			
Number of pairs.....	2,364,668	3,061,796	3,369,808
Value.....	\$3,853,277	\$2,935,434	.....
Women's, misses', and children's—			
Number of pairs.....	3,255,905	8,737,736	6,785,516
Value.....	\$7,731,593	\$10,860,407	.....
Infants' shoes and slippers:			
Number of pairs.....	2,559,373	3,109,511	3,610,576
Value.....	\$2,390,405	\$1,685,771	.....
All other footwear:			
Number of pairs.....	6,423,110	2,306,164	1,411,378
Value.....	\$9,034,027	\$1,063,201	.....
All other products, value.....	\$3,217,950	\$2,502,197	.....
Amount received for work done for others.....	\$878,384	\$719,390	.....

<sup>1</sup> Only total value reported in 1909.

TABLE 28.—BOOTS AND SHOES—NUMBER OF PAIRS, BY METHOD OF MANUFACTURE: 1919 AND 1914.

CLASS.	Census year.	Total.	Welted.	McKay.	Turned.	Wood or metal fastened.
Boots and shoes....	1919	102,389,856	51,641,435	20,430,328	116,933,760	4,384,333
	1914	98,009,176	47,023,877	32,597,338	10,547,357	7,840,604
Men's.....	1919	39,610,259	34,511,423	2,154,131	26,832	2,917,873
	1914	44,750,716	33,052,320	5,588,227	461,750	5,648,419
Boys' and youths'	1919	5,517,399	1,312,192	3,044,342	26,525	1,134,340
	1914	8,318,252	1,672,616	5,377,545	.....	1,268,091
Women's.....	1919	45,251,383	13,963,994	18,531,329	12,535,279	220,781
	1914	32,295,781	9,667,796	13,322,750	8,779,641	525,594
Misses' and children's.	1919	12,010,815	1,853,820	5,700,526	14,345,124	111,339
	1914	12,644,427	2,631,145	8,308,810	1,305,066	398,500
Slippers.....	1919	5,620,573	380,724	2,706,174	2,533,675	.....
	1914	11,799,532	509,269	4,189,516	6,824,978	275,769
Men's, boys', and youths'.	1919	2,364,668	.....	1,122,993	1,241,675	.....
	1914	3,061,796	.....	1,313,678	1,472,349	275,769
Women's, misses', and children's.	1919	3,255,905	.....	1,891,005	1,364,900	.....
	1914	8,737,736	509,269	2,875,838	5,852,629	.....
Infants' shoes and slippers.	1919	2,559,373	150,126	253,811	1,155,436	.....
	1914	3,109,511	477,811	661,750	1,969,950	.....
All other footwear..	1919	6,423,110	80,483	13,014,927	3,327,700	.....
	1914	2,306,164	.....	563,864	1,742,300	.....

<sup>1</sup> Includes "stitchdown" to avoid disclosure of individual operations.

<sup>2</sup> Includes "welted" and "stitchdown."

<sup>3</sup> Includes "welted."



Of the boots and shoes manufactured in Massachusetts, 50.4 per cent were of the welted type, 28.7 per cent McKay, and 20.8 per cent other types. The corresponding percentages in 1914 were 48, 33.3, and 18.8. The gain shown in number of pairs of welted shoes produced exceeded the total increase of all other types combined. The manufacture of the McKay, always a prominent type in the state, has steadily declined since 1909. In 1909, although not shown in this table, the McKay make formed 37.9 per cent of the total; while in 1919 the percentage was but 28.7 per cent. In 1919, 66.8 per cent of the welted type were men's and 27 per cent were women's. On the other hand, 63 per cent of the McKay were women's and only 7.3 per cent men's. The greater portion of men's boots and shoes, 87.1 per cent, were made by the welted method; while women's shoes were 41 per cent McKay, 30.9 per cent welted, and 27.7 per cent turned. Although boys' and youths' and misses' and children's shoes were principally of the McKay type, a considerable proportion of the misses' and children's were of the turned type.

**Slaughtering and meat packing** (Table 29).—This table presents for the census years 1919, 1914, and 1909, data for both materials and products in detail.

The cost of "All other materials" includes that for dressed meat purchased for curing, cottonseed oil, refrigeration, curing materials, seasoning, fuel, rent of power, containers, mill supplies, and freight; the value of "All other products" includes that for beef, pickled and other cured, canned pork, meat puddings, lard compounds, oleo and other oils, oleo stearin, hog and cattle hair, wool, wooden boxes, cooperage, and skins.

The growth of the industry, when measured by cost of materials and value of products, shows large increases from 1914 to 1919. That for total cost of materials was \$55,807,001, or 122.8 per cent; for cost of animals slaughtered, \$42,875,025, or 123.5 per cent; and for "All other materials," \$12,931,976, or 120.6 per cent. The growth as indicated by the increase in the total number of animals slaughtered, however, was very slight, this increase being only 113,896, or 6.2 per cent, during the five-year period. In fact, the number of beeves and sheep and lambs combined decreased 173,985, or 38.6 per cent, the increase being in calves and hogs, which was 287,881, or 20.9 per cent.

In 1919, compared with 1914, the total value of products for the industry in the state shows an increase of \$58,513,518, or 113.1 per cent. The total value for all fresh meats increased \$8,777,745, or 46.9 per cent, but the combined quantity of the several kinds of fresh meats decreased 27,312,379 pounds, or 18.5 per cent. During this five-year period the largest single product, pork, pickled and other cured, in-

creased 17,283,120 pounds in quantity, or 14.4 per cent, and \$24,542,929, or 148.4 per cent, in value.

TABLE 29.—SLAUGHTERING AND MEAT PACKING: 1919, 1914, AND 1909.

	1919	1914	1909
<b>MATERIALS.</b>			
Total cost.....	\$101,235,340	\$45,428,339	\$37,484,136
Animals slaughtered, cost.....	\$77,581,477	\$34,706,452	\$31,009,461
Beeves—			
Number.....	59,319	79,615	62,900
Cost.....	\$6,501,738	\$4,630,253	\$3,376,319
Calves—			
Number.....	244,394	115,724	129,162
Cost.....	\$3,060,106	\$1,135,673	\$854,275
Sheep and lambs—			
Number.....	217,146	370,835	342,491
Cost.....	\$2,509,439	\$2,085,790	\$1,780,127
Hogs—			
Number.....	1,422,449	1,263,238	1,501,456
Cost.....	\$85,510,104	\$20,854,736	\$25,048,740
All other materials, cost.....	\$23,653,863	\$10,721,887	\$6,474,675
<b>PRODUCTS.</b>			
Total value.....	\$110,238,038	\$51,724,520	\$42,531,499
Fresh meat, value.....	\$27,480,598	\$18,702,853	\$13,242,103
Beef—			
Pounds.....	30,250,063	39,464,297	34,589,397
Value.....	\$5,929,396	\$4,282,617	\$2,865,011
Veal—			
Pounds.....	13,677,154	7,966,036	8,317,482
Value.....	\$1,990,750	\$1,042,344	\$801,055
Mutton and lamb—			
Pounds.....	8,091,291	14,715,201	13,346,470
Value.....	\$1,088,818	\$1,883,045	\$1,538,054
Pork—			
Pounds.....	68,194,030	80,977,605	66,468,331
Value.....	\$17,091,609	\$11,185,002	\$7,956,169
Edible offal and all other fresh meat—			
Pounds.....	5,435,828	4,837,606	1,290,842
Value.....	\$480,016	\$309,785	\$81,814
Pork, pickled and other cured:			
Pounds.....	137,117,401	110,834,341	122,689,181
Value.....	\$41,084,001	\$10,541,132	\$16,044,381
Sausage:			
Pounds.....	24,481,233	27,854,557	23,074,968
Value.....	\$6,212,114	\$4,289,963	\$2,357,348
Lard:			
Pounds.....	72,191,184	66,840,628	60,840,711
Value.....	\$23,374,020	\$7,226,817	\$7,159,116
Tallow and oleo stock:			
Pounds.....	2,019,696	1,276,769	2,775,149
Value.....	\$332,270	\$80,100	\$172,280
Grease and soap stock:			
Pounds.....	5,350,698	582,487	(2)
Value.....	\$693,263	\$31,372	(2)
Sausage casings:			
Pounds.....	4,114,325	550,808	(2)
Value.....	\$472,026	\$173,463	(2)
Fertilizer materials:			
Tons.....	10,244	2,380	8,441
Value.....	\$577,806	\$78,423	\$220,019
Hides and pelts:			
Cattle—			
Number.....	59,319	79,615	101,837
Pounds.....	3,452,135	4,487,017	4,672,435
Value.....	\$1,086,101	\$719,160	\$680,312
Calves—			
Number.....	243,924	107,324	
Pounds.....	1,718,156	970,055	
Value.....	\$1,301,074	\$210,394	
Sheep—			
Number.....	217,146	370,835	341,956
Value.....	\$650,633	\$135,327	\$100,214
All other products, value.....	\$6,914,072	\$3,546,518	\$3,460,726

<sup>1</sup> No oleo stock reported in 1914.

<sup>2</sup> Not reported separately.

**Electrical machinery, apparatus, and supplies** (Table 30).—This table presents details for the products of the industry in the state for 1919. Comparative statistics of this character are not available for prior censuses, but the total value of products for the industry in Massachusetts in 1919, as compared with that for 1914, shows an increase of \$48,069,444, or 109.6 per cent.



TABLE 30.—ELECTRICAL MACHINERY, APPARATUS, AND SUPPLIES: 1919.

	Value.
Total .....	1919. <sup>1</sup> \$91,938,738 1914. 43,869,294
Motors.....	16,651,886
Insulated wire.....	5,143,957
Incandescent lamps.....	4,699,504
Generating apparatus and parts.....	3,892,315
Apparatus and devices, industrial and household.....	3,761,723
Telegraph apparatus.....	2,823,539
Sockets, receptacles, bases, and attachment plugs.....	949,215
Electric clocks and time mechanisms.....	447,319
Telephone apparatus.....	397,999
Switchboards, panel boards, and cut-out cabinets for light and power.....	375,699
Bells, buzzers, and signal gongs.....	351,108
Batteries.....	350,123
Searchlights, projectors, and focusing lamps.....	190,721
Railway switches, signals, and attachments.....	132,373
All other electrical machinery, apparatus, and supplies <sup>2</sup> .....	48,772,989
All other products.....	2,614,264
Amount received for custom work and repairing.....	384,004

<sup>1</sup> In addition, electrical machinery, apparatus, and supplies to the value of \$108,778 were reported in 1919 by establishments engaged primarily in other industries.

<sup>2</sup> Includes articles that can not be shown separately without disclosing individual operations, such as transformers, magneto-ignition apparatus, electric measuring instruments, carbons, arc lamps, rectifying apparatus, insulators, wiring supplies, annunciators, X-ray tubes, etc.

Paper and wood pulp (Table 31).—This industry in Massachusetts consists almost entirely in the manufacture of paper, only one establishment producing wood pulp for sale and three manufacturing it for their own use. This table gives the quantity and cost of materials used, the quantity and value of the principal products, and detailed information regarding equipment, for 1919, 1914, and 1909.

TABLE 31.—PAPER AND WOOD PULP: 1919, 1914, AND 1909.

	1919	1914	1909
<b>MATERIALS.</b>			
Total cost.....	\$53,703,884	\$26,610,748	\$22,349,613
Pulp wood:			
Cords.....	51,981	45,242	( <sup>1</sup> )
Cost.....	\$1,004,840	\$332,908	\$357,888
Wood pulp, purchased, total:			
Tons.....	202,520	181,267	143,005
Cost.....	\$19,465,999	\$8,702,013	\$6,762,838
Ground—			
Tons.....	10,845	11,343	12,191
Cost.....	\$445,184	\$328,930	\$277,421
Soda fiber—			
Tons.....	58,275	44,102	38,434
Cost.....	\$4,608,031	\$1,070,288	\$1,731,456
Sulphite fiber—			
Tons.....	107,247	113,036	91,103
Cost.....	\$11,098,777	\$5,823,339	\$4,654,074
Sulphate fiber— <sup>2</sup>			
Tons.....	25,049	12,786	2,177
Cost.....	\$2,399,356	\$570,456	\$99,887
Screenings, mechanical and chemical—			
Tons.....	210	( <sup>1</sup> )	( <sup>1</sup> )
Cost.....	\$14,651	( <sup>1</sup> )	( <sup>1</sup> )
Rags, including cotton and flax waste and sweepings:			
Tons.....	69,465	79,307	93,558
Cost.....	\$9,490,326	\$5,181,974	\$4,859,936
Paper stock, including high-grade shavings and old and waste paper:			
Tons.....	157,995	137,716	106,216
Cost.....	\$4,846,672	\$2,375,667	\$1,861,709
Manila stock, including jute bagging, rope waste, threads, etc.:			
Tons.....	22,639	15,424	17,515
Cost.....	\$1,502,917	\$672,480	\$680,065
China clay, domestic and foreign:			
Tons.....	35,181	( <sup>3</sup> )	( <sup>3</sup> )
Cost.....	\$714,565	( <sup>3</sup> )	( <sup>3</sup> )
Bleaching powder:			
Tons.....	7,669	( <sup>3</sup> )	( <sup>3</sup> )
Cost.....	\$326,630	( <sup>3</sup> )	( <sup>3</sup> )
Fuel and rent of power, cost.....	\$4,916,773	\$2,721,645	\$2,331,897
All other materials, cost.....	\$11,405,072	\$6,624,061	\$5,615,280

TABLE 31.—PAPER AND WOOD PULP: 1919, 1914, AND 1909—Continued.

	1919	1914	1909
<b>PRODUCTS.</b>			
Total value.....	\$87,159,890	\$42,352,545	\$40,096,713
Book, plate, and coated paper:			
Tons.....	130,611	143,897	121,371
Value.....	\$21,311,815	\$12,169,771	\$10,011,719
Cover paper:			
Tons.....	6,849	6,475	3,898
Value.....	\$2,001,029	\$1,019,445	\$489,275
Fine paper: <sup>4</sup>			
Tons.....	91,026	86,876	89,595
Value.....	\$34,770,247	\$17,879,504	\$17,438,568
Wrapping paper:			
Tons.....	19,863	13,848	16,362
Value.....	\$3,190,534	\$1,685,619	\$1,900,385
Boards:			
Tons.....	115,649	59,157	53,233
Value.....	\$10,767,394	\$2,196,686	\$2,065,865
All other products, value.....	\$15,118,871	\$8,401,520	\$8,190,901
<b>EQUIPMENT.</b>			
Paper machines:			
Fourdrinier—			
Number.....	158	180	150
Capacity, tons, 24 hours.....	1,341	1,118	920
Cylinder—			
Number.....	40	43	65
Capacity, tons, 24 hours.....	582	550	454
Digestors, number.....	19	17	17
Grinders, number.....	10	10	11
Yearly capacity of mills in pulp, tons.....	40,460	33,556	24,401
Yearly capacity of mills in paper, tons.....	572,085	497,520	410,536

<sup>1</sup> Not reported.

<sup>2</sup> Reported in 1909 as "Other chemical fiber."

<sup>3</sup> Not reported separately.

<sup>4</sup> Reported as "Writing and other fine paper" in 1914 and 1909.

The item "All other materials" includes the cost of sizing, chemicals, sulphur, dyestuffs, freight, and mill supplies.

Fine paper, including writing paper, was the principal product of the industry in the state at each census, forming 39.9 per cent of the total value of all products in 1919. Book paper was the next in importance in this respect, representing 24.4 per cent at that census. In 1919 Massachusetts produced 28 per cent of the total quantity of fine paper manufactured in the United States. In 1914 the corresponding proportion was 35.1 per cent, and in 1909, 45.2 per cent. To avoid disclosing the data of individual establishments, it was necessary to include the value of tissue paper, tag stock, poster, novel, blotting paper, newspaper, hanging paper, etc., and wood pulp produced for sale in "All other products."

Textile machinery and parts (Table 32).—Separate statistics for the manufacture of textile machinery have not been shown at prior censuses, but were included in the general classification "Foundry and machine-shop products." Massachusetts led in 1919 in the manufacture of textile machinery, reporting 53.7 per cent of the total value of products for the United States. The details presented in Table 32 give only such items as can be shown without the possibility of disclosing the operations of individual establishments.



TABLE 32.—TEXTILE MACHINERY AND PARTS: 1919.

PRODUCT.	Value.
Total.....	\$65,901,370
Machinery for working raw stock, and subsequent machinery used in textile mills in preparing yarn for weaving, knitting, etc.	23,070,283
Carding machines.....	7,176,675
Spinning and throwing machines.....	6,465,628
Twisting or doubling frames.....	1,618,300
Roving machines and slubbing frames.....	1,579,929
Winders and warp spooling machines.....	1,240,440
Picker machines.....	976,366
All other preliminary machinery.....	4,012,945
Fabric machinery.....	17,081,912
Machinery for converting and finishing yarn and fabrics.....	2,158,989
Extra parts, attachments and accessories for textile machinery....	17,373,180
Parts and attachments for machines working raw stock to yarn.....	10,854,212
Parts and attachments for fabric machines.....	3,561,260
Parts and attachments for converting and finishing machines.....	2,957,717
Other textile machinery, including repairs.....	4,607,163
Other machinery not pertaining to textiles.....	824,176
All other products.....	785,058

Printing and publishing (Tables 33 and 34).—Table 33 shows the number and aggregate circulation per issue of all the newspapers and periodicals published in Massachusetts as reported at the censuses of 1919, 1914, and 1909.

TABLE 33.—PRINTING AND PUBLISHING: 1919, 1914, AND 1909.

PERIOD OF ISSUE.	NUMBER OF PUBLICATIONS.			AGGREGATE CIRCULATION PER ISSUE.		
	1919	1914	1909	1919	1914	1909
Total.....	570	632	537	9,026,485	10,072,651	9,636,182
Daily.....	84	93	86	2,085,287	2,000,343	1,765,690
Sunday.....	17	21	15	1,444,846	1,271,453	1,122,049
Semiweekly <sup>1</sup> .....	7	10	8	15,058	26,550	23,225
Weekly.....	284	322	271	1,493,362	2,552,499	1,911,466
Monthly <sup>2</sup> .....	129	130	112	2,918,846	2,780,289	3,305,165
Quarterly.....	44	44	31	1,056,934	1,361,467	1,401,844
All other classes <sup>3</sup> .....	5	12	14	12,152	20,050	106,723

<sup>1</sup> Includes 2 triweekly publications in 1919, and 3 in 1914 and 1909.

<sup>2</sup> Includes 10 semimonthly publications in 1919; 12, in 1914; and 6, in 1909.

<sup>3</sup> Includes 4 bimonthly and 1 four-times-a-week publications in 1919; 9 bimonthly publications, 2 semiannuals, and 1 semiquarterly in 1914; and 7 bimonthly and 7 "all other" publications in 1909.

The decrease in total circulation is due to the removal to New York City of one weekly of large circulation and to the reduction in reported circulation of several quarterly publications of religious and charitable type.

The circulation of daily newspapers increased 24,944, or 1.2 per cent, during the five years from 1914 to 1919 and 319,597, or 18.1 per cent, during the decade. The low rate of increase for the five-year period is due to the consolidation of certain leading dailies and to the extinction of others.

Of the daily circulation as reported for 1919, 1,231,070, or 59 per cent, is shown for the 66 afternoon newspapers. The Sunday circulation shows an increase of 173,393, or 13.6 per cent, from 1914 to 1919; and of 322,797, or 28.8 per cent, during the decade.

Table 34 shows the number and, so far as possible without disclosure of individual establishments, the

circulation of foreign-language newspapers and periodicals, compared with those in English, by period of issue, for the censuses of 1919, 1914, and 1909.

TABLE 34.—PRINTING AND PUBLISHING, BY LANGUAGES: 1919, 1914, AND 1909.

PERIOD OF ISSUE.	Census year.	TOTAL.		IN ENGLISH.		IN FOREIGN LANGUAGES.	
		Num-ber.	Aggregate circulation per issue.	Num-ber.	Aggregate circulation per issue.	Num-ber.	Aggregate circulation per issue.
Total.....	1919	570	9,026,485	509	8,669,617	61	356,868
	1914	632	10,072,651	575	9,467,839	57	604,812
	1909	537	9,636,182	490	9,261,144	47	375,038
Daily and Sunday.....	1919	101	3,530,133	87	3,445,147	14	84,986
	1914	114	3,331,796	107	3,209,249	7	32,547
	1909	101	2,887,739	96	2,871,539	5	16,200
Weekly <sup>1</sup> .....	1919	292	1,519,847	263	1,397,915	29	112,932
	1914	332	2,579,049	292	2,431,807	40	147,242
	1909	279	1,934,711	245	1,827,105	34	107,606
Monthly.....	1919	119	2,886,640	106	2,840,225	13	46,415
	1914	118	2,153,439	112	2,122,266	6	31,173
	1909	101	2,744,183	101	2,744,183	( <sup>2</sup> )	( <sup>2</sup> )
All other classes <sup>3</sup> .....	1919	58	1,098,865	53	986,330	5	112,535
	1914	68	2,008,367	64	1,614,517	4	393,850
	1909	56	2,069,549	48	1,818,317	8	251,232

<sup>1</sup> Includes in 1919, 2 triweeklies and 4 semiweeklies in English, and 1 triweekly and 1 semiweekly in foreign languages; in 1914, 3 semiweeklies and 2 triweeklies in English, and 4 semiweeklies and 1 triweekly in foreign languages; in 1909, 1 semiweekly and 2 triweeklies in English, and 4 semiweeklies and 1 triweekly in foreign languages.

<sup>2</sup> Included in "all other classes" to avoid disclosure of individual operations.

<sup>3</sup> Includes in 1919, 9 semimonthly and 4 bimonthly publications, and 40 quarterlies in English, and 1 semimonthly publication and 4 quarterlies in foreign languages; in 1914, 10 semimonthly and 9 bimonthly publications, 42 quarterlies, and 3 "all other" in English, and 2 semimonthly publications and 2 quarterlies in foreign languages; and in 1909, 5 semimonthly and 7 bimonthly publications, 30 quarterlies, and 6 "all other" in English, and 6 monthly publications, 1 quarterly, and 1 "all other" in foreign languages.

The decrease in the total circulation of foreign-language publications since 1914 was 247,944, or 41 per cent.

It is of interest to note that the French publications show the largest increase in circulation—75,973—which was due to the issuance of a quarterly religious and charitable publication formerly printed in English-and-French. German publications decreased by four, but the circulation as reported increased slightly. The other leading foreign-language publications were those in Portuguese, Lithuanian, Polish, Italian, and Finnish. Albanian, Dutch, Spanish, and Syrian were newcomers in census returns for Massachusetts, while Esperanto and Yiddish publications disappeared during the five-year period from 1914 to 1919.

The daily foreign-language newspapers were in Albanian, Armenian, Finnish, French, Italian, Polish, and Portuguese.

Laundries (Table 35).—Statistics for power laundries are not included in the general tables nor in the totals for manufacturing industries. Table 35, however, summarizes the statistics for such laundries in the state for 1919 and 1914.



TABLE 35.—POWER LAUNDRIES: 1919 AND 1914.

	NUMBER OR AMOUNT.		Per cent of increase, <sup>1</sup> 1914-1919.
	1919	1914	
Number of establishments.....	340	381	-13.0
Persons engaged.....	7,960	8,861	-10.2
Proprietors and firm members.....	330	404	-18.3
Salaried employees.....	809	686	17.9
Wage earners (average number).....	6,821	7,771	-12.2
Primary horsepower.....	11,502	11,382	1.1
Capital.....	\$7,203,319	\$4,695,798	54.7
Salaries and wages.....	6,451,179	4,434,869	45.5
Salaries.....	1,100,026	713,460	63.4
Wages.....	5,285,153	3,721,409	42.0
Paid for contract work.....	738,385	59,708	1,130.7
Rent and taxes.....	302,401	275,427	31.6
Cost of materials.....	2,484,350	1,391,900	78.5
Amount received for work done.....	12,864,279	8,661,830	48.5

<sup>1</sup>A minus sign (-) denotes decrease.

Dyeing and cleaning (Table 36).—Statistics for dyeing and cleaning establishments that were operated by mechanical power in 1919 are presented in this table. Statistics for such establishments are not included in the general tables nor in the totals for manufacturing industries for censuses since 1900. This presentation is the first of its kind that has been made since the census statistics were confined to manufacturing industries as distinguished from the hand trades, household industries, etc.

TABLE 36.—DYEING AND CLEANING: 1919.

	Number or amount.
Number of establishments.....	45
Persons engaged.....	894
Proprietors and firm members.....	38
Salaried employees.....	133
Wage earners (average number).....	723
Primary horsepower.....	1,063
Capital.....	\$396,211
Salaries and wages.....	850,529
Salaries.....	185,412
Wages.....	671,117
Paid for contract work.....	15,947
Rent and taxes.....	125,073
Cost of materials.....	584,673
Amount received for work done.....	2,252,321

Custom sawmills and gristmills (Tables 37 and 38).—Statistics for custom sawmills and custom gristmills are not included in the general tables nor in the totals for manufacturing industries. Data for custom mills were not collected in 1914. Tables 37 and 38, however, summarize the statistics for such mills for 1919 and 1909. The value of products for custom sawmills represents the amount charged for the work performed and that for custom gristmills the selling value of the grain milled.

TABLE 37.—CUSTOM SAWMILLS: 1919 AND 1909.

	NUMBER OR AMOUNT.		Per cent of increase, <sup>1</sup> 1909-1919.
	1919	1909	
Number of establishments.....	27	35	.....
Persons engaged.....	45	92	.....
Proprietors and firm members.....	34	40	.....
Wage earners (average number).....	11	52	.....
Primary horsepower.....	1,002	1,512	-33.7
Capital.....	\$53,705	\$78,685	-31.7
Wages.....	9,900	22,548	-56.1
Rent and taxes.....	736	773	1.7
Cost of materials.....	1,502	601	149.9
Amount received for work done.....	26,600	47,754	-44.1

<sup>1</sup>A minus sign (-) denotes decrease; percentages are omitted where base is less than 100.

TABLE 38.—CUSTOM GRISTMILLS: 1919 AND 1909.

	NUMBER OR AMOUNT.		Per cent of increase, <sup>1</sup> 1909-1919.
	1919	1909	
Number of establishments.....	10	15	.....
Persons engaged.....	16	26	.....
Proprietors and firm members.....	12	16	.....
Wage earners (average number).....	4	10	.....
Primary horsepower.....	390	584	-33.2
Capital.....	\$40,984	\$42,780	8.4
Wages.....	4,292	2,333	84.0
Rent and taxes.....	3,802	429	786.2
Cost of materials <sup>2</sup> .....	129,747	85,510	51.7
Value of products <sup>2</sup> .....	151,159	99,381	52.1

<sup>1</sup>A minus sign (-) denotes decrease; percentages are omitted where base is less than 100.<sup>2</sup>Includes estimate of all grain ground.

## GENERAL TABLES.

Table 39 gives, for 1919, 1914, and 1909 for selected industries in the state and in 12 cities having 50,000 inhabitants or more the number of establishments, average number of wage earners, primary horsepower, wages, cost of materials, and value of products, while for Haverhill and for cities of 10,000 to 50,000 inhabitants for which comparable figures are available, similar data for all industries combined.

Table 40 presents, for 1919, for the state as a whole and for the 13 cities having 50,000 inhabitants or more, statistics in detail for each industry for which figures can be shown without disclosing the operations of individual establishments; and for cities of 10,000 to 50,000 inhabitants, similar data for all industries combined.



TABLE 39.—COMPARATIVE SUMMARY FOR SELECTED INDUSTRIES AND FOR CITIES: 1919, 1914, AND 1909.

INDUSTRY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Wages.	Cost of mate- rials.	Value of prod- ucts.	INDUSTRY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Wages.	Cost of mate- rials.	Value of prod- ucts.
					Expressed in thousands of dollars.								Expressed in thousands of dollars.		
THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES.															
All industries.....	1919	11,906	713,830	1,729,878	766,623	2,260,713	4,011,182	Copper, tin, and sheet-iron products. <sup>2</sup>	1919	172	3,124	3,203	3,656	6,875	15,536
	1914	12,013	606,698	1,396,722	341,310	931,384	1,641,373		1914	159	2,688	2,791	1,663	3,510	7,347
	1909	11,684	584,559	1,175,071	301,173	830,765	1,490,529		1909	150	2,627	1,808	1,481	2,933	6,185
Automobiles, including bod- ies and parts.	1919	96	4,530	4,441	5,829	16,282	27,032	Corsets.....	1919	11	1,555	835	1,093	3,367	6,704
	1914	66	3,439	4,293	3,015	5,642	11,199		1914	11	2,298	600	906	1,902	4,581
	1909	62	4,138	2,896	2,793	5,401	11,359		1909	10	1,989	455	735	1,607	3,752
Belting, leather.....	1919	20	269	383	320	2,930	3,944	Cotton goods, including cot- ton small wares.	1919	231	124,150	526,367	111,141	364,921	604,938
	1914	20	1,113	1,386	764	4,980	7,297		1914	189	113,559	438,083	50,706	119,834	197,322
	1909	16	955	897	555	3,666	5,647		1909	182	108,914	362,043	45,117	105,157	186,462
Blacking and cleansing and polishing preparations.	1919	93	765	746	761	4,905	8,501	Cutlery and tools, not else- where specified.	1919	168	11,214	20,492	12,305	13,399	48,832
	1914	93	572	574	302	2,083	3,841		1914	137	6,485	12,728	3,903	3,394	12,974
	1909	80	527	892	257	1,879	3,713		1909	135	6,747	13,263	3,738	3,484	11,611
Boots and shoes, including cut stock and findings.	1919	929	90,693	48,353	99,589	367,219	573,037	Dyeing and finishing tex- tiles, exclusive of that done in textile mills.	1919	62	12,321	39,133	12,241	44,210	75,262
	1914	884	85,114	39,721	51,007	164,242	255,188		1914	57	11,437	30,932	5,843	10,989	22,455
	1909	860	83,063	35,051	45,990	152,990	236,343		1909	48	9,079	24,513	4,430	10,460	21,893
Boots and shoes, rubber.....	1919	8	13,062	21,609	12,763	17,621	44,308	Dyestuffs and extracts—nat- ural.	1919	27	105	773	200	4,476	5,812
	1914	9	8,087	8,177	4,468	10,455	23,789		1914	17	148	520	90	1,162	1,674
	1909	8	6,928	8,330	3,376	10,640	18,722		1909	10	80	325	50	512	725
Boxes, paper and other, not elsewhere specified.	1919	102	4,711	4,166	3,547	7,463	15,666	Electrical machinery, appa- ratus, and supplies.	1919	110	23,889	36,367	27,050	31,837	61,939
	1914	97	4,244	3,393	1,886	3,672	7,085		1914	91	17,125	29,846	10,651	17,097	43,869
	1909	90	3,838	2,370	1,557	2,719	5,758		1909	83	14,507	14,835	8,209	12,735	28,143
Brass, bronze, and copper products.	1919	72	2,832	15,511	3,506	9,367	16,943	Emery and other abrasive wheels.	1919	14	2,443	5,886	2,265	5,013	13,118
	1914	73	1,620	7,415	1,063	3,715	5,959		1914	12	902	2,214	599	866	2,290
	1909	85	1,791	6,407	1,115	3,663	6,042		1909	13	615	1,710	420	504	1,982
Bread and other bakery products.	1919	1,309	8,583	7,712	9,336	40,587	66,017	Fancy articles, not else- where specified. <sup>3</sup>	1919	71	3,833	3,076	3,229	7,359	13,606
	1914	1,419	8,083	6,589	4,866	18,271	33,309		1914	67	2,777	2,457	1,383	2,857	5,342
	1909	1,201	6,697	4,316	3,814	15,727	26,146		1909	78	3,558	2,382	1,030	3,514	6,018
Brushes.....	1919	30	1,613	1,005	1,342	3,334	6,857	Firearms.....	1919	5	2,253	2,121	2,599	1,066	5,645
	1914	29	1,437	878	717	2,231	3,910		1914	6	2,161	1,990	1,461	711	3,297
	1909	30	1,629	580	653	1,356	2,875		1909	8	2,327	3,059	1,458	752	3,408
Canning and preserving <sup>1</sup> ....	1919	55	1,944	1,677	1,838	13,433	19,017	Flour-mill and gristmill prod- ucts.	1919	75	123	4,013	130	4,250	4,878
	1914	65	1,903	996	866	5,606	8,169		1914	105	176	4,900	101	3,424	3,811
	1909	71	1,449	1,043	642	4,583	6,840		1909	120	220	5,042	126	4,131	4,632
Carpets and rugs, other than rag.	1919	10	3,134	6,132	3,146	8,021	13,594	Food preparations, not else- where specified.	1919	81	848	1,919	773	6,072	9,603
	1914	12	5,319	10,600	2,389	6,668	10,981		1914	68	469	1,032	280	1,953	4,043
	1909	11	5,954	10,037	2,763	7,501	12,812		1909	50	366	827	108	1,202	2,547
Carriages and sleds, child- ren's.	1919	13	1,449	1,358	1,414	2,550	5,254	Foundry and machine-shop products. <sup>4</sup>	1919	1,179	61,740	98,105	77,067	87,099	244,579
	1914	8	1,175	1,130	660	1,460	2,644		1914	932	41,361	68,618	28,118	30,090	85,639
	1909	7	858	845	411	955	1,755		1909	857	44,179	52,802	27,032	31,182	80,026
Cars and general shop con- struction and repairs by electric-railroad companies.	1919	30	1,840	2,790	2,446	1,750	4,505	Furnishing goods, men's <sup>6</sup> ...	1919	43	3,240	1,989	2,071	10,278	17,862
	1914	39	1,705	235	1,373	1,204	2,566		1914	43	3,316	1,727	1,582	4,370	7,592
	1909	46	1,708	1,788	1,096	975	2,140		1909	55	4,260	2,306	1,952	6,052	12,030
Cars and general shop con- struction and repairs by steam-railroad companies.	1919	14	7,724	11,259	11,272	10,291	22,638	Furniture and refrigerators..	1919	171	6,435	10,677	6,748	10,845	24,109
	1914	15	6,264	8,287	4,394	4,197	8,830		1914	145	6,054	10,910	4,084	5,858	14,281
	1909	21	5,162	5,697	3,447	3,976	7,804		1909	155	7,277	12,203	3,980	5,808	13,868
Chemicals.....	1919	27	2,483	9,223	3,044	8,101	17,305	Gas, illuminating and heating	1919	51	2,654	18,827	3,557	10,774	24,231
	1914	24	1,395	5,405	955	3,355	6,685		1914	61	3,182	11,402	2,141	5,951	15,752
	1909	24	1,358	3,731	811	3,048	5,916		1909	64	2,292	7,371	1,250	3,810	11,074
Chocolate and cocoa prod- ucts.	1919	6	2,007	5,711	1,945	23,989	30,327	Glue, not elsewhere specified.	1919	13	826	1,095	940	3,630	6,451
	1914	5	943	4,403	592	7,303	10,210		1914	11	563	1,481	204	1,789	2,589
Clothing, men's, including shirts.	1919	219	7,946	2,285	7,989	20,465	46,583		1914	14	509	2,151	223	1,169	1,895
	1914	227	7,645	1,095	3,853	10,415	19,014	Grease and tallow, not in- cluding lubricating greases.	1919	24	825	2,103	917	4,836	7,323
	1909	254	7,335	1,753	3,398	9,750	18,314		1914	33	622	1,244	420	1,829	2,668
Clothing, women's.....	1919	258	6,271	1,622	5,616	17,974	30,428		1909	35	561	1,374	347	1,753	2,061
	1914	202	6,076	1,202	2,966	7,064	13,953	Hats, straw.....	1919	13	1,490	605	1,109	2,890	5,485
	1909	174	5,813	1,024	2,446	6,511	11,728		1914	10	2,333	1,857	1,451	3,205	5,702
Coffee and spice, roasting and grinding.	1919	23	512	1,377	483	14,005	16,978		1909	18	2,068	1,009	1,448	3,680	6,589
	1914	21	466	1,312	265	6,312	8,675	House-furnishing goods, not elsewhere specified.	1919	54	1,081	746	793	5,130	7,708
	1909	17	373	996	201	4,082	5,806		1914	29	444	814	203	844	1,350
Confectionery and ice cream..	1919	278	11,585	11,236	8,523	40,354	68,897		1909	18	311	490	129	593	921
	1914	273	7,250	6,699	3,037	13,841	22,902	Iron and steel, steel works and rolling mills.	1919	11	3,084	31,009	5,758	19,236	30,970
	1914	53	955	2,914	529	1,157	2,061		1914	11	2,889	28,507	1,003	8,802	11,376
	1909	70	974	2,833	452	1,094	1,939		1909	9	3,115	24,500	1,977	10,032	13,568
Cooperage and wooden goods, not elsewhere specified.	1919	33	737	2,095	695	2,002	3,482								
	1914	53	955	2,914	529	1,157	2,061								
	1909	70	974	2,833	452	1,094	1,939								

<sup>1</sup> Includes "canning and preserving, fish," and "pickles, preserves, and sauces," in all years; "canning and preserving, fruits and vegetables," in 1914 and 1909; and "canning and preserving, oysters," in 1909.

<sup>2</sup> Includes "stamped ware, not elsewhere specified," and "tinware, not elsewhere specified."

<sup>3</sup> Includes "combs and hairpins, not made from metal or rubber," and "ivory, shell, and bone work."

<sup>4</sup> Includes "automobile repairing"; "engines, steam, gas, and water"; "gas machines and gas and water meters"; "hardware"; "iron and steel, tempering and welding"; "machine tools"; "plumbers' supplies, not elsewhere specified"; "pumps, steam"; "steam fittings and steam and hot-water heating apparatus"; "structural iron-work, not made in steel works or rolling mills"; and "textile machinery and parts," in all years; "hardware, saddlery," in 1914 and 1909; and "iron and steel, cast-iron pipe," in 1919.

<sup>5</sup> Includes "suspenders, garters, and elastic woven goods."



## MANUFACTURES—MASSACHUSETTS.

629

TABLE 39.—COMPARATIVE SUMMARY FOR SELECTED INDUSTRIES AND FOR CITIES: 1919, 1914, AND 1909—Continued.

INDUSTRY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Expressed in thousands of dollars.			INDUSTRY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Expressed in thousands of dollars.		
					Wages.	Cost of materi- als.	Value of prod- ucts.						Wages.	Cost of materi- als.	Value of prod- ucts.
THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.															
Iron and steel, bolts, nuts, washers, and rivets, not made in rolling mills.	1919 1914 1909	11 8 10	1,471 1,292 1,217	2,120 2,073 2,233	1,613 764 703	3,150 1,041 908	5,763 2,267 2,427	Paper goods, not elsewhere specified. <sup>3</sup>	1919 1914 1909	57 60 61	3,856 5,829 5,135	9,395 8,621 6,776	3,497 2,918 2,344	15,130 8,687 7,436	24,421 15,579 13,533
Iron and steel, forgings, not made in steel works or rolling mills.	1919 1914 1909	14 10 11	2,172 683 565	6,579 1,826 1,469	2,906 523 381	5,278 839 925	13,299 2,076 1,949	Patent medicines and com- pounds and druggists' preparations. <sup>4</sup>	1919 1914 1909	139 162 154	2,390 1,381 1,183	1,981 1,586 1,376	1,905 696 566	8,612 3,323 2,727	20,327 8,263 7,432
Iron and steel, nails and spikes, cut and wrought, including wire nails, not made in steel works or rolling mills.	1919 1914 1909	25 28 26	1,537 1,233 1,125	3,380 3,308 2,870	1,520 698 576	3,841 1,421 1,510	7,853 2,847 2,928	Printing and publishing. <sup>5</sup>	1919 1914 1909	1,327 1,344 1,279	18,247 18,170 17,532	21,129 20,295 47,629	20,805 13,266 11,684	34,906 16,817 12,881	104,551 56,196 47,445
Jewelry.....	1919 1914 1909	165 202 175	6,786 6,505 7,423	4,404 4,272 4,018	7,234 3,889 4,422	18,365 6,710 5,679	34,817 14,176 15,211	Rubber tires, tubes, and rubber goods, not else- where specified.	1919 1914 1909	47 42 29	9,406 4,743 3,418	34,358 17,515 10,123	11,682 2,845 1,769	47,076 14,142 11,005	93,377 23,011 15,796
Knit goods.....	1919 1914 1909	77 77 65	12,751 10,935 9,941	16,574 12,303 9,113	11,364 4,737 3,855	31,173 9,267 6,972	52,424 17,419 14,736	Shipbuilding, wooden, in- cluding boat building.	1919 1914 1909	55 61 81	928 435 323	2,074 1,513 1,402	1,402 328 395	1,978 395 395	4,192 1,061 1,061
Lasts.....	1919 1914 1909	31 32 27	1,299 890 675	2,861 2,278 1,610	1,598 653 526	1,837 592 611	5,886 1,909 1,909	Silk goods, including throw- sters.	1919 1914 1909	21 19 19	5,097 4,495 4,109	9,811 6,035 5,305	5,040 2,002 1,840	19,243 5,961 5,430	34,194 10,677 8,942
Leather goods <sup>1</sup> .....	1919 1914 1909	102 119 119	1,680 1,430 1,710	670 444 634	1,377 785 859	4,063 2,219 2,387	7,373 4,023 4,373	Silverware and plated ware.	1919 1914 1909	25 17 21	2,345 2,163 2,465	2,991 2,730 2,113	2,471 1,468 1,725	4,800 2,228 2,228	9,825 5,542 6,539
Leather, tanned, curried, and finished.	1919 1914 1909	131 126 132	15,180 10,164 10,252	34,159 26,534 19,231	19,211 5,018 5,444	82,017 33,194 28,766	129,595 45,265 40,002	Slaughtering and meat pack- ing. <sup>6</sup>	1919 1914 1909	96 107 94	4,613 3,582 3,325	9,201 6,742 4,844	5,788 2,141 1,837	105,458 47,476 38,880	115,534 54,447 44,403
Linen goods.....	1919 1914 1909	4 7 7	1,219 1,541 1,052	3,780 4,005 4,050	1,106 652 660	3,328 1,795 1,904	5,178 3,050 3,392	Soap.....	1919 1914 1909	27 32 38	1,008 400 458	2,785 1,400 1,379	984 260 227	11,173 2,476 2,377	18,730 4,671 4,283
Liquors, malt.....	1919 1914 1909	19 26 37	1,328 2,106 1,739	7,835 12,100 9,017	1,931 1,992 1,481	4,188 4,920 3,593	14,713 15,608 12,724	Sporting and athletic goods.	1919 1914 1909	14 15 18	1,397 1,275 891	1,912 1,188 870	1,248 767 474	3,004 1,984 1,235	5,774 3,424 2,510
Lumber and timber prod- ucts. <sup>2</sup>	1919 1914 1909	482 589 708	7,119 8,156 8,976	38,350 42,493 44,784	7,593 5,075 5,031	17,794 13,177 12,484	33,612 23,012 23,026	Stationery goods, not else- where specified.	1919 1914 1909	30 27 21	3,305 2,467 1,790	1,500 1,282 924	2,619 1,248 778	7,265 3,552 2,395	15,162 6,512 4,524
Marble and stone work.....	1919 1914 1909	230 306 330	1,936 3,858 5,015	11,053 15,400 10,515	2,625 2,889 3,552	2,519 1,885 2,192	7,125 6,734 7,804	Stoves and hot-air furnaces.	1919 1914 1909	15 13 21	1,386 1,446 1,703	2,420 1,961 1,804	1,785 1,116 1,239	1,671 893 1,079	5,577 2,984 3,542
Mattresses and spring beds, not elsewhere specified.	1919 1914 1909	52 54 52	583 740 667	903 1,032 592	637 376 330	2,426 1,456 1,297	4,015 2,502 2,227	Surgical appliances.....	1919 1914 1909	14 14 13	609 249 206	728 322 221	532 149 112	4,346 1,039 474	6,572 1,453 802
Millinery and lace goods, not elsewhere specified.	1919 1914 1909	60 69 70	1,396 2,026 1,086	628 451 391	1,258 940 667	3,153 2,886 2,282	5,950 4,919 3,977	Tobacco manufactures.....	1919 1914 1909	269 336 417	2,976 3,926 3,551	3,354 339 251	3,354 3,110 2,506	4,985 3,811 2,921	11,891 9,269 7,888
Mineral and soda waters.....	1919 1914 1909	172 171 145	768 508 525	1,849 855 657	816 333 313	4,080 1,075 803	8,177 2,442 2,193	Toys and games.....	1919 1914 1909	30 18 16	1,642 1,381 1,051	1,716 1,119 745	1,101 636 447	1,893 1,129 869	4,704 2,536 1,751
Motorcycles, bicycles, and parts.	1919 1914 1909	8 6 10	3,000 2,135 843	3,050 2,104 890	3,238 1,567 580	8,408 3,194 1,378	16,000 7,021 2,706	Wire.....	1919 1914 1909	9 8 10	5,203 2,599 3,718	24,799 15,142 10,498	7,353 2,005 2,218	11,874 4,650 5,538	24,552 8,359 9,580
Musical instruments, pianos and organs and materials.	1919 1914 1909	40 52 59	3,950 3,906 4,245	4,462 5,105 4,454	4,392 2,510 2,668	5,808 3,702 4,149	13,342 8,213 9,106	Wirework, not elsewhere specified.	1919 1914 1909	27 30 31	1,470 1,950 1,578	1,699 2,048 1,468	1,399 1,079 809	1,706 2,331 1,499	4,519 4,878 3,232
Needles, pins, and hooks and eyes.	1919 1914	7 4	1,375 535	980 390	1,337 268	1,199 190	4,194 577	Wool scouring.....	1919 1914 1909	13 10 8	1,012 677 493	4,628 4,479 3,645	1,498 334 220	1,050 727 169	3,069 1,407 631
Oil, not elsewhere specified..	1919 1914 1909	15 16 17	146 303 293	312 885 617	150 197 174	3,505 2,239 2,273	4,364 2,975 2,864	Woolshoddy.....	1919 1914 1909	23 17 27	623 446 442	4,419 3,106 4,683	685 240 202	3,700 1,267 1,193	5,515 1,903 1,766
Optical goods.....	1919 1914 1909	29 13 11	4,082 2,356 2,460	4,887 3,048 2,230	3,437 1,390 1,103	3,406 1,196 1,163	12,038 3,993 3,058	Woolen, worsted, and felt goods. <sup>7</sup>	1919 1914 1909	197 171 183	54,950 54,255 53,873	183,973 143,461 117,119	87,904 27,363 24,593	219,350 83,077 87,976	352,013 130,349 141,967
Paint and varnish.....	1919 1914 1909	33 34 41	591 490 428	1,644 1,411 1,819	592 302 251	5,673 2,622 2,075	9,807 4,876 3,469	All other industries.....	1919 1914 1909	1,466 1,618 1,827	64,825 42,932 46,593	139,890 105,774 82,224	80,739 25,483 23,728	195,816 86,772 83,865	356,435 144,639 144,636
Paper and wood pulp.....	1919 1914 1909	78 86 88	12,960 13,401 12,848	145,323 133,860 115,792	14,642 7,549 6,542	53,764 26,611 22,850	87,160 43,353 40,097								

<sup>1</sup> Includes "pocketbooks"; "saddlery and harness"; and "trunks and valises."<sup>2</sup> Includes "boxes, wooden packing, except cigar boxes"; "lumber, planing-mill products, not including planing mills connected with sawmills"; and "window and door screens and weather strips."<sup>3</sup> Includes "envelopes."<sup>4</sup> Includes "perfumery and cosmetics."<sup>5</sup> Includes "bookbinding and blank-book making"; "engraving, steel and copper plate, including plate printing"; and "lithographing."<sup>6</sup> Includes "sausage, not made in slaughtering and meat-packing establishments."<sup>7</sup> Includes "hats, wool-felt," in 1909.



## MANUFACTURES—MASSACHUSETTS.

TABLE 39.—COMPARATIVE SUMMARY FOR SELECTED INDUSTRIES AND FOR CITIES: 1919, 1914, AND 1909—Continued.

INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Wages.	Cost of mate- rials.	Value of prod- ucts.	INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Wages.	Cost of mate- rials.	Value of prod- ucts.
					Expressed in thousands of dollars.								Expressed in thousands of dollars.		
CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES.															
BOSTON.....	1919	3,077	88,759	101,604	96,401	349,606	618,922	BOSTON—Con.							
All industries.	1914	3,138	78,894	85,897	49,444	150,568	284,802	Foundry and machine-shop	1919	239	11,469	14,520	15,435	15,254	48,653
	1914	3,138	78,894	85,897	49,444	150,568	284,802	products. <sup>1</sup>	1914	225	8,041	10,413	5,742	6,628	18,259
	1909	3,195	73,957	77,275	42,386	127,928	244,793		1909	211	6,323	6,880	4,190	5,100	13,474
Automobile bodies and parts	1919	22	257	265	326	323	918								
	1914	10	193	147	147	140	449	Fur goods.....	1919	18	282	55	384	1,287	2,368
Awnings, tents, and sails....	1919	21	168	55	156	504	877		1914	17	208	40	146	476	862
	1914	19	173	48	108	279	517	Furnishing goods, men's,	1919	11	207	17	159	1,607	2,450
	1909	19	204	32	110	231	408	neckwear.	1914	7	237	51	118	668	1,040
Belting, leather.....	1919	3	39	55	45	1,129	1,455	Furniture and refrigerators..	1919	67	1,088	1,165	1,381	2,750	5,630
	1914	4	52	53	36	623	904		1914	53	872	702	634	1,128	2,551
	1909	5	46	43	35	513	998		1909	64	943	822	617	1,159	2,054
Blacking and cleansing and polishing preparations.	1919	28	145	283	138	1,023	2,075	Hats and caps, other than	1919	31	352	59	484	1,301	2,241
	1914	27	141	178	79	537	1,127	felt, straw, and wool.	1914	28	278	47	104	396	710
	1909	23	125	114	67	417	820	House-furnishing goods, not	1919	30	553	144	390	3,164	4,685
Boots and shoes, including cut stock and findings.	1919	57	7,531	5,082	7,632	48,772	66,427	elsewhere specified.	1914	8	85	20	45	108	217
	1914	51	7,421	4,158	4,029	19,479	27,163		1909	6	36	6	19	77	119
	1909	43	6,116	2,062	3,046	19,835	26,147	Instruments, professional	1919	12	441	293	497	492	1,506
Boxes, set-up paper boxes and cartons.	1919	21	971	474	685	944	2,314	and scientific.	1914	12	484	559	332	378	891
	1914	19	725	308	308	364	882		1909	15	344	221	235	225	781
	1909	21	964	414	362	558	1,213	Jewelry.....	1919	32	198	103	298	731	1,003
Brass, bronze, and copper products.	1919	24	218	244	304	725	1,410		1914	39	250	112	180	386	808
	1914	27	185	266	141	233	500		1909	32	303	82	189	248	710
	1909	33	333	244	224	363	806	Knit goods.....	1919	11	864	374	683	2,541	4,205
Bread and other bakery prod- ucts.	1919	306	2,798	2,413	2,087	12,897	21,681		1914	10	770	291	310	1,005	1,596
	1914	312	2,701	2,235	1,547	5,830	11,413	Leather goods <sup>2</sup> .....	1909	8	729	168	253	583	1,026
	1909	285	1,990	6,063	1,068	4,825	8,109		1919	34	375	121	384	1,346	2,266
Canning and preserving <sup>1</sup> ....	1919	19	519	857	446	3,861	6,034		1914	40	352	132	224	691	1,245
	1914	23	444	504	233	1,688	2,633	Liquors, malt.....	1909	45	558	152	280	797	1,434
	1909	21	323	577	140	1,383	1,951		1919	10	802	3,735	1,221	2,104	8,955
Carriages and wagons and materials.	1919	8	181	156	213	184	544		1914	13	1,225	5,951	1,149	2,594	8,836
	1914	31	339	375	247	288	694	Lumber and timber products	1909	20	1,126	4,799	1,019	1,957	7,554
	1909	26	298	450	204	222	582		1919	44	689	3,181	804	2,045	3,765
Cars and general shop con- struction and repairs by steam-railroad companies.	1919	6	1,860	700	2,601	1,043	4,728		1914	56	859	2,970	941	1,680	2,903
	1914	5	3,628	2,944	2,443	2,410	5,024	Marble and stone work.....	1909	67	1,034	3,295	727	1,538	3,027
	1909	6	1,172	291	768	652	1,530		1919	17	177	749	202	375	771
Clothing, men's, including shirts.	1919	168	4,660	1,104	5,606	17,938	32,404		1914	24	455	1,106	366	436	1,037
	1914	181	4,758	1,043	2,633	7,687	14,080	Mattresses and spring beds, not elsewhere specified.	1909	31	581	1,146	459	453	1,152
	1909	196	4,479	1,086	2,286	7,756	14,535		1919	22	381	616	455	1,778	2,973
Clothing, women's.....	1919	173	3,882	1,010	3,965	12,105	20,656		1914	21	531	598	203	1,115	1,887
	1914	139	3,964	686	2,144	5,126	9,609	Millinery and lace goods, not elsewhere specified.	1909	28	496	383	248	1,048	1,770
	1909	122	3,540	491	1,649	4,306	7,842		1919	51	896	190	790	1,948	3,763
Coffee and spice, roasting and grinding.	1919	14	481	1,132	449	13,418	16,239		1914	59	1,415	283	901	2,014	3,564
	1914	17	446	1,114	252	6,124	8,463	Mineral and soda waters.....	1909	65	1,464	311	580	1,931	3,425
	1909	11	348	786	188	3,651	5,308		1919	29	198	319	243	1,086	2,492
Confectionery and ice cream.	1919	68	8,258	6,485	5,792	26,418	46,097		1914	26	137	228	103	539	1,204
	1914	72	5,114	4,273	2,042	9,108	15,246	Musical instruments and materials, not elsewhere specified.	1909	25	160	100	112	415	995
	1909	85	1,702	845	900	1,870	3,925		1919	14	187	104	192	207	607
Copper, tin, and sheet-iron products. <sup>3</sup>	1919	61	1,457	1,428	1,674	3,640	8,177		1914	15	245	106	184	137	333
	1914	75	1,397	946	904	2,100	4,144	Musical instruments, pianos and organs and materials.	1919	10	1,231	1,581	1,547	2,111	4,863
	1909	85	1,702	845	900	1,870	3,925		1914	15	1,299	1,312	908	1,581	3,276
Cotton goods.....	1919	9	874	2,968	715	2,527	4,408		1909	21	1,410	917	958	1,468	3,428
	1914	5	747	2,408	318	694	1,228	Paint and varnish.....	1919	10	135	388	151	1,096	2,144
Dyestuffs and extracts— natural.	1919	11	57	276	75	814	1,323		1914	11	119	234	79	637	1,055
	1914	10	61	183	45	516	717	Paper goods, not elsewhere specified.	1909	12	142	484	80	617	1,065
	1909	6	27	119	16	161	243		1919	6	161	412	139	626	898
Electrical machinery, appa- ratus, and supplies.	1919	32	2,525	1,936	2,460	4,344	10,671		1914	12	342	223	144	337	659
	1914	30	1,431	1,829	914	1,414	3,635	Patent medicines and com- pounds and druggists' preparations. <sup>7</sup>	1919	66	1,676	743	1,290	5,700	12,222
	1909	27	1,380	1,502	700	1,093	3,028		1914	68	768	431	360	2,120	4,623
Fancy articles, not elsewhere specified.	1919	15	150	43	135	356	871		1909	69	614	280	282	1,638	3,966
	1914	7	52	37	29	52	114	Photo-engraving.....	1919	16	357	132	503	180	1,297
	1914	9	52	42	28	311	641		1914	19	432	209	399	145	1,002
	1909	15	55	19	27	250	572	Printing and publishing <sup>8</sup> ....	1919	539	8,214	9,140	10,240	20,772	62,523
Flavoring extracts.....	1919	13	67	43	65	636	1,209		1914	567	7,972	9,124	6,375	9,781	33,249
	1914	9	52	42	28	311	641		1909	504	8,257	6,248	6,033	6,962	28,021
	1909	15	55	19	27	250	572								
Food preparations, not else- where specified.	1919	29	502	1,100	460	3,372	5,667								
	1914	21	257	556	160	1,058	2,500								
	1909	14	219	382	129	686	1,540								

<sup>1</sup> Includes "canning and preserving, fish"; and "pickles, preserves, and sauces."<sup>2</sup> Excludes statistics for 2 establishments manufacturing carriage and wagon materials, to avoid disclosure of individual operations.<sup>3</sup> Includes "tinware, not elsewhere specified."<sup>4</sup> Includes "automobile repairing"; "gas machines and gas and water meters"; "hardware"; "iron and steel, tempering and welding"; "machine tools"; "plumb-ers' supplies, not elsewhere specified"; "steam fittings and steam and hot-water heating apparatus"; "structural ironwork, not made in steel works or rolling mills"; and "textile machinery and parts" in all years; and "engines, steam, gas, and water"; "hardware, saddlery"; and "pumps, steam," in 1914 and 1909.<sup>5</sup> Includes "pocketbooks"; and "trunks and valises" in all years; and "saddlery and harness" in 1914 and 1909.<sup>6</sup> Includes "boxes," wooden packing, except cigar boxes; "lumber, planing-mill products, not including planing mills connected with saw mills"; and "window and door screens and weather strips."<sup>7</sup> Includes "perfumery and cosmetics."<sup>8</sup> Includes "bookbinding and blank-book making"; "engraving, steel and copper plate, including plate printing"; and "lithographing."



## MANUFACTURES—MASSACHUSETTS.

631

TABLE 39.—COMPARATIVE SUMMARY FOR SELECTED INDUSTRIES AND FOR CITIES: 1919, 1914, AND 1909—Continued.

INDUSTRY AND CITY.	Census year.	Number of establishments.	Wage earners (average number).	Primary horse-power.	Wages.	Cost of materials.	Value of products.	INDUSTRY AND CITY.	Census year.	Number of establishments.	Wage earners (average number).	Primary horse-power.	Wages.	Cost of materials.	Value of products.
					Expressed in thousands of dollars.								Expressed in thousands of dollars.		
CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.															
BOSTON—Con.								CAMBRIDGE—Con.							
Rubber tires, tubes, and rubber goods, not elsewhere specified.	1919	8	401	793	351	742	1,545	Bread and other bakery products.	1919	42	1,245	1,030	1,215	5,279	9,099
	1914	7	276	1,092	151	319	680		1914	40	901	1,171	512	2,071	3,954
	1909	7	149	200	175	274	605		1909	40	801	862	440	1,961	2,962
Screws, machine.	1919	7	149	200	175	274	605	Confectionery and ice cream.	1919	26	1,952	1,997	1,425	6,698	11,460
	1914	7	102	211	71	99	231		1914	21	1,241	1,183	509	2,503	3,808
Signs and advertising novelties.	1919	10	230	96	239	255	745	Copper, tin, and sheet-iron products. <sup>3</sup>	1919	12	478	583	571	1,025	2,254
	1914	12	270	136	143	171	465		1914	7	183	203	113	297	588
	1909	22	296	758	409	7,991	9,168		1909	6	200	100	104	274	530
Slaughtering and meat packing. <sup>1</sup>	1919	22	296	758	409	7,991	9,168	Foundry and machine-shop products. <sup>4</sup>	1919	44	3,238	4,800	4,100	6,362	15,045
	1914	26	329	625	232	5,211	6,396		1914	34	1,786	3,386	1,202	1,885	5,332
	1909	24	273	313	172	3,514	4,096		1909	25	2,260	3,176	1,430	1,761	4,789
Soap.	1919	8	44	177	52	573	1,061	Furniture.	1919	11	728	809	938	769	2,179
	1914	11	54	95	33	314	441		1914	12	636	556	495	368	1,284
	1909	13	65	80	36	286	465		1909	13	780	1,262	603	417	1,392
Stationery goods, not elsewhere specified.	1919	4	180	96	138	637	1,361	Instruments, professional and scientific.	1919	3	42	31	38	91	158
	1914	5	237	105	123	389	606		1914	3	31	24	24	43	100
	1909	3	86	17	46	91	233	Lumber and timber products. <sup>5</sup>	1919	6	203	683	245	320	785
Suspenders, garters, and elastic woven goods.	1919	9	740	263	513	2,190	3,940		1914	12	358	1,359	282	691	1,112
	1914	10	855	245	361	1,285	2,322		1909	11	345	1,261	232	409	875
Tobacco manufactures.	1919	97	2,052	111	2,444	3,481	8,437	Marble and stone work.	1919	8	87	505	132	135	364
	1914	101	2,694	126	2,316	2,738	6,684		1914	10	173	607	140	118	380
	1909	145	2,318	70	1,780	2,046	5,506		1909	12	302	887	242	183	605
Tools, not elsewhere specified	1919	16	539	1,007	631	660	2,181	Printing and publishing. <sup>6</sup>	1919	47	2,101	1,979	2,258	3,717	10,010
	1914	12	321	494	201	458	781		1914	45	2,159	1,804	1,477	1,552	4,020
	1909	11	235	601	138	384	798		1909	41	1,993	1,442	1,185	1,280	3,368
All other industries.	1919	469	15,595	31,804	16,522	104,420	150,813	All other industries.	1919	134	11,844	15,768	11,474	44,110	75,069
	1914	508	12,049	22,954	7,553	38,537	62,588		1914	127	8,786	15,782	5,254	21,758	36,307
	1909	758	23,140	33,675	11,924	46,809	79,731		1909	123	8,287	12,272	4,024	17,177	29,426
BROCKTON.								FALL RIVER.							
All industries.	1919	217	18,059	13,205	20,896	74,713	117,855	All industries.	1919	293	37,015	145,646	30,514	96,180	163,246
	1914	243	10,246	10,477	10,557	31,604	51,259		1914	315	36,834	139,582	16,131	37,161	64,603
	1909	196	14,737	9,773	9,122	28,565	45,972		1909	288	37,139	122,061	15,339	35,524	64,146
Blacking, stains, and dressings.	1919	13	43	57	52	447	838	Bread and other bakery products.	1919	68	254	195	283	1,202	1,875
	1914	16	43	32	31	104	430		1914	88	197	86	127	610	1,017
	1909	12	31	45	23	166	328		1909	74	217	19	127	479	796
Boots and shoes, including cut stock and findings.	1919	92	15,089	8,495	17,011	67,040	101,598	Confectionery and ice cream.	1919	8	28	67	37	168	271
	1914	84	13,765	7,106	8,978	28,455	44,122		1914	12	23	25	13	74	124
	1909	75	12,503	6,802	7,751	25,384	39,293	Copper, tin, and sheet-iron work.	1919	10	27	11	38	36	95
Boxes, set-up paper boxes and cartons.	1919	4	182	50	142	239	537		1914	8	36	-----	24	22	75
	1914	5	174	141	77	114	233	Cotton goods, including cotton small wares.	1919	54	32,288	135,872	20,319	81,588	137,731
	1909	5	214	148	89	140	320		1914	51	30,758	124,347	13,189	29,059	49,995
Bread and other bakery products.	1919	10	84	119	108	507	810		1909	45	30,407	110,975	12,106	27,563	45,576
	1914	21	252	134	134	539	1,070	Foundry and machine-shop products. <sup>7</sup>	1919	31	925	1,377	906	1,833	3,907
	1909	11	223	198	126	453	892		1914	27	570	627	342	453	1,064
Cutlery and edge tools.	1919	7	66	96	91	69	281		1909	33	769	629	373	605	1,342
	1914	9	72	83	62	32	135	Lumber and timber products. <sup>8</sup>	1919	4	47	427	55	160	271
	1909	8	102	90	85	47	204		1914	6	80	486	52	98	192
Foundry and machine-shop products. <sup>2</sup>	1919	9	276	255	329	254	929		1909	8	68	648	38	206	318
	1914	15	243	230	178	127	431	Marble and stone work.	1919	10	50	220	61	34	124
	1909	9	162	278	119	116	391		1914	10	45	374	32	27	78
Lasts.	1919	6	365	631	470	498	1,857		1909	12	103	549	81	24	158
	1914	7	241	600	181	215	584	Printing and publishing.	1919	22	196	149	191	166	570
	1909	6	170	313	124	183	539		1914	22	195	195	153	96	396
Models and patterns, not including paper patterns.	1919	5	58	27	70	31	214		1909	21	190	171	142	95	365
	1914	4	38	18	23	11	76	Sausage, not made in slaughtering and meat-packing establishments.	1919	7	27	47	30	268	338
	1909	71	1,896	3,475	2,023	5,628	10,791		1914	8	21	27	16	145	210
All other industries.	1919	82	1,418	2,019	893	1,977	4,178		1909	7	13	10	6	76	97
	1914	70	1,332	1,899	805	2,076	3,996	All other industries.	1919	70	3,173	7,281	2,594	10,725	18,064
	1909	275	15,260	21,372	8,365	23,566	44,227		1914	83	4,909	13,415	2,183	5,977	11,514
CAMBRIDGE.									1909	88	5,382	9,060	2,466	6,476	12,494
All industries.	1919	339	22,550	28,421	22,842	69,127	127,865	HAVERHILL. <sup>9</sup>							
	1914	316	16,749	26,227	10,217	31,535	57,484	All industries.	1919	405	15,783	12,747	18,352	57,218	96,277
	1909	275	15,260	21,372	8,365	23,566	44,227		1914	398	13,281	10,839	8,614	26,512	42,409
Boxes, set-up paper boxes.	1919	6	632	236	446	621	1,447		1909	346	11,689	7,930	6,658	21,686	35,377
	1914	5	495	152	209	249	599								
	1909	4	292	110	105	104	280								

<sup>1</sup> Includes "sausage, not made in slaughtering and meat-packing establishments."<sup>2</sup> Includes "automobile repairing" in 1914.<sup>3</sup> Includes "stamped ware, not elsewhere specified" in all years; and "tinware, not elsewhere specified," in 1919.<sup>4</sup> Includes "automobile repairing"; "iron and steel, welding"; "machine tools"; "plumbers' supplies, not elsewhere specified"; "pumps, steam"; "steam fittings and steam and hot-water heating apparatus"; and "structural ironwork, not made in steel works or rolling mills."<sup>5</sup> Includes "boxes, wooden packing, except cigar boxes"; "lumber, planing-mill products, not including planing mills connected with sawmills"; and "window and door screens."<sup>6</sup> Includes "bookbinding and blank-book making."<sup>7</sup> Includes "iron and steel, welding," and "textile machinery and parts."<sup>8</sup> Includes "lumber, planing-mill products, not including planing mills connected with sawmills," in all years; and "boxes, wooden packing, except cigar boxes," in 1914 and 1909.<sup>9</sup> Comparative statistics by industries for 1914 and 1909 not available.



TABLE 39.—COMPARATIVE SUMMARY FOR SELECTED INDUSTRIES AND FOR CITIES: 1919, 1914, AND 1909—Continued.

INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Wages.			Value of prod- ucts.	INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Wages.			Value of prod- ucts.
					Expressed in thousands of dollars.									Expressed in thousands of dollars.			
CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.																	
<b>HOLYOKE</b> ..... All industries.	1919 1914 1909	176 222 187	17,773 17,493 16,513	76,893 74,369 60,269	17,318 8,994 8,076	51,160 25,362 22,301	93,427 44,041 40,097		<b>LOWELL</b> ..... All industries.	1919 1914 1909	291 300 319	30,111 29,904 32,333	85,556 83,817 71,562	29,865 14,002 14,022	76,993 33,104 32,455	137,802 56,049 59,688	
Bread and other bakery products.	1919 1914 1909	26 33 27	120 124 108	145 40 24	139 83 76	587 313 275	951 561 464		Belting, leather.....	1919 1914	3 3	17 10	9 8	21 11	114 57	165 78	
Copper, tin, and sheet-iron work.	1919 1914	3 4	75 107	133 23	94 59	189 131	368 249		Boots and shoes, not includ- ing rubber boots and shoes.	1919 1914 1909	5 9 7	674 1,485 1,259	476 800 618	585 684 562	1,753 2,355 1,682	3,138 3,549 2,650	
Foundry and machine-shop products. <sup>1</sup>	1919 1914 1909	26 24 17	1,354 905 1,002	3,525 2,864 1,455	1,604 594 621	2,685 890 843	5,524 2,197 2,095		Bread and other bakery products.	1919 1914 1909	57 57 46	218 221 166	160 92 58	240 146 103	1,132 415 482	1,724 734 750	
Lumber, planing-mill prod- ucts, not including planing mills connected with saw- mills.	1919 1914 1909	3 4 4	162 182 131	431 360 410	188 137 71	902 366 177	1,350 641 362		Confectionery and ice cream.	1919 1914	10 7	28 8	142 18	37 5	185 34	297 57	
Paper and wood pulp.....	1919 1914 1909	20 21 23	3,628 4,684 4,480	37,776 42,582 39,069	4,044 2,487 2,211	13,012 8,272 7,244	21,376 13,179 12,305		Copper, tin, and sheet-iron work.	1919 1914	6 6	39 30	5 5	48 19	56 21	168 59	
Paper goods, not elsewhere specified.	1919 1914 1909	5 5 4	508 496 417	1,407 1,033 740	507 282 204	2,250 1,258 947	3,645 1,932 1,424		Cotton goods, including cot- ton small wares.	1919 1914 1909	13 12 11	12,555 13,142 13,833	54,348 5,788 41,955	11,707 14,333 6,663	36,216 14,333 13,043	60,831 32,178 24,744	
Printing and publishing <sup>2</sup> ....	1919 1914 1909	22 31 27	945 793 736	690 363 371	856 479 371	1,406 473 633	3,453 1,697 1,450		Dyeing and finishing textiles, exclusive of that done in textile mills.	1919 1914	5 3	947 705	3,020 1,227	998 390	3,023 855	5,370 1,440	
Sausage, not made in slaugh- tering and meat-packing establishments.	1919 1914	4 7	11 9	27 26	12 7	98 49	127 74		Foundry and machine-shop products. <sup>1</sup>	1919 1914 1909	34 26 35	2,762 1,841 2,599	3,640 2,605 2,700	3,256 1,122 1,418	4,245 1,283 1,822	9,872 2,788 4,333	
Stationery goods, not else- where specified	1919 1914 1909	8 7 7	1,011 655 706	519 582 366	784 334 297	2,199 924 1,094	4,491 1,891 1,930		Lumber and timber prod- ucts. <sup>3</sup>	1919 1914 1909	13 14 17	382 313 410	1,656 1,936 1,637	377 196 211	1,503 770 734	2,377 1,123 1,066	
Tobacco manufactures.....	1919 1914 1909	7 13 17	34 64 73	1 3 -----	36 42 44	50 118 38	124 118 128		Patent medicines and com- pounds. <sup>6</sup>	1919 1914 1909	5 8 7	145 160 183	621 533 496	127 92 95	603 321 340	1,513 795 1,130	
All other industries.....	1919 1914 1909	52 73 61	9,925 9,474 8,860	32,239 26,488 17,834	9,054 4,490 4,181	27,782 12,646 11,050	52,018 21,502 19,939		Printing and publishing <sup>10</sup> ...	1919 1914 1909	22 24 26	106 265 250	313 595 349	209 191 178	320 298 299	1,034 768 796	
<b>LAWRENCE</b> ..... All industries.	1919 1914 1909	194 221 162	30,319 31,043 30,542	124,155 93,572 73,066	32,362 15,778 13,787	110,959 45,152 45,438	183,449 73,178 70,993		Woolen and worsted goods..	1919 1914 1909	13 9 11	1,025 1,016 2,807	4,845 4,262 5,807	1,898 931 1,210	5,574 2,436 3,672	9,798 3,924 5,522	
Bread and other bakery products.	1919 1914 1909	48 59 26	158 171 143	198 183 129	200 108 89	890 476 367	1,409 800 572		All other industries.....	1919 1914 1909	105 122 150	10,223 9,778 10,826	16,312 18,603 17,936	10,302 4,427 4,592	22,269 9,920 9,472	41,515 17,556 18,697	
Cotton goods.....	1919 1914 1909	6 4 6	3,601 4,189 4,914	25,811 16,597 16,172	3,470 1,833 2,030	12,806 4,656 3,918	20,937 7,143 8,826		<b>LYNN</b> ..... All industries.	1919 1914 1909	442 420 431	27,355 25,330 27,368	29,132 22,747 17,089	32,092 15,593 15,666	85,009 38,695 41,361	160,906 99,783 71,503	
Foundry and machine-shop products. <sup>3</sup>	1919 1914 1909	25 21 27	1,007 730 1,012	1,848 1,508 1,238	1,177 459 578	1,813 691 727	4,205 1,443 1,720		Blacking, stains, and dress- ings.	1919 1914 1909	11 10 14	77 62 44	38 78 76	94 43 31	568 295 271	943 525 537	
Lumber and timber prod- ucts <sup>4</sup>	1919 1914 1909	3 5 5	159 410 402	418 1,130 1,170	177 222 230	646 808 1,037	1,081 1,139 1,390		Boots and shoes, including out stock and findings.	1919 1914 1909	201 194 207	13,881 13,779 16,340	4,621 4,161 5,488	16,736 8,792 9,532	60,992 28,006 20,148	96,668 43,801 40,660	
Printing and publishing <sup>5</sup> ....	1919 1914 1909	19 21 18	138 121 126	178 196 166	173 94 89	142 82 66	504 285 254		Boxes, set-up paper boxes...	1919 1914 1909	4 5 6	114 353 348	40 507 265	89 177 169	215 411 404	505 736 730	
Sausage, not made in slaugh- tering and meat-packing establishments.	1919 1914	6 11	13 26	63 103	13 17	121 92	168 135		Bread and other bakery products.	1919 1914 1909	43 39 37	176 200 165	139 99 42	199 154 111	1,074 440 443	1,632 784 681	
Woolen and worsted goods..	1919 1914 1909	11 11 15	19,101 20,565 20,203	78,021 61,810 44,838	20,027 10,457 8,899	79,361 32,597 33,657	125,761 51,584 58,536		Confectionery and ice cream..	1919 1914	7 4	38 17	99 73	39 10	131 54	251 82	
All other industries.....	1919 1914 1909	76 89 65	6,142 4,831 3,742	17,618 12,075 9,553	7,116 2,588 1,872	15,180 5,750 5,606	29,204 10,649 10,605		Foundry and machine-shop products. <sup>11</sup>	1919 1914 1909	23 28 26	375 319 411	385 275 370	441 238 254	448 153 178	1,288 594 800	

<sup>1</sup> Includes "automobile repairing"; "iron and steel, welding"; "pumps, steam"; "steam fittings and steam and hot-water heating apparatus" in all years; and "structural ironwork, not made in steel works or rolling mills," in 1914 and 1909.

<sup>2</sup> Includes "bookbinding and blank-book making" in all years; and "engraving, steel and copper plate, including plate printing"; and "lithographing" in 1914 and 1909.

<sup>3</sup> Includes "iron and steel, welding"; "pumps, steam"; "steam fittings and steam and hot-water heating apparatus"; and "textile machinery and parts" in all years; "automobile repairing" in 1919; and "structural ironwork, not made in steel works or rolling mills," in 1914 and 1909.

<sup>4</sup> Includes "boxes, wooden packing, except cigar boxes"; and "lumber, planing-mill products, not including planing mills connected with sawmills."

<sup>5</sup> Includes "bookbinding and blank-book making" in 1914.

<sup>6</sup> Excludes statistics for 1 establishment manufacturing woolen goods, to avoid disclosure of individual operations.

<sup>7</sup> Includes "iron and steel, welding," and "textile machinery and parts" in all years; and "automobile repairing" and "structural ironwork, not made in steel works or rolling mills," in 1919.

<sup>8</sup> Includes "boxes, wooden packing, except cigar boxes," and "lumber, planing-mill products, not including planing mills connected with sawmills."

<sup>9</sup> Includes "perfumery and cosmetics" in 1914.

<sup>10</sup> Includes "bookbinding and blank-book making" in all years, and "engraving, steel and copper plate, including plate printing," in 1919.

<sup>11</sup> Includes "automobile repairing" in all years; and "engines, steam, gas, and water," and "hardware" in 1914 and 1909.



## MANUFACTURES—MASSACHUSETTS.

633

TABLE 39.—COMPARATIVE SUMMARY FOR SELECTED INDUSTRIES AND FOR CITIES: 1919, 1914, AND 1909—Continued.

INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Wages.	Cost of materi- als.	Value of prod- ucts.	INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Wages.	Cost of materi- als.	Value of prod- ucts.
					Expressed in thousands of dollars.								Expressed in thousands of dollars.		
CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.															
LYNN—Con.															
Lasts.....	1919	8	347	619	400	441	1,479	Lumber, planing-mill prod- ucts, not including planing mills connected with saw- mills.	1919	3	35	238	46	49	146
	1914	8	234	447	153	105	389		1914	5	59	250	46	83	168
	1909	5	81	187	61	75	266	Printing and publishing.....	1919	16	35	40	38	41	144
Leather, tanned, curried, and finished.	1919	11	1,041	2,301	1,270	10,602	15,824		1914	17	44	37	39	22	114
	1914	9	633	1,450	317	3,020	3,849		1909	14	43	32	24	17	77
	1909	8	1,062	1,185	457	4,009	5,094	Slaughtering and meat pack- ing. <sup>1</sup>	1919	5	3,290	6,011	4,113	78,618	84,740
Lumber, planing-mill prod- ucts, not including planing mills connected with saw- mills.	1919	5	21	158	35	54	124		1914	6	2,309	4,198	1,420	32,424	36,835
	1914	5	87	285	61	134	277		1909	7	2,292	3,308	1,236	27,866	31,270
	1909	6	129	363	82	188	330	All other industries.....	1919	73	2,315	8,660	2,337	6,801	11,860
Mineral and carbonated waters.	1919	4	23	36	22	94	179		1914	67	2,689	4,939	1,625	3,314	6,165
	1914	4	21	17	16	25	67		1909	59	2,731	4,213	1,490	3,676	6,714
Models and patterns, not including paper patterns.	1919	12	43	46	67	27	196	SPRINGFIELD.....							
	1914	10	41	30	33	14	94	All industries.	1919	401	18,429	31,624	19,796	47,803	98,333
Printing, job.....	1919	20	138	152	127	177	501		1914	395	14,240	24,418	9,350	21,915	44,429
	1914	21	145	135	83	124	345		1909	346	11,855	17,744	6,867	14,363	31,773
	1909	21	146	104	81	118	296	Automobile bodies and parts.	1919	6	434	127	556	345	1,760
All other industries.....	1919	93	11,081	20,492	13,473	10,186	41,316		1914	6	173	107	147	149	385
	1914	92	9,442	15,190	5,516	5,908	18,150	Brass and bronze products...	1919	5	694	2,260	906	1,293	3,468
	1909	101	8,633	9,009	4,888	6,527	16,109		1914	6	176	145	117	279	480
NEW BEDFORD.....									1909	7	164	129	104	246	431
All industries.	1919	267	41,630	150,248	40,012	122,571	210,773	Bread and other bakery products.	1919	58	441	772	481	2,898	4,347
	1914	233	33,343	112,151	16,568	37,574	65,575		1914	46	286	356	191	756	1,414
	1909	207	26,566	76,147	12,598	28,564	53,238		1909	27	127	52	83	356	611
Bread and other bakery products.	1919	55	417	257	431	1,449	2,409	Confectionery and ice cream..	1919	12	369	501	257	1,666	2,648
	1914	58	349	247	186	741	1,219		1914	10	346	378	160	733	1,229
	1909	44	289	90	100	548	1,023	Copper, tin, and sheet-iron work.	1919	13	50	18	57	103	224
Confectionery and ice cream..	1919	9	56	260	49	309	445		1914	9	57	10	46	49	132
	1914	6	22	53	16	137	195	Electrical machinery, appa- ratus, and supplies.	1919	10	1,438	1,219	1,674	2,391	7,277
Cotton goods.....	1919	31	35,206	134,080	33,186	104,654	177,059		1914	7	545	869	533	3,118	4,015
	1914	29	28,719	102,918	13,716	30,318	51,766		1909	5	154	198	82	63	161
	1909	22	22,141	68,155	10,115	23,290	42,505	Fancy articles, not elsewhere specified.	1919	3	48	1	29	37	107
Foundry and machine-shop products. <sup>1</sup>	1919	39	496	605	542	655	1,707		1914	4	74	3	29	43	114
	1914	18	302	591	190	229	522		1909	5	56	23	21	30	106
	1909	16	270	1,019	176	192	454	Foundry and machine-shop products. <sup>2</sup>	1919	52	2,033	3,173	2,778	2,574	9,419
Lumber, planing-mill prod- ucts, not including planing mills connected with saw- mills.	1919	6	65	666	66	185	296		1914	50	1,485	3,160	1,055	1,099	3,404
	1914	6	72	375	49	135	212		1909	39	1,554	3,488	973	1,027	3,006
	1909	8	171	759	93	232	412	Mattresses and spring beds, not elsewhere specified.	1919	3	22	43	20	75	120
Marble and stone work.....	1919	6	26	88	29	18	90		1914	6	66	234	34	102	177
	1914	11	23	55	27	13	59	Mineral and carbonated waters.	1919	6	35	67	31	106	185
Mineral and carbonated waters.	1919	7	41	25	42	229	385		1914	8	18	17	13	27	67
	1914	8	28	44	16	42	86		1909	6	12	12	7	19	51
	1909	3	20	12	14	29	53	Models and patterns, not in- cluding paper patterns.	1919	6	46	71	67	16	124
Printing and publishing <sup>2</sup> ....	1919	25	216	501	227	288	866		1914	5	28	31	26	4	50
	1914	20	273	511	194	152	537	Paper goods, not elsewhere specified.	1919	5	62	403	71	435	761
	1909	17	265	199	171	129	483		1914	6	395	503	200	612	1,061
Sausage, not made in slaugh- tering and meat-packing establishments.	1919	7	31	107	39	474	573	Printing and publishing <sup>3</sup> ....	1919	53	792	1,656	879	1,533	4,666
	1914	6	33	76	21	256	311		1914	59	1,160	1,754	816	1,037	3,757
All other industries.....	1919	82	5,076	13,653	5,401	14,310	20,943		1909	51	1,025	1,632	666	1,006	3,901
	1914	71	3,522	7,281	2,143	5,551	10,668	Tobacco, cigars.....	1919	14	368	38	409	543	1,250
	1909	97	3,404	5,904	1,869	4,144	8,308		1914	26	487	11	346	414	920
SOMERVILLE.....									1909	29	408	6	277	256	720
All industries.	1919	140	6,111	15,293	7,022	87,097	99,559	Tools, not elsewhere specified	1919	8	363	608	368	249	928
	1914	144	5,429	9,707	3,340	36,497	43,971		1914	5	339	768	228	127	784
	1909	114	5,280	7,680	2,870	31,923	38,687		1909	4	287	648	185	154	523
Bread and other bakery products.	1919	29	279	136	287	1,015	1,653	All other industries.....	1919	147	11,234	20,667	11,213	33,539	61,049
	1914	31	172	128	120	385	668		1914	142	8,599	16,082	5,409	13,366	26,440
	1909	28	120	55	68	269	429		1909	173	8,068	11,556	4,469	11,206	22,233
Confectionery and ice cream..	1919	7	53	71	79	341	493								
	1914	8	77	69	47	181	311								
Foundry and machine-shop products. <sup>3</sup>	1919	7	104	137	122	232	523								
	1914	10	79	86	52	88	210								
	1909	6	94	72	46	95	197								

<sup>1</sup> Includes "automobile repairing"; "iron and steel, welding"; "machine tools"; "steam fittings and steam and hot-water heating apparatus"; and "textile machinery and parts."<sup>2</sup> Includes "bookbinding and blank-book making" in 1914 and 1909.<sup>3</sup> Includes "automobile repairing"; "hardware"; and "textile machinery and parts" in all years; and "steam fittings and steam and hot-water heating apparatus" in 1919.<sup>4</sup> Includes "sausage, not made in slaughtering and meat-packing establishments."<sup>5</sup> Includes "automobile repairing"; "iron and steel, welding"; "machine tools"; "plumbers' supplies, not elsewhere specified"; "steam fittings and steam and hot water heating apparatus"; and "structural ironwork, not made in steel works or rolling mills," in all years; and "hardware" in 1914 and 1909.<sup>6</sup> Includes "bookbinding and blank-book making" in all years; "lithographing" in 1914 and 1909; and "engraving, steel and copper plate, including plate printing," in 1914.



## MANUFACTURES—MASSACHUSETTS.

TABLE 39.—COMPARATIVE SUMMARY FOR SELECTED INDUSTRIES AND FOR CITIES: 1919, 1914, AND 1909—Continued.

INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Expressed in thousands of dollars.			INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Expressed in thousands of dollars.		
					Wages.	Cost of mate- rials.	Value of prod- ucts.						Wages.	Cost of mate- rials.	Value of prod- ucts.
CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.															
WORCESTER..... All industries.	1919 1914 1909	618 606 580	38,673 29,452 28,221	94,712 71,984 53,405	44,440 17,633 15,295	106,181 45,794 42,601	208,706 82,829 77,148	WORCESTER—Con.							
Envelopes.....	1919 1914	7 6	1,267 1,182	807 773	1,117 520	3,772 1,003	6,469 2,803								
Foundry and machine-shop products. <sup>3</sup>	1919 1914 1909	101 89 89	8,399 6,038 6,603	15,580 10,910 6,801	10,556 4,020 3,841	14,156 4,543 4,793	37,709 12,226 13,219								
Furniture.....	1919 1914	4 3	36 63	70 60	40 45	75 32	146 104								
Lumber and timber prod- ucts. <sup>4</sup>	1919 1914 1909	12 13 12	331 541 320	1,342 1,702 1,154	388 382 195	753 699 476	1,509 1,234 814								
Marble and stone work.....	1919 1914 1909	8 7 10	17 140 227	54 836 862	23 106 218	41 59 93	120 262 383								
Mineral and carbonated waters.	1919 1914 1909	7 7 7	22 39 53	93 58 49	27 31 22	48 62 35	117 141 83								
Models and patterns, not in- cluding paper patterns.	1919 1914	7 4	43 24	65 41	70 19	20 7	134 38								
Musical instruments, piano and organ materials.	1919 1914	5 4	712 351	535 688	780 214	1,014 246	2,260 596								
Printing and publishing <sup>5</sup> ....	1919 1914 1909	59 59 53	700 690 585	687 939 384	852 451 392	942 448 371	3,328 1,620 1,233								
Sausage, not made in slaugh- tering and meat-packing establishments.	1919 1914	4 4	26 39	81 77	31 20	371 226	458 277								
Tobacco, cigars.....	1919 1914 1909	9 18 20	66 83 65	6 5 2	71 51 37	104 72 42	225 163 117								
Wirework, not elsewhere specified.	1919 1914	6 9	552 1,066	468 1,280	481 554	559 1,237	1,751 2,004								
Wood, turned and carved....	1919 1914	5 4	53 16	111 60	47 6	32 6	109 18								
Woolen and worsted goods..	1919 1914 1909	13 12 15	1,487 1,583 1,722	3,807 3,529 3,900	1,494 2,292 689	4,839 3,585 3,200	8,865 3,585 4,460								
All other industries.....	1919 1914 1909	180 172 222	18,116 11,871 15,083	64,300 45,615 37,075	22,202 7,066 8,166	59,134 20,751 28,637	108,374 42,970 48,136								

## CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

<b>ADAMS</b> .....	1919	32	3,974	14,120	3,524	8,140	15,077	<b>CHICOPEE</b> .....	1919	60	10,068	30,523	12,592	40,458	89,773
	1914	35	3,930	12,673	1,793	3,797	6,530		1914	62	8,426	22,907	5,131	17,118	28,869
	1909	31	3,991	10,173	1,719	3,082	6,410		1909	58	7,260	18,738	3,090	10,952	19,219
<b>AMESBURY</b> .....	1919	44	3,173	4,003	3,847	9,417	16,310	<b>CLINTON</b> .....	1919	33	4,155	13,921	4,088	8,270	15,180
	1914	50	1,451	1,641	1,009	1,805	3,551		1914	36	4,064	9,931	1,884	3,610	9,735
	1909	27	228	849	238	423	1,006		1909	39	4,123	10,882	1,872	4,216	7,845
<b>ARLINGTON</b> .....	1919	10	246	542	185	277	641	<b>DEDHAM</b> .....	1919	20	463	2,033	419	814	1,738
	1914	19	283	851	177	311	695		1914	15	256	1,000	120	211	428
	1909	19	283	851	177	311	695	<b>EVERETT</b> .....	1919	104	4,523	17,400	4,635	19,050	35,776
<b>ATTLEBORO</b> .....	1919	144	6,763	7,789	7,263	18,570	34,472		1914	85	3,226	10,908	2,047	6,611	13,219
	1914	151	6,058	7,486	3,518	7,379	13,947		1909	62	2,680	7,816	1,598	4,506	8,747
	1909	128	6,429	5,991	3,763	6,813	15,160	<b>FITCHBURG</b> .....	1919	121	9,907	45,988	10,520	36,055	58,165
<b>BEVERLY</b> .....	1919	70	6,495	5,190	8,410	8,738	21,830		1914	137	8,837	38,371	4,815	16,097	23,983
	1914	67	4,641	4,659	3,356	3,166	8,774		1909	122	8,497	28,754	4,231	14,442	23,252
	1909	63	4,487	3,778	2,929	3,291	8,653	<b>FRAMINGHAM</b> .....	1919	59	4,362	6,940	4,138	10,350	18,842
<b>BROOKLINE</b> .....	1919	32	484	203	484	1,042	2,243		1914	49	3,982	6,058	2,267	4,447	8,727
	1914	21	335	323	239	218	659		1909	27	3,069	4,486	1,440	3,411	6,917
	1909	16	340	339	194	196	532	<b>GARDNER</b> .....	1919	73	4,036	6,195	3,936	5,180	13,600
<b>CHELSEA</b> .....	1919	123	6,580	13,797	6,924	16,703	32,537		1914	64	3,964	5,046	2,084	3,079	7,450
	1914	123	6,241	7,031	3,854	9,415	16,971		1909	52	3,617	5,031	1,774	2,833	6,485
	1909	110	5,954	8,339	3,320	10,569	17,002								

<sup>1</sup> Excludes statistics for 2 establishments manufacturing boot and shoe findings, to avoid disclosure of individual operations.<sup>2</sup> Includes "stamped ware, not elsewhere specified."<sup>3</sup> Includes "automobile repairing"; "engines, steam, gas, and water"; "gas and water meters"; "hardware"; "iron and steel, tempering and welding"; "machine tools"; "structural ironwork, not made in steel works or rolling mills"; and "textile machinery and parts" in all years; "steam fittings and steam and hot-water heating apparatus" in 1919 and 1909; and "plumbers' supplies, not elsewhere specified," in 1914 and 1909.<sup>4</sup> Includes "boxes, wooden packing, except cigar boxes"; "lumber, planing-mill products, not including planing mills connected with sawmills"; and "window and door screens."<sup>5</sup> Includes "bookbinding and blank-book making"; "engraving, steel and copper plate, including plate printing"; and "lithography."



## MANUFACTURES—MASSACHUSETTS.

635

TABLE 39.—COMPARATIVE SUMMARY FOR SELECTED INDUSTRIES AND FOR CITIES: 1919, 1914, AND 1909—Continued.

CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Wages.	Cost of mate- rials.	Value of prod- ucts.	CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Wages.	Cost of mate- rials.	Value of prod- ucts.
					Expressed in thousands of dollars.								Expressed in thousands of dollars.		
CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED—Continued.															
GLOUCESTER.....	1919	90	2,084	2,943	2,614	12,700	18,804	PLYMOUTH.....	1919	31	2,971	10,872	3,005	21,497	31,320
	1914	87	2,814	2,682	1,337	5,590	8,534		1914	37	2,845	9,229	1,481	10,123	13,905
	1909	102	2,181	2,427	1,042	4,770	7,753		1909	32	2,912	6,239	1,416	8,475	11,618
GREENFIELD.....	1919	53	2,750	4,914	3,110	2,840	9,481	QUINCY.....	1919	162	19,653	19,348	34,830	24,175	68,535
	1914	50	1,602	2,544	877	1,422	3,527		1914	177	5,783	10,153	4,584	5,088	12,097
	1909	47	1,251	2,327	701	1,034	2,801		1909	183	5,492	9,147	3,434	3,844	10,505
LEOMINSTER.....	1919	92	5,793	7,696	5,519	13,844	24,929	REVERE.....	1919	31	126	738	155	449	767
	1914	89	4,920	6,408	2,574	5,410	10,838		1914	27	80	675	69	220	350
	1909	94	5,601	5,890	2,794	5,576	10,531		1909	14	101	548	54	202	407
MALDEN.....	1919	108	4,723	7,425	4,276	9,645	22,078	SALEM.....	1919	153	5,672	13,504	5,904	16,927	30,438
	1914	92	2,850	3,547	1,477	3,249	8,366		1914	178	5,204	11,802	2,803	8,145	13,653
	1909	86	2,900	3,433	1,346	4,388	8,206		1909	155	6,338	11,436	2,893	8,640	14,576
MARLBOROUGH.....	1919	48	3,798	1,767	4,034	13,155	19,045	SOUTHBRIDGE.....	1919	41	5,320	9,132	4,605	7,482	18,253
	1914	43	3,822	2,332	2,119	6,468	9,984		1914	35	4,332	8,995	2,272	3,238	7,366
	1909	59	4,265	2,721	2,224	6,375	10,382		1909	36	4,037	7,636	1,805	3,125	6,269
MEDFORD.....	1919	54	1,031	2,139	981	3,189	5,666	TAUNTON.....	1919	167	8,981	25,340	9,013	27,787	48,331
	1914	54	559	1,495	355	1,855	2,619		1914	115	7,371	20,997	4,135	8,106	15,886
	1909	40	560	1,123	331	1,250	2,045		1909	146	7,407	19,141	3,834	7,775	15,380
MELROSE.....	1919	27	1,606	1,777	1,327	3,077	6,084	WAKEFIELD.....	1919	32	1,869	1,538	1,921	5,582	8,977
	1914	26	962	1,582	484	1,334	2,490		1914	22	2,008	1,831	1,196	3,144	6,058
	1909	25	1,038	1,535	493	1,589	2,825		1909	23	2,230	1,729	1,046	2,835	5,527
METHUEN.....	1919	33	2,571	10,625	2,405	9,074	14,215	WALTHAM.....	1919	93	8,069	9,823	8,190	6,834	20,879
	1914	25	1,940	6,247	855	2,951	4,461		1914	88	6,465	7,926	4,005	3,815	10,237
	1909	19	1,572	5,772	689	2,226	3,476		1909	80	6,037	7,583	3,288	2,444	7,814
MILFORD.....	1919	48	1,809	2,020	1,819	4,846	8,409	WATERTOWN.....	1919	25	8,420	18,390	9,029	10,734	47,298
	1914	59	1,749	2,137	992	2,298	4,028		1914	30	4,787	4,377	2,855	6,694	14,764
	1909	53	1,801	2,410	945	2,889	4,442		1909	25	4,335	4,862	2,235	6,463	11,546
NATICK.....	1919	49	1,463	2,178	1,382	4,953	7,393	WEBSTER.....	1919	24	3,849	7,543	3,921	18,791	28,401
	1914	38	1,347	1,017	745	3,318	4,566		1914	23	3,246	6,130	1,471	6,983	9,234
	1909	38	1,347	1,017	745	3,318	4,566		1909	22	3,019	6,454	1,293	6,976	10,027
NEWBURYPORT.....	1919	64	3,960	6,417	3,911	12,680	20,595	WESTFIELD.....	1919	85	3,243	7,253	3,115	6,941	14,279
	1914	54	3,349	4,412	1,056	4,757	8,246		1914	100	3,584	4,046	2,127	3,434	8,420
	1909	74	3,215	3,820	1,642	3,781	6,931		1909	91	3,060	3,541	1,695	2,898	7,362
NEWTON.....	1919	49	2,547	5,536	2,613	8,428	15,525	WEST SPRINGFIELD.....	1919	23	2,701	11,260	3,569	6,385	12,387
	1914	58	2,154	5,576	1,185	3,142	5,823		1914	29	2,209	12,131	1,631	2,410	5,040
	1909	46	2,174	4,163	1,125	3,383	6,279		1909	29	2,209	12,131	1,631	2,410	5,040
NORTH ADAMS.....	1919	65	6,023	14,040	5,031	22,286	36,204	WEYMOUTH.....	1919	34	2,146	2,352	2,285	11,129	16,837
	1914	70	5,288	12,046	2,775	5,697	10,923		1914	40	2,074	2,649	1,196	5,058	8,251
	1909	60	5,414	11,928	2,567	5,576	10,315		1909	41	1,991	1,902	1,110	4,204	6,627
NORTHAMPTON.....	1919	63	3,532	6,687	3,306	9,351	17,961	WINCHESTER.....	1919	17	1,112	2,188	1,295	6,221	9,698
	1914	75	3,446	7,531	1,960	3,888	8,581		1914	19	1,048	1,644	643	3,602	5,150
	1909	71	3,150	6,139	1,503	3,163	6,999	WINTHROP.....	1919	19	61	71	49	203	330
PEABODY.....	1919	91	8,013	19,134	10,234	31,316	52,907		1914	10	16	197	11	38	72
	1914	77	5,485	15,764	8,072	12,243	18,442		1909	7	7	41	5	25	42
	1909	74	4,850	9,981	2,638	10,192	15,540	WOBURN.....	1919	53	2,011	5,942	2,376	7,550	13,980
PITTSFIELD.....	1919	90	8,570	18,045	10,200	19,718	41,613		1914	57	1,565	3,880	915	3,351	5,518
	1914	84	7,490	15,980	4,683	9,129	22,241		1909	50	1,653	3,560	932	3,114	5,408
	1909	71	6,353	8,301	3,718	8,528	15,215								







## 637

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.				

[illegible]

<sup>4</sup> Same number reported for one or more other months.



## MANUFACTURES—MASSACHUSETTS.

TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Number of establishments	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.		Total.	16 and over.		Under 16.			
					Male.	Female.	Average number.	Number, 15th day of---		Male.	Female.	Male.	Female.		
								Maximum month.							Minimum month.

## THE STATE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

															Dollars.
1	Clothing, men's, buttonholes.....	4	13	4	271	240	6,271	(*) 9	(*) 9	10	6	3	1	.....	1,300
2	Clothing, women's.....	258	7,319	302	235	240	6,122			6,475	1,333	4,970	3	169	10,994,913
3	Regular factory products.....	238	7,137	278	233	269	6,122			6,328	1,269	4,888	2	169	10,963,855
4	Suits, skirts, and cloaks.....	46	1,039	70	27	41	800	Oc 958	Ja 716	878	617	250	.....	2	1,807,017
5	Shirt waists and dresses, except house dresses.....	86	3,121	99	98	118	106	My 2,918	Ja 2,309	2,531	354	2,001	1	85	4,122,833
6	Undergarments and petticoats.....	37	1,424	37	45	43	41	Do 1,441	Ja 1,002	1,443	140	1,250	.....	44	3,189,532
7	Wrappers and house dresses.....	11	217	13	11	13	7	De 203	Fe 155	203	21	177	.....	5	313,459
8	All other.....	58	1,336	59	52	54	40	No 1,277	Ja 894	1,273	137	1,102	1	33	1,520,114
9	Contract work.....	20	182	24	2	2	5			147	64	82	.....	1	41,058
10	Suits, skirts, and cloaks.....	15	118	20	1	1	4	No 113	Fe 67	87	63	23	1	.....	17,089
11	All other.....	5	64	4	1	1	1	Oc 100	Fe 7	60	1	50	.....	.....	23,969
12	Coal-tar products.....	8	634	1	43	110	36	De 535	Mh 366	535	533	1	1	.....	3,718,616
13	Coffee and spice, roasting and grinding.....	23	826	23	38	107	56			548	342	199	.....	7	5,676,977
14	Coffee.....	19	622	22	22	164	49	Au 386	Mh 349	378	271	106	.....	1	4,754,825
15	Spice.....	4	204	1	16	33	7	De 170	Ap 129	170	71	93	.....	6	922,152
16	Coffins, burial cases, and undertakers' goods.....	9	429	4	20	30	16	Fe 420	Se 202	348	321	26	.....	1	1,313,299
17	Combs and hairpins, not made from metal or rubber.....	26	1,022	13	67	28	48	De 1,847	Ja 1,690	1,952	1,150	630	89	83	2,976,108
18	Confectionery and ice cream.....	278	13,613	201	498	627	612			11,856	3,651	6,900	225	1,071	28,133,527
19	Confectionery.....	130	12,435	117	442	590	533	Oc 11,800	Jy 9,000	11,141	3,041	6,808	221	1,071	25,202,770
20	Ice cream.....	148	1,178	174	56	37	79	Ja 623	Ja 623	715	610	101	4	.....	2,870,767
21	Cooperage, hogsheds and barrels.....	18	431	18	8	5	4	Mh 477	Ap 336	374	374	.....	.....	.....	1,054,040
22	Copper, tin, and sheet-iron work.....	137	2,172	124	174	171	170	De 1,754	Mh 1,392	1,760	1,683	46	19	2	4,382,284
23	Cordage and twine.....	13	2,995	4	70	74	104	Mh 2,948	Ja 2,574	2,720	1,911	729	45	35	26,094,441
24	Cordials and flavoring sirups.....	8	94	3	12	11	15	Au 60	Se 39	51	31	20	.....	.....	522,869
25	Cork, cutting.....	3	30	1	6	2	.....	Fe 29	My 18	22	16	5	.....	1	109,376
26	Corsets.....	11	1,750	1	37	39	68	Oc 1,790	Jy 1,430	1,804	227	1,431	10	136	4,319,452
27	Cotton goods.....	191	125,834	17	1,361	1,046	911	De 127,017	Ap 118,105	128,489	65,749	55,354	3,575	3,811	504,295,192
28	Cotton small wares.....	40	1,821	13	97	13	47	De 1,708	Fe 1,541	1,683	544	990	40	103	5,356,380
29	Cutlery and edge tools.....	51	4,739	27	169	307	248			4,528	2,865	1,564	73	26	24,543,745
30	Table cutlery.....	45	3,800	27	142	278	231	De 869	Ja 700	869	770	41	48	10	1,902,236
31	All other.....	9	65	4	7	7	40	De 3,588	Au 2,760	3,659	2,095	1,523	25	16	22,641,509
32	Dental goods.....	3	15	3	.....	.....	12			46	34	9	.....	.....	142,678
33	Tooth.....	6	50	1	7	7	28	No 17	Ja 10	17	14	.....	3	.....	6,895
34	All other.....	24	2,573	7	125	205	447	Ap 35	Ja 21	29	20	9	.....	.....	135,783
35	Druggists' preparations.....	62	13,389	13	379	322	354	Fe 2,097	Au 1,446	1,848	864	962	16	16	15,390,799
36	Dyeing and finishing textiles, exclusive of that done in textile mills.....	27	277	19	32	34	27	De 13,031	Mh 10,800	13,786	10,414	3,117	153	102	58,279,255
37	Dyestuffs and extracts—natural.....	27	277	19	32	34	27	De 104	Ap 127	186	175	5	1	5	2,261,813
38	Electrical machinery, apparatus, and supplies.....	110	29,472	32	1,201	2,287	2,063	De 23,024	Ap 21,532	28,008	20,884	6,900	151	73	90,953,845
39	Electroplating.....	48	389	49	24	15	13	No 347	Fe 227	328	305	13	10	.....	353,493
40	Emery and other abrasive wheels.....	14	3,010	8	113	193	263	De 2,776	Jy 2,214	2,776	2,550	206	6	14	17,747,806
41	Enameling.....	7	78	5	3	1	2	No 80	Mh 52	78	30	80	2	7	147,690
42	Engraving and disinking.....	47	216	65	3	5	0	Se 104	Ja 123	163	140	0	14	.....	145,778
43	Engraving, steel and copper plate, including plate printing.....	24	524	16	22	21	33	Oc 515	Fe 386	465	224	189	24	28	488,256
44	Envelopes.....	13	2,161	2	51	82	109	De 2,153	Au 1,826	2,153	703	1,430	3	8	7,256,167
45	Fancy articles, not elsewhere specified.....	39	2,227	26	93	62	117			2,497	1,231	1,123	50	93	4,063,570
46	Celluloid novelties.....	10	1,285	2	46	19	48	De 1,362	Ja 1,094	1,362	838	402	15	17	2,536,916
47	Metal and wood novelties.....	5	237	5	15	5	23	De 277	Ja 144	277	225	50	2	.....	556,160
48	Paper novelties.....	8	561	6	21	33	41	De 718	Mh 909	713	126	478	33	76	753,541
49	All other.....	16	144	13	11	5	110	No 150	Ja 60	145	42	103	.....	.....	216,959
50	Felt goods.....	15	1,309	.....	56	46	121	Ja 1,143	Fe 1,021	1,248	1,090	140	13	5	10,790,477
51	Firearms.....	5	2,440	1	13	78	95	Ja 2,570	Ja 1,886	2,463	2,323	95	45	.....	5,294,448
52	Flavoring extracts.....	3	12	2	.....	.....	10	Oc 14	Ja 6	13	7	6	.....	.....	18,198
53	Flouring extracts.....	27	254	19	27	60	10	Oc 151	Ja 115	147	59	81	1	6	950,221
54	Flour-mill and gristmill products.....	75	233	79	13	7	11	De 138	Mh 116	143	135	8	.....	.....	3,135,522
55	Food preparations, not elsewhere specified.....	81	1,203	79	78	104	94			886	605	255	17	9	4,704,078
56	Breadstuffs, cereals, and breakfast foods.....	8	36	7	2	1	8	Ja 21	Ap 15	19	17	2	.....	.....	147,000
57	Macaroni, vermicelli, and noodles.....	17	258	23	11	7	6	Jy 225	Fe 195	228	189	27	10	2	1,137,112
58	Meat products, not elsewhere specified.....	5	179	2	13	9	11	Ja 209	Au 93	134	66	67	1	.....	902,255
59	Peanut butter.....	3	21	4	1	2	.....	Mh 15	Ja 13	14	8	6	.....	.....	29,878
60	All other.....	48	709	43	51	85	69	Ja 511	Oc 401	491	325	163	6	7	2,487,743
61	Foundry and machine-shop products.....	574	33,161	385	1,617	1,895	1,572	Ja 871	Mh 726	31,355	30,339	859	150	7	102,735,354
62	Boiler shops.....	18	949	10	42	38	29	De 571	Mh 726	818	814	3	1	.....	3,067,936
63	Foundries.....	79	4,507	42	199	90	115	De 5,005	Ja 3,420	5,071	5,039	17	15	.....	9,474,466
64	Machine shops.....	457	25,696	313	1,278	1,698	1,380	De 23,542	My 19,013	23,550	22,599	824	129	7	86,092,149
65	Machine shop and foundry combined.....	20	2,009	.....	98	69	48	Ja 1,938	Ap 1,024	1,907	1,887	15	5	.....	4,103,803
66	Fur goods.....	22	376	22	15	37	13	De 340	Mh 248	340	162	177	1	.....	1,179,617
67	Furnishing goods, men's.....	14	356	15	16	30	20	De 310	Ja 250	330	60	277	3	.....	1,008,754
68	Furniture.....	161	7,232	129	316	236	209			7,418	6,461	761	154	42	27,852,510
69	Wood, other than rattan and willow.....	120	5,623	104	229	183	154	De 5,741	Ja 4,305	5,757	5,019	559	139	40	23,028,120
70	Rattan and willow.....	13	965	7	44	18	31	De 1,025	Ap 779	1,025	837	184	4	.....	3,384,994
71	Metal.....	9	249	2	16	18	8	De 225	Ja 182	225	203	12	8	.....	595,628
72	Store and office fixtures.....	19	395	16	27	17	16	De 411	My 225	411	402	6	3	.....	843,768

\* Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

\* Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



## MANUFACTURES—MASSACHUSETTS.

639

COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.				Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		For contract work.	Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.			Fuel and rent of power.	Total	Owned.			
			Steam engines (not turbines).					Steam turbines.	Internal-combustion engines.			Water power. <sup>1</sup>	Rent- ed. <sup>2</sup>		

THE STATE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.
709,399	805,707	5,010,403	7,750	074,508	1,197	344,718	144,453	17,877,812	95,705	30,427,592	12,454,075	1,622	470	2	1,150	116
705,922	801,899	5,409,176	7,750	074,508	1,197	344,718	144,453	17,877,812	95,705	30,427,592	12,454,075	1,622	470	2	1,150	116
62,397	111,141	254,154	2,278,977	48,125	8,096	60,183	52,000	3,530,992	14,592	6,034,004	2,438,420	139	310	2	137	116
256,944	362,082	2,278,977		450,839	134,692			6,439,222	38,449	11,442,349	4,904,678	744			434	
222,518	193,907	965,564	133,113	60,060	59,851	5,111,880	19,140	7,685,546	2,554,526	411	100				251	6
16,030	28,931	125,421		16,907	1,692	540,875	3,800	864,338	319,663	56					56	7
148,033	105,238	845,059	31,481	61,770	21,782	2,191,800	17,157	4,105,011	1,830,514	238					238	8
3,477	3,808	147,228		10,416	426	63,543	2,527	290,344	230,274	34					34	9
1,805	2,495	117,170		8,816	203	63,254	1,609	240,061	175,198	19					19	10
1,872	1,313	30,068		1,000	223	50,289	918	50,289	53,076	16					16	11
279,755	102,005	572,177	1,282	12,757	140,536	110,443	110,443	3,950,975	1,485,449	1,019	191				810	12
263,206	495,701	483,470		104,404	110,029	13,939,589	95,247	10,977,791	2,972,955	1,377	480			48	740	13
191,876	438,396	343,515		93,084	90,077	12,543,041	54,783	15,121,062	2,523,838	919	220				659	14
71,390	57,805	139,955		10,480	19,952	1,390,548	10,404	1,850,129	449,117	458	200			8	90	15
66,342	84,586	371,601		12,526	108,145	984,753	7,618	2,170,243	1,183,872	762	400				362	16
270,258	80,459	1,424,032	23,512	5,652	70,728	2,462,099	72,503	5,179,469	2,044,807	1,292	667				102	17
1,855,174	1,769,483	8,523,320	8,142	614,724	3,024,883	39,728,401	625,008	68,896,835	28,542,876	11,236	4,116	810	111	1	6,198	3,841
1,082,518	1,052,200	7,512,037	1,370	584,659	3,559,751	34,406,967	407,350	60,550,558	25,082,285	8,419	4,001	810	27		3,581	3,841
172,656	117,283	1,011,238	0,772	80,005	65,132	5,321,434	158,252	8,340,327	2,800,641	2,817	115				2,617	20
30,510	7,082	350,948	190	4,045	30,916	1,358,880	20,437	2,150,268	765,001	413	275				109	76
530,085	292,773	1,919,135	10,549	90,082	106,839	3,103,582	64,404	8,315,508	5,087,622	1,926	225				1,542	270
237,130	265,904	2,300,026	250,000	11,820	2,690,503	19,227,341	203,609	28,080,044	8,659,094	10,957	5,101	3,067	225	478	1,396	1,893
72,922	31,490	48,079	4,000	15,131	10,960	680,783	3,082	962,578	327,813	102					28	24
11,720	2,040	7,720	7,921	2,352	182	44,051	2,582	68,396	40,765	111					25	25
220,765	335,620	1,093,117	549,728	32,810	175,803	3,352,418	14,544	6,703,509	3,395,547	835	565				270	460
6,611,577	2,740,039	100,902,503	939,202	35,955,862	348,057,068	11,598,170	590,587,441	237,012,202	523,045	523,045	267,200	87,234	1,380	69,460	98,371	117,895
392,001	68,003	1,238,705	37,241	253,476	5,122,118	13,307	8,250,308	3,004,823	2,722	5,885	1,440	30	9	655	1,040	60
480,510	650,211	3,940,086	1,875	2,336,804	5,200,738	210,599	19,072,750	14,201,411	5,885	1,440	30	9	655	3,751	245	29
80,371	67,096	803,008		55,928	458,066	87,230	1,889,444	1,374,158	2,166	3,729	890	30	9	220	1,471	75
400,139	589,115	3,077,618	1,875	13,089	2,279,876	4,742,082	153,369	17,783,306	12,857,255	3,729					2,580	170
20,024	16,032	38,888	620	5,481	7,898	689,712	2,328	881,152	189,110	27					27	32
		10,951		1,231	208	18,275	209	40,079	101,575	4					23	34
20,024	15,032	27,937	620	4,250	7,690	671,459	2,059	835,073	101,575	4					23	34
761,357	812,636	1,307,006	420	22,061	784,156	4,913,010	39,859	9,989,720	5,030,851	757	610				147	508
1,822,350	12,240,747	22,722	22,722	12,930	4,594,062	41,846,099	2,303,839	75,261,815	31,052,277	39,133	13,613	14,269		2,305	8,956	18,146
118,004	91,095	199,918		22,183	152,958	4,422,910	52,920	5,811,567	1,335,737	773	319				421	37
3,856,415	5,158,047	27,049,667	23,100	195,130	4,127,531	30,546,217	1,291,859	91,938,738	00,101,002	30,307	3,925	24,718	25	8	7,469	58,400
64,032	20,412	323,742	3,953	37,288	4,398	147,659	20,912	834,325	605,754						483	39
482,507	388,240	2,264,531		787,071	4,566,879	440,305	13,118,047	8,104,803	5,886	375	1,667	15	4		3,840	40
0,250	2,392	97,953	9	1,710	5,909	123,114	8,043	250,009	124,852	94	55				29	41
7,147	12,083	109,217	7,724	10,043	2,056	40,293	3,505	434,583	384,782	78					78	42
122,682	55,549	407,250	0,074	20,780	30,912	254,262	7,340	1,318,098	1,050,490	110			10		100	43
225,040	235,252	1,073,251		14,435	262,877	6,504,528	45,615	10,868,966	4,318,823	1,401	985	35			381	1,009
280,375	237,028	1,092,386	83,487	39,806	196,949	3,558,917	120,842	7,931,996	3,443,237	2,473	381				2,080	45
105,825	62,892	1,145,729	140	15,779	172,999	3,351,135	101,820	5,524,119	2,071,164	1,075	301				1,662	46
24,020	30,845	184,380	0,653	7,543	12,999	272,078	18,542	649,674	355,854	214					214	47
46,855	129,348	285,214	72,805	9,013	9,809	483,769	0,950	1,281,924	791,205	42					162	48
23,675	7,943	77,033	3,983	9,531	1,082	251,735	2,530	470,279	222,014	242					42	49
293,550	213,543	1,154,905		11,096	194,126	6,421,690	218,020	10,280,361	3,640,651	5,243	1,095				2,292	50
95,542	234,303	2,599,197		520	372,672	961,022	105,185	5,644,510	4,578,303	2,121	570				1,581	51
		10,262	1,000	1,197	52	8,252	320	28,045	19,467	8					8	52
106,247	270,412	108,170	41	24,807	44,820	1,120,340	6,089	2,147,024	1,020,595	77					77	53
32,981	15,652	129,996	152	18,259	25,303	4,214,481	35,056	4,878,212	628,676	4,013	234				2,497	54
296,181	302,127	772,902	31,105	89,437	171,967	5,890,790	181,017	9,002,578	3,530,771	1,919	412				1,475	55
10,500	8,423	16,874		5,244	2,016	300,969	2,895	399,167	95,293	114	14				73	56
29,463	15,273	180,751		15,528	11,586	1,164,933	44,439	1,633,341	423,969	700	100				600	57
60,075	21,583	120,357		0,531	38,034	1,184,953	15,433	1,592,065	391,709	179					179	58
3,900	4,522	13,486		180	382	113,223	1837	153,423	38,363	20					20	59
194,343	252,320	441,434	31,105	61,954	119,949	3,120,712	116,413	5,824,562	2,581,437	906	298				603	60
5,901,981	3,893,558	30,613,749	807,324	495,990	3,721,613	37,118,580	2,061,458	111,852,629	72,642,691	46,310	8,754	4,584	981	1,380	30,611	7,949
220,708	90,341	1,064,798	0,082	27,849	104,605	1,990,056	81,408	4,615,248	2,537,783	1,430	655				765	139
792,201	170,417	5,494,824	1,233	55,104	338,390	4,741,510	54,440	14,011,139	6,875,183	6,728	728				5,969	283
4,566,275	3,498,027	27,812,904	799,203	394,003	3,009,338	28,448,256	1,277,297	87,321,104	57,595,551	33,109	6,266	4,584	940	1,360	19,950	7,059
313,737	139,773	2,241,223	796	18,434	209,385	1,932,752	138,312	5,905,238	3,834,174	5,043	1,105				3,918	64
60,059	67,618	393,661	56,442	40,993	118,219	1,305,490	4,594	2,417,752	1,107,698	61					61	66
98,650	105,274	201,361	60,805	17,192	30,355	1,922,280	4,447	2,890,304	993,577	33					33	67
901,399	525,121	6,037,133	46,306	227,052	640,027	10,303,855	354,943	23,688,923	13,030,675	10,472	5,515	33	66	1,065	3,793	2,018



TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.		Number of establishments	PERSONS ENGAGED IN THE INDUSTRY.							WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY					Capital.	
			Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.		Total.	16 and over.		Under 16.			
						Male.	Female.	Average number.	Number, 15th day of—		Male.	Female.	Male.	Female.		
									Maximum month.							Minimum month.
1	Gas and electric fixtures.....	7	110	4	8	2	6	90	De 101	Au 82	101	90	10	1	Dollars.	
2	Gas, illuminating and heating.....	51	3,314	204	179	277	2,654	Ja 2,739	Se 2,424	2,612	2,608	27	4	77,030,109		
3	Glass, cutting, staining, and ornamenting.....	26	225	27	4	8	177	No 207	Au 155	210	166	11	6	299,275		
4	Gloves and mittens, leather.....	5	64	5	4	1	4	50	No 68	Ap 37	62	23	39	158,401		
5	Glue, not elsewhere specified.....	13	932	2	47	19	38	825	No 880	Je 798	819	689	130	5,410,316		
6	Gold, leaf and foil.....	12	146	12	4	1	5	124	De 147	Je 105	147	70	65	187,905		
7	Gold and silver, reducing and refining, not from the ore.....	5	32	5	3	1	3	20	Oc 26	My 14	23	22	1	253,648		
8	Grease and tallow, not including lubricating greases.....	24	958	11	50	49	23	825			832	820	9	3	4,599,253	
9	Soap stock.....	11	341	4	22	16	8	291	Ja 306	Jy 277	295	293	2		1,674,366	
10	All other.....	13	617	7	28	33	15	534	Se 581	Mh 495	537	527	9	1	2,924,887	
11	Hair work.....	3	11	3	1	1	6	(1)	(1)	(1)	6	6	6		2,700	
12	Hand stamps.....	18	145	18	11	3	100	Je 106	Ja 93	106	70	24	6	167,012		
13	Hardware.....	30	662	20	43	71	28	500			566	402	141	10	1,609,842	
14	Locks.....	5	64	4	9	1	6	44	De 59	Ja 27	59	47	8	3	124,115	
15	Builders' hardware.....	5	30	2	4	1	2	21	De 29	Mh 17	29	25	1	3	66,221	
16	All other.....	20	568	14	30	69	20	435	No 488	Ja 390	478	330	132	13	1,419,506	
17	Hat and cap materials.....	5	26	4	2	1	19	Je 21	Ja 15	21	12	4	3	2	18,881	
18	Hats and caps, other than felt, straw, and wool.....	42	507	57	18	30	26	376	Oc 417	Fe 339	406	274	121	7	916,195	
19	Hats, straw.....	13	1,612	11	51	34	26	1,490	Fe 2,164	Jy 835	1,917	649	1,241	14	13	2,194,748
20	House-furnishing goods, not elsewhere specified.....	54	1,367	41	61	108	76	1,081			1,253	337	813	25	78	3,854,507
21	Mops and dusters.....	13	148	7	10	14	10	107	Oc 131	Fe 80	128	42	82	1	3	237,079
22	All other.....	41	1,219	34	51	94	66	974	No 1,131	Ja 799	1,125	295	731	24	76	3,617,428
23	Ice, manufactured.....	12	182	4	15	9	1	153	Au 182	Ja 119	100	100				2,002,115
24	Instruments, professional and scientific.....	25	991	16	88	51	54	782			801	626	150	14	11	2,128,286
25	Medical, surgical, and optical.....	7	449	3	61	39	36	310	De 332	Au 290	332	210	91	11	11	647,519
26	All other.....	18	542	13	27	12	18	472	Fe 553	Mh 421	469	407	59	3		1,480,767
27	Iron and steel, steel works and rolling mills.....	11	4,310	1	204	306	115	3,684	De 4,029	Ap 3,221	3,096	3,831	161	4		21,374,408
28	Iron and steel, bolts, nuts, washers, and rivets, not made in rolling mills.....	11	1,618	2	48	35	62	1,471	De 1,635	Ja 1,302	1,635	1,144	489	2		4,576,129
29	Iron and steel, forgings, not made in steel works or rolling mills.....	14	2,441		103	68	98	2,172	De 2,491	Fe 2,024	2,607	2,558	83	14	2	11,686,386
30	Iron and steel, nails and spikes, cut and wrought, including wire nails, not made in steel works or rolling mills.....	25	1,720	14	48	60	61	1,537			1,735	1,287	427	11	10	5,812,171
31	Wire nails and spikes.....	7	229	2	12	10	9	196	Ja 243	Se 135	212	123	80	1	8	1,101,920
32	All other.....	18	1,491	12	36	50	52	1,341	De 1,505	Au 907	1,523	1,164	347	10	2	4,710,251
33	Iron and steel, tempering and welding.....	29	132	20	12	3	7	84			90	90				182,990
34	Treated iron and steel.....	3	21		6	1	2	12	Jy 14	Fe 10	12	12				31,397
35	Welding.....	26	111	26	6	2	5	72	De 81	Mh 63	78	78				151,503
36	Ivory, shell, and bone work, not including combs and hairpins.....	6	154	1	11	1	8	138	Mh 100	My 112	156	137	15	4		377,201
37	Japaning.....	4	17					10	De 12	Fe 9	11	10	1			3,950
38	Jewelry.....	165	7,916	178	336	278	340	6,786	De 7,713	Ja 5,806	7,009	4,784	2,695	147	123	19,445,856
39	Jewelry and instrument cases.....	10	393	7	11	2	8	365	De 422	My 329	422	98	266	8	50	237,112
40	Knit goods.....	77	13,596	41	235	255	314	12,751	De 13,975	My 11,970	13,963	3,862	0,447	184	470	38,066,842
41	Lamps and reflectors.....	8	717	6	39	28	18	626	De 672	My 590	670	537	124	8	1	1,478,300
42	Lapidary work.....	6	58	6	2			50	My 59	No 40	45	39	6			45,118
43	Lasts.....	31	1,511	22	84	70	36	1,299	De 1,413	Ja 1,031	1,400	1,387	50	23		3,603,942
44	Leather goods, not elsewhere specified.....	51	677	37	36	27	27	545	De 1,044	Ja 501	647	319	293	10	10	1,266,265
45	Leather, tanned, curried, and finished.....	131	16,877	92	634	580	441	15,180	De 17,379	Jy 13,241	17,378	15,759	1,440	147	82	92,548,853
46	Lime.....	12	543	8	21	10	3	501	No 542	Mh 445	533	531		2		1,254,687
47	Linen goods.....	4	1,288		18	35	16	1,219	De 1,283	Ja 1,104	1,310	523	614	66	107	5,257,364
48	Liquors, distilled, grain alcohol and rum.....	4	93	1	9	11	8	64	Ja 90	Au 49	56	56				2,800,920
49	Liquors, malt.....	19	1,623	3	92	160	40	1,328	Je 1,464	De 1,004	1,162	1,157	5			15,842,830
50	Lithographing.....	14	1,519	1	85	106	100	1,218	De 1,349	Ap 1,166	1,340	917	412	14	6	4,141,125
51	Looking-glass and picture frames.....	26	195	26	5	5	11	148	De 169	Fe 132	1,163	147				2,151,727
52	Lumber and timber products.....	244	1,913	260	49	12	10	1,582	Mh 1,837	Jy 1,332	1,908	1,970				4,008,302
53	Lumber, planing-mill products, not including planing mills connected with sawmills.....	146	2,728	107	177	111	88	2,245	De 2,614	Fe 1,960	2,613	2,570	8	10		8,410,800
54	Machine tools.....	46	7,709	22	274	469	473	6,471	De 7,297	Jy 5,853	7,370	7,011	326	32	1	32,446,551
55	Marble and stone work.....	239	2,435	295	85	75	44	1,936			2,236	2,227	2			5,654,512
56	Monuments and tombstones.....	181	1,142	239	31	34	20	818	My 1,003	Ja 247	911	903	1		7	2,185,345
57	All other.....	52	1,293	56	54	41	24	1,118	No 1,296	Fe 677	1,325	1,324	1			3,469,167
58	Mattresses and spring beds, not elsewhere specified.....	52	768	49	32	69	35	583	Oc 637	Ja 503	600	412	162	16	10	2,110,285
59	Millinery and lace goods, not elsewhere specified.....	60	1,621	61	51	57	56	1,306			1,833	469	1,843	8	13	1,908,084
60	Embroideries.....	10	118	6	12	5	3	92	Oc 112	Ap 78	104	19	78	1	6	118,832
61	Trimmed hats and hat frames.....	24	1,119	27	21	40	41	990	Fe 1,298	Jy 641	1,363	896	955	6	6	1,162,322
62	Women's neckwear.....	11	228	12	13	7	8	188	No 220	Ja 149	222	17	204	1		242,962
63	All other.....	15	156	16	5	5	4	126	Oc 148	Ja 96	144	37	106		1	333,968

<sup>1</sup> Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

<sup>2</sup> Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



## MANUFACTURES—MASSACHUSETTS.

641

COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.			Rent- ed. <sup>2</sup>	
										Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>		

THE STATE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.										
30,950	6,100	101,805	3,405	8,219	6,483	117,859	3,610	347,015	225,747	63						63			
458,483	497,021	3,557,408		3,073	1,788,328	1,907,331	8,866,233	24,231,005	13,457,531	18,827	9,958	5,880	25	12		2,952	2,059		
17,405	8,650	177,706	843	18,388	2,909	301,705	7,256	672,244	363,283	134						134			
8,160	4,755	49,102	1,464	4,020	1,609	134,098	1,969	225,255	89,188	18						18			
189,881	79,493	939,913	19,873	2,114	134,787	3,359,079	270,717	6,451,367	2,821,571	1,095						30	72		
9,272	3,165	125,753	5,359	1,997	4,164	190,827	2,438	399,443	206,178	41			12			29			
8,155	3,840	22,901		600		474,243	7,434	639,313	157,036	111			4			107			
124,684	88,018	916,524		60,890	223,123	4,562,612	273,009	7,323,228	2,487,007	2,163	1,437					726	650		
54,924	30,266	332,302		1,413	98,759	1,130,604	110,812	2,207,537	966,121	798	540					258	308		
69,760	57,752	584,222		59,477	124,364	3,432,008	102,197	5,115,691	1,521,498	1,365	897					468	342		
	1,644	4,240	600	1,172	31	9,226	43	24,335	15,066	1						1			
23,992	18,540	82,541	960	11,347	13,994	98,122	3,035	335,183	234,026	53						53			
128,313	95,245	462,004	7,296	16,976	85,217	844,742	36,765	2,452,121	1,570,614	691	100					591			
19,778	3,720	33,321		2,340	1,681	81,185	1,999	175,276	62,092	38						38			
10,500	2,100	25,410		5,935	660	33,595	1,410	89,538	54,533	46						46			
98,035	89,425	403,270	7,296	8,701	82,876	729,962	33,356	2,187,307	1,423,939	607	100					507			
8,404	936	15,001		2,369	136	30,612	446	66,997	35,339	6				3		7			
81,844	81,380	508,775	2,074	34,114	5,308	1,376,724	9,875	2,403,884	1,017,285	72						72			
217,269	99,633	1,100,251	48,327	5,880	82,400	2,902,436	77,607	5,485,090	2,505,047	695	484					171	107		
256,301	277,748	793,381	39,905	62,801	43,740	5,091,557	38,258	7,708,426	2,578,011	746	345			38		363	13		
47,349	21,413	73,787	2,838	9,096	2,909	467,073	2,257	750,368	281,038	69						69			
209,042	256,335	719,594	37,157	53,705	40,771	4,024,484	36,001	6,958,058	2,297,573	677	345			38		294	13		
22,956	10,655	201,347		9,829	40,694	30,906	152,086	745,098	562,106	3,995	3,540	108	176	150		21	759		
188,416	153,859	851,032	3,475	37,070	224,025	886,121	28,236	2,894,515	1,980,158	608	165					443			
102,802	115,527	278,815	410	20,448	28,195	333,287	5,973	995,599	656,339	180	40					140			
85,614	38,332	572,717	3,065	17,222	195,830	552,834	22,263	1,898,916	1,323,819	428	125					303			
605,496	657,183	5,757,024	650	17,383	752,879	17,232,481	2,004,008	30,999,001	11,733,112	31,609	20,949	40	667	425		9,522	7,285		
103,044	128,420	1,612,857		7,222	288,637	3,038,490	111,188	5,703,078	2,613,400	2,120	1,619					436	787		
747,772	214,618	2,000,244	386	17,099	1,358,382	4,631,190	647,233	13,299,412	8,020,083	6,579	1,538					5,041	30		
223,053	145,932	1,519,980	3,508	30,184	359,773	3,697,393	143,412	7,852,504	4,011,609	3,380	1,625			6	201	1,458	752		
66,433	20,064	178,872	3,598	12,091	83,820	843,621	13,859	1,409,486	552,006	619	50					494			
156,620	125,868	1,341,114		18,098	275,953	2,853,772	129,553	6,443,018	3,459,093	2,761	1,575			6	216	904			
21,422	9,454	145,144	1,857	13,544	3,496	85,950	14,697	341,657	241,610	121						121			
9,644	1,708	15,422		3,240	2,391	9,932	7,712	50,042	32,398	85						85			
11,778	4,746	129,722	1,857	10,304	1,105	76,013	6,385	201,615	209,212	83						83			
46,903	3,482	111,717		9,551	321,450	13,729	584,340	249,161	249,161	211	170					41	25		
1,148,117	894,790	7,283,590	471,562	261,233	615,842	18,171,466	193,036	34,816,822	10,452,320	4,404	630	60	167	114		3,433	96		
20,457	6,653	245,424	6,046	16,490	7,686	269,579	8,764	665,515	417,172	151						151			
1,117,126	887,331	11,364,080	147,789	2,317,856	30,730,778	441,785	52,424,235	21,251,072	10,574	10,574	7,270	1,214	38	2,719		5,333	2,055		
91,814	51,740	545,058		7,878	14,537	887,024	39,148	1,814,304	888,132	1,028						1,028			
8,800	600	57,134	588	2,959	1,969	22,151	2,347	134,645	110,147	23						23			
335,361	173,085	1,598,128	40,021	32,427	321,437	1,759,458	77,578	5,886,356	4,049,320	2,861	1,315					1,546	758		
99,796	84,414	417,345	12,448	32,351	13,384	1,113,942	16,149	2,062,710	932,619	396	94					288			
2,779,770	1,117,085	10,211,106	1,142,633	316,402	3,692,229	80,083,207	1,934,048	129,594,962	47,577,707	34,159	15,165	5,404	200	362		13,028	11,147		
52,974	23,900	522,624		2,777	69,613	599,854	368,475	2,113,741	1,145,412	2,028	531		135			1,362	60		
77,796	83,708	1,105,520		10,000	136,273	3,231,247	97,242	5,177,679	1,849,190	3,780	2,100	450		880		850	1,095		
119,551	29,030	90,653			57,394	1,891,218	43,436	2,550,171	615,517	149	30					119			
743,944	302,339	1,931,084		4,754,997	3,768,482	419,100	14,712,964	10,525,382	7,835	6,827	388					820	905		
339,417	377,023	1,347,811	158,648	25,735	97,661	1,845,058	91,369	4,916,351	3,019,924	1,025	120					237	1,515		
6,048	18,737	100,779	6,200	18,430	5,235	251,472	4,190	593,568	337,906	134						134			
103,083	20,105	1,645,093	223,603	7,876	164,699	2,087,244	58,314	5,782,924	3,607,366	14,154	7,473	20	1,386	3,053		2,222	214		
447,493	280,679	2,708,767	30,443	117,020	213,308	7,078,198	135,603	12,625,323	5,411,522	11,515	6,925	15	84	305		4,186	555		
925,899	995,451	7,610,041	101,642	98,717	1,072,132	5,532,701	376,062	23,442,547	16,533,784	12,676	2,165	35		170		10,306	780		
105,228	144,665	2,625,147	181,600	48,583	76,140	2,275,617	243,624	7,125,060	4,605,819	11,653	6,731	165	180	4		4,573			
57,151	78,022	1,234,974	164,948	40,957	20,986	1,528,742	99,878	4,148,008	2,519,388	3,084	457		172	4		2,451			
138,077	66,643	1,390,173	16,742	27,597	35,183	740,875													



## MANUFACTURES—MASSACHUSETTS.

TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Number of establishments	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.		Total.	16 and over.		Under 16.		
					Male.	Female.	Average number.	Number, 15th day of—		Male.	Female.	Male.	Female.	
								Maximum month.	Minimum month.					

## THE STATE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

																	Dollars.
1	Mineral and soda waters.....	172	1,212	184	96	103	61	768	Jy 1,052	Ja 570	664	641	13	9	1		4,110,421
2	Mineral and carbonated waters.....	166	1,201	176	96	103	61	765	Ja 570	Ja 570	661	638	13	9	1		4,159,340
3	All other.....	6	11	8				3	(*)	(*)	3	3					11,075
4	Minerals and earths, ground or otherwise treated.....	10	186	6	19	4	4	153	De 168	Ap 143	168	167			1		1,182,840
5	Mirrors, framed and unframed, not elsewhere specified.....	6	97	5	6	5	4	77	De 89	Mh 68	88	84	4				211,715
6	Models and patterns, not including paper patterns.....	77	514	100	18	6	15	375	De 433	Ja 322	456	444	8	4			588,442
7	Motorcycles, bicycles, and parts.....	8	3,444	3	126	165	150	3,000	De 3,128	Se 2,794	3,128	2,664	377	49	38		10,154,259
8	Mucilage, paste, and other adhesives, not elsewhere specified.....	21	236	20	29	37	30	120	De 133	Mh 110	133	108	14	10	1		1,177,306
9	Musical instruments and materials, not elsewhere specified.....	25	304	22	17	6	13	246	De 272	Ja 201	272	222	36	14			446,430
10	Musical instruments, organs.....	5	166	3	12	3	7	141	De 155	Ja 128	155	145	10				472,119
11	Musical instruments, pianos.....	14	2,419	3	70	67	51	2,228	De 2,394	Ja 1,885	2,394	2,215	114	57	8		8,545,273
12	Musical instruments, piano and organ materials.....	21	1,682	9	51	10	25	1,581			1,810	1,298	412	64	36		3,707,893
13	Piano materials.....	15	1,593	5	38	15	25	1,510	De 1,695	Ja 1,258	1,723	1,220	403	64	36		3,438,653
14	Organ materials.....	6	89	4	13	1		71	Ap 75	Ja 63	87	78	0				269,240
15	Needles, pins, and hooks and eyes.....	7	1,492	1	42	34	40	1,375	De 1,658	Mh 1,217	1,370	482	856	13	19		4,337,347
16	Oil, not elsewhere specified.....	15	210	7	20	17	20	146			192	147	14	1			2,007,421
17	Animal oils.....	8	90	5	8	5	4	68	De 78	Mh 63	78	78					1,197,922
18	Mineral and composite oils.....	7	120	2	12	12	16	78	De 84	Mh 72	84	69	14	1			869,499
19	Oilcloth, enameled.....	4	375		20	7	6	342	Oc 411	Fe 252	399	331	54	4	10		2,601,090
20	Optical goods.....	29	4,744	15	219	189	239	4,082	De 4,373	Jy 3,683	4,375	2,294	1,840	123	109		8,638,378
21	Ordnance and accessories.....	4	2,604		128	421	250	1,805	Ja 3,037	Ja 902	2,080	1,984	95	1			22,600,853
22	Paints.....	19	418	2	36	78	27	275	De 298	Mh 250	311	286	24		1		2,233,528
23	Paper and wood pulp.....	78	14,524	22	432	613	497	12,060	De 13,223	Fe 11,057	14,115	10,498	3,671	8	38		88,302,299
24	Paper exclusively.....	74	13,602	22	408	589	483	12,100	De 13,223	Fe 11,057	13,245	9,701	3,408	8	38		81,765,700
25	All other.....	4	922		24	24	14	860	Fe 914	No 834	870	797	73				6,536,599
26	Paper goods, not elsewhere specified.....	44	2,307	17	93	82	146	1,969	De 2,189	My 1,838	2,126	1,390	674	10	52		8,767,093
27	Patent medicines and compounds.....	97	1,072	56	118	118	179	604			659	397	250	7	5		5,384,206
28	Patent and proprietary medicines.....	53	760	30	78	83	137	432	No 523	Ja 375	494	278	207	5	4		3,878,191
29	Patent and proprietary compounds, not elsewhere specified.....	39	312	26	37	35	42	172	Ja 193	Mh 139	105	110	43	2	1		1,506,105
30	Paving materials.....	27	725	11	37	22	7	648	Se 848	Fe 320	671	671					1,262,736
31	Perfumery and cosmetics.....	18	142	11	17	17	10	87	Ja 95	Fe 80	88	26	58	4			571,230
32	Photo-engraving.....	26	577	10	44	54	41	422	No 477	My 304	482	412	27	13			729,787
33	Photographic materials.....	5	55		4		1	50	Jy 53	Fe 47	54	32	13	9			172,623
34	Pickles, preserves, and sauces.....	33	645	18	43	63	41	480			524	268	213	9	4		3,100,895
35	Preserves.....	18	375	6	39	61	39	430	De 406	Mh 395	469	237	223	5	4		2,967,554
36	Pickles and sauces.....	15	70	12	4	2	2	60	Jy 69	Ja 38	55	31	20	4			133,341
37	Plated ware.....	7	554	2	16	26	41	469	No 514	Ja 412	498	461	41	5	1		704,940
38	Plumbers' supplies, not elsewhere specified.....	12	573	3	28	50	32	460	De 554	Ap 404	555	507	36	11	1		1,161,676
39	Pocketbooks.....	10	442	12	17	18	14	381	De 434	Ja 303	434	116	301	3	14		704,537
40	Pottery.....	8	178	5	9	7	8	149			157	131	23	3			446,019
41	China, earthen, and stone ware.....	5	157	2	8	7	7	133	Oc 140	Ja 123	139	122	14	3			430,796
42	All other.....	3	21	3	1		1	16	No 18	Se 14	18	9					15,823
43	Printing and publishing, book and job.....	768	11,102	705	598	890	1,275	7,634	De 7,246	Ja 6,217	8,261	5,896	2,125	220	50		31,978,693
44	Job printing.....	698	8,803	652	412	227	398	6,674	De 7,246	Ja 6,217	7,290	5,180	1,849	204	48		14,108,795
45	Book publishing and printing.....	10	1,402	19	53	286	298	746	Ja 781	Jy 692	753	538	207	7	1		8,222,957
46	Book publishing without printing.....	51	1,107	28	119	370	573	17	Ja 18	Oc 15	18	11	5	2			9,287,943
47	Linotype work and typesetting.....	9	230	6	14	7	6	197	My 204	Au 188	200	128	64	7	1		348,998
48	Printing and publishing, music.....	15	325	13	17	75	78	142			142	116	26				1,190,277
49	Printing and publishing.....	4	162	2	5	10	5	140	No 144	Ja 133	140	114	26				442,571
50	Publishing without printing.....	11	163	11	12	65	73	2	(*)	(*)	2	2					747,706
51	Printing and publishing, newspapers and periodicals.....	412	10,405	188	635	2,072	1,025	5,885			6,155	5,077	861	207	10		22,964,151
52	Printing and publishing.....	64	5,385	32	179	1,047	661	3,406	Oc 3,608	Ja 3,310	3,584	3,043	392	142	7		13,223,657
53	Printing, publishing, and job printing.....	164	3,047	101	228	286	401	2,031	De 2,150	Ja 1,961	2,173	1,674	436	60	3		7,047,821
54	Publishing without printing.....	184	1,973	55	228	739	563	388	My 404	Ja 373	398	360	33	5			2,692,673
55	Printing materials.....	4	42		10	4	3	25	Se 29	Fe 21	29	29					125,066
56	Pulp goods.....	4	90	1	10	3	2	74	Oc 88	Fe 59	87	81	4	2			352,708
57	Pumps, steam.....	7	2,600	1	92	174	143	2,280	Ja 2,881	Jy 1,959	2,057	1,969	86	2			10,961,491
58	Refrigerators.....	10	132	8	15	13	3	93	Ap 101	Au 81	83	83					219,398
59	Regalia, and society badges and emblems.....	7	134	5	8	6	12	103	Fe 121	Mh 87	101	47	54				228,051
60	Roofing materials.....	8	906	2	37	96	76	695	Se 800	Ap 610	698	674	23	1			4,468,021
61	Rubber tires, tubes, and rubber goods, not elsewhere specified.....	47	12,185	7	530	1,404	838	9,406	De 10,804	Ja 7,728	10,964	9,336	1,520	62	46		64,948,481
62	Saddlery and harness.....	15	168	12	9	2	5	140	My 148	Fe 132	138	121	16	1			405,487
63	Sausage, not made in slaughtering and meat-packing establishments.....	56	443	56	19	49	13	306			321	309	10	2			1,026,753
64	Sausage.....	49	384	46	19	36	13	270	De 287	Jy 262	284	274	8	2			954,549
65	Sausage casings.....	7	59	10		13		36	Ja 37	Ap 35	37	35	2				72,204
66	Saws.....	15	1,016	12	33	141	77	753	De 889	Je 677	891	781	109		1		3,585,048
67	Screws, machine.....	23	680	9	40	9	29	593	Ja 701	Oc 500	696	570	83	41	2		2,068,436
68	Screws, wood.....	3	1,063		74	50	91	848	De 1,119	Jy 762	1,119	938	160	15	6		3,195,478
69	Sewing machines and attachments.....	7	1,002	2	27	39	41	893	De 1,003	Fe 820	1,003	932	59	10	2		4,528,910

1 Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

2 Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



## 643

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.	Rent. <sup>2</sup>			
										Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>		

[illegible]

<sup>4</sup> Same number reported for one or more other months.



TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.		Number of establishments	PERSONS ENGAGED IN THE INDUSTRY.										WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.						Capital.
			Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.				Total.	16 and over.		Under 16.				
						Male.	Female.	Average number.	Number, 15th day of—		Male.		Female.	Male.	Female.				
									Maximum month.	Minimum month.									
1	Shipbuilding, wooden, including boat building.	55	1,073	50	41	31	23	928				582	581	1			Dollars. 2,573,693		
2	New vessels.	14	848	9	27	27	13	772	Ja 1,150	Se 402	429	429					2,043,818		
3	Repair work only.	19	107	17	9	1	3	77	Ja 131	De 62	64	64					311,819		
4	Small boats.	17	90	19	4	3	5	59	Ja 78	Ja 41	68	68					111,080		
5	Masts, spars, oars, and rigging.	5	28	5	1		2	20	Se 23	Ja 16	21	20					106,376		
6	Shirts.	12	1,153	10	22	16	15	1,090	De 1,146	Au 1,016	1,146	177	962	1	6		1,993,069		
7	Show cases.	8	63	8	3	2	4	46	Jy 50	Ja 41	43	41					147,059		
8	Signs and advertising novelties.	21	395	12	29	23	22	309			357	223	102	4	28		517,028		
9	Electric and other signs.	15	199	8	22	13	12	144	Jy 159	Ja 112	147	135	10	1	1		261,869		
10	Advertising novelties.	6	196	4	7	10	10	165	De 210	Fe 140	210	88	92	3	27		255,150		
11	Silk goods, including throwsters.	21	6,141	14	139	178	113	5,697			0,813	2,518	3,880	131	284		20,614,191		
12	Finished products.	15	4,499	10	90	167	89	4,143	De 4,554	Ja 3,634	4,590	1,378	2,843	110	259		20,251,004		
13	Throwsters and winders.	6	1,642	4	49	11	24	1,554	De 2,223	Fe 956	2,223	1,140	1,037	21	25		6,363,187		
14	Silversmithing and silverware.	18	2,180	7	61	114	122	1,876	Oc 2,038	Ja 1,501	2,035	1,595	365	51	24		8,058,938		
15	Slaughtering and meat packing.	40	4,926	33	87	391	108	4,307	Ja 5,354	No 1,501	3,981	3,868	105	8			42,216,147		
16	Soap.	27	1,583	18	108	264	185	1,008	No 1,274	Ap 786	1,189	783	370	10	26		14,002,772		
17	Sporting and athletic goods.	14	1,582	6	58	50	71	1,397	De 1,681	Ja 1,123	1,684	1,178	444	47	15		4,553,109		
18	Springs, steel, car and carriage, not made in steel works or rolling mills.	7	77	8	9	6	3	51			58	58					192,053		
19	Automobile.	4	23	2	3	4	2	12	No 16	Ja 9	17	17					85,504		
20	All other.	3	54	6	6	2	1	39	Ja 41	Ap 36	41	41					107,449		
21	Stamped ware, not elsewhere specified.	19	807	0	67	28	30	676	De 800	My 611	806	730	51	23	2		1,096,685		
22	Stationery goods, not elsewhere specified.	30	4,232	14	199	389	325	3,305	De 3,628	Ap 3,077	3,628	1,402	2,092	44	90		8,878,995		
23	Statuary and art goods.	11	81	11	6		2	62	De 69	Ja 55	69	69					164,130		
24	Steam fittings and steam and hot-water heating apparatus.	23	4,885	12	218	281	853	3,521	De 3,902	Jy 3,121	3,904	3,694	198	12			12,383,986		
25	Steam packing.	9	147	5	17	17	13	95	No 123	My 79	106	83	22	1			415,602		
26	Stencils and brands.	12	47	11	5	2	1	28	De 33	Ja 25	33	33					49,453		
27	Stereotyping and electrotyping.	9	250	7	17	11	11	204	De 227	Ja 170	226	202	16	8			296,680		
28	Stoves and hot-air furnaces.	15	1,567	2	56	79	44	1,380			1,561	1,543	5	13			4,757,077		
29	Stoves and ranges.	12	1,550	1	53	79	42	1,375	De 1,549	Fe 1,242	1,549	1,531	5	13			4,657,083		
30	Hot-air furnaces.	3	17	1	3		2	11	Ja 14	Ap 8	12	12					99,394		
31	Stoves, gas and oil.	4	526		30	47	44	405	De 525	My 314	525	478	31	10	0		1,557,990		
32	Structural ironwork, not made in steel works or rolling mills.	55	1,498	36	119	93	62	1,188	De 1,314	Jo 1,035	1,312	1,308	3	1			4,506,886		
33	Surgical appliances.	14	755	8	28	30	80	609	Ja 943	My 464	578	258	286	5	29		3,744,244		
34	Suspenders, garters, and elastic woven goods.	29	3,317	19	118	99	116	2,965	De 3,282	Fe 2,733	3,282	1,020	2,130	27	105		10,155,302		
35	Textile machinery and parts.	116	19,378	71	490	861	543	17,413	Oc 19,297	Ap 15,399	19,254	17,914	1,058	252	30		76,759,604		
36	Tinware, not elsewhere specified.	16	1,051	13	33	47	43	915	Ja 988	Au 832	943	750	183	10			3,713,240		
37	Tobacco, cigars and cigarettes.	202	3,418	277	83	77	35	2,946			4,008	3,503	1,132	2	1		6,097,133		
38	Cigars.	254	3,386	272	81	77	33	2,923	Fe 3,389	Jy 1,358	4,070	3,550	1,123	2	1		5,944,975		
39	Cigarettes.	8	32	5	2		2	23	Ap 24	Oc 21	22	13	0				152,158		
40	Tobacco, smoking, and snuff.	7	43	5	5	2	1	30	De 36	My 26	36	23	12	1			184,610		
41	Tools, not elsewhere specified.	117	8,552	99	339	307	491	7,226			7,575	6,637	773	113	52		32,682,525		
42	Machinists' tools.	40	4,403	28	123	157	305	3,790	De 3,910	My 3,710	3,898	3,327	403	62	46		19,549,867		
43	All other.	77	4,149	71	216	240	186	3,436	De 3,615	Ja 3,348	3,677	3,310	310	51	0		13,735,058		
44	Toys and games.	30	1,860	16	74	28	100	1,642	Jy 1,886	Ja 1,260	1,055	843	637	73	102		8,723,134		
45	Trunks and valises.	26	753	28	35	47	29	614	Se 702	Ja 504	684	480	180	12	12		1,487,314		
46	Umbrellas and canes.	7	71	8	3	4	6	50	No 52	Ja 21	83	37	45	1			189,215		
47	Upholstering materials, not elsewhere specified.	6	164	5	10	2	8	130			170	167	3				1,260,040		
48	Imitation leather and leatheroid.	3	133		9	1	7	116	De 148	Je 97	148	147	1				1,203,944		
49	All other.	3	31	5	1	1	1	23	Ja 27	Jy 20	22	20	2				65,696		
50	Varnishes.	14	556	3	52	119	66	316	Fe 342	Jy 277	306	272	34				4,097,926		
51	Vinegar and cider.	75	204	86	11	5	13	89			215	173	39	3			820,402		
52	Vinegar.	6	35	6			4	25	Oc 47	Ja 15	25	24		1			348,518		
53	Cider.	69	169	80	11	5	9	64	Oc 162	Ap 30	190	149	30	2			471,884		
54	Waste.	6	144	2	16	3	9	114	No 124	Ja 107	118	88	30				1,097,093		
55	Watch and clock materials, except watch cases.	6	261	7	4	2	12	236	No 266	Ja 214	259	69	180	8	2		402,030		
56	Whips.	15	804	16	22	100	40	626	De 651	Ap 604	651	431	192	15	13		2,322,365		
57	Window and door screens and weather strips.	17	88	16	3	5	4	60			51	48	2	1			171,927		
58	Window and door screens.	13	84	15	3	5	3	58	Jy 95	Fe 35	48	45	2	1			169,590		
59	Weather strips.	4	4	1			1	2	Ja 3	Ap 1	3	3					11,337		
60	Window shades and fixtures.	11	91	10	5	7	1	68	De 83	Se 55	83	60	21	1	1		295,584		
61	Wire.	9	5,715	4	89	239	180	5,203	De 5,905	Je 4,910	5,005	5,525	325	37	18		22,027,351		
62	Wirework, not elsewhere specified.	27	1,700	13	53	82	82	1,470	Ja 1,599	Jy 1,366	1,552	1,074	405	50	23		6,286,191		
63	Wood, turned and carved.	46	832	47	19	11	13	742	De 786	Je 608	786	699	42	45			1,837,217		
64	Wooden goods, not elsewhere specified.	15	400	16	17	14	12	341	Ap 340	Se 333	348	32	23	5			1,011,261		

<sup>1</sup> Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

<sup>2</sup> Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



## COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.			Rent- <sup>2</sup>	
										Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>		

## THE STATE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars. 127,831	Dollars. 48,752	Dollars. 1,401,973	Dollars. 4,657	Dollars. 24,166	Dollars. 64,160	Dollars. 1,954,938	Dollars. 22,783	Dollars. 4,191,573	Dollars. 2,213,852	2,074	653	251	1,170	1	
97,041	39,749	1,210,331	4,589	13,729	55,956	1,765,644	15,286	3,653,698	1,872,668	1,549	473	115	961	2	
22,795	2,733	97,859	68	6,462	5,748	84,186	4,466	251,680	162,928	348	180	98	70	3	
7,175	4,546	73,431	.....	3,183	1,431	70,572	1,433	200,572	128,727	112	.....	38	74	4	
820	1,724	20,352	.....	792	1,025	34,636	1,698	88,663	49,529	65	.....	.....	65	5	
36,889	24,303	781,297	77,098	12,702	64,481	2,847,727	16,893	5,107,697	2,243,077	407	865	.....	42	6	
9,434	8,608	59,448	184	5,162	803	183,052	4,851	296,872	109,409	117	.....	25	92	7	
70,772	89,426	318,041	12,649	20,486	8,226	335,434	7,076	1,059,662	717,152	198	.....	.....	198	8	
50,722	37,199	103,599	11,541	14,742	5,120	159,834	3,190	633,989	470,959	61	.....	.....	61	9	
20,050	52,227	124,442	1,108	5,744	3,106	175,600	3,886	425,679	240,193	137	.....	.....	137	10	
574,927	560,575	5,030,601	1,370,674	15,689	797,824	19,090,721	242,762	34,193,951	14,950,468	9,811	2,469	600	1,749	11	
472,828	501,543	3,576,700	1,344,488	11,292	525,643	13,673,320	152,567	25,810,966	11,985,073	6,854	1,609	685	1,289	12	
102,099	59,032	1,462,901	26,186	4,397	272,181	5,327,395	90,195	8,882,985	2,965,395	3,457	860	25	450	13	
273,830	422,032	1,976,151	5,114	18,974	141,881	3,732,485	98,699	8,484,941	4,653,787	1,843	1,070	.....	200	14	
350,184	686,928	5,391,004	109,110	55,756	542,061	100,653,710	581,030	110,238,038	9,002,098	8,050	3,345	410	14	15	
367,966	391,135	984,138	.....	22,807	1,104,860	10,847,792	325,440	18,720,572	7,556,340	2,785	557	.....	360	16	
131,048	153,533	1,247,707	41,012	6,789	106,803	2,938,946	64,556	5,774,346	2,770,844	1,912	520	14	1,018	17	
24,448	6,065	60,058	.....	3,438	1,797	7,408	6,887	21,609	132,274	166	.....	.....	166	18	
5,424	2,454	13,947	.....	1,478	258	40,690	1,728	73,075	31,557	53	.....	.....	53	19	
10,024	3,611	40,111	.....	1,960	1,539	36,718	5,159	142,594	100,717	103	.....	.....	103	20	
272,193	69,310	768,775	836	29,057	91,885	1,042,138	38,442	2,630,607	1,550,027	903	250	.....	653	21	
769,453	1,089,209	2,619,452	89,434	98,075	700,378	7,167,757	97,260	18,161,819	7,896,802	1,600	365	18	907	22	
11,180	1,970	84,826	1,818	8,259	3,174	44,435	1,080	208,295	162,780	13	.....	.....	13	23	
676,504	566,585	3,967,954	1,907	14,658	609,683	5,130,372	307,743	13,472,559	8,028,444	4,795	1,254	1	3,540	24	
70,562	40,342	107,558	.....	3,380	15,233	346,999	15,512	686,389	323,878	178	55	.....	123	25	
12,287	3,365	27,588	.....	6,788	1,091	22,776	1,570	106,178	81,832	17	.....	.....	17	26	
62,908	19,806	245,310	.....	18,240	2,809	125,734	18,527	646,364	502,103	584	.....	.....	584	27	
209,666	230,932	1,785,095	.....	5,013	176,310	1,550,900	119,952	5,577,181	3,906,329	2,429	1,002	10	1,417	28	
203,806	220,934	1,771,435	.....	4,365	176,718	1,515,905	119,313	5,509,499	3,874,281	2,418	1,002	10	1,406	29	
5,860	998	13,600	.....	648	592	34,995	639	67,682	32,048	11	.....	.....	11	30	
123,872	92,330	475,532	.....	4,483	120,393	592,579	19,489	1,332,199	1,322,199	544	148	.....	396	31	
444,072	223,282	1,509,096	43,671	34,700	138,433	3,251,533	95,368	6,686,528	3,339,027	2,454	480	150	1,824	32	
145,099	118,247	531,904	85,432	25,834	42,012	4,302,308	43,312	6,571,531	2,225,911	728	300	.....	428	33	
581,719	313,490	2,469,532	142,534	35,856	657,456	8,214,929	136,106	14,971,600	6,620,565	1,956	1,133	40	783	34	
2,209,209	1,545,893	20,712,227	81,003	66,712	3,655,976	22,633,109	844,263	65,901,370	42,423,998	22,402	12,134	1,250	1,816	35	
95,563	102,657	968,389	.....	37,718	160,422	2,539,196	27,425	4,589,881	2,023,260	434	120	6	308	36	
200,303	136,435	3,327,209	545	97,510	1,429,907	4,836,150	20,298	11,560,443	6,703,986	172	.....	24	148	37	
197,716	135,425	3,306,947	545	93,475	1,405,303	4,707,602	19,876	11,302,948	6,635,470	165	.....	24	141	38	
2,587	1,010	20,262	.....	4,035	24,604	128,587	422	197,405	68,516	7	.....	.....	7	39	
19,400	3,400	27,153	.....	2,540	74,870	120,921	1,209	330,921	202,701	143	25	.....	100	40	
1,234,406	1,117,273	8,363,049	58,873	82,022	2,852,462	7,456,743	530,674	29,158,834	21,171,417	14,607	2,930	685	1,713	41	
575,163	535,846	4,321,030	45,424	29,328	2,002,238	3,208,251	208,636	15,084,076	11,667,789	5,293	1,690	85	498	42	
659,243	581,427	4,042,919	13,449	52,694	850,224	4,248,492	322,038	14,074,158	9,503,628	9,314	1,330	650	1,215	43	
271,535	125,003	1,100,781	20,690	19,580	110,310	1,841,605	51,470	4,704,260	2,811,185	1,716	610	.....	921	44	
109,566	133,687	541,687	1,105	29,690	64,532	1,842,242	7,909	3,206,473	1,356,322	88	.....	.....	88	45	
3,915	4,219	38,832	.....	5,900	1,549	272,168	2,662	435,290	160,460	63	.....	.....	63	46	
37,585	8,759	157,303	.....	1,867	33,854	917,400	39,269	1,467,640	510,971	766	135	187	444	47	
35,985	6,519	139,030	.....	667	32,390	867,979	34,966	1,375,055	472,110	644	90	.....	167	48	
1,000	2,240	21,273	.....	1,200	964	49,421	4,303	92,585	38,861	122	45	.....	20	49	
276,919	300,279	302,938	.....	4,421	380,194	3,569,244	31,802	6,159,199	2,558,153	557	9	.....	548	50	
27,300	12,143	99,405	846	4,022	21,500	706,931	14,205	1,263,902	542,766	1,140	299	249	317	51	
.....	2,772	31,456	.....	112	1,069	252,870	3,282	384,065	127,913	140	110	.....	30	52	
27,300	9,871	67,949	840	3,910	19,531	454,061	10,923	879,837	414,853	1,000	189	249	317	53	
84,629	12,554	101,987	.....	13,775	11,141	1,408,960	17,487	1,751,743	325,296	770	225	.....	375	54	
6,356	10,047	166,494	840	615	4,569	67,013	8,229	339,027	263,785	53	.....	.....	6	55	
111,587	303,684	496,013	12,287	15,579	49,858	938,809	28,793	2,686,313	1,717,711	750	130	40	545	56	
5,980	9,064	55,596	100	4,222	1,951	78,529	4,050	202,753	120,174	231	70	60	61	57	
5,980	9,144	53,282	100	3,062	1,879	74,270	3,707	192,311	114,334	221	70	58	40	58	
.....	520	2,304	.....	1,160	72	4,259	343	10,442	5,840	10	.....	2	.....	59	
11,453	11,890	59,650	493	4,196	1,982	349,994	2,169	542,033	189,870	.....	.....	.....	130	60	
409,217	737,190	7,353,067	4,389	46,222	469,923	10,774,669	1,095,930	24,552,410	12,673,791	24,799	7,577	2,210	14,812	61	
217,034	220,270	1,398,578	1,015	29,603	153,413	1,613,009	93,454	2,812,402	1,699	1,122	.....	4	573	62	
84,383	20,101	612,245	696	9,514	61,861	983,336	18,476	2,256,046	1,254,234	1,979	1,187	71	315	63	
40,876	28,216	338,436	1,457	7,233	31,762	602,840	14,152	1,331,738	714,746	1,682	1,107	12	430	64	

\* Same number reported for one or more other months.



## MANUFACTURES—MASSACHUSETTS.

TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Number of establishments	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	10 and over.		Under 16.		
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.		Female.
								Maximum month.	Minimum month.						

## THE STATE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

																Dollars.
1	Wool scouring.....	13	1,074	4	43	9	6	1,012	De 1,195	Mh 758	1,195	1,161	34	.....	.....	2,679,702
2	Wool shoddy.....	23	740	16	53	32	16	623	De 677	Fe 578	711	609	65	2	35	4,731,554
3	Woolen goods.....	111	13,664	50	625	202	219	17,558	Se 20,235	Fe 12,544	20,242	13,950	5,833	241	218	77,495,511
4	Worsted goods.....	71	37,997	32	789	385	495	36,296	De 43,872	Fe 23,755	43,245	22,629	17,905	1,124	1,587	190,353,441
5	All other industries*.....	172	40,616	66	899	1,668	1,197	36,786								145,814,475

* All other industries embrace—	Candles.....	2	Coke, not including gas-house coke.....	1	Files.....	3
Aeroplanes, seaplanes, and airships, and parts.....	Canning and preserving, fruits.....	2	Collars and cuffs, men's.....	1	Fire extinguishers, chemical.....	2
Agricultural implements.....	Cardboard, not made in paper mills.....	2	Condensed milk.....	2	Fireworks.....	5
Artificial flowers.....	Cars, steam-railroad, not including operations of railroad companies.....	2	Crucibles, graphite.....	1	Furs, dressed.....	2
Asbestos products, not including steam packing.....	Cash registers and calculating machines.....	3	Dairymen's and poultrymen's supplies.....	4	Galvanizing.....	2
Babbitt metal and solder.....	Charcoal, not including production in the lumber and wood distillation industries.....	2	Drug grinding.....	4	Gas machines and gas and water meters.....	3
Baking powders.....	Cheese.....	1	Engines, steam, gas, and water.....	4	Glass.....	1
Bluing.....	Chewing gum.....	2	Engravers' materials.....	3	Gloves and mittens, cloth, not including gloves made in textile mills.....	2
Bone black and lampblack.....			Engraving, wood.....	1	Glucose and starch.....	1
Butter, reworking.....			Explosives.....	1		
			Fertilizers.....	2		

## CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES.

1	BOSTON—All industries.....	3,077	110,713	2,436	4,691	8,205	6,622	88,759	De 93,522	Je 85,220	95,495	62,165	30,113	1,349	1,868	351,261,054
2	Artificial limbs.....	6	38	3	5	3	3	24	Au 27	De 20	20	20	.....	.....	.....	96,631
3	Artificial stone products.....	4	82	4	4	4	2	68	Se 72	Je 66	66	66	.....	.....	.....	129,197
4	Automobile bodies and parts.....	22	320	16	18	16	13	257	De 304	Ja 218	305	303	2	.....	.....	631,091
5	Automobile repairing.....	32	779	16	14	44	21	684	Je 738	Fe 574	707	691	15	1	.....	795,672
6	Awnings, tents, and sails.....	21	226	19	16	8	15	168	Je 236	Fe 119	150	94	56	.....	.....	442,982
7	Belting, leather.....	3	64	.....	10	10	5	39	No 42	Ap 35	40	38	1	1	.....	552,552
8	Blacking, stains, and dressings.....	14	194	10	14	42	14	114	Se 119	Ja 97	121	75	43	1	2	603,778
9	Bookbinding and blank-book making.....	52	1,412	40	57	52	51	1,212	No 1,265	Ja 1,135	1,275	524	703	31	17	1,330,025
10	Boot and shoe cut stock.....	23	1,122	14	50	53	28	977	Jy 1,059	Ja 922	920	780	53	75	3	10,661,723
11	Boot and shoe findings.....	20	501	7	40	27	19	408	Se 447	Ja 345	425	243	172	6	4	1,528,005
12	Boots and shoes, not including rubber boots and shoes.....	14	7,097	2	130	310	503	6,146	My 6,941	Je 4,893	6,473	3,095	2,615	377	386	18,789,753
13	Boxes, set-up paper boxes and cartons.....	21	1,077	15	48	9	34	971	No 1,059	Ja 839	1,006	208	607	18	83	1,148,835
14	Brass, bronze, and copper products.....	24	270	20	21	6	5	218	De 237	My 205	237	237	.....	.....	.....	448,238
15	Bread and other bakery products.....	306	3,588	318	50	334	88	2,798	De 2,079	Ja 2,013	2,080	1,077	906	6	7	4,988,685
16	Brushes.....	10	815	9	23	24	37	722	De 848	Ap 617	850	377	473	.....	.....	3,193,109
17	Buttons.....	5	31	5	1	.....	4	21	My 27	Fe 15	21	7	14	.....	.....	11,487
18	Canning and preserving, fish.....	6	137	2	8	7	5	115	Oc 167	Ja 95	122	67	53	.....	2	361,936
19	Carriages and wagons, including repairs.....	8	210	8	11	7	3	181	Mh 205	Ja 144	178	178	.....	.....	.....	234,102
20	Cars and general shop construction and repairs by steam-railroad companies.....	6	1,955	.....	40	51	4	1,860	Fe 1,947	Au 1,809	1,923	1,885	38	.....	.....	1,856,997
21	Chemicals.....	7	91	2	12	11	11	55	De 81	Ja 33	81	62	18	1	.....	420,420
22	Chocolate and cocoa products.....	3	1,823	.....	25	111	43	1,044	Jy 1,795	My 1,480	1,543	1,103	429	1	10	11,515,501
23	Cleansing and polishing preparations.....	14	71	6	8	14	12	31	Ja 15	Je 12	13	22	8	1	.....	340,909
24	Metal polish.....	6	29	3	1	.....	5	14	Ja 15	Je 12	13	17	7	1	.....	33,379
25	All other.....	8	42	3	7	8	7	17	Jy 18	Au 15	18	17	1	.....	.....	307,530
26	Clothing, men's.....	162	5,190	193	126	209	126	4,536	.....	.....	5,128	2,095	2,390	8	36	15,535,105
27	Men's and youths'.....	52	2,918	59	84	154	75	2,546	Oc 2,923	Ja 1,943	2,917	1,725	1,172	3	17	8,883,284
28	All other.....	37	1,178	30	42	54	48	995	De 1,137	Ja 834	1,155	393	748	2	12	6,611,503
29	Contract work.....	73	1,004	95	.....	1	3	995	De 1,050	Je 940	1,056	677	470	3	6	140,318
30	Clothing, women's.....	173	4,580	201	146	182	169	3,882	.....	.....	3,913	1,080	2,770	1	50	6,501,883
31	Suits, skirts, and cloaks.....	39	937	53	26	40	35	783	Oc 882	Ja 655	799	504	233	.....	2	1,503,337
32	Shirt waists, dresses, and wraps.....	62	2,227	70	67	98	83	1,914	Mh 2,046	De 1,092	1,777	278	1,408	.....	31	2,749,079
33	Undergarments and petticoats.....	21	513	23	16	16	20	438	De 490	Ja 393	490	67	409	.....	14	1,347,546
34	All other.....	36	787	36	36	32	27	650	Oc 743	Ja 530	755	113	633	.....	0	884,632
35	Contract work.....	15	116	19	1	.....	4	91	No 113	Je 64	92	64	27	1	.....	16,789
36	Coffee and spice, roasting and grinding.....	14	785	15	36	197	56	481	Au 521	Mh 449	516	315	194	.....	7	5,430,919
37	Confectionery and ice cream.....	68	9,438	47	343	398	392	8,258	.....	.....	8,385	2,343	5,035	172	835	18,850,508
38	Confectionery.....	54	9,318	35	338	397	388	8,100	Oc 8,952	Jy 7,196	8,300	2,262	5,031	172	835	18,348,563
39	Ice cream.....	14	120	12	5	1	4	98	Jy 121	Ja 83	85	81	4	.....	.....	510,945
40	Copper, tin, and sheet-iron work.....	50	1,172	51	99	104	104	814	De 936	My 744	940	895	32	11	2	2,144,093
41	Cordials and flavoring sirups.....	8	94	3	12	11	15	53	Au 60	Se 39	51	31	20	.....	.....	522,869
42	Cotton goods.....	9	943	1	30	22	10	874	De 893	Oc 853	896	385	446	34	31	4,581,709
43	Druggists' preparations.....	9	2,141	2	81	229	432	1,397	Fe 1,706	Au 1,168	1,517	726	785	3	3	14,050,290
44	Dye stuffs and extracts—natural.....	11	109	6	16	19	11	57	De 67	Ja 47	59	59	.....	.....	.....	655,685
45	Electrical machinery, apparatus, and supplies.....	32	3,084	12	127	211	209	2,525	Ja 2,879	Se 2,304	2,627	1,618	971	33	5	9,381,839
46	Electroplating.....	21	137	24	3	6	5	99	De 124	Ja 80	124	117	1	6	.....	96,961
47	Engraving and die sinking.....	14	87	14	1	5	6	61	De 64	Ja 57	65	52	7	6	.....	99,280
48	Engraving, steel and copper plate, including plate printing.....	17	400	11	14	13	25	337	Oc 417	Fe 299	358	154	165	10	23	355,869

\* Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

† Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



# MANUFACTURES—MASSACHUSETTS.

647

COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.				
										Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>	Rent- <sup>2</sup>	

THE STATE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.								
212,786	19,370	1,407,574	.....	17,925	210,307	833,883	211,312	3,699,320	2,619,125	4,628	2,295	.....	875	1,458	150	1	
281,003	58,317	684,722	1,805	5,484	199,737	3,573,404	126,404	5,514,555	1,814,747	4,419	1,660	.....	965	1,794	265	2	
2,925,847	589,723	19,790,579	363,052	40,019	5,531,027	60,372,260	1,721,258	105,183,068	43,089,550	50,100	21,609	6,290	30	10,019	12,152	11,125	3
3,920,644	1,334,287	36,949,984	3,581,065	102,091	11,505,350	146,340,845	4,275,698	237,443,077	88,826,534	128,630	37,424	63,724	.....	12,069	15,413	66,180	4
3,794,226	3,470,652	51,522,134	417,775	160,010	3,151,059	105,849,585	6,009,996	192,613,139	80,753,558	62,631	21,400	8,767	615	13,838	17,911	28,406	5

Graphite, ground and refined.....	1	Labels and tags.....	7	Phonographs and graphophones.....	2	Sulphuric, nitric, and mixed acids..	1
Hammocks.....	1	Lead, bar, pipe, and sheet.....	2	Pipes, tobacco.....	2	Theatrical scenery.....	1
Hats, fur-felt.....	3	Lubricating greases.....	2	Pumps, not including power pumps..	4	Type foundry.....	3
Hats, wool-felt.....	2	Matches.....	1	Sand and emery paper and cloth....	1	Typewriter supplies, carbon paper and ribbon.....	3
Horseshoes, not made in steel works or rolling mills.....	1	Nets and seines.....	3	Sand-lime brick.....	2	Vault lights and ventilators.....	2
Ink, printing.....	3	Oleomargarine and other butter substitutes.....	2	Scales and balances.....	1	Wall paper, not made in paper mills.	2
Ink, writing.....	6	Paper patterns.....	1	Shipbuilding, steel.....	4	Washing machines and clothes wringers.....	1
Iron and steel, blast furnaces.....	1	Peanuts, grading, roasting, cleaning, and shelling.....	1	Smelting and refining, not from the ore.....	4	Watches.....	5
Iron and steel, cast-iron pipe.....	1	Pens, fountain and stylographic....	3	Soda-water apparatus.....	4		
Iron and steel, doors and shutters...	1	Pens, gold.....	2	Sugar, refining, not including beet sugar.....	2		
Jute goods.....	2						

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES.

18,830,158	20,452,238	96,401,002	9,360,340	5,390,604	20,814,410	343,354,555	6,251,336	618,921,962	269,310,071	101,604	39,042	4,137	1,393	595	56,432	19,607	1
7,221	6,258	21,817	.....	4,407	359	21,386	1,081	90,186	67,719	24	.....	.....	.....	.....	24	.....	2
6,620	5,940	90,373	.....	4,080	3,820	139,680	3,354	288,667	145,624	109	.....	.....	10	.....	90	.....	1
70,563	26,184	326,074	3,385	32,442	9,607	306,144	16,669	917,778	594,965	265	.....	.....	.....	.....	235	.....	4
35,026	91,564	929,598	6,712	91,154	49,424	774,160	23,313	2,544,072	1,746,590	309	.....	.....	9	.....	300	.....	5
38,289	24,857	156,204	80	20,606	9,754	501,042	3,281	877,334	373,011	55	.....	.....	.....	.....	55	.....	6
77,737	27,063	45,431	.....	10,050	18,679	1,125,822	2,927	1,455,088	328,336	55	.....	.....	.....	.....	55	.....	7
104,314	91,578	106,801	.....	15,279	32,551	729,890	12,867	1,402,607	659,850	228	145	.....	.....	.....	83	16	8
146,739	115,090	1,033,428	5,680	94,403	17,947	853,609	24,245	2,786,966	1,000,132	520	.....	.....	.....	.....	520	.....	9
377,551	181,139	974,218	3,331	106,209	202,184	30,345,332	54,238	35,443,382	5,043,812	634	245	.....	.....	.....	339	4	10
153,494	61,808	364,145	1,826	46,989	45,183	2,187,773	30,124	3,456,760	1,238,893	686	250	.....	.....	.....	436	100	11
77,985	1,023,808	6,293,718	90	70,948	538,624	16,028,460	126,008	27,526,886	11,372,418	3,762	1,260	.....	.....	.....	2,512	600	12
122,468	63,280	684,715	.....	69,934	70,896	924,254	20,104	2,313,635	1,369,277	474	150	.....	.....	.....	324	54	13
72,721	13,539	304,086	3,718	19,646	20,895	691,296	34,086	1,410,098	684,716	244	50	.....	8	.....	186	.....	14
244,454	600,430	2,987,285	184	271,789	394,272	12,589,383	307,334	21,680,632	8,783,915	2,413	1,260	.....	15	.....	1,138	1,266	15
163,028	96,481	603,134	10,632	33,811	189,205	1,847,337	28,568	3,501,597	1,625,702	622	510	.....	.....	.....	12	344	16
1,560	2,236	14,897	.....	2,870	176	4,900	196	44,273	39,177	5	.....	.....	.....	.....	5	.....	17
10,990	15,190	98,035	.....	7,100	4,709	554,480	8,266	787,323	224,577	125	46	.....	22	.....	57	.....	18
33,878	12,015	213,365	16	12,294	3,350	172,093	11,613	543,643	359,937	156	25	.....	45	.....	86	.....	19
96,924	72,696	2,600,623	.....	14,866	1,851,059	91,996	4,728,165	2,785,110	700	342	.....	.....	6	.....	352	113	20
22,227	20,264	67,081	.....	21,497	4,058	226,914	11,020	357,085	119,151	467	.....	.....	.....	.....	467	.....	21
271,960	389,097	1,577,518	1,403	37,269	729,624	18,874,202	205,578	24,277,494	5,197,714	3,946	2,150	.....	150	300	1,346	31	22
36,443	69,297	31,369	2,807	8,915	10,316	278,376	1,595	672,773	392,802	55	.....	.....	.....	.....	55	.....	23
2,800	12,830	11,091	1,100	3,785	570	43,057	553	99,690	56,080	3	.....	.....	.....	.....	3	.....	24
27,043	46,467	19,378	1,707	5,130	9,746	235,319	1,042	573,083	336,722	52	.....	.....	.....	.....	52	.....	25
500,247	667,897	5,517,908	2,530,782	200,650	289,680	17,121,562	90,662	31,337,508	14,116,284	1,075	450	.....	.....	.....	625	68	26
441,556	504,764	3,296,685	2,499,591	182,924	163,235	13,126,088	36,884	23,254,361	10,091,419	555	275	.....	.....	.....	280	6	27
148,691	159,823	945,048	5,214	40,078	125,576	3,952,269	46,268	6,417,408	2,418,871	966	175	.....	.....	.....	191	62	28
.....	4,310	1,276,176	31,977	37,648	869	43,205	16,510	1,665,709	1,605,994	154	.....	.....	.....	.....	154	.....	29
395,091	545,818	3,965,177	632,722	262,102	83,282	12,046,246	59,108	20,655,935	8,550,581	1,010	320	.....	2	.....	688	116	30
58,557	106,115	1,175,104	42,089	56,254	7,541	3,064,082	11,449	5,378,045	2,302,514	120	.....	.....	2	.....	118	.....	31
162,720	297,317	1,719,444	436,705	116,275	38,794	4,875,138	27,937	8,532,342	3,626,267	604	310	.....	.....	.....	294	116	32
71,268	75,765	419,036	134,849	31,754	23,137	2,566,407	7,712	3,839,969	1,265,850	120	10	.....	.....	.....	110	.....	33
100,732	94,126	535,756	18,939	48,961	18,607	1,477,765	10,396	2,655,662	1,167,501	147	.....	.....	.....	.....	147	.....	34
1,805	2,495	115,837	.....	8,858	203	62,854	1,614	249,917	135,449	19	.....	.....	.....	.....	19	.....	35
256,966	495,701	449,382	.....	95,884	107,239	13,360,511	57,837	10,239,248	2,820,900	1,132	480	.....	40	.....	612	536	36
1,399,910	1,195,797	5,701,608	1,370	487,935	2,621,902	26,062,513	355,743	46,096,820	19,678,564	6,485	2,986	.....	.....	.....	2,689	3,182	37
1,816,990	1,190,361	5,058,434	1,370	478,607	2,513,534	25,447,883	327,259	45,103,479	19,328,337	6,138	2,986	.....	.....	.....	2,342	3,182	38
12,020	5,436	133,174	.....	9,268	8,368	614,630	28,484	993,341	350,227	347	.....	.....	.....	.....	347	.....	39
310,204	1,099,389	1,029,090	16,340	50,808	35,185	1,476,863	37,136	4,619,480	3,105,481	1,095	130	.....	150	.....	815	170	40
72,982	31,490	48,079	4,000	15,131	10,960	630,783	3,922	992,578	327,813	102	.....	.....	.....	.....	102	.....	41
159,086	90,259	714,939	14,462	17,945	215,424	2,439,506	87,308	4,407,623	1,830,809	2,968	725	1,500	.....	200	543	1,965	42
682,503	690,571	1,150,651	.....	8,800	764,714	4,240,920	30,097	8,661,345	4,390,418	581	560	.....	.....	.....	21	508	43
85,569	39,160	75,233	.....	11,298	34,832	300,206	13,497	1,322,634	508,931	276	54	.....	25	.....	197	.....	44
565,351	528,087	2,459,587	19,545	71,454	532,313	4,233,132	110,798	10,671,247	6,327,317	1,936	665	.....	75	.....	1,196	40	45
12,674	8,825	123,074	2,676	18,847	1,188	52,632	7,383	296,386	236,371	133	.....	.....	.....	.....	133	.....	46
3,017	11,017	71,119	4,671	8,267	946	33,181	1,892	193,606	153,563	27	.....	.....	.....	.....	27	.....	47
77,715	36,597	314,506	9,074	26,280	24,983	207,315	5,536	997,330	784,479	80	.....	.....	10	.....	70	.....	48

\* Same number reported for one or more other months.



## MANUFACTURES—MASSACHUSETTS.

TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Number of establishments	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.		Total.	16 and over.		Under 16.			
					Male.	Female.	Average number.	Number, 15th day of—		Male.	Female.	Male.	Female.		
								Maximum month.							Minimum month.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

BOSTON—Continued.															Dollars.			
1	Fancy articles, not elsewhere specified.	15	235	12	16	28	29	150				187	46	134	1	6	392,821	
2	Metal and paper novelties.	8	183	7	9	24	27	116	Oc	155	Ja	91	140	29	104	1	6	300,675
3	All other.	7	52	5	7	4	2	34	No	49	Ja	20	47	17	30			92,146
4	Flavoring extracts.	13	133	6	20	31	9	67	Oc	83	Ja	59	81	38	42	1		501,526
5	Food preparations, not elsewhere specified.	29	688	24	37	57	68	502					528	379	135	10	4	2,773,729
6	Breadstuffs, macaroni, vermicelli, and noodles.	12	239	13	12	8	13	193	No	209	Fe	178	207	171	25	0	2	1,078,812
7	All other.	17	449	11	25	49	55	399	Ja	410	Au	210	321	208	110	1	2	1,694,917
8	Foundry and machine-shop products.	141	8,463	78	309	583	416	6,087	No	237	Au	175	7,004	6,836	138	30		20,242,983
9	Boiler shops.	4	250	16	6	5		223	No	237	Au	175	232	231	1			615,348
10	Machine shops.	128	6,918	75	324	534	383	5,602	Ja	6,512	Jy	5,262	5,513	5,804	123	20		21,949,553
11	All other.	9	1,295	3	59	43	28	1,162	De	1,259	Fe	1,040	1,259	1,211	14	4		3,677,982
12	Fur goods.	18	364	18	15	37	12	282	De	330	Mh	242	330	158	171	1		1,090,087
13	Furnishing goods, men's, neckwear.	11	276	14	9	27	18	207	De	235	Ja	178	235	42	101	2		873,323
14	Furniture.	61	1,267	54	69	69	45	1,030	No	715	Ja	484	1,238	1,136	81	19	2	2,438,906
15	Wood, other than rattan and willow.	45	756	40	38	35	20	617	No	715	Ja	484	713	671	35	7		1,236,322
16	Rattan and willow.	5	118	2	9	4	7	96	De	114	Fe	86	114	74	38	2		224,814
17	Metal.	4	147	2	7	16	5	117	No	125	Ja	101	124	112	2	8	2	383,567
18	Store and office fixtures.	7	246	4	15	14	13	200	De	287	My	117	287	279	6	2		694,703
19	Gas and electric fixtures.	4	85	3	2	2	1	27	No	32	Ja	24	33	31	1	1		66,348
20	Glass, cutting, staining, and ornamenting.	15	110	13	4	8	4	86	De	98	Ja	71	101	98	2	1		121,251
21	Glue, not elsewhere specified.	3	103		11	1	4	87	De	94	Se	78	94	94				1,577,208
22	Gold, leaf and foil.	5	40	6				34	Ap	86	Ja	30	36	26	10			31,234
23	Grease and tallow, not including lubricating greases.	3	187	1	11	13	5	157	De	175	Fe	150	175	166	8	1		865,129
24	Hand stamps.	10	65	11	5	5	2	42	No	44	Fe	40	43	38	3	2		89,193
25	Hardware.	13	91	10	10	1	6	64	No	81	Ja	53	79	68	7	3	1	142,237
26	Hat and cap materials.	5	26	4	2			19	Je	21	Ja	15	21	12	4	3	2	18,891
27	Hats and caps, other than felt, straw, and wool.	31	404	43	15	30	24	352	Oc	386	Ja	319	375	257	111	5	2	850,338
28	House-furnishing goods, not elsewhere specified.	30	708	27	29	59	40	553					642	90	401	6	49	2,071,055
29	Mops and dusters.	5	76	1	6	5	5	50	Oc	70	Ja	45	65	21	44			97,627
30	All other.	25	632	26	23	54	35	494	No	578	Ja	409	577	75	447	0	49	1,973,428
31	Instruments, professional and scientific.	12	602	8	70	44	39	441					461	353	93	12	3	1,366,250
32	Medical and surgical.	4	330	2	55	34	28	211	De	227	Se	195	227	152	62	10	3	504,352
33	All other.	8	272	6	15	10	11	230	Fe	304	Mh	177	234	201	31	2		861,898
34	Iron and steel, tempering and welding.	9	43	6	8	1	4	24	Au	27	Mh	22	22	22				47,621
35	Jewelry.	32	298	35	7	25	33	198	De	231	Ja	180	231	208	16	7		860,821
36	Jewelry and instrument cases.	5	77	5	3	1	3	65	Se	105	Ja	43	104	43	60	1		92,358
37	Knit goods.	11	985	8	37	37	39	864	De	1,018	Mh	737	1,018	160	774	2	82	3,230,586
38	Lamps and reflectors.	3	19	2				17	(*)	17	(*)	17	18	17		1		14,701
39	Leather goods, not elsewhere specified.	14	175	7	12	17	7	132	No	152	Ap	112	152	93	59			612,562
40	Liquors, malt.	10	968		48	98	20	802	Je	867	De	637	648	643	5			11,908,792
41	Lithographing.	7	177		13	8	7	149	De	155	Fe	142	154	142	11	1		815,914
42	Looking-glass and picture frames.	16	91	18	1	4	4	64	No	69	Ja	59	69	67		2		100,215
43	Lumber, planing-mill products, not including planing mills connected with sawmills.	35	719	24	44	21	15	615	De	783	Je	412	768	758		10		1,960,360
44	Marble and stone work.	17	228	17	15	13	6	177					203	203				593,726
45	Monuments and tombstones.	9	66	13	3	2	1	47	Se	56	Ja	38	47	47				116,161
46	All other.	8	162	4	12	11	5	130	De	155	Mh	118	156	156				477,565
47	Mattresses and spring beds, not elsewhere specified.	22	511	20	24	62	24	381	Oc	423	Ja	310	401	278	110	8	5	1,572,550
48	Millinery and lace goods, not elsewhere specified.	51	1,076	57	40	37	46	896					1,124	219	891	6	8	1,236,307
49	Trimmed hats and hat frames.	20	660	25	16	24	32	563	De	738	Jy	387	738	165	568	4	1	815,455
50	All other.	31	416	32	24	13	14	333	No	382	Ja	279	386	54	323	2	7	420,852
51	Mineral and soda waters.	29	303	26	23	34	22	198	Jy	255	Ja	154	174	173	1			1,127,811
52	Models and patterns, not including paper patterns.	22	119	27	4		3	85	Au	99	Se	62	86	80	5	1		128,122
53	Musical instruments and materials, not elsewhere specified.	14	225	10	12	6	10	187	Au	208	Ja	147	200	167	28	5		311,908
54	Musical instruments, pianos.	6	1,220	3	27	19	24	1,147	De	1,214	Ja	1,010	1,214	1,122	57	33	2	3,646,654
55	Oil, not elsewhere specified.	4	54	1	3	9	1	40	Je	44	Mh	35	43	43				672,108
56	Paints.	6	192		13	48	12	119	Se	134	Mh	103	121	112	9			893,286
57	Paper goods, not elsewhere specified.	6	189	4	3	7	14	161	De	204	Ap	137	206	119	85			509,416
58	Patent medicines and compounds.	45	390	20	55	61	43	211					226	135	87	2	2	1,353,386
59	Patent and proprietary medicines.	30	298	9	42	45	31	171	No	188	Je	163	183	105	76	1	1	1,077,260
60	Patent and proprietary compounds, not elsewhere specified.	15	92	11	13	16	12	40	Fe	54	Se	35	43	30	11	1	1	276,126
61	Paving materials.	8	190	5	9	6	1	169	Se	219	Fe	71	208	208				326,338
62	Perfumery and cosmetics.	12	110	4	15	17	6	68	Ja	77	My	61	69	17	48	4		465,731
63	Photo-engraving.	16	477	7	32	49	32	357	No	398	My	301	400	366	22	12		584,211
64	Pickles, preserves, and sauces.	13	532	3	39	52	34	404					445	219	218	5	3	2,836,504
65	Preserves.	9	501	1	35	52	34	379	De	418	Ja	351	420	207	209	1	3	2,793,622
66	Pickles and sauces.	4	31	2	4			25	Jv	40	Ja	15	25	12	9	4		42,942

\* Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

\* Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



# MANUFACTURES—MASSACHUSETTS.

649

COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.				
										Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>	Rent- ed. <sup>2</sup>	

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.							
23,455	105,984	134,743	51,209	15,305	2,748	353,685	2,025	871,427	515,717	43						43	1
9,250	100,733	106,226	51,209	10,095	2,194	254,240	1,206	693,326	437,880	25						25	2
14,205	5,251	28,517		5,210	554	99,445	819	178,101	77,837	18						18	3
100,347	154,235	65,085		19,996	19,644	631,646	4,069	1,209,439	573,824	43						43	4
175,678	179,897	460,305		64,966	143,460	3,281,986	90,222	5,666,552	2,294,344	1,100	150	2	5			943	5
37,963	23,016	161,211		14,114	11,761	1,243,865	37,788	1,711,529	429,876	629	100					529	6
137,715	156,881	299,094		50,852	131,699	2,038,121	52,434	3,955,023	1,864,468	471	50	2	5			414	7
1,631,551	1,295,502	9,944,066	229,544	232,918	1,273,373	8,988,788	543,307	31,727,563	22,195,408	9,343	2,529	145	135	60	6,474	530	8
62,366	12,882	353,912		13,928	47,978	409,883	20,431	1,097,055	666,741	411					251	98	9
1,262,899	1,224,397	8,103,576	228,748	182,955	969,856	7,116,798	366,321	25,970,983	18,487,864	6,752	1,054	145	135	60	4,758	75	10
306,286	58,313	1,487,478		30,035	255,539	1,462,107	156,555	4,659,525	3,040,803	2,180	715				1,465	357	11
60,050	67,178	384,409		55,442	37,873	117,511	4,107	2,368,093	1,080,789	55					55		12
65,350	94,781	158,778		66,805	15,015	33,288	1,603,490	3,583	2,450,820	843,238	17				17		13
197,762	115,454	1,310,032		120,193	33,140	2,590,885	31,664	5,344,428	2,721,880	995	200		58		737	35	14
82,821	59,373	820,511		76,783	12,932	1,760,495	18,404	3,438,769	1,659,870	544	75				469		15
27,800	10,570	90,230		13,419	5,061	216,018	3,570	452,115	232,527	46			18		28		16
55,401	24,088	134,992		10,391	12,030	397,290	5,335	816,721	414,096	99					99		17
31,740	21,423	264,299		13,600	3,117	217,082	4,345	636,823	415,390	306	125		40		141	35	18
3,816	2,622	42,384		3,956	411	46,768	2,343	127,773	78,662	40					40		19
3,430	5,868	109,531		12,635	1,240	217,277	2,700	432,903	212,926	60					60		20
23,381	4,438	116,776				718,531	39,819	931,074	172,724	57	27				30		21
28,295	19,579	37,147	2,859	600	232	50,490	574	109,494	58,430	8					2		22
		180,904		54,800	32,782	1,635,908	84,346	2,120,424	497,170	527	109		6		418		23
13,803	8,836	48,043		7,180	1,741	53,080	1,935	211,398	156,383	41					41		24
24,490	5,004	65,616	121	10,131	1,752	89,459	3,250	238,611	140,202	81					81		25
8,404	936	15,601		2,369	138	30,612	446	66,997	35,939	6					3		26
70,459	70,768	484,019	2,074	20,833	5,282	1,292,572	8,670	2,240,712	999,461	59					59		27
136,128	147,098	390,038	32,162	52,539	21,312	3,153,209	10,607	4,685,175	1,521,359	144	25				119		28
15,354	8,094	38,598	62	5,278	2,043	196,780	893	324,315	126,062	23					23		29
120,774	139,004	351,440	32,100	47,261	19,269	2,956,449	9,714	4,360,580	1,394,087	121	25				96		30
130,823	138,724	496,835	3,475	28,058	27,849	481,317	10,677	1,506,066	1,014,072	293	40				31		31
81,904	100,273	192,518	410	17,188	21,418	203,754	2,709	703,541	497,078	134	40				94		32
48,919	32,451	304,317	3,065	10,870	6,431	277,663	7,968	802,526	516,994	159					159		33
13,622	3,989	38,482	1,532	5,703	2,891	31,589	8,066	128,288	88,033	53					53		34
27,644	65,362	297,654	24,500	7,425	7,425	725,205	5,388	1,603,398	872,807	103			10		93		35
4,976	3,443	64,506	600	6,360	261	68,183	1,895	176,257	106,174	30					30		36
120,777	135,090	683,370	56,967	30,403	157,880	2,613,537	27,160	4,204,571	1,063,808	374					374		37
	1,057	25,054	4,358	103	103	22,537	1,011	81,585	67,837	16					16		38
52,360	42,780	140,984	125	10,204	6,000	530,674	3,539	912,889	378,676	63	14				49		39
374,335	255,903	1,221,004		2,000,894	1,892,737	210,925	8,956,330	6,852,668	3,735	3,398	188				149	527	40
55,392	17,322	172,320	7,000	13,149	232,694	5,042	612,095	373,759	164						104		41
800	10,414	78,244	6,000	13,203	137,647	1,511	294,436	155,278	30						30		42
117,812	51,503	804,629	8,808	48,324	1,708,417	24,459	3,095,193	1,362,317	2,570	1,565	14				991	305	43
31,434	23,378	262,129	595	8,266	350,280	16,063	770,661	395,328	749	400		35			314		44
5,395	5,097	69,413	195	1,215	47,717	4,580	187,379	135,082	149						114		45
26,039	18,281	192,716	400	8,925	311,503	11,473	583,282	260,246	600	400					200		46
111,549	122,229	454,990		50,798	42,502	1,755,838	21,974	2,973,498	1,195,686	616	125				401	53	47
85,855	142,755	795,781	12,932	67,630	31,284	1,927,166	20,488	3,762,505	1,814,851	190			4		186		48
34,624	102,743	555,904		39,461	1,335,064	14,630	2,524,296	1,174,602	112						112		49
51,231	40,012	230,877	12,932	28,169	5,772	692,102	5,858	1,232,209	640,249	78			4		74		50
98,051	71,310	243,429		136,485	1,067,181	19,087	2,492,117	1,405,849	319	70					249	66	51
5,190	2,142	132,055	3,461	12,206	1,078	59,824	3,684	292,976	229,468	88					88		52
45,200	15,124	192,003	4,483	18,122	3,097	204,929	2,239	606,871	399,703	104	7				97		53
137,334	47,818	1,440,399		82,744	84,951	1,956,307	55,781	4,552,210	2,540,122	1,430	1,350	57			23		54
10,596	7,602	29,025		3,840	14,162	1,265,624	6,872	1,453,696	187,200	77					42		55
77,054	98,098	125,018		17,121	43,404	655,973	16,082	1,414,924	742,889	327	175				152		56
14,000	27,754	139,060		5,752	56,360	615,806	9,737	895,114	272,511	412					312		57
212,989	175,854	87,276	8,170	46,405	65,781	961,925	7,476	2,537,025	1,587,623	154				29	125		58
146,006	130,103	41,717	260	36,881	50,916	674,424	6,287	1,750,967	1,070,276	132			29		103		59
66,983	45,751	45,559	7,920	9,524	14,865	287,502	1,209	786,058	497,347	22					22		60
35,698	9,748	233,199		13,181	8,005	93,248	40,512	534,843	401,083	1,391	605				726		61
40,054	39,896	51,986		11,315	132,652	469,118	621	1,023,644	563,905	8					8		62
109,880	103,254	503,016	45,441	36,472	12,839	174,043	15,009	1,296,973	1,107,916	132					132		63
161,738	142,372	348,083		61,683	120,269	3,208,050	30,273	5,246,494	1,948,171	732					102	219	64
151,441		326,359		60,551	118,839	3,103,247	29,455	5,019,633	1,886,951	715					85	219	65
10,297	2,156	21,724		1,132	1,430	164,803	838	226,861	61,220	17					17		66

<sup>1</sup> Same number reported for one or more other months.

<sup>2</sup> Same number reported throughout the year.



## MANUFACTURES—MASSACHUSETTS.

TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.		Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.							WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Capital.	
			Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		
						Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.		Female.
									Maximum month.	Minimum month.						
CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.																
BOSTON—Con.																
1	Plumbers' supplies, not elsewhere specified.	4	35		3		3	20	Oct 36	Ja 17	34	34			Dollars. 65,095	
2	Pocketbooks.....	4	29	7			1	21	Fe 25	Ja 17	19	4	13		23,491	
3	Pottery.....	3	73	1	3	2	3	69	Au 77	My 04	67	53	14		96,113	
4	Printing and publishing, book and job	311	5,127	244	320	550	730	3,233			3,466	2,633	717	104	15,177,009	
5	Job work only.....	262	3,897	219	215	138	194	3,131	De 3,321	Ja 2,989	3,348	2,553	986	90	6,079,775	
6	Book printing and publishing.....	6	267	2	17	86	55	107	Je 154	Jy 04	72	52	16	3	543,313	
7	Book publishing without printing.	39	917	21	86	326	479	5	(1)	(1)	5	4	1		8,472,738	
8	Linotype work and typesetting.....	4	46	2	2		2	40	My 41	Jy 38	41	24	14	2	82,083	
9	Printing and publishing, music.....	15	325	13	17	75	78	142			142	116	20		1,190,277	
10	Printing and publishing.....	4	162	2	5	10	5	140	No 144	Ja 133	140	114	20		442,571	
11	Publishing without printing.....	11	163	11	12	65	73	2	(1)	(1)	2	2			747,706	
12	Printing and publishing, newspapers and periodicals.	137	5,972	38	317	1,524	1,002	3,091			3,233	2,602	433	90	13,712,774	
13	Printing and publishing.....	10	3,614	8	94	750	517	2,245	Oc 2,352	Ja 2,123	2,330	1,978	202	83	9,530,536	
14	Printing, publishing, and job printing.	27	755	6	61	101	119	468	Oc 526	Fe 434	515	360	141	12	1,736,174	
15	Publishing without printing.....	94	1,603	24	162	673	366	378	My 394	Ja 363	388	354	30	4	2,446,064	
16	Printing materials.....	4	42		10	4	3	25	Se 29	Fe 21	29	29			125,066	
17	Refrigerators.....	6	79	3	12	3	3	53	Oc 63	Au 48	48	48			168,034	
18	Regalia, and society badges and emblems.	3	56	1	3	5	7	40	Ap 47	Se 35	37	12	25		74,030	
19	Rubber tires, tubes, and rubber goods, not elsewhere specified.	8	463	2	27	8	25	401	Au 438	Ap 371	407	245	156	5	940,766	
20	Sausage, not made in slaughtering and meat-packing establishments.	14	184	10	12	22	8	132	De 153	Ap 121	150	149	1		490,821	
21	Saws.....	3	11	2		2	1	6	De 8	Se 5	7	6	1		12,517	
22	Screws, machine.....	7	173	4	9	4	7	149	Ja 207	Ap 123	179	158	14	7	446,014	
23	Shipbuilding, wooden, including boat building.	5	82	5	3		3	71	My 100	No 46	49	49			132,364	
24	Shirts.....	6	134	8	1		1	124	De 150	Au 107	150	13	132	1	601,621	
25	Show cases.....	5	46	4	3	2	3	34	Jy 38	Ja 20	31	30		1	101,591	
26	Signs and advertising novelties.....	10	282	6	15	16	15	230	De 255	Ja 212	255	133	90	4	355,743	
27	Silversmithing and silverware.....	5	54	4	5		3	42	De 50	Ja 36	50	44		6	97,611	
28	Slaughtering and meat packing.....	3	224	5	9	39	7	104	Ja 197	No 142	166	156	10		552,006	
29	Soap.....	8	32	2	12	13	11	44	Jy 57	Fe 37	41	39	2		402,322	
30	Springs, steel, automobile and carriage and wagon.	4	43	6	5	5	2	25	De 29	Ja 22	29	29			110,699	
31	Stationery goods, not elsewhere specified.	4	295	4	20	56	35	180	Oc 189	Ja 165	189	62	107	5	763,197	
32	Statuary and art goods.....	8	69	6	6		2	55	De 61	Ja 51	61	61			153,598	
33	Steam fittings and steam and hot-water heating apparatus.	9	2,744	3	151	229	184	2,177	De 2,300	My 2,066	2,200	2,100	189	1	6,457,128	
34	Steam packing.....	4	25	1	5	8	1	10	(1)	(1)	10	9	1		65,182	
35	Stencils and brands.....	6	37	4	5	2	1	25	De 29	Ja 22	29	29			42,654	
36	Stereotyping and electrotyping.....	4	145	2	10	9	6	121	No 131	Ja 106	131	124		7	114,006	
37	Stoves and hot-air furnaces.....	3	134		14	22	9	89	Oc 142	Ap 44	129	129			1,002,079	
38	Structural ironwork, not made in steel works or rolling mills.	22	271	16	27	11	12	205	De 235	Je 164	235	235			541,784	
39	Surgical appliances.....	8	163	5	8	5	12	133	Au 155	Fe 113	116	37	73	1	168,379	
40	Suspenders, garters, and elastic-woven goods.	9	893	7	31	71	44	740	Oc 895	Fe 612	850	99	712	5	2,322,808	
41	Textile machinery and parts.....	5	760	1	35	40	19	665	De 912	My 486	912	893	12	7	4,312,314	
42	Tinware, not elsewhere specified.....	11	752	10	27	39	33	643	Ja 708	Au 578	621	463	151	7	3,326,052	
43	Tobacco, cigars and cigarettes.....	94	2,297	93	64	65	29	2,046	Fe 2,577	Jy 514	3,624	2,919	703	1	4,839,189	
44	Tobacco, smoking.....	3	8					0	Oc 5	Se 5	7	4	2		9,335	
45	Tools, not elsewhere specified.....	16	633	16	34	14	30	539	De 604	Je 497	605	567	32	6	1,589,842	
46	Toys and games.....	5	139	3	10	4	2	120	Oc 160	Fe 68	154	31	122		124,834	
47	Trunks and valises.....	16	290	17	9	30	12	222	De 259	Ja 167	259	210	47	2	411,661	
48	Varnishes.....	4	28		5	5	2	16	Se 18	Mh 14	15	15			362,492	
49	Window and door screens and weather strips.	4	13	2	1	1	2	7	Je 12	Ap 5	7	7			19,304	
50	Window shades and fixtures.....	4	26	3	2	1		20	Au 25	Ja 15	23	19	4		100,490	
51	Wirework, not elsewhere specified.....	7	47	5	4	2	4	32	Fe 35	Je 29	31	22	5	4	35,799	
52	Wool scouring.....	3	75	1	4	3	1	66	De 94	Fe 41	94	94			278,015	
53	All other industries *.....	217	14,058	133	571	943	653	11,758			12,428	9,279	3,009	68	73,420,003	

\* All other industries embrace—  
Aeroplanes, seaplanes, and airships, and parts.....  
Aluminum manufactures.....  
Ammunition.....  
Asbestos textile-mill products, not including steam packing.....  
Bags, other than paper, not including bags made in textile mills.....  
Bags, paper, not including bags made in paper mills.....  
Baking powders.....  
Baskets, and rattan and willow ware.....  
Belting, rubber.....  
Belting, woven.....  
Billiard tables and accessories.....  
Bluing.....  
Boxes, cigar.....

Boxes, wooden packing, except cigar boxes.....  
Brooms.....  
Butter.....  
Butter, reworking.....  
Card cutting and designing.....  
Carriage and wagon materials.....  
Cars and general shop construction and repairs by electric-railroad companies.....  
Cars, steam-railroad, not including operations of railroad companies.....  
Cash registers and calculating machines.....  
Cheese.....  
Chewing gum.....  
Clocks.....  
Cloth, sponging and refinishing.....

Clothing, men's, buttonholes.....  
Cloths, burial cases, and undertakers' goods.....  
Cooperage, hogsheds and barrels.....  
Cordage and twine.....  
Cork, cutting.....  
Corsets.....  
Cotton small wares.....  
Cutlery and edge tools.....  
Dairymen's supplies.....  
Dental goods.....  
Drug grinding.....  
Dyeing and finishing textiles, exclusive of that done in textile mills.....  
Emery and other abrasive wheels.....  
Enameling.....  
Engravers' materials.....

Engraving, wood.....  
Envelopes.....  
Felt goods.....  
Fire extinguishers, chemical.....  
Flags and banners.....  
Flour-mill and gristmill products.....  
Furs, dressed.....  
Galvanizing.....  
Gas, illuminating and heating.....  
Gas and water meters.....  
Gloves and mittens, cloth, not including gloves made in textile mills.....  
Gloves and mittens, leather.....  
Hair work.....  
Hammocks.....  
Hats, fur-felt.....  
Hats, straw.....  
Ice, manufactured.....

<sup>1</sup> Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).  
<sup>2</sup> Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



# MANUFACTURES—MASSACHUSETTS.

651

COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					Electric horsepower generated in establishments reporting.
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.			Rent- <sup>2</sup>	
										Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>		

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars. 4,950	Dollars. 2,156	Dollars. 33,297	Dollars. 2,050	Dollars. 4,280	Dollars. 506	Dollars. 48,737	Dollars. 4,582	Dollars. 136,045	Dollars. 82,726	82	40			42	1
5,100	624	11,976	3,256	67	44,191	390	69,832	25,251	12	12				12	2
1,264,055	5,003	73,853	1,800	1,543	62,250	11,534	106,726	92,930	141	75				66	3
770,556	1,583,503	3,780,597	3,138,893	415,519	383,750	6,143,962	139,925	22,809,951	16,526,064	3,150	248			2,801	4
48,579	413,521	3,616,120	132,594	320,536	200,295	3,867,440	130,886	12,037,364	8,039,038	3,032	248			2,773	5
437,920	1,051,681	5,410	2,999,635	78,683	18,215	119,737	5,366	573,358	448,255	107				107	6
					164,095	2,140,808	1,137	10,096,290	7,945,345						7
7,000	2,802	44,767	2,423	1,145	6,977	2,536	102,939	93,420	11					11	8
73,407	102,813	123,871	540,107	46,437	46,562	303,183	3,850	1,708,990	1,401,957	147				147	9
14,300	16,558	119,571	248,850	12,500	19,704	187,787	3,832	739,322	547,703	144				144	10
59,107	140,255	3,800	297,248	33,937	20,858	115,396	18	909,668	854,254	3				3	11
1,394,957	3,440,417	4,815,576	1,356,859	411,886	907,058	12,638,237	213,462	33,607,374	20,755,675	5,088	80		119	4,889	12
661,138	1,854,570	3,614,736	1,747	181,391	789,329	9,845,986	155,961	22,774,201	12,772,254	3,581	80		119	3,601	13
168,691	254,290	538,483	66,010	78,838	22,810	538,337	20,572	1,991,501	1,423,592	782				663	14
565,128	1,331,557	662,357	1,280,102	151,657	95,413	2,253,914	27,929	8,841,672	6,559,829	725				725	15
30,170	9,518	25,931		10,553	10,371	128,021	2,150	275,054	144,883	21				21	16
31,350	3,516	71,329		4,060	1,614	124,835	2,536	285,556	158,185	170	125		28	17	17
7,804	13,220	39,855	1,000	4,790	1,600	121,062	430	213,174	90,782	4				4	18
96,376	40,853	351,197	388	6,044	40,224	698,553	43,892	1,545,196	802,751	703	708		40	45	37
34,550	30,069	183,573		34,253	6,367	2,016,184	22,612	2,516,142	477,346	498				498	20
	2,056	6,205		2,050	288	4,792	840	24,526	18,894	19				19	21
34,379	12,007	175,108		11,778	8,880	263,047	11,077	604,568	330,444	290				290	22
32,782	2,957	79,903		6,168	1,079	113,374	3,267	275,597	158,956	179	50		30	99	23
333	634	88,155	62,644	4,740	2,540	715,094	2,033	1,066,850	349,723	29			25	20	24
9,434	7,804	40,543	184	3,332	505	113,426	3,212	196,405	79,767	67				42	25
40,843	99,165	238,065	4,186	15,981	40,545	250,189	4,332	745,154	490,633	96				96	26
10,961	2,820	49,679	2,037	5,006	348	70,566	2,546	188,076	114,904	49				49	27
59,203	70,205	225,646	13,339	31,702	6,659	5,938,702	13,656	6,651,615	609,257	200				200	28
70,873	50,605	52,113		8,506	86,256	558,198	14,433	1,060,934	488,303	177	164			13	29
11,524	2,498	28,990		3,498	581	53,112	3,709	137,728	80,906	73				73	30
51,010	153,984	138,297	86,935	29,020	21,739	629,952	7,077	1,360,957	722,928	96			18	78	31
11,180	1,970	75,300	1,318	7,959	3,041	39,506	706	189,421	149,209						32
502,997	437,846	2,605,762	1,907	7,662	482,854	2,371,870	185,642	8,134,716	5,577,204	2,797	635			2,162	33
15,020	15,140	12,883		3,140	557	50,889	1,269	134,419	82,231	17				17	34
12,287	3,395	24,636		5,643	1,006	20,580	1,234	87,324	65,504	14				14	35
39,804	14,217	155,045		9,451	1,197	84,105	10,881	402,678	307,602	257				257	36
27,120	56,955	104,455		1,825	15,018	144,204	3,735	342,768	194,829	77				77	37
78,563	39,103	271,130	43,671	22,912	9,366	443,922	20,904	1,062,021	597,195	499	160		35	314	38
27,012	28,572	92,858	82	14,469	3,317	156,606	1,802	402,249	243,841	30				30	39
132,402	184,162	512,821	90,776	36,727	78,294	2,176,822	15,113	3,930,800	1,749,365	263	143			120	40
139,323	82,711	829,259	1,607	5,892	57,281	817,096	24,923	2,274,625	1,432,606	453	150		40	263	41
66,997	33,717	644,975		34,358	163,502	2,104,149	21,393	3,557,154	1,431,612	333	120			213	42
162,548	106,169	2,441,426		57,605	1,067,821	3,446,519	11,917	8,400,429	4,941,990	110				110	43
		2,769		2,300	1,217	22,803	130	36,166	13,233	1				1	44
102,848	52,248	631,350	750	8,091	127,678	593,448	61,753	2,181,278	1,521,077	1,007	17		12	978	45
24,155	3,778	71,644	2,966	7,512	1,423	124,517	2,195	300,413	173,701	48				48	46
21,898	69,093	231,321	120	18,096	3,313	763,474	3,867	1,283,312	515,971	46				46	47
18,679	11,453	25,838		2,895	6,918	421,666	2,011	729,245	305,508	61	9			52	48
780	1,986	7,301		1,910	133	11,925	833	30,469	17,711	20				20	49
2,413	750	20,640		2,687	298	87,750	143	149,545	61,652	4				4	50
6,848	5,804	33,893	272	4,486	474	26,334	898	99,158	71,956	18			2	16	51
13,741	3,273	100,732		1,920	8,312	65,731	29,969	270,969	175,949	396	325			71	52
2,193,925	2,005,801	12,627,169	70,709	375,525	4,869,836	75,510,167	2,051,430	113,464,010	35,902,413	24,279	11,596	1,435	172	35	6,705

Ink, printing.....	2	Liquors, distilled, grain alcohol and rum.....	2
Ink, writing.....	3	Lubricating greases.....	1
Iron and steel, steel works and rolling mills.....	3	Lumber and timber products.....	2
Iron and steel, bolts, nuts, washers, and rivets, not made in rolling mills.....	2	Machine tools.....	3
Iron and steel, forgings, not made in steel works or rolling mills.....	1	Minerals and earths, ground or otherwise treated.....	1
Iron and steel, wire nails and spikes, not made in steel works or rolling mills.....	1	Mirrors, framed and unframed, not elsewhere specified.....	4
Japanning.....	2	Mucilage, paste, and other adhesives, not elsewhere specified.....	5
Labels and tags.....	2	Musical instruments, organs.....	2
Lapidary work.....	1	Musical instruments, piano and organ materials.....	2
Leads.....	1	Needles, pins, and hooks and eyes.....	2
Lead, bar, pipe, and sheet.....	1	Oleomargarine and other butter substitutes.....	1
Leather, tanned, curried, and finished.....	2	Optical goods.....	3

Ordnance and accessories.....	2
Paper and wood pulp.....	1
Peanuts, grading, roasting, cleaning, and shelling.....	1
Pens, fountain and stylographic.....	2
Photographic materials.....	1
Pipes, tobacco.....	1
Plated ware.....	2
Pumps, not including power pumps.....	4
Roofing materials, metal shingles and ceiling.....	1
Saddlery and harness.....	2
Sewing machines.....	5
Shipbuilding, steel, repair work only.....	3
Silk goods.....	3
Smelting and refining, not from the ore.....	3
Soda-water apparatus.....	3

Sporting and athletic goods.....	2
Stoves, gas and oil.....	3
Sugar, refining, not including beet sugar.....	2
Type founding.....	2
Typewriter supplies, carbon paper and ribbon.....	2
Umbrellas and canes.....	5
Upholstering materials, curled hair.....	1
Vault lights and ventilators.....	1
Waste, cotton.....	2
Wood, turned and carved.....	2
Wooden goods, not elsewhere specified.....	1
Wool shoddy.....	1
Woolen goods.....	1
Worsted goods.....	1

\* Same number reported throughout the year.

\* Same number reported for one or more other months.



## MANUFACTURES—MASSACHUSETTS.

TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Num-ber of estab-lish-ments	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.
		Total.	Pro-pri-ors and firm mem-bers.	Sala-ried offi-cers, super-in-tend-ents, and man-agers.	Clerks, etc.		Wage earners.		Total.	16 and over		Under 16.		
					Male.	Fe-male.	Aver-age num-ber.	Number, 15th day of—		Male.	Fe-male.	Male.	Fe-male.	
								Maximum month.	Minimum month.					

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

																	Dollars.
1	<b>BROCKTON—All industries....</b>	217	20,555	166	734	694	902	18,059	De 18,936	Ja 17,156	10,176	12,762	5,929	253	232		54,715,520
2	Blacking, stains, and dressings.....	13	97	17	8	19	10	43	No 45	Ja 41	45	36	9	.....	.....	.....	340,799
3	Boot and shoe cut stock.....	11	921	7	33	13	22	846	Oc 905	De 787	786	476	287	7	16	.....	2,351,606
4	Boot and shoe findings.....	42	1,560	36	71	38	50	1,365	De 1,562	Ja 1,196	1,564	949	572	20	26	.....	5,511,465
5	Boots and shoes, not including rubber boots and shoes.....	39	14,383	13	415	420	657	12,878	An 13,630	Ja 12,281	13,457	8,751	4,381	184	141	.....	36,063,484
6	Boxes, set-up paper boxes and cartons.....	4	204	1	9	3	9	182	Ap 195	Ja 166	191	56	116	2	17	.....	288,138
7	Bread and other bakery products.....	10	129	10	7	20	8	84	No 93	De 77	88	80	7	1	.....	.....	194,531
8	Clothing, men's.....	4	110	2	9	4	9	86	De 107	Ja 63	107	41	55	7	4	.....	227,086
9	Cotton small wares.....	4	182	2	11	4	7	158	Se 181	Ja 136	166	64	96	2	4	.....	645,659
10	Cutlery and edge tools.....	7	89	5	15	1	2	66	De 70	Ja 63	70	70	.....	.....	.....	.....	117,426
11	Foundry and machine-shop products.....	9	331	8	13	17	17	276	De 329	My 229	329	321	8	.....	.....	.....	692,703
12	Lasts.....	6	421	4	22	20	10	365	Oc 416	Ja 275	448	420	25	3	.....	.....	1,362,007
13	Lumber, planing-mill products, not including planing mills connected with sawmills.....	3	19	1	3	1	2	12	De 14	Ja 9	14	14	.....	.....	.....	.....	60,901
14	Models and patterns, not including paper patterns.....	5	80	7	7	6	2	58	De 71	Mh 48	71	71	.....	.....	.....	.....	80,548
15	Mucilage, paste, and other adhesives, not elsewhere specified.....	4	40	4	5	8	4	19	(*) 19	(*) 19	19	18	1	.....	.....	.....	280,150
16	Printing, job.....	14	273	16	27	22	25	183	De 198	Ja 164	199	160	36	2	1	.....	429,624
17	All other industries*.....	42	1,716	33	70	98	68	1,438	.....	.....	1,622	1,238	336	25	23	.....	6,069,303

\*All other industries embrace—  
 Automobile repairing..... 1  
 Awnings, tents, and sails..... 1  
 Boxes, wooden packing, except cigar boxes..... 2  
 Carpets, rag..... 1

Cars and general shop construction and repairs by electric-railroad companies..... 1  
 Cleansing preparations..... 1  
 Clothing, women's..... 1  
 Confectionery and ice cream..... 2

Copper, tin, and sheet-iron work..... 2  
 Electrical machinery, apparatus, and supplies..... 1  
 Electroplating..... 1  
 Fancy articles, wood novelties..... 1  
 Flavoring extracts..... 1  
 Flour-mill and gristmill products..... 1

Furniture, metal..... 1  
 Gas, illuminating and heating..... 1  
 Hand stamps..... 1  
 House-furnishing goods, mops and dusters..... 1  
 Iron and steel, nails and spikes, not made in steel works or rolling mills..... 2

																Dollars.
1	<b>CAMBRIDGE—All industries....</b>	339	27,334	227	1,051	1,956	1,550	22,550	No 24,781	Ap 21,038	24,730	16,355	7,682	295	308	98,741,856
2	Automobile repairing.....	7	95	4	6	10	2	73	Je 80	Ja 67	74	73	.....	1	.....	142,311
3	Bookbinding and blank-book making.....	7	472	6	10	9	10	437	No 465	Fe 400	402	214	234	5	9	658,013
4	Boxes, set-up paper boxes.....	6	668	1	20	2	13	632	Jy 660	Ja 553	640	144	423	20	53	698,440
5	Bread and other bakery products.....	42	1,479	41	30	113	50	1,245	De 1,381	Mh 1,071	1,382	918	442	8	14	5,175,347
6	Chemicals.....	3	170	1	11	39	26	93	Se 105	Ap 85	97	85	12	.....	.....	815,524
7	Clothing, women's.....	7	236	6	14	7	6	203	Mh 130	Jy 44	209	16	185	.....	8	239,042
8	Shirt waists, dresses, and wrap-pers.....	4	116	1	12	6	4	93	.....	.....	95	10	85	.....	.....	141,878
9	All other.....	3	120	5	2	1	2	110	My 135	Ja 87	114	6	100	.....	8	97,104
10	Confectionery and ice cream.....	26	2,255	25	80	115	83	1,952	Oc 1,921	Je 1,503	2,006	603	1,212	33	158	4,494,007
11	Confectionery.....	18	2,041	12	75	106	71	1,777	Jy 251	Ja 134	1,867	465	1,211	33	158	4,114,375
12	Ice cream.....	8	214	13	5	9	12	175	De 322	Je 200	139	138	1	.....	.....	370,632
13	Copper, tin, and sheet-iron work.....	9	400	5	35	50	26	284	Oc 2,963	Ap 1,781	2,702	2,167	501	34	.....	6,278,218
14	Electrical machinery, apparatus, and supplies.....	8	2,697	3	106	84	105	2,399	.....	.....	1,293	1,227	61	5	.....	2,751,246
15	Foundry and machine-shop products.....	21	1,338	11	70	72	47	1,138	De 669	Ja 451	609	604	61	4	.....	1,678,017
16	Machine shops.....	16	674	10	43	36	33	552	Se 662	Ap 494	624	623	.....	1	.....	1,073,229
17	All other.....	5	664	1	27	36	14	586	Oc 859	Je 574	837	795	36	6	.....	1,795,827
18	Furniture.....	11	820	3	33	34	22	728	No 52	Je 34	50	80	18	1	1	91,690
19	Glass, cutting, staining, and ornamenting.....	3	50	3	4	.....	1	42	No 52	Ja 23	51	49	1	1	.....	149,972
20	Instruments, professional and scientific.....	3	47	.....	8	1	1	42	.....	.....	113	112	1	.....	.....	206,264
21	Marble and stone work.....	8	113	7	11	4	4	87	Ap 8	Fe 4	6	6	.....	.....	.....	11,900
22	Monuments and tombstones.....	3	9	3	.....	.....	.....	6	De 108	Fe 54	107	106	1	.....	.....	194,364
23	All other, except slate.....	5	104	4	11	4	4	81	De 470	Ja 345	470	463	4	3	.....	2,694,803
24	Musical instruments, pianos.....	3	498	.....	17	38	14	429	De 1,574	Ja 1,326	1,574	983	581	10	.....	9,743,301
25	Printing and publishing, book and job.....	25	2,014	36	63	208	251	1,456	.....	.....	227	171	49	7	.....	653,526
26	Printing and publishing, newspapers and periodicals.....	15	262	7	11	17	19	208	De 227	Ja 197	227	171	49	7	.....	938,404
27	Printing, publishing, and job printing.....	7	252	5	8	16	15	208	.....	.....	.....	.....	.....	.....	.....	15,122
28	Publishing without printing.....	8	10	2	3	1	4	.....	(*) 3	(*) 3	3	3	.....	.....	.....	8,050
29	Slaughtering and meat packing.....	3	6	3	.....	.....	.....	3	Fe 362	Se 299	329	320	.....	.....	.....	1,383,136
30	Structural ironwork, not made in steel works or rolling mills.....	9	399	5	18	37	5	334	De 12	My 3	12	7	5	.....	.....	10,058
31	Tobacco, cigars.....	7	13	7	1	.....	.....	5	Je 20	Ja 12	13	13	.....	.....	.....	79,877
32	Wood, turned and carved.....	3	22	3	4	.....	.....	15	.....	.....	.....	.....	.....	.....	.....	59,400,497
33	All other industries*.....	113	13,280	50	504	1,116	895	10,745	.....	.....	11,873	7,651	3,011	150	155	.....

\*All other industries embrace—  
 Automobile bodies and parts..... 4  
 Automobiles..... 1  
 Babbitt and white metal..... 1  
 Belting and hose, rubber..... 1  
 Belting, leather..... 1  
 Blacking, stains, and dressings..... 2  
 Boot and shoe cut stock..... 2  
 Boot and shoe findings..... 2  
 Boots and shoes, not including rubber boots and shoes..... 2  
 Boots and shoes, rubber..... 1

Boxes, wooden packing, except cigar boxes..... 2  
 Brass and bronze products..... 1  
 Brick, building..... 1  
 Brooms, from broom corn..... 1  
 Brushes, paint and varnish..... 1  
 Butter..... 2  
 Cleansing and polishing preparations..... 2  
 Clothing, men's..... 1  
 Coffins, burial cases, and undertakers' goods..... 2  
 Collars and cuffs, men's..... 1  
 Cooperage, hogsheds and barrels..... 1

Dental goods..... 1  
 Druggists' preparations..... 1  
 Electroplating..... 1  
 Engraving, steel and copper plate, including plate printing..... 1  
 Envelopes..... 1  
 Fancy articles, not elsewhere specified..... 1  
 Felt goods..... 1  
 Flags and banners..... 1  
 Food preparations, not elsewhere specified..... 1  
 Gas, illuminating and heating..... 2

Grease and tallow, not including lubricating greases..... 2  
 House-furnishing goods, not elsewhere specified..... 2  
 Ink, writing..... 1  
 Iron and steel, welding..... 2  
 Jewelry..... 2  
 Jewelry and instrument cases..... 1  
 Knit goods..... 3  
 Liquors, distilled, grain alcohol..... 1  
 Lithographing..... 1  
 Looking-glass and picture frames..... 2

<sup>1</sup> Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

<sup>2</sup> Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



## 653

[illegible]

Dollars. 2, 937, 554	Dollars. 2, 687, 948	Dollars. 20, 896, 087	Dollars. 61, 201	Dollars. 226, 162	Dollars. 2, 930, 613	Dollars. 73, 824, 775	Dollars. 888, 506	Dollars. 117, 855, 025	Dollars. 43, 141, 744	13, 205	4, 798	614	25	.....	7, 768	807	1
34, 100	36, 639	51, 635	.....	8, 239	18, 006	443, 672	2, 912	837, 536	390, 952	57	20	.....	.....	.....	37	.....	2
193, 296	44, 135	791, 895	.....	12, 060	71, 612	4, 298, 908	24, 099	5, 978, 855	1, 655, 858	408	50	.....	.....	.....	358	.....	3
376, 293	126, 777	1, 261, 764	985	44, 919	157, 279	10, 061, 280	61, 316	14, 075, 890	3, 953, 294	1, 307	700	.....	.....	.....	607	150	4
1, 665, 937	1, 948, 461	16, 557, 692	429	76, 343	2, 171, 911	52, 286, 434	308, 350	81, 543, 541	28, 948, 757	6, 780	2, 373	450	.....	.....	3, 957	1	5
33, 597	12, 192	142, 327	.....	5, 000	15, 859	234, 344	4, 948	537, 255	297, 963	50	.....	.....	.....	.....	50	.....	6
9, 802	43, 094	408, 112	.....	12, 942	4, 110	499, 140	17, 019	309, 788	302, 625	119	.....	.....	.....	.....	119	.....	7
21, 700	13, 297	67, 084	.....	4, 620	7, 105	225, 777	1, 919	344, 968	157, 272	59	.....	.....	.....	.....	116	.....	8
31, 028	8, 520	125, 688	.....	2, 950	9, 393	517, 846	10, 365	804, 950	273, 739	116	.....	.....	.....	.....	96	.....	10
25, 925	2, 696	90, 842	.....	3, 880	7, 263	63, 317	6, 072	280, 845	211, 456	98	.....	.....	.....	.....	105	.....	11
46, 857	50, 979	328, 082	.....	5, 740	44, 355	239, 086	14, 453	929, 057	675, 613	255	150	.....	.....	.....	101	454	12
107, 119	41, 015	470, 383	38, 739	2, 628	111, 796	479, 544	18, 494	1, 857, 436	1, 359, 398	631	530	.....	.....	.....	85	.....	13
5, 696	3, 081	20, 174	.....	4, 500	459	41, 491	1, 823	91, 229	47, 915	85	.....	.....	.....	.....	.....	.....	.....
41, 877	6, 727	70, 140	.....	4, 584	1, 325	30, 171	1, 016	213, 527	182, 340	27	.....	.....	.....	.....	27	.....	14
14, 000	19, 124	24, 713	.....	480	8, 340	364, 830	9, 063	565, 570	191, 677	278	125	.....	.....	.....	153	.....	15
100, 435	69, 943	185, 395	17, 051	17, 974	12, 292	341, 538	6, 042	920, 823	573, 243	181	.....	.....	.....	.....	181	.....	16
259, 293	241, 259	1, 599, 252	4, 017	18, 703	289, 508	3, 706, 397	400, 610	8, 027, 745	3, 920, 738	2, 759	850	164	25	.....	1, 720	202	17

3,820,068	4,324,116	22,842,488	190,163	474,010	4,854,535	66,802,784	2,324,139	127,864,901	58,737,978	28,421	10,339	5,400	480	.....	12,193	0,856	1
22,901	16,537	86,602	.....	9,870	588	139,088	4,801	305,836	161,857	68	.....	.....	85	.....	33	.....	2
58,278	28,225	413,749	.....	29,786	10,887	456,767	9,220	1,280,108	814,121	304	.....	190	2	.....	112	.....	3
125,780	13,187	445,605	2,318	10,170	33,993	611,920	9,052	1,447,157	826,185	236	.....	75	15	.....	146	.....	4
68,044	254,578	1,214,903	.....	14,150	122,515	5,181,548	97,709	9,094,101	3,814,844	1,030	.....	857	.....	.....	173	166	5
13,127	58,930	95,948	.....	900	71,627	217,314	28,568	702,986	457,104	427	.....	150	.....	175	102	95	6
25,078	15,717	132,055	17,856	8,576	3,371	363,260	2,921	669,427	303,246	44	.....	.....	.....	.....	44	.....	7
21,728	13,600	67,258	10,440	6,056	2,190	199,861	1,480	376,810	175,469	26	.....	.....	.....	.....	26	.....	8
3,350	2,117	64,797	7,410	2,520	1,172	163,399	1,441	292,617	127,777	18	.....	.....	.....	.....	18	.....	9
295,672	292,278	1,424,687	.....	26,313	809,025	6,572,652	125,388	11,460,261	4,762,221	1,997	.....	695	.....	.....	1,302	213	10
261,496	274,565	1,218,457	.....	16,320	797,054	5,641,118	79,208	9,901,092	4,180,736	1,491	.....	670	.....	.....	821	213	11
34,176	17,713	206,230	.....	9,993	11,971	931,534	46,180	1,559,199	581,485	506	.....	25	.....	.....	481	.....	12
117,939	72,255	340,617	.....	21,586	43,973	701,359	14,119	1,509,124	793,046	473	.....	85	.....	.....	388	100	13
320,387	209,304	2,944,835	.....	22,378	306,880	3,792,338	111,724	8,718,570	4,814,508	3,064	1,175	.....	.....	.....	1,889	755	14
310,504	124,657	1,438,635	9,775	17,977	73,400	2,064,317	73,330	5,033,915	2,896,259	1,807	468	.....	66	.....	778	0	15
100,666	64,407	706,374	3,683	11,680	26,194	891,035	25,713	2,511,931	1,595,133	586	88	.....	60	.....	432	.....	16
128,833	60,250	732,261	6,092	6,297	47,206	1,173,232	47,626	2,521,984	1,301,126	721	380	.....	.....	.....	341	6	17
110,394	110,206	937,780	1,970	65,525	30,181	709,731	59,039	2,178,731	1,409,819	809	150	.....	.....	.....	659	.....	18
10,475	1,144	27,985	.....	2,540	995	11,822	1,869	84,698	71,017	31	.....	.....	.....	.....	81	.....	19
8,150	750	38,023	.....	6,333	7,365	89,405	1,759	157,704	66,540	31	.....	.....	.....	.....	31	.....	20
27,468	7,979	131,596	.....	9,096	2,379	125,794	8,891	363,705	229,020	505	450	.....	.....	.....	55	.....	21
.....	.....	11,117	14,000	1,430	108	10,960	37,497	49,363	37,938	10	.....	.....	.....	.....	10	.....	22
27,468	7,979	120,479	.....	7,666	2,271	114,834	8,424	314,342	191,084	495	450	.....	.....	.....	14	.....	23
114,489	66,925	671,637	.....	16,105	121,235	479,562	24,833										

<sup>c</sup> Same number reported throughout the year.



## MANUFACTURES—MASSACHUSETTS.

TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Num-ber of estab-lish-ments	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Pro- pri- etors and firm mem- bers.	Sala- ried offi- cers, super- in- tend- ents, and man- agers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		
					Male.	Fe- male.	Aver- age num- ber.	Number, 15th day of—			Male.	Fe- male.	Male.		Fe- male.
								Maximum month.	Minimum month.						

## CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

		293	38,717	231	553	524	394	37,015	No 38,065	Mh 35,909	38,454	20,219	15,944	1,086	1,205	Dollars. 135,717,124
1	FALL RIVER—All industries..															
2	Belting, leather.....	4	121	2	3	7	2	107	No 115	Au 67	111	95	14	2		321,749
3	Bread and other bakery products....	68	362	70	4	7	27	254	Oc 270	Ja 232	276	247	19	8	2	494,700
4	Clothing, women's, shirt waists, dresses, and wrappers.	3	70	6			1	63	Mh 75	Ja 40	68		32		30	77,153
5	Confectionery and ice cream.....	8	44	10		3	3	28	Je 34	Ja 21	29	27	2			49,853
6	Copper, tin, and sheet-iron work.....	10	35					27	Oc 35	Fe 17	35	34		1		76,727
7	Cotton goods.....	40	32,746		359	371	211	31,805	No 32,096	Mh 31,079	32,893	10,442	14,474	932	1,045	116,706,753
8	Cotton small wares.....	8	514		19	3	9	483	Ja 525	Se 442	473	113	208	20	42	1,489,646
9	Dyeing and finishing textiles, exclusive of that done in textile mills.	4	1,096	1	14	28	27	1,026	No 1,095	Mh 911	1,089	859	223	4	3	5,281,889
10	Foundry and machine-shop products	11	171	16	9	2	5	139	Ap 147	Je 133	147	146		1		737,902
11	Hats and caps, other than felt, straw, and wool.	3	7	3				4	(1)	(1)	5	2	1		2	1,812
12	Iron and steel, welding	3	11	3	1	1		6	Jy 7	Fe 5	7	7				6,923
13	Lumber, planing-mill products, not including planing mills connected with sawmills.	4	68	5	2	10	4	47	De 53	Fe 41	53	53				51,786
14	Marble and stone work.....	10	65	10	2	3		50			53	53				63,201
15	Monuments and tombstones.....	7	21	7				14	My 15	Mh 11	14	14				20,120
16	All other, except slate.....	3	44	3	2	3		36	Je 52	Fe 8	39	39				37,081
17	Mineral and carbonated waters.....	6	27	7	2			18	Au 25	Fe 14	18	18				42,292
18	Printing, job.....	15	73	12	5		3	53	De 58	Mh 51	58	43	7	8		107,021
19	Printing and publishing, newspapers and periodicals.	7	171	5	8	6	9	143	De 148	Ja 138	146	123	8	15		394,638
20	Sausage, not made in slaughtering and meat-packing establishments.	7	34	7				27	Ja 28	Au 25	28	24	3	1		31,447
21	Textile machinery and parts.....	17	852	15	22	18	17	780	De 886	Fe 730	887	713	130	35	9	2,144,837
22	Trunks and valises.....	3	35	3	5		2	23	No 31	Ap 20	31	30	1			77,399
23	All other industries *	56	2,214	48	98	65	74	1,029			2,047	1,190	732	50	66	7,550,306

\* All other industries embrace—  
Artificial stone products..... 1  
Automobile bodies and parts..... 1  
Automobile repairing..... 2  
Awnings, tents, and sails..... 1  
Bags, other than paper, not including bags made in textile mills..... 2

Bookbinding and blank-book making..... 1  
Boot and shoe cut stock..... 1  
Boxes, set-up paper boxes..... 1  
Brass and bronze products..... 1  
Brooms, from broom corn..... 1  
Brushes..... 1

Carpets, rag..... 2  
Cleansing and polishing preparations..... 1  
Clothing, men's..... 2  
Cordage and twine..... 4  
Dyestuffs and extracts—natural..... 1  
Electroplating..... 1  
Flour-mill and gristmill products..... 1

Food preparations, not elsewhere specified..... 2  
Furs, dressed..... 1  
Gas, illuminating and heating..... 1  
Glass, cutting, staining, and ornamenting..... 2

		405	17,833	407	705	205	613	15,783	De 18,089	Jy 14,108	18,297	11,602	6,355	201	130	39,601,758
1	HAVERHILL—All industries..															
2	Boot and shoe cut stock.....	66	1,019	77	45	29	27	841	No 941	Au 758	939	712	201	22	4	6,002,176
3	Boot and shoe findings.....	79	1,864	91	90	30	79	1,574	De 1,788	Ja 1,371	1,849	1,300	523	18	8	3,520,309
4	Boots and shoes, not including rubber boots and shoes.	137	12,748	107	523	161	438	11,529			13,456	8,131	5,055	157	118	22,295,772
5	Regular factory products.....	122	12,432	92	514	151	433	11,242	De 13,043	Jy 9,861	13,141	8,020	4,861	152	108	22,221,433
6	Contract work.....	5	117	4	6		2	105	Oc 118	Ja 84	111	102	4	5		25,313
7	Stitching and crimping.....	10	199	11	3		3	182	De 203	Ap 159	204	9	190		5	49,026
8	Boxes, set-up paper boxes and cartons.	5	191	6	5		4	176	De 205	Jy 153	205	75	128	1	1	333,174
9	Boxes, wooden packing, except cigar boxes.	3	209	1	9	1	5	193	Ja 234	Jo 167	200	139	60		1	500,497
10	Bread and other bakery products....	22	123	24	9	1	8	81	No 102	Ja 60	102	74	27		1	184,606
11	Confectionery and ice cream.....	8	70	13	2	2	3	50			58	33	22		3	117,726
12	Confectionery.....	4	43	8		1	2	32	No 46	Jo 23	45	23	19		3	60,390
13	Ice cream.....	4	27	5	2	1	1	18	Au 25	No 11	13	10	3			57,336
14	Cutlery and edge tools.....	3	24	5				19	Jy 20	Ja 17	20	20				37,013
15	Foundry and machine-shop products	7	96	10	5	6	3	72	De 97	Fe 56	97	95	1	1		156,137
16	Mineral and carbonated waters.....	3	14	6			1	7	Jy 12	Ja 4	4	4				32,068
17	Models and patterns, not including paper patterns.	6	45	9	2		2	32	De 41	Ja 25	41	39	2			62,049
18	Printing, job.....	13	32	13				19	Mh 21	Jy 16	21	16	4	1		45,963
19	Signs and advertising novelties.....	3	8	4				4	My 5	Ja 3	5	5				3,699
20	Tobacco, cigars.....	3	7	3				4	Oc 6	Mh 3	6	4	2			5,650
21	All other industries *	47	1,833	38	75	45	43	1,132			1,204	955	330	1	8	6,295,919

\* All other industries embrace—  
Automobile bodies and parts..... 1  
Automobile repairing..... 2  
Blacking, stains, and dressings..... 2  
Brick, building..... 1  
Carpets, rag..... 2

Cleansing preparations..... 1  
Clothing, men's..... 2  
Electrical machinery, apparatus, and supplies..... 1  
Emery and other abrasive wheels..... 1  
Engravers' materials..... 1  
Fancy articles, not elsewhere specified..... 1  
Flour-mill and gristmill products..... 2  
Gas fixtures..... 1  
Gas, illuminating and heating..... 1  
Hats, fur-felt..... 1

Hats, wool-felt..... 1  
Iron and steel, welding..... 1  
Lamps, automobile..... 1  
Lasts..... 3  
Leather goods, not elsewhere specified..... 1

1 Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

2 Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



## MANUFACTURES—MASSACHUSETTS.

655

## COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.				Electric horsepower generated in establishments reporting.
											Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>	

## CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars. 2,443,444	Dollars. 1,018,871	Dollars. 30,513,600	Dollars. 54,107	Dollars. 106,759	Dollars. 12,130,150	Dollars. 91,992,342	Dollars. 4,188,042	Dollars. 103,240,082	Dollars. 67,065,098	145,646	109,985	15,962	396	1,115	18,188	13,623	1
9,550	14,281	111,433	-----	4,120	5,783	494,899	6,511	738,944	237,534	141	135	-----	-----	-----	6	-----	2
7,926	20,940	283,494	-----	18,335	4,595	1,163,873	38,574	1,874,956	672,509	195	-----	-----	-----	-----	195	-----	3
-----	832	30,777	-----	1,620	290	114,808	665	213,174	98,201	22	-----	-----	-----	-----	22	-----	4
-----	3,293	37,410	194	4,331	363	163,599	4,272	271,106	103,235	67	-----	-----	-----	-----	67	-----	5
-----	37,587	-----	-----	1,433	642	34,235	1,353	94,925	59,337	11	-----	-----	-----	-----	11	-----	6
1,641,257	648,611	25,997,711	-----	14,440	10,833,934	77,045,717	3,262,226	135,783,717	55,475,774	134,876	106,585	13,675	-----	1,070	13,546	12,741	7
67,346	9,209	321,023	14,861	4,424	45,486	1,229,448	50,419	1,947,518	667,651	996	-----	-----	25	-----	971	-----	8
276,445	83,609	894,207	-----	4,882	404,250	4,806,950	232,681	8,250,120	3,210,489	3,533	150	2,077	-----	-----	1,306	285	9
13,987	4,987	157,407	2,502	2,068	8,435	182,138	6,082	445,523	256,403	196	-----	40	-----	-----	150	-----	10
-----	-----	2,995	-----	1,846	92	21,450	265	35,250	13,535	3	-----	-----	-----	-----	3	-----	11
3,040	200	7,492	75	788	50	9,776	191	29,357	19,390	3	-----	-----	-----	-----	3	-----	12
4,750	15,008	55,174	-----	1,864	2,620	158,586	1,262	270,790	110,952	427	350	-----	-----	-----	77	-----	13
2,900	2,746	61,119	200	425	663	26,646	7,688	124,153	89,819	220	125	15	22	-----	58	-----	14
-----	-----	19,384	200	125	154	14,443	958	50,375	34,974	40	-----	-----	22	-----	18	-----	15
2,900	2,746	41,735	-----	800	509	12,203	6,730	73,778	54,845	180	125	15	-----	-----	40	-----	16
1,936	-----	13,819	-----	810	584	32,862	1,600	79,777	45,315	17	-----	-----	-----	-----	17	-----	17
9,994	3,101	50,873	1,100	6,042	1,139	61,802	2,040	171,003	107,161	51	-----	-----	-----	-----	51	-----	18
18,719	17,500	140,136	128	6,851	5,570	94,361	7,735	398,847	296,751	98	25	-----	-----	-----	73	-----	19
-----	-----	30,413	-----	1,654	334	265,190	2,375	337,577	70,012	47	24	-----	-----	-----	23	-----	20
136,260	55,732	740,661	-----	9,093	370,988	1,590,670	43,278	3,432,321	1,798,373	1,178	455	37	-----	-----	686	234	21
5,266	3,453	20,622	-----	1,000	273	90,026	428	150,076	53,622	7	-----	-----	-----	-----	7	-----	22
247,068	135,364	1,610,247	35,047	21,744	450,020	4,399,806	517,507	8,596,948	3,679,635	3,658	2,136	158	303	45	910	363	23

Grease and tallow, not including lubricating greases.....	1	Jewelry.....	2	Musical instruments, pianos.....	1	Slaughtering and meat packing.....	1
Hardware, vehicle.....	1	Knit goods.....	1	Paper goods, not elsewhere specified.....	2	Tobacco, cigars and cigarettes.....	2
Hats, fur-felt.....	1	Liquors, malt.....	1	Patent and proprietary compounds, not elsewhere specified.....	2	Tobacco, smoking.....	1
House-furnishing goods, not elsewhere specified.....	1	Lumber and timber products.....	1	Pipes, tobacco.....	1	Toys and games.....	1
-----	1	Mattresses and spring beds, not elsewhere specified.....	2	Silk goods.....	2	Varnishes.....	1
-----	1	-----	2	-----	2	Wood, turned and carved.....	1

2,457,575	1,312,419	18,351,096	630,327	638,949	808,622	56,418,993	799,290	99,276,853	39,058,570	12,747	5,092	136	19	40	7,469	503	1
180,284	80,246	934,717	2,423	65,662	50,387	11,570,772	24,861	14,924,601	3,328,888	653	-----	-----	3	-----	650	-----	2
255,141	94,042	1,060,358	68,870	91,339	80,081	5,316,457	56,202	9,424,749	4,052,000	1,662	100	-----	-----	-----	1,562	18	3
1,662,115	985,464	13,766,655	551,002	373,075	487,370	33,046,102	199,685	59,099,812	26,454,025	4,465	467	-----	-----	-----	3,998	15	4
1,648,760	981,274	13,468,858	551,002	364,290	486,567	32,985,426	193,943	59,231,873	26,052,504	4,355	467	-----	-----	-----	3,898	15	5
9,365	1,082	137,966	-----	5,038	633	30,273	2,422	215,415	182,720	53	-----	-----	-----	-----	53	-----	6
3,990	2,508	159,831	-----	6,747	170	30,403	3,320	252,524	218,801	57	-----	-----	-----	-----	57	-----	7
15,760	4,236	169,091	-----	10,170	5,200	334,441	5,331	720,455	380,683	144	-----	-----	-----	-----	144	-----	8
40,623	7,657	193,961	-----	14,070	33,512	496,301	35,701	964,350	432,348	1,143	1,000	-----	-----	-----	143	-----	9
10,040	5,938	102,134	55	13,169	1,575	412,197	17,237	694,375	264,941	80	-----	-----	-----	-----	80	-----	10
7,000	6,113	47,612	-----	11,005	1,730	200,338	4,033	377,026	172,656	61	-----	-----	-----	-----	91	-----	11
-----	4,313	31,008	-----	8,477	402	90,787	2,759	200,113	106,567	25	-----	-----	-----	-----	25	-----	12
7,000	1,800	16,604	-----	2,528	1,328	109,551	1,274	176,913	66,088	66	-----	-----	-----	-----	66	-----	13
-----	20,827	-----	-----	1,400	77	13,607	2,299	63,272	47,366	21	-----	-----	-----	-----	21	-----	14
12,886	12,151	99,354	-----	4,992	1,971	128,409	2,676	320,261	192,176	62	-----	7	-----	-----	55	-----	15
-----	702	6,195	-----	1,574	242	37,131	754	70,028	32,141	18	-----	-----	-----	-----	18	-----	16
4,647	1,800	40,661	-----	3,750	944	12,957	852	143,746	129,937	15	-----	-----	-----	-----	15	-----	17
-----	-----	14,809	-----	3,331	290	23,135	1,082	82,786	53,569	36	-----	-----	-----	-----	36	-----	18
-----	4,800	-----	-----	1,080	-----	3,519	252	18,171	14,400	1	-----	-----	-----	-----	1	-----	19
-----	5,025	-----	-----	240	2,179	5,912	-----	17,369	11,457	-----	-----	-----	-----	-----	-----	-----	20
280,079	113,170	1,279,437	7,977	44,083	128,094	4,815,715	448,325	8,746,954	3,482,914	4,356	3,525	136	-----	40	655	470	21

Leather, tanned, curried, and finished.....	2	Mattresses and spring beds, not elsewhere specified.....	1	Musical instruments and materials, not elsewhere specified.....	1	Saws.....	1
Lumber, planing-mill products, not including planing mills connected with sawmills.....	1	Millinery and lace goods, not elsewhere specified.....	1	Optical goods.....	1	Shipbuilding, wooden, small boats.....	1
Marble and stone work, monuments and tombstones.....	2	Mucilage, paste, and other adhesives, not elsewhere specified.....	1	Paper and wood pulp.....	1	Slaughtering and meat packing.....	1
-----	2	-----	1	Pickles and sauces.....	1	Tools, machinists.....	1
-----	2	-----	1	Printing and publishing, newspapers and periodicals.....	2	Vinegar and cider.....	1
-----	2	-----	1	-----	2	Woolen goods.....	1

<sup>1</sup> Same number reported for one or more other months.<sup>2</sup> Same number reported throughout the year.



TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Num-ber of estab-lish-ments	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Prop-ri-eters and firm mem-bers.	Sala-ried offi-cers, super-in-tend-ents, and man-agers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		
					Male.	Fe-male.	Aver-age num-ber.	Number, 15th day of—			Male.	Fe-male.	Male.		Fe-male.
								Maximum month.	Minimum month.						

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

1	HOLYOKE—All industries.....	176	20,215	119	511	1,002	810	17,773	De 18,922	Fe 16,685	18,904	10,543	7,349	429	583	Dollars. 92,505,503
2	Automobile repairing.....	12	53	11	1	1	5	35	Jy 42	Ja 28	35	34	.....	1	.....	69,135
3	Bookbinding and blank-book making.....	5	884	3	17	42	28	794	De 831	Fe 755	832	466	251	76	39	2,268,205
4	Bread and other bakery products.....	26	174	29	5	13	7	120	Au 126	No 112	111	90	21	.....	.....	490,067
5	Copper, tin, and sheet-iron work.....	3	92	3	9	4	1	75	De 102	Mh 49	102	102	.....	.....	.....	238,119
6	Foundry and machine-shop products.....	11	618	7	26	43	25	518	.....	.....	468	459	5	4	.....	1,886,377
7	Machine shops.....	8	360	2	19	38	20	281	De 305	My 266	305	298	3	4	.....	1,542,534
8	All other.....	3	258	5	6	5	5	237	My 319	De 163	163	161	2	.....	.....	343,843
9	Lumber, planing-mill products, not including planing mills connected with sawmills.....	3	188	.....	16	7	3	162	Se 186	Ap 132	170	169	.....	1	.....	780,147
10	Marble and stone work.....	3	16	5	1	.....	1	9	Oo 14	Ja 4	11	11	.....	.....	.....	60,758
11	Mineral and carbonated waters.....	5	25	5	2	1	4	13	Ap 18	No 7	9	6	.....	3	.....	29,504
12	Paper and wood pulp.....	20	4,353	.....	114	338	273	3,628	De 4,174	Fe 3,034	4,174	3,094	1,080	.....	.....	20,738,884
13	Paper goods, not elsewhere specified.....	5	617	.....	30	27	52	508	De 563	Jy 470	563	361	202	.....	.....	2,452,757
14	Printing, job.....	11	93	8	3	.....	4	73	Oo 88	Fe 61	70	48	26	2	.....	133,278
15	Printing and publishing, newspapers and periodicals.....	6	127	2	11	6	30	78	(*) 78	(*) 78	78	66	10	2	.....	192,243
16	Sausage, not made in slaughtering and meat-packing establishments.....	4	16	5	.....	.....	11	.....	Au 12	Ap 10	12	11	.....	1	.....	16,344
17	Stationery goods, not elsewhere specified.....	8	1,330	.....	53	175	91	1,011	No 1,096	Ap 974	1,067	466	561	20	20	3,511,056
18	Tobacco, cigars.....	7	44	9	.....	.....	1	34	My 36	Ja 32	35	25	10	.....	.....	47,444
19	All other industries*.....	47	11,585	32	219	345	285	10,704	.....	.....	11,161	5,135	5,183	319	524	53,585,045

\*All other industries embrace—

Artificial stone products..... 1

Automobile bodies and parts..... 1

Awnings, tents, and sails..... 2

Belting, leather..... 1

Bluing..... 1

Boxes, set-up paper boxes..... 1

Brass and bronze products..... 1

Brick, building..... 1

Brooms, from broom corn..... 1

Cars and general shop construction and repairs by electric-railroad companies..... 1

..... 1

Chemicals..... 1

Confectionery, ice cream..... 1

Corsets..... 1

Cotton goods..... 3

Cotton small wares..... 1

Dyeing and finishing textiles, exclu-

sive of that done in textile mills..... 1

Dyestuffs and extracts—natural..... 1

Envelopes..... 1

Flour-mill and gristmill products..... 1

1	LAWRENCE—All industries.....	194	31,940	143	652	382	444	30,319	De 37,083	Fe 18,209	30,650	21,505	13,262	838	955	171,477,984
2	Bread and other bakery products.....	48	222	44	9	3	8	158	De 175	Fe 135	175	140	25	.....	4	371,707
3	Carpets, rag.....	3	8	.....	.....	.....	.....	5	Ap 6	Ja 4	6	.....	.....	.....	.....	2,125
4	Cotton goods.....	6	3,703	11	44	26	31	3,601	De 4,373	Fe 2,218	4,373	2,055	2,083	134	101	22,801,088
5	Foundry and machine-shop products.....	14	520	11	26	20	9	454	.....	.....	485	484	1	.....	.....	1,024,192
6	Boiler shops and foundries.....	3	112	2	2	.....	1	107	De 123	My 96	97	97	.....	.....	.....	286,247
7	Machine shops.....	11	408	9	24	20	8	347	De 385	My 323	388	387	1	.....	.....	1,837,945
8	Leather goods, not elsewhere specified.....	3	35	2	1	1	2	29	Mh 33	Jy 24	28	26	.....	2	.....	43,100
9	Marble and stone work.....	4	15	4	.....	.....	.....	11	Jo 13	Ja 7	13	13	.....	.....	.....	67,816
10	Mattresses and spring beds, not elsewhere specified.....	3	13	4	.....	.....	.....	9	My 10	Ja 7	8	6	2	.....	.....	65,280
11	Paper and wood pulp.....	3	812	.....	17	17	7	771	Fe 824	Jy 744	701	663	128	.....	.....	3,504,907
12	Printing, job.....	10	35	11	.....	.....	.....	24	So 25	Ja 23	25	19	6	.....	.....	52,800
13	Printing and publishing, newspapers and periodicals.....	9	141	5	9	5	8	114	De 119	Ja 109	119	101	9	9	.....	271,557
14	Sausage, not made in slaughtering and meat-packing establishments.....	6	20	7	.....	.....	.....	13	Oo 14	So 11	14	12	2	.....	.....	58,600
15	Textile machinery and parts.....	5	513	5	7	13	13	475	De 506	Mh 433	506	382	108	9	7	1,315,070
16	Tobacco, cigars.....	3	5	3	.....	.....	.....	2	My 3	No 1	2	2	.....	.....	.....	2,835
17	Worsted goods.....	11	19,966	.....	398	214	253	19,101	De 24,377	Fe 9,681	23,935	12,819	9,694	635	787	114,583,186
18	All other industries*.....	66	5,932	43	141	83	113	5,552	.....	.....	6,170	4,803	1,204	47	56	26,652,811

\*All other industries embrace—

Artificial stone products..... 2

Automobile bodies and parts..... 3

Automobiles..... 1

Automobile repairing..... 2

Awnings, tents, and sails..... 1

Belting and hose, woven, other than rubber..... 1

Belting, leather..... 3

Boots and shoes, not including rub-ber boots and shoes..... 2

Boxes, wooden packing, except cigar boxes..... 1

Brass and bronze products..... 2

Brooms, from broom corn..... 2

Brushes..... 1

Butter..... 1

Carpets and rugs, other than rag..... 1

Carriages and wagons..... 2

Clothing, women's..... 1

Coffee, roasting and grinding..... 1

Confectionery, ice cream..... 4

Copper, tin, and sheet-iron work..... 1

Cotton small wares..... 1

Dyeing and finishing textiles, exclu-

sive of that done in textile mills..... 3

Electroplating..... 1

Files..... 1

Flour-mill and gristmill products..... 1

Food preparations, macaroni, vermi-cell, and noodles..... 1

1	LOWELL—All industries.....	291	32,139	236	580	543	609	30,111	Ja 34,851	Mh 27,896	31,154	17,008	13,020	534	532	114,940,546
2	Belting, leather.....	3	22	2	.....	.....	.....	17	No 21	Ja 12	20	17	3	.....	.....	90,064
3	Boots and shoes, not including rub-ber boots and shoes.....	5	784	1	39	40	30	674	De 984	Au 443	984	580	307	55	42	1,506,094
4	Boxes, wooden packing, except cigar boxes.....	7	307	6	10	3	10	278	De 293	Ap 265	293	285	.....	8	.....	684,167
5	Bread and other bakery products.....	57	309	62	2	22	5	218	Mh 226	Se 209	221	186	34	1	.....	273,038
6	Confectionery and ice cream.....	10	44	14	1	.....	1	28	.....	.....	25	21	3	1	.....	71,239
7	Confectionery.....	4	9	.....	.....	.....	.....	3	(*) 3	(*) 3	4	2	1	1	.....	7,154
8	Ice cream.....	6	35	8	1	.....	1	25	Au 32	Ja 18	21	19	2	.....	.....	64,085
9	Copper, tin, and sheet-iron work.....	6	51	6	2	1	3	39	No 44	Ja 32	40	40	.....	.....	.....	90,030
10	Cotton goods.....	9	12,839	1	161	93	105	12,470	Oo 13,322	Mh 11,377	13,420	7,178	5,780	245	226	50,078,158
11	Cotton small wares.....	4	88	1	6	.....	.....	76	Ja 97	My 50	94	36	50	.....	.....	220,788
12	Dyeing and finishing textiles, exclu-sive of that done in textile mills.....	5	1,065	.....	30	42	46	947	No 1,064	Ap 854	1,039	838	184	10	1	3,999,676

1 Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

2 Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



## MANUFACTURES—MASSACHUSETTS.

657

## COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.						
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.	
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.					Rent- <sup>2</sup>
											Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>		

## CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars. 2,447,410	Dollars. 2,359,093	Dollars. 17,318,128	Dollars. 990,371	Dollars. 120,224	Dollars. 4,188,780	Dollars. 40,231,283	Dollars. 1,928,699	Dollars. 93,426,775	Dollars. 42,260,793	70,893	28,162	10,475	27,427	10,829	13,310	1
1,994	4,480	56,270	.....	3,014	542	62,605	1,935	160,223	105,683	42	.....	.....	.....	42	.....	2
109,978	131,002	708,460	.....	948	94,978	1,228,980	15,199	2,852,417	1,608,238	275	200	.....	.....	145	.....	3
11,687	22,798	139,334	300	10,088	7,085	564,420	22,313	950,597	363,864	145	.....	.....	.....	145	.....	4
24,015	5,775	94,297	.....	1,620	10,606	186,028	2,034	367,834	178,872	133	.....	.....	.....	133	.....	5
123,138	84,934	606,476	525	10,906	77,227	833,216	50,211	2,387,961	1,504,534	1,155	325	.....	.....	680	233	6
89,918	62,429	324,355	525	7,352	66,233	519,821	22,053	1,403,012	861,138	700	200	.....	150	350	230	7
33,220	22,505	282,121	.....	3,524	10,994	313,395	28,158	1,984,949	643,396	455	125	.....	.....	330	8	8
43,677	12,275	187,679	.....	8,500	13,329	899,120	3,241	1,349,854	447,493	431	370	.....	.....	61	.....	9
1,940	700	11,306	.....	330	411	16,305	1,615	37,591	19,671	58	.....	.....	.....	58	.....	10
3,200	3,780	17,984	.....	936	1,200	42,718	2,228	87,555	42,609	29	.....	.....	.....	29	.....	11
578,765	694,819	4,043,999	17,308	283	765,132	12,104,982	906,897	21,375,894	8,364,015	37,776	14,593	1,675	.....	850	4,436	12
168,128	108,087	507,398	19	6,266	141,511	2,199,109	50,775	3,644,794	1,391,010	1,407	536	.....	.....	871	.....	13
13,950	3,079	63,572	.....	6,035	1,673	51,657	3,292	201,780	146,831	86	.....	.....	2	84	.....	14
37,806	26,099	83,621	78,763	7,040	3,124	98,921	8,062	398,925	291,942	329	.....	.....	.....	329	.....	15
.....	.....	12,479	.....	1,736	664	97,451	750	127,105	28,904	27	.....	.....	.....	27	.....	16
214,340	319,196	784,139	.....	20,206	195,347	2,181,376	17,946	4,491,361	2,292,039	519	40	.....	100	379	.....	17
.....	750	36,100	.....	2,551	12,352	40,212	786	124,223	74,225	1	.....	.....	.....	1	.....	18
1,114,762	941,839	9,965,014	893,456	39,765	2,862,999	28,624,283	841,415	54,868,661	25,402,963	34,480	12,098	8,800	6,523	7,059	8,636	19

Furniture, store and office fixtures.....	1	Millinery and lace goods, not elsewhere specified.....	1	Photo-engraving.....	1	Toys and games.....	1
Gas, illuminating and heating.....	1	Mucilage and paste.....	1	Pumps, steam.....	1	Vault lights and ventilators.....	1
Grease, soap stock.....	1	Musical instruments and materials, not elsewhere specified.....	1	Saddlery and harness.....	1	Wire.....	1
Hand stamps.....	1	.....	1	Silk goods.....	2	Wirework, not elsewhere specified.....	1
Iron and steel, welding.....	1	.....	1	Steam fittings and steam and hot-water heating apparatus.....	1	Woolen goods.....	2
Mattresses and spring beds, not elsewhere specified.....	1	.....	1	.....	1	Worsted goods.....	5

3,151,748	1,178,885	32,361,598	1,514,033	70,818	12,441,991	106,506,196	4,452,414	183,440,096	72,490,486	124,155	30,312	71,223	853	16,630	5,137	74,283	1
25,170	6,968	199,810	.....	17,350	9,262	861,705	28,254	1,409,364	519,405	198	.....	.....	.....	198	.....	.....	2
132,386	62,768	3,478,704	2,992	596	9	2,520	199	7,535	4,816	4	.....	.....	.....	4	.....	.....	3
130,855	44,066	615,049	.....	1,236	1,872,667	12,500,468	305,202	20,937,148	8,131,438	25,811	3,320	14,159	350	7,099	383	15,098	4
4,387	1,040	158,327	.....	4,490	66,600	835,641	42,874	1,937,450	1,059,435	1,147	426	.....	.....	80	641	240	5
126,408	43,026	456,722	.....	2,400	1,641	138,204	14,478	332,751	180,069	200	.....	.....	.....	200	.....	.....	6
2,076	3,598	28,729	.....	2,090	64,959	697,437	27,896	1,604,699	879,366	947	426	.....	.....	80	441	240	7
.....	.....	14,424	6,971	2,106	525	54,942	432	103,517	45,143	44	.....	.....	.....	14	30	.....	8
.....	.....	9,486	.....	193	605	23,123	1,435	67,687	43,120	84	.....	.....	.....	.....	84	.....	9
.....	.....	.....	.....	1,640	326	54,769	624	73,938	18,545	13	.....	.....	.....	.....	13	.....	10
113,796	40,534	1,037,899	.....	.....	48,317	1,942,598	272,218	3,697,646	1,482,830	4,070	2,200	300	.....	1,480	.....	525	11
49,186	11,615	24,623	1,364	4,116	172	27,870	1,656	84,162	54,636	40	.....	.....	.....	40	.....	.....	12
.....	.....	148,176	7,753	5,325	9,772	104,727	7,253	419,934	307,954	138	.....	.....	.....	138	.....	.....	13
.....	.....	13,303	.....	1,320	235	118,116	2,483	167,916	47,817	63	20	.....	.....	.....	43	.....	14
59,695	52,705	458,650	963	2,400	191,772	789,690	14,165	1,954,892	1,151,037	563	315	.....	.....	.....	248	300	15
1,984,420	731,021	20,026,556	1,431,747	233	1,739	3,000	114	12,195	8,091	.....	.....	.....	.....	.....	.....	.....	16
604,195	224,510	6,301,886	62,238	2,856	7,150,636	76,788,069	2,573,118	125,760,608	46,399,421	78,021	20,023	51,624	.....	5,957	417	47,867	17
.....	.....	.....	.....	32,837	3,089,004	12,397,978	1,202,887	26,815,104	13,214,239	13,959	3,918	5,140	3	2,000	2,898	10,753	18

Furniture, wood, other than rattan and willow.....	1	Lumber, planing-mill products, not including planing mills connected with sawmills.....	2	Patent and proprietary compounds, not elsewhere specified.....	1	Steam fittings and steam and hot-water heating apparatus.....	1
Gas, illuminating and heating.....	1	Mineral and carbonated waters.....	2	Paving materials.....	1	Tools, not elsewhere specified.....	1
House-furnishing goods, not elsewhere specified.....	1	Models and patterns, not including paper patterns.....	2	Pumps, steam.....	2	Wood, turned and carved.....	1
Iron and steel, welding.....	1	Oil, animal.....	1	Soap.....	1	Wooden goods, not elsewhere specified.....	1
Knit goods.....	1	.....	1	Stationary goods, not elsewhere specified.....	2	Wool scouring.....	1
Liquors, malt.....	2	.....	1	.....	1	Woolen goods.....	1

2,571,481	1,527,806	29,864,020	506,121	278,840	6,932,266	74,204,498	2,788,010	137,801,538	60,809,030	85,566	19,929	28,509	70	25,860	11,188	36,351	1
6,882	728	20,711	.....	1,441	1,307	113,556	513	164,880	50,811	9	.....	.....	.....	9	.....	.....	2
161,489	97,875	584,790	.....	12,093	25,510	1,732,665	20,310	3,137,655	1,384,680	476	304	.....	.....	172	.....	.....	3
49,270	15,667	245,795	.....	3,000	44,192	753,389	209	1,245,871	492,328	1,430	1,140	250	.....	40	307	.....	4
7,392	30,160	240,407	.....	24,383	6,361	1,092,085	38,773	1,723,508	591,750	169	.....	.....	.....	109	.....	.....	5
1,500	936	37,026	.....	4,895	2,024	182,635	2,243	296,520	111,642	142	80	10	.....	52	.....	.....	6
.....	.....	3,519	.....	1,128	122	16,308	635	33,052	16,114	2	.....	.....	.....	2	.....	.....	7
1,500	936	33,477	.....	3,764	1,902	166,332	1,608	263,468	95,528	140	80	10	.....	50	.....	.....	8
7,000	3,764	48,245	.....	2,162	1,843	54,545	1,619	168,300	112,136	5	.....	.....	.....	5	.....	.....	9
613,330	263,305	11,061,528	88,824	40,000	2,941,534	34,734,841	1,260,325	60,451,404	24,456,238	54,217	5,875	25,108	10	22,636	669	32,433	10
23,185	8,402	45,763	246	3,997	6,179	216,596	9,930	379,918	159,392	131	.....	.....	.....	131	.....	.....	11
207,869	96,539	997,893	.....	5,893	281,466	2,906,819	116,153	5,369,860	2,346,888	3,020	1,010	1,860	.....	160	1400	.....	12

\* Same number reported for one or more other months.

\* Same number reported throughout the year.



## MANUFACTURES—MASSACHUSETTS.

TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Number of establishments	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.		Total.	16 and over.		Under 16.			
					Male.	Female.	Average number.	Number, 15th day of—		Male.	Female.	Male.	Female.		
								Maximum month.							Minimum month.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

LOWELL—Continued.																Dollars.	
1	Food preparations, not elsewhere specified.	3	28	4	.....	.....	24	De	36	Oc	4	36	11	25	.....	14,432	
2	Foundry and machine-shop products	17	681	13	23	50	48	547	.....	.....	.....	627	620	2	5	3,940,555	
3	Boiler shops and foundries.....	5	174	3	10	.....	7	154	Ap	218	Jy	118	166	166	.....	352,556	
4	Machine shops.....	12	507	10	13	50	41	393	De	461	Je	353	461	454	2	3,587,996	
5	Knit goods.....	5	5,471	2	22	14	76	5,357	De	5,679	My	5,041	5,679	1,598	5	10,647,355	
6	Lumber, planing-mill products, not including planing mills connected with sawmills.	6	130	1	13	3	9	104	No	116	Fe	91	110	110	93	540,558	
7	Marble and stone work, monuments and tombstones.	5	9	5	.....	.....	4	Je <sup>a</sup>	6	Ja	1	5	5	.....	.....	13,349	
8	Mattresses and spring beds, not elsewhere specified.	3	26	3	.....	2	21	Fe <sup>a</sup>	23	My <sup>a</sup>	19	22	19	3	.....	38,563	
9	Mineral and soda waters.....	6	25	7	2	1	15	Je <sup>a</sup>	18	De	12	14	14	.....	80,238		
10	Patent medicines and compounds...	5	198	2	12	11	28	No	203	Je	106	184	98	80	1,602,804		
11	Printing, job.....	9	65	10	2	.....	53	Oc <sup>a</sup>	56	Je	47	56	51	5	85,541		
12	Printing and publishing, newspapers and periodicals.	9	152	6	14	22	12	98	.....	.....	.....	105	94	11	598,039		
13	Printing and publishing.....	3	124	2	11	22	11	78	De	84	Je <sup>a</sup>	72	85	77	8	414,989	
14	Printing, publishing, and job printing.	3	24	3	1	.....	20	(4)	20	(4)	20	20	17	3	181,850		
15	Publishing without printing.....	3	4	1	2	1	1	.....	.....	.....	.....	.....	.....	.....	1,200		
16	Textile machinery and parts.....	12	2,333	5	72	50	66	2,140	Oc	2,603	Ap	1,775	1,828	1,638	120	5,674,722	
17	Tobacco, cigars and cigarettes.....	8	22	7	1	1	13	13	De	15	Se	11	14	12	2	28,813	
18	Wirework, not elsewhere specified...	3	28	2	2	2	21	21	De	35	My	13	45	23	10	51,789	
19	Woolen goods.....	5	787	44	13	7	723	Je	841	Fe	331	784	533	248	3	3,372,736	
20	Worsted goods.....	3	1,258	9	29	5	13	1,202	De	1,391	Fe	783	1,391	448	787	32	3,075,021
21	All other industries*.....	81	5,417	67	91	172	199	4,888	.....	.....	.....	4,100	2,583	1,429	75	22,183,971	

*All other industries embrace—	Boxes, set-up paper boxes.....	2	Cleansing preparations.....	1	Engraving, steel and copper plate, including plate printing.....	1
Ammunition.....	Brass and bronze products.....	1	Clothing, women's.....	3	Fancy articles, not elsewhere specified.....	1
Artificial limbs.....	Brooms.....	1	Coffee, roasting and grinding.....	1	Felt goods.....	1
Artists' materials, crayons.....	Brushes.....	1	Combs and hairpins, not made from metal or rubber.....	1	Furniture, wood, other than rattan and willow.....	2
Automobile bodies and parts.....	Carpets and rugs, other than rag.....	1	Druggists' preparations.....	1	Gas, illuminating and heating.....	1
Automobile repairing.....	Carpets, rag.....	2	Electrical machinery, apparatus, and supplies.....	3	Glass, cutting, staining, and ornamenting.....	1
Awnings, tents, and sails.....	Carriages and wagons.....	1	Electroplating.....	1	.....	.....
Bookbinding and blank-book making.....	Cars and general shop construction and repairs by electric-railroad companies.....	1	.....	.....	.....	.....
Boot and shoe cut stock.....	.....	1	.....	.....	.....	.....

1	LYNN—All industries.....	442	32,266	388	1,208	1,543	1,772	27,355	De	30,409	Ap	25,531	23,522	21,131	7,065	216	110	07,501,713
2	Automobile repairing.....	4	23	3	.....	.....	7	18	My	21	Fe	13	19	10	.....	.....	.....	27,654
3	Blacking, stains, and dressings.....	11	149	6	10	28	28	77	De	84	Ap	71	84	54	30	.....	.....	326,385
4	Boot and shoe cut stock.....	39	958	45	53	26	38	706	De	846	Ap	738	846	650	159	36	1	9,012,328
5	Boot and shoe findings.....	57	1,140	64	44	32	44	962	De	1,141	My	777	1,151	757	340	18	27	2,069,726
6	Boots and shoes, not including rubber boots and shoes.	105	13,480	72	471	270	544	12,123	.....	.....	.....	.....	13,164	7,661	5,615	127	61	27,728,162
7	Regular factory products.....	93	13,368	59	470	269	542	12,028	De	12,953	My	11,253	13,024	7,620	5,219	127	58	27,692,268
8	All other.....	12	112	13	1	1	2	95	No	135	Jy	72	140	41	96	.....	3	85,894
9	Boxes, set-up paper boxes.....	4	137	4	14	2	6	114	No	117	Ap	112	115	47	67	1	.....	245,114
10	Bread and other bakery products.....	43	274	47	9	21	21	176	Au	190	Ja	163	187	141	46	.....	.....	247,445
11	Clothing, women's.....	2	55	3	2	.....	2	48	No	66	Ja	25	60	1	53	.....	1	66,265
12	Confectionery and ice cream.....	7	59	4	4	2	11	38	.....	.....	.....	.....	44	23	21	.....	.....	105,657
13	Confectionery.....	3	24	3	2	.....	19	Jy	29	Se	14	29	14	15	.....	.....	.....	40,422
14	Ice cream.....	4	35	1	2	2	11	Jy	27	Ja	14	15	15	9	6	.....	.....	50,235
15	Cutlery and edge tools.....	3	23	2	3	.....	2	21	Ap	22	Mh	20	21	21	.....	.....	.....	24,660
16	Electrical machinery, apparatus, and supplies.	6	12,433	1	455	1,020	873	10,084	De	11,591	Mh	9,270	9,591	9,085	505	1	.....	38,278,897
17	Foundry and machine-shop products.	19	464	18	20	43	26	357	No	403	Ja	282	395	388	7	.....	.....	1,047,658
18	Lasts.....	8	399	6	21	16	9	347	Jy	411	Ja	263	360	332	17	11	.....	738,880
19	Leather, tanned, curried, and finished.	11	1,105	3	26	12	23	1,041	De	1,188	Ja	828	1,188	1,038	160	.....	.....	11,598,052
20	Lumber, planing-mill products, not including planing mills connected with sawmills.	5	29	3	2	.....	3	21	De	27	My	15	27	27	.....	.....	.....	70,209
21	Marble and stone work, monuments and tombstones.	4	20	5	.....	.....	2	13	My	17	Ja	10	12	12	.....	.....	.....	28,499
22	Mattresses and spring beds, not elsewhere specified.	3	9	3	.....	.....	5	(4)	5	(4)	5	5	5	4	1	.....	.....	10,800
23	Mineral and carbonated waters.....	4	36	6	3	2	2	23	Je	35	Ja	17	18	18	.....	.....	.....	68,443
24	Models and patterns, not including paper patterns.	12	62	16	.....	.....	3	43	Je	43	Oc	35	49	48	.....	1	.....	75,915
25	Mudclage, paste, and other adhesives, not elsewhere specified.	4	67	4	0	12	6	30	No	46	Ap	33	46	36	4	6	.....	296,310
26	Printing, job.....	20	185	19	8	5	15	138	No	168	Ja	115	167	118	43	5	1	339,558
27	Tools, not elsewhere specified.....	4	27	3	3	1	1	19	De	35	Ja	8	35	35	.....	.....	.....	52,335
28	All other industries*.....	66	1,121	51	54	50	114	852	.....	.....	.....	.....	938	616	293	10	19	4,463,805

*All other industries embrace—	Brass and bronze products.....	1	Cars and general shop construction and repairs by electric-railroad companies.....	1	Flour-mill and gristmill products....	2
Artificial stone products.....	Brick, building.....	1	Clothing, men's, buttonholes.....	1	Food preparations, not elsewhere specified.....	2
Automobile bodies and parts.....	Brushes.....	1	Copper, tin, and sheet-iron work.....	1	Gas, illuminating and heating.....	1
Awnings, tents, and sails.....	Butter.....	1	Druggists' preparations.....	2	Grocery, soap stock.....	1
Babbitt metal and solder.....	Carriage and wagon materials.....	1	Electroplating.....	1	Hair work.....	2
Baking powders.....	Carriages and wagons, repair work only.....	2	Flavoring extracts.....	1	Iron and steel, cut nails and spikes, not made in steel works or rolling mills	1
Boxes, wooden packing, except cigar boxes.....	.....	2	.....	.....	.....	.....

1 Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

2 Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



## COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.						
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.	
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.					Rent- <sup>2</sup>
											Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>		

## CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	15				15	1
72,500	91,614	602,950	385,029	15,535	34,659	1,086,820	44,944	2,284,779	1,153,015	747	312	56	23		356	150
31,277	7,302	179,070		0,505	13,561	234,393	13,209	551,745	304,144	238	75				103	3
41,223	84,312	423,880	385,029	9,030	21,098	852,427	31,735	1,733,033	848,871	509	237	56	23		193	150
105,876	112,813	5,008,872			626,452	9,873,481	121,699	17,172,099	7,176,919	8,211	4,650	1,035		2,200	329	948
46,287	11,446	131,218		8,791	44,166	743,262	0,653	1,131,274	381,359	226	15				211	6
		4,257	7,701	400	176	5,532	553	30,554	24,469	22	12				10	7
	1,374	20,862	150	2,940	528	51,122	491	90,293	38,680	33					33	8
2,500	750	13,173		3,094	3,524	50,782	1,170	87,999	36,047	36					36	9
84,236	28,941	127,404		4,395	113,568	595,011	7,642	1,512,540	909,887	621	571				50	6
9,800	3,696	61,223		5,993	2,399	106,956	3,266	254,530	144,308	105					105	11
33,525	40,895	187,779	5,616	4,200	18,901	172,406	10,997	661,323	477,920	161					101	12
28,525	38,420	143,609		2,480	15,855	122,657	9,093	541,895	410,145	140					140	13
	1,875	24,270		720	3,011	49,749	1,904	101,617	49,904	21					21	14
5,000	600		5,616	1,000	125			17,811	17,811							15
229,571	157,495	2,505,036		7,476	184,258	2,832,582	101,849	7,185,194	4,250,793	2,734	585				1,559	105
1,560	200	12,420		2,104	8,870	28,699	317	67,993	28,947	1					1	17
2,588	2,618	19,351	544	1,492	890	53,307	837	89,888	35,744	50	25				25	18
162,770	22,720	880,150	584	6,200	375,879	3,127,221	84,356	5,368,558	2,155,981	1,969	1,200				310	143
100,610	76,522	1,017,382		41,196	191,538	2,260,963	101,515	4,426,038	2,087,160	2,876	1,675				225	976
641,744	464,046	5,330,655	17,477	73,330	2,015,918	11,389,059	855,601	24,443,848	12,190,188	8,150	2,475	200	27		5,448	859

Glucose and starch.....	1	Millinery, trimmed hats and hat frames.....	1	Sausage, not made in slaughtering and meat-packing establishments.....	2	Structural ironwork, not made in steel works or rolling mills.....	3
Glue, fish.....	1	Models and patterns, not including paper patterns.....	1	Scales and balances.....	1	Suspenders, garters, and elastic woven goods.....	1
Iron and steel, welding.....	1	Musical instruments, piano materials.....	1	Signs, other than electric.....	2	Toys and games.....	1
Jewelry.....	1	Paper goods, not elsewhere specified.....	2	Soap.....	2	Vinegar and cider.....	2
Leather goods, not elsewhere specified.....	1	Perfumery and cosmetics.....	1	Stationery goods, not elsewhere specified.....	1	Window and door screens.....	2
Leather, tanned, curried, and finished.....	1	Phonographs and graphophones.....	1	Stencils and brands.....	1	Wire.....	1
Liquors, malt.....	1	Pickles and preserves.....	2	Stereotyping and electrotyping.....	1	Wood, turned and carved.....	2
Looking-glass and picture frames.....	1					Wood scouring.....	1

4,405,016	4,295,653	32,992,420	185,265	756,298	5,295,651	83,626,797	1,832,549	160,905,792	75,896,446	29,132	4,114	16,627	15	.....	8,376	29,800	1
	1,384	13,903		3,122	326	44,242	1,346	78,588	32,998	27					27		2
33,160	69,131	93,959		26,131	5,637	566,258	1,922	942,601	374,421	38					38		3
238,058	133,974	741,019	19,009	58,556	395,840	18,512,409	22,526	23,152,402	4,617,467	454	150				304	110	4
142,267	87,563	920,287	14,190	70,917	34,311	4,534,432	22,854	7,057,957	2,500,621	691					691		5
1,895,934	1,398,191	15,068,732	71,874	406,911	1,147,351	37,745,424	153,991	66,457,834	28,557,934	3,476	433				3,043	42	6
1,895,184	1,395,043	14,992,728	71,874	403,735	1,147,130	37,721,498	151,612	66,319,719	28,446,609	3,412	433				2,979	42	7
750	2,248	76,004		3,176	221	23,926	2,379	137,630	111,325	64					64		8
17,593	7,073	89,113		10,786	3,371	211,980	2,874	595,239	290,385	46					46		9
18,503	38,738	190,330		24,145	7,399	1,046,889	27,639	1,631,554	557,126	139					139		10
1,874	1,140	28,273	125	1,384	140	46,007	553	110,340	63,780	12					12		11
5,890	10,940	30,138		6,886	3,988	126,178	4,683	261,153	120,292	99	20				79		12
1,740		10,634		1,550	2,020	58,452	1,292	102,300	43,616	35	20				15		13
4,150	10,940	22,504		5,336	1,968	67,726	3,391	148,793	77,676	64					64		14
7,022	2,447	32,181		759	158	16,610	2,186	80,231	61,435	23					18		15
1,273,746	2,189,210	12,463,448		9,590	2,071,809	6,548,792	486,857	33,149,457	26,113,808	17,620	1,333	16,000	5		237	29,338	16
60,804	64,061	427,225	1,141	31,828	19,699	387,415	15,158	1,209,363	806,790	358	10				348		17
84,486	41,413	400,493	5,698	9,817	70,563	420,681	20,822	1,479,362	1,037,879	619					619		18
332,425	51,610	1,269,916	52,638	18,745	925,383	10,526,249	75,772	15,824,162	5,222,141	2,301	1,100				1,201		19
8,000	3,124	84,616		3,768	586	60,728	3,449	123,676	69,499	153					158		20
	1,004	21,282		419	339	12,287	2,336	52,856	38,233	72					72		21
	1,750	4,262	500	1,200	47	12,290	225	27,274	14,759	18					18		22
5,420	3,351	22,127		1,500	5,368	92,050	1,920	178,905	84,935	36					36		23
	896	67,374	2,668	7,970	911	25,270	2,026	196,497	169,201	46					46		24
25,980	29,833	43,987		4,400	30,657	411,322	4,017	710,039	294,700	137	105				32	8	25
27,693	18,833	127,159	1,258	13,042	5,030	173,261	3,449	501,081	324,371	152			10		142		26
3,794	1,498	18,132		2,161	308	7,675	860	44,244	35,709	28					28		27
222,367	138,439	860,464	16,164	41,661	566,432	2,108,318	525,184	7,141,464	4,507,962	2,582	913	627			1,042	307	28

Iron and steel, welding.....	1	Paving materials.....	2	Rubber tires, tubes, and rubber goods, not elsewhere specified.....	1	Stencils and brands.....	1
Leather goods, not elsewhere specified.....	2	Perfumery and cosmetics.....	2	Saddlery and harness.....	1	Surgical appliances.....	1
Millinery and lace goods, embroidered.....	1	Photo-engraving.....	1	Screws, machine.....	1	Tobacco, cigars.....	1
Paper goods, not elsewhere specified.....	1	Printing and publishing, newspapers and periodicals.....	6	Shipbuilding, wooden, repair work only.....	1	Typewriter supplies, carbon paper.....	2
Patent and proprietary medicines.....	4	Pulp goods.....	1	Soap.....	1	Wirework, not elsewhere specified.....	1
						Wooden goods, not elsewhere specified.....	1

<sup>a</sup> Same number reported for one or more other months.<sup>1</sup> Same number reported throughout the year.



## MANUFACTURES—MASSACHUSETTS.

TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Num-ber of estab-lish-ments	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Prop-ri-ors and firm mem-bers.	Sala-ried offi-cers, super in-tend-ents, and man-agers.	Clerks, etc.		Wage earners.		Total.	16 and over.		Under 16.			
					Male.	Fe-male.	Aver-age num-ber.	Number, 15th day of—		Male.	Fe-male.	Male.	Fe-male.		
								Maximum month.							Minimum month.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

1	NEW BEDFORD—All industries.	267	43,226	231	505	390	404	41,030	De 44,107	Ap 39,852	44,209	25,501	16,689	915	1,014	Dollars. 174,598,315
2	Automobile repairing.....	17	66	14	4	2	4	42	Ja <sup>a</sup> 45	Se 38	46	46	76	21		80,832
3	Bread and other bakery products.....	55	540	63	16	28	16	417	Ja 448	My 382	419	322	30			800,802
4	Confectionery and ice cream.....	9	86	18	3	2	7	50	Ja 64	Ja 45	55	30	25			194,118
5	Copper, tin, and sheet-iron work.....	8	65	7	3		5	50	Ap 58	Ap 45	48	43				91,267
6	Cotton goods.....	31	35,808	5	281	157	159	35,206	De 37,002	Ap 33,865	36,904	20,165	15,020	805	914	153,900,717
7	Foundry and machine-shop products.....	10	280	7	8	6	2	257	No 267	Ap 235	250	238	10	2		358,949
8	Lumber, planing-mill products, not including planing mills connected with sawmills.....	6	77	6	4		2	65	No 75	Ja 56	75	74	1			134,205
9	Marble and stone work.....	6	34	5	2		1	26	Se 37	Fe 10	23	23				78,083
10	Mineral and carbonated waters.....	7	56	7	3		5	41	Ja 52	Ja 29	40	36	3	1		127,550
11	Oil, animal and composite.....	4	79	2	6	1	5	65	De 74	Mh 62	74	60	14			993,784
12	Patent medicines and compounds.....	3	9	1	1			7	(*) 7	(*) 7	7	6	1			14,895
13	Printing and publishing, book and job.....	16	94	19	4	3	3	65	De 71	Ja 60	74	53	21			102,476
14	Printing and publishing, newspapers and periodicals.....	9	213	5	19	22	16	151	De 156	Ja 146	153	142	11			215,003
15	Sausage, not made in slaughtering and meat-packing establishments.....	7	46	9	2	2	2	31	Ja 32	Ja 30	2	28	4			61,207
16	Shipbuilding, wooden, small boats.....	3	35	3	2		4	25	My 33	Ja 18	32	32				36,716
17	Textile machinery and parts.....	9	186	9	10	1	0	100	De 177	My 149	177	134	40	3		225,642
18	All other industries *.....	67	5,552	51	197	172	167	4,905			5,794	4,154	1,457	104	70	17,332,479

* All other industries embrace—	Boxes, set-up paper boxes.....	2	Cars and general shop construction and repairs by electric-railroad companies.....	2	Electrical machinery, apparatus, and supplies.....	1
Artificial stone products.....	Boxes, wooden packing, except cigar boxes.....	2	Clothing, women's.....	2	Firearms.....	1
Automobile bodies and parts.....	Brass and bronze products.....	2	Coffee and spice, roasting and grinding.....	2	Food preparations, not elsewhere specified.....	1
Awnings, tents, and sails.....	Brooms, from broom corn.....	2	Cordage and twine.....	1	Furniture.....	2
Bookbinding and blank-book making.....	Card cutting and designing.....	1	Cotton small wares.....	1	Gas, illuminating and heating.....	1
Boot and shoe findings.....	Carpets, rag.....	1			Glass.....	1
Boots and shoes, not including rubber boots and shoes.....	Carriages and wagons, repair work only.....	2				

1	SOMERVILLE—All industries.	140	6,978	105	209	300	163	6,111	Fe 6,853	No 3,764	5,805	5,211	530	40	24	44,089,118
2	Automobile bodies and parts.....	3	32	2	2		1	27	My 30	Ja 24	28	28				46,688
3	Bread and other bakery products.....	29	352	32	12	22	7	279	Ap 313	Se 230	245	181	60	1	3	615,658
4	Clothing, women's.....	3	47	3		1		43	Se 40	De 34	34	1	33			14,000
5	Confectionery and ice cream.....	7	65	3	6	2	1	53	(*) 11	(*) 11	42	30	10	2		127,732
6	Confectionery.....	3	14	3				11	(*) 63	Ja 24	11	2	8	1		26,583
7	Ice cream.....	4	51		6	2	1	42	No 78	Ja 71	31	28	2	1		101,179
8	Grease and tallow, not including lubricating greases.....	3	89	1	8	4	2	74			76	76				359,586
9	House-furnishing goods, not elsewhere specified.....	3	71	1	2	9	4	55	De 71	Ja 34	71	53	12	6		118,704
10	Lumber, planing-mill products, not including planing mills connected with sawmills.....	3	45	1	4		5	35	De 51	Ja 21	51	49		2		163,008
11	Mineral and carbonated waters.....	3	13	5	1			7	Ap 10	Ja 6	6	6				31,553
12	Printing, job.....	11	24	12	1	1	1	9	(*) 9	(*) 9	10	10				20,668
13	Printing and publishing, newspapers and periodicals.....	5	48	3	3	9	7	26	Fe 28	No 24	26	19	6	1		54,003
14	Slaughtering and meat packing.....	5	3,640	1	59	227	63	3,290	Ja 4,154	No 811	2,862	2,786	74	2		35,088,970
15	Tools, not elsewhere specified.....	3	15	2	1	1	1	10	(*) 10	(*) 10	10	10				51,896
16	All other industries *.....	62	2,537	39	110	114	71	2,203			2,344	1,962	335	26	21	7,395,062

* All other industries embrace—	Boots and shoes, not including rubber boots and shoes.....	1	Cars and general shop construction and repairs by steam-railroad companies.....	1	Dyestuffs and extracts—natural....	1
Artificial limbs.....	Boxes, set-up paper boxes.....	2	Cleansing and polishing preparations.....	2	Fancy articles, celluloid novelties...	1
Artificial stone products.....	Boxes, wooden packing, except cigar boxes.....	1	Coffins, burial cases, and undertakers' goods.....	2	Food preparations, not elsewhere specified.....	3
Automobile repairing.....	Brass, bronze, and copper products..	3	Cutlery and edge tools.....	2	Foundry and machine-shop products	3
Bags, paper, not including bags made in paper mills.....	Brushes.....	1	Dyeing and finishing textiles, exclusive of that done in textile mills....	1	Furniture, wood, other than rattan and willow.....	1
Bookbinding and blank-book making.....	Carriages and wagons.....	1			Glass, cutting, staining, and ornamenting.....	1

<sup>1</sup> Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

<sup>2</sup> Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



## COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.						
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.	
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.					Rented. <sup>2</sup>
											Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>		

## CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars. 2,406,117	Dollars. 951,212	Dollars. 40,012,121	Dollars. 188,011	Dollars. 874,772	Dollars. 11,839,434	Dollars. 118,529,158	Dollars. 4,041,000	Dollars. 210,773,312	Dollars. 88,202,554	150,248	90,266	19,857	537	.....	39,588	27,720	1
3,751	3,738	46,292	.....	7,447	2,832	51,354	4,061	184,897	129,482	70	.....	.....	2	.....	68	.....	2
37,324	49,520	431,120	.....	24,561	33,061	1,405,422	43,905	2,409,819	959,092	257	49	.....	5	.....	203	.....	3
3,760	0,520	49,469	.....	4,475	2,827	299,123	9,490	445,075	136,462	260	.....	.....	.....	.....	260	.....	4
2,139	3,050	67,611	.....	3,458	398	77,353	1,483	199,690	120,854	37	.....	.....	.....	.....	37	.....	5
1,555,993	407,704	33,180,313	135,741	761,084	10,408,123	101,551,873	3,102,256	177,058,520	72,404,391	134,086	85,812	17,982	450	.....	29,842	26,074	6
17,683	0,970	319,299	.....	7,859	20,402	249,729	10,596	744,740	479,415	243	.....	.....	.....	.....	243	.....	7
7,645	1,488	60,170	187	4,386	2,359	180,744	4,135	200,053	111,174	606	330	.....	.....	.....	336	.....	8
10,400	1,200	29,410	1,385	50	709	15,796	1,742	90,210	72,672	88	.....	.....	.....	.....	88	.....	9
7,790	3,465	42,026	.....	600	24,603	225,488	3,220	385,355	156,047	25	.....	.....	.....	.....	25	.....	10
36,317	5,574	62,804	.....	300	28,283	1,484,832	7,754	1,890,030	397,444	110	81	.....	.....	.....	29	.....	11
582	.....	7,773	189	612	403	11,657	278	27,099	15,164	.....	.....	.....	.....	.....	.....	.....	12
8,428	6,148	54,401	880	6,094	922	94,860	3,586	207,075	139,129	85	.....	.....	.....	.....	85	.....	13
85,573	36,440	172,976	1,555	11,723	13,881	205,987	14,473	659,405	438,945	416	.....	.....	72	.....	344	.....	14
2,600	3,844	39,187	.....	2,626	1,343	408,060	6,090	573,008	98,858	107	.....	.....	.....	.....	107	.....	15
3,500	2,498	41,070	.....	1,348	106	25,689	508	86,740	60,543	38	.....	.....	.....	.....	38	.....	16
20,905	4,250	137,411	1,200	5,034	4,413	295,243	8,797	640,942	339,902	177	40	.....	.....	.....	137	13	17
597,027	408,185	5,258,783	47,474	32,535	1,294,709	11,916,448	814,220	24,875,154	12,144,480	13,583	3,954	1,875	8	.....	7,746	1,033	18

Glass, cutting, staining, and ornamenting.....	1	Leather goods, not elsewhere specified.....	1	Pickles and sauces.....	1	Steam fittings and steam and hot-water heating apparatus.....	1
Grease and tallow, not including lubricating greases.....	2	Liquors, malt.....	2	Plated ware, hollow ware.....	1	Tobacco, cigars.....	2
Hats and caps, other than felt, straw, and wool.....	1	Machine tools.....	1	Saddlery and harness.....	1	Tools, not elsewhere specified.....	1
Ice, manufactured.....	2	Mattresses and spring beds, not elsewhere specified.....	2	Screws, wood.....	1	Toys and games.....	1
Iron and steel, welding.....	1	Paints.....	2	Show cases.....	1		
Knit goods.....	1	Paper and wood pulp.....	2	Silk goods, including throwsters.....	2		
		Paper goods, not elsewhere specified.....	1	Slaughtering and meat packing.....	1		
				Stationary goods, not elsewhere specified.....	1		

711,029	775,527	7,021,671	112,692	102,258	679,681	86,323,750	773,591	99,558,513	12,461,172	15,293	3,698	350	96	1	11,148	208	1
1,287	868	33,491	.....	115	684	30,361	2,006	80,910	48,549	38	.....	.....	.....	.....	38	.....	2
32,506	44,524	287,083	.....	11,199	11,980	937,012	28,086	1,652,912	637,814	136	.....	.....	.....	.....	136	.....	3
.....	3,780	20,180	.....	1,160	90	44,760	507	86,754	41,427	10	.....	.....	.....	.....	10	.....	4
22,245	3,018	79,432	3,380	3,842	7,180	336,305	4,923	493,031	151,743	71	.....	.....	.....	.....	71	.....	5
.....	.....	8,810	.....	562	260	34,271	938	52,939	17,730	9	.....	.....	.....	.....	9	.....	6
22,245	3,018	70,622	3,380	3,280	6,920	302,094	3,985	440,092	134,013	62	.....	.....	.....	.....	62	.....	7
15,194	10,498	82,585	.....	160	16,692	392,715	16,813	609,832	200,304	165	165	.....	.....	.....	.....	8	8
5,000	18,774	46,026	115	2,447	829	111,892	4,192	219,554	108,500	111	.....	.....	38	.....	73	.....	9
9,896	3,282	46,145	1,442	.....	1,990	45,005	3,854	146,462	97,603	238	225	.....	.....	.....	13	.....	10
750	.....	8,614	.....	1,525	541	35,793	853	61,291	24,645	18	.....	.....	.....	.....	18	.....	11
1,300	2,595	11,138	200	1,019	348	21,898	639	56,957	34,920	22	.....	.....	3	.....	19	.....	12
8,580	13,660	26,585	2,550	1,190	741	16,711	1,770	86,705	68,224	18	.....	.....	.....	.....	18	.....	13
211,042	425,173	4,112,728	94,761	16,734	339,448	78,168,604	449,367	84,740,246	6,122,215	6,011	2,525	350	.....	.....	3,136	200	14
1,000	2,322	11,747	.....	1,054	1,345	23,146	1,405	48,991	24,440	26	.....	.....	.....	.....	26	.....	15
406,629	247,127	2,249,937	10,244	61,213	297,813	6,106,958	250,116	11,274,802	4,905,788	8,429	788	.....	55	1	7,590	.....	16

Hand stamps.....	1	Patent and proprietary medicines.....	1	Steam fittings and steam and hot-water heating apparatus.....	1	Vinegar.....	1
Hardware.....	1	Paving materials.....	1	Suspensers, garters, and elastic	1	Window and door screens.....	1
Jewelry.....	1	Pickles and sauces.....	1	woven goods.....	1	Wood, turned and carved.....	2
Leather, tanned, curried, and finished.....	1	Pocketbooks.....	1	Textile machinery and parts.....	1	Wooden goods, not elsewhere specified.....	2
Looking-glass and picture frames.....	1	Pulp goods.....	1	Theatrical scenery.....	1		
Mirrors, framed and unframed, not elsewhere specified.....	1	Refrigerators.....	1	Tinware, not elsewhere specified.....	1		
Optical goods.....	2	Show cases.....	1	Tobacco, cigars.....	2		
		Stationary goods, not elsewhere specified.....	1	Trunks and valises.....	2		

<sup>1</sup>Same number reported for one or more other months.<sup>2</sup>Same number reported throughout the year.



## MANUFACTURES—MASSACHUSETTS.

TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Number of establishments	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.		Total.	16 and over.		Under 16.			
					Male.	Female.	Average number.	Number, 15th day of—		Male.	Female.	Male.	Female.		
								Maximum month.							Minimum month.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

1	SPRINGFIELD—All industries.	401	22,421	294	986	1,365	1,347	13,429	De 21,083	Ja 15,459	21,558	15,539	5,444	258	317	Dollars. 81,448,826
2	Automobile bodies and parts.	6	512	1	36	14	27	434	Ja 610	No 204	446	439	6	1	-----	1,461,909
3	Automobile repairing.	17	156	13	9	19	6	109	De 121	Ja 84	121	118	1	2	-----	262,605
4	Awnings, tents, and sails.	3	24	5	-----	-----	3	16	Je 31	Ja 8	9	5	-----	-----	-----	47,690
5	Bookbinding and blank-book making.	3	54	2	2	-----	2	48	Ap 49	Ja 47	49	10	25	5	3	37,974
6	Boxes, set-up paper boxes.	4	65	4	-----	-----	24	60	De 72	Se 51	72	13	50	2	7	35,865
7	Brass and bronze products.	5	836	2	55	61	24	694	Ja 753	Se 653	719	658	44	14	3	2,905,806
8	Bread and other bakery products.	58	611	53	30	62	25	441	Oc 490	Fe 383	477	380	97	-----	-----	1,524,404
9	Carriages and wagons.	3	42	6	1	-----	1	34	Mh 42	Ja 28	36	36	-----	-----	-----	142,715
10	Clothing, women's.	4	74	2	3	2	1	66	My 76	Ja 52	68	3	65	-----	-----	93,322
11	Coffee, roasting and grinding.	3	8	3	-----	-----	-----	5	(*) 5	(*) 5	5	5	-----	-----	-----	37,720
12	Confectionery and ice cream.	12	515	15	19	62	50	369	Oc 425	Je 273	386	144	199	3	40	1,656,350
13	Confectionery.	6	445	8	13	57	40	327	Oc 425	Je 273	348	108	197	3	40	1,266,056
14	Ice cream.	6	70	7	6	5	10	42	Jy 59	Ja 30	38	30	2	-----	-----	300,300
15	Copper, tin, and sheet-iron work.	13	70	15	-----	-----	4	50	Oc 62	My 40	62	61	-----	1	-----	109,655
16	Electrical machinery, apparatus, and supplies.	10	1,838	-----	57	173	170	1,438	De 2,295	Mh 933	2,286	1,578	688	4	16	8,924,183
17	Engraving and diesinking.	5	7	6	-----	-----	-----	1	(*)	(*)	1	1	-----	-----	-----	2,621
18	Fancy articles, not elsewhere specified.	3	52	2	1	-----	1	48	No 70	Ja 18	63	3	60	-----	-----	64,988
19	Food preparations, not elsewhere specified.	4	17	2	4	1	-----	10	(*) 10	(*) 10	11	9	2	-----	-----	34,084
20	Foundry and machine-shop products.	27	1,629	14	83	78	87	1,367	-----	-----	1,801	1,767	29	5	-----	5,575,795
21	Boiler shops and foundries.	5	242	1	8	5	5	223	Se 233	Je 211	226	225	-----	1	-----	444,115
22	Machine shops.	22	1,387	13	75	73	82	1,144	De 1,572	Ja 845	1,575	1,542	29	4	-----	5,131,680
23	Hand stamps.	4	67	4	7	3	-----	53	Oc 59	Ja 48	58	28	21	3	6	68,071
24	Leather goods, not elsewhere specified.	3	50	2	3	3	6	36	Au 44	Fe 27	34	8	21	2	3	104,001
25	Mattresses and spring beds, not elsewhere specified.	3	27	3	-----	-----	1	22	Oc 25	Ja 20	20	17	3	-----	-----	95,835
26	Mineral and carbonated waters.	6	52	4	7	2	4	85	Jy 51	Ja 23	31	29	2	-----	-----	168,575
27	Models and patterns, not including paper patterns.	6	55	7	-----	-----	2	46	De 62	Ja 26	62	61	1	-----	-----	72,007
28	Paper goods, not elsewhere specified.	5	93	6	8	6	11	62	De 84	Ap 44	80	74	6	-----	-----	627,637
29	Printing and publishing, book and job.	39	583	30	52	37	86	378	-----	-----	394	244	120	14	7	1,743,714
30	Job printing.	32	464	27	34	7	20	376	My 389	Se 300	392	242	120	14	7	1,098,570
31	All other.	7	119	3	18	30	66	2	(*) 2	(*) 2	2	2	-----	-----	-----	645,144
32	Printing and publishing, newspapers and periodicals.	11	770	5	31	174	194	360	Ap 398	No 335	387	325	45	17	-----	2,394,818
33	Saws.	4	257	2	20	47	14	174	De 234	Mh 139	234	153	80	-----	1	1,577,511
34	Stationery goods, not elsewhere specified.	4	630	-----	24	19	29	558	Se 627	Fe 471	580	175	383	5	17	1,070,749
35	Tobacco, cigars.	14	391	19	4	-----	-----	368	Oc 423	My 307	434	282	151	1	-----	540,998
36	Tools, not elsewhere specified.	8	415	5	32	4	11	363	De 384	Mh 353	384	372	8	4	-----	734,700
37	All other industries.*	114	12,521	62	498	596	587	10,778	-----	-----	12,248	8,535	3,324	175	214	48,716,219

\*All other industries embrace—  
 Artificial limbs. 1  
 Belting, leather. 2  
 Boxes, wooden packing, except cigar boxes. 1  
 Brick, building. 1  
 Brooms, from broom corn. 1  
 Brushes. 2  
 Card cutting and designing. 2  
 Cardboard, not made in paper mills. 1  
 Carpets and rugs, other than rag. 1

Carpets, rag. 2  
 Cars and general shop construction and repairs by steam-railroad companies. 1  
 Cash registers and parts. 1  
 Chemicals. 3  
 Chocolate and cocoa products. 1  
 Cleansing and polishing preparations. 1  
 Clothing, men's. 3  
 Corsets. 1  
 Cotton goods. 4

Cotton small wares. 1  
 Druggists' preparations. 2  
 Dyestuffs and extracts—natural. 1  
 Electroplating. 2  
 Emery and other abrasive wheels. 1  
 Envelopes. 3  
 Firearms. 1  
 Flavoring extracts. 3  
 Flour-mill and gristmill products. 2  
 Fur goods. 2  
 Furniture. 2

Gas fixtures. 1  
 Gas, illuminating and heating. 1  
 Glass, decalcomania work. 1  
 Gold, leaf and foil. 1  
 Hats and caps, other than felt, straw, and wool. 2  
 House-furnishing goods, mops and dusters. 1  
 Iron and steel, forgings, not made in steel works or rolling mills. 2

1	WORCESTER—All industries.	618	45,825	446	1,779	2,656	2,271	38,678	De 43,436	Jy 36,004	44,831	34,345	9,200	939	557	182,501,999
2	Automobile repairing.	5	54	3	3	3	3	42	Ap 46	My 36	44	43	-----	1	-----	194,324
3	Bookbinding and blank-book making.	4	68	5	1	1	2	59	Au 64	Ja 46	65	24	34	5	2	84,656
4	Boot and shoe out stock.	3	57	3	5	2	3	44	Oc 48	Mh 35	40	38	7	1	-----	159,807
5	Boots and shoes, not including rubber boots and shoes.	11	1,492	8	57	47	63	1,317	No 1,602	Ja 841	1,570	680	804	46	40	4,019,589
6	Brass and bronze products.	4	31	2	6	-----	-----	23	Ap 51	My 10	22	22	-----	-----	-----	103,025
7	Bread and other bakery products.	51	504	52	20	36	28	368	Oc 382	Ap 359	392	277	87	7	21	740,824
8	Brushes.	3	54	1	7	2	3	41	Au 44	Oc 33	43	20	18	5	-----	68,834
9	Carriages and wagons, including repairs.	3	44	-----	4	1	4	35	My 42	No 29	33	31	1	1	-----	112,967
10	Clothing, men's.	13	223	20	10	15	4	174	-----	-----	202	94	102	1	5	845,970
11	Men's and youths'.	10	204	18	9	13	4	160	No 180	Ja 76	183	91	86	1	5	817,233
12	All other.	3	19	2	1	2	-----	14	De 19	Ja 10	-----	3	16	-----	-----	28,737
13	Clothing, women's.	21	651	35	19	32	20	545	-----	-----	588	87	483	1	17	1,212,986
14	Suits, skirts, and cloaks.	4	57	12	1	-----	3	41	Ap 62	Jy 17	42	20	16	-----	-----	221,559
15	Shirt waists and dresses, except house dresses.	8	260	13	6	17	8	216	Oc 241	Ja 141	209	30	165	1	13	335,662
16	All other.	9	334	10	12	15	9	288	Je 346	Fe 211	337	31	302	-----	4	655,765
17	Confectionery and ice cream.	12	92	15	5	6	7	59	Mh 15	Ap 10	67	40	14	1	2	186,581
18	Confectionery.	3	17	4	-----	-----	-----	13	Jy 61	Ja 34	43	37	6	-----	-----	12,817
19	Ice cream.	9	75	11	5	6	7	40	-----	-----	-----	-----	-----	-----	-----	173,764

<sup>1</sup> Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

<sup>2</sup> Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



[illegible]

Dollars. 3,577,684	Dollars. 3,290,526	Dollars. 19,796,084	Dollars. 622,536	Dollars. 487,267	Dollars. 3,713,706	Dollars. 45,949,502	Dollars. 1,853,078	Dollars. 98,332,955	Dollars. 50,529,775	31,624	6,710	3,470	130	2,855	18,450	4,095
99,981	49,817	550,420	8,016	11,932	19,257	326,029	10,143	1,759,735	1,414,563	127						127
28,640	27,943	131,041	2,032	24,898	13,894	155,488	7,062	418,710	285,230	110						110
	2,975	13,786		2,256	214	24,287	441	67,212	42,484	11						11
7,550	1,600	35,833		3,228	1,485	21,440	580	80,071	58,042	11						11
	936	35,893		3,208	369	32,988	488	84,245	50,771	16						16
165,902	133,546	906,710		5,340	414,165	1,241,060	52,370	3,467,771	2,174,332	2,260	500					1,780
65,909	124,583	480,505		35,437	19,023	2,834,454	63,899	4,347,014	1,448,661	772						772
2,190	780	35,847		35,847	1,938	31,618	1,936	58,454	58,454	50						50
11,200	2,424	50,213	3,264	4,154	2,800	90,990	319	193,409	102,100	11						11
		5,810		2,040	584	117,826	904	142,613	23,883	13						13
59,174	133,153	257,307		8,169	131,920	1,637,011	29,178	2,648,450	982,261	501	175					326
40,254	113,263	214,297		5,524	127,166	1,270,176	18,736	2,162,570	873,658	329	175					154
9,020	19,890	43,010		2,645	4,754	366,835	10,442	455,880	108,603	172						172
	2,864	57,410	209	6,188	2,027	101,807	1,126	223,830	120,897	18						18
209,612	306,235	1,674,340		14,068	144,068	2,350,557	40,503	7,276,769	4,885,709	1,219						1,219
		541		796	17	495	65	14,244	13,684	1						1
1,200	850	28,963		2,761	120	36,325	210	106,852	70,317	1						1
8,441	559	10,000		2,945	214	58,938	1,069	79,288	19,281	25						25
339,348	136,230	1,938,288	9,237	22,351	291,704	1,000,491	72,361	6,028,191	4,895,339	2,134	440		71			1,623
37,419	13,051	278,384		1,125	12,837	289,760	23,911	687,267	393,566	166	85					81
301,029	123,179	1,659,904	9,237	21,226	278,867	1,390,731	48,420	5,940,924	4,501,773	1,968	355		71			1,542
8,189	6,704	20,762	960	3,077	978	34,025	1,040	97,335	62,270	11						11
5,154	12,830	24,065	74	2,630	533	118,951	239	187,312	68,122	7						7
	3,881	10,793		441	1,266	74,580	798	120,246	44,868	43						43
11,460	14,795	31,150		5,992	11,196	104,016	2,289	185,355	79,050	67						67
	682	67,226		2,732	392	14,560	1,593	123,651	107,468	71						71
22,242	19,290	71,045	26,361	19,720	18											

Iron and steel, welding.....	2	Musical instruments, organs.....	1	Saddlery and harness.....	1	Steam fittings and steam and hot-	
Knit goods.....	2	Optical goods.....	1	Sand-lime brick.....	2	water heating apparatus.....	
Lithographing.....	3	Paints.....	1	Screws, machine.....	1	Stereotyping and electrotyping.....	
Looking-glass and picture frames.....	1	Patent and proprietary medicines.....	2	Shipbuilding, wooden, masts, spars,		Structural ironwork, not made in	
Lumber, planing-mill products, not		Photographic materials.....	1	oars, and rigging.....		steel works or rolling mills.....	
including planing mills connected		Photo-engraving.....	4	Signs and advertising novelties.....		Toys and games.....	
with sawmills.....	2	Plumbers' supplies, not elsewhere		Slaughtering and meat packing.....	2	Type founding.....	
Machine tools.....	2	specified.....	2	Soap.....		Waste.....	
Motorcycles, bicycles, and parts.....	2	Pocketbooks.....	1	Sporting and athletic goods.....	2	Wirework, not elsewhere specified.....	
Musical instruments and materials,		Regalia, and society badges and em-		Stamped ware, not elsewhere spec-		Wooden goods, not elsewhere spec-	
not elsewhere specified.....	1	blems.....	1	ified.....	2	ified.....	

7, 108, 284	5, 760, 705	44, 439, 907	490, 776	817, 485	7, 935, 619	101, 205, 207	4, 975, 795	208, 705, 773	102, 524, 771	94, 712	37, 080	4, 592	727	129	52, 184	18, 061
5, 440	5, 344	45, 099	-----	2, 424	8, 244	53, 093	4, 783	156, 033	97, 557	40	-----	-----	-----	-----	40	-----
1, 780	3, 572	39, 342	-----	5, 806	730	17, 789	426	95, 973	77, 763	37	-----	-----	-----	-----	37	-----
30, 817	4, 522	35, 814	-----	2, 506	1, 111	310, 865	840	430, 572	109, 867	16	-----	-----	-----	-----	16	-----
220, 225	224, 394	1, 174, 550	12, 777	32, 319	113, 899	4, 315, 455	25, 581	7, 396, 821	3, 055, 785	603	110	-----	-----	-----	493	-----
10, 900	-----	38, 201	2, 500	-----	1, 145	113, 464	7, 345	191, 799	70, 990	25	-----	-----	-----	-----	25	-----
68, 209	103, 109	385, 801	-----	24, 855	30, 839	1, 872, 261	48, 049	2, 865, 707	945, 397	388	125	-----	-----	-----	203	-----
18, 440	6, 007	30, 061	1, 901	5, 208	1, 237	76, 326	686	148, 722	71, 710	17	-----	-----	-----	-----	17	-----
9, 877	3, 036	45, 530	-----	5, 500	2, 700	53, 606	1, 819	171, 118	85, 693	66	-----	-----	-----	-----	66	-----
26, 091	31, 274	187, 748	47, 963	6, 907	6, 505	712, 787	4, 311	1, 238, 117	521, 019	92	55	-----	-----	-----	37	-----
24, 696	29, 258	175, 733	47, 963	5, 275	6, 239	657, 560	4, 106	1, 159, 142	497, 476	87	55	-----	-----	-----	32	-----
1, 395	2, 016	12, 015	-----	1, 032	206	55, 227	205	78, 975	23, 543	5	-----	-----	-----	-----	5	-----
59, 714	90, 842	391, 547	7, 236	30, 236	8, 554	1, 683, 482	10, 158	2, 701, 668	1, 008, 028	224	160	-----	-----	-----	74	-----
3, 840	2, 716	42, 702	6, 036	2, 697	794	317, 239	2, 410	447, 193	127, 544	12	-----	-----	-----	-----	12	-----
20, 452	44, 782	157, 819	1, 200	7, 028	1, 878	554, 621	1, 954	979, 717	423, 142	28	-----	-----	-----	-----	28	-----
35, 422	43, 344	191, 026	-----	20, 611	5, 912	811, 622	5, 794	1, 274, 758	457, 342	184	150	-----	-----	-----	34	-----
9, 715	19, 100	66, 980	-----	12, 961	1, 066	438, 596	5, 800	695, 346	250, 950	132	-----	-----	-----	-----	132	-----
-----	-----	8, 885	-----	1, 965	98	24, 630	780	50, 876	24, 966	1	-----	-----	-----	-----	1	-----
9, 715	19, 100	58, 095	-----	11, 996	968	413, 966	5, 020	644, 970	225, 984	131	-----	-----	-----	-----	131	-----

<sup>4</sup> Same number reported throughout the year.



## MANUFACTURES—MASSACHUSETTS.

TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Number of establishments	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.		Female.
								Maximum month.	Minimum month.						

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

WORCESTER—Continued.															Dollars.			
1	Copper, tin, and sheet-iron work.....	8	65	7	5	1	6	46	My	51	No	42	48	48	174,679			
2	Corsets.....	7	1,387	23	77	59	1,228	Oc	1,305	My	1,155	1,286	145	1,033	7	101	3,320,845	
3	Cotton goods.....	5	557	33	24	14	486	Ja	649	Ap	322	591	155	418	18	18	4,001,454	
4	Cotton small wares.....	3	72	2	5	1	65	Oc	77	Ja	53	77	10	45	22	22	147,424	
5	Cutlery and edge tools.....	6	538	2	14	21	17	484	Jy	521	No	439	490	308	74	13	010,217	
6	Dyeing and finishing textiles, exclusive of that done in textile mills.	3	220	1	6	3	4	206	Oc	214	Ja	195	210	175	35	14	670,583	
7	Electrical machinery, apparatus, and supplies.....	10	770	5	26	17	37	685	De	933	Ja	401	933	567	341	23	2	1,404,805
8	Electroplating.....	8	146	4	17	6	4	115	No	152	Fe	77	125	119	3	3	150,860	
9	Engraving and diesinking.....	3	6	3	1	1	3	3	(*)	3	(*)	3	4	3	1	1	500	
10	Envelopes.....	7	1,420	33	40	74	1,207	De	1,807	Au	1,199	1,397	439	951	2	5	3,945,261	
11	Flavoring extracts.....	3	8	4	1	1	2	2	(*)	2	(*)	2	2	1	1	1	10,306	
12	Food preparations, not elsewhere specified.....	7	13	7	1	1	6	6	6	6	6	6	6	6	6	6	18,020	
13	Breadstuffs, cereals, and breakfast food.....	3	6	3	1	1	3	3	(*)	3	(*)	3	3	3	3	3	5,080	
14	All other.....	4	7	4	1	1	3	3	(*)	3	(*)	3	3	3	3	3	13,540	
15	Foundry and machine-shop products.....	48	3,245	27	155	122	109	2,772	De	2,377	Au	2,046	3,235	3,119	78	36	2	11,820,248
16	Machine shops.....	38	2,555	20	118	107	154	2,156	De	2,377	Au	2,046	2,378	2,206	78	32	2	10,013,252
17	All other.....	10	690	7	37	15	15	616	De	822	Ja	353	857	853	4	4	1,815,996	
18	Furniture.....	4	47	3	6	2	2	36	Mh	43	Fe	28	39	36	1	2	52,064	
19	Hats and caps, other than felt, straw, and wool.....	3	11	3	1	1	3	8	Se	14	Ja	5	13	7	0	0	19,197	
20	Jewelry.....	4	50	4	2	5	39	Oc	44	Ja	35	44	28	4	10	2	33,809	
21	Leather goods, not elsewhere specified.....	4	79	5	3	8	1	62	De	69	Ja	52	69	34	28	5	2	120,334
22	Lumber, planing-mill products, not including planing mills connected with sawmills.....	8	199	5	8	8	5	173	De	197	Ap	161	197	193	4	4	585,469	
23	Machine tools.....	15	2,878	9	109	175	152	2,433	De	2,766	Jy	2,266	2,766	2,670	79	8	12,242,331	
24	Marble and stone work.....	8	27	9	1	1	17	My	23	Ja	10	18	18	1	1	1	62,905	
25	Mineral and carbonated waters.....	7	42	8	8	2	22	De	52	De	8	28	28	2	2	2	70,504	
26	Models and patterns, not including paper patterns.....	7	60	11	4	2	43	De	58	Ja	28	61	59	2	2	2	44,347	
27	Motorcycles, bicycles, and parts.....	4	170	3	5	4	7	151	Fe	201	Au	104	139	97	27	12	3	411,897
28	Musical instruments, piano and organ materials.....	5	762	1	17	6	16	712	No	837	Ja	529	834	572	242	17	3	1,281,610
29	Printing, job, linotype work and typesetting.....	33	263	37	15	8	17	186	No	209	My	175	206	157	34	15	355,500	
30	Printing and publishing, newspapers and periodicals.....	19	654	5	33	101	51	464	.....	.....	.....	.....	479	417	46	10	1,414,774	
31	Printing and publishing.....	3	528	18	81	35	394	Oc	406	Ja	377	402	359	34	9	9	1,187,715	
32	Printing, publishing, and job printing.....	7	108	3	14	8	13	70	De	77	Au	65	77	58	12	7	226,599	
33	Publishing without printing.....	9	18	2	1	12	3	20	My	31	No	18	21	21	1	1	1,460	
34	Sausage, not made in slaughtering and meat-packing establishments.....	4	46	3	3	13	1	20	My	31	No	18	21	21	1	1	114,789	
35	Screws, machine.....	6	302	19	5	15	263	Fe	311	Oc	151	320	242	04	18	2	1,043,797	
36	Stamped ware, not elsewhere specified.....	9	459	3	35	12	14	395	De	405	Ja	343	405	417	32	14	2	1,127,217
37	Structural ironwork, not made in steel works or rolling mills.....	6	251	3	15	9	217	Au	203	Ap	109	250	250	1	1	1	843,109	
38	Textile machinery and parts.....	20	3,669	10	99	423	286	2,851	No	3,213	Fe	2,412	3,181	3,042	107	32	12,246,644	
39	Tobacco, cigars.....	9	77	10	1	1	66	No	104	Ap	80	102	76	20	1	1	90,877	
40	Tools, not elsewhere specified.....	17	711	11	45	58	51	546	.....	.....	.....	.....	626	568	41	17	1,726,606	
41	All other.....	7	174	4	11	3	7	149	Ja	198	My	114	172	163	2	7	378,533	
42	Wirework, not elsewhere specified.....	10	537	7	34	55	44	397	De	454	My	365	454	405	39	10	1,848,078	
43	Wood, turned and carved.....	6	679	1	20	60	46	552	Ja	616	Jy	503	614	351	225	25	13	1,303,039
44	Wooden goods, not elsewhere specified.....	5	61	5	1	2	53	No	67	Fe	49	51	39	39	12	12	40,206	
45	Woolen goods.....	8	776	5	31	2	8	730	Do	846	Fe	448	846	530	304	3	0	3,351,346
46	Worsted goods.....	5	795	4	17	8	14	757	Do	857	Mh	601	857	328	443	22	04	3,319,971
48	All other industries*.....	150	21,027	81	824	1,295	1,043	17,784	.....	.....	.....	.....	21,111	17,604	3,052	249	206	106,404,495

\*All other industries embrace—

1 Agricultural implements.....	1	Boxes, cigar.....	1	Coffins, burial cases, and undertakers' goods.....	1	1 Gas and electric fixtures.....	1
1 Aluminum manufactures.....	1	Boxes, wooden packing, except cigar boxes.....	3	Combs and hairpins, not made from metal or rubber.....	1	1 Gas and water motors.....	1
1 Ammunition.....	1	Carpet and rugs, other than rag.....	1	Dental goods.....	1	1 Gas, illuminating and heating.....	1
1 Artificial limbs.....	1	Carriage and wagon materials.....	1	Druggists' preparations.....	2	1 mounting.....	1
1 Artificial stone products.....	1	Cars and general shop construction and repairs by electric-railroad companies.....	1	Emery and other abrasive wheels.....	1	2 Hand stamps.....	1
1 Asbestos textile-mill products, not including steam packing.....	1	Cars and general shop construction and repairs by steam-railroad companies.....	1	Enameling.....	3	3 Hardware.....	2
1 Automobile bodies and parts.....	1	Chemicals.....	1	Engines, steam, gas and water.....	1	1 House-furnishing goods, mops and dusters.....	1
1 Awnings, tents, and sails.....	1	Cleaning preparations.....	2	Engraving, steel and copper plate, including plate printing.....	1	1 Ices, manufactured.....	1
1 Bags, other than paper, not including bags made in textile mills.....	2	Cloth, sponging and refinishing.....	1	Fancy articles, paper novelties.....	1	2 Iron and steel, steel works and rolling mills.....	1
1 Baling, leather.....	2	Coffee, roasting and grinding.....	1	Files.....	1	1 Iron and steel, bolts, nuts, washers, and rivets, not made in rolling mills.....	1
1 Billiard tables, bowling alleys, and accessories.....	1	.....	1	Flour-mills.....	1	2 Iron and steel, forgings, not made in steel works or rolling mills.....	6
1 Blacking, stains, and dressings.....	1	.....	1	Flour-mill and gristmill products.....	2	.....	.....
1 Boot and shoe findings.....	2	.....	1	Furnishing goods, men's.....	1	.....	.....

1 Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

2 Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



## COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.				
											Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>	

## CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.										
26,476	14,812	55,670	.....	3,998	4,289	97,798	464	245,626	147,364	16	.....	4	.....	12	.....	1	.....	.....	.....
151,806	297,138	843,013	.....	13,885	124,571	2,377,849	10,804	5,235,051	2,846,838	624	520	.....	.....	104	.....	2	.....	.....	.....
225,899	95,330	434,249	30,680	21,526	456,054	3,789,125	29,719	5,884,459	2,045,615	1,200	525	100	.....	575	.....	3	.....	.....	.....
18,850	.....	37,444	500	2,065	3,335	154,806	2,847	202,049	104,396	40	.....	.....	.....	40	.....	4	.....	.....	.....
75,476	40,019	488,553	1,875	3,600	33,463	233,595	21,940	1,132,066	877,155	459	200	.....	.....	259	.....	5	.....	.....	.....
58,100	9,890	158,372	.....	20,000	27,035	500,697	20,218	1,016,184	480,299	310	270	.....	.....	40	.....	6	.....	.....	.....
82,446	73,513	675,512	.....	28,503	54,029	1,763,892	10,097	3,110,670	1,330,681	402	30	.....	.....	372	.....	7	.....	.....	.....
48,048	10,799	117,419	.....	8,616	2,283	42,415	7,787	305,466	255,264	214	.....	.....	.....	214	.....	8	.....	.....	.....
.....	4,941	.....	.....	950	9	50	25	12,336	12,261	2	.....	.....	.....	2	.....	9	.....	.....	.....
141,409	145,861	1,110,909	.....	11,825	148,313	3,745,839	25,689	6,469,355	2,697,827	807	585	.....	.....	222	737	10	.....	.....	.....
.....	1,528	700	.....	105	54	12,612	45	21,760	9,103	.....	.....	.....	.....	.....	.....	11	.....	.....	.....
.....	.....	6,586	.....	2,204	111	41,803	2,400	53,769	9,506	44	14	.....	.....	80	.....	12	.....	.....	.....
.....	.....	3,540	.....	780	.....	20,501	484	22,147	1,162	25	14	.....	.....	11	.....	13	.....	.....	.....
.....	.....	3,040	.....	1,424	111	21,302	1,976	31,622	8,344	19	.....	.....	.....	19	.....	14	.....	.....	.....
786,256	863,409	3,488,796	50,659	51,134	518,889	5,582,037	261,309	13,554,481	7,711,135	6,335	928	.....	.....	5,407	1,529	15	.....	.....	.....
048,120	330,312	2,054,452	50,659	42,324	469,402	4,812,902	190,805	11,251,223	6,247,516	5,288	853	.....	.....	4,435	1,494	16	.....	.....	.....
138,136	33,097	834,344	.....	8,810	40,437	769,135	70,504	2,303,258	1,463,619	1,047	75	.....	.....	972	35	17	.....	.....	.....
9,310	2,155	30,840	3,285	7,471	513	73,437	1,180	145,378	71,261	70	.....	.....	.....	70	.....	18	.....	.....	.....
.....	.....	6,465	.....	1,017	82	24,930	240	46,470	21,300	5	.....	.....	.....	5	.....	19	.....	.....	.....
4,898	3,773	33,378	300	2,506	519	25,169	1,504	103,785	77,112	30	.....	.....	.....	30	.....	20	.....	.....	.....
9,155	10,692	41,006	.....	2,021	694	88,251	1,401	166,141	76,459	57	15	.....	.....	42	.....	21	.....	.....	.....
16,339	23,502	221,510	.....	14,552	14,054	372,661	7,617	819,024	438,746	1,117	975	.....	.....	142	.....	22	.....	.....	.....
357,834	410,805	2,855,419	31,038	75,740	238,641	3,107,998	125,979	9,595,950	6,361,982	4,273	1,170	.....	.....	3,103	.....	23	.....	.....	.....
.....	1,000	22,863	.....	562	711	30,053	1,491	119,914	79,370	54	.....	.....	.....	36	.....	24	.....	.....	.....
11,085	2,645	20,765	379	4,352	1,769	40,460	1,827	117,488	69,201	93	35	.....	.....	57	.....	25	.....	.....	.....
5,200	1,088	70,315	.....	4,671	703	18,367	1,193	133,583	114,023	65	.....	.....	.....	65	.....	26	.....	.....	.....
17,057	13,994	154,494	.....	10,281	1,835	465,051	9,433	778,782	304,298	191	.....	.....	.....	191	.....	27	.....	.....	.....
65,558	10,796	785,500	.....	30,849	9,413	995,108	19,282	2,259,882	1,245,472	535	375	.....	.....	160	143	28	.....	.....	.....
53,150	22,894	182,765	18,061	24,484	11,564	317,230	4,969	808,201	486,002	100	.....	.....	.....	160	.....	29	.....	.....	.....
112,185	134,111	553,238	20,393	18,600	40,660	531,688	26,254	2,132,957	1,575,015	453	.....	.....	.....	453	.....	30	.....	.....	.....
67,692	111,505	470,549	.....	9,910	29,931	422,761	23,429	1,720,600	1,274,419	359	.....	.....	.....	359	.....	31	.....	.....	.....
44,405	21,530	82,689	3,120	8,600	10,729	108,912	2,825	387,139	275,402	94	.....	.....	.....	94	.....	32	.....	.....	.....
88	1,070	.....	17,273	.....	15	.....	.....	25,209	25,194	.....	.....	.....	.....	.....	.....	33	.....	.....	.....
7,082	14,366	30,770	.....	2,484	4,405	300,938	3,896	458,434	87,630	81	20	.....	.....	61	.....	34	.....	.....	.....
40,537	15,424	310,053	.....	6,505	37,547	425,510	27,352	939,220	486,358	564	.....	.....	.....	564	.....	35	.....	.....	.....
140,887	34,790	475,115	.....	17,324	40,674	580,750	23,169	1,511,691	907,772	567	175	.....	.....	302	.....	36	.....	.....	.....
51,542	26,377	274,446	.....	1,800	13,121	580,050	11,501	1,142,349	550,798	551	20	.....	.....	531	.....	37	.....	.....	.....
443,088	564,459	3,795,977	77,282	23,705	989,958	4,172,998	144,756	12,953,937	8,636,183	4,230	1,975	.....	6	2,249	35	38	.....	.....	.....
1,945	.....	71,088	.....	2,404	20,835	103,659	452	224,634	120,523	6	.....	.....	.....	6	.....	39	.....	.....	.....
189,944	122,501	680,907	102	32,046	120,389	1,072,796	80,898	3,020,205	1,866,511	1,269	50	.....	20	1,199	.....	40	.....	.....	.....
66,323	8,809	181,801	158	13,831	21,822	75,677	5,890	515,492	433,925	265	.....	.....	.....	265	.....	41	.....	.....	.....
123,621	113,692	409,106	4	18,215	105,067	997,119	75,008	2,504,713	1,432,586	1,004	50	.....	20	984	.....	42	.....	.....	.....
96,837	131,468	481,227	199	16,560	51,159	641,835	17,232	1,750,514	1,191,447	468	125	.....	.....	343	.....	43	.....	.....	.....
.....	3,488	46,704	635	1,787	743	29,536	2,936	109,425	76,953	111	75	.....	.....	36	.....	44	.....	.....	.....
6,500	400	18,741	1,457	2,960	149	19,533	1,282	50,982	30,167	36	.....	.....	12	24	.....	45	.....	.....	.....
228,003	10,803	775,087	121,683	10,895	164,774	2,854,556	75,742	4,782,280	2,351,982	2,324	225	.....	.....	2,090	.....	46	.....	.....	.....
90,058	18,962	719,127	2,114	20,202	80,741	2,344,776	64,396	4,082,705	1,673,593	1,483	64	.....	.....	1,419	.....	47	.....	.....	.....
3,068,106	2,633,716	21,892,390	51,697	185,354	4,528,875	54,477,055	3,802,185	107,075,570	48,796,380	63,826	28,269	4,492	687	103	30,270	15,170	48	.....	.....

Iron and steel, nails and spikes, not made in steel works or rolling mills. 1  
 Iron and steel, tempering and welding. 2  
 Japaning. 1  
 Jewelry and instrument cases. 2  
 Knit goods. 1  
 Laths. 3  
 Lead, bar, pipe, and sheet. 1  
 Leather, tanned, curried, and finished. 1  
 Liquors, malt. 2  
 Lithographing. 1  
 Looking-glass and picture frames. 1  
 Matches. 1  
 Mattresses and spring beds, not elsewhere specified. 2

Musical instruments and materials, not elsewhere specified. 1  
 Musical instruments, pianos. 1  
 Needles, pins, and hooks and eyes. 1  
 Oil, composite. 1  
 Optical goods. 1  
 Ordnance and accessories. 1  
 Patent medicines and compounds. 2  
 Paying materials. 3  
 Perfumery and cosmetics. 1  
 Photo-engraving. 1  
 Photographic materials. 3  
 Pickles and sauces. 1  
 Refrigerators. 2  
 Regalia, and society badges and emblems. 1

Rubber tires, tubes, and rubber goods, not elsewhere specified. 1  
 Saddlery and harness. 1  
 Saws. 1  
 Screws, wood. 2  
 Shirts. 1  
 Show cases. 1  
 Signs, other than electric. 2  
 Silk goods, including throwsters. 2  
 Slaughtering and meat packing. 4  
 Sporting and athletic goods. 1  
 Stationery goods, not elsewhere specified. 2  
 Statuary and art goods. 1  
 Steam fittings and steam and hot-water heating apparatus. 1  
 Steam packing. 1

Stencils and brands. 2  
 Stereotyping and electrotyping. 1  
 Surgical appliances. 1  
 Suspenders, garters, and elastic woven goods. 4  
 Tobacco, smoking. 2  
 Toys and games. 2  
 Trunks and valises. 1  
 Umbrellas and canes. 1  
 Vinegar and cider. 1  
 Wall paper, not made in paper mills. 1  
 Window and door screens. 1  
 Window shades and fixtures. 5  
 Wire. 4  
 Wool shoddy. 1

<sup>a</sup> Same number reported for one or more other months.

<sup>4</sup> Same number reported throughout the year.



## MANUFACTURES—MASSACHUSETTS.

TABLE 40.—DETAILED STATEMENT OF ALL INDUSTRIES.

INDUSTRY AND CITY.		Number of establishments	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.						Capital.
			Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.		Total.	16 and over.		Under 16.				
						Male.	Female.	Average number.	Number, 15th day of—		Male.	Female.	Male.	Female.			
									Maximum month.						Minimum month.		
CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.																	
															Dollars.		
1	ADAMS.....	32	4,114	28	43	31	38	3,974	De 4,185	Au 3,524	4,199	2,558	1,448	105	88	11,288,709	
2	AMESBURY.....	44	3,457	38	97	40	100	3,173	De 3,565	Ap 2,710	3,083	3,154	492	27	10	8,747,338	
3	ARLINGTON.....	27	294	20	24	7	15	228	De 240	Ja 208	262	230	24	2	.....	1,502,207	
4	ATTLEBORO.....	144	7,748	160	300	235	290	6,763	De 7,719	Ja 5,842	7,589	5,434	1,843	166	146	22,632,192	
5	BELMONT.....	6	108	4	4	3	4	93	De 106	Fe 52	100	92	13	1	.....	200,282	
6	BEVERLY.....	70	7,624	63	359	364	343	6,495	De 7,766	Mh 5,615	7,770	6,470	1,195	76	30	18,064,021	
7	BRAINTREE.....	19	2,392	10	32	71	103	2,178	De 2,386	Ap 2,017	2,386	1,505	697	112	72	6,601,205	
8	BROOKLINE.....	32	593	24	37	15	33	484	Ja 822	Je 360	404	267	197	6	24	1,514,915	
9	CHELSEA.....	123	7,870	107	342	466	375	6,580	Au 6,919	My 6,249	6,045	4,906	1,775	128	136	25,618,973	
10	CHICOPEE.....	60	12,665	37	405	1,420	735	10,068	De 11,043	Je 9,634	12,126	9,424	2,384	154	164	69,411,199	
11	CLINTON.....	33	4,304	28	63	68	80	4,155	De 4,441	Fe 3,847	4,439	2,499	1,597	169	174	15,916,555	
12	DANVERS.....	25	1,653	15	62	42	60	1,474	Fe 1,515	My 1,430	1,527	1,003	450	28	40	6,085,247	
13	DEDHAM.....	20	521	17	26	8	10	463	Au 512	Ja 372	535	304	185	22	24	1,278,193	
14	EASTHAMPTON.....	28	4,290	20	48	49	40	4,142	De 4,359	Ja 3,918	4,380	2,556	1,600	123	101	18,489,006	
15	EVERETT.....	104	5,437	58	304	301	251	4,523	De 4,961	My 4,147	4,959	4,154	658	85	62	65,718,095	
16	FITCHBURG.....	121	10,948	82	341	307	311	9,907	De 10,534	My 9,409	10,563	7,060	3,045	223	235	51,829,392	
17	FRAMINGHAM.....	59	5,191	43	204	189	393	4,362	De 5,557	Ja 3,549	5,557	3,560	1,867	61	69	13,908,197	
18	GARDNER.....	73	4,525	48	182	140	119	4,036	De 4,723	Ap 3,638	4,728	3,657	851	149	71	20,063,351	
19	GLOUCESTER.....	90	3,042	61	107	73	117	2,684	De 3,023	Ap 2,581	2,986	2,163	766	18	39	11,635,710	
20	GREENFIELD.....	53	3,337	38	107	204	238	2,750	De 3,125	Jy 2,569	3,165	2,020	510	23	12	13,932,077	
21	LEOMINSTER.....	92	6,343	64	220	107	159	5,793	De 6,480	Ja 5,307	6,533	4,084	2,232	129	88	13,515,034	
22	MALDEN.....	108	5,689	94	260	341	271	4,723	De 5,169	Je 4,338	5,154	2,909	2,066	65	114	24,069,731	
23	MARLBOROUGH.....	48	4,116	40	89	56	133	3,798	De 4,037	Ap 3,466	4,054	2,553	1,844	90	67	7,972,139	
24	MEDFORD.....	54	1,259	34	92	51	51	1,031	De 1,260	Ja 922	1,260	827	394	14	25	4,771,861	
25	MELROSE.....	27	1,938	19	42	180	91	1,606	Ja 1,787	Jy 1,459	1,729	765	905	12	44	7,062,576	
26	METHUEN.....	33	2,687	27	41	16	32	2,571	De 2,830	Fe 2,149	2,696	999	1,472	111	114	13,135,692	
27	MILFORD.....	48	2,006	48	71	36	42	1,809	De 2,132	My 1,671	2,135	1,395	654	49	37	8,897,836	
28	NATICK.....	49	1,686	56	67	58	42	1,463	De 1,690	Ja 1,196	1,779	1,343	420	12	4	6,712,228	
29	NEWBURYPORT.....	64	4,410	50	138	118	144	3,960	Ap 4,044	Au 3,842	4,325	2,652	1,601	46	66	13,554,071	
30	NEWTON.....	49	2,866	31	65	108	115	2,547	De 2,777	Mh 2,319	2,769	1,842	857	41	29	10,466,293	
31	NORTH ADAMS.....	65	6,630	53	184	181	189	6,023	De 6,499	My 5,451	6,459	4,217	1,902	141	109	25,331,703	
32	NORTHAMPTON.....	63	3,870	44	104	85	105	3,532	De 3,797	Ja 3,274	3,893	2,330	1,340	123	94	13,939,947	
33	NORTHBRIDGE.....	13	4,033	13	45	71	33	3,871	De 4,259	Mh 3,003	4,203	3,519	678	97	69	14,535,992	
34	NORWOOD.....	26	3,286	19	140	139	153	2,835	De 3,159	Ja 2,512	3,142	2,441	652	32	17	13,620,106	
35	PEABODY.....	91	8,676	67	280	146	170	8,013	De 8,801	Ja 7,303	8,781	7,853	852	54	22	32,786,949	
36	PITTSFIELD.....	90	10,733	70	470	868	749	8,570	De 10,258	Ja 6,756	10,313	7,471	2,622	77	143	35,847,896	
37	PLYMOUTH.....	31	3,232	18	72	82	89	2,971	De 3,225	Ja 2,515	3,225	2,440	751	18	10	28,525,538	
38	QUINCY.....	162	21,276	188	257	743	435	19,653	Mh 22,979	De 12,006	12,677	12,087	571	8	11	30,466,341	
39	REVERE.....	31	151	32	12	5	6	126	De 161	Ap 89	167	143	23	1	.....	815,301	
40	SALEM.....	153	6,352	124	269	90	188	5,072	De 6,523	My 4,894	6,530	3,950	2,343	114	117	21,198,391	
41	SAUGUS.....	14	150	14	5	1	4	126	No 193	Ap 66	166	152	9	3	2	654,325	
42	SOUTHBRIDGE.....	41	6,034	33	240	197	235	5,329	De 5,675	Mh 4,935	5,070	3,221	2,183	150	122	15,700,252	
43	TAUNTON.....	167	9,946	114	316	282	253	8,981	No 9,385	Mh 8,521	9,715	6,808	2,540	194	173	31,649,031	
44	WAKEFIELD.....	32	2,034	19	70	31	45	1,869	De 2,126	Ap 1,666	2,102	1,313	753	16	20	7,640,582	
45	WALTHAM.....	93	8,669	75	228	104	193	8,069	De 8,909	Mh 7,430	8,907	5,716	3,076	76	30	26,388,296	
46	WATERTOWN.....	25	9,926	16	270	581	639	8,420	De 9,439	Je 7,720	9,439	5,962	3,299	117	61	24,428,115	
47	WEBSTER.....	24	4,149	15	61	117	107	3,849	Oc 4,345	Mh 3,286	4,128	2,653	1,112	189	174	13,548,824	
48	WESTFIELD.....	85	3,890	77	147	253	170	3,243	De 3,701	Je 2,913	3,709	2,878	727	48	56	12,449,307	
49	WEST SPRINGFIELD.....	23	3,858	17	116	202	142	2,701	De 3,171	Fe 2,426	3,174	2,825	341	5	3	9,073,174	
50	WYOMOUTH.....	34	2,462	22	86	92	116	2,146	Au 2,298	Ja 1,977	2,333	1,531	673	70	59	13,624,739	
51	WINCHESTER.....	17	1,233	9	65	16	31	1,112	De 1,198	Fe 1,009	1,236	1,006	135	5	.....	4,327,380	
52	WINTHROP.....	19	91	19	7	1	3	61	Au 64	Ja 59	64	31	33	.....	.....	104,057	
53	WOBURN.....	53	2,264	36	91	77	49	2,011	De 2,323	Ap 1,688	2,341	2,005	311	16	9	10,170,398	

<sup>1</sup> Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

<sup>2</sup> Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



# MANUFACTURES—MASSACHUSETTS.

667

COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.				
										Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>		

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.
225,262	85,029	3,524,404	49	1,989	551,619	7,601,918	537,596	15,076,858	6,937,344	14,120	9,634	234	1,150	3,336	287	1	2	
443,364	160,243	3,847,306	2,402	40,840	270,082	9,196,167	220,801	16,309,509	6,892,541	4,003	510	100	35	182	584	3	4	
43,204	22,443	237,535	332	10,232	25,644	316,955	105,665	1,006,207	533,587	4,009	405	100	55	587	3,861	530	4	
990,729	788,490	7,262,751	212,400	183,193	686,268	18,187,672	382,008	34,471,577	15,901,897	7,789	3,286	150			12		5	
9,267	5,949	101,742	1,784	14,292	3,901	164,526	43,672	374,586	166,388									
866,181	650,929	8,419,302	127,962	82,069	252,904	8,451,574	286,814	21,820,684	13,091,296	5,190	704	3,358		1,128	3,044	6	7	
139,903	206,168	2,370,715	279	18,590	149,410	7,006,523	142,802	11,974,839	4,825,514	3,189	2,393	77		507	212	125	8	
101,245	36,262	484,458	28,040	45,101	30,658	1,017,797	24,155	2,243,311	1,201,359	2,03			10	193		9		
1,175,106	1,089,650	9,924,440	302,716	91,428	1,049,363	10,160,122	543,062	32,536,518	15,833,384	13,797	4,145	1,900	380	7,372	2,401	10		
1,282,777	3,376,175	12,592,063	2,132	14,597	2,443,943	45,588,182	870,189	89,772,534	43,814,163	30,523	4,372	2,435	49	3,407	20,260	5,546		
339,172	302,180	4,088,169	7,311	11,857	676,156	7,753,714	516,330	15,179,819	6,909,775	13,921	8,065	40	25	40	5,751	4,365	11	
280,423	128,170	1,583,406	16,481	8,099	562,066	7,506,074	161,713	11,541,839	3,874,052	2,718	2,718			100	1,812	12		
106,627	16,827	418,921	4,011	3,065	18,991	1,017,797	67,431	1,737,673	923,905	2,033	675	700		350	308	13		
401,272	152,301	3,679,183	1,492	3,226	1,895,168	26,098,455	345,453	37,942,121	10,898,213	10,571	795	2,947		4	160	15,605	14	
1,084,902	754,922	4,635,071	14,300	80,249	1,590,957	13,363,997	5,696,084	35,775,728	16,710,647	17,409	10,891	1,891	133		4,494	3,773	15	
1,405,965	712,317	10,520,346	82,201	71,242	2,033,283	34,363,471	1,691,442	58,164,842	22,109,929	45,988	19,346	3,070		3,864	19,708	1,028	16	
680,751	420,407	4,137,709	102,203	38,738	455,458	10,016,850	332,961	18,842,173	8,492,962	6,940	3,893	184	50		2,808	2,854	17	
634,736	299,728	3,935,862	8,160	20,906	576,108	4,944,340	241,859	13,599,682	8,413,483	6,195	3,300	33		444	2,418	1,94	18	
481,813	183,337	2,614,243	14,174	28,224	272,026	12,441,876	267,174	18,803,673	6,094,623	2,943	982	70	128		1,763	203	19	
325,952	439,604	3,110,887	1,210	17,494	414,962	2,620,327	219,722	9,481,382	6,641,333	4,914	205	50		120	4,639	28	20	
868,078	339,482	5,518,716	45,111	25,879	697,402	13,489,006	354,608	24,928,790	11,085,176	7,696	2,756	705	107	842	3,286	918	21	
693,916	797,734	4,276,470	5,023	54,191	1,145,192	8,855,191	789,784	22,077,624	12,482,049	7,425	3,711	652	15		8,047	378	22	
238,402	172,397	4,038,567	349	11,690	158,243	13,061,734	93,604	19,044,907	6,889,699	1,767	820	40	5		902		23	
356,421	107,153	981,262	9,100	27,066	267,077	3,038,716	90,346	5,665,723	2,476,691	2,139	1,025		8		1,106	282	24	
185,083	316,917	1,826,981	8,451	106,106	132,146	3,019,219	57,818	6,083,698	3,000,861	1,777	1,340				437	69	25	
148,952	43,307	2,405,128	8,123	3,392	717,696	8,737,043	337,151	14,214,905	5,140,711	10,625	1,180		17	805	8,623	58	26	
242,431	85,770	1,819,133	18,219	12,669	193,003	4,748,457	97,581	8,408,531	3,592,493	2,020	714		5	25	1,276	1	27	
159,254	107,716	1,382,200	12,760	24,911	43,511	4,748,457	77,447	7,393,897	4,440,808	2,178	960	135	34	250	799	66	28	
503,866	443,342	3,011,411	14,170	24,201	271,971	12,411,372	268,232	20,695,015	7,915,411	6,417	1,558		22		4,837	195	29	
349,021	364,757	2,012,738	79,762	21,809	334,946	8,258,416	170,053	15,524,607	7,090,098	5,536	3,597	560	152	595	632	2,582	30	
812,237	490,428	5,630,773	80,439	23,113	1,831,849	21,555,999	729,823	36,203,767	13,917,945	14,049	8,014		2	2,368	3,665	1,389	31	
420,423	217,439	3,305,685	173,827	20,997	1,204,578	9,022,661	327,949	17,960,620	8,610,010	6,687	2,098		635	1,809	2,873	1,074	32	
339,351	171,906	4,398,961	25	3,270	621,732	5,649,626	195,298	13,848,897	8,003,973	7,418	5,467			2,376	3,675	627	33	
488,060	452,966	3,276,834	119,234	527,333	10,422,213	337,522	337,522	20,359,242	9,599,507	5,510	2,305	500	30		2,675	1,772	34	
1,012,547	511,443	10,233,573	1,030,648	147,445	1,089,524	30,110,204	1,205,514	52,906,722	21,590,914	19,134	8,551	8,829			5,754	0,126	35	
1,651,572	2,122,111	10,200,381	51,064	49,691	1,041,790	18,854,078	864,178	41,613,350	21,895,100	18,945	2,795	10,968	13	1,363	3,806	31,652	36	
345,830	250,510	3,005,806	251,464	8,807	2,850,435	21,157,903	339,250	31,319,553	9,822,400	10,872	5,386	3,667	14	155	1,650	2,011	37	
1,889,875	1,580,004	34,830,105	140,768	24,156	1,336,911	23,127,027	1,047,749	68,535,406	44,300,630	19,348	3,665	253	543		14,557	972	38	
30,819	14,170	1,555,387	1,149	12,466	8,020	403,147	45,954	767,294	318,193	738	450		10	100	178	5	39	
810,147	359,819	5,004,208	126,531	121,788	016,384	10,298,910	628,583	30,437,957	13,510,464	13,604	2,336	275	35		10,858	201	40	
13,600	2,910	118,818	2,224	23,607	844,908	20,705	1,157,215	201,602	539		100				439		41	
838,098	472,671	4,005,406	46,283	5,492	268,422	7,148,678	333,495	18,252,814	10,770,641	9,132	775	5,521		1,721	1,115	3,760	42	
1,231,117	914,515	0,013,250	177,033	122,118	1,421,175	20,603,312	1,183,253	48,330,638	20,544,073	25,940	15,699	1,865	8	935	6,833	3,618	43	
282,857	150,393	1,921,061	19,653	11,160	123,504	5,404,260	117,519	8,977,010	3,395,222	1,638	1,145	133			260	713	44	
806,356	283,030	8,189,080	238,982	37,572	777,314	6,402,315	431,419	20,878,515	14,044,781	9,823	5,540	2,020	29	380	1,854	5,040	45	
803,394	1,390,813	9,028,702	5,060	1,011,018	19,252,439	481,734	47,297,519	27,563,346	9,610,046	18,390	1,797		25	80	16,488	656	46	
317,862	326,115	3,921,335	164,497	4,457	946,637	18,378,196	412,523	28,400,765	9,010,046	7,543	4,249			825	2,469	1,958	47	
433,001	570,925	3,115,314	12,462	41,860	507,206	6,633,421	307,354	14,278,973	7,338,198	7,253	2,375	450		1,062	3,368	681	48	
375,090	525,820	3,593,867	2,198	9,848	479,729	0,135,585	249,900	12,386,556	6,001,071	11,260	3,939	2,700	9	1,807	2,805	1,181	49	
339,951	322,696	2,235,274	1,139	18,700	410,607	10,992,870	135,995	16,836,997	5,708,132	2,352	810		8	90	1,444	1,000	50	
270,744	106,054	1,294,533		17,050	68,571	6,113,159	107,075	9,607,701	3,470,837	2,188	1,475			6	1,115	1,15	51	
13,773	4,209	40,225	3,088	3,624	5,122	197,489	6,007	330,234	126,808	71				34		87	52	
389,121	217,109	2,375,631	35,461	22,312	479,799	7,049,154	500,440	13,980,185	6,430,591	5,942	2,054	1,800	215		1,373	1,387	53	



# MICHIGAN.

## GENERAL STATISTICS.

**General character of the state.**—Michigan has a gross area of 57,980 square miles, of which 57,480 represent land surface. The inhabitants of the state in 1900 numbered 2,420,982; in 1910, 2,810,173; and in 1920, 3,668,412. In total population Michigan ranked seventh among the states in 1920. The number of inhabitants per square mile in 1910 was 48.9, the corresponding figure for 1920 being 63.8.

In 1920 there were 28 cities in the state (see Table 6) having more than 10,000 inhabitants. The statistics for Hamtramck and Highland Park, however, can not be shown separately without the possibility of disclosing the operations of individual establishments. The combined population of these 28 cities in 1920 was 1,894,612, which formed 51.6 per cent of the total population of the state. In 1919 these cities reported 81.8 per cent of the value of the state's manufactured products.

**Importance and growth of manufactures** (Table 1).—The large increases in salaries and wages, cost of materials, and value of products from 1914 to 1919, as presented in Table 1, are largely due to the change in industrial conditions brought about by the World War, and therefore can not properly be used to measure the growth of manufactures during the census period 1914 to 1919. The increases shown, however, in average number of wage earners and horsepower are indicative of a decided growth in the manufacturing activities of the state. The addition of the Federal income tax since 1914 will account for the large increase in "Rent and taxes."

**Statistics for the state, by counties** (Table 2).—Figures are not available for comparison of county totals for 1919 with those of prior censuses. Of the 83 counties in the state, Wayne and Kent, which include the cities of Detroit and Grand Rapids, reported 60.5 per cent of the total value of products in the state in 1919 and 59.8 per cent of the average number of wage earners.

**Principal industries, ranked by value of products** (Table 3).—The ranking of industries by value of products is often misleading as to their real importance from a manufacturing standpoint. Their ranking would change materially if based upon the average number of wage earners or value added by manufacture.

**Persons engaged in manufacturing industries** (Table 4).—The age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms." The classification by sex for 1919 was reported separately, but for 1914 and 1909 was

obtained in the same manner as the distribution by age. Figures for individual industries will be found in Table 36.

**Average number of wage earners for selected industries** (Table 5).—The industries covered by this table are those which employed more than 2,000 wage earners in 1919, and for which statistics can be shown without the possibility of disclosing the operations of individual establishments.

**Average number of wage earners, by sex and age, and value of products for cities of 10,000 inhabitants or more** (Table 6).—This table shows increases from 1914 to 1919 in practically all details for the cities for which comparative figures are available.

**Wage earners, by months** (Table 7).—The statistics for wage earners in this table are intended to show the steadiness of employment, or the reverse, in accordance with the industrial conditions existing during the several census years.

**Wage earners, by months, for selected industries and for cities** (Table 8).—In addition to the number of wage earners employed by months for selected industries, this table gives similar data for males and females for all industries combined for the state and for cities of 10,000 inhabitants or more, and also the number of females for industries in which a large number of females were employed. There were a number of industries in the state in 1919 in which the number of female wage earners predominated.

**Prevailing hours of labor** (Table 9).—Since 1914 there has been a marked shortening of the working day in Michigan. In that year 11.6 per cent of the wage earners were included in the group "48 and under," as against 35.1 per cent in 1919. In 1914 the "60" and "Over 60" groups constituted 27.6 per cent of the total wage earners, as compared with 8.3 per cent in 1919.

**Size of establishments, by average number of wage earners, for selected industries and for cities** (Table 10).—The predominance of the number of small establishments, when based on the number of wage earners employed, is evidenced in this table by the fact that of the total number of establishments in the state, 91.4 per cent were in the several classes having fewer than 101 wage earners, while such establishments employed but 17.9 per cent of the total number of wage earners. On the other hand, the establishments employing an average of more than 100 wage earners represented only 8.6 per cent of the total number of manufacturing establishments in the state, but reported 82.1 per cent of the total number of wage earners.



**Size of establishments, by value of products (Table 11).—**At the censuses of 1909 and 1914 establishments with products valued at "\$100,000 to \$1,000,000" constituted one group, but at the census of 1919 this group was subdivided into "\$100,000 to \$500,000" and "\$500,000 to \$1,000,000." Separate figures for the number of establishments and value of products have been compiled, however, from the returns for 1914. The table, therefore, gives combined figures for these two groups for all items for 1909 and for the average number of wage earners and value added by manufacture for 1914.

**Size of establishments, by value of products, for selected industries (Table 12).—**In the preparation of this table it was necessary in several instances to combine the establishments of one group of the industry with those of some other group of that industry to avoid the possibility of disclosing the operations of individual establishments.

**Size of establishments, by value of products, for cities of 10,000 inhabitants or more (Table 13).—**This table strikingly illustrates the fact that the number of establishments of itself is no real index of manufacturing activities.

**Character of ownership (Table 14).—**The preponderance of corporate ownership is clearly brought out in this table. Although corporations owned but 39.1 per cent of the number of establishments in the state in 1919, they reported 94.3 per cent of the average number of wage earners and 95.2 per cent of the total value of products. During the five-year period 1914 to

1919 the average number of wage earners in corporations increased 202,687, or 83.8 per cent, and the value of products \$2,312,599,775, or 234.4 per cent.

**Manufactures, by population groups, in cities of 10,000 inhabitants or more (Table 15).—**This table shows that the combined number of establishments in the 28 cities in 1919 represented 57.7 per cent of the total in the state. They reported in that year 79.8 per cent of the average number of wage earners and 81.8 per cent of the value of products.

**Principal industries in Detroit, Flint, Grand Rapids, Lansing, and Saginaw, with per cent of total for state (Table 16).—**This table includes the principal industries in each of the 5 cities in the state having 50,000 inhabitants or more in 1920, figures being given for those which can be shown without disclosing the operations of individual establishments.

**Number and horsepower of types of prime movers (Table 17).—**The total horsepower reported in 1919, as compared with that for 1914, shows an increase of 471,745 horsepower, or 64.6 per cent. This increase, however, is chiefly due to the gain of 356,868 horsepower, or 185.6 per cent, in rented power. The owned power increased 114,877 horsepower, or 21.3 per cent, during the five-year period.

**Fuel consumed (Table 18).—**This table shows the principal kinds of fuel used by the manufacturing plants in the state in 1919 and 1914 and gives separately for 1919 the amounts used by a number of industries which are large consumers of fuel.

TABLE 1.—COMPARATIVE SUMMARY: 1919, 1914, 1909, 1904, AND 1899.

	1919	1914	1909	1904	1899	PER CENT OF INCREASE. <sup>1</sup>			
						1914-1919	1909-1914	1904-1909	1899-1904
Number of establishments.....	8,305	8,724	9,159	7,446	7,810	-4.8	-4.7	23.0	1.9
Persons engaged.....	549,069	320,611	271,071	200,196	( <sup>2</sup> )	71.3	18.3	35.4	.....
Proprietors and firm members.....	6,762	7,725	8,965	7,732	( <sup>2</sup> )	-12.5	-13.8	15.9	.....
Salaried employees.....	71,065	41,796	30,607	17,235	13,350	70.0	30.6	77.6	20.1
Wage earners (average number).....	471,242	271,090	231,490	175,229	155,800	73.8	17.1	32.1	12.5
Primary horsepower.....	1,202,128	730,383	598,288	440,890	368,497	64.6	27.7	35.7	19.6
Capital.....	\$2,340,954,312	\$869,143,114	\$583,946,965	\$337,894,102	\$246,996,529	168.8	48.8	72.8	36.8
Salaries and wages.....	788,743,091	238,524,979	153,838,044	98,749,270	74,867,786	230.7	55.0	55.8	31.9
Salaries.....	149,034,998	56,272,695	34,870,214	17,470,433	12,335,974	104.8	61.4	99.6	41.6
Wages.....	639,708,093	182,252,284	118,967,830	81,278,837	62,531,812	251.0	53.2	46.4	30.0
Paid for contract work.....	8,232,883	7,973,706	3,397,011	4,475,054	( <sup>2</sup> )	3.3	134.7	-24.1	.....
Rent and taxes.....	170,170,376	18,481,171	11,757,437	4,072,474	( <sup>2</sup> )	820.8	57.2	.....	.....
Cost of materials.....	1,919,243,243	592,801,064	368,612,022	230,080,031	175,966,128	223.8	60.8	60.2	30.8
Value of products.....	3,466,188,483	1,086,162,432	685,109,169	429,120,060	319,601,856	219.1	58.5	59.7	34.2
Value added by manufacture <sup>4</sup> .....	1,546,945,240	493,361,368	316,497,147	199,039,129	143,725,728	213.6	55.9	59.0	38.5

<sup>1</sup> A minus sign (-) denotes decrease.

<sup>2</sup> Figures not available.

<sup>3</sup> Exclusive of internal revenue.

<sup>4</sup> Value of products less cost of materials.



## MANUFACTURES—MICHIGAN.

671

TABLE 2.—STATISTICS FOR THE STATE, BY COUNTIES: 1919.

COUNTY.	Number of establishments.	WAGE EARNERS.		Rent and taxes.	Cost of materials.	Value of products.	Value added by manufacture.	Primary horse-power.
		Average number.	Wages.					
The state.....	8,305	471,242	\$639,708,093	\$170,170,376	\$1,919,243,243	\$3,466,188,483	\$1,546,045,240	1,202,128
Alcona.....	8	24	13,120	624	120,557	164,849	44,292	177
Alger.....	15	1,421	1,590,669	175,747	2,304,070	5,710,430	3,406,360	7,146
Allegan.....	105	1,667	1,650,208	659,490	8,028,057	12,244,990	4,216,933	11,241
Alpena.....	39	1,378	1,533,224	340,033	4,887,750	9,361,640	4,473,890	10,548
Antrim.....	18	364	345,062	66,039	1,459,635	2,771,329	1,311,694	1,215
Arenac.....	12	29	29,895	2,011	203,109	285,764	82,655	220
Baraga.....	30	694	715,796	50,177	437,836	2,534,071	2,096,235	2,086
Barry.....	51	1,045	1,050,365	147,269	2,810,522	5,451,217	2,640,695	2,998
Bay.....	132	5,822	6,217,587	1,737,938	19,952,846	36,039,756	16,086,910	32,812
Benzie.....	12	97	77,326	17,953	453,827	637,489	183,662	222
Berrien.....	206	6,473	6,846,463	1,869,425	18,735,563	36,431,623	17,696,060	13,603
Branch.....	66	1,081	838,615	115,237	4,694,405	7,317,604	2,623,199	8,038
Calhoun.....	203	9,969	12,580,800	3,409,194	36,721,861	73,217,755	36,495,894	31,003
Cass.....	48	1,160	1,299,271	350,009	2,716,205	6,358,266	3,642,060	4,099
Charlevoix.....	35	1,427	1,420,894	369,761	3,840,400	8,119,186	4,278,696	5,522
Cheboygan.....	26	607	594,589	254,187	3,356,968	5,095,039	1,738,071	5,187
Chippewa.....	65	1,916	2,197,143	598,420	7,489,351	12,720,989	5,231,638	8,290
Clare.....	10	24	19,118	2,892	186,610	260,948	74,338	151
Clinton.....	47	446	482,875	20,825	1,694,159	3,022,596	1,328,437	2,098
Crawford.....	16	489	624,048	84,063	812,546	2,041,895	1,229,349	1,893
Delta.....	89	3,602	3,851,081	493,309	6,127,069	12,937,399	6,810,330	16,513
Dickinson.....	49	612	732,835	41,251	878,588	2,102,823	1,314,235	2,250
Eaton.....	68	1,371	1,304,102	142,556	4,762,076	8,461,023	3,698,947	5,747
Emmet.....	39	978	919,885	64,541	2,070,786	4,123,847	2,053,061	5,503
Genesee.....	151	24,884	38,589,156	12,345,743	174,420,563	278,321,516	103,900,953	38,998
Gladwin.....	13	24	23,600	4,460	292,007	350,355	53,348	290
Gogebic.....	49	642	771,324	38,807	1,076,792	2,134,104	1,057,312	1,740
Grand Traverse.....	63	991	871,185	108,225	2,321,874	4,234,083	1,912,209	3,538
Gratiot.....	61	1,700	2,261,171	632,994	21,162,890	27,165,994	6,003,104	6,973
Hillsdale.....	63	791	771,627	87,098	6,915,230	9,377,918	2,462,688	2,783
Houghton.....	123	2,038	2,144,489	216,581	28,597,364	38,585,922	9,988,558	9,167
Huron.....	45	480	535,277	192,541	4,501,873	6,154,700	1,652,887	3,856
Ingham.....	180	12,411	14,065,615	4,044,735	65,874,887	105,985,903	40,111,016	24,362
Ionia.....	82	3,144	3,089,449	389,777	9,503,730	16,429,508	6,925,778	7,641
Iosco.....	18	228	324,675	19,556	894,751	1,044,389	649,038	1,380
Iron.....	53	323	351,173	13,175	580,624	1,265,147	684,523	707
Isabella.....	30	400	397,868	69,788	3,111,274	4,577,862	1,466,588	1,353
Jackson.....	193	10,073	11,714,343	740,950	31,221,013	52,065,986	20,844,973	20,660
Kalamazoo.....	224	10,228	11,361,862	2,314,850	37,700,972	67,086,766	29,385,794	50,024
Kalkaska.....	10	62	59,615	2,876	77,737	202,961	125,224	398
Kent.....	700	25,640	28,395,218	4,141,176	58,720,590	122,065,487	63,335,897	61,549
Lake.....	7	10	8,401	479	65,018	79,645	14,627	50
Lapeer.....	44	277	275,205	14,298	1,147,473	1,735,724	588,251	1,282
Leelanau.....	17	61	45,758	1,291	226,941	393,504	166,563	746
Lenawee.....	131	3,009	3,049,751	503,218	19,159,576	27,521,091	8,361,515	10,198
Livingston.....	42	274	305,538	35,419	2,652,711	3,405,099	752,388	1,102
Luce.....	12	745	843,584	95,107	2,255,682	3,737,408	1,481,726	2,589
Mackinac.....	23	250	228,602	13,422	267,395	768,053	500,658	728
Macomb.....	93	692	920,544	101,566	2,843,850	5,158,151	2,314,301	2,891
Manistee.....	51	2,076	1,717,315	324,052	3,053,197	8,174,701	4,221,504	9,196
Marquette.....	82	1,960	2,219,738	145,008	5,470,944	9,256,186	3,785,242	8,033
Mason.....	42	1,719	1,467,552	444,586	3,545,194	7,616,702	4,071,508	4,117
Mecosta.....	34	481	354,030	20,875	1,549,694	2,423,898	874,204	2,050
Menominee.....	58	2,094	2,192,327	511,512	4,837,382	10,128,286	5,290,904	13,375
Midland.....	17	1,121	1,548,743	355,223	2,005,292	5,827,562	2,922,270	12,044
Missaukee.....	12	589	388,676	152,886	467,526	1,367,225	899,699	1,447
Monroe.....	60	3,187	3,674,451	709,188	9,129,733	17,661,031	8,531,298	18,664
Montcalm.....	57	852	620,374	84,549	3,183,089	4,630,383	1,453,294	1,715
Montmorency.....	12	51	40,127	901	143,926	204,217	60,291	168
Muskegon.....	203	12,664	14,950,232	3,609,818	33,927,112	72,169,248	38,242,136	31,097
Newaygo.....	46	508	461,738	69,620	2,402,979	3,568,433	1,165,454	2,895
Oakland.....	164	8,125	11,383,621	5,367,954	68,903,199	108,195,982	39,292,783	15,996
Oceana.....	44	439	284,972	26,174	1,689,816	2,362,915	693,099	1,164
Ogemaw.....	6	41	47,494	1,302	88,700	199,002	110,302	214
Ontonagon.....	27	863	708,656	85,810	598,629	2,140,277	1,541,648	2,653
Osceola.....	23	294	301,737	37,093	1,954,010	2,543,674	589,664	1,882
Otsego.....	11	353	276,695	41,586	475,334	1,258,382	783,048	1,009
Ottawa.....	165	5,588	5,399,169	976,221	22,192,115	37,002,265	14,810,150	11,046
Presque Isle.....	19	765	875,445	57,632	1,900,729	3,492,235	1,591,506	2,002
Saginaw.....	262	12,319	13,571,961	1,512,642	27,009,517	56,525,989	29,516,472	61,331
St. Clair.....	157	4,819	5,542,821	594,867	12,267,522	23,952,075	11,684,553	14,246
St. Joseph.....	86	3,050	3,084,445	394,281	6,104,948	13,496,165	7,391,217	7,478
Sanilac.....	39	333	266,267	106,229	2,911,490	3,768,671	857,181	2,178
Schoolcraft.....	27	989	1,023,802	247,210	3,735,866	5,804,866	2,069,000	13,069
Shiawassee.....	67	1,867	2,316,769	522,434	6,866,352	11,842,842	4,976,490	4,691
Tuscola.....	44	313	351,946	128,732	3,244,727	4,310,856	1,066,129	2,664
Van Buren.....	99	1,128	1,077,748	163,458	4,541,993	7,289,038	2,747,045	3,189
Washtenaw.....	148	2,610	3,206,904	523,295	8,829,273	15,451,733	6,622,460	10,698
Wayne.....	2,377	256,144	390,184,190	115,220,416	1,058,452,036	1,975,599,070	917,147,634	483,838
Wexford.....	43	1,835	1,746,132	478,317	5,990,267	10,313,888	4,314,621	18,003
All other counties.....	7	51	54,015	6,754	134,948	254,222	119,274	409

<sup>1</sup>All other counties comprise Keweenaw, Oscoda, and Roscommon.



TABLE 3.—PRINCIPAL INDUSTRIES, RANKED BY VALUE OF PRODUCTS: 1919.

INDUSTRY.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		INDUSTRY.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.	
		Average number.	Per cent distribution.	Amount (expressed in thousands).	Per cent distribution.	Amount (expressed in thousands).	Per cent distribution.			Average number.	Per cent distribution.	Amount (expressed in thousands).	Per cent distribution.	Amount (expressed in thousands).	Per cent distribution.
All industries.....	8,305	471,242	100.0	\$3,466,188	100.0	\$1,546,945	100.0	Wood distillation.....	16	1,586	0.3	\$10,651	0.3	\$4,858	0.3
Automobiles.....	68	126,937	26.9	1,332,076	38.4	522,872	33.8	Patent medicines and compounds.....	70	1,392	0.3	9,948	0.3	5,736	0.4
Automobile bodies and parts.....	203	49,048	10.4	288,307	8.3	137,744	8.9	Cement.....	11	1,387	0.3	9,943	0.3	5,681	0.4
Foundry and machine-shop products.....	523	39,430	8.4	169,463	4.9	100,662	6.5	Tobacco, chewing and smoking, and snuff.....	14	816	0.2	9,574	0.3	4,751	0.3
Engines, steam, gas, and water.....	35	14,258	3.0	101,989	2.9	44,939	2.9	Clothing, men's.....	31	1,750	0.4	9,180	0.3	3,643	0.2
Shipbuilding, steel, new vessels and small boats.....	7	15,996	3.4	83,124	2.4	48,078	3.1	Hardware.....	30	2,174	0.5	8,701	0.3	5,569	0.4
Furniture.....	171	18,496	3.9	69,497	2.0	41,187	2.7	Iron and steel, forgings, not made in steel works or rolling mills.....	15	1,690	0.3	8,550	0.3	3,697	0.2
Paper and wood pulp.....	39	9,561	2.0	66,300	1.9	25,946	1.7	Springs, steel, car and carriage, not made in steel works or rolling mills.....	6	1,870	0.4	8,472	0.2	3,046	0.2
Brass, bronze, and copper products.....	80	10,306	2.2	62,708	1.8	23,859	1.5	Iron and steel, steel works and rolling mills.....	7	1,455	0.3	8,345	0.2	5,443	0.4
Slaughtering and meat packing.....	24	1,712	0.4	59,585	1.7	9,810	0.6	Screws, machine.....	20	1,624	0.3	7,036	0.2	4,313	0.3
Rubber tires, tubes, and rubber goods, not elsewhere specified.....	7	5,044	1.1	50,318	1.5	29,139	1.9	Stamped ware, not elsewhere specified.....	21	1,185	0.3	7,036	0.2	3,793	0.3
Lumber and timber products.....	380	14,923	3.2	46,044	1.3	30,350	2.0	Stoves, gas and oil.....	7	1,001	0.2	7,497	0.2	4,504	0.3
Leather, tanned, curried, and finished.....	28	3,464	0.7	45,801	1.3	13,349	0.9	Corsets.....	12	1,529	0.3	7,298	0.2	4,385	0.3
Bread and other bakery products.....	944	5,088	1.1	44,923	1.3	10,808	1.1	Refrigerators.....	12	1,055	0.4	6,718	0.2	3,513	0.2
Flour-mill and gristmill products.....	345	1,128	0.2	44,144	1.3	5,959	0.4	Boots and shoes.....	15	1,120	0.2	6,046	0.2	1,802	0.1
Lumber, planing-mill products, not including planing mills, connected with sawmills.....	192	5,256	1.1	37,869	1.1	13,860	0.9	Lamps and reflectors.....	8	924	0.2	5,564	0.2	3,472	0.2
Chemicals.....	36	5,712	1.2	37,851	1.1	22,107	1.4	Mineral and soda waters.....	181	602	0.1	5,497	0.2	2,902	0.2
Food preparations, not elsewhere specified.....	37	2,483	0.5	35,702	1.0	16,889	1.1	Musical instruments, pianos.....	8	1,122	0.2	5,397	0.2	2,574	0.2
Butter.....	231	984	0.2	33,385	1.0	8,806	0.3	Liquors, malt.....	25	779	0.2	5,276	0.2	3,249	0.2
Smelting and refining, copper.....	4	709	0.2	32,725	0.9	6,980	0.5	Boxes, wooden packing, except cigar boxes.....	46	1,481	0.3	4,978	0.1	2,231	0.1
Condensed milk.....	32	1,064	0.2	27,738	0.8	4,631	0.3	Pickles, preserves, and sauces.....	44	453	0.1	4,836	0.1	1,827	0.1
Sugar, beet.....	16	1,836	0.4	26,379	0.8	9,697	0.6	Tinware, not elsewhere specified.....	6	918	0.2	4,631	0.1	1,966	0.1
Electrical machinery, apparatus, and supplies.....	54	4,190	0.9	25,026	0.7	15,990	1.0	Woolen goods.....	9	812	0.2	4,572	0.1	1,691	0.1
Printing and publishing, newspapers and periodicals.....	565	3,176	0.7	24,930	0.7	17,234	1.1	Phonographs and graphophones.....	10	798	0.2	4,230	0.1	2,558	0.2
Druggists' preparations.....	16	3,219	0.7	23,904	0.7	13,908	0.9	Automobile repairing.....	259	968	0.2	4,227	0.1	2,364	0.2
Stoves and hot-air furnaces.....	21	4,240	0.9	20,489	0.6	14,200	0.9	Varnishes.....	6	193	(1)	4,002	0.1	1,948	0.1
Tobacco, cigars and cigarettes.....	349	5,456	1.2	18,119	0.5	9,728	0.6	Clothing, women's.....	33	1,036	0.2	3,923	0.1	1,650	0.1
Gas, illuminating and heating.....	59	2,846	0.6	17,993	0.5	9,723	0.6	Cars and general shop construction and repairs by electric-railroad companies.....	15	1,401	0.3	3,828	0.1	2,203	0.2
Printing and publishing, book and job.....	436	3,717	0.8	17,676	0.5	11,204	0.7	Copper, tin, and sheet-iron work.....	115	694	0.1	3,791	0.1	2,069	0.1
Cars and general shop construction and repairs by steam-railroad companies.....	36	7,025	1.5	17,223	0.5	10,995	0.7	Paper goods, not elsewhere specified.....	10	451	0.1	3,748	0.1	1,452	0.1
Structural ironwork, not made in steel works or rolling mills.....	34	2,313	0.5	17,124	0.5	6,109	0.4	Cheese.....	55	146	(1)	3,603	0.1	445	(1)
Wirework, not elsewhere specified.....	38	2,516	0.5	17,065	0.5	6,262	0.4	Cleansing and polishing preparations.....	20	138	(1)	3,599	0.1	1,798	0.1
Paints.....	24	1,019	0.2	16,435	0.5	6,871	0.4	Wall plaster and composition flooring.....	10	585	0.1	3,501	0.1	2,101	0.1
Salt.....	12	2,063	0.4	14,054	0.4	7,715	0.5	Carriages and sleds, children's.....	10	799	0.2	3,410	0.1	2,013	0.1
Iron and steel, blast furnaces.....	11	1,101	0.2	13,534	0.4	3,235	0.2	Brick and tile, terra-cotta, and fire-clay products.....	48	852	0.2	3,339	0.1	2,521	0.2
Machine tools.....	31	3,196	0.7	12,650	0.4	8,684	0.6	Plumbers' supplies, not elsewhere specified.....	11	837	0.2	3,300	0.1	1,765	0.1
Confectionery and ice cream.....	184	1,746	0.4	12,627	0.4	5,458	0.4	Models and patterns, not including paper patterns.....	52	861	0.2	3,280	0.1	2,840	0.2
Knit goods.....	31	3,170	0.7	12,039	0.3	5,249	0.3	Wooden goods, not elsewhere specified.....	18	984	0.2	3,225	0.1	1,716	0.1
Tools, not elsewhere specified.....	89	3,261	0.7	11,899	0.3	8,350	0.5	Steam fittings and steam and hot-water heating apparatus.....	15	762	0.2	3,093	0.1	1,490	0.1
Canning and preserving, fruits and vegetables.....	52	2,109	0.4	11,172	0.3	3,201	0.2	All other industries <sup>2</sup> .....	1,505	35,634	7.6	218,966	6.3	125,201	8.1
Agricultural implements.....	23	2,708	0.6	11,091	0.3	6,043	0.4								
Boxes, paper and other, not elsewhere specified.....	22	2,336	0.5	10,935	0.3	5,649	0.4								

<sup>1</sup> Less than one-tenth of 1 per cent.<sup>2</sup> Among the industries for which statistics can not be shown separately without the possibility of disclosing the operations of individual establishments are six having products in excess of some for which figures are shown in the table. These industries are as follows: "Billiard tables and accessories"; "cars, steam-railroad, not including operations of railroad companies"; "cash registers and calculating machines"; "coke, not including gas-house coke"; "silk goods"; and "stationery goods, not elsewhere specified."



## MANUFACTURES—MICHIGAN.

673

TABLE 4.—PERSONS ENGAGED IN MANUFACTURING INDUSTRIES: 1919, 1914, AND 1909.

CLASS.	Cen- sus year.	Total.	Male.	Fe- male.	PER CENT OF TOTAL.		CLASS.	Cen- sus year.	Total.	Male.	Fe- male.	PER CENT OF TOTAL.	
					Male.	Fe- male.						Male.	Fe- male.
All classes.....	1919	549,069	475,246	73,823	86.6	13.4	Clerks and other subordinate sala- ried employees.....	1919	50,663	31,258	19,405	61.7	38.3
	1914	320,611	278,229	42,382	86.8	13.2		1914	32,058	22,928	9,130	71.5	28.5
	1909	271,071	231,915	39,156	85.6	14.4		1909	22,576	16,183	6,393	71.7	28.3
Proprietors and officials.....	1919	27,164	26,280	884	96.7	3.3	Wage earners (average number)....	1919	471,242	417,708	53,534	88.6	11.4
	1914	17,463	16,900	563	96.8	3.2		1914	271,090	238,401	32,689	87.9	12.1
	1909	16,996	16,434	562	96.7	3.3		1909	231,499	199,298	32,201	86.1	13.9
Proprietors and firm members.....	1919	6,762	6,456	306	95.5	4.5	16 years of age and over.....	1919	469,750	416,616	53,134	88.7	11.3
	1914	7,725	7,335	390	95.0	5.0		1914	269,519	237,496	32,023	88.1	11.9
	1909	8,965	8,594	401	95.5	4.5		1909	228,982	197,777	31,205	86.4	13.6
Salaried officers of corporations.....	1919	5,266	5,108	158	97.0	3.0	Under 16 years of age.....	1919	1,492	1,092	400	73.2	26.8
	1914	3,572	3,471	101	97.2	2.8		1914	1,571	905	666	57.6	42.4
	1909	3,089	3,026	63	98.0	2.0		1909	2,517	1,521	996	60.4	39.6
Superintendents and managers.....	1919	15,136	14,716	420	97.2	2.8							
	1914	6,166	6,094	72	98.8	1.2							
	1909	4,942	4,844	98	98.0	2.0							

TABLE 5.—AVERAGE NUMBER OF WAGE EARNERS FOR SELECTED INDUSTRIES, WITH PER CENT, BY SEX AND AGE: 1919 AND 1914.

INDUSTRY.	Cen- sus year.	Wage earners (average num- ber).	PER CENT OF TOTAL.			INDUSTRY.	Cen- sus year.	Wage earners (average num- ber).	PER CENT OF TOTAL.		
			16 years of age and over.		Under 16 years of age.				16 years of age and over.		Under 16 years of age.
			Male.	Fe- male.					Male.	Fe- male.	
All Industries.....	1919	471,242	88.4	11.3	0.3	Hardware.....	1919	2,174	77.0	22.3	0.7
	1914	271,090	87.6	11.8	0.6		1914	742	89.8	9.8	0.4
	1909	231,499	85.4	13.5	1.1	Knit goods.....	1919	3,170	23.8	74.2	2.0
Agricultural implements.....	1919	2,708	97.5	2.4	(1)		1914	2,714	24.4	74.1	1.5
	1914	2,143	99.6	.....	0.4	Leather, tanned, curried, and finished.....	1919	3,464	95.9	4.1	.....
Automobile bodies and parts.....	1919	49,048	94.6	5.3	0.1		1914	2,773	99.9	(1)	(1)
	1914	24,736	97.7	2.1	0.2	Lumber and timber products.....	1919	14,923	98.7	1.2	0.1
Automobiles.....	1919	126,937	95.8	4.1	0.1		1914	21,488	99.7	0.2	0.2
	1914	42,802	97.9	2.0	0.1	Lumber, planing-mill products, not includ- ing planing mills connected with saw- mills.	1919	5,266	93.8	5.8	0.9
Boxes, paper and other, not elsewhere speci- fied.	1919	2,836	32.4	66.5	1.1		1914	4,944	98.0	1.3	0.7
	1914	1,461	66.3	31.7	2.0	Paper and wood pulp.....	1919	9,561	86.7	13.3	(1)
Brass, bronze, and copper products.....	1919	10,306	91.7	8.2	(1)		1914	6,051	84.7	15.3	(1)
	1914	4,731	94.5	3.6	1.8	Printing and publishing, book and job.....	1919	3,717	68.9	29.8	1.3
Bread and other bakery products.....	1919	5,088	74.7	24.3	1.0		1914	3,860	74.1	24.4	1.5
	1914	4,014	79.6	19.6	0.7	Printing and publishing, newspapers and periodicals.	1919	3,176	80.1	17.7	2.2
Canning and preserving, fruits and vege- tables.	1919	2,109	44.2	50.5	5.3		1914	3,270	83.4	14.5	2.1
	1914	1,687	42.5	57.0	0.5	Rubber tires, tubes, and rubber goods, not elsewhere specified. <sup>2</sup>	1919	5,044	91.8	8.2	0.1
Cars and general shop construction and re- pairs by steam-railroad companies.	1919	7,025	98.7	1.3	(1)	Salt.....	1919	2,063	93.2	6.4	0.4
	1914	5,803	100.0	.....	.....		1914	1,434	93.2	6.8	.....
Chemicals.....	1919	5,712	98.3	1.5	0.1	Shipbuilding, steel, new vessels and small boats.	1919	15,996	99.6	0.4	(1)
	1914	4,509	99.3	0.6	0.1		1914	935	100.0	.....	.....
Druggists' preparations.....	1919	3,219	43.3	56.7	.....	Stoves and hot-air furnaces.....	1919	4,240	99.0	0.8	0.2
	1914	2,175	52.6	46.9	0.6		1914	3,832	99.0	0.2	0.8
Electrical machinery, apparatus, and sup- plies.	1919	4,190	60.9	39.0	0.1	Structural ironwork, not made in steel works or rolling mills.	1919	2,313	96.8	3.2	(1)
	1914	1,144	71.2	28.4	0.4		1914	1,371	99.4	.....	0.6
Engines, steam, gas, and water.....	1919	14,258	95.8	4.2	(1)	Tobacco, cigars and cigarettes.....	1919	5,456	16.6	83.1	0.3
	1914	4,427	99.7	0.2	(1)		1914	7,205	19.7	78.2	4.1
Food preparations, not elsewhere specified..	1919	2,483	62.6	37.4	.....	Tools, not elsewhere specified.....	1919	3,261	84.8	15.1	0.1
	1914	1,683	71.2	28.8	0.1		1914	872	97.0	1.3	1.6
Foundry and machine-shop products <sup>2</sup> .....	1919	42,745	93.9	6.0	0.1	Wirework, not elsewhere specified.....	1919	2,516	77.6	21.7	0.7
	1914	17,608	97.2	2.7	0.1		1914	1,314	92.6	6.7	0.7
Furniture.....	1919	18,496	85.9	13.2	0.9	All other industries.....	1919	85,406	78.6	20.8	0.6
	1914	14,706	95.8	3.7	0.5		1914	72,717	78.4	20.7	0.8
Gas, illuminating and heating.....	1919	2,846	99.8	0.2	.....						
	1914	2,340	99.8	0.2	.....						

<sup>1</sup> Less than one-tenth of 1 per cent.<sup>2</sup> Includes "iron and steel, tempering and welding" and "machine tools."<sup>2</sup> Not shown separately in 1914.



## MANUFACTURES—MICHIGAN.

TABLE 6.—AVERAGE NUMBER OF WAGE EARNERS, BY SEX AND AGE, AND VALUE OF PRODUCTS FOR CITIES OF 10,000 INHABITANTS OR MORE: 1919, 1914, AND 1909.

CITY.	AVERAGE NUMBER OF WAGE EARNERS IN MANUFACTURING INDUSTRIES.												VALUE OF PRODUCTS.		
	Total.			16 years of age and over.						Under 16 years of age.					
				Male.			Female.								
	1919	1914	1909	1919	1914	1909	1919	1914	1909	1919	1914	1909	1919	1914	1909
Adrian.....	1,870	1,256	1,059	1,473	1,002	924	388	249	118	9	5	17	\$14,549,031	\$5,442,338	\$6,085,126
Alpena.....	1,372	1,494	1,432	1,288	1,460	1,403	84	33	27	.....	1	2	9,356,190	4,101,935	3,903,823
Ann Arbor.....	1,612	842	573	1,440	747	535	172	93	38	.....	2	.....	9,793,606	2,603,379	1,885,894
Battle Creek.....	6,680	4,599	4,175	5,503	3,999	3,415	1,170	599	752	7	1	8	56,139,053	23,248,420	20,174,016
Bay City.....	5,057	3,771	4,737	3,979	3,355	4,263	1,062	386	441	10	30	33	28,214,525	11,119,286	10,293,747
Benton Harbor.....	2,328	1,285	.....	2,030	1,098	.....	290	187	.....	8	.....	.....	11,345,034	3,021,552	.....
Detroit.....	167,016	99,603	81,011	145,179	82,012	64,138	21,379	10,598	15,061	458	993	1,812	1,234,519,842	400,347,912	252,939,343
Escanaba.....	842	777	720	637	615	595	204	159	122	1	3	3	3,017,012	1,506,520	1,074,109
Flint.....	24,603	8,722	7,088	22,190	8,349	6,775	2,405	366	312	8	7	1	275,779,638	53,375,039	24,118,007
Grand Rapids.....	23,548	17,427	17,590	19,146	14,622	15,157	4,163	2,748	2,320	239	57	113	109,135,055	49,792,200	42,230,675
Holland.....	2,748	2,165	2,162	2,250	1,877	1,951	464	270	186	34	18	25	17,711,095	8,683,835	5,802,043
Ironwood.....	399	516	201	375	511	197	14	5	4	10	.....	.....	1,381,290	793,247	377,410
Ishpeming.....	197	79	66	99	75	59	7	3	6	1	1	1	1,007,432	228,643	132,374
Jackson.....	9,620	4,906	4,788	8,116	4,019	3,754	1,485	867	1,023	19	20	11	49,517,712	10,809,846	13,984,121
Kalamazoo.....	7,029	5,525	6,272	5,922	4,253	4,390	1,654	1,233	1,844	53	39	38	46,254,917	20,214,314	17,903,560
Lansing.....	12,349	6,231	5,285	11,360	5,903	5,043	972	327	239	17	1	3	104,722,115	26,984,406	16,567,093
Marquette.....	1,415	589	509	1,370	572	500	33	14	9	12	3	.....	7,210,375	1,394,587	1,277,828
Monroe.....	2,904	.....	.....	1,828	.....	.....	1,074	.....	.....	2	.....	.....	16,052,331	.....	.....
Muskegon.....	9,710	4,646	4,522	8,258	3,960	3,871	1,427	640	615	31	46	36	55,900,347	11,147,605	9,647,823
Owosso.....	1,781	1,231	.....	1,594	1,120	.....	177	110	.....	10	1	.....	9,948,736	3,468,534	.....
Pontiac.....	7,682	2,409	1,739	7,071	2,336	1,629	611	73	106	.....	.....	4	104,990,133	15,102,453	5,893,961
Port Huron.....	2,231	1,296	1,580	1,887	1,045	1,435	334	251	142	10	.....	3	9,545,578	4,090,323	3,588,272
Saginaw.....	9,472	6,342	5,368	7,791	5,479	4,637	1,637	847	706	44	16	25	43,140,125	19,008,070	14,192,054
Sault Ste. Marie.....	1,248	938	825	1,151	863	775	96	74	50	1	1	.....	10,099,767	3,821,464	3,729,117
Traverse City.....	960	956	1,220	757	712	1,102	200	242	117	3	2	1	4,099,900	2,251,484	2,289,150
Wyandotte.....	6,214	.....	.....	5,958	.....	.....	252	.....	.....	4	.....	.....	33,382,791	.....	.....
All other cities <sup>1</sup> .....	64,629	.....	.....	63,298	.....	.....	1,358	.....	.....	3	.....	.....	569,208,377	.....	.....

<sup>1</sup> All other cities comprise Hamtramck and Highland Park.

TABLE 7.—WAGE EARNERS, BY MONTHS: 1919, 1914, AND 1909.

MONTH.	NUMBER. <sup>1</sup>			PER CENT OF MAXIMUM.			MONTH.	NUMBER. <sup>1</sup>			PER CENT OF MAXIMUM.		
	1919	1914	1909	1919	1914	1909		1919	1914	1909	1919	1914	1909
January.....	<b>421,408</b>	273,067	<b>211,679</b>	80.6	96.8	84.6	July.....	480,152	268,390	232,023	91.8	95.1	92.8
February.....	426,205	277,824	218,230	81.3	98.5	87.3	August.....	497,915	274,164	235,804	95.2	97.2	94.3
March.....	428,121	282,176	223,087	81.9	100.0	89.2	September.....	507,050	273,860	240,310	97.0	97.1	96.1
April.....	431,021	281,040	222,273	82.4	99.6	88.9	October.....	515,805	270,454	241,912	98.0	95.8	96.7
May.....	442,925	278,103	226,811	84.7	98.6	90.7	November.....	522,876	254,678	240,720	100.0	90.3	98.7
June.....	461,718	269,532	229,058	88.3	95.5	91.6	December.....	520,623	249,777	250,078	99.6	88.5	100.0

<sup>1</sup> The figures represent the number employed on the 15th of each month or the nearest representative day. Maximum number indicated by bold-faced figures, minimum by *italic* figures.



## MANUFACTURES—MICHIGAN.

675

TABLE 8.—WAGE EARNERS, BY MONTHS, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919.

[The month of maximum employment for each industry is indicated by bold-faced figures and that of minimum employment by *italic* figures.]

INDUSTRY AND CITY.	Average number employed during year.	NUMBER EMPLOYED ON 15TH DAY OF THE MONTH OR NEAREST REPRESENTATIVE DAY.												Per cent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
All industries.....	471,242	<i>421,493</i>	425,205	428,121	431,021	442,925	461,718	480,152	497,915	507,050	515,805	<b>522,876</b>	520,623	80.6
Males.....	417,708	<i>371,370</i>	370,532	370,596	381,814	392,827	409,526	424,915	441,386	449,561	457,033	464,243	463,687	80.0
Females.....	53,534	50,117	48,673	48,525	49,207	50,098	52,192	55,237	56,529	57,489	58,772	58,633	56,936	82.6
Agricultural implements.....	2,708	2,644	2,943	3,111	3,113	2,913	2,818	2,668	2,683	<i>2,110</i>	2,273	2,468	2,752	67.8
Automobile bodies and parts.....	49,048	<i>36,840</i>	35,203	40,972	42,760	43,619	45,763	49,581	53,044	56,459	60,218	61,438	59,780	59.7
Automobiles.....	126,937	<i>99,563</i>	103,345	107,479	114,432	121,185	128,064	133,493	138,077	142,977	144,191	145,197	145,241	68.6
Boxes, paper and other, not elsewhere specified.....	2,336	2,257	2,313	2,274	2,253	<i>2,240</i>	<i>2,240</i>	2,335	2,391	2,336	2,414	2,515	2,452	80.3
Brass, bronze, and copper products.....	10,306	9,759	9,357	9,121	9,170	9,270	<i>8,922</i>	9,696	10,852	11,437	12,402	<i>12,454</i>	11,232	71.6
Bread and other bakery products.....	5,088	4,748	<i>4,608</i>	4,851	4,954	4,975	5,141	5,177	5,311	5,195	5,278	5,365	5,363	87.6
Canning and preserving, fruits and vegetables.....	2,109	800	418	<i>400</i>	541	781	3,533	5,019	4,180	4,186	3,151	1,581	658	8.0
Cars and general shop construction and repairs by steam-railroad companies.....	7,025	7,038	7,044	6,975	<i>6,910</i>	6,954	6,938	6,960	6,978	6,928	7,064	7,243	<i>7,268</i>	95.1
Chemicals.....	5,712	<i>7,494</i>	6,697	5,768	5,042	<i>4,980</i>	5,077	5,083	5,123	5,482	5,720	5,962	6,116	66.5
Druggists' preparations.....	3,219	3,183	3,221	3,203	<i>3,145</i>	3,179	3,171	3,247	3,210	3,232	3,212	3,317	3,303	94.8
Electrical machinery, apparatus, and supplies.....	4,190	3,847	3,853	3,845	<i>3,775</i>	3,854	3,928	4,050	4,369	4,493	4,697	4,908	4,661	76.9
Engines, steam, gas, and water.....	14,258	<i>16,691</i>	13,638	13,755	<i>10,460</i>	10,782	13,216	14,413	15,213	15,305	15,746	16,746	16,346	62.7
Food preparations, not elsewhere specified.....	2,433	<i>1,778</i>	1,917	1,883	2,119	2,583	<i>2,728</i>	3,083	3,354	3,108	2,621	2,282	2,340	53.0
Foundry and machine-shop products.....	39,430	<i>35,593</i>	36,114	37,103	36,438	36,690	37,229	39,169	39,756	41,065	43,457	45,392	45,154	78.4
Furniture.....	18,496	<i>15,908</i>	16,246	16,795	17,055	17,406	17,966	18,543	19,437	19,777	20,191	20,913	21,365	74.5
Gas, illuminating and heating.....	2,846	2,557	<i>2,387</i>	2,478	2,569	2,679	2,754	3,032	2,994	3,018	3,274	3,145	3,275	72.9
Hardware.....	2,174	<i>1,763</i>	1,816	1,807	1,804	1,992	2,044	2,223	2,336	2,427	2,580	2,627	2,583	60.7
Knit goods.....	3,170	3,201	3,175	3,058	3,115	3,001	<i>2,971</i>	3,097	3,188	3,121	3,352	3,345	3,416	87.0
Leather, tanned, curried, and finished.....	3,404	<i>3,302</i>	3,360	3,303	3,547	3,406	3,392	3,527	3,622	3,511	3,518	3,525	3,549	91.2
Lumber and timber products.....	14,923	16,355	16,575	15,650	13,787	13,797	<i>13,040</i>	13,957	14,051	14,536	14,783	15,394	16,566	82.3
Lumber, planing-mill products, not including planing mills connected with sawmills.....	5,256	<i>4,251</i>	4,301	4,334	4,690	5,047	5,276	5,703	5,890	5,898	5,851	5,908	<i>5,953</i>	71.4
Machine tools.....	3,196	3,314	3,214	3,066	3,044	3,055	<i>3,030</i>	3,057	3,165	3,263	3,324	3,436	3,384	88.2
Paper and wood pulp.....	9,561	9,223	9,185	<i>9,063</i>	9,110	9,294	9,505	9,765	9,941	9,866	9,905	<i>9,998</i>	9,879	90.7
Printing and publishing, book and job.....	3,717	<i>3,535</i>	3,621	3,613	3,600	3,576	3,619	3,621	3,734	3,844	3,916	3,908	4,017	88.0
Printing and publishing, newspapers and periodicals.....	3,176	<i>3,032</i>	3,054	3,075	3,111	3,143	3,137	3,192	3,153	3,236	3,273	3,341	3,365	90.1
Rubber tires, tubes, and rubber goods, not elsewhere specified.....	5,044	<i>4,184</i>	4,020	4,823	4,587	4,810	4,786	4,983	5,104	5,279	5,505	5,814	<i>5,968</i>	70.1
Salt.....	2,063	2,017	1,964	<i>1,923</i>	1,981	1,925	2,016	2,000	2,178	2,125	2,143	2,169	<i>2,255</i>	85.3
Shipbuilding, steel, new vessels and small boats.....	15,996	17,333	18,855	20,269	19,133	18,904	19,726	15,993	16,370	13,863	11,592	10,449	<i>9,460</i>	46.7
Stoves and hot-air furnaces.....	4,240	<i>3,815</i>	4,160	4,159	4,095	4,133	4,070	3,975	4,306	4,429	4,009	<i>4,679</i>	4,450	81.5
Structural ironwork, not made in steel works or rolling mills.....	2,313	2,125	1,969	1,965	1,980	<i>1,932</i>	2,098	2,384	2,592	2,641	2,668	2,675	2,727	70.8
Tobacco, cigars and cigarettes.....	5,456	5,238	5,504	5,428	5,400	5,465	<i>4,666</i>	5,281	5,489	5,516	5,730	5,847	<i>5,818</i>	78.7
Tools, not elsewhere specified.....	3,261	2,800	<i>2,810</i>	2,923	2,994	2,997	3,076	3,004	3,328	3,574	3,740	3,923	3,813	71.6
Wirework, not elsewhere specified.....	2,516	<i>1,989</i>	2,242	2,368	2,398	2,509	2,758	2,712	2,638	2,638	2,704	2,638	2,598	72.1
All other industries.....	85,525	<i>83,397</i>	82,200	<i>77,265</i>	77,819	79,843	82,415	85,674	89,788	90,175	90,912	93,306	93,416	82.7
<i>Industries showing large proportion of females.</i>														
Boxes, paper and other, not elsewhere specified.....	1,571	1,557	1,582	1,514	1,511	1,487	<i>1,484</i>	1,549	1,565	1,548	1,633	1,734	1,688	85.6
Bread and other bakery products.....	1,255	1,228	<i>1,180</i>	1,226	1,257	1,238	<i>1,256</i>	1,298	1,302	1,215	1,255	1,329	1,336	83.8
Canning and preserving, fruits and vegetables.....	1,139	377	129	<i>97</i>	139	235	2,084	2,829	2,487	2,466	1,926	745	204	3.4
Druggists' preparations.....	1,824	1,872	1,880	1,851	1,808	1,834	1,821	1,835	<i>1,767</i>	1,797	1,770	1,831	1,832	93.5
Electrical machinery, apparatus, and supplies.....	1,638	1,482	1,488	1,502	<i>1,431</i>	1,512	1,529	1,559	1,719	1,776	1,848	2,027	1,783	70.6
Food preparations, not elsewhere specified.....	928	<i>525</i>	608	639	850	1,108	1,171	<i>1,329</i>	1,388	1,242	861	688	727	37.8
Hardware.....	485	<i>385</i>	389	386	387	421	430	526	540	551	594	616	595	62.5
Knit goods.....	2,399	2,434	2,389	2,302	2,367	2,273	<i>2,246</i>	2,362	2,409	2,354	2,549	2,528	2,675	87.2
Printing and publishing, book and job.....	1,112	1,065	1,097	1,084	1,071	<i>1,041</i>	1,070	1,065	1,104	1,154	1,175	1,187	1,231	84.6
Tobacco, cigars and cigarettes.....	4,543	4,362	4,596	4,521	4,491	4,528	<i>3,836</i>	4,394	4,554	4,599	4,795	4,901	4,939	77.7
Wirework, not elsewhere specified.....	552	<i>366</i>	458	482	514	570	626	628	617	601	590	586	596	56.7
Total for cities.....	376,032	<i>330,601</i>	333,217	335,523	344,776	355,475	367,611	384,337	397,195	408,026	416,590	419,976	419,057	78.7
Males.....	332,700	<i>289,311</i>	293,253	295,713	304,357	314,435	325,799	340,677	352,332	361,860	369,379	372,486	372,798	77.6
Females.....	43,332	41,290	39,964	<i>39,810</i>	40,419	41,040	41,812	43,660	44,863	46,166	47,211	47,490	46,259	83.8
ADRIAN.....	1,870	1,748	1,827	1,811	1,783	<i>1,715</i>	1,768	1,789	1,902	1,918	2,082	2,055	2,064	82.4
Males.....	1,482	1,373	1,454	1,460	1,387	<i>1,362</i>	1,397	1,397	1,500	1,520	1,675	1,629	1,630	81.3
Females.....	388	375	373	<i>351</i>	376	353	369	392	402	398	407	426	434	80.9
ALPENA.....	1,372	1,224	<i>1,318</i>	1,236	1,332	1,247	1,278	1,325	1,360	1,539	1,590	1,576	1,539	76.6
Males.....	1,288	1,175	<i>1,170</i>	1,186	1,277	1,186	1,222	1,262	1,294	1,469	1,435	1,409	1,371	79.6
Females.....	84	49	<i>48</i>	50	55	61	56	63	66	70	155	167	168	28.6
ANN ARBOR.....	1,612	1,555	1,615	1,686	<i>1,602</i>	1,638	1,588	1,711	1,529	1,604	1,638	1,652	1,625	87.8
Males.....	1,440	1,379	1,466	1,509	<i>1,338</i>	1,481	1,445	1,513	1,341	1,419	1,466	1,470	1,453	88.4
Females.....	172	176	149	177	164	157	<i>143</i>	198	188	185	172	182	173	72.2
BATTLE CREEK.....	6,680	<i>5,898</i>	6,267	6,356	6,667	7,009	7,145	7,374	7,554	6,693	6,267	6,342	6,618	77.7
Males.....	5,506	<i>5,045</i>	5,375	5,414	5,547	5,658	5,725	5,793	5,956	5,259	5,195	5,437	5,668	84.7
Females.....	1,174	<i>853</i>	892	942	1,120	1,351	1,420	1,581	1,598	1,434	1,072	905	950	51.5



TABLE 8.—WAGE EARNERS, BY MONTHS, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919—Continued.

INDUSTRY AND CITY.	Average number employed during year.	NUMBER EMPLOYED ON 15TH DAY OF THE MONTH OR NEAREST REPRESENTATIVE DAY.												Percent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
BAY CITY.....	5,057	5,036	4,936	4,902	4,983	4,762	4,983	5,130	4,905	4,362	5,590	5,548	6,127	70.3
Males.....	3,995	4,037	3,925	3,904	3,950	3,829	4,000	4,112	3,159	3,159	4,340	4,485	5,030	62.8
Females.....	1,062	999	1,030	995	1,033	933	974	1,018	1,746	1,203	1,250	1,063	1,097	74.6
BENTON HARBOR.....	2,328	2,433	2,253	2,201	2,174	2,092	2,354	2,375	2,204	2,380	2,430	2,464	2,507	83.4
Males.....	2,038	2,166	2,030	1,980	1,967	1,879	1,867	2,056	2,009	2,040	2,067	2,173	2,232	83.6
Females.....	290	267	223	221	207	213	487	319	255	340	362	291	275	42.5
DETROIT.....	167,016	154,228	153,741	151,248	152,357	155,860	153,252	167,756	175,163	181,300	185,542	185,910	182,835	81.4
Males.....	145,565	132,821	133,256	131,083	132,224	135,415	135,206	146,659	153,791	158,650	162,250	162,236	160,129	80.8
Females.....	21,451	21,407	20,485	20,165	20,133	20,445	18,046	21,097	21,372	22,650	23,292	23,674	22,706	84.4
ESCANABA.....	842	873	882	873	869	857	811	790	774	811	839	850	866	87.8
Males.....	638	653	655	653	652	640	620	620	608	623	638	646	658	92.4
Females.....	204	220	227	220	217	217	191	170	166	188	201	204	208	72.2
FLINT.....	24,603	18,366	20,161	21,174	22,430	24,113	25,214	25,782	27,335	27,244	26,688	27,325	29,414	62.4
Males.....	22,198	16,364	18,155	18,995	20,049	21,656	22,717	23,231	24,771	24,648	24,037	24,670	27,033	60.5
Females.....	2,405	1,992	2,006	2,179	2,381	2,457	2,497	2,551	2,564	2,596	2,651	2,655	2,381	75.0
GRAND RAPIDS.....	28,548	20,724	21,044	21,326	21,687	21,740	22,676	23,923	24,808	25,173	25,985	26,463	26,918	77.0
Males.....	19,305	17,015	17,324	17,627	17,830	17,857	18,520	19,510	20,193	20,581	21,166	21,783	22,259	70.4
Females.....	4,243	3,709	3,720	3,699	3,857	3,882	4,156	4,413	4,705	4,607	4,819	4,680	4,659	76.8
HOLLAND.....	2,748	2,432	2,477	2,403	2,456	2,507	2,746	2,870	3,030	3,089	2,904	2,916	2,990	78.7
Males.....	2,268	1,980	2,028	2,052	2,049	2,101	2,264	2,376	2,521	2,587	2,372	2,427	2,510	78.7
Females.....	480	452	449	441	407	406	482	494	515	502	532	489	480	68.6
IRONWOOD.....	399	406	409	419	281	271	405	420	412	439	450	425	451	60.1
Males.....	385	393	399	409	267	267	389	405	398	425	436	408	434	58.9
Females.....	14	13	10	10	14	14	16	15	14	14	14	17	17	58.8
ISHPEMING.....	107	74	61	63	66	74	75	78	152	162	164	150	150	37.2
Males.....	100	70	57	59	62	70	71	73	144	155	149	146	144	36.8
Females.....	7	4	4	4	4	4	4	5	8	7	15	13	12	26.7
JACKSON.....	9,620	8,145	8,491	8,889	9,015	8,802	9,194	9,596	10,316	10,350	10,782	11,075	10,776	73.5
Males.....	8,132	6,834	7,135	7,494	7,580	7,412	7,741	8,107	8,758	8,707	9,141	9,415	9,160	72.6
Females.....	1,488	1,311	1,356	1,395	1,425	1,390	1,453	1,489	1,558	1,643	1,641	1,660	1,616	70.0
KALAMAZOO.....	7,629	7,229	7,299	7,229	7,268	7,080	7,230	7,577	7,819	7,888	8,178	8,027	8,724	81.2
Males.....	5,952	5,566	5,659	5,611	5,631	5,499	5,638	5,915	6,147	6,272	6,477	6,466	6,836	80.4
Females.....	1,677	1,663	1,640	1,611	1,637	1,581	1,592	1,662	1,672	1,616	1,701	1,561	1,888	83.7
LANSING.....	12,349	10,185	10,951	11,550	11,725	12,115	12,593	13,098	13,194	12,676	13,622	13,712	12,707	74.3
Males.....	11,376	9,384	10,107	10,605	10,745	11,052	11,502	11,901	12,128	11,767	12,688	12,755	11,793	73.6
Females.....	973	801	844	945	980	1,063	1,091	1,197	1,066	914	934	957	914	72.4
MARQUETTE.....	1,415	1,430	1,437	1,421	1,417	1,469	1,466	1,409	1,418	1,373	1,427	1,438	1,466	86.2
Males.....	1,382	1,403	1,404	1,388	1,384	1,435	1,439	1,382	1,391	1,341	1,390	1,401	1,426	86.3
Females.....	33	26	33	33	33	34	27	27	27	32	37	37	40	67.5
MONROE.....	2,904	2,678	2,692	2,699	2,746	2,845	2,875	2,988	2,996	3,073	3,030	3,091	3,135	85.4
Males.....	1,829	1,656	1,651	1,689	1,720	1,795	1,814	1,914	1,935	1,933	1,913	1,939	1,989	83.0
Females.....	1,075	1,022	1,041	1,010	1,026	1,050	1,061	1,074	1,061	1,140	1,117	1,152	1,146	87.7
MUSKEGON.....	9,716	9,651	8,976	8,669	8,872	9,063	9,401	9,624	10,147	10,211	10,254	10,731	10,993	78.9
Males.....	8,271	8,106	7,617	7,379	7,630	7,810	7,995	8,265	8,618	8,699	8,692	9,083	9,358	78.9
Females.....	1,445	1,545	1,359	1,290	1,242	1,253	1,406	1,359	1,529	1,512	1,562	1,648	1,635	75.4
OWASSO.....	1,781	1,820	1,488	1,579	1,659	1,671	1,739	1,775	1,818	1,804	1,856	2,042	2,121	70.2
Males.....	1,604	1,678	1,360	1,432	1,488	1,505	1,565	1,595	1,636	1,613	1,651	1,826	1,909	70.7
Females.....	177	142	128	147	171	166	174	180	182	191	205	216	212	63.9
PONTIAC.....	7,682	5,622	5,919	6,817	6,824	7,042	7,278	8,028	8,388	8,830	8,978	9,345	9,118	60.2
Males.....	7,071	5,120	5,386	6,256	6,224	6,440	6,680	7,414	7,713	8,164	8,339	8,676	8,430	59.0
Females.....	611	502	523	561	600	602	598	614	675	666	639	669	683	73.5
PORT HURON.....	2,231	1,717	1,771	1,847	1,850	2,047	2,303	2,417	2,345	2,683	2,767	2,535	2,300	62.1
Males.....	1,896	1,365	1,400	1,544	1,530	1,742	2,002	2,099	2,015	2,356	2,395	2,135	1,969	57.8
Females.....	335	352	371	303	320	305	301	318	330	327	372	400	421	71.3
SAGINAW.....	9,472	7,990	8,023	8,093	8,294	8,742	9,029	9,748	10,085	10,288	10,711	11,379	11,282	70.2
Males.....	7,834	6,429	6,023	6,078	6,029	7,327	7,509	8,070	8,291	8,465	8,850	9,448	9,380	68.0
Females.....	1,638	1,561	1,400	1,415	1,265	1,415	1,520	1,678	1,794	1,823	1,861	1,931	1,903	70.7
SAULT STE. MARIE.....	1,248	1,182	1,221	1,170	1,187	1,236	1,270	1,254	1,248	1,278	1,298	1,325	1,307	88.3
Males.....	1,152	1,099	1,131	1,086	1,093	1,139	1,171	1,159	1,153	1,185	1,197	1,216	1,195	89.3
Females.....	96	83	90	84	94	97	99	95	95	93	101	109	112	74.1
TRAVERSE CITY.....	960	843	874	880	874	883	900	942	1,025	1,074	1,055	1,094	1,076	77.1
Males.....	760	664	681	702	706	710	719	710	793	839	848	882	866	75.3
Females.....	200	179	193	178	168	173	181	232	232	235	207	212	210	71.5
WYANDOTTE.....	6,214	6,957	6,953	6,539	6,558	6,547	6,605	4,729	5,132	5,900	6,065	6,071	6,503	68.0
Males.....	5,962	6,660	6,686	6,324	6,369	6,348	6,386	4,475	4,898	5,627	5,782	5,775	6,214	66.9
Females.....	252	297	267	215	189	199	219	254	234	282	283	296	289	63.6
ALL OTHER CITIES <sup>1</sup> .....	64,629	50,186	50,211	52,353	57,820	62,039	66,035	69,820	70,580	73,856	74,320	74,426	73,293	67.4
Males.....	63,271	48,847	49,058	51,197	56,599	60,830	65,326	68,574	69,171	72,337	72,750	72,850	71,713	67.1
Females.....	1,358	1,339	1,153	1,156	1,221	1,209	1,309	1,246	1,409	1,519	1,570	1,576	1,580	73.0

<sup>1</sup> All other cities comprise Hamtramck and Highland Park.



## MANUFACTURES—MICHIGAN.

677

TABLE 9.—AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919 AND 1914.

INDUSTRY AND CITY.	Census year.	Total.	IN ESTABLISHMENTS WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—							
			44 and under.	Between 44 and 48.	48. 1	Between 48 and 54.	54.	Between 54 and 60.	60.	Over 60.
All industries.....	1919	471,242	8,654	8,234	148,486	166,318	48,624	51,744	33,281	5,901
	1914	271,090	(2)	(2)	31,326	31,353	57,614	75,878	64,861	10,058
	1909	231,499	(2)	(2)	11,174	6,612	38,449	51,552	113,762	9,950
Agricultural implements.....	1919	2,708			2	219	120	2,266	101	
	1914	2,143	(2)	(2)	199	411	788	411	334	
Automobile bodies and parts.....	1919	49,048	198	1,909	18,717	20,920	2,805	4,176	323	
	1914	24,736	(2)	(2)	88	2,127	2,557	16,740	3,224	
Automobiles.....	1919	126,937	526		59,573	58,559	7,043	1,196	40	
	1914	42,802	(2)	(2)	12,376	7,232	971	16,908	5,315	
Boxes, paper and other, not elsewhere specified.....	1919	2,336			874	635	448	355	24	
	1914	1,461	(2)	(2)	36	75	213	907	230	
Brass, bronze, and copper products.....	1919	10,306	497	524	26	5,834	124	2,924	377	
	1914	4,731	(2)	(2)	14	143	1,360	1,977	1,237	
Bread and other bakery products.....	1919	5,088	423	324	1,138	668	1,944	89	447	55
	1914	4,014	(2)	(2)	425	561	1,394	598	966	70
Canning and preserving, fruits and vegetables.....	1919	2,109	23		156		201	273	958	498
	1914	1,687	(2)	(2)	24	6	522	311	796	29
Cars and general shop construction and repairs by steam-railroad companies.....	1919	7,025		57	6,194	206	42	452	74	
	1914	5,803	(2)	(2)	382	1,589	3,198	67	553	14
Chemicals.....	1919	5,712		3	1,737	719	117	2,609	479	48
	1914	4,509	(2)	(2)	29	18	20	2,040	1,741	661
Druggists' preparations.....	1919	3,219	40	2,631	20	422	18	60	28	
	1914	2,175				1,925	183	66	1	
Electrical machinery, apparatus, and supplies.....	1919	4,190	16	47	453	2,461	370	515	128	200
	1914	1,144	(2)	(2)	73	118	471	277	205	
Engines, steam, gas, and water.....	1919	14,258	390		3,208	4,013	917	5,716	14	
	1914	4,427				97	1,547	2,267	516	
Food preparations, not elsewhere specified.....	1919	2,483	5		87	135	25	62	1,948	221
	1914	1,683	(2)	(2)	553	67	122	61	797	83
Foundry and machine-shop products <sup>1</sup> .....	1919	42,745	1,257	15	4,963	18,802	5,316	9,726	2,666	
	1914	17,608	(2)	(2)	670	1,706	4,037	8,727	1,808	
Furniture.....	1919	18,496	41	38	210	12,339	3,282	2,416	170	
	1914	14,706	(2)	(2)	645	2,080	5,502	2,344	4,135	
Gas, illuminating and heating.....	1919	2,840		3	1,203	5	6	667	852	110
	1914	2,349					109	967	270	1,003
Hardware.....	1919	2,174			381	1,194	557	24	18	
	1914	742	(2)	(2)	1	129	168	358	86	
Knit goods.....	1919	3,170	34	13	921	1,431	771			
	1914	2,714	(2)	(2)	26	201	2,315	172		
Leather, tanned, curried, and finished.....	1919	3,464			674	1,021	1,641		128	
	1914	2,773				11	972	563	1,227	
Lumber and timber products.....	1919	14,923	28	6	168	133	337	808	13,443	
	1914	21,488	(2)	(2)	84	547	427	325	20,165	
Lumber, planing-mill products, not including planing mills connected with sawmills.....	1919	5,256	260		23	1,396	814	1,676	1,087	
	1914	4,944	(2)	(2)	171	314	1,470	1,256	1,704	29
Paper and wood pulp.....	1919	9,561			5,310	1,904	2,011	226	9	101
	1914	6,061				278	1,016	623	1,482	2,652
Printing and publishing, book and job.....	1919	3,717	42	36	3,277	297	42	1	20	2
	1914	3,860	(2)	(2)	2,748	555	500	32	25	
Printing and publishing, newspapers and periodicals.....	1919	3,176	133	87	2,295	202	296	57	105	1
	1914	3,270	(2)	(2)	2,059	209	682	190	106	24
Rubber tires, tubes, and rubber goods, not elsewhere specified <sup>4</sup> .....	1919	5,044	17		4,845	48	2	132		
Salt.....	1919	2,063		2	541		411	587	428	94
	1914	1,434	(2)	(2)	12		40	565	536	281
Shipbuilding, steel, new vessels and small boats.....	1919	15,996			15,994			2		
	1914	935	(2)	(2)	89		659		187	
Stoves and hot-air furnaces.....	1919	4,240		201	67	1,611	1,569	692	100	
	1914	3,832	(2)	(2)	5	724	2,209	275	619	
Structural ironwork, not made in steel works or rolling mills.....	1919	2,313			265	1,016	102	764	166	
	1914	1,371	(2)	(2)	156	47	304	848	16	
Tobacco, cigars and cigarettes.....	1919	5,456	884	530	796	1,185	2,002	4	55	
	1914	7,295	(2)	(2)	3,460	1,751	2,049	6	23	
Tools, not elsewhere specified.....	1919	3,261	66	38	188	2,566	193	207	3	
	1914	372	(2)	(2)	1	1	39	288	43	
Wirework, not elsewhere specified.....	1919	2,516	78		416	593	245	1,080	43	91
	1914	1,314	(2)	(2)	3	12	129	701	469	
All other industries.....	1919	85,406	3,696	1,770	13,764	25,814	14,853	11,982	9,047	4,480
	1914	72,717	(2)	(2)	6,991	8,359	21,041	15,008	16,106	5,212

<sup>1</sup> Includes 48 and under for 1914 and 1909.<sup>2</sup> Corresponding figures not available.<sup>3</sup> Includes "iron and steel, tempering and welding" and "machine tools."<sup>4</sup> Not shown separately in 1914.



## MANUFACTURES—MICHIGAN.

TABLE 9.—AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919 AND 1914—Continued.

INDUSTRY AND CITY.	Census year.	Total.	IN ESTABLISHMENTS WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—							
			44 and under.	Between 44 and 48.	48. <sup>1</sup>	Between 48 and 54.	54.	Between 54 and 60.	60.	Over 60.
Total for cities.....	1919 1914	376,032 177,605	7,405 ( <sup>2</sup> )	7,935 ( <sup>2</sup> )	122,704 16,389	153,330 28,851	37,412 45,136	35,310 57,509	10,546 26,619	1,300 3,101
ADRIAN.....	1919 1914	1,870 1,256	( <sup>2</sup> ) 2	( <sup>2</sup> ) 2	26 28	379 31	356 179	817 279	282 695	6 44
ALPENA.....	1919 1914	1,372 1,494	( <sup>2</sup> )	( <sup>2</sup> )	348 33	30 —	77 42	423 310	404 848	— 261
ANN ARBOR.....	1919 1914	1,612 842	( <sup>2</sup> ) 78	( <sup>2</sup> ) 10	118 189	417 6	272 237	697 316	16 80	4 14
BATTLE CREEK.....	1919 1914	6,680 4,599	( <sup>2</sup> ) 40	( <sup>2</sup> ) 31	733 870	185 492	423 1,478	3,003 709	2,051 1,042	214 8
BAY CITY.....	1919 1914	5,057 3,771	( <sup>2</sup> ) 69	( <sup>2</sup> ) 20	1,944 237	832 184	497 1,249	760 497	883 1,462	2 142
BENTON HARBOR.....	1919 1914	2,328 1,285	( <sup>2</sup> ) 9	( <sup>2</sup> ) 2	196 11	3 19	550 133	1,307 564	228 558	33 —
DETROIT.....	1919 1914	167,016 99,603	5,460 ( <sup>2</sup> )	7,019 ( <sup>2</sup> )	53,344 9,702	71,132 20,735	12,788 20,248	15,159 35,419	1,547 12,804	567 695
ESCANABA.....	1919 1914	842 777	( <sup>2</sup> ) 29	( <sup>2</sup> )	264 67	9 —	287 224	36 343	214 127	3 4
FLINT.....	1919 1914	24,603 8,722	( <sup>2</sup> ) 76	( <sup>2</sup> )	181 157	22,597 341	597 406	709 7,568	439 140	4 104
GRAND RAPIDS.....	1919 1914	23,548 17,427	( <sup>2</sup> ) 323	( <sup>2</sup> ) 445	4,338 1,721	15,448 2,484	1,867 9,048	936 1,997	177 1,911	14 266
HOLLAND.....	1919 1914	2,748 2,165	( <sup>2</sup> ) 4	( <sup>2</sup> ) 6	223 232	826 27	967 939	610 409	15 490	88 68
IRONWOOD.....	1919 1914	399 516	( <sup>2</sup> ) 1	( <sup>2</sup> )	23 7	6 9	19 10	— —	350 480	— 10
ISHPEMING.....	1919 1914	107 79	( <sup>2</sup> )	( <sup>2</sup> ) 3	17 14	— 3	58 10	13 —	16 52	— —
JACKSON.....	1919 1914	9,620 4,906	( <sup>2</sup> ) 13	( <sup>2</sup> ) 5	1,144 413	5,421 900	928 1,568	1,016 1,411	187 403	6 211
KALAMAZOO.....	1919 1914	7,629 5,525	( <sup>2</sup> ) 519	( <sup>2</sup> ) 300	1,442 251	3,230 682	1,068 2,392	930 861	125 1,102	15 237
LANSING.....	1919 1914	12,349 6,231	( <sup>2</sup> ) 8	( <sup>2</sup> ) 9	350 484	3,534 2,175	7,600 634	670 2,474	85 389	93 75
MARQUETTE.....	1919 1914	1,415 589	( <sup>2</sup> ) 4	( <sup>2</sup> )	489 291	60 7	35 92	26 14	800 185	1 —
MONROE.....	1919	2,904	1	—	1,922	175	565	120	115	6
MUSKEGON.....	1919 1914	9,716 4,046	( <sup>2</sup> ) 345	( <sup>2</sup> ) 3	716 581	228 301	3,777 2,587	4,239 378	206 444	112 355
OWOSSO.....	1919 1914	1,781 1,231	( <sup>2</sup> )	( <sup>2</sup> )	72 70	25 —	506 71	952 345	71 925	155 120
PONTIAC.....	1919 1914	7,682 2,409	( <sup>2</sup> ) 6	( <sup>2</sup> )	2,540 58	4,473 14	20 257	74 1,785	527 214	33 81
PORT HURON.....	1919 1914	2,231 1,296	( <sup>2</sup> ) 290	( <sup>2</sup> ) 21	957 279	144 185	155 185	507 91	144 327	13 229
SAGINAW.....	1919 1914	9,472 6,342	( <sup>2</sup> ) 110	( <sup>2</sup> ) 52	1,905 607	4,251 236	1,013 2,982	870 586	343 1,707	19 104
SAULT STE. MARIE.....	1919 1914	1,248 938	( <sup>2</sup> ) 3	( <sup>2</sup> ) 1	28 33	692 2	448 124	15 592	50 178	2 9
TRAVERSE CITY.....	1919 1914	960 956	( <sup>2</sup> )	( <sup>2</sup> )	101 54	89 6	167 41	279 561	324 290	— 4
WYANDOTTE.....	1919	6,214	2	—	5,037	662	23	22	468	—
ALL OTHER CITIES <sup>3</sup> .....	1919	64,629	13	6	44,246	18,432	1,440	202	290	—

<sup>1</sup> Includes 48 and under for 1914 and 1909.<sup>2</sup> Corresponding figures not available.<sup>3</sup> All other cities comprise Hamtramck and Highland Park.



## MANUFACTURES—MICHIGAN.

679

TABLE 10.—SIZE OF ESTABLISHMENTS, BY AVERAGE NUMBER OF WAGE EARNERS, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919.

INDUSTRY AND CITY.	TOTAL.			ESTABLISHMENTS EMPLOYING—																	
	Establishments.	Wage earners (average number).	No wage earners.	1 to 5 wage earners, inclusive.		6 to 20 wage earners, inclusive.		21 to 50 wage earners, inclusive.		51 to 100 wage earners, inclusive.		101 to 250 wage earners, inclusive.		251 to 500 wage earners, inclusive.		501 to 1,000 wage earners, inclusive.		Over 1,000 wage earners.			
				Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.		
All industries.....	8,305	471,242	1,085	3,800	8,573	1,494	16,748	747	25,050	456	33,945	414	66,285	167	57,771	78	53,182	55	209,688		
Agricultural implements.....	23	2,708		6	19	4	59	6	234	3	202	1	208	2	944			1	1,042		
Automobile bodies and parts.....	203	49,048	9	48	104	39	470	21	694	26	2,088	20	3,210	17	6,170	13	9,329	10	26,983		
Automobiles.....	68	120,937	1	4	10	7	88	13	459	8	614	11	1,857	5	1,491	2	1,751	17	120,667		
Boxes, paper and other, not elsewhere specified.....	22	2,336	1			6	86	5	185	5	334	3	591	1	294		846				
Brass, bronze, and copper products.....	80	10,306	2	14	39	23	281	12	397	9	649	5	862	9	3,114	5	3,432	1	1,532		
Bread and other bakery products.....	944	5,088	190	606	1,306	112	1,040	23	758	6	427	4	659	3	898						
Canning and preserving, fruits and vegetables.....	52	2,109	1	8	28	16	205	15	515	6	467	6	894								
Cars and general shop construction and repairs by steam-railroad companies.....	36	7,025		2	2	4	42	7	202	10	761	6	987	1	411	5	3,616	1	1,004		
Chemicals.....	36	5,712	5	14	25	4	64	7	223	1	90			1	340	1	692	3	4,278		
Druggists' preparations.....	16	3,219	3	1	2	5	54	2	50	3	196			1	286			1	2,631		
Electrical machinery, apparatus, and supplies.....	54	4,190	2	15	42	13	171	6	254	7	573	8	1,250	2	688			1	1,242		
Engines, steam, gas, and water.....	35	14,258	1	5	18	3	40	6	215	6	483	7	1,315	2	854	1	700	4	10,027		
Food preparations, not elsewhere specified.....	37	2,483	5	17	32	6	47	4	142	2	152	1	213			1	771	1	1,126		
Foundry and machine-shop products.....	523	39,430	23	143	385	102	1,194	107	3,555	52	3,715	55	8,790	27	9,370	10	6,540	4	5,862		
Furniture.....	171	18,496	4	21	62	27	357	32	1,051	36	2,767	33	5,340	10	3,601	8	5,318				
Gas, illuminating and heating.....	59	2,846		15	59	26	278	7	220	5	352	5	748					1	1,180		
Hardware.....	30	2,174		7	15	5	48	5	129	7	562	4	672	2	748						
Knit goods.....	31	3,170	1	3	6	7	93	6	224	7	554	3	432	2	826	2	1,035				
Leather, tanned, curried, and finished.....	28	3,404	1			2	18	3	95	8	611	12	2,010	2	730						
Lumber and timber products.....	380	14,923	9	176	389	87	1,005	38	1,310	29	2,170	25	3,790	12	3,604	4	2,565				
Lumber, planing-mill products, not including planing mills connected with sawmills.....	192	5,256	6	74	186	55	673	31	1,066	12	878	11	1,624	3	829						
Machine tools.....	31	3,196		3	10	7	81	4	144	8	590	7	1,005			2	1,366				
Paper and wood pulp.....	39	9,561		2	6	3	23	2	63	4	280	13	2,305	11	3,718	3	2,036	1	1,130		
Printing and publishing, book and job.....	436	3,717	93	203	470	92	961	31	1,000	16	1,110	1	176								
Printing and publishing, newspapers and periodicals.....	565	3,176	141	320	691	78	832	20	649	3	223	2	379	1	402						
Rubber tires, tubes, and rubber goods, not elsewhere specified.....	7	5,044		2	3	2	25	1	47			1	124					1	4,845		
Salt.....	12	2,063		1	3					4	326	4	662	3	1,072						
Shipbuilding, steel, new vessels and small boats.....	7	15,996		1	2					1	84							5	15,910		
Stoves and hot-air furnaces.....	21	4,240		3	11			5	176	3	250	6	1,020			4	2,783				
Structural ironwork, not made in steel works or rolling mills.....	34	2,313	1	5	10	14	143	7	226	1	77	4	741	1	368	1	742				
Tobacco, cigars and cigarettes.....	349	5,456	116	153	315	42	429	14	471	9	669	9	1,310	5	1,764	1	508				
Tools, not elsewhere specified.....	89	3,261	4	24	76	23	317	28	992	7	478	1	120			2	1,278				
Wirework, not elsewhere specified.....	38	2,516		12	34	6	66	9	360	4	325	4	782	3	949						
All other industries.....	3,657	85,525	466	1,901	4,207	674	7,552	270	8,934	148	10,888	142	22,208	41	14,260	12	7,865	3	9,620		
Total for cities.....	4,792	376,032	570	1,855	4,501	1,051	11,830	520	17,245	293	21,541	265	43,227	120	41,553	65	44,535	47	191,510		
ADRIAN.....	62	1,870	13	22	61	9	108	8	263	4	289	5	817	1	332						
ALPENA.....	38	1,372	8	11	24	8	92	6	179			3	357	2	720						
ANN ARBOR.....	78	1,612	24	28	61	16	212	4	135	4	260			1	349	1	595				
BATTLE CREEK.....	118	0,680	18	53	126	21	238	10	332	3	196	6	1,155	3	1,118	2	1,347	2	2,168		
BAY CITY.....	108	5,057	14	36	100	24	276	12	415	9	666	10	1,596	1	281	1	521	1	1,202		
BENTON HARBOR.....	65	2,328	9	24	46	15	172	4	110	8	554	2	288	2	603	1	555				
DETROIT.....	2,176	107,016	251	770	1,895	504	5,716	280	9,219	133	9,715	123	19,590	56	19,007	36	24,194	23	77,500		
ESCANABA.....	45	842	2	26	60	12	98	1	23	2	140	1	234	1	287						
FLINT.....	107	24,603	14	42	124	30	299	6	222	4	283	3	476	4	1,435			4	21,764		
GRAND RAPIDS.....	611	23,548	90	240	580	117	1,393	63	2,036	51	3,783	27	4,588	14	5,087	9	6,081				
HOLLAND.....	64	2,748	5	24	61	8	73	14	489	3	207	9	1,528	1	390						
IRONWOOD.....	23	399	6	14	37	7	60							1	302						
ISHPEMING.....	21	107		16	35	4	27	1	45												
JACKSON.....	156	9,620	8	70	186	37	428	17	588	8	608	7	1,166	3	1,163	4	2,648				
KALAMAZOO.....	185	7,929	20	71	176	47	543	14	521	12	840	16	3,035	4	1,384			1	1,130		
LANSING.....	147	12,349	9	62	151	41	465	12	434	8	661	5	884	6	2,111	2	1,766	2	5,877		
MARQUETTE.....	34	1,415	2	13	28	7	86	4	96	1	69	6	854	1	282						
MONROE.....	41	2,904	3	20	54	5	50	5	184	4	303	1	250	1	400	2	1,663				
MUSKEGON.....	141	9,716	23	61	139	19	226	12	423	11	792	7	1,090	5	1,715	1	513	2	4,818		
OWOSSO.....	40	1,781	6	17	48	6	64	3	109	1	61	4	568	3	931						
PONTIAC.....	78	7,682	5	40	98	17	165	6	203	2	186	3	409	1	315	2	1,734	2	4,572		
PORT HURON.....	83	2,231	14	39	108	11	108	9	269	4	270	4	680	2	796						
SAGINAW.....	208	9,472	17	86	218	50	574	19	647	12	945	19	2,992	1	438	2	1,200	2	2,398		
SAULT STE. MARIE.....	26	1,248	2	14	43	6	56	1	32	1	60			1	366	1	691				
TRAVERSE CITY.....	56	900	1	27	70	15	149	7	215	6	526							2	4,966		
WYANDOTTE.....	26	6,214	3	12	23	8	37			1	67	3	471	2	650			2	4,966		
ALL OTHER CITIES.....	50	64,629	9	17	39	12	115	2	56	1	60	1	199	3	960	1	967	4	62,197		

1 All other cities comprise Hamtramck and Highland Park.



## MANUFACTURES—MICHIGAN.

TABLE 11.—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS: 1919, 1914, AND 1909.

VALUE OF PRODUCT.	NUMBER OF ESTABLISHMENTS.			AVERAGE NUMBER OF WAGE EARNERS.			VALUE OF PRODUCTS.			VALUE ADDED BY MANUFACTURE.		
	1919	1914	1909	1919	1914	1909	1919	1914	1909	1919	1914	1909
All classes.....	8,305	8,724	9,159	471,242	271,090	231,499	\$3,406,188,483	\$1,086,162,432	\$685,109,169	\$1,546,945,240	\$493,361,368	\$316,497,147
Less than \$5,000.....	1,539	2,976	3,372	916	3,154	3,006	3,980,695	7,254,892	7,821,328	2,444,262	4,561,300	4,914,568
\$5,000 to \$20,000.....	2,278	2,566	2,665	5,545	10,556	12,382	24,871,038	20,702,525	27,383,330	13,464,814	14,339,602	14,559,126
\$20,000 to \$100,000.....	2,361	1,914	1,999	20,716	30,078	35,705	100,296,336	87,746,430	90,330,115	51,878,594	40,538,674	41,918,104
\$100,000 to \$500,000.....	1,341	933	1,035	61,705	117,227	123,279	306,923,542	206,598,783	301,233,306	150,101,597	157,753,189	146,842,090
\$500,000 to \$1,000,000.....	327	175	88	43,258	110,075	56,226	232,661,055	123,370,371	258,341,090	112,651,519	276,168,543	108,263,253
\$1,000,000 and over.....	450	160		339,042			2,788,475,817	634,480,431		1,216,404,454		
PER CENT DISTRIBUTION.												
All classes.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than \$5,000.....	18.5	34.1	36.8	0.2	1.2	1.7	0.1	0.7	1.1	0.2	0.9	1.6
\$5,000 to \$20,000.....	27.4	29.4	29.1	1.2	3.9	5.3	0.7	2.5	4.0	0.9	2.9	4.6
\$20,000 to \$100,000.....	28.4	21.9	21.8	4.4	11.1	15.4	3.2	8.1	13.2	3.3	5.2	13.2
\$100,000 to \$500,000.....	16.2	10.7	11.3	13.1	43.2	53.3	8.9	19.0	44.0	9.7	32.0	46.4
\$500,000 to \$1,000,000.....	3.9	2.0		9.2			6.7	11.4		7.3		
\$1,000,000 and over.....	5.5	1.8	1.0	71.9	40.6	24.3	80.4	58.4	37.7	78.6	56.0	34.2

TABLE 12.—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS, FOR SELECTED INDUSTRIES: 1919 AND 1914.

INDUSTRY AND VALUE OF PRODUCT.	NUMBER OF ESTABLISHMENTS.			AVERAGE NUMBER OF WAGE EARNERS.			VALUE OF PRODUCTS.			VALUE ADDED BY MANUFACTURE.		
	1919	1914	Per cent distribution.	1919	1914	Per cent distribution.	1919	1914	Per cent distribution.	1919	1914	Per cent distribution.
AUTOMOBILE BODIES AND PARTS.....	203	140	100.0	49,048	24,736	100.0	\$288,306,858	\$71,540,077	100.0	\$137,744,416	\$33,146,818	100.0
Less than \$5,000.....	15	17	7.4	15	21	(1)	40,755	40,299	(1)	11,867	30,145	(1)
\$5,000 to \$20,000.....	35	19	17.2	82	85	0.2	344,792	213,984	0.1	220,586	131,042	0.2
\$20,000 to \$100,000.....	49	29	24.1	611	676	1.2	2,416,890	1,774,733	0.8	1,540,952	1,035,860	1.1
\$100,000 to \$500,000.....	43	41	21.2	2,820	2,713	5.7	10,218,891	9,024,150	3.5	5,763,097	4,201,442	4.2
\$500,000 to \$1,000,000.....	11	14	5.4	1,443		2.9	7,308,239	10,090,025	2.5	3,325,317		2.4
\$1,000,000 and over.....	50	20	24.6	44,077	16,641	89.9	267,977,291	50,417,886	93.0	120,864,507	22,650,720	92.1
AUTOMOBILES.....	68	65	100.0	126,937	42,802	100.0	1,332,076,498	326,748,945	100.0	522,871,509	145,926,809	100.0
Less than \$20,000.....	4	8	5.9	7	64	(1)	56,569	154,115	(1)	24,560	43,345	(1)
\$20,000 to \$100,000.....	5	17	7.4	41	207	(1)	275,515	892,089	(1)	145,102	328,500	(1)
\$100,000 to \$500,000.....	16	210	23.5	649	2,470	0.5	4,232,927	2,369,087	0.3	1,775,511	897,474	0.3
\$500,000 to \$1,000,000.....	5		7.4	373		0.3	3,416,158		0.3	1,055,984		0.2
\$1,000,000 and over.....	38	30	55.0	125,867	42,052	98.2	1,324,095,329	322,009,654	99.4	519,870,352	144,657,481	99.4
BRASS, BRONZE, AND COPPER PRODUCTS.....	30	64	100.0	10,306	4,731	100.0	62,708,335	10,868,725	100.0	23,859,357	5,395,258	100.0
Less than \$5,000.....	4	13	5.0	4	17	(1)	12,000	40,675	(1)	0,368	23,344	(1)
\$5,000 to \$20,000.....	6	12	7.5	15	55	0.1	77,330	128,482	0.1	30,252	67,420	0.2
\$20,000 to \$100,000.....	25	19	31.2	240	415	2.3	1,350,390	1,000,000	2.2	672,376	529,306	2.8
\$100,000 to \$500,000.....	23	17	28.8	1,341	2,510	13.0	4,943,450	5,828,771	7.0	2,544,230	2,804,331	10.7
\$500,000 to \$1,000,000.....	8		10.0	1,219		11.8	5,650,642		0.0	2,638,575		11.3
\$1,000,000 and over.....	14	3	17.5	7,487	1,784	72.7	50,664,557	9,871,948	80.8	17,905,556	1,880,848	75.0
BREAD AND OTHER BAKERY PRODUCTS.....	944	922	100.0	5,088	4,014	100.0	44,923,454	16,000,068	100.0	16,807,665	6,091,971	100.0
Less than \$5,000.....	108	311	11.4	20	209	0.4	316,168	949,157	0.7	131,011	434,466	0.8
\$5,000 to \$20,000.....	422	474	44.7	500	1,164	9.8	4,093,083	4,632,068	11.1	1,784,664	1,974,465	10.0
\$20,000 to \$100,000.....	349	118	37.0	1,466	1,207	28.8	13,728,083	4,768,760	30.6	4,715,292	1,880,774	28.1
\$100,000 to \$500,000.....	257	14	6.0	1,522	1,434	29.9	12,516,291	2,503,515	15.6	4,691,725	2,402,266	27.9
\$500,000 to \$1,000,000.....	8	5	0.8	1,580		31.1	13,308,924		29.8	5,484,973		32.6
\$1,000,000 and over.....												
BUTTER.....	231	270	100.0	984	769	100.0	33,385,420	13,479,297	100.0	3,804,528	1,813,195	100.0
Less than \$5,000.....	23	13	4.8	14	8	1.0		39,870	0.3		7,298	0.4
\$5,000 to \$20,000.....	126	171	54.5	279	420	11.6	263,335	920,321	0.8	638,962	134,080	1.0
\$20,000 to \$100,000.....	71	20	30.7	419	247	42.6	7,257,408	7,596,258	21.7	801,608	954,031	21.1
\$100,000 to \$500,000.....	0		2.6	113		11.5	13,936,776	4,962,848	41.7	1,516,773	715,986	39.9
\$500,000 to \$1,000,000.....	5		2.2	159		16.2	4,345,919		13.0	510,426		13.4
\$1,000,000 and over.....							7,581,982		22.7	936,759		24.6
CHEMICALS.....	36	86	100.0	5,712	4,509	100.0	37,850,834	13,891,415	100.0	22,106,759	7,517,930	100.0
Less than \$5,000.....	13	16	36.1	6	21	0.1	28,973	32,484	0.1	16,942	23,280	0.1
\$5,000 to \$20,000.....	3	4	8.3	6	14	0.1	25,194	43,254	0.1	9,297	17,034	0.2
\$20,000 to \$100,000.....	6	3	10.7	72	41	1.3	406,534	181,760	1.1	223,038	80,695	1.0
\$100,000 to \$500,000.....	29	28	25.0	2,318	2,325	5.6	3,477,438	2,197,986	9.2	1,833,454	871,312	8.3
\$500,000 to \$1,000,000.....	5	5	13.9	5,310	4,108	93.0	33,912,095	11,660,620	89.6	20,024,028	6,525,000	90.6
\$1,000,000 and over.....												
ELECTRICAL MACHINERY, APPARATUS, AND SUPPLIES.....	54	35	100.0	4,190	1,144	100.0	25,025,528	3,415,500	100.0	15,990,472	1,075,952	100.0
Less than \$5,000.....	4	7	7.4	2	8	(1)	7,341	17,340	(1)	4,537	9,452	(1)
\$5,000 to \$20,000.....	9	9	10.7	26	40	0.6	124,907	95,090	0.5	50,957	44,552	0.4
\$20,000 to \$100,000.....	15	8	27.8	209	161	5.0	830,296	394,114	3.3	410,268	203,027	2.0
\$100,000 to \$500,000.....	12	11	22.2	595	935	14.2	2,561,111	2,908,956	10.2	1,280,149	1,418,921	8.1
\$500,000 to \$1,000,000.....	7		13.0	864		20.6	5,173,350		20.7	3,139,654		19.6
\$1,000,000 and over.....	7		13.0	2,494		50.5	16,328,523		65.2	11,083,907		60.3

1 Less than one-tenth of 1 per cent.

2 Includes the group "\$500,000 to \$1,000,000."

3 Includes the groups "\$500,000 to \$1,000,000" and "\$1,000,000 and over."

4 Includes the group "\$1,000,000 and over."

5 Includes the group "Less than \$5,000."



## MANUFACTURES—MICHIGAN.

681

TABLE 12.—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS, FOR SELECTED INDUSTRIES: 1919 AND 1914—Continued.

INDUSTRY AND VALUE OF PRODUCT.	NUMBER OF ESTABLISHMENTS.				AVERAGE NUMBER OF WAGE EARNERS.				VALUE OF PRODUCTS.				VALUE ADDED BY MANUFACTURE.			
	19191914		Per cent distribution.		19191914		Per cent distribution.		19191914		Per cent distribution.		19191914		Per cent distribution.	
			1919	1914			1919	1914			1919	1914			1919	1914
ENGINES, STEAM, GAS, AND WATER.	35	48	100.0	100.0	14,258	4,427	100.0	100.0	\$101,989,440	\$12,369,172	100.0	100.0	\$44,938,747	\$6,407,540	100.0	100.0
Less than \$5,000.	1	5	2.8	10.4	1	3	0.1	0.1	1	8,538	0.1	0.1	1	4,780	0.1	0.1
\$5,000 to \$20,000.	14	10	11.4	20.8	19	65	0.1	1.5	127,068	113,416	(2)	0.9	119,008	66,551	(2)	1.0
\$20,000 to \$100,000.	5	11	14.3	22.9	87	326	0.6	7.4	217,285	642,875	0.2	5.2	125,322	316,962	0.3	4.9
\$100,000 to \$500,000.	12	19	34.3	39.6	762	1,494	5.3	33.7	3,663,968	4,319,995	3.6	34.9	1,515,252	2,157,357	3.4	33.7
\$500,000 to \$1,000,000.	6	3	17.1	6.2	974	2,539	6.8	57.4	4,059,521	7,284,348	4.0	58.9	2,516,725	3,881,890	5.6	60.3
\$1,000,000 and over.	8	3	22.9	6.2	12,426	2,539	87.2	57.4	94,021,598	7,284,348	92.2	58.9	40,762,439	3,881,890	90.7	60.3
FLOUR-MILL AND GRIST-MILL PRODUCTS.	345	427	100.0	100.0	1,128	1,370	100.0	100.0	44,144,434	27,381,474	100.0	100.0	5,959,339	4,082,303	100.0	100.0
Less than \$5,000.	14	45	4.1	10.5	2	27	0.2	2.0	47,243	134,169	0.1	0.5	8,829	30,535	0.1	0.7
\$5,000 to \$20,000.	75	147	21.7	34.4	40	173	3.6	12.6	900,117	1,714,408	2.0	6.3	173,478	344,991	2.9	8.4
\$20,000 to \$100,000.	185	188	53.6	44.0	278	457	24.6	33.4	8,508,510	7,787,576	19.3	28.4	1,346,759	1,294,361	22.6	31.7
\$100,000 to \$500,000.	59	39	17.1	9.1	322	1,494	28.5	29.0	12,191,285	7,541,907	27.6	27.5	1,060,732	1,433,149	27.9	35.1
\$500,000 to \$1,000,000.	6	3	1.7	0.7	155	316	13.7	23.1	4,047,740	1,730,082	9.2	6.3	529,492	979,267	8.9	24.0
\$1,000,000 and over.	6	5	1.7	1.2	331	316	29.3	23.1	18,449,539	8,473,352	41.8	30.9	2,240,019	979,267	37.6	24.0
FOUNDRY AND MACHINE-SHOP PRODUCTS.	580	502	100.0	100.0	42,745	17,608	100.0	100.0	\$182,735,316	\$39,428,783	100.0	100.0	\$109,796,788	\$23,630,250	100.0	100.0
Less than \$5,000.	55	119	9.5	23.7	29	151	0.1	0.9	145,151	350,179	0.1	0.9	105,189	258,378	0.1	1.1
\$5,000 to \$20,000.	128	139	22.1	27.7	425	747	1.0	4.2	1,450,860	1,418,515	0.8	3.6	994,652	930,460	0.9	3.9
\$20,000 to \$100,000.	149	153	25.7	30.5	2,229	3,281	5.2	18.6	7,932,791	6,993,489	4.3	17.7	5,142,485	4,461,659	4.7	18.9
\$100,000 to \$500,000.	159	73	27.4	14.5	9,719	11,792	22.7	67.0	36,751,189	15,784,096	20.1	40.0	23,026,021	14,703,677	21.0	62.6
\$500,000 to \$1,000,000.	40	14	6.9	2.8	6,320	1,637	14.8	9.3	27,833,202	10,021,704	15.0	25.4	17,193,471	3,186,076	15.7	13.5
\$1,000,000 and over.	49	4	8.4	0.8	24,023	1,637	56.2	9.3	109,122,123	4,860,800	59.7	12.3	63,334,970	3,186,076	57.7	13.5
FURNITURE.	171	192	100.0	100.0	18,496	14,706	100.0	100.0	69,497,237	30,184,542	100.0	100.0	41,187,025	17,605,105	100.0	100.0
Less than \$5,000.	10	25	5.8	13.0	12	42	0.1	0.3	22,740	61,786	(2)	0.2	14,963	39,320	(2)	0.2
\$5,000 to \$20,000.	15	31	8.8	16.1	67	158	0.4	1.1	168,087	311,825	0.2	1.0	96,957	194,353	0.2	1.1
\$20,000 to \$100,000.	35	55	20.5	28.6	604	1,809	3.3	12.3	1,045,200	3,063,818	2.8	10.2	1,057,503	1,735,214	2.6	9.8
\$100,000 to \$500,000.	72	68	42.1	35.4	5,219	12,697	28.2	86.3	10,453,209	15,965,483	28.0	52.9	11,371,767	15,696,188	27.6	88.9
\$500,000 to \$1,000,000.	20	13	11.7	6.8	3,839	1,637	20.8	9.3	14,493,187	10,781,630	20.9	35.7	8,993,953	3,186,076	21.8	13.5
\$1,000,000 and over.	19	11	11.1	6.8	8,755	1,637	47.3	9.3	33,414,814	4,860,800	48.1	12.3	19,651,882	3,186,076	47.7	13.5
LUMBER AND TIMBER PRODUCTS.	380	477	100.0	100.0	14,923	21,488	100.0	100.0	46,043,855	33,873,367	100.0	100.0	30,350,299	19,764,708	100.0	100.0
Less than \$5,000.	102	174	26.8	36.5	110	333	0.7	1.5	223,849	370,639	0.5	1.1	165,075	260,740	0.5	1.3
\$5,000 to \$20,000.	97	119	25.5	24.9	467	880	3.1	4.1	1,057,950	1,295,673	2.3	3.8	727,410	814,213	2.4	4.1
\$20,000 to \$100,000.	88	98	23.2	20.5	1,392	3,402	9.3	15.8	3,874,759	4,537,400	8.4	13.4	2,381,654	2,963,598	7.8	15.0
\$100,000 to \$500,000.	65	73	17.1	15.3	4,937	10,873	33.1	78.5	14,709,720	16,898,555	32.1	49.9	9,463,705	15,720,157	31.2	79.5
\$500,000 to \$1,000,000.	19	13	5.0	2.7	4,619	1,637	31.0	9.3	13,958,108	10,771,100	30.3	31.8	9,601,437	3,186,076	31.0	13.5
\$1,000,000 and over.	9	4	2.4	0.8	3,398	1,637	22.8	9.3	12,129,400	4,860,800	26.3	12.3	8,011,018	3,186,076	26.4	13.5
LUMBER, PLANING-MILL PRODUCTS, NOT INCLUDING PLANING MILLS CONNECTED WITH SAWMILLS.	192	217	100.0	100.0	5,256	4,944	100.0	100.0	37,869,230	19,767,965	100.0	100.0	13,859,822	7,559,706	100.0	100.0
Less than \$5,000.	21	49	10.9	22.6	21	65	0.4	1.3	65,227	149,258	0.2	0.8	38,040	72,200	0.3	1.0
\$5,000 to \$20,000.	36	41	18.7	18.9	95	203	1.8	4.1	383,236	496,004	1.0	2.5	185,835	270,288	1.3	3.6
\$20,000 to \$100,000.	59	75	30.7	34.6	546	1,295	10.4	26.2	2,969,420	3,558,126	7.8	18.0	1,362,472	1,540,139	9.8	20.4
\$100,000 to \$500,000.	57	43	29.7	19.8	1,961	3,381	37.3	68.4	13,272,037	8,360,360	35.0	42.3	4,901,519	5,677,129	35.4	75.1
\$500,000 to \$1,000,000.	11	9	5.7	4.1	1,094	1,637	20.8	9.3	8,042,334	7,214,217	21.2	36.5	3,113,418	3,186,076	22.5	13.5
\$1,000,000 and over.	8	4	4.2	0.8	1,539	1,637	29.3	9.3	13,138,976	4,860,800	34.7	12.3	4,258,538	3,186,076	30.7	13.5
PATENT MEDICINES AND COMPOUNDS.	70	102	100.0	100.0	1,392	1,029	100.0	100.0	9,948,329	3,871,014	100.0	100.0	5,735,523	2,395,160	100.0	100.0
Less than \$5,000.	27	54	38.6	52.9	9	27	0.6	2.6	63,831	106,811	0.6	2.8	37,520	73,969	0.7	3.1
\$5,000 to \$20,000.	14	27	20.0	26.5	13	75	0.9	7.3	152,531	308,397	1.5	8.0	98,036	222,212	1.7	9.3
\$20,000 to \$100,000.	21	16	30.0	15.7	148	96	10.6	9.3	904,172	875,678	9.1	22.6	576,214	612,278	10.0	25.6
\$100,000 to \$500,000.	4	5	5.7	4.9	38	531	2.7	80.8	854,843	2,580,128	8.6	66.7	332,454	1,486,701	5.8	62.1
\$500,000 and over.	4	4	5.7	4.9	1,184	1,637	85.1	9.3	7,972,952	4,697,540	80.1	50.1	4,601,290	3,186,076	81.8	13.5
PRINTING AND PUBLISHING, BOOK AND JOB.	436	404	100.0	100.0	3,717	3,880	100.0	100.0	17,675,925	9,380,560	100.0	100.0	11,204,129	6,296,771	100.0	100.0
Less than \$5,000.	119	174	27.3	43.1	51	177	1.4	4.6	302,163	418,638	1.7	4.5	200,255	304,710	1.8	4.8
\$5,000 to \$20,000.	156	144	35.8	35.6	401	640	10.8	16.6	1,676,145	1,428,943	9.5	15.2	1,091,259	975,630	9.7	15.6
\$20,000 to \$100,000.	121	63	27.8	15.6	1,288	1,270	34.7	32.9	5,524,410	2,837,439	31.3	30.2	3,663,087	1,920,072	32.7	30.6
\$100,000 and over.	40	23	9.2	5.7	1,977	1,773	53.2	45.9	10,173,207	4,697,540	57.6	50.1	6,240,528	3,090,359	55.8	49.1
PRINTING AND PUBLISHING, NEWSPAPERS AND PERIODICALS.	565	660	100.0	100.0	3,176	3,270	100.0	100.0	24,930,421	12,290,227	100.0	100.0	17,234,276	8,946,668	100.0	100.0
Less than \$5,000.	236	372	41.8	56.4	207	479	6.5	14.6	657,309	965,112						



TABLE 13.—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS, FOR CITIES OF 10,000 INHABITANTS OR MORE: 1919.

CITY AND VALUE OF PRODUCT.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		CITY AND VALUE OF PRODUCT.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.	
		Average number.	Per cent of total.	Amount.	Per cent of total.	Amount.	Per cent of total.			Average number.	Per cent of total.	Amount.	Per cent of total.	Amount.	Per cent of total.
ADRIAN.....	62	1,870	100.0	\$14,549,031	100.0	\$4,396,103	100.0	ISHPEMING.....	21	107	100.0	\$1,007,432	100.0	\$524,734	100.0
Less than \$5,000.....	15	6	0.3	32,793	0.2	20,892	0.5	Less than \$5,000.....	5	4	3.7	16,746	1.7	6,772	1.3
\$5,000 to \$20,000.....	11	25	1.3	96,759	0.7	63,417	1.4	\$5,000 to \$20,000.....	7	17	15.9	62,428	6.2	32,523	6.2
\$20,000 to \$100,000.....	18	158	8.4	818,690	5.6	427,696	9.7	\$20,000 to \$100,000.....	6	30	28.0	192,434	19.1	93,549	17.8
\$100,000 to \$500,000.....	10	549	29.4	1,770,132	12.2	914,662	20.8	\$100,000 to \$500,000.....	3	56	52.3	735,824	73.0	391,890	74.7
\$500,000 to \$1,000,000.....	4	485	25.9	2,417,927	16.6	1,069,894	24.3								
\$1,000,000 and over.....	4	647	34.6	9,412,730	64.7	1,899,572	43.2	JACKSON.....	156	9,020	100.0	49,517,712	100.0	10,529,000	100.0
ALPENA.....	38	1,872	100.0	9,356,190	100.0	4,468,715	100.0	Less than \$5,000.....	10	15	0.2	57,579	0.1	36,317	0.2
Less than \$5,000.....	11	5	0.4	27,776	0.3	15,471	0.3	\$5,000 to \$20,000.....	37	101	1.0	421,232	0.9	242,375	1.2
\$5,000 to \$20,000.....	4	7	0.5	53,779	0.6	21,352	0.5	\$20,000 to \$100,000.....	48	411	4.3	2,058,498	4.2	1,072,129	5.5
\$20,000 to \$100,000.....	14	182	13.3	603,182	6.4	290,612	6.5	\$100,000 to \$500,000.....	35	1,334	13.9	7,214,040	14.6	3,807,648	19.5
\$100,000 to \$500,000.....	6	330	24.1	1,016,937	10.9	594,635	13.3	\$500,000 to \$1,000,000.....	6	869	9.0	4,994,018	10.1	1,781,085	9.1
\$1,000,000 and over.....	3	848	61.8	7,654,516	81.8	3,546,645	79.4	\$1,000,000 and over.....	11	6,890	71.6	34,770,845	70.2	12,588,946	64.5
ANN ARBOR.....	78	1,612	100.0	9,763,696	100.0	4,417,049	100.0	KALAMAZOO.....	185	7,629	100.0	46,254,917	100.0	22,018,574	100.0
Less than \$5,000.....	26	9	0.6	66,282	0.7	46,415	1.0	Less than \$5,000.....	28	14	0.2	75,575	0.2	48,936	0.2
\$5,000 to \$20,000.....	18	41	2.5	219,797	2.2	127,380	2.9	\$5,000 to \$20,000.....	46	145	1.9	534,397	1.2	315,182	1.4
\$20,000 to \$100,000.....	21	191	11.8	899,399	9.2	541,407	12.3	\$20,000 to \$100,000.....	55	449	5.9	2,396,200	5.2	1,158,303	5.3
\$100,000 and over.....	13	1,371	85.0	8,608,218	87.9	3,701,897	83.8	\$100,000 to \$500,000.....	33	1,720	22.5	7,585,457	16.4	4,054,231	18.4
								\$500,000 to \$1,000,000.....	13	1,877	24.6	9,133,862	19.7	4,948,480	22.5
								\$1,000,000 and over.....	10	3,424	44.9	20,520,426	57.4	11,493,442	52.2
BATTLE CREEK.....	118	6,680	100.0	56,139,953	100.0	28,151,062	100.0	LANSING.....	147	12,349	100.0	104,722,115	100.0	39,740,775	100.0
Less than \$5,000.....	16	5	(1)	36,975	(1)	25,793	(1)	Less than \$5,000.....	20	13	0.1	59,751	(1)	41,220	0.1
\$5,000 to \$20,000.....	37	72	1.1	452,376	0.8	254,689	0.9	\$5,000 to \$20,000.....	30	100	0.8	426,570	0.4	255,247	0.6
\$20,000 to \$100,000.....	38	309	4.6	1,028,624	2.9	846,715	3.0	\$20,000 to \$100,000.....	41	357	2.9	1,683,454	1.6	831,228	2.1
\$100,000 to \$500,000.....	12	372	5.6	2,471,275	4.4	1,313,006	4.7	\$100,000 to \$500,000.....	32	1,324	10.7	8,468,717	8.1	3,307,037	8.3
\$500,000 to \$1,000,000.....	4	430	6.4	2,479,117	4.4	1,344,095	4.8	\$500,000 to \$1,000,000.....	5	635	5.1	3,340,004	3.2	1,632,487	3.9
\$1,000,000 and over.....	11	5,492	82.2	40,071,586	87.4	24,365,564	86.6	\$1,000,000 and over.....	13	9,920	80.3	90,743,619	80.7	33,773,190	85.0
BAY CITY.....	108	5,057	100.0	28,214,525	100.0	12,952,929	100.0	MARQUETTE.....	34	1,415	100.0	7,210,375	100.0	2,545,079	100.0
Less than \$5,000.....	16	7	0.1	45,901	0.2	22,294	0.2	Less than \$5,000.....	4	2	0.1	10,494	0.1	5,775	0.2
\$5,000 to \$20,000.....	25	84	1.7	285,935	1.0	133,848	1.0	\$5,000 to \$20,000.....	8	26	1.8	97,367	1.4	54,497	2.1
\$20,000 to \$100,000.....	26	247	4.9	1,462,341	5.2	822,797	4.0	\$20,000 to \$100,000.....	11	122	8.6	494,310	6.9	254,881	10.0
\$100,000 to \$500,000.....	29	1,587	31.4	6,963,304	24.7	3,363,971	26.0	\$100,000 to \$500,000.....	7	532	37.6	1,006,065	22.3	760,870	29.9
\$500,000 to \$1,000,000.....	5	548	10.8	3,495,313	12.4	1,151,675	8.9	\$500,000 and over.....	4	733	51.8	5,002,139	69.4	1,409,056	57.7
\$1,000,000 and over.....	7	2,584	51.1	15,961,731	56.6	7,758,344	59.9								
BENTON HARBOR.....	65	2,328	100.0	11,345,034	100.0	6,713,511	100.0	MONROE.....	41	2,904	100.0	16,052,331	100.0	7,691,204	100.0
Less than \$5,000.....	13	5	0.2	31,702	0.3	15,873	0.2	Less than \$5,000.....	5	3	0.1	9,521	(1)	6,143	0.1
\$5,000 to \$20,000.....	15	33	1.4	185,040	1.6	97,466	1.5	\$5,000 to \$20,000.....	11	29	1.0	126,878	0.8	70,041	0.9
\$20,000 to \$100,000.....	22	269	11.6	1,117,631	9.9	621,434	9.3	\$20,000 to \$100,000.....	10	54	1.9	382,368	2.4	159,839	2.1
\$100,000 to \$500,000.....	9	492	21.1	2,231,414	19.7	1,350,382	20.1	\$100,000 to \$500,000.....	9	395	13.6	2,109,024	13.1	872,659	11.3
\$500,000 to \$1,000,000.....	3	371	15.9	1,783,541	15.7	832,200	12.4	\$500,000 to \$1,000,000.....	3	509	17.5	2,025,272	13.7	964,093	12.5
\$1,000,000 and over.....	3	1,158	49.7	5,995,706	52.8	3,796,156	56.5	\$1,000,000 and over.....	8	1,913	65.9	11,218,068	69.0	5,617,829	73.0
DETROIT.....	2,176	167,016	100.0	1,234,519,842	100.0	578,608,379	100.0	MUSKEGON.....	141	9,716	100.0	55,969,347	100.0	30,293,618	100.0
Less than \$5,000.....	235	96	(1)	625,055	(1)	404,936	0.1	Less than \$5,000.....	34	10	0.1	78,839	0.1	41,588	0.1
\$5,000 to \$20,000.....	532	1,097	0.7	5,987,366	0.5	3,539,111	0.6	\$5,000 to \$20,000.....	33	75	0.8	334,290	0.6	180,356	0.6
\$20,000 to \$100,000.....	696	6,571	3.9	33,038,658	2.7	19,806,155	3.4	\$20,000 to \$100,000.....	35	315	3.2	1,503,790	2.8	757,637	2.5
\$100,000 to \$500,000.....	447	19,500	11.7	101,906,562	8.3	55,412,137	9.6	\$100,000 to \$500,000.....	21	1,224	12.6	4,553,779	8.1	2,638,514	8.7
\$500,000 to \$1,000,000.....	96	12,131	7.3	67,551,141	5.5	34,782,204	6.0	\$500,000 to \$1,000,000.....	9	857	8.8	6,541,053	11.7	2,379,301	7.9
\$1,000,000 and over.....	170	127,621	76.4	1,025,411,070	83.1	464,661,776	80.3	\$1,000,000 and over.....	9	7,235	74.5	42,897,026	76.0	24,296,202	80.2
ESCANABA.....	45	842	100.0	3,017,912	100.0	1,894,981	100.0	Owosso.....	40	1,781	100.0	9,948,736	100.0	4,739,046	100.0
Less than \$5,000.....	5	3	0.4	15,340	0.5	8,552	0.5	Less than \$5,000.....	5	5	0.1	10,899	0.1	6,836	0.1
\$5,000 to \$20,000.....	19	44	5.2	223,998	7.4	99,762	5.3	\$5,000 to \$20,000.....	14	35	2.0	153,170	1.5	97,637	1.4
\$20,000 to \$100,000.....	17	134	15.9	694,300	23.0	321,664	17.2	\$20,000 to \$100,000.....	10	94	5.3	519,315	5.2	260,487	5.5
\$100,000 and over.....	4	661	78.5	2,084,274	69.1	1,435,003	76.9	\$100,000 to \$500,000.....	6	372	20.9	1,820,920	18.3	1,032,141	21.8
								\$500,000 and over.....	5	1,280	71.9	7,444,423	74.8	3,372,645	71.2
FLINT.....	107	24,603	100.0	275,779,638	100.0	102,955,874	100.0	PONTIAC.....	78	7,682	100.0	104,990,133	100.0	38,203,971	100.0
Less than \$5,000.....	12	4	(1)	26,244	(1)	15,851	(1)	Less than \$5,000.....	5	5	0.1	11,522	(1)	6,605	(1)
\$5,000 to \$20,000.....	23	54	0.2	274,797	0.1	147,405	0.1	\$5,000 to \$20,000.....	25	95	0.8	285,895	0.3	173,531	0.5
\$20,000 to \$100,000.....	43	291	1.2	2,078,879	0.8	995,188	1.0	\$20,000 to \$100,000.....	26	174	2.3				



TABLE 13.—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS, FOR CITIES OF 10,000 INHABITANTS OR MORE: 1919—Continued.

CITY AND VALUE OF PRODUCT.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.		CITY AND VALUE OF PRODUCT.	Number of establishments.	WAGE EARNERS.		VALUE OF PRODUCTS.		VALUE ADDED BY MANUFACTURE.	
		Average number.	Per cent of total.	Amount.	Per cent of total.	Amount.	Per cent of total.			Average number.	Per cent of total.	Amount.	Per cent of total.	Amount.	Per cent of total.
TRAVERSE CITY.....	56	960	100.0	\$4,099,960	100.0	\$1,817,979	100.0	WYANDOTTE—Contd.							
Less than \$5,000.....	5	5	0.5	14,832	0.4	7,542	0.4	\$500,000 to \$1,000,000....	3	660	10.6	\$2,378,441	7.1	\$1,327,808	6.7
\$5,000 to \$20,000.....	24	83	8.6	252,036	6.1	145,534	8.0	\$1,000,000 and over.....	4	5,427	87.3	30,252,126	90.6	18,233,943	91.4
\$20,000 to \$100,000.....	13	154	16.0	595,975	14.5	279,459	15.4	ALL OTHER CITIES <sup>1</sup> .....	50	64,029	100.0	569,208,377	100.0	260,138,249	100.0
\$100,000 to \$500,000....	14	718	74.8	3,237,117	79.0	1,385,444	76.2								
WYANDOTTE.....	26	6,214	100.0	33,382,791	100.0	19,942,807	100.0	Less than \$5,000.....	4	.....	.....	9,643	( <sup>2</sup> )	5,574	( <sup>2</sup> )
Less than \$20,000.....	12	16	0.3	121,150	0.4	55,867	0.3	\$5,000 to \$20,000.....	10	9	( <sup>2</sup> )	93,815	( <sup>2</sup> )	41,236	( <sup>2</sup> )
\$20,000 to \$100,000....	4	14	0.2	140,373	0.4	61,552	0.3	\$20,000 to \$100,000.....	20	93	0.1	838,016	0.1	343,724	0.1
\$100,000 to \$500,000....	3	97	1.6	490,701	1.5	263,637	1.3	\$100,000 and over.....	16	64,527	99.9	568,266,003	99.9	259,747,715	99.9

<sup>1</sup> All other cities comprise Hamtramck and Highland Park.<sup>2</sup> Less than one-tenth of 1 per cent.

TABLE 14.—CHARACTER OF OWNERSHIP, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919 AND 1914.

INDUSTRY AND CITY.	Cen- sus year.	NUMBER OF ESTABLISH- MENTS OWNED BY—			AVERAGE NUMBER OF WAGE EARNERS.									VALUE OF PRODUCTS.								
					Total.	In establishments owned by—			Per cent of total.			Total.	Of establishments owned by—			Per cent of total.						
		Indi- vid- uals.	Cor- pora- tions.	All oth- ers.		Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.		Indi- vid- uals.	Corpora- tions.	All others.	Indi- vid- uals.	Corpora- tions.	All oth- ers.				
All industries.....	1919	3,572	3,249	1,484	471,242	14,730	444,516	11,096	3.1	94.3	2.5	\$3,466,188,483	\$92,181,144	\$3,299,255,502	\$74,751,837	2.7	95.2	2.1				
	1914	4,282	2,000	1,542	271,090	10,674	241,829	12,587	6.2	89.2	4.6	1,080,162,432	50,886,390	986,655,727	48,620,315	4.7	90.8	4.5				
	1909	4,567	2,638	1,954	231,499	20,564	193,139	17,799	8.9	83.4	7.7	685,100,169	57,652,930	571,102,107	56,354,132	8.4	83.4	8.2				
Agricultural implements..	1919	6	16	1	2,708	195	2,613	.....	3.5	96.5	.....	11,090,669	1,274,717	10,815,952	.....	2.5	97.5	.....				
	1914	8	18	4	2,143	96	2,027	20	4.5	94.6	0.9	7,731,217	273,131	7,390,617	67,469	3.5	95.6	0.9				
Automobile bodies and parts.	1919	46	137	20	49,048	663	48,284	111	1.3	98.4	0.2	288,306,858	3,802,539	284,010,487	493,832	1.3	98.5	0.2				
	1914	28	106	6	24,736	130	24,497	109	0.5	99.0	0.4	71,540,077	395,118	70,816,683	328,276	0.6	99.0	0.5				
Boxes, paper and other, not elsewhere specified.	1919	1	17	4	2,336	.....	2,165	<sup>1</sup> 171	.....	92.7	7.3	10,934,722	.....	10,483,458	<sup>1</sup> 451,264	.....	95.9	4.1				
	1914	4	13	6	1,461	40	1,088	333	2.7	74.5	22.8	3,747,876	48,545	2,782,318	917,013	1.3	74.2	24.5				
Brass, bronze, and copper products.	1919	16	55	9	10,306	94	10,129	83	0.9	98.3	0.8	62,708,335	590,193	61,421,105	690,947	1.0	97.9	1.1				
	1914	14	40	10	4,731	187	4,492	62	4.0	94.9	1.1	16,868,725	607,450	15,928,399	332,876	3.6	94.4	2.0				
Bread and other bakery products.	1919	713	58	173	5,088	1,714	2,724	650	33.7	53.5	12.8	44,923,454	16,301,071	22,002,561	6,520,822	36.5	49.0	14.5				
	1914	755	29	138	4,014	2,041	1,492	481	50.8	37.2	12.0	16,000,068	8,017,664	5,936,037	2,040,367	50.1	37.1	12.8				
Butter.....	1919	67	71	93	984	171	548	265	17.4	55.7	26.9	33,385,420	6,308,839	18,096,970	8,979,605	18.9	54.2	26.9				
	1914	80	96	94	769	147	408	214	19.1	53.1	27.8	13,470,207	2,453,497	7,414,866	3,610,934	18.2	55.0	26.8				
Canning and preserving, fruits and vegetables.	1919	13	30	9	2,109	242	1,649	218	11.5	78.2	10.3	11,172,169	1,314,935	8,537,037	1,320,197	11.8	76.4	11.8				
	1914	14	26	9	1,687	216	1,361	110	12.8	80.7	6.5	4,421,946	464,821	3,767,687	189,438	10.5	85.2	4.3				
Chemicals.....	1919	9	25	2	5,712	4	5,708	.....	0.1	99.9	.....	37,850,834	<sup>1</sup> 25,170	37,825,604	.....	0.1	99.9	.....				
	1914	11	21	4	4,509	12	4,493	4	0.3	99.6	( <sup>3</sup> )	13,891,415	26,300	13,858,241	6,874	0.2	99.8	( <sup>3</sup> )				
Confectionery and ice cream.	1919	90	30	64	1,746	344	905	497	19.7	51.8	28.5	12,626,501	2,493,155	7,264,049	2,868,697	19.7	57.5	22.7				
	1914	73	22	20	1,187	341	661	185	28.7	55.7	15.6	4,842,801	1,272,964	2,773,017	796,820	26.3	57.3	16.5				
Druggists' preparations.....	1919	7	9	.....	3,219	38	3,181	.....	1.2	98.8	.....	23,903,856	321,744	23,582,112	.....	1.3	98.7	.....				
	1914	4	10	1	2,175	47	2,128	.....	2.2	97.8	.....	11,738,662	<sup>1</sup> 102,203	11,636,459	.....	0.9	99.1	.....				
Electrical machinery, ap- paratus, and supplies.	1919	9	40	5	4,190	84	4,092	14	2.0	97.7	0.3	25,025,528	275,840	24,660,021	80,667	1.1	98.5	0.4				
	1914	7	26	2	1,144	150	1,094	.....	4.4	95.6	.....	3,415,500	<sup>1</sup> 99,993	3,315,507	.....	2.9	97.1	.....				
Engines, steam, gas, and water.	1919	2	32	1	14,258	17	14,251	.....	( <sup>3</sup> )	99.9	.....	101,989,440	<sup>1</sup> 30,860	101,958,580	.....	( <sup>3</sup> )	99.9	.....				
	1914	10	35	3	4,427	35	4,261	131	0.8	96.3	3.0	12,369,172	74,470	12,074,084	220,618	0.6	97.6	1.8				
Flour-mill and gristmill products.	1919	146	85	114	1,128	203	746	179	18.0	66.1	15.9	44,144,434	6,572,213	30,150,339	7,421,882	14.9	68.3	16.8				
	1914	203	83	141	1,370	332	731	307	24.2	53.4	22.4	27,381,474	5,606,028	16,384,336	5,388,110	20.5	59.8	19.7				
Food preparations, not elsewhere specified.	1919	8	25	4	2,483	8	2,457	18	0.3	99.0	0.7	35,701,760	166,897	35,323,175	211,688	0.5	98.9	0.6				
	1914	14	32	10	1,683	39	1,623	621	2.3	60.8	36.9	16,005,282	137,801	7,824,862	8,042,619	0.9	48.9	50.2				
Foundry and machine- shop products. <sup>4</sup>	1919	145	369	66	42,745	1,393	40,266	1,086	3.2	94.2	2.5	182,735,316	4,877,479	172,726,812	5,131,025	2.7	94.5	2.8				
	1914	148	271	83	17,608	1,039	15,947	622	5.9	90.6	3.5	39,428,783	2,161,547	35,960,167	1,307,069	5.5	91.2	3.3				
Furniture.....	1919	26	128	17	18,496	374	17,907	215	2.0	96.8	1.2	69,497,237	1,401,032	67,168,769	927,436	2.0	96.6	1.3				
	1914	34	138	20	14,706	460	13,950	296	3.1	94.9	2.0	30,184,542	879,875	28,816,498	488,169	2.9	95.5	1.6				
Knit goods.....	1919	6	24	1	3,170	166	3,104	.....	2.1	97.9	.....	12,039,377	<sup>1</sup> 183,968	11,855,409	.....	1.5	98.5	.....				
	1914	3	26	3	2,711	68	2,598	45	2.5	95.8	1.7	5,228,035	67,766	4,960,091	200,178	1.3	94.9	3.8				
Lumber and timber prod- ucts.	1919	192	96	92	14,923	2,008	10,072	2,843	13.5	67.5	19.1	46,043,855	7,939,838	30,685,094	7,418,323	17.2	66.6	16.1				
	1914	238	129	110	21,488	2,061	10,985	2,452	9.5	79.0	11.4	33,873,367	3,074,477	26,710,809	4,088,081	9.1	78.9	12.1				
Lumber, planing-mill products, not including planing mills connected with sawmills.	1919	40	110	42	5,256	312	4,315	629	5.9	82.1	12.0	37,869,230	2,123,293	32,059,340	3,680,597	5.6	84.7	9.7				
	1914	67	103	47	4,944	940	3,412	592	19.0	69.0	12.0	19,767,965	2,890,954	14,757,226	2,119,785	14.6	74.7	10.7				
Paper and wood pulp.....	1919	3	30	.....	9,561	18	9,543	.....	0.2	99.8	.....	66,299,513	74,062	66,225,421	.....	0.1	99.9	.....				
	1914	2	34	1	6,051	120	6,031	.....	0.3	99.7	.....	22,049,990	<sup>1</sup> 45,336	22,004,654	.....	0.2	99.8	.....				
Printing and publishing, book and job.	1919	234	118	84	3,717	657	2,732	328	17.7	73.5	8.8	17,675,925	2,799,018	12,778,867	2,098,040	15.8	72.3	11.9				
	1914	229	106	69	3,860	715	2,820	325	18.5	73.1	8.4	9,380,560	1,722,201	6,881,312	776,957	18.4	73.4	8.3				

<sup>1</sup> Includes the group "All others."<sup>2</sup> Includes the group "Individuals."<sup>3</sup> Less than one-tenth of 1 per cent.<sup>4</sup> Includes "iron and steel, tempering and welding" and "machine tools."



## MANUFACTURES—MICHIGAN.

TABLE 14.—CHARACTER OF OWNERSHIP, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919 AND 1914—Continued.

INDUSTRY AND CITY.	Cen- sus year.	NUMBER OF ESTABLISH- MENTS OWNED BY—			AVERAGE NUMBER OF WAGE EARNERS.									VALUE OF PRODUCTS.								
		Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Total.	In establishments owned by—			Per cent of total.			Total.	Of establishments owned by—			Per cent of total.						
						Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.		Indi- vid- uals.	Corpora- tions.	All others.	Indi- vid- uals.	Corpora- tions.	All oth- ers.				
Printing and publishing, newspapers and period- icals.	1919 1914	303 387	149 165	113 108	3,176 3,270	558 860	2,251 2,090	367 320	17.6 26.3	70.9 63.9	11.6 9.8	\$24,030,421 12,290,227	\$2,000,647 1,777,613	\$21,313,661 9,605,334	\$1,607,113 907,280	8.1 14.5	85.5 78.2	6.4 7.4				
Slaughtering and meat packing.	1919 1914	11 9	10 7	3 1	1,712 1,112	47 123	1,653 1,089	12 .....	2.7 2.1	96.6 97.9	0.7 .....	59,584,740 20,665,737	1,729,960 1,572,504	57,427,123 20,093,233	427,651 .....	2.9 2.8	96.4 97.2	0.7 .....				
Structural ironwork, not made in steel works or rolling mills.	1919 1914	9 9	20 19	5 3	2,313 1,371	78 91	2,189 1,252	46 28	3.4 6.6	94.6 91.3	2.0 2.0	17,124,120 4,918,366	476,940 296,708	16,403,714 4,544,832	243,460 76,826	2.8 6.0	95.8 92.4	1.4 1.6				
Tobacco, cigars and cig- arettes.	1919 1914	282 515	35 26	32 68	5,456 7,295	1,114 1,504	3,933 4,555	409 1,236	20.4 20.6	72.1 62.5	7.5 16.9	18,118,556 12,121,802	4,217,478 3,154,556	12,663,365 6,753,776	1,237,713 2,213,530	23.3 26.0	69.9 55.7	6.8 18.3				
Tools, not elsewhere spec- ified.	1919 1914	21 8	54 11	14 5	3,261 3,720	287 40	2,790 297	184 35	8.8 10.8	85.6 79.8	5.6 9.4	11,898,853 850,144	1,128,030 76,189	10,072,670 719,430	698,141 63,525	9.5 8.9	84.7 83.7	5.9 7.4				
Wirework, not elsewhere specified.	1919 1914	3 6	29 23	6 4	2,516 1,314	44 61	2,442 1,233	30 20	1.7 4.6	97.1 93.8	1.2 1.5	17,065,225 5,891,274	260,165 130,477	16,650,288 5,680,919	154,772 79,878	1.5 2.2	97.6 96.4	0.9 1.4				
Total for cities.....	1919 1914	1,850 2,009	2,205 1,815	737 727	376,032 177,605	8,709 9,763	361,101 160,364	6,222 7,478	2.3 5.5	96.0 90.3	1.7 4.2	2,836,698,957 688,558,088	54,033,779 28,565,266	2,744,216,497 629,113,585	38,448,081 30,870,237	1.9 4.1	96.7 91.4	1.4 4.5				
ADRIAN.....	1919 1914	26 34	22 21	14 13	1,870 1,256	92 102	1,616 1,001	162 153	4.9 8.1	86.4 79.7	8.7 12.2	14,549,031 5,442,338	508,970 340,408	13,005,832 4,734,595	1,034,229 358,245	3.5 6.4	89.4 87.0	7.1 6.6				
ALPENA.....	1919 1914	16 28	16 17	6 9	1,372 1,494	145 73	1,200 1,390	27 31	10.6 4.9	87.5 93.0	2.0 2.1	9,356,190 4,101,935	336,062 126,258	8,806,110 3,867,843	214,018 107,834	3.6 3.1	94.1 94.3	2.3 2.6				
ANN ARBOR.....	1919 1914	35 38	26 19	17 18	1,612 842	135 134	1,433 593	44 115	8.4 15.9	88.9 70.4	2.7 13.7	9,793,696 2,603,379	783,953 352,540	8,725,961 1,701,742	283,782 480,097	8.0 13.5	89.1 67.7	2.9 18.8				
BATTLE CREEK.....	1919 1914	55 64	48 52	15 19	6,680 4,599	151 180	6,493 3,523	36 896	2.3 3.9	97.2 76.6	0.5 19.5	56,139,953 23,248,420	277,860 630,058	54,533,778 13,734,003	328,315 8,884,359	2.3 2.7	97.1 59.1	0.6 38.2				
BAY CITY.....	1919 1914	45 76	50 46	13 20	5,057 3,771	205 462	4,725 3,036	127 273	4.1 12.3	93.4 80.5	2.5 7.2	28,214,525 11,119,286	1,987,472 1,270,219	25,282,167 8,919,281	944,886 929,786	7.0 11.4	89.6 80.2	3.3 8.4				
BENTON HARBOR.....	1919 1914	24 25	32 22	9 15	2,328 1,285	45 132	2,210 1,029	73 124	1.9 10.3	94.9 80.1	3.1 9.6	11,345,034 3,021,552	309,469 515,895	10,531,096 2,317,335	504,469 188,322	2.7 17.1	92.8 76.7	4.4 6.2				
DETROIT.....	1919 1914	772 882	1,085 860	319 294	167,016 99,603	4,025 4,397	159,884 91,757	3,107 3,449	2.4 4.4	95.7 92.1	1.9 3.5	1,234,510,842 400,347,912	27,422,084 13,557,847	1,188,067,496 376,187,763	19,030,202 10,002,802	2.2 3.4	96.2 94.0	1.5 2.6				
ESCANABA.....	1919 1914	29 23	11 13	5 9	842 777	77 53	737 680	28 44	9.1 6.8	87.5 87.5	3.3 5.7	3,017,912 1,500,526	460,709 111,140	2,396,533 1,303,913	160,070 91,473	15.3 7.4	79.4 86.5	5.3 6.1				
FLINT.....	1919 1914	49 40	39 34	19 20	24,603 8,722	237 160	24,185 8,416	181 146	1.0 1.8	98.3 96.5	0.7 1.7	275,779,638 53,375,039	1,726,465 373,390	272,855,259 52,389,060	1,197,014 612,589	0.6 0.7	98.9 98.2	0.4 1.1				
GRAND RAPIDS.....	1919 1914	266 267	259 231	86 96	23,548 17,427	1,077 1,431	21,517 15,207	954 789	4.6 8.2	91.4 87.3	4.1 4.5	109,135,055 49,792,200	5,272,883 3,871,624	99,195,600 43,765,942	4,666,512 2,154,634	4.8 7.8	90.9 87.9	4.3 4.3				
HOLLAND.....	1919 1914	14 16	40 34	10 11	2,748 2,165	51 55	2,651 2,057	46 53	1.9 2.5	96.5 95.0	1.7 2.4	17,711,095 8,683,835	162,903 130,243	17,124,013 8,281,748	424,179 271,844	0.9 1.5	96.7 95.4	2.4 3.1				
IRONWOOD.....	1919 1914	16 13	6 6	6 5	399 516	39 30	329 443	31 34	9.8 7.6	82.5 85.9	7.8 6.6	1,381,200 793,247	352,590 153,662	816,387 545,045	212,313 94,540	25.5 19.4	59.1 68.7	15.4 11.9				
ISHPEMING.....	1919 1914	15 13	4 2	2 4	107 79	149 31	58 148	..... .....	45.8 39.2	54.2 60.8	..... .....	1,007,432 228,643	1358,090 67,757	649,342 160,886	..... .....	35.5 20.6	64.5 70.4	..... .....				
JACKSON.....	1919 1914	59 56	73 67	24 24	9,620 4,906	400 257	9,030 4,498	190 151	4.2 5.2	93.9 91.7	2.0 3.1	49,517,712 16,890,846	1,681,622 770,961	46,658,431 15,620,622	1,177,659 409,263	3.4 4.6	94.2 93.0	2.4 2.4				
KALAMAZOO.....	1919 1914	60 96	94 84	25 33	7,629 5,525	428 420	7,076 4,948	125 157	5.6 7.6	92.8 89.6	1.6 2.8	46,254,917 20,214,314	1,957,136 1,048,046	43,717,000 18,785,086	580,781 381,182	4.2 5.2	94.5 92.9	1.3 1.9				
LANSING.....	1919 1914	54 79	70 75	23 26	12,349 6,231	223 254	12,022 5,837	104 140	1.8 4.1	97.4 93.7	0.8 2.2	104,722,115 26,984,496	1,764,930 1,072,797	101,618,932 25,111,441	1,338,253 800,258	1.7 4.0	97.0 93.1	1.3 3.0				
MARQUETTE.....	1919 1914	12 21	19 10	3 3	1,415 589	40 77	1,370 487	5 25	2.8 13.1	96.8 82.7	0.4 4.2	7,210,375 1,394,587	212,673 140,318	6,943,449 1,176,671	54,253 71,598	2.9 10.5	96.3 84.4	0.8 5.1				
MONROE.....	1919	12	25	4	2,904	25	2,869	10	0.9	98.8	0.3	16,052,331	158,276	15,581,801	312,254	1.0	97.1	1.9				
MUSKEGON.....	1919 1914	52 47	66 44	23 12	9,716 4,646	175 328	9,415 4,281	126 37	1.8 7.1	96.9 92.1	1.3 0.8	55,969,347 11,147,605	1,218,060 1,007,375	54,129,103 10,050,450	622,184 89,780	2.2 9.0	96.7 90.2	1.1 0.8				
OWOSSO.....	1919 1914	20 24	16 16	4 5	1,781 1,231	318 113	1,438 1,094	25 24	17.9 9.2	80.7 88.9	1.4 1.9	9,948,736 3,468,534	1,023,238 298,615	8,746,218 3,078,016	179,280 91,903	10.3 8.0	87.9 88.7	1.8 2.6				
PONTIAC.....	1919 1914	22 14	26 20	30 12	7,682 2,400	69 49	7,453 2,286	160 74	0.9 2.0	97.0 94.9	2.1 3.1	104,990,133 15,102,453	538,419 324,293	102,991,503 14,471,015	1,460,211 307,145	0.5 2.1	98.1 95.8	1.4 2.0				
PORT HURON.....	1919 1914	43 43	28 31	12 15	2,231 1,295	115 148	2,065 1,094	51 54	5.2 11.4	92.6 84.4	2.3 4.2	9,545,578 4,090,323	729,892 485,671	8,482,230 3,436,688	333,525 167,964	7.6 11.9	88.9 84.0	3.5 4.1				
SAGINAW.....	1919 1914	80 112	88 82	40 47	9,472 6,342	345 721	8,683 5,097	444 524	3.6 11.4	91.7 80.4	4.7 8.3	43,146,125 19,008,670	2,072,514 1,427,297	38,734,013 14,303,947	2,339,598 3,277,420	4.8 7.5	89.8 75.2	5.4 17.2				
SAULT STE. MARIE.....	1919 1914	11 27	12 12	3 5	1,248 938	54 33	1,175 818	39 67	2.7 5.7	94.2 87.2	3.1 7.1	10,699,767 3,821,464	170,930 143,127	10,197,513 3,546,002	331,324 132,335	1.6 3.7	95.3 92.8	3.1 5.5				
TRAVERSE CITY.....	1919 1914	24 31	18 17	14 12	960 956	121 94	748 744	91 118	12.6 9.8	77.9 77.8	9.5 12.3	4,099,060 2,251,484	581,344 380,635	3,146,178 1,555,491	372,438 305,358	14.7 14.7	76.7 69.1	9.1 16.2				
WYANDOTTE.....	1919	12	11	3	6,214	14	6,191	9	0.2	99.6	0.1	33,382,791	154,725	33,163,370	64,696	0.5	99.3	0.2				
ALL OTHER CITIES <sup>1</sup> .....	1919	21	21	8	64,629	74	6															



# MANUFACTURES—MICHIGAN.

685

TABLE 15.—MANUFACTURES, BY POPULATION GROUPS, IN CITIES OF 10,000 INHABITANTS OR MORE: 1919, 1914, AND 1909.

	Census year.	Aggregate.	CITIES HAVING A POPULATION OF 10,000 OR OVER.								THE STATE OUTSIDE OF CITIES HAVING A POPULATION OF 10,000 OR OVER.	
			Total. <sup>1</sup>		10,000 to 25,000. <sup>1</sup>		25,000 <sup>2</sup> to 100,000.		100,000 and over.			
			Number or amount.	Per cent of aggre- gate.	Number or amount.	Per cent of aggre- gate.	Number or amount.	Per cent of aggre- gate.	Number or amount.	Per cent of aggre- gate.	Number or amount.	Per cent of aggre- gate.
Number of places.....	1919 1914 1909		28 26 24		14 16 15		12 8 7		2 2 2			
Population <sup>3</sup> .....	1920 1915 1910	3,668,412 2,976,030 2,810,173	1,894,012 1,194,360 1,043,746	51.6 40.1 37.1	179,991 211,887 203,817	4.9 7.1 7.3	533,309 321,586 261,592	15.9 10.8 9.3	1,131,312 660,877 578,337	30.8 22.2 20.6	1,773,800 1,781,670 1,766,427	48.4 59.9 62.9
Number of establishments.....	1919 1914 1909	8,305 8,724 9,159	4,792 4,710 4,500	57.7 54.0 49.1	624 825 817	7.5 9.5 8.9	1,381 1,255 1,123	16.6 14.4 12.3	2,787 2,630 2,560	33.6 30.1 27.9	3,513 4,014 4,659	42.3 46.0 50.9
Average number of wage earners....	1919 1914 1909	471,242 471,090 231,499	376,032 181,446 156,747	79.8 66.9 67.7	25,800 19,674 20,433	5.5 7.3 8.8	159,668 44,742 37,713	33.9 16.5 16.3	190,564 117,030 98,601	40.4 43.2 42.6	95,210 89,644 74,752	20.2 33.1 32.3
Value of products.....	1919 1914 1909	\$3,466,188,483 1,086,162,432 685,109,169	\$2,836,638,957 697,694,182 465,201,235	81.8 64.2 67.0	\$149,555,640 65,646,394 52,798,619	4.3 6.0 7.7	\$1,343,488,420 181,907,676 117,232,598	38.8 16.7 17.1	\$1,343,654,897 450,140,112 295,170,018	38.8 41.4 43.1	\$629,489,526 388,468,250 219,907,934	18.2 35.8 32.1
Value added by manufacture.....	1919 1914 1909	1,546,945,240 493,361,368 316,497,147	1,288,383,086 313,194,451 225,647,404	83.3 63.5 71.3	71,374,377 26,621,691 23,980,450	4.6 5.4 7.6	580,429,036 82,676,454 59,450,253	37.5 16.8 17.8	636,579,673 203,896,306 145,216,761	41.2 41.3 45.9	258,662,154 180,166,917 90,849,683	16.7 36.5 28.7

<sup>1</sup> Includes Manistee and Menominee in 1914 and 1909; population less than 10,000 in 1920.

<sup>2</sup> Population of 1920, as of Jan. 1, 1920; 1915, estimated population as of July 1, 1914 (per reports census of manufactures, 1914); 1910, as of Apr. 15, 1910.

TABLE 16.—PRINCIPAL INDUSTRIES IN CITIES OF 50,000 INHABITANTS OR MORE, WITH PER CENT OF TOTAL FOR STATE: 1919.

CITY AND INDUSTRY.	VALUE OF PRODUCTS.				CITY AND INDUSTRY.	VALUE OF PRODUCTS.			
	Amount, 1919.	Per cent of total for the state.	Increase <sup>1</sup> over 1914.			Amount, 1919.	Per cent of total for the state.	Increase <sup>1</sup> over 1914.	
			Amount.	Per cent.				Amount.	Per cent.
DETROIT.					GRAND RAPIDS—Continued.				
Automobiles.....	\$348,772,599	26.2	\$223,165,029	177.7	Printing and publishing, newspapers and periodicals.....	\$2,343,763	0.4	\$900,639	62.4
Automobile bodies and parts.....	201,455,182	69.9	162,986,208	423.7	Lumber, planing-mill products, not including planing mills connected with sawmills.....	2,015,250	5.3	337,607	20.1
Foundry and machine-shop products <sup>2</sup> .....	67,161,566	86.8	49,970,198	290.8	Phonographs and graphophones.....	1,990,429	47.2	( <sup>3</sup> )	.....
Slaughtering and meat packing.....	57,648,125	96.7	37,570,977	187.1	Tobacco, cigars and cigarettes.....	1,982,897	10.9	689,837	53.3
Brass, bronze, and copper products.....	49,239,768	78.5	34,610,017	236.6	Leather, tanned, curried, and finished.....	1,885,337	4.1	390,968	26.2
Engines, steam, gas, and water.....	36,611,142	35.9	29,455,124	411.6	Printing and publishing, book and job.....	1,775,419	10.0	620,430	53.7
Bread and other bakery products.....	22,631,347	50.4	15,142,526	202.2	Butter.....	1,647,484	4.9	900,300	120.5
Printing and publishing, newspapers and periodicals.....	14,017,463	56.2	8,238,099	142.5	Automobiles.....	1,254,478	0.1	1,108,049	756.7
Electrical machinery, apparatus, and supplies.....	12,970,284	51.8	10,729,879	478.9	Cars and general shop construction and repairs by steam-railroad companies.....				
Tobacco, cigars and cigarettes.....	11,606,301	64.1	3,102,402	36.5	Gas, illuminating and heating.....				
Printing and publishing, book and job.....	11,430,857	64.7	6,060,845	112.9	House-furnishing goods, not elsewhere specified.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Chemicals.....	11,355,383	30.0	7,480,855	193.1	Paper and wood pulp.....				
Structural ironwork, not made in steel works or rolling mills.....	11,271,015	65.8	9,141,473	420.3	Plumbers' supplies, not elsewhere specified.....				
Stoves and hot-air furnaces.....	10,144,806	49.5	( <sup>3</sup> )	.....	Roofing materials.....				
Tools, not elsewhere specified.....	9,216,733	77.5	( <sup>3</sup> )	.....	LANSING.				
Lumber, planing-mill products, not including planing mills connected with sawmills.....	9,114,453	24.1	3,547,943	63.7	Automobile bodies and parts.....	9,229,855	3.2	7,238,722	363.5
Leather, tanned, curried, and finished.....	8,624,215	18.8	6,809,198	375.2	Foundry and machine-shop products <sup>2</sup> .....	4,581,448	2.7	2,258,336	97.2
Patent medicines and compounds.....	8,091,447	81.3	4,224,304	109.2	Iron and steel forgings, not made in steel works or rolling mills.....	4,174,718	48.8	( <sup>3</sup> )	.....
Cars, steam-railroad, not including operations of railroad companies.....					Engines, steam, gas, and water.....	3,227,820	3.2	1,795,476	125.4
Cash registers and calculating machines.....					Lumber, planing-mill products, not including planing mills connected with sawmills.....	2,226,531	5.9	1,438,135	182.4
Druggists' preparations.....					Flour-mill and gristmill products.....	846,933	1.9	305,888	56.5
Flour-mill and gristmill products.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Bread and other bakery products.....	840,135	1.9	560,624	200.6
Lamps and reflectors.....					Automobiles.....				
Rubber tires, tubes, and rubber goods, not elsewhere specified.....					Condensed milk.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Stoves, gas and oil.....					Screws, machine.....				
Tobacco, chewing and smoking, and snuff.....					Sugar, beet.....				
FLINT.					SAGINAW.				
Automobile bodies and parts.....	8,537,634	2.9	( <sup>3</sup> )	.....	Foundry and machine-shop products <sup>2</sup> .....	13,609,661	8.0	11,560,559	584.2
Foundry and machine-shop products.....	2,148,759	1.3	501,644	30.5	Lumber, planing-mill products, not including planing mills connected with sawmills.....	2,474,337	6.5	-28,496	-1.1
Bread and other bakery products.....	1,621,915	3.6	1,321,790	440.4	Bread and other bakery products.....	1,479,984	3.3	878,213	145.9
Automobiles.....					Automobile bodies and parts.....	695,137	0.2	( <sup>3</sup> )	.....
Electrical machinery, apparatus, and supplies.....					Butter.....				
Flour-mill and gristmill products.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	Cars and general shop construction and repairs by steam-railroad companies.....				
Gas, illuminating and heating.....					Corsets.....				
Paints.....					Engines, steam, gas, and water.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Printing and publishing, newspapers and periodicals.....					Flour-mill and gristmill products.....				
Springs, steel, automobile.....					Furniture.....				
GRAND RAPIDS.					Graphite, ground and refined.....				
Furniture.....	34,962,294	50.3	20,137,084	135.8	Leather, tanned, curried, and finished.....				
Automobile bodies and parts.....	5,656,674	2.0	5,553,421	5,378.5	Tools, not elsewhere specified.....				
Flour-mill and gristmill products.....	5,453,586	12.4	2,311,856	73.6	Wooden goods, not elsewhere specified.....				
Foundry and machine-shop products <sup>1</sup> .....	4,505,759	2.5	2,015,087	80.9					
Bread and other bakery products.....	3,605,027	8.0	1,922,829	114.3					
Hardware.....	2,802,248	32.0	2,322,543	484.2					
Knit goods.....	2,478,656	20.6	1,414,871	133.0					
Confectionery and ice cream.....	2,344,979	18.6	1,701,027	264.2					

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Includes "iron and steel, tempering and welding" and "machine tools."

<sup>3</sup> Figures can not be shown without disclosing individual operations.

<sup>4</sup> Includes "machine tools" and "textile machinery and parts."

<sup>5</sup> Includes "iron and steel, welding."



## MANUFACTURES—MICHIGAN.

TABLE 17.—NUMBER AND HORSEPOWER OF TYPES OF PRIME MOVERS: 1919, 1914, AND 1909.

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
	1919	1914	1909	Amount.			Per cent distribution.		
				1919	1914	1909	1919	1914	1909
Primary power, total.....	58,208	25,686	15,527	1,202,128	730,383	598,288	100.0	100.0	100.0
Owned.....	4,582	5,790	6,967	652,952	538,075	521,543	54.3	73.7	87.2
Steam.....	3,411	4,177	5,066	502,911	480,771	465,530	49.3	60.6	77.8
Engines.....	3,200	(2)	(2)	440,130	(2)	(2)	36.0	.....	.....
Turbines.....	211	(2)	(2)	152,781	(2)	(2)	12.7	.....	.....
Internal-combustion engines.....	776	1,062	1,167	19,695	19,593	13,988	1.6	2.7	2.3
Water.....	395	551	734	40,346	31,711	42,019	3.4	4.3	7.0
Water wheels and turbines.....	388	486	700	40,329	30,424	41,442	3.4	4.2	6.9
Water motors.....	7	66	34	17	1,287	577	(3)	0.2	0.1
Rented.....	53,626	19,896	8,560	549,176	192,308	70,745	45.7	26.3	12.8
Electric.....	53,626	19,896	8,560	540,757	188,702	74,270	45.0	25.8	12.4
Other.....	.....	.....	.....	8,419	3,606	2,475	0.7	0.5	0.4
Electric.....	70,678	28,992	12,917	818,271	311,966	133,064	100.0	100.0	100.0
Rented.....	53,626	19,896	8,560	540,757	188,702	74,270	66.1	60.5	55.8
Generated by establishments reporting.....	23,052	9,096	4,357	277,514	123,264	58,794	33.9	39.5	44.2

<sup>1</sup> Figures for horsepower include for 1909 the amount reported under the head of "Other" owned power.  
<sup>2</sup> Not reported separately.

<sup>3</sup> Less than one-tenth of 1 per cent.

TABLE 18.—FUEL CONSUMED, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919.

INDUSTRY AND CITY.	COAL.		Coke (tons, 2,000 pounds).	Fuel oils (barrels).	Gasoline and other volatile oils (barrels).	Gas (1,000 cubic feet).
	Anthracite (tons, 2,240 pounds).	Bituminous (tons, 2,000 pounds).				
All industries.....	50,516	8,241,877	812,041	1,741,039	150,419	2,105,985
Per cent of increase <sup>1</sup> .....	95,815 —47.3	5,974,604 37.9	460,122 76.5	781,212 142.1	(1) (1)	2,455,572 —14.2
Agricultural implements.....	82	23,040	4,882	4,405	112	1,722
Automobile bodies and parts.....	781	235,666	10,862	73,256	7,969	160,320
Automobiles.....	1,062	648,913	69,096	555,839	70,550	913,381
Brass, bronze, and copper products.....	2,620	75,527	33,500	127,470	1,596	195,154
Bread and other bakery products.....	13,422	36,107	25,342	449	1,801	59,011
Brick and tile, terra-cotta, and fire-clay products.....	94	82,933	30	114,122	183	.....
Butter.....	2,281	27,851	265	232	.....	1,532
Cars and general shop construction and repairs by steam-railroad companies.....	42	100,880	369	0,700	29	552
Chemicals.....	100	967,341	161,828	14,228	205	.....
Confectionery and ice cream.....	473	9,123	370	6	141	49,730
Copper, tin, and sheet-iron work.....	72	1,509	57	7	139	1,222
Electrical machinery, apparatus, and supplies.....	41	10,210	140	16	761	38,846
Electroplating.....	93	722	13	240	11	2,109
Engines, steam, gas, and water.....	208	74,910	10,625	52,752	15,475	40,788
Flour-mill and gristmill products.....	407	46,841	104	2,386	1,875	.....
Foundry and machine-shop products.....	2,788	311,049	135,797	99,533	8,263	231,574
Furniture.....	947	126,244	1,422	25	509	11,327
Gas, illuminating and heating.....	45	834,361	3,832	411,562	.....	598
Hardware.....	371	6,167	753	555	23	4,406
Iron and steel, steel works and rolling mills.....	.....	30,481	6,038	32,208	1,096	1,022
Iron and steel, bolts, nuts, washers, and rivets, not made in rolling mills.....	4	2,386	211	10,475	5	50
Iron and steel, forgings, not made in steel works or rolling mills.....	.....	38,448	437	46,152	10	6,000
Iron and steel, tempering and welding.....	27	2,004	78	1,765	11	11,175
Lime.....	896	4,101	7,002	7,135	2,895	.....
Liquors, malt.....	1,400	96,944	3,013	2,950	254	475
Machine tools.....	7	9,491	.....	4,244	0,050	102,948
Marble and stone work.....	124	559	66	51	1,044	460
Mineral and soda waters.....	154	5,877	148	42	146	1,228
Pottery.....	.....	16,008	.....	6,785	.....	49,189
Printing and publishing, book and job.....	237	6,651	77	10	130	8,624
Printing and publishing, newspapers and periodicals.....	769	6,928	245	1,137	1,101	20,705
Screws, machine.....	360	4,300	25	2,900	100	5,100
Shipbuilding, steel, new vessels and small boats.....	.....	78,564	2,685	30,456	1,180	.....
Springs, steel, car and carriage, not made in steel works or rolling mills.....	.....	2,007	25	49,295	5,701	18,930
Stamped ware, not elsewhere specified.....	18	5,824	28	164	65	1,250
Stoves and hot-air furnaces.....	167	32,754	15,561	8	389	9,298
Structural ironwork, not made in steel works or rolling mills.....	66	12,491	1,557	30,336	655	2,808
Tools, not elsewhere specified.....	114	5,768	240	1,080	2,881	11,687
Wirework, not elsewhere specified.....	17	10,140	251	945	2,186	4,061
All other industries.....	20,138	4,240,758	314,017	49,062	14,503	132,703

<sup>1</sup> Included in figures for fuel oils.

<sup>2</sup> A minus sign (—) denotes decrease.



## MANUFACTURES—MICHIGAN.

687

TABLE 18.—FUEL CONSUMED, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919—Continued.

INDUSTRY AND CITY.	COAL.		Coke (tons, 2,000 pounds).	Fuel oils (barrels).	Gasoline and other volatile oils (barrels).	Gas (1,000 cubic feet).
	Anthracite (tons, 2,240 pounds).	Bituminous (tons, 2,000 pounds).				
Total for cities.....	28,594	4,708,982	469,818	1,544,277	129,404	1,892,978
ADRIAN.....	7	25,554	882	24	1,860	874
ALPENA.....	2	177,649	404	3	241	30
ANN ARBOR.....	285	36,023	254	4,233	288	119,184
BATTLE CREEK.....	5,015	179,255	7,037	8,005	324	3,908
BAY CITY.....	1,200	52,399	8,851	1,066	2,356	3,251
BENTON HARBOR.....	263	39,204	1,709	20,875	2,527	932
DETROIT.....	15,747	1,626,226	178,236	795,769	64,946	896,139
ESCANABA.....	9	8,704	1,186	4,365	12	.....
FLINT.....	136	190,275	8,464	128,725	9,565	253,533
GRAND RAPIDS.....	2,523	280,937	15,319	37,793	1,104	25,803
HOLLAND.....	9	40,612	1,170	30	28	50,215
IRONWOOD.....	34	1,828	522	2,154	.....	331
ISHPEMING.....	52	5,346	.....	3	10	294
JACKSON.....	166	83,582	1,703	55,795	3,343	34,412
KALAMAZOO.....	437	240,434	5,703	12,031	2,337	3,689
LANSING.....	206	115,911	6,988	68,360	14,413	114,606
MARQUETTE.....	12	21,407	689	108	4	1,404
MONROE.....	15	184,550	659	205	107	876
MUSKEGON.....	558	116,705	10,157	17,202	5,321	12,253
OWOSSO.....	84	56,249	2,006	54	239	7,098
PONTIAC.....	98	63,745	15,596	49,637	6,687	26,116
PORT HURON.....	329	61,714	5,176	12,079	286	780
SAGINAW.....	378	103,769	5,511	10,422	585	31,664
SAULT STE. MARIE.....	15	113,959	63,493	877	9	9,528
TRAVERSE CITY.....	515	6,425	62	.....	23	1,087
WYANDOTTE.....	155	563,442	61,347	.....	6	1,641
ALL OTHER CITIES <sup>1</sup> .....	344	313,078	66,695	314,372	12,783	293,330

<sup>1</sup> All other cities comprise Hamtramck and Highland Park.



## SPECIAL STATISTICS.

For a number of important industries the Census Bureau collects, by means of special schedules, certain details which do not appear on the general schedule. Data for 11 of these industries in Michigan are here presented.

**Automobiles, including bodies and parts (Table 19).**—This table shows the number and value of the different classes of automobiles manufactured, as reported at the censuses of 1919, 1914, and 1909.

Although the figures in the table show large increases in the number of the different classes of automobiles manufactured in 1919 as compared with preceding censuses, they are somewhat misleading owing to a change in the character of operations of one large establishment. In 1914 and 1909 this plant reported a large number of completed automobiles, while in 1919 the greater part of its production was reported as "bodies and parts," the completed machines being reported by assembling plants owned by the same company and located at various places throughout the United States.

Of the total number of automobiles produced in Michigan in 1919, 364,184, or over one-half, were rated as having 20 but less than 30 horsepower. In 1914 the corresponding figures were 313,395 out of a total of 443,072. The remainder was distributed in groups according to horsepower ratings as follows: Three hundred and fifty-seven were of less than 10 horsepower in 1919, as compared with 1,937 in 1914; 163,948 were of 10 but less than 20 horsepower, against 39,250; and 160,681 were of 30 to 50 horsepower, as compared with 79,254. In 1919 no automobiles were reported as having a horsepower rating of 50 and over, while in 1914 there were 9,236 classified in this group.

TABLE 19.—AUTOMOBILES, INCLUDING BODIES AND PARTS: 1919, 1914, AND 1909.

	1919		1914		1909	
	Num-ber.	Value.	Num-ber.	Value.	Num-ber.	Value.
		Dollars.		Dollars.		Dollars.
Total value.....		1,620,383,356		398,289,022		96,651,451
Automobiles, total.....	639,170	727,004,358	443,072	303,774,254	84,800	70,359,749
Pleasure vehicles.....	626,853	642,928,814	437,083	295,553,172	63,883	68,750,909
Touring cars.....	509,830	483,103,499	367,092	251,609,059	43,855	51,365,994
Closed cars.....	54,573	89,900,677	6,610	10,636,264	1,539	3,803,016
Roadsters, runabouts, and all other.....	62,450	69,921,638	63,381	33,307,852	18,489	13,587,309
Business vehicles.....	62,317	84,078,544	5,989	8,221,082	917	1,902,840
Delivery wagons.....	12,912	11,294,203	1,295	970,599	401	319,071
Trucks.....	47,442	70,169,104	4,684	7,220,321	372	994,311
All other.....	1,963	2,615,237	10	30,192	144	289,458
Chassis.....	41,247	51,624,485	(1)	(1)	(1)	(1)
Trailers.....	5,451	1,737,338	(1)	(1)	(1)	(1)
All other products, including bodies and parts and repairs.....		840,017,175		94,514,768		26,291,702

<sup>1</sup> Not reported separately.

**Shipbuilding, including boat building (Tables 20 and 21).**—This industry includes the building and

repairing of steel and wooden vessels, as well as small craft, and the manufacture of masts, spars, oars, and the rigging of vessels. Comparisons of the 1919 figures for this industry, unlike those for any other for which tables are presented, are made with those of the special census for shipbuilding, taken in 1916.

TABLE 20.—SHIPBUILDING, INCLUDING BOAT BUILDING—NUMBER AND TONNAGE: 1919 AND 1916.

	1919		1916	
	Num-ber.	Gross tonnage.	Num-ber.	Gross tonnage.
Vessels, 5 gross tons and over, launched during the year.....	131	208,602	29	38,340
Steel.....	120	206,912	19	37,906
Steam.....	121	200,162	12	35,618
Motor.....	5	750	7	2,288
Unrigged.....	5	1,090	10	434
Wooden.....	5	1,090	1	327
Steam.....	5	1,090	9	107
Motor.....				
Unrigged.....				
Power boats, less than 5 gross tons.....	50		172	

The gross tonnage of iron and steel vessels launched, which was 37,906 in 1916, increased to 206,912 in 1919. Forty-three steel vessels, with a total of 97,249 gross tons, were launched at Detroit; 29 vessels, with 71,567 gross tons, at River Rouge; 6 vessels, with 14,096 gross tons, at Saginaw; and 48 vessels, with 24,000 gross tons, at Dearborn. Of the 126 vessels launched, 73, with 182,162 gross tonnage, were for ocean freight service; 5, aggregating 750 gross tons, were coal barges for the United States Navy; and 48, with 24,000 gross tonnage, were Eagle patrol boats.

The value of work done upon vessels of all kinds during 1919 and 1916 is shown in Table 21.

TABLE 21.—SHIPBUILDING, INCLUDING BOAT BUILDING—VALUE: 1919 AND 1916.

	1919	1916
Total value of work.....	\$85,154,702	\$5,637,103
Work done during the year on new vessels, 5 gross tons and over.....	82,508,048	3,371,750
Steel.....	81,454,048	3,255,904
Wood.....	1,054,000	115,855
Boats of less than 5 tons.....	171,852	150,043
Power boats of all kinds.....	103,259	130,184
Sailboats, rowboats, etc.....	68,593	26,859
Repair work.....	1,567,132	1,455,258
Steel.....	828,595	890,602
Wood.....	738,537	564,656
All other products.....	907,670	664,043

**Paper and wood pulp (Table 22).**—This table shows the quantity and cost of the principal materials used, the quantity and value of the various products, and detailed information regarding equipment, for 1919, 1914, and 1909.

Michigan ranked fifth among the states in the manufacture of paper and wood pulp in 1919. Of the 39 paper and pulp mills in the state in 1919, 4 were



engaged exclusively in the manufacture of wood pulp, 27 made paper only, and 8 produced both pulp and paper.

TABLE 22.—PAPER AND WOOD PULP: 1919, 1914, AND 1909.

	1919	1914	1909
<b>MATERIALS.</b>			
Total cost.....	\$40,353,447	\$14,544,945	\$9,024,595
Pulp wood:			
Cords.....	207,234	182,314	132,846
Cost.....	\$2,580,805	\$1,270,403	\$858,230
Wood pulp purchased:			
Tons.....	106,018	78,488	60,750
Cost.....	\$9,617,530	\$3,100,095	\$2,405,975
Ground—			
Tons.....	9,918	17,511	15,320
Cost.....	\$341,842	\$357,006	\$384,489
Soda fiber 1—			
Tons.....	13,030	12,833	10,360
Cost.....	\$1,185,726	\$581,101	\$691,514
Sulphite fiber—			
Tons.....	67,781	42,765	29,070
Cost.....	\$6,006,262	\$2,022,035	\$1,329,972
Sulphate fiber—			
Tons.....	12,894	4,098	(2)
Cost.....	\$1,073,344	\$170,028	(2)
Screenings, mechanical and chemical—			
Tons.....	2,295	1,281	(2)
Cost.....	\$110,856	\$29,926	(2)
Rags, including cotton and flax waste and sweepings:			
Tons.....	9,675	16,006	11,939
Cost.....	\$1,202,231	\$425,935	\$383,886
Paper stock, including high-grade shavings and old and waste paper: 2			
Tons.....	300,908	200,370	114,497
Cost.....	\$9,084,955	\$3,419,791	\$2,193,302
China clay, domestic and foreign:			
Tons.....	34,375	(2)	(2)
Cost.....	\$638,265	(2)	(2)
Bleaching powder:			
Tons.....	5,631	(2)	(2)
Cost.....	\$245,299	(2)	(2)
Fuel and rent of power, cost.....	\$3,925,143	\$1,407,613	\$958,147
All other materials, cost 1.....	\$13,058,216	\$4,801,044	\$2,225,055
<b>PRODUCTS.</b>			
Total value.....	\$60,209,513	\$22,040,990	\$13,922,124
Book, cover, plate, and coated paper:			
Tons.....	156,598	118,991	85,048
Value.....	\$25,090,000	\$10,075,238	\$6,499,865
Fine paper:			
Tons.....	26,332	17,463	5,032
Value.....	\$6,617,961	\$1,880,801	\$705,772
Wrapping paper:			
Tons.....	53,643	50,873	50,323
Value.....	\$6,893,109	\$3,427,732	\$2,799,583
Boards:			
Tons.....	215,553	109,360	56,342
Value.....	\$15,000,415	\$3,633,395	\$1,866,436
All other paper:			
Tons.....	29,383	36,935	36,411
Value.....	\$6,394,483	\$1,692,933	\$1,709,006
Wood pulp made for sale or for consumption in mills other than where produced:			
Tons.....	31,378	10,464	8,199
Value.....	\$2,249,301	\$549,031	\$300,948
Wood pulp produced (including that used in mills where manufactured), total tons.....	106,497	81,451	65,331
Ground, tons.....	16,980	17,280	12,273
Sulphite fiber, tons.....	71,959	53,358	53,058
Other chemical fiber, tons.....	17,558	10,813	.....
All other products, value.....	\$3,454,244	\$790,860	\$40,514
<b>EQUIPMENT.</b>			
Paper machines:			
Total number.....	82	81	63
Capacity, yearly, tons.....	578,380	430,077	301,345
Fourdrinier—			
Number.....	55	55	43
Capacity per 24 hours, tons.....	923	809	573
Cylinder—			
Number.....	28	26	25
Capacity per 24 hours, tons.....	962	619	321
Pulp equipment:			
Grinders, number.....	19	19	17
Digesters, number.....	36	29	27
Capacity, yearly, tons of pulp, total.....	139,878	93,186	74,932
Mechanical, tons.....	35,974	24,510	18,303
Chemical, tons.....	103,904	68,676	56,629

1 Reported as "Other chemical fiber" in 1914 and 1909.

2 Not reported separately.

3 Reported as "Old and waste paper" in 1914 and 1909.

4 Includes sizing, chemicals, sulphur, dyestuffs, and mill supplies.

94669°—22—44

Book paper was the principal product of the industry at each census, forming 38.8 per cent of the total value of products in 1919. Boards was the next product in importance, representing 22.6 per cent of the total value. To avoid disclosing the data of individual establishments, it was necessary to include the value of tissue paper, tag stock, and various other grades in the item "All other products."

Butter, cheese, and condensed milk (Table 23).—This table shows the quantity and value of the several products of the industry for 1919, 1914, and 1909.

Michigan was the fourth state in 1919 in the production of butter, cheese, and condensed-milk factory products. The states that exceeded it in the total value of these products were Wisconsin, New York, and Minnesota, in the order given. Michigan was the seventh state in the production of butter, fourth in the production of cheese, and fifth in the production of condensed milk.

Of the total value of products, butter formed 44.8 per cent; cheese, 5.3 per cent; and condensed milk, 37.7 per cent. The total value of products increased \$43,237,001, or 200.6 per cent, during the five-year period 1914 to 1919. Values increased to such a degree, influenced largely by industrial conditions brought about by the World War, that they can not properly be used to measure the growth of manufactures between the industrial censuses of 1914 and 1919.

TABLE 23.—BUTTER, CHEESE, AND CONDENSED MILK: 1919, 1914, AND 1909.

	1919	1914	1909
Total value 1.....	\$64,786,598	\$21,549,597	\$14,287,499
Butter:			
Pounds.....	55,842,680	43,220,077	35,511,760
Value.....	\$29,041,657	\$12,416,504	\$10,043,137
Packed solid—			
Pounds.....	29,358,134	32,925,588	30,323,760
Value.....	\$16,650,919	\$9,365,152	\$8,689,270
Prints or rolls—			
Pounds.....	26,484,546	10,294,489	5,183,000
Value.....	\$12,390,738	\$3,051,352	\$1,450,867
Cream sold:			
Pounds.....	6,173,016	7,604,889	2,572,764
Value.....	\$1,475,030	\$901,054	\$249,276
Cheese:			
Pounds.....	12,857,230	13,287,145	13,382,160
Value.....	\$3,454,423	\$1,773,576	\$1,911,875
Full-cream—			
Pounds.....	9,201,576	11,045,713	13,028,317
Value.....	\$2,928,357	\$1,588,656	\$1,860,879
Other kinds—			
Pounds.....	3,655,654	2,221,432	353,843
Value.....	\$526,066	\$184,920	\$50,996
Condensed and evaporated milk:			
Pounds.....	181,700,256	76,514,655	32,404,944
Value.....	\$24,422,946	\$5,200,640	\$1,924,621
Sweetened—			
Pounds.....	63,915,861	37,057,100	27,695,866
Value.....	\$10,442,798	\$2,930,006	\$1,093,030
Unsweetened—			
Pounds.....	117,784,395	39,457,555	4,709,078
Value.....	\$13,980,148	\$2,270,634	\$231,591
All other butter, cheese, and condensed-milk factory products, value.....	\$5,551,485	\$650,716	\$105,378
All other products, value.....	\$841,057	\$607,107	\$53,212

1 In addition, in 1919, butter valued at \$59,175 was manufactured in establishments engaged primarily in the manufacture of products other than those covered by the industry designation.

A consideration of quantity production will give a unit of measure for comparative purposes. During



the five-year period 1914 to 1919 butter increased in quantity 12,622,603 pounds, or 29.2 per cent; cheese decreased 409,915 pounds, or 3.1 per cent; and condensed milk increased 105,185,601 pounds, or 137.5 per cent. The remarkable growth of the condensed-milk industry was due largely to the increased production of unsweetened condensed milk, the output of which in 1919 formed 64.8 per cent of the total condensed and evaporated milk reported.

**Slaughtering and meat packing (Table 24).**—This table presents detailed statistics for materials and products for the census years 1919, 1914, and 1909.

TABLE 24.—SLAUGHTERING AND MEAT PACKING: 1919, 1914, AND 1909.

	1919	1914	1909
<b>MATERIALS.</b>			
Total cost.....	\$49,774,348	\$18,813,805	\$11,253,120
Animals slaughtered, cost.....	\$45,783,152	\$17,054,123	\$9,498,922
Beefes—			
Number.....	106,975	62,035	50,157
Cost.....	\$8,652,036	\$3,715,884	\$2,072,350
Calves—			
Number.....	74,242	24,505	27,284
Cost.....	\$1,876,206	\$368,055	\$288,412
Sheep and lambs—			
Number.....	193,345	125,537	88,285
Cost.....	\$2,010,375	\$644,913	\$404,087
Hogs—			
Number.....	881,030	761,380	444,756
Cost.....	\$33,244,535	\$12,325,271	\$6,734,073
All other materials, cost.....	\$3,991,196	\$1,759,742	\$1,754,198
<b>PRODUCTS.</b>			
Total value.....	\$59,584,740	\$20,665,737	\$12,842,201
Fresh meat, value.....	\$31,010,401	\$9,883,613	\$4,650,040
Beef—			
Pounds.....	44,582,286	28,050,744	24,099,494
Value.....	\$7,069,863	\$3,517,274	\$1,931,128
Veal—			
Pounds.....	7,215,770	2,800,785	2,603,074
Value.....	\$1,808,948	\$408,809	\$300,568
Mutton and lamb—			
Pounds.....	6,757,427	4,782,158	3,509,894
Value.....	\$1,767,650	\$608,761	\$363,474
Pork—			
Pounds.....	74,392,478	30,382,616	16,479,567
Value.....	\$19,111,083	\$5,232,513	\$2,014,770
Edible offal, and other fresh meat—			
Pounds.....	5,272,424	1,278,456	631,000
Value.....	\$652,857	\$116,256	\$37,100
Pork, pickled and other cured:			
Pounds.....	53,360,220	43,017,100	36,145,040
Value.....	\$13,762,761	\$5,697,111	\$4,707,180
Sausage:			
Pounds.....	10,758,438	8,409,965	8,174,244
Value.....	\$2,582,906	\$1,103,762	\$804,620
Tallow:			
Pounds.....	3,041,759	1,496,222	751,470
Value.....	\$449,496	\$106,308	\$38,531
Lard:			
Pounds.....	26,271,409	27,342,302	13,351,255
Value.....	\$7,078,212	\$2,744,866	\$1,859,703
Grease and soap stock:			
Pounds.....	5,326,001	2,766,045	( <sup>1</sup> )
Value.....	\$309,048	\$105,617	( <sup>1</sup> )
Fertilizers and fertilizer materials:			
Tons.....	8,527	( <sup>2</sup> )	( <sup>2</sup> )
Value.....	\$505,787	( <sup>2</sup> )	( <sup>2</sup> )
Hides and pelts:			
Cattle—			
Number.....	106,975	62,035	
Pounds.....	5,398,013	3,457,996	
Value.....	\$1,839,138	\$531,873	57,635
Calf—			
Number.....	37,137	9,716	2,982,942
Pounds.....	452,770	118,828	\$365,080
Value.....	\$265,807	\$20,772	
Sheep—			
Number.....	192,998	125,534	88,285
Value.....	\$610,420	\$128,392	\$94,862
All other products, value.....	\$661,734	\$283,423	\$316,185

<sup>1</sup> Not reported separately.

<sup>2</sup> Included in "All other products" to avoid disclosing individual operations.

"All other materials" includes the cost of poultry, dressed meat purchased for curing, cottonseed oil, refrigeration, curing materials, seasoning, fuel, rent of power, containers, mill supplies, and freight; and "All other products" includes the value of beef, pickled and other cured, compound lard, casings, and hog and cattle hair.

The industry made a substantial growth in the last census period, as indicated by the increase of 282,135, or 29 per cent, in the total number of animals slaughtered. This was not as rapid as that from 1909 to 1914, when the increase in the number slaughtered was 362,975, or 59.4 per cent. The increase in the cost of animals slaughtered, however, from 1914 to 1919, was \$28,729,029, or 167.3 per cent.

The industry is centered in Detroit, with a production of \$57,648,125, or 96.7 per cent of the entire product of the state.

**Leather, tanned, curried, and finished (Table 25).**—This table gives for 1919, 1914, and 1909 the quantity and cost of materials used and the quantity and value of the principal products.

The number of cattle hides treated decreased by 439,211, or 25.7 per cent, in 1919 as compared with 1914; and by 161,144, or 11.3 per cent, as compared with 1909. Despite this decrease the total cost of the hides was considerably greater than at previous censuses. All other raw stock, which consisted principally of horsehides, and calf, kip, and sheep skins, showed an increase of 798 per cent for the census period 1914 to 1919. Fuel, rent of power, and all other materials also showed substantial increases for the same period.

TABLE 25.—LEATHER, TANNED, CURRIED, AND FINISHED: 1919, 1914, AND 1909.

	1919	1914	1909
<b>MATERIALS.</b>			
Total cost.....	\$32,451,798	\$20,982,247	\$12,120,971
Cattle hides:			
Number.....	1,260,741	1,708,952	1,430,885
Cost.....	\$17,295,185	\$15,807,830	\$8,022,645
All other raw stock, cost.....	\$6,532,698	\$727,628	\$1,055,188
Fuel and rent of power, cost.....	\$766,723	\$200,013	\$104,423
All other materials, cost.....	\$7,857,107	\$4,155,876	\$2,948,715
<b>PRODUCTS.</b>			
Total value.....	\$45,800,786	\$25,503,573	\$15,331,104
Leather:			
Sole—			
Sides.....	1,149,381	1,871,940	1,603,512
Value.....	\$11,046,441	\$12,641,509	\$7,320,276
Upper (other than patent), value.....	\$14,873,789	\$4,323,597	\$5,087,868
Upholstery (automobile, furniture, and carriage), value.....	\$4,405,467	\$1,395,076	\$5,722
Harness—			
Sides.....	239,588	403,346	214,879
Value.....	\$3,285,618	\$2,580,218	\$1,210,132
All other, value.....	\$4,365,514	\$3,493,485	\$3,311,462
All other products, value.....	\$905,385	\$451,361	\$225,619
Work on materials for others, value.....	\$6,318,572	\$618,327	\$104,025

<sup>1</sup> Does not include upper leather made from skins.



The total value of products increased in 1919 by \$20,297,213, or 79.6 per cent, as compared with 1914. Upper leather (other than patent), with an increase of \$10,550,192, or 244 per cent, made the greatest gain. Upholstery and harness leather showed greater values in 1919 than 1914, but sole leather showed a lesser value. Both sole and harness leather fell off in production, the former especially, showing a decrease of 722,559 sides, or 38.6 per cent. "All other leather" covers case, bag, and strap, glove, horse, finished splits, bookbinders' leather, etc.

"All other products," consisting of wool, hair, etc., has doubled since 1914, and the amount received for tanning, currying, and finishing for others was more than ten times as great in 1919 as it was in 1914.

**Flour-mill and gristmill products** (Table 26).—This table presents the quantity and value of the principal kinds of products of flour mills and gristmills for the census years 1919, 1914, and 1909.

Although there was a general decrease in quantities in 1919 for all important products of this industry, as compared with 1914, it was still one of the leading industries in the state. This decrease was probably due to the decrease in acreage and the scarcity of labor for agricultural purposes.

Wheat flour, the product of greatest value in the industry, formed 64.3 per cent of the total value of products in 1919 and 58.6 per cent in 1914.

TABLE 26.—FLOUR-MILL AND GRISTMILL PRODUCTS (MERCHANT MILLS): 1919, 1914, AND 1909.

	1919	1914	1909
Products, total value.....	\$44,144,434	\$27,381,474	\$34,860,803
Wheat flour:			
Barrels.....	2,537,386	3,056,744	3,447,800
Value.....	\$28,366,273	\$16,050,043	\$18,838,591
Rye flour:			
Barrels.....	137,750	74,662	61,963
Value.....	\$1,248,024	\$377,707	\$266,698
Corn meal and corn flour:			
Barrels.....	94,175	131,046	177,189
Value.....	\$812,361	\$461,630	\$606,706
Buckwheat flour:			
Pounds.....	7,981,873	15,773,491	20,161,026
Value.....	\$590,503	\$447,545	\$547,024
Bran and middlings:			
Tons.....	103,752	140,893	
Value.....	\$4,548,649	\$3,298,041	520,810
Feed and offal:			
Tons.....	135,199	216,760	
Value.....	\$8,342,228	\$6,350,156	\$13,970,486
All other cereal products, value.....	\$212,861	\$291,053	\$319,937
All other products, value.....	\$17,535	\$98,690	\$311,361

**Beet sugar** (Table 27).—This table shows the quantity of domestic sugar beets used in the production of beet sugar during 1919, 1914, and 1909, and the quantity and value of the different products made from sugar beets.

In 1914 Michigan ranked third in value of products among the states producing beet sugar, being exceeded by California and Colorado while in 1919 its rank was second, being exceeded only by Colorado.

TABLE 27.—BEET SUGAR: 1919, 1914, AND 1909.

	1919	1914	1909
Beets used, tons.....	992,938	862,053	816,609
Products, total value.....	\$20,378,870	\$11,023,058	\$10,476,876
Sugar:			
Granulated—			
Tons.....	122,539	111,570	103,864
Value.....	\$23,887,805	\$9,944,717	\$9,766,587
Raw—			
Tons.....	169	305	551
Value.....	\$12,505	\$22,239	\$41,404
Molasses:			
Gallons.....	3,435,572	4,133,121	5,016,748
Value.....	\$504,445	\$277,266	\$337,200
Pulp, value.....	\$1,890,475	\$778,836	\$339,025
All other products, value.....	\$113,040		\$2,660

**Chemicals** (Table 28).—This table presents the statistics of products for the chemical industries in 1919. The production includes all products reported by 40 establishments engaged primarily in the manufacture of chemicals, including those of coal-tar origin, and subsidiary chemicals to the value of \$3,194,793 manufactured by establishments included under other industry classifications.

In 1914 there were 36 establishments with products valued at \$13,891,415 and in 1909, 36 establishments with products of \$12,890,000 in value, these figures being comparable with the 40 establishments and the products of the classified industries, valued at \$38,667,887 in 1919. The increase in value of products for the period 1914 to 1919 was at the rate of 201 per cent, and for 1909 to 1914, 8 per cent.

A considerable portion of the production was made with the aid of electricity. The value of the chemicals made by electrochemical or electrometallurgical methods was \$10,284,831, equal to 27.2 per cent of all chemicals for the state, and 14.2 per cent of all electrochemical and electrometallurgical chemicals in the United States.

TABLE 28.—CHEMICALS: 1919.

	1919
Products, total value.....	\$41,872,200
The classified industries:	
Chemicals.....	37,850,834
Coal-tar products.....	817,053
Subsidiary chemical products from other industries.....	3,204,313
Acids.....	942,011
Sodas, sodium, and compounds.....	22,131,154
Potash.....	588,814
Bleaching compounds.....	1,267,678
Compressed and liquefied gases.....	1,527,723
Other chemicals.....	13,437,068
All other products, value.....	1,977,732

**Printing and publishing** (Table 29).—This table shows the number and aggregate circulation per issue for all publications reported in Michigan for the census years 1919, 1914, and 1909.

Although the total number of publications decreased during the five-year period 1914 to 1919 there was



an increase of 564,842, or 15.6 per cent, in their aggregate circulation. The increase in the circulation of dailies was 131,668, or 14.8 per cent. Of these dailies, 17 were published in the morning, reporting a circulation of 274,911, and 56, with a circulation of 745,738, were published in the afternoon. These increases in circulation were 12.3 and 15.8 per cent, respectively, over the figures reported for 1914.

During the five years the circulation of weekly newspapers and periodicals increased 310,846, or 9.2 per cent.

The foreign-language publications numbered 39 with an aggregate circulation of 201,509, as compared with 53 in 1914 with a circulation of 169,612. The great increase in circulation was principally in publications printed in Polish. In 1914 there were reported for this language 3 dailies, 1 Sunday, 1 weekly, 1 semi-weekly, and 1 monthly publication, the total circulation being 43,793. In 1919 there were 3 dailies, 1 Sunday, and 4 weeklies with a total circulation of 92,409. Other foreign-language publications were 1 daily and 1 Sunday in German; 1 daily and 1 Sunday in Yiddish; 1 weekly in Croatian; 4 weeklies, 1 triweekly, and 2 monthlies in Dutch; 2 weeklies, 2 triweeklies, 3 monthlies, 1 semimonthly, and 1 quarterly in Finnish; 1 weekly and 1 monthly in Hungarian; 2 weeklies and 1 triweekly in Italian; 1 weekly each in Flemish, Slovenian, Swedish, and English and German; and 1 monthly in Magyar.

TABLE 29.—PRINTING AND PUBLISHING: 1919, 1914, AND 1909.

PERIOD OF ISSUE.	NUMBER OF PUBLICATIONS.			AGGREGATE CIRCULATION PER ISSUE.		
	1919	1914	1909	1919	1914	1909
Total.....	630	736	747	4,192,771	3,627,929	2,766,282
Daily.....	73	80	87	1,020,649	888,981	681,919
Sunday.....	14	14	15	507,916	342,163	256,583
Semiweekly.....	6	21	28	6,854	33,080	96,560
Triweekly.....	5	7	6	18,150	12,803	10,080
Weekly.....	443	517	528	1,104,022	793,176	750,298
Semimonthly.....	4	7	4	14,200	106,437	13,991
Monthly.....	72	84	73	1,464,830	1,428,889	927,601
Quarterly <sup>1</sup> .....	13	6	8	56,150	22,400	53,250

<sup>1</sup> Includes in 1919, 2 bimonthlies; in 1914, 1 bimonthly and 1 semiannual; and in 1909, 2 bimonthly and 2 "All other" publications.

**Lumber and timber products (Table 30).**—This table presents statistics pertaining to the chief products of the lumber industry for 1919, 1914, and 1909. Michigan has been prominent in the lumber industry in the United States for the past 80 years, and was the leading state in the production of lumber in 1869, 1879, and 1889. In 1899 it occupied second place. The

state's rank in production has decreased rapidly, and in 1909 it ranked tenth; in 1914, thirteenth; and in 1919, fourteenth.

Until 1904 the cut consisted principally of white pine. This wood has been largely cut out, and in 1919 60 per cent of the total cut of the state was from hard woods, the principal species being maple. In the production of lumber from this wood the state ranked first. In 1919 the cut from all woods decreased 27.9 per cent compared with that for 1914, and 53.7 per cent compared with that for 1909.

The lumber cut from the principal species in 1919 was reported as follows: Maple 321,409,000 feet, or 36.7 per cent of the total cut from all species in the state; hemlock 267,824,000 feet, or 30.6 per cent; birch 63,533,000 feet, or 7.3 per cent; white pine 57,501,000 feet, or 6.6 per cent; beech 49,125,000 feet, or 5.6 per cent; basswood 33,532,000 feet, or 3.8 per cent; and elm 30,745,000 feet, or 3.5 per cent. Among other woods sawed into lumber in considerable quantities were oak, larch, and spruce.

TABLE 30.—LUMBER, LATH, AND SHINGLES: 1919, 1914, AND 1909.

PRODUCT.	QUANTITY. <sup>1</sup>		
	1919	1914	1909
Lumber.....M feet b. m.....	875,891	1,214,435	1,889,724
Lath.....thousands.....	51,469	( <sup>2</sup> )	218,308
Shingles.....thousands.....	144,173	( <sup>2</sup> )	891,649

<sup>1</sup> The output of custom mills is included in 1919 and 1909, but not in 1914.

<sup>2</sup> Not reported.

**Laundries (Table 31).**—Statistics for power laundries are not included in the general tables nor in the totals for manufacturing industries. Table 31, however, summarizes the statistics for such laundries in Michigan for 1919 and 1914.

TABLE 31.—POWER LAUNDRIES: 1919 AND 1914.

	NUMBER OR AMOUNT.		Percent of increase, <sup>1</sup> 1914-1919
	1919	1914	
Number of establishments.....	107	234	-15.8
Persons engaged.....	5,740	5,037	1.9
Proprietors and firm members.....	218	270	-19.3
Salaried employees.....	615	465	32.3
Wage earners (average number).....	4,013	4,062	0.2
Primary horsepower.....	7,151	6,467	10.7
Capital.....	\$5,421,084	\$3,172,343	70.9
Salaries and wages.....	4,725,134	2,619,264	80.4
Salaries.....	935,955	458,146	104.3
Wages.....	3,789,179	2,161,118	75.3
Paid for contract work.....	26,372	3,807.0	3,807.0
Rent and taxes.....	210,054	151,040	38.2
Cost of materials.....	2,192,476	928,502	136.1
Amount received for work done.....	9,416,373	5,115,280	84.1

<sup>1</sup> A minus sign (—) denotes decrease.



Dyeing and cleaning (Table 32).—Statistics for dyeing and cleaning establishments that were operated by mechanical power in 1919 are presented in this table. Statistics for such establishments are not included in the general tables nor in the totals for manufacturing industries for censuses since 1900. This presentation is the first of its kind that has been made since the census statistics were confined to manufacturing industries as distinguished from the hand trades, household industries, etc.

TABLE 32.—DYEING AND CLEANING: 1919.

	Number or amount.
Number of establishments.....	73
Persons engaged.....	895
Proprietors and firm members.....	79
Salaried employees.....	135
Wage earners (average number).....	681
Primary horsepower.....	714
Capital.....	\$1,240,051
Salaries and wages.....	956,798
Salaries.....	161,490
Wages.....	792,308
Paid for contract work.....	10,328
Rent and taxes.....	83,311
Cost of materials.....	445,540
Amount received for work done.....	2,043,569

Custom sawmills and custom gristmills (Tables 33 and 34).—Statistics for custom sawmills and custom gristmills are not included in the general tables nor in the totals for manufacturing industries. Data for these custom mills were not collected in 1914. Tables 33 and 34, however, summarize the statistics for such mills for 1919 and 1909. The value of products for custom sawmills represents the amount charged for

the work performed, and that for custom gristmills the selling value of the grain milled.

TABLE 33.—CUSTOM SAWMILLS: 1919 AND 1909.

	NUMBER OR AMOUNT.		Per cent of increase, <sup>1</sup> 1909-1919.
	1919	1909	
Number of establishments.....	103	197	-47.7
Persons engaged.....	199	580	-65.7
Proprietors and firm members.....	128	271	-52.8
Salaried employees.....	71	306	-76.8
Wage earners (average number).....	2,576	4,894	-47.4
Primary horsepower.....	\$148,240	\$322,255	-54.0
Capital.....	44,983	103,029	-56.3
Salaries and wages.....	44,986	102,659	-56.2
Salaries.....	1,665	2,064	-19.3
Wages.....	8,665	4,051	113.9
Rent and taxes.....	94,317	236,209	-60.1
Cost of materials.....			
Amount received for work done.....			

<sup>1</sup> A minus sign (—) denotes decrease.

TABLE 34.—CUSTOM GRISTMILLS: 1919 AND 1909.

	NUMBER OR AMOUNT.		Per cent of increase, <sup>1</sup> 1909-1919.
	1919	1909	
Number of establishments.....	185	208	-11.1
Persons engaged.....	313	357	-12.3
Proprietors and firm members.....	183	256	-28.5
Salaried employees.....	24	8	.....
Wage earners (average number).....	106	93	.....
Primary horsepower.....	6,808	7,172	-3.8
Capital.....	\$1,588,117	\$722,877	119.7
Salaries and wages.....	151,011	39,798	281.7
Salaries.....	28,159	3,260	763.8
Wages.....	123,752	36,538	238.7
Rent and taxes.....	23,391	6,947	236.7
Cost of materials.....	4,523,400	1,792,317	152.4
Value of products <sup>2</sup> .....	5,302,703	2,140,461	147.7

<sup>1</sup> A minus sign (—) denotes decrease; percentages are omitted where base is less than 100.  
<sup>2</sup> Includes estimate of all grain ground.

## GENERAL TABLES.

Table 35 gives, for 1919, 1914, and 1909, the number of establishments, average number of wage earners, primary horsepower, wages, cost of materials, and value of products for selected industries in the state and in the cities of Detroit, Grand Rapids, and Saginaw; and for Flint and Lansing and each of the cities in the state having from 10,000 to 50,000 inhabitants, for which comparative figures are available, similar data for all industries combined.

Table 36 presents, for 1919, for the state as a whole and for each city having a population of more than 50,000, statistics in detail for each industry for which figures can be shown without disclosing the operations of individual establishments; and the statistics for all industries combined for each of the cities in the state having from 10,000 to 50,000 inhabitants, for which figures can be given without disclosing the operations of individual establishments.



## MANUFACTURES—MICHIGAN.

TABLE 35.—COMPARATIVE SUMMARY FOR SELECTED INDUSTRIES AND FOR CITIES: 1919, 1914, AND 1909.

INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earners (aver- age num- ber).	Primary horse- power.	Wages.	Cost of mate- rials.	Value of prod- ucts.	INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earners (aver- age num- ber).	Primary horse- power.	Wages.	Cost of mate- rials.	Value of prod- ucts.
					Expressed in thousands of dollars.	Expressed in thousands of dollars.	Expressed in thousands of dollars.						Expressed in thousands of dollars.	Expressed in thousands of dollars.	Expressed in thousands of dollars.
THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES.															
All industries.....	1919	8,305	471,242	1,202,128	639,708	1,919,243	3,466,188	Coffins, burial cases, and undertakers' goods.	1919	24	416	1,087	379	1,340	2,522
	1914	8,724	271,090	730,383	182,252	592,801	1,086,162		1914	23	540	1,077	315	1,355	
	1909	9,159	231,499	598,288	118,968	368,612	685,109		1909	18	439	711	208	493	1,085
Agricultural implements..	1919	23	2,708	6,197	3,003	5,048	11,091	Confectionery and ice cream. <sup>2</sup>	1919	184	1,746	3,738	1,462	7,168	12,627
	1914	30	2,143	5,941	1,456	2,640	7,731		1914	124	1,187	2,774	555	2,858	4,843
	1909	32	2,359	5,195	1,261	2,890	9,273	Cooperage and wooden goods, not elsewhere specified.	1919	53	1,067	4,553	765	1,970	3,880
Artificial stone products..	1919	191	480	834	612	980	2,434		1914	82	1,067	7,316	912	2,063	3,839
	1914	217	483	1,258	306	400	1,060		1909	101	2,042	8,500	1,016	2,001	3,989
	1909	191	514	634	255	349	908	Copper, tin, and sheet- iron products. <sup>3</sup>	1919	142	2,797	2,781	3,270	8,230	16,058
Automobiles, including bodies and parts.	1919	271	175,985	284,127	272,989	959,767	1,620,383		1914	162	2,397	2,789	1,437	2,807	5,650
	1914	205	67,538	79,379	57,792	219,215	398,289		1909	152	2,386	1,875	1,122	2,545	4,929
	1909	113	25,444	25,938	15,491	53,882	96,651	Corsets.....	1919	12	1,529	724	1,031	2,013	7,298
Awnings, tents, and sails.	1919	22	190	117	213	920	1,645		1914	16	2,149	959	873	1,809	4,982
	1914	24	154	45	104	261	502		1909	14	2,461	734	835	1,877	4,368
	1909	17	129	44	67	199	349	Cutlery and tools, not elsewhere specified.	1919	94	3,352	3,062	4,810	3,597	12,078
Baskets, and rattan and willow ware.	1919	9	296	263	216	198	539		1914	28	453	1,194	320	387	965
	1914	13	238	574	113	285	537		1909	37	668	1,370	307	384	1,124
	1909	18	373	900	159	174	480	Electrical machinery, ap- paratus, and supplies.	1919	51	4,190	5,659	4,685	9,035	25,026
Boots and shoes.....	1919	15	1,120	660	921	4,184	6,046		1914	35	1,144	1,584	638	1,740	3,416
	1914	24	2,035	1,596	932	3,181	5,357		1909	40	1,218	1,355	494	1,030	2,327
	1909	23	2,455	786	936	3,341	5,256	Flour-mill and gristmill products.	1919	345	1,128	29,928	1,257	38,185	44,144
Boxes, paper and other, not elsewhere specified.	1919	22	2,336	5,226	2,161	5,286	10,935		1914	427	1,370	35,321	800	23,209	27,381
	1914	23	1,461	5,935	748	2,131	3,748		1909	520	1,530	38,091	806	20,359	34,861
	1909	19	1,326	1,564	447	1,618	2,663	Food preparations, not elsewhere specified.	1919	37	2,483	12,167	3,108	18,813	35,702
Brass, bronze, and copper products.	1919	80	10,306	27,912	14,579	38,849	62,708		1914	59	1,683	9,790	1,110	7,039	10,005
	1914	64	4,731	14,251	3,030	11,473	16,869		1909	49	1,303	8,983	724	4,750	11,492
	1909	60	4,771	11,622	2,450	8,993	13,890	Foundry and machine- shop products. <sup>4</sup>	1919	975	64,623	134,422	88,511	150,126	324,354
Bread and other bakery products.	1919	944	5,088	6,339	5,895	28,116	44,923		1914	705	26,497	52,085	18,092	27,120	64,576
	1914	922	4,014	3,479	2,459	9,308	16,000		1909	654	21,649	34,152	12,344	18,714	45,399
	1909	816	2,637	1,953	1,444	6,071	11,082	Fur goods.....	1919	31	426	117	412	1,282	2,444
Brick, tile, pottery, and other clay products. <sup>1</sup>	1919	61	1,666	7,741	2,179	1,579	5,983		1914	35	380	503	183	818	1,680
	1914	102	2,194	11,505	1,245	1,058	3,174		1909	31	619	232	267	984	2,284
	1909	131	1,771	8,772	892	649	2,293	Furniture and refrigera- tors.	1919	183	20,151	32,415	21,236	31,516	76,216
Butter, cheese, and con- densed milk.	1919	318	2,194	9,136	2,483	55,906	64,787		1914	202	16,207	28,204	9,488	14,361	38,857
	1914	364	1,367	6,659	803	18,463	21,550		1909	202	10,010	27,485	8,300	11,718	28,042
	1909	435	1,073	4,776	554	12,377	14,287	Gas and electric fixtures and lamps and reflec- tors.	1919	21	1,042	1,847	1,510	2,910	6,981
Canning and preserving, fruits and vegetables.	1919	52	2,109	4,185	1,135	7,971	11,172		1914	13	597	993	445	936	2,094
	1914	49	1,687	3,712	583	2,040	4,422		1909	20	395	386	219	642	1,646
	1909	72	1,311	2,216	391	1,442	2,368	Gas, illuminating and heating.	1919	59	2,846	13,593	3,965	8,270	17,093
Carriages and wagons and materials.	1919	46	367	1,134	389	714	1,523		1914	59	2,349	4,935	1,584	3,350	10,441
	1914	177	1,417	2,739	982	1,928	3,775		1909	55	1,771	6,055	1,090	2,129	6,748
	1909	212	4,034	6,362	2,240	5,262	10,159	Ice, manufactured.....	1919	18	742	8,137	1,186	717	2,822
Carriages and sleds, chil- dren's.	1919	10	799	609	737	1,397	3,410		1914	11	443	4,433	389	128	705
	1914	8	462	598	224	443	970		1909	5	87	1,950	77	40	199
	1909	9	555	484	214	257	682	Iron and steel, blast fur- naces.	1919	11	1,101	6,367	1,710	10,298	13,534
Cars and general shop con- struction and repairs by electric-railroad com- panies.	1919	15	1,401	849	2,088	1,625	3,828		1914	12	991	14,015	782	3,877	5,450
	1914	18	885	413	629	632	1,326		1909	11	1,016	17,403	632	4,224	5,824
	1909	15	574	1,704	318	949	1,301	Iron and steel, steel works and rolling mills.	1919	7	1,455	9,142	2,471	2,902	8,345
Cars and general shop con- struction and repairs by steam-railroad com- panies.	1919	36	7,025	11,079	9,862	6,220	17,223		1914	9	718	4,688	408	871	1,716
	1914	26	5,803	8,595	3,005	3,204	7,569		1909	8	1,188	4,290	661	1,508	2,670
	1909	32	5,401	5,742	3,500	2,916	6,838	Iron and steel, forgings, not made in steel works or rolling mills.	1919	15	1,506	6,767	2,387	4,862	8,559
Cement.....	1919	11	1,387	35,470	1,739	3,063	9,643		1914	11	552	1,532	470	807	1,498
	1914	11	1,340	24,158	975	2,408	4,520		1909	4	307	483	182	240	602
	1909	13	1,306	21,773	826	1,403	2,915	Knit goods.....	1919	31	3,170	3,073	2,114	6,700	12,039
Chemicals.....	1919	36	5,712	74,943	8,950	15,744	37,851		1914	34	2,714	3,373	1,000	2,610	5,233
	1914	36	4,509	45,944	3,405	6,373	13,891		1909	35	2,545	3,201	769	2,047	4,020
	1909	36	3,174	26,594	2,012	5,072	12,890	Leather goods <sup>5</sup> .....	1919	75	625	463	603	2,309	4,181
Clothing, men's, includ- ing shirts.	1919	41	2,227	1,102	1,616	6,632	10,916		1914	103	625	462	379	1,413	2,426
	1914	39	2,502	1,075	1,094	2,996	5,306		1909	57	834	760	434	1,458	2,560
	1909	40	3,580	1,151	1,221	3,389	6,532	Leather, tanned, curried, and finished.	1919	28	3,464	12,243	4,163	32,452	45,801
Clothing, women's.....	1919	33	1,036	262	750	2,273	3,923		1914	23	2,773	6,787	1,739	20,982	25,504
	1914	32	1,672	552	715	1,194	2,661		1909	24	2,291	6,719	1,133	12,121	15,331
	1909	52	2,194	581	745	1,710	3,587	Liquors, malt.....	1919	25	779	6,658	1,052	2,027	5,276
Coffee, roasting and grind- ing.	1919	19	99	461	74	2,133	2,514		1914	70	2,097	13,039	1,703	4,328	15,041
	1914	16	88	205	50	1,316	1,618		1909	70	1,527	9,219	1,073	2,421	9,840
	1909	12	76	278	40	680	938								

<sup>1</sup> Includes "sand-lime brick" in 1919 and 1914.<sup>2</sup> Includes "chewing gum" in 1914.<sup>3</sup> Includes "stamped ware, not elsewhere specified" and "tinware, not elsewhere specified."<sup>4</sup> Includes "automobile repairing"; "engines, steam, gas, and water"; "gas machines and gas and water meters"; "hardware"; "iron and steel, tempering and welding"; "machine tools"; "plumbers' supplies, not elsewhere specified"; "pumps, steam and other power"; "steam fittings and steam and hot-water heating apparatus"; "steel barrels, drums, and tanks"; "structural ironwork, not made in steel works or rolling mills"; and "textile machinery and parts" in all years; and "hard-ware, saddlery" in 1919 and 1914.<sup>5</sup> Includes "saddlery and harness" and "trunks and valises."



# MANUFACTURES—MICHIGAN.

695

TABLE 35.—COMPARATIVE SUMMARY FOR SELECTED INDUSTRIES AND FOR CITIES: 1919, 1914, AND 1909—Contd.

INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Primary horse- power.	Expressed in thousands of dollars.			INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earn- ers (aver- age num- ber).	Primary horse- power.	Expressed in thousands of dollars.		
					Wages.	Cost of mater- ials.	Value of prod- ucts.						Wages.	Cost of mater- ials.	Value of prod- ucts.
THE STATE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.															
Lumber and timber prod- ucts. <sup>1</sup>	1919 1914 1909	633 748 1,180	21,979 28,527 35,827	114,319 112,584 133,739	22,021 15,195 16,298	43,313 29,356 20,042	90,607 58,523 61,514	Slaughtering and meat packing. <sup>6</sup>	1919 1914 1909	53 36 45	1,871 1,181 902	5,522 3,275 3,404	2,503 815 481	52,088 19,283 11,666	62,515 21,267 13,435
Marble and stone work...	1919 1914 1909	103 111 113	395 461 551	2,098 1,644 1,670	547 390 393	1,021 637 592	2,580 1,561 1,504	Springs, steel, car and car- riage, not made in steel works or rolling mills.	1919 1914 1909	6 6 5	1,870 638 588	1,786 1,000 908	2,242 472 309	5,426 1,183 558	8,472 2,175 1,308
Mattresses and spring beds, not elsewhere specified.	1919 1914 1909	16 23 14	171 278 806	487 517 508	196 162 140	785 519 407	1,369 877 689	Stoves and furnaces, in- cluding gas and oil stoves.	1919 1914 1909	28 27 33	5,241 4,074 4,482	9,382 5,916 5,910	6,959 2,988 2,832	9,281 3,715 2,816	27,986 10,757 9,123
Mineral and soda waters..	1919 1914 1909	131 120 97	602 391 252	1,021 814 606	772 246 138	2,865 819 368	5,467 1,696 910	Sugar, beet.....	1919 1914 1909	16 10 11	1,836 1,328 1,460	20,550 10,306 8,854	2,765 932 910	16,682 6,244 6,228	26,379 11,023 10,477
Musical instruments, pianos.	1919 1914 1909	8 12 14	1,122 925 1,611	1,767 1,481 2,363	1,170 587 983	2,823 1,128 1,882	5,397 2,416 3,944	Tobacco manufactures....	1919 1914 1909	363 626 729	6,272 9,075 7,876	1,184 1,343 937	4,915 3,770 3,076	13,213 8,963 7,208	27,693 20,667 16,179
Oil, essential.....	1919 1914 1909	29 53 23	62 38 54	715 619 865	57 17 17	669 226 415	951 492 486	Toys and games.....	1919 1914 1909	12 7 8	861 251 279	632 198 994	362 149 135	393 246 174	1,010 529 432
Paper and wood pulp.....	1919 1914 1909	39 37 32	9,561 6,051 4,327	95,729 62,528 48,700	11,177 3,559 2,142	40,353 14,545 9,025	66,300 22,050 13,922	Wall plaster and compo- sition flooring.	1919 1914 1909	10 13 16	585 631 746	4,924 4,295 3,029	726 421 270	1,491 743 412	3,591 2,074 1,421
Paper goods, not else- where specified. <sup>2</sup>	1919 1914 1909	14 14 18	556 750 1,181	693 2,009 2,580	577 402 483	2,513 2,252 1,953	4,203 3,588 3,551	Window shades and fix- tures.	1919 1914 1909	5 8 7	766 702 636	1,057 1,149 1,236	633 295 261	865 983 807	2,864 1,756 1,296
Patent medicines and compounds and drug- gists' preparations. <sup>3</sup>	1919 1914 1909	107 142 159	4,751 3,369 3,249	2,642 2,694 2,270	4,151 1,994 1,509	14,690 7,003 4,941	34,945 10,434 13,475	Wirework, not else- where specified.	1919 1914 1909	38 33 37	2,516 1,914 909	3,822 2,269 1,900	2,721 788 428	10,808 3,918 3,446	17,065 5,891 6,285
Printing and publishing <sup>4</sup> .	1919 1914 1909	1,045 1,113 1,045	7,880 8,166 7,219	11,587 13,033 7,651	9,590 5,602 4,000	15,536 7,498 4,985	46,829 24,953 17,348	Wood distillation.....	1919 1914 1909	16 10 12	1,586 845 806	5,985 2,644 5,012	1,988 415 504	5,793 1,708 1,155	10,651 2,678 2,399
Salt.....	1919 1914 1909	12 15 27	2,063 1,434 1,363	10,321 8,316 6,628	2,530 991 745	6,339 2,067 1,643	14,054 4,421 3,653	Wood, turned and carved.	1919 1914 1909	34 45 58	622 576 1,137	1,997 2,901 4,695	615 318 548	837 339 634	1,008 950 1,708
Scales and balances.....	1919 1914 1909	3 3 4	420 276 228	380 298 310	516 200 137	513 208 229	2,340 612 524	Woolen goods.....	1919 1914 1909	9 9 15	812 477 554	1,502 1,311 1,900	719 280 235	2,881 798 863	4,572 1,215 1,571
Shipbuilding, including boat building.	1919 1914 1909	33 62 91	16,541 1,201 2,344	81,153 7,665 6,485	28,921 1,040 1,380	36,121 1,259 2,490	85,155 2,823 5,034	All other industries.....	1919 1914 1909	857 795 874	35,311 21,207 21,672	91,119 62,863 37,710	45,325 13,681 10,912	134,243 60,747 56,914	288,680 101,104 92,648
Show cases.....	1919 1914 1909	6 6 11	261 410 823	685 845 1,403	305 272 459	482 463 796	1,158 1,035 1,896								

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES.

DETROIT..... All industries.	1919 2,176 1914 2,036 1909 2,036	167,016 90,603 81,011	308,250 170,808 114,190	245,434 69,417 43,007	655,913 222,249 130,218	1,234,520 400,348 252,939	DETROIT—Contd. Bread and other bakery products.	1919 294 1914 275 1909 265	2,338 1,850 1,108	3,258 1,827 1,112	3,121 1,200 638	13,642 4,363 2,897	22,631 7,489 4,826
Artificial stone products..	1919 13 1914 16 1909 13	98 77 104	119 98 25	157 49 48	207 50 51	526 151 142	Brick, tile, pottery, and other clay products. <sup>6</sup>	1919 7 1914 9 1909 13	141 100 220	619 804 625	251 110 129	235 95 90	795 269 329
Automobiles, including bodies and parts.	1919 136 1914 122 1909 68	65,090 33,439 15,675	90,141 39,458 14,666	104,091 26,368 9,021	328,783 101,382 31,363	550,228 104,076 59,536	Butter.....	1919 10 1914 5 1909 8	199 56 12	1,395 180 91	321 40 4	6,758 896 57	7,777 1,107 72
Awnings, tents, and sails.	1919 10 1914 8 1909 7	141 114 100	87 22 20	174 80 54	761 172 133	1,380 336 238	Chemicals.....	1919 10 1914 7 1909 5	1,708 1,489 1,198	20,339 13,899 9,564	2,756 1,106 709	3,561 1,633 1,938	11,355 5,875 6,012
Boots and shoes.....	1919 4 1914 6 1909 8	104 905 1,327	129 531 862	180 490 491	552 1,014 1,702	932 2,255 2,744	Clothing, men's, including shirts.	1919 21 1914 20 1909 22	1,251 1,082 2,786	840 812 961	1,087 765 993	4,531 2,273 2,352	7,301 3,897 4,761
Boxes, paper and other, not elsewhere specified.	1919 8 1914 11 1909 7	289 352 300	156 193 142	221 144 115	430 189 148	987 491 382	Clothing, women's.....	1919 13 1914 19 1909 27	395 1,070 921	96 229 154	354 484 357	827 595 661	1,559 1,406 1,494
Brass, bronze, and copper products.	1919 50 1914 38 1909 37	8,664 3,880 4,032	24,866 13,074 10,661	12,429 2,485 2,049	29,292 10,296 8,273	49,240 14,030 12,297	Coffee, roasting and grind- ing.	1919 10 1914 5 1909 6	61 40 41	390 143 186	57 29 24	1,698 701 452	2,004 965 617

<sup>1</sup> Includes "boxes, wooden packing, except cigar boxes"; "lumber, planing-mill products, not including planing mills connected with sawmills"; and "window and door screens and weather strips."

<sup>2</sup> Includes "envelopes."

<sup>3</sup> Includes "perfumery and cosmetics."

<sup>4</sup> Includes "bookbinding and blank-book making"; "engraving, steel and copper plate, including plate printing"; and "lithographing."

<sup>5</sup> Includes "sausage, not made in slaughtering and meat-packing establishments."

<sup>6</sup> Includes "sand-lime brick."



TABLE 35.—COMPARATIVE SUMMARY FOR SELECTED INDUSTRIES AND FOR CITIES: 1919, 1914, AND 1909—Contd.

INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earners (aver- age num- ber).	Primary horse- power.	Wages.	Cost of mater- ials.	Value of prod- ucts.	INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earners (aver- age num- ber).	Primary horse- power.	Wages.	Cost of mater- ials.	Value of prod- ucts.
CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.															
DETROIT—Contd.								FLINT							
Coffins, burial cases, and undertakers' goods.	1919	8	105	189	123	336	775	All industries. <sup>6</sup>	1919	107	24,603	33,610	38,093	172,824	275,780
	1914	7	102	170	67	128	275		1914	94	8,722	10,576	7,235	34,333	53,375
	1909	5	95	148	56	117	268		1909	104	7,088	8,240	4,420	13,971	24,118
Copper, tin, and sheet- iron products. <sup>1</sup>	1919	60	1,419	1,473	1,639	4,346	9,017	GRAND RAPIDS..	1919	611	23,548	44,048	26,170	51,102	109,135
	1914	68	1,957	2,106	1,163	2,108	4,369	All industries.	1914	594	17,427	30,393	10,296	23,095	49,792
	1909	72	1,932	1,453	851	1,932	3,534		1909	524	17,500	27,676	9,217	19,730	42,231
Electrical machinery, ap- paratus, and supplies.	1919	29	1,894	3,084	2,094	4,584	12,970	Automobiles, including bodies and parts.	1919	22	1,232	2,131	1,750	3,251	6,911
	1914	20	591	1,097	334	1,223	2,240		1914	8	87	94	61	114	250
	1909	23	541	575	226	493	1,148		1909	3	86	110	58	147	389
Foundry and machine- shop products. <sup>2</sup>	1919	286	25,563	47,566	38,459	50,512	123,665	Brass and bronze prod- ucts.	1919	4	316	478	329	325	911
	1914	221	11,250	20,210	8,558	12,351	29,465		1914	7	432	560	257	281	707
	1909	215	8,094	10,336	4,828	7,614	18,243		1909	5	405	401	209	243	680
Fur goods.....	1919	17	310	46	329	1,064	2,032	Bread and other bakery products.	1919	74	588	424	442	2,228	3,605
	1914	18	207	190	155	626	1,102		1914	67	441	244	227	943	1,682
	1909	19	371	24	181	707	1,738		1909	60	361	185	185	872	1,476
Iron and steel, forgings, not made in steel works or rolling mills.	1919	6	638	2,979	979	1,219	2,416	Butter.....	1919	5	57	234	70	1,434	1,647
	1914	7	399	1,268	329	583	1,012		1914	6	27	126	19	621	747
Jewelry.....	1919	19	109	72	152	418	938		1909	4	10	134	12	216	249
	1914	18	133	57	101	154	386	Clothing, men's, includ- ing shirts.	1919	6	70	26	66	188	404
	1909	9	92	28	68	43	204		1914	8	199	45	60	192	397
Knit goods.....	1919	8	236	316	194	620	1,103		1909	6	239	70	84	220	513
	1914	9	280	245	102	365	615	Coffins, burial cases, and undertakers' goods.	1919	6	78	238	67	282	537
	1909	9	334	214	91	326	559		1914	4	58	206	37	137	305
Leather goods <sup>3</sup> .....	1919	17	169	127	158	699	1,137	Confectionery and ice cream.	1919	23	287	426	183	1,285	2,345
	1914	32	239	228	145	534	913		1914	12	203	326	95	400	644
	1909	22	403	530	211	819	1,396		1909	6	193	115	71	477	694
Leather, tanned, curried, and finished.	1919	3	340	1,072	603	6,212	8,624	Flour-mill and gristmill products.	1919	9	124	1,937	143	4,952	5,454
	1914	3	301	765	203	1,282	1,715		1914	9	107	1,537	78	2,652	3,142
Liquors, malt.....	1919	9	504	3,905	755	1,424	3,763		1909	8	118	1,510	72	3,045	3,781
	1914	19	1,165	6,088	1,020	2,523	9,410	Foundry and machine- shop products. <sup>7</sup>	1919	66	2,764	4,040	3,131	4,011	10,013
	1909	18	646	3,886	495	1,185	4,042		1914	61	1,532	2,831	989	1,080	3,023
Lumber, planing-mill products, not including planing mills connected with sawmills.	1919	32	1,232	5,895	1,754	5,717	9,114		1909	49	1,532	2,107	825	1,134	2,740
	1914	34	1,410	5,503	989	3,357	5,567	Knit goods.....	1919	4	520	290	440	1,270	2,479
	1909	46	1,607	3,499	809	3,414	5,346		1914	4	422	251	148	505	1,004
Marble and stone work...	1919	22	205	1,309	316	434	1,186		1909	4	216	100	74	393	647
	1914	19	202	650	178	203	522	Leather, tanned, curried, and finished.	1919	4	208	968	220	945	1,885
	1909	19	194	560	131	172	413		1914	3	177	620	115	1,031	1,394
Mineral and soda waters..	1919	28	282	803	406	1,059	2,384		1909	3	98	437	50	545	705
	1914	19	166	148	117	240	539	Liquors, malt.....	1919	3	77	936	96	143	490
	1909	13	81	85	45	113	266		1914	3	174	1,328	123	315	1,201
Models and patterns, not including paper patterns	1919	29	693	438	1,484	312	2,703		1909	3	136	725	94	108	912
	1914	15	201	149	186	43	306	Lumber and timber prod- ucts. <sup>8</sup>	1919	11	438	2,530	406	1,133	2,269
	1909	17	188	95	125	24	238		1914	16	539	2,409	345	1,240	1,925
Photo-engraving.....	1919	12	144	117	271	101	851		1909	20	594	2,504	343	907	1,697
	1914	9	104	61	105	35	282	Printing and publishing <sup>4</sup> .	1919	81	906	1,302	1,145	1,404	4,651
	1909	7	153	116	116	60	351		1914	84	942	1,145	973	888	2,896
Pickles, preserves, and sauces.	1919	12	111	100	112	486	893		1909	68	832	781	489	587	2,057
	1914	13	460	417	198	1,379	1,974	Tobacco, cigars.....	1919	25	678	27	507	793	1,983
	1909	9	408	549	157	855	1,568		1914	32	667	4	261	712	1,293
Printing and publishing <sup>5</sup> .	1919	281	3,806	5,736	5,202	10,138	27,940		1909	36	458	5	188	302	725
	1914	265	3,472	7,098	2,629	4,044	13,108	Wood, turned and carved.	1919	10	116	288	138	99	342
	1909	224	2,519	2,602	1,570	2,044	7,291		1914	10	47	204	31	17	77
Slaughtering and meat packing. <sup>6</sup>	1919	20	1,707	4,678	2,291	49,502	59,341		1909	8	128	246	65	57	184
	1914	13	1,102	3,047	761	18,489	20,321	All other industries.....	1919	258	15,083	20,878	16,977	27,419	63,209
	1909	29	811	3,092	433	11,221	12,850		1914	200	11,378	18,403	6,771	12,795	28,995
Tobacco, cigars and ciga- rettes.	1919	73	3,421	123	2,821	5,557	11,606		1909	235	12,178	18,237	6,392	10,423	24,782
	1914	143	5,352	156	2,165	3,811	8,504	LANSING	1919	147	12,349	23,602	13,957	64,981	104,722
	1909	187	4,354	99	1,586	2,730	6,490	All industries. <sup>9</sup>	1914	180	6,231	12,614	4,373	13,887	26,984
Wirework, not elsewhere specified.	1919	17	790	1,104	994	1,357	2,930		1909	109	5,285	8,720	2,707	8,802	16,567
	1914	10	206	177	108	160	424								
	1909	12	207	175	81	127	357								
All other industries.....	1919	612	42,790	84,683	59,149	118,683	292,417								
	1914	533	25,130	55,648	16,544	44,856	90,292								
	1909	457	29,491	47,578	15,694	40,105	92,287								

<sup>1</sup> Includes "stamped ware, not elsewhere specified," in all years and "tinware, not elsewhere specified," in 1914 and 1909.

<sup>2</sup> Includes "automobile repairing," "engines, steam, gas, and water"; "hardware"; "iron and steel, tempering and welding"; "machine tools"; "plumbers' supplies, not elsewhere specified"; "steam fittings and steam and hot-water heating apparatus"; and "structural ironwork, not made in steel works or rolling mills" in all years; and "gas machines and gas and water meters"; and "pumps, steam and other power" in 1914 and 1909.

<sup>3</sup> Includes "trunks and valises," in all years, and "saddlery and harness" in 1914 and 1909.

<sup>4</sup> Includes "bookbinding and blank-book making"; "engraving, steel and copper plate, including plate printing"; and "lithographing."

<sup>5</sup> Includes "sausage, not made in slaughtering and meat-packing establishments."

<sup>6</sup> Comparative statistics by industries for 1914 and 1909 not available.

<sup>7</sup> Includes "automobile repairing"; "hardware"; "machine tools"; "plumbers' supplies, not elsewhere specified"; "steam fittings and steam and hot-water heating apparatus"; "structural ironwork, not made in steel works or rolling mills"; and "textile machinery and parts" in all years; "gas machines and gas and water meters," in 1919, and "engines, steam, gas, and water," in 1914.

<sup>8</sup> Includes "lumber, planing-mill products, not including planing mills connected with sawmills," and "window and door screens and weather strips" in all years; and "boxes, wooden packing, except cigar boxes" in 1919.



## MANUFACTURES—MICHIGAN.

697

TABLE 25.—COMPARATIVE SUMMARY FOR SELECTED INDUSTRIES AND FOR CITIES: 1919, 1914, AND 1909—Contd.

INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earners (aver- age num- ber).	Primary horse- power.	Wages.	Cost of mater- ials.	Value of prod- ucts.	INDUSTRY AND CITY.	Cen- sus year.	Num- ber of estab- lish- ments	Wage earners (aver- age num- ber).	Primary horse- power.	Wages.	Cost of mater- ials.	Value of prod- ucts.
					Expressed in thousands of dollars.								Expressed in thousands of dollars.		

## CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SELECTED INDUSTRIES—Continued.

SAGINAW..... All industries.	1919	208	9,472	31,402	9,963	21,316	43,146	SAGINAW—Contd. Liquors, malt.....	1919	3	70	240	47	80	166
	1914	241	6,342	15,959	3,671	10,656	19,009		1914	5	84	808	71	125	499
	1909	202	5,368	11,867	2,750	7,634	14,192		1909	5	74	170	58	110	393
Bread and other bakery products.	1919	18	240	291	170	914	1,480	Lumber and timber products. <sup>2</sup>	1919	14	490	4,692	400	1,676	2,886
	1914	18	149	135	90	378	602		1914	11	652	4,162	367	1,868	2,503
	1909	9	83	76	42	223	328		1909	12	666	2,682	335	1,629	2,404
Confectionery and ice cream.	1919	7	29	107	27	185	310	Patent medicines and compounds.	1919	4	12	21	14	58	113
	1914	7	51	39	21	116	170		1914	4	6	28	5	37	61
Copper, tin, and sheet-iron work.	1919	10	24	18	24	59	118	Printing and publishing <sup>3</sup> .	1919	19	148	327	159	299	872
	1914	14	42	15	29	51	120		1914	22	153	316	120	207	542
	1909	3	44	41	40	76	154		1909	22	164	411	100	127	428
Foundry and machine-shop products. <sup>1</sup>	1919	28	3,356	15,064	3,771	7,019	15,901	All other industries.....	1919	105	5,097	10,036	5,351	11,026	21,300
	1914	18	792	2,082	565	932	2,265		1914	142	4,407	8,374	2,403	6,942	12,247
	1909	23	698	1,674	432	788	1,838		1909	128	3,609	6,813	1,743	4,681	8,647

## CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

ADRIAN.....	1919	62	1,870	3,317	1,714	10,153	14,549	JACKSON.....	1919	156	9,620	18,744	10,890	20,980	40,518
	1914	68	1,266	2,840	908	3,783	5,442		1914	147	4,906	9,740	3,263	9,529	16,810
	1909	80	1,059	3,211	540	4,150	6,085		1909	168	4,788	6,355	2,487	8,156	13,984
ALPENA.....	1919	38	1,372	23,318	1,528	4,887	9,356	KALAMAZOO.....	1919	135	7,629	26,147	8,162	24,236	46,255
	1914	54	1,494	11,537	895	2,398	4,102		1914	213	5,525	19,548	3,284	10,947	20,214
	1909	58	1,432	10,070	711	2,301	3,964		1909	193	6,272	14,449	3,149	9,505	17,904
ANN ARBOR.....	1919	78	1,612	3,629	2,102	5,377	9,794	MARQUETTE.....	1919	34	1,415	6,138	1,503	4,665	7,210
	1914	75	842	2,376	516	1,302	2,603		1914	34	589	2,156	378	678	1,395
	1909	63	573	1,468	287	1,010	1,806		1909	35	509	1,575	313	565	1,278
BATTLE CREEK.....	1919	118	6,680	22,432	8,668	27,989	56,140	MUSKEGON.....	1919	141	9,716	24,026	10,853	25,676	55,060
	1914	135	4,599	17,049	3,191	8,158	23,248		1914	103	4,648	12,499	2,641	5,317	11,148
	1909	105	4,175	14,923	2,354	7,068	20,174		1909	101	4,522	10,436	2,107	4,938	9,648
BAY CITY.....	1919	108	5,057	14,540	5,393	15,262	28,215	OWOSSO.....	1919	40	1,781	4,220	2,221	5,209	9,049
	1914	142	3,771	15,911	2,129	6,403	11,119		1914	45	1,231	4,266	724	1,851	3,469
	1909	182	4,737	17,872	2,118	5,647	10,294								
BENTON HARBOR.....	1919	65	2,328	3,374	2,563	4,632	11,345	PONTIAC.....	1919	78	7,682	12,841	10,881	66,786	104,090
	1914	62	1,285	2,245	723	1,210	3,022		1914	46	2,409	3,111	2,010	10,449	15,102
									1909	42	1,739	2,854	1,087	3,241	5,894
ESCANABA.....	1919	45	842	2,201	876	1,153	3,018	PORT HURON.....	1919	83	2,231	5,884	2,482	4,931	9,546
	1914	45	777	2,591	499	636	1,507		1914	89	1,296	4,400	735	2,227	4,090
	1909	39	720	1,416	405	364	1,074		1909	82	1,580	3,130	791	1,950	3,588
HOLLAND.....	1919	64	2,748	4,937	2,709	10,225	17,711	SAULT STE. MARIE.....	1919	26	1,248	5,598	1,533	6,760	10,700
	1914	61	2,165	3,696	1,162	5,843	8,084		1914	44	938	2,326	621	2,352	3,821
	1909	61	2,162	3,440	1,069	3,478	5,802		1909	46	825	2,940	432	2,441	3,729
IRONWOOD.....	1919	28	309	725	587	554	1,381	TRAVERSE CITY.....	1919	56	960	3,131	847	2,282	4,100
	1914	24	516	641	305	414	793		1914	60	956	4,553	499	1,087	2,251
	1909	14	201	521	88	201	377		1909	61	1,220	4,231	444	1,183	2,239
ISHPEMING.....	1919	21	107	370	124	483	1,007								
	1914	19	79	230	46	136	229								
	1909	19	66	73	37	52	132								

<sup>1</sup> Includes "automobile repairing"; engines, steam, gas, and water"; "iron and steel, welding"; "machine tools"; and "structural ironwork, not made in steel works or rolling mills."

<sup>2</sup> Includes "lumber, planing-mill products, not including planing mills connected with sawmills," in all years; and "window and door screens and weather strips" in 1919.

<sup>3</sup> Includes "bookbinding and blank-book making" in 1919 and 1909 and "engraving, steel and copper plate, including plate printing," in 1919.



## MANUFACTURES—MICHIGAN.

TABLE 36.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.		Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.							WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.							Capital.
			Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Average number.	Wage earners.		Total.	16 and over.		Under 16.			
						Male.	Female.		Maximum month.	Minimum month.		Male.	Female.	Male.	Female.		
																Number, 15th day of—	
1	All Industries.....	8,305	549,069	6,762	20,402	31,258	19,405	471,242	No 522,876	Ja 421,493	(*)	(*)	(*)	(*)	(*)	Dollars. 2,340,954,312	
2	Agricultural implements.....	23	3,259	8	138	273	132	2,708	Ap 3,113	Se 2,110	2,727	2,665	61	1	.....	14,405,102	
3	Aluminum manufactures.....	6	328	7	16	6	2	297	Se 363	Ja 201	405	395	10	.....	.....	700,683	
4	Artificial limbs.....	9	23	8	2	2	1	10	Jy 4 11	Ja 8	13	12	1	.....	.....	31,041	
5	Artificial stone products.....	191	790	218	51	25	16	480	Se 676	Ja 226	608	607	1	.....	.....	1,693,206	
6	Automobile bodies and parts.....	203	54,905	91	1,696	2,672	1,398	49,048	No 61,438	Ja 36,640	60,175	57,016	3,107	52	.....	186,318,075	
7	Automobiles.....	68	142,976	4	3,084	8,120	4,881	126,937	De 145,241	Ja 99,563	145,578	140,810	4,590	178	.....	806,195,893	
8	Automobile repairing.....	259	1,454	322	48	30	66	968	Au 1,064	Ja 774	1,047	1,032	11	4	.....	2,604,986	
9	Awnings, tents, and sails.....	22	289	20	25	33	21	190	Jy 248	Fe 135	180	99	81	.....	.....	626,959	
10	Bags, other than paper, not including bags made in textile mills.....	5	25	5	3	.....	2	15	Ja 25	Je 9	12	2	10	.....	.....	127,632	
11	Baskets, and rattan and willow ware.....	9	326	9	10	8	3	296	My 341	Ja 103	327	232	95	.....	.....	335,133	
12	Belting, leather.....	8	141	3	9	7	9	113	Au 135	Je 98	133	116	17	.....	.....	1,088,702	
13	Bookbinding and blank-book making.....	24	687	19	43	81	62	482	De 559	Je 445	557	268	270	8	2	1,422,432	
14	Boot and shoe findings.....	3	15	6	1	.....	.....	8	Oc 4 13	Ap 3	13	10	3	.....	.....	41,009	
15	Boots and shoes.....	15	1,314	6	60	78	50	1,120	De 1,192	Ja 1,061	1,193	663	503	18	9	2,871,813	
16	Boxes, cigar.....	9	326	4	13	3	5	301	De 328	Ja 262	327	78	246	3	.....	239,010	
17	Boxes, paper and other, not elsewhere specified.....	22	2,521	10	90	41	44	2,336	.....	.....	2,448	752	1,698	8	20	6,511,322	
18	Shipping containers.....	9	1,876	.....	60	80	31	1,755	No 1,811	Ja 1,700	1,793	610	1,177	1	5	5,761,743	
19	All other.....	13	645	10	30	11	13	531	No 704	Je 500	655	142	401	7	15	749,579	
20	Boxes, wooden packing, except cigar boxes.....	46	1,650	44	78	20	27	1,481	Au 1,670	Mh 1,285	1,741	1,540	180	21	.....	3,727,416	
21	Brass, bronze, and copper products.....	80	11,630	36	392	582	314	10,306	Oc 10,459	Mh 7,353	9,580	8,737	900	5	.....	40,284,256	
22	Brass and bronze products.....	74	9,844	36	371	545	289	8,603	De 10,459	Ja 1,268	9,580	8,737	900	5	.....	30,709,734	
23	Copper and other products.....	6	1,786	21	37	25	1,703	.....	No 2,010	Jy 1,268	1,727	1,065	62	.....	.....	9,574,522	
24	Bread and other bakery products.....	944	7,714	1,112	222	465	5,088	.....	No 962	Fe 764	5,504	4,088	1,304	32	20	17,064,978	
25	Biscuit and crackers.....	6	1,084	5	21	154	43	861	No 962	Fe 764	926	395	531	32	20	2,492,564	
26	Bakery products, other than biscuit and crackers.....	938	6,030	1,107	201	673	422	4,227	De 4,436	Fe 8,934	4,578	3,093	833	32	20	14,572,414	
27	Brick and tile, terra-cotta, and fire-clay products.....	48	972	43	48	14	15	852	.....	.....	973	963	1	0	.....	4,359,383	
28	Building brick.....	22	652	17	31	9	12	583	Je 749	Ja 320	674	674	.....	.....	.....	3,093,637	
29	Sewer pipe, drain tile, and terra-cotta products.....	26	320	26	17	5	3	269	Au 338	Ja 178	299	289	1	9	.....	1,265,746	
30	Brooms, from broom corn.....	21	120	25	3	5	3	84	De 98	Ap 72	91	92	29	.....	.....	239,439	
31	Brushes.....	10	212	14	4	11	7	176	Ja 193	Se 162	171	91	80	.....	.....	618,575	
32	Butter.....	231	1,500	135	144	114	132	984	Jy 1,161	Fe 826	954	815	138	1	.....	9,147,141	
33	Canning and preserving, fruits and vegetables.....	52	2,366	32	149	34	42	2,109	.....	.....	3,462	1,392	1,879	62	120	6,010,871	
34	Canned vegetables.....	25	1,187	9	84	14	19	1,061	Jy 2,440	Mh 250	1,870	801	553	2	23	3,037,862	
35	Canned and dried fruits.....	27	1,179	23	65	20	23	1,048	Jy 2,570	Fe 143	2,083	501	1,320	60	106	2,973,009	
36	Carpets, rag.....	7	36	13	1	1	1	21	Je 27	Ja 14	24	16	5	2	1	24,437	
37	Carriage and wagon materials.....	10	149	4	6	4	135	De 160	Jy 106	160	159	1	.....	.....	.....	474,879	
38	Carriages and sleds, children's.....	10	981	3	40	74	56	790	De 972	Ja 657	972	795	177	.....	.....	2,636,992	
39	Carriages and wagons, including repairs.....	39	303	47	12	5	7	232	.....	.....	211	208	3	.....	.....	914,009	
40	Carriages and wagons.....	27	250	32	12	4	7	195	Ja 228	My 176	179	176	3	.....	.....	820,752	
41	Repair work only.....	12	53	15	1	1	.....	37	Se 38	No 35	32	32	.....	.....	.....	93,817	
42	Cars and general shop construction and repairs by electric railroad companies.....	15	1,513	.....	18	84	10	1,401	My 1,433	Je 1,318	1,381	1,377	2	2	.....	3,139,419	
43	Cars and general shop construction and repairs by steam-railroad companies.....	36	7,579	.....	207	170	87	7,025	De 7,268	Ap 6,910	7,280	7,214	65	1	.....	14,479,362	
44	Cement.....	11	1,566	1	78	81	19	1,387	Se 1,647	Ja 958	1,294	1,277	17	.....	.....	10,540,992	
45	Cheese.....	55	212	31	13	12	10	146	No 153	Ja 125	161	146	15	.....	.....	700,502	
46	Chemicals.....	36	6,721	14	314	492	189	5,712	Ja 7,494	My 4,980	5,999	5,938	53	8	.....	62,841,234	
47	Cleansing and polishing preparations.....	20	463	15	23	197	90	138	.....	.....	162	136	26	.....	.....	1,604,052	
48	Cleansing preparations.....	12	435	10	16	195	88	126	Se 141	Mh 99	144	128	16	.....	.....	1,565,317	
49	Metal and other polishing preparations.....	8	28	5	7	2	.....	12	De 17	Ja 10	18	8	10	.....	.....	38,735	
50	Clothing, men's.....	31	2,041	24	51	112	104	1,750	.....	.....	2,068	800	1,703	2	3	6,125,030	
51	Regular factory products.....	23	1,987	13	51	112	104	1,707	.....	.....	2,021	292	1,720	.....	.....	6,105,205	
52	Men's and youths'.....	6	719	3	17	58	28	613	De 735	Mh 545	735	153	582	.....	.....	2,606,318	
53	All other.....	17	1,268	10	34	64	76	1,094	De 1,270	My 972	1,286	139	1,147	.....	.....	3,438,887	
54	Contract work.....	8	54	11	.....	.....	43	Mh 48	Ja 38	47	8	34	2	3	.....	10,825	
55	Clothing, women's.....	33	1,188	20	69	32	31	1,036	.....	.....	1,230	102	1,128	.....	.....	1,810,718	
56	Regular factory products.....	30	1,128	19	65	32	30	982	Se 627	Je 518	1,146	97	1,049	.....	.....	1,789,158	
57	Shirt waists and dresses, except house dresses.....	9	641	1	39	15	13	573	.....	.....	653	50	597	.....	.....	832,002	
58	Wrappers and house dresses.....	4	78	.....	9	9	1	59	Jy 67	Ja 53	72	4	68	.....	.....	103,790	
59	All other.....	17	409	18	17	8	10	350	No 426	Ja 273	421	37	384	.....	.....	853,366	
60	Contract work.....	3	60	1	4	.....	1	54	Au 95	Fe 4	84	5	70	.....	.....	21,560	
61	Coal-tar products.....	4	131	.....	9	7	2	113	Je 138	Oc 85	134	133	1	.....	.....	1,296,864	
62	Coffee, roasting and grinding.....	19	173	21	12	17	24	99	Jy 110	De 93	102	30	63	.....	.....	969,175	
63	Coffins, burial cases, and undertakers' goods.....	24	538	17	32	48	25	416	Fe 449	Jy 394	426	333	92	1	.....	1,819,185	
64	Condensed milk.....	32	1,270	3	81	56	66	1,064	Je 1,143	Ja 972	1,035	614	119	2	.....	11,224,584	
65	Confectionery and ice cream.....	184	2,308	239	113	117	93	1,746	No 1,687	Je 1,013	2,091	903	1,183	3	2	5,725,391	
66	Confectionery.....	92	1,599	114	69	92	40	1,284	Jy 634	Ja 341	1,012	485	1,125	.....	.....	3,372,272	
67	Ice cream.....	92	709	125	44	25	53	462	.....	.....	479	418	58	3	.....	2,353,119	

\* Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

\* Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



## MANUFACTURES—MICHIGAN.

699

## COMBINED AND SPECIFIED INDUSTRIES: 1919.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.				
										Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>	Rent- ed. <sup>2</sup>	

## THE STATE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES.

Dollars. 79,454,081	Dollars. 69,580,917	Dollars. 639,708,003	Dollars. 8,232,883	Dollars. 5,291,962	Dollars. 164,878,414	Dollars. 1,852,906,090	Dollars. 60,337,153	Dollars. 3,466,188,483	Dollars. 1,546,946,240	1,202,128	440,130	152,781	19,695	40,346	549,176	277,514	1
404,968	504,620	3,003,362	427	2,061	442,721	4,837,772	210,196	11,080,669	6,042,701	6,197	2,993	.....	50	.....	3,154	332	2
47,828	10,044	276,850	.....	3,067	10,428	915,064	38,849	1,377,584	423,671	383	30	.....	.....	.....	353	.....	3
4,940	4,160	12,895	.....	4,760	129	11,670	755	63,149	50,724	16	.....	.....	.....	.....	16	.....	4
88,349	37,420	611,561	519,854	20,110	20,729	950,856	29,569	2,434,213	1,453,788	834	115	.....	216	.....	503	.....	5
6,640,301	5,150,127	75,221,256	388,957	285,253	9,084,787	147,613,334	2,949,108	288,306,858	137,744,416	103,425	14,919	1,470	8,421	18	78,597	4,634	6
21,405,704	17,128,611	197,768,186	100	642,476	83,140,040	801,202,501	8,002,488	1,332,076,498	522,871,509	180,702	22,620	57,707	146	.....	100,229	70,625	7
98,485	114,589	1,288,441	15,982	114,734	48,883	1,780,480	82,461	4,226,691	2,363,750	1,362	2	.....	182	.....	1,178	.....	8
88,388	66,684	213,004	.....	27,963	80,591	913,430	6,479	1,645,060	725,151	117	.....	.....	.....	.....	117	.....	9
5,625	2,230	10,080	.....	1,386	496	280,506	836	307,434	26,092	59	.....	.....	.....	.....	59	.....	10
14,050	15,667	215,663	.....	2,359	16,475	194,314	4,129	538,909	340,526	263	225	.....	4	.....	34	.....	11
40,585	22,321	127,198	.....	799	56,775	1,015,535	17,909	1,595,982	562,538	585	330	.....	.....	.....	255	.....	12
138,076	222,144	405,144	693	20,805	140,367	531,725	11,823	2,091,826	1,548,278	174	.....	.....	.....	.....	174	.....	13
1,500	.....	8,801	.....	168	268	22,232	1,750	40,455	16,473	22	.....	.....	.....	.....	22	.....	14
155,988	280,588	920,703	.....	19,435	70,978	4,153,194	30,787	6,046,310	1,862,329	660	132	.....	.....	.....	528	70	15
36,807	8,487	213,624	729	4,477	7,234	250,412	6,823	600,088	342,853	219	.....	.....	100	.....	119	.....	16
319,460	123,110	2,161,400	3,025	23,987	653,118	4,976,235	309,810	10,934,722	5,048,677	5,226	3,900	.....	35	.....	1,291	8	17
229,598	101,610	1,782,049	.....	5,015	617,807	4,435,906	296,881	9,632,246	4,899,450	5,005	3,900	.....	.....	.....	1,105	.....	18
89,862	21,500	378,751	8,025	18,972	35,311	540,329	12,929	1,302,476	740,218	221	.....	.....	85	.....	186	8	19
197,020	54,356	1,331,974	7,512	21,702	65,855	2,695,958	50,134	4,977,560	2,231,468	6,772	4,871	85	12	.....	1,804	360	20
1,814,957	1,405,332	14,578,780	16,608	72,722	1,075,233	37,357,127	1,491,851	62,708,335	23,859,357	27,912	7,880	1,000	230	.....	18,802	671	21
1,631,567	1,319,603	12,323,304	15,974	68,162	890,063	28,210,616	1,117,013	48,393,780	19,066,251	14,909	2,680	.....	230	.....	11,999	671	22
183,390	85,729	2,255,386	634	4,560	195,170	9,146,611	374,838	14,814,555	4,793,106	13,003	5,200	1,000	.....	.....	6,803	.....	23
712,522	1,930,301	5,895,407	22,868	380,282	392,870	27,262,941	852,848	44,923,454	16,807,665	6,339	395	.....	163	.....	5,781	184	24
50,610	412,877	506,877	.....	15,030	42,164	2,031,202	42,192	3,841,637	1,768,153	393	305	.....	.....	.....	88	150	25
661,912	1,517,424	5,388,530	22,868	374,252	350,706	25,231,649	810,566	41,081,817	15,039,612	5,946	90	.....	163	.....	5,693	34	26
159,029	36,256	1,180,743	9,010	3,619	87,031	189,406	628,508	3,339,381	2,521,467	6,047	5,884	.....	90	.....	73	7	27
136,320	27,065	879,594	9,010	3,599	52,304	122,172	440,197	2,530,064	1,961,695	3,887	3,838	.....	16	.....	33	7	28
22,709	8,201	301,149	.....	20	34,727	67,234	182,311	809,317	559,772	2,160	2,046	.....	74	.....	40	.....	29
6,437	10,267	74,864	.....	2,580	2,927	296,248	2,675	487,873	188,950	89	.....	.....	6	.....	83	.....	30
14,400	25,347	156,507	269	3,146	6,031	331,984	8,174	668,828	328,670	171	.....	.....	.....	.....	171	.....	31
287,013	276,978	1,173,610	19,667	31,978	143,126	29,346,329	234,563	33,385,420	3,804,528	4,943	1,883	192	167	.....	2,701	60	32
302,668	95,078	1,185,224	2,570	8,575	97,460	7,849,401	121,541	11,172,169	3,201,227	4,185	3,451	.....	88	.....	696	183	33
134,865	54,102	498,014	2,570	629	51,434	3,192,569	62,902	4,889,666	1,634,105	2,406	2,032	.....	5	.....	369	145	34
167,793	41,576	637,210	.....	7,948	46,026	4,656,832	58,639	6,282,503	1,567,032	1,779	1,419	.....	33	.....	327	38	35
.....	1,390	19,315	126	2,675	247	6,631	1,782	56,219	47,906	53	.....	.....	.....	.....	53	.....	36
23,113	4,516	136,893	.....	48	10,036	268,344	9,709	505,937	227,884	569	350	.....	10	25	184	.....	37
101,035	77,406	736,711	.....	300	153,824	1,365,263	31,410	3,410,047	2,013,374	609	250	.....	.....	.....	359	41	38
23,291	11,992	252,370	1,515	5,406	21,945	419,839	15,991	1,016,954	581,124	565	125	.....	25	2	413	.....	39
23,291	11,042	206,042	1,515	3,990	20,366	383,374	14,136	902,545	505,035	502	125	.....	10	.....	367	.....	40
.....	950	45,437	.....	1,416	1,579	36,465	1,855	114,409	76,089	63	.....	.....	15	2	46	.....	41
35,950	36,362	2,088,383	.....	9,266	25,451	1,580,149	45,050	3,828,271	2,203,072	849	385	.....	.....	.....	464	.....	42
763,230	309,385	9,862,344	965	.....	66,485	5,751,556	477,086	17,223,189	10,994,547	11,079	3,250	260	33	.....	7,536	955	43
203,492	155,121	1,738,993	814	38,537	204,450	2,094,766	1,867,821	9,643,454	5,680,867	35,470	15,105	15,600	305	2,000	2,460	19,398	44
21,946	32,043	171,563	200	3,227	6,250	3,161,993	56,288	3,663,131	4,484,850	668	530	21	35	.....	82	5	45
1,121,081	967,786	8,949,577	1,940	20,960	2,309,240	9,292,641	6,451,534	37,850,834	22,106,759	74,943	22,710	37,237	22	100	14,874	20,541	46
163,943	455,207	181,667	.....	5,195	127,130	1,789,623	11,481	3,598,751	1,797,647	312	150	.....	8	.....	154	120	47
152,785	462,274	171,630	.....	1,755	120,675	1,745,784	10,870	3,445,939	1,689,285	302	150	.....	8	.....	144	120	48
11,163	2,933	10,937	.....	3,440	455	43,839	611	152,812	108,362	10	.....	.....	.....	.....	10	.....	49
318,376	522,938	1,379,504	24,100	38,537	132,451	5,508,057	38,102	9,189,112	3,642,953	1,034	750	.....	.....	.....	284	370	50
318,376	522,938	1,338,102	23,340	36,058	131,862	5,507,502	36,738	9,054,507	3,510,267	1,022	750	.....	.....	.....	272	370	51
130,797	175,339	493,061	23,340	8,475	72,533	1,069,999	11,589	2,870,968	1,180,380	491	375	.....	.....	.....	116	5	52
181,570	347,500	844,151	.....	27,583	59,329	3,837,503	25,149	6,183,539	2,320,887	531	375	.....	.....	.....	156	365	53
.....	.....	41,462	700	2,479	580	555	1,364	134,605	132,686	12	.....	.....	.....	.....	12	.....	54
220,882	110,001	750,422	1,528	32,260	60,939	2,255,644	17,359	3,923,300	1,650,297	262	15	.....	.....	.....	247	.....	55
214,282	109,281	717,040	722	29,409	60,866	2,253,944	10,683	3,865,380	1,594,753	249	15	.....	.....	.....	234	.....	56
121,306	65,714	431,215	412	12,221	46,751	922,076	6,183	1,861,095	933,436	118	.....	.....	.....	.....	118	.....	57
22,930	16,386	30,956	10	3,612	1,811	121,104	1,096	233,348	111,148	22	.....	.....	.....	.....	22	.....	58
70,046	27,181	254,899	300	13,576	12,304	1,210,764	9,404	1,770,337	560,169	109	15	.....	.....	.....	94	.....	59
6,580	7,720	33,382	806	2,850	73	1,700	676	57,920	55,544	13	.....	.....	.....	.....	13	.....	60
25,011	11,094	163,801	.....	40,748	10,682	406,470	53,272	817,053	357,311	521	312	.....	.....	.....	209	220	61
43,500	73,968	73,9															



## MANUFACTURES—MICHIGAN.

TABLE 36.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.		Female.
								Maximum month.	Minimum month.						

THE STATE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

																Dollars.
1	Cooperage.....	35	122	20	8	3	2	83	Oc	120	Mh	61	112	112	.....	208,480
2	Copper, tin, and sheet-iron work.....	115	963	117	83	34	35	694	Oc	801	Fe	577	785	780	.....	2,060,440
3	Corsets.....	12	1,848	4	75	92	148	1,629	De	1,744	Je	1,402	1,944	1,900	1,640	2,223,201
4	Cutlery and edge tools.....	5	112	2	11	6	2	91	No	100	Fe	84	99	91	0	187,970
5	Dairymen's, poultrymen's, and ap- parlars' supplies.....	13	162	9	13	6	9	125	Se	145	De	97	122	109	13	533,487
6	Dental goods.....	8	112	4	9	8	6	85	Jy	95	Ja	71	90	56	84	190,589
7	Druggists' preparations.....	16	3,991	7	112	326	327	3,219	No	3,317	Ap	3,145	3,309	1,450	1,850	20,343,212
8	Electrical machinery, apparatus, and supplies.....	54	5,185	19	230	377	349	4,190	No	4,908	Ap	3,775	4,057	2,876	1,776	15,967,288
9	Electroplating.....	21	228	20	22	4	5	177	No	214	Fe	127	201	194	7	216,936
10	Enameling.....	6	71	8	5	1	1	50	No	82	Ja	23	66	62	1	77,438
11	Engines, steam, gas, and water.....	35	16,050	4	492	777	519	14,258	Ja	16,691	Ap	10,460	16,328	15,736	587	62,506,899
12	Engraving, steel and copper plate, including plate printing.....	10	93	16	2	4	4	67	De	85	Ja	61	78	56	21	76,018
13	Envelopes.....	4	131	.....	11	8	7	105	De	121	Jy	90	121	36	84	309,032
14	Fancy articles, not elsewhere specified	8	156	5	12	14	8	117	No	139	Mh	86	137	39	95	230,459
15	Files.....	5	59	2	5	2	.....	50	De	56	Ja	45	60	53	3	125,611
16	Flags and banners.....	4	45	2	5	1	2	35	No	50	Oc	24	39	8	31	52,952
17	Flavoring extracts.....	11	76	6	19	22	4	25	De	28	Ja	20	28	12	15	179,247
18	Flax and hemp, dressed.....	4	44	.....	3	.....	1	40	De	58	Jy	27	53	53	.....	147,515
19	Flour-mill and gristmill products.....	345	1,947	400	160	145	108	1,128	Ja	1,266	Je	1,022	1,224	1,125	99	18,090,143
20	Food preparations, not elsewhere specified.....	37	3,312	20	113	480	216	2,483	.....	.....	.....	.....	2,524	1,780	744	18,823,565
21	Breadstuff preparations, cereals and breakfast foods.....	5	2,997	.....	78	462	194	2,263	Au	3,124	Ja	1,605	2,102	1,440	602	16,654,918
22	Macaroni, vermicelli, and noodles	6	97	3	8	3	2	81	De	99	Je	51	99	78	21	743,584
23	Peanut butter.....	3	29	2	2	2	3	20	Fe	24	Ja	16	19	9	10	131,456
24	All other.....	23	189	15	25	13	17	119	Oc	284	Ja	71	304	253	61	1,293,807
25	Foundry and machine-shop products.....	523	45,532	232	2,126	2,123	1,671	39,430	.....	.....	.....	.....	45,684	42,925	2,590	133,114,339
26	Boiler shops.....	24	943	20	51	50	34	788	De	890	Mh	678	882	881	1	3,475,800
27	Foundries.....	101	15,053	49	540	442	236	14,386	No	17,307	Ja	11,463	17,559	16,592	945	43,557,610
28	Machine shops.....	363	25,393	199	1,380	1,460	1,210	21,144	No	23,479	Ap	20,148	23,445	21,790	1,016	77,480,057
29	Machine shop and foundry com- bined.....	35	3,543	14	155	171	91	3,112	No	3,764	Ap	2,607	3,098	3,002	28	8,504,872
30	Fur goods.....	31	582	30	24	51	51	426	De	502	Ap	394	480	175	305	2,224,096
31	Furnishing goods, men's, neckwear.	3	42	3	2	5	4	28	Au	32	De	25	27	5	22	77,904
32	Furniture.....	171	20,765	68	791	795	615	18,496	.....	.....	.....	.....	21,347	18,325	2,828	53,725,259
33	Wood, including rattan and willow.....	140	17,943	54	680	504	410	16,295	De	18,828	Ja	14,017	18,810	15,904	2,657	45,692,299
34	Metal furniture and store and office fixtures.....	31	2,822	14	111	291	205	2,201	De	2,542	Ja	1,891	2,537	2,361	171	7,832,060
35	Furs, dressed.....	4	87	1	1	2	28	Fe	32	Au	20	27	27	12	15	46,725
36	Gas and electric fixtures.....	13	184	6	26	22	12	118	De	142	Ja	92	145	126	18	433,142
37	Gas, illuminating and heating.....	59	4,044	2	298	362	626	2,846	De	3,275	Fe	2,387	3,286	3,282	4	80,125,709
38	Glass, cutting, staining, and orna- menting.....	14	139	10	16	1	8	104	No	130	Ja	80	120	126	3	2,180,742
39	Gloves and mittens, cloth, not in- cluding gloves made in textile mills.	9	155	9	9	3	2	132	Au	149	Ap	113	148	11	137	229,826
40	Grease and tallow, not including lu- bricating greases.....	14	179	9	14	4	8	144	Au	150	Ap	135	148	147	1	1,864,848
41	Hand stamps.....	11	49	13	6	3	7	20	Au	21	De	15	21	18	2	40,673
42	Hardware.....	30	2,473	12	92	104	91	2,174	.....	.....	.....	.....	2,562	1,952	591	5,021,907
43	Locks and builders' hardware.....	9	499	2	22	17	17	441	De	550	Ja	384	550	373	177	1,047,641
44	Vehicle hardware.....	7	1,087	.....	45	52	41	949	Oc	1,107	Ja	704	1,063	928	135	2,528,276
45	All other.....	14	887	10	25	35	33	784	De	990	Mh	628	949	651	270	2,045,990
46	House-furnishing goods, not elsewhere specified.....	10	478	7	19	32	19	401	De	478	Ja	222	497	280	200	1,673,948
47	Ice, manufactured.....	18	868	14	66	12	34	742	Jy	1,084	Ja	460	769	748	21	5,105,412
48	Iron and steel, blast furnaces.....	11	1,203	.....	89	46	18	1,101	Ja	1,173	No	1,083	1,139	1,137	2	15,820,266
49	Iron and steel, steel works and rolling mills.....	7	1,075	.....	68	118	34	1,455	No	1,675	My	1,110	1,454	1,450	4	10,081,631
50	Iron and steel, bolts, nuts, washers, and rivets, not made in rolling mills.	6	476	1	16	23	13	423	Se	468	No	387	395	359	85	1,020,926
51	Iron and steel forgings, not made in steel works or rolling mills.....	15	1,806	.....	74	97	39	1,596	Oc	1,910	Ja	1,046	1,778	1,606	82	6,970,591
52	Iron and steel, tempering and weld- ing.....	26	177	25	24	6	8	119	No	143	Ap	102	122	122	.....	804,087
53	Jewelry.....	22	195	24	17	8	25	121	De	144	Ja	104	143	121	22	502,325
54	Knit goods.....	31	3,437	8	89	98	72	3,170	De	3,416	Je	2,971	3,542	2,638	17	9,122,918
55	Labels and tags.....	7	115	1	17	6	10	81	No	89	Mh	75	80	48	38	218,304
56	Lamps and reflectors.....	8	1,034	1	67	22	20	924	Se	1,168	Ja	731	811	500	221	2,730,728
57	Leather goods, not elsewhere specified	14	225	11	24	8	9	173	Ap	192	Ja	145	187	117	70	728,731
58	Leather, tanned, curried, and finished	38	3,748	1	158	81	44	3,464	Au	3,622	Ja	3,302	3,528	3,356	172	32,886,376
59	Lime.....	6	241	2	7	6	4	222	Au	263	Mh	162	227	227	.....	601,000
60	Liquors, malt.....	25	1,011	7	104	97	24	779	Jy	1,087	Ja	547	682	688	.....	7,224,012
61	Lithographing.....	10	550	4	43	49	16	438	De	504	Ja	361	504	384	120	1,912,267
62	Looking-glass and picture frames.....	8	62	4	7	.....	5	46	Fe	50	Oc	42	43	35	8	71,409
63	Lumber and timber products.....	380	16,139	410	863	317	126	14,923	Fe	16,575	Je	13,649	18,170	17,927	221	49,093,440
64	Lumber, planing-mill products, not including planing mills connected with sawmills.....	192	6,434	153	380	372	273	5,256	De	5,953	Ja	4,251	5,833	5,464	332	24,835,940
65	Machine tools.....	31	3,685	5	137	212	135	3,196	No	3,436	Je	3,030	3,385	3,177	202	14,438,903

<sup>1</sup> Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

<sup>2</sup> Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



# MANUFACTURES—MICHIGAN.

701

COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.				
											Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>	

THE STATE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.						
11,913	5,095	97,207	3,475	1,728	4,597	458,584	2,363	654,342	193,395	139	55	24	60	1	
183,376	90,272	950,254	8,800	47,455	63,755	1,701,678	20,029	3,790,651	2,068,944	471	26	26	445	2	
268,011	458,374	1,030,652		15,891	141,137	2,890,566	22,154	7,297,824	4,385,104	724	416	34	274	3	150
21,870	7,307	70,415		1,852	1,712	41,825	5,797	179,373	131,751	151	65	19	86	4	
30,598	15,080	118,130	49	2,892	3,578	274,369	11,224	635,464	349,871	120			101	5	
34,736	18,181	98,348	3,220	6,046	13,312	94,029	2,315	319,089	222,145	54			54	6	
549,113	1,180,893	2,830,077		14,441	2,207,430	9,880,817	115,370	23,903,850	13,907,663	1,471	540	500	431	7	
1,062,059	940,048	4,085,470	7,555	100,420	1,597,016	8,812,160	222,896	25,025,528	15,990,472	5,659	265	37	5,357	8	
42,617	9,243	242,724		10,049	2,192	77,707	24,087	535,620	433,736	619		41	578	9	
15,850	1,146	84,636		4,930	1,088	53,129	24,806	211,639	133,704	53			53	10	
1,870,965	2,039,218	21,362,743	500	43,014	5,103,583	56,214,185	830,508	101,989,440	44,938,747	30,488	3,350	50	27,009	11	
3,000	0,088	81,748	300	7,570	187	38,572	1,207	201,395	161,616	27		79	27	12	
22,221	15,849	90,594	2,720	5,135	11,048	213,775	3,673	455,305	237,857	116			116	13	
28,150	14,050	71,012	887	0,892	4,407	185,973	2,914	399,221	210,334	27			27	14	
11,812	1,000	74,557		475	2,455	46,207	9,312	177,128	121,009	370	40		290	15	
10,592	8,120	23,285	225	4,575	1,861	52,647	1,385	103,137	49,105	20		40	20	16	
30,777	33,289	21,090		2,490	2,422	199,254	1,465	350,330	149,611	37		15	22	17	
8,151	1,402	81,963			970	135,213	1,304	184,208	47,691	48			48	18	
399,982	260,550	1,250,772	10,144	43,809	251,841	37,776,280	408,815	44,144,434	5,959,339	29,928	9,500	845	2,044	19	
722,166	772,300	3,107,993	3,034	57,009	1,830,598	18,095,732	717,334	35,701,700	16,888,094	12,157	2,930	500	8,715	20	
638,635	734,522	2,917,006		49,089	1,786,669	16,490,817	651,830	33,158,108	16,015,461	10,761	2,650	500	7,611	21	
14,860	0,069	80,524		780	13,230	390,247	18,347	574,382	165,788	398	150		248	22	
4,960	8,853	14,549		1,130	3,472	334,275	2,875	380,983	43,833	125			125	23	
63,711	27,895	95,914	3,034	6,610	27,227	880,393	44,282	1,588,287	663,612	873	130	12	731	24	
7,343,593	4,688,654	52,416,677	1,209,839	399,745	6,810,539	64,642,116	4,158,028	160,462,545	100,692,401	84,776	10,307	1,507	70,828	25	
213,738	153,929	1,167,093	35,556	10,049	419,231	2,037,965	87,094	5,277,320	3,132,201	2,100	1,265	43	792	26	
1,883,297	811,201	10,597,140	1,040,783	50,418	1,771,011	21,497,154	2,102,822	56,322,684	32,722,708	36,801	2,630	32	34,130	27	
4,699,095	3,852,090	27,647,338	108,200	267,732	4,128,636	36,079,473	1,761,067	95,296,966	57,450,426	39,577	4,646	540	81,464	28	
577,493	371,874	4,003,606	25,300	68,546	493,611	5,027,524	207,045	12,566,575	7,331,006	6,208	1,766		4,442	29	
75,390	175,983	411,618	1,838	38,895	52,099	1,272,608	9,034	2,443,527	1,161,885	117			117	30	
7,000	0,277	22,800		2,815	527	110,104	255	201,085	90,726	6			6	31	
3,021,947	2,943,921	10,659,900	305,890	80,615	2,056,189	27,527,005	783,207	69,497,237	41,187,025	28,947	19,809	1,694	6,969	32	
2,573,744	1,903,767	17,148,788	296,064	84,370	1,818,822	22,810,109	676,420	58,569,672	35,077,143	25,133	17,629	1,679	5,512	33	
448,203	1,040,164	2,511,121	0,820	5,245	237,867	4,710,896	106,787	10,927,565	6,109,882	3,814	2,180	15	1,457	34	
15,060	1,892	33,286		2,040	534	75,038	2,552	152,654	75,064	113	80		33	35	
70,445	40,165	179,040		25,850	10,004	812,426	5,386	1,417,303	599,491	75		8	87	36	
503,947	1,139,831	3,905,259	0,510	1,520	1,247,040	2,514,834	5,755,498	17,993,314	9,722,082	18,593	10,484	1,032	805	37	
93,945	11,085	157,883	572	0,790	4,851	324,200	5,751	619,497	289,546	137	35		102	38	
22,883	4,241	68,604		0,073	4,312	397,569	1,934	532,652	133,149	107	21		86	39	
37,935	12,060	244,047	244	115	20,488	819,416	80,947	1,410,631	510,268	583	137		446	40	
9,300	10,203	21,640		5,987	407	52,893	1,647	151,038	96,498	25			25	41	
334,080	258,304	2,497,723	11,106	53,451	204,192	3,101,526	90,456	8,760,825	5,568,843	2,671	755	40	1,876	42	
76,073	50,507	505,511	11,106	22,180	17,800	687,039	15,899	1,748,739	1,045,801	319	75		244	43	
167,530	99,768	1,224,411		28,652	124,453	1,512,501	47,145	4,206,711	2,647,065	1,419	150	40	1,229	44	
90,457	108,029	707,801		2,619	61,939	901,986	27,412	2,805,375	1,875,977	933	530		403	45	
126,964	133,432	347,894		7,060	64,780	780,797	21,137	1,954,741	1,152,807	1,608	1,010	75	523	46	
153,121	80,101	1,186,323			81,209	452,070	204,760	2,821,688	2,104,252	8,137	1,328		6,809	47	
123,442	89,927	1,719,380			565,518	4,904,869	5,393,552	13,533,739	3,235,318	6,367	4,805	1,125	437	48	
311,943	268,358	2,471,088		12,000	641,542	2,393,307	508,496	8,344,643	5,442,840	9,142	2,710		6,432	49	
91,502	60,022	544,432	32,554	3,892	51,369	865,167	78,595	1,941,884	998,122	970			970	50	
282,425	178,109	2,380,888		10,300	260,535	4,474,800	386,911	8,559,190	3,697,479	6,757	2,420	150	4,187	51	
77,915	15,246	184,256	242	17,588	11,049	123,218	42,993	616,279	450,068	371		76	295	52	
54,207	58,850	159,954	4,010	18,221	3,000	422,250	1,495	961,685	537,940	76			76	53	
324,162	324,805	2,114,308	220,850	108,524	658,361	6,055,330	135,056	12,039,377	5,248,991	3,073	1,460	15	1,598	54	
33,043	14,380	79,868	1,668	6,225	7,199	131,892	3,665	328,712	193,155	78			78	55	
210,981	90,760	1,340,320		6,576	52,142	2,035,882	56,484	5,563,932	3,471,566	1,772			1,772	56	
89,895	22,428	135,679		11,380	14,694	824,188	5,479	1,258,893	429,226	132			132	57	
626,608	302,105	4,162,540		1,270	1,016,156	766,723	45,800,786	13,348,988	12,243	8,278	520	1,110	2,335	58	
23,150	10,286	183,272		200	11,044	148,596	142,424	625,750	334,730	1,195	1,000	118	77	59	
348,821	179,931	1,052,491		20,100	703,979	1,777,029	249,956	5,276,052	3,249,067	6,658	3,279		3,379	60	
138,474	117,924	467,455	33,344	14,705	57,172	766,042	18,817	1,929,149	1,144,290	687	517	25	145	61	
17,640	4,436	48,167		11,750	961	50,025	1,333	189,123	137,765	17			17	62	
1,037,905	589,660	14,569,524	2,332,752	19,886	1,432,794	15,471,880	211,676	46,043,855	30,350,299	79,449	70,028	4,245	2,307	63	
1,334,351	782,287	5,821,510	141,616	54,293	719,063	23,643,702	365,706	37,889,230	13,859,822	27,070	14,968	1,752	10,113	64	
663,431	547,780	4,408,088	25,476	32,501	619,855	3,789,355	182,818	12,656,492	8,684,319	5,905	400	320	5,185	65	

<sup>1</sup> Same number reported for one or more other months.



## MANUFACTURES—MICHIGAN.

TABLE 36.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.		Female.
								Maximum month.	Minimum month.						

THE STATE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

																Dollars.
1	Marble and stone work.....	103	595	115	47	48	20	365			414	412	2			1,904,119
2	Monuments and tombstones.....	83	341	99	19	32	15	176	Se 187	Ja 152	190	188	2			916,033
3	Other marble and stone work, except slate.....	20	254	16	28	16	5	189	No 281	Ja 105	224	224				988,086
4	Mattresses and spring beds, not elsewhere specified.....	16	222	15	16	12	8	171	Se 207	Ja 125	188	151	37			540,661
5	Millinery and lace goods, not elsewhere specified.....	12	427	6	25	27	50	319	Au 380	Je 284	325	132	131	8	4	1,441,479
6	Mineral and soda waters.....	131	929	160	70	35	62	602			529	519	7	3		4,666,587
7	Mineral and carbonated waters.....	126	814	159	58	32	54	511	Jy 717	Ja 351	455	448	4	3		3,148,638
8	Fruit beverages.....	5	115	1	12	3	8	91	Se 177	Ja 37	74	71				1,517,949
9	Models and patterns, not including paper patterns.....	52	1,009	41	71	16	20	861	De 1,043	Ja 727	1,009	1,004	4	1		1,323,471
10	Musical instruments and materials, not specified.....	11	474	7	31	9	49	378	Ja 407	Se 362	360	266	93		1	582,327
11	Musical instruments, pianos.....	8	1,257		34	77	24	1,122	De 1,288	My 1,038	1,288	1,103	132	44	0	7,882,678
12	Needles, pins, and hooks and eyes.....	3	162		11	2	7	142	De 158	Ap 130	148	90	58			440,871
13	Oil, essential.....	29	115	31	12	7	3	62	Au 116	Ja 47	117	114	3			974,755
14	Oil, vegetable and composite.....	3	117		10	17	3	87	De 143	Ja 31	96	96				1,366,195
15	Optical goods.....	11	272	7	18	13	39	195	Au 207	De 176	178	120	58			513,282
16	Paints.....	24	1,800	6	119	423	233	1,019	Oc 1,167	Fe 887	1,124	1,004	118	1	1	12,174,996
17	Paper and wood pulp.....	39	10,225	3	279	241	141	9,561			9,825	8,558	1,265		2	53,680,651
18	Paper exclusively.....	27	7,533	3	176	182	109	7,003	De 7,943	Ap 6,723	7,339	6,217	1,120		2	36,481,098
19	Pulp exclusively.....	4	309		7	9	3	290	No 346	Mh 157	313	310	3			2,227,672
20	Paper and pulp.....	8	2,383		96	50	29	2,208	No 2,810	Ap 2,083	2,173	2,031	142			14,971,281
21	Paper goods, not elsewhere specified.....	10	568	7	30	57	23	451	Au 503	No 433	446	293	143	10		2,533,806
22	Patent medicines and compounds.....	70	2,146	41	223	248	242	1,392			1,485	645	888		2	6,027,919
23	Patent and proprietary medicines.....	49	1,983	27	187	227	218	1,324	No 1,432	Jy 1,192	1,396	680	814		2	5,883,231
24	Patent and proprietary compounds, not elsewhere specified.....	21	163	14	36	21	24	68	Au 74	Je 61	89	65	24			744,668
25	Paving materials.....	0	293	10	14	17	2	280	Au 341	Mh 111	325	325				2,305,555
26	Perfumery and cosmetics.....	21	222	11	25	14	32	140	Oc 169	Ja 101	163	60	97	1	2	565,248
27	Phonographs and graphophones.....	10	929	1	46	42	42	798	De 1,036	Mh 637	1,019	907	106	0		2,599,218
28	Photo-engraving.....	18	263	9	39	20	20	169	No 183	Ja 139	182	175	7			322,010
29	Pickles, preserves, and sauces.....	44	653	27	61	56	36	483			551	411	137	3		3,186,311
30	Preserves.....	4	82	1	7	2	2	70	Jy 174	Ja 18	51	42	9			2,533,766
31	Pickles and sauces.....	40	571	26	44	54	34	413	Se 614	Ap 301	500	369	128	3		2,752,545
32	Plumbers' supplies, not elsewhere specified.....	11	1,032	9	55	80	51	837	De 1,085	Ja 662	989	910	70			2,272,320
33	Pottery.....	6	835	3	71	16	37	708			819	487	320	3		1,800,703
34	China ware.....	3	780		07	15	36	662	Ja 812	Au 615	760	434	320	3		1,775,192
35	Earthen and stone ware.....	3	55	3	4	1	1	46	No 55	Jy 37	53	53				85,511
36	Printing and publishing, book and job.....	436	5,216	413	399	318	369	3,717			3,989	2,726	1,208	47	5	11,366,835
37	Job printing.....	405	4,750	387	366	197	273	3,527	De 4,017	Ja 3,535	3,812	2,583	1,177	47	5	10,273,161
38	Book publishing and printing.....	5	65	5	4	5	10	41	Oc 49	Ja 31	43	30	13			218,930
39	Book publishing without printing.....	16	219	10	15	115	77	6	(*) 2	(*) 2	2	2				498,930
40	Linotype work and typesetting.....	10	182	11	14	1	9	147	De 163	Ap 135	129	111	18			375,805
41	Printing and publishing, newspapers and periodicals.....	565	6,643	483	1,021	1,142	821	3,170			3,302	2,723	596	96	7	14,562,346
42	Printing and publishing.....	44	3,069	14	199	890	452	1,514	De 1,637	Ja 1,410	1,633	1,528	94	10	1	8,918,086
43	Printing, publishing, and job printing.....	438	3,248	432	753	178	260	1,635	De 1,703	Fe 1,597	1,732	1,175	496	55	0	5,191,085
44	Publishing without printing.....	83	326	37	69	74	119	27	Au 29	Ja 24	27	20	0	1		453,175
45	Printing materials.....	3	12		3	1	1	7	(*) 7	(*) 7	7	7				33,001
46	Pumps, not including power pumps.....	6	294	2	14	15	16	247	Se 336	Fe 175	263	129	5	07	32	470,937
47	Refrigerators.....	12	1,618	4	88	99	72	1,655	De 1,938	Jy 1,511	1,920	1,745	177	5	2	0,190,766
48	Rubber tires, tubes, and rubber goods, not elsewhere specified.....	7	7,053	4	173	1,481	351	5,044	De 5,968	Ja 4,184	5,881	5,430	438	4		57,418,022
49	Saddlery and harness.....	51	326	50	11	5	7	253	No 317	My 185	300	217	83			942,557
50	Salt.....	12	2,513		95	257	98	2,063	De 2,265	Mh 1,923	2,274	2,110	154	10		12,804,398
51	Sand-lime brick.....	7	123		14		3	106	An 136	Mh 46	137	137				428,081
52	Sausage, not made in slaughtering and meat-packing establishments.....	29	228	32	10	18	9	159			163	143	10	1		483,363
53	Sausage.....	18	131	19	6	12	6	88	Oc 92	Ja 84	88	79	8	1		283,025
54	Sausage casings.....	11	97	13	4	6	3	71	De 75	Ap 67	75	64	11			200,338
55	Scales and balances.....	9	109	8	14	9	8	70	De 75	Ja 67	74	73	1			405,667
56	Screws, machine.....	3	575		20	43	83	420	Oc 534	Ja 292	506	487	10			2,253,801
57	Shipbuilding, steel, new vessels and small boats.....	20	1,854	11	103	55	61	1,624	No 1,811	Ja 1,440	1,754	1,662	102			6,655,739
58	Shipbuilding, wooden, including boat building.....	7	17,061	1	428	526	110	15,996	Mh 20,260	De 9,460	19,133	19,073	50	1		21,826,060
59	Shipbuilding, wooden, including boat building.....	26	613	17	25	15	11	545			906	904	2			2,270,552
60	New vessels and small boats.....	20	307	13	20	7	9	258	Mh 327	Se 204	200	207	2			1,093,075
61	Repair work only.....	8	306	4	5	8	2	287	Oc 575	Ja 88	607	607				1,177,477
62	Shirts.....	10	524	3	15	20	9	477	No 495	Je 458	477	37	416	5	10	440,185

<sup>1</sup> Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

<sup>2</sup> Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



## 703

[illegible][illegible]

<sup>4</sup> Same number reported throughout the year.



## MANUFACTURES—MICHIGAN.

TABLE 36.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.		Total.	16 and over.		Under 16.			
					Male.	Female.	Average number.	Number, 15th day of—		Male.	Female.	Male.	Female.		
								Maximum month.							Minimum month.

THE STATE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

																		Dollars.
1	Show cases.....	6	310	2	14	24	9	261	No	277	Ja	239	265	252	13			902,853
2	Signs and advertising novelties.....	25	355	32	25	15	23	200					308	234	72			793,575
3	Signs, other than electric.....	17	152	24	10	3	3	112	Jy	131	Fe	88	111	110	1			174,980
4	Electric signs and advertising novelties.....	8	203	8	15	12	20	148	Oc	198	Ja	90	195	124	71			618,595
5	Slaughtering and meat packing.....	24	2,083	18	73	193	87	1,712	De	2,073	My	1,405	2,073	1,773	297	2	1	10,431,187
6	Smelting and refining, copper.....	4	759		9	37	4	709	Mh	973	Je	537	598	598				5,040,624
7	Smelting and refining, not from the ore.....	4	41		10	3	3	25	Ja	26	Au	24	24	23	1			186,783
8	Sporting and athletic goods.....	12	423	7	24	9	10	373	De	447	Ja	290	445	324	121			913,735
9	Springs, steel, car and carriage, not made in steel works or rolling mills.....	6	1,972		39	37	26	1,870	Se	2,100	My	1,549	1,952	1,835	117			3,707,451
10	Stamped ware, not elsewhere specified.....	21	1,350	4	72	37	52	1,185	Au	1,380	Ap	845	1,125	870	254		1	4,200,572
11	Statuary and art goods.....	4	22	7			1	14	De	16	Fe <sup>a</sup>	12	16	10				11,829
12	Steam fittings and steam and hot-water heating apparatus.....	15	865	2	31	45	25	762					1,253	1,224	20			3,101,554
13	Radiators and cast-iron heating boilers.....	4	766		13	36	16	701	Oc	1,203	My	138	1,174	1,145	20			2,840,865
14	All other.....	11	99	2	18	9	9	61	De	79	Fe	38	79	70				260,689
15	Steam packing.....	6	326	1	16	19	15	275	No	325	Ap	195	303	164	139			1,300,305
16	Stencils and brands.....	4	33	2	6		2	23	De	36	My	17	37	24	12	1		49,163
17	Stereotyping and electrotyping.....	8	228	3	22	13	13	177	De	109	Ja	136	200	193	6	1		332,864
18	Stoves and hot-air furnaces.....	21	5,040	5	188	397	210	4,240					4,601	4,502	91	8		18,843,300
19	Stoves and ranges.....	8	3,190		87	232	128	2,743	No	3,021	Ja	2,423	2,928	2,837	83	8		11,406,813
20	Hot-air furnaces and fireless cookers.....	13	1,850	5	101	165	82	1,497	No	1,658	Ja	1,392	1,073	1,065	8			7,436,547
21	Stoves, gas and oil.....	7	1,252		38	177	36	1,001	De	1,132	Ja	870	1,169	1,101	68			4,564,041
22	Structural ironwork, not made in steel works or rolling mills.....	34	3,118	22	128	487	168	2,313	De	2,727	My	1,932	2,731	2,657	73	1		12,116,532
23	Sugar, beet.....	16	2,221		106	210	69	1,836	De	4,383	Mh	590	4,807	4,733	74			27,073,805
24	Surgical appliances.....	9	108	10	8	1	5	84	Mh	91	Ja	76	82	20	62			81,020
25	Tinware, not elsewhere specified.....	6	1,022		41	34	29	918	Oc	963	Mh	848	997	575	392			3,200,475
26	Tobacco, chewing and smoking, and snuff.....	14	1,004	11	16	140	21	816					784	266	518			5,041,982
27	Chewing and smoking.....	8	998	5	16	140	21	816	Ja	932	Ap	752	784	266	518			5,020,452
28	Snuff.....	6	6															21,530
29	Tobacco, cigars and cigarettes.....	349	6,234	360	268	92	58	5,456	De	5,918	Je	4,650	6,103	1,000	5,688	5	10	9,221,680
30	Tools, not elsewhere specified.....	89	3,827	57	205	165	139	3,261					3,803	3,246	554	3		8,404,898
31	Machinists' tools.....	54	2,344	30	130	93	95	1,996	No	2,425	De	1,344	2,334	2,231	102	1		5,118,076
32	All other.....	35	1,483	27	75	72	44	1,265	No	1,498	Ap	1,146	1,469	1,015	452	2		3,346,822
33	Toys and games.....	12	403	12	16	7	7	361	Au	466	Ja	267	353	248	104		1	910,857
34	Trunks and valises.....	10	237	11	12	4	11	199	Jy	201	My	190	199	126	73			519,666
35	Upholstering materials, not elsewhere specified.....	9	236	4	18	6	4	204	No	223	Mh	184	228	183	45			1,127,082
36	Varnishes.....	6	452	1	47	119	92	193	No	222	Mh	169	206	187	10			3,408,004
37	Vinegar and cider.....	42	169	50	13	1	5	100					142	122	20			1,070,167
38	Vinegar.....	10	84	15	7		2	60	Oc	118	Ja <sup>a</sup>	39	74	54	20			847,923
39	Cider.....	32	85	35	6	1	3	40	Oc	111	Je	17	68	68				281,244
40	Wall plaster and composition flooring.....	10	744	1	33	91	34	585	No	700	Ja	401	653	630	23			2,847,954
41	Window and door screens and weather strips.....	15	379	10	16	16	18	319					377	313	60	4		1,728,212
42	Window and door screens.....	11	347	8	12	9	10	308	Ja	360	Jy	230	305	301	60	4		1,537,795
43	Weather strips.....	4	32	2	4	7	8	11	De <sup>a</sup>	12	Au <sup>a</sup>	10	12	12				185,417
44	Window shades and fixtures.....	5	864		24	34	40	700	De	941	Ap	588	941	624	310		1	2,369,206
45	Wirework, not elsewhere specified.....	38	2,901	19	135	140	91	2,516					2,775	2,154	601	13	7	8,993,804
46	Woven-wire fencing.....	11	747	2	34	74	23	614	Mh	697	Jy	542	735	735				3,455,055
47	All other.....	27	2,154	17	101	66	68	1,902	Jy	2,170	Ja	1,434	2,040	1,419	001	13	7	5,538,749
48	Wood distillation.....	16	1,764		72	69	37	1,536	Fe	1,773	Je	1,444	1,591	1,501				15,381,952
49	Wood, turned and carved.....	34	715	27	41	8	17	622	Je	723	Ja	550	759	692	64	3		1,625,818
50	Wooden goods, not elsewhere specified.....	18	1,118	13	42	57	22	984	De	1,142	Se	872	1,185	819	338	24	4	2,490,201
51	Woolen goods.....	9	880	2	35	14	17	812	De	892	Ja	682	892	505	377	5	5	3,024,687
52	All other industries*.....	199	20,856	105	880	1,166	694	18,011										90,404,045

\*All other industries embrace—  
 Ammunition..... 1  
 Artificial flowers..... 1  
 Babbitt metal and solder..... 6  
 Bags, paper, not including bags made in paper mills..... 1  
 Baking powders and yeast..... 1  
 Belting, woven, other than rubber..... 1  
 Billiard tables and accessories..... 1  
 Blacking, stains, and dressings..... 2  
 Bluing..... 2  
 Boot and shoe cut stock..... 2  
 Buttons..... 6  
 Canning and preserving, fish..... 2  
 Card cutting and designing..... 1  
 Cars, steam-railroad, not including operations of railroad companies..... 1

Cash registers and calculating machines..... 8  
 Charcoal, not including production in the lumber and wood distillation industries..... 2  
 Chewing gum..... 2  
 China decorating, not including that done in potteries..... 1  
 Clocks..... 3  
 Cloth, sponging and refinishing..... 1  
 Coke, not including gas-house coke..... 2  
 Cordage and twine..... 2  
 Cordials and flavoring sirups..... 2  
 Cotton goods..... 3  
 Dyeing and finishing textiles, exclusive of that done in textile mills..... 1

Dyestuffs and extracts—natural..... 2  
 Emery and other abrasive wheels..... 3  
 Engraving and diesinking..... 2  
 Engraving, wood..... 1  
 Explosives..... 2  
 Felt goods..... 1  
 Fireworks..... 1  
 Fire extinguishers, chemical..... 2  
 Foundry supplies..... 2  
 Galvanizing..... 1  
 Gas machines and gas and water meters..... 3  
 Glass..... 1

Gloves and mittens, leather..... 4  
 Glucose and starch..... 2  
 Gold and silver, reducing and refining, not from the ore..... 2  
 Graphite, ground and refined..... 2  
 Grindstones..... 1  
 Hair work..... 1  
 Hardware, saddlery..... 1  
 Hat and cap materials..... 1  
 Hats and caps, other than felt, straw, and wool..... 5  
 Hats, fur-felt..... 1  
 Hats, straw..... 1  
 Horseshoes, not made in steel works or rolling mills..... 1  
 Ink, printing..... 2

<sup>1</sup> Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

<sup>2</sup> Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-holt or transmitted power from neighboring power plants).



## 705

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.				Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		For contract work.	Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.			Fuel and rent of power.	Total.	Owned.			

[illegible]

<sup>a</sup> Same number reported for one or more other months.



TABLE 36.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.		Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.							WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.							Capital.
			Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Average number.	Wage earners.		Total.	16 and over.		Under 16.			
						Male.	Female.		Maximum month.	Minimum month.		Male.	Female.	Male.	Female.		
																Number, 15th day of—	
1	DETROIT—All industries.....	2,176	198,144	1,489	7,709	13,377	8,553	167,016	No185,910	Mh151,248	183,996	160,796	22,724	414	62	Dollars. 788,329,200	
2	Artificial limbs.....	6	20	5	2	2	1	10	Jy <sup>a</sup> 11	Ja <sup>a</sup> 7	12	11	1	.....	.....	28,566	
3	Artificial stone products.....	13	129	17	10	1	3	98	Oc 135	Ja 38	126	126	.....	.....	.....	338,212	
4	Automobile bodies and parts.....	110	36,395	54	911	1,425	957	33,048	Oc 38,780	Ja 26,049	37,760	36,104	1,505	31	.....	120,028,578	
5	Automobiles.....	26	37,694	2	1,070	2,805	1,775	32,042	Oc 37,599	Ja 26,200	35,338	33,863	1,304	171	.....	172,000,786	
6	Automobile repairing.....	25	308	24	18	15	10	232	Oc 300	Fe 171	209	208	1	.....	.....	251,140	
7	Awnings, tents, and sails.....	10	214	7	21	29	10	141	Jy 189	Fe 94	133	74	59	.....	.....	431,176	
8	Bookbinding and blank-book making.....	9	217	5	17	8	11	176	De 205	Ja 157	205	55	150	.....	.....	294,002	
9	Boots and shoes.....	4	183	3	7	6	3	104	Oc 169	Ja 155	164	104	60	.....	.....	362,607	
10	Boxes, cigar.....	4	228	1	8	2	3	214	Se 241	Ja 180	223	58	102	3	.....	148,865	
11	Boxes, paper and other, not elsewhere specified.....	8	331	5	20	8	9	289	Jy <sup>a</sup> 303	Sa 261	266	95	106	.....	5	529,804	
12	Boxes, wooden packing, except cigar boxes.....	11	518	7	27	6	10	468	No 543	My 405	530	515	.....	15	.....	1,500,652	
13	Brass, bronze, and copper products.....	50	9,086	14	300	474	234	8,604	Se 10,422	Ap 7,701	9,228	8,512	714	2	.....	30,600,102	
14	Bread and other bakery products.....	234	3,573	316	114	589	216	2,338	No 2,487	Fe 2,111	2,598	2,066	528	3	1	8,544,442	
15	Brick, building.....	4	125	.....	9	1	3	112	Se 154	Ja <sup>a</sup> 88	131	131	.....	.....	.....	488,227	
16	Butter.....	10	309	1	31	38	40	199	Je 247	Fe 155	186	130	40	1	.....	5,149,536	
17	Carpets, rag.....	3	4	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,233	
18	Carrriages and sleds, children's.....	3	5	3	.....	.....	.....	2	( <sup>a</sup> ) 2	( <sup>a</sup> ) 2	2	2	.....	.....	.....	11,060	
19	Chemicals.....	10	2,263	.....	148	295	112	1,708	Ja 2,214	Je 1,497	1,070	1,038	40	1	.....	14,961,887	
20	Cleausing and polishing preparations.....	11	36	7	10	3	1	15	De 22	Ja <sup>a</sup> 11	24	13	11	.....	.....	30,304	
21	Clothing, men's.....	18	1,431	17	32	92	80	1,210	De 1,405	Mh 1,112	1,405	220	1,180	2	3	5,134,563	
22	Clothing, women's.....	13	465	8	35	15	12	395	.....	.....	438	43	395	.....	.....	652,522	
23	Shirt waists and dresses, except house dresses.....	6	382	1	30	12	11	328	Ja <sup>a</sup> 352	Je 293	363	38	825	.....	.....	602,801	
24	All other.....	7	82	6	5	3	1	67	Jy <sup>a</sup> 71	Oc <sup>a</sup> 61	75	5	70	.....	.....	50,021	
25	Coffee, roasting and grinding.....	10	113	8	10	14	20	61	Jy 68	My 55	63	30	33	.....	.....	818,304	
26	Coffins, burial cases, and undertakers' goods.....	8	138	7	9	13	4	105	Fe 119	Je 94	103	75	27	1	.....	465,904	
27	Confectionery and ice cream.....	38	1,015	44	43	48	39	841	No 2,096	My 1,510	1,030	423	607	.....	.....	2,023,346	
28	Copper, tin, and sheet-iron work.....	45	487	46	38	22	17	304	Oc 423	Fe 307	399	399	.....	.....	.....	1,025,773	
29	Electrical machinery, apparatus, and supplies.....	29	2,448	7	146	191	210	1,894	De 2,244	Ap 1,054	2,244	1,344	805	2	3	7,359,273	
30	Electroplating.....	12	171	12	19	3	4	133	No 158	Ja 91	147	144	3	.....	.....	177,695	
31	Engines, steam, gas, and water.....	13	7,543	2	224	534	300	6,483	Ja 8,520	Fe 5,651	6,934	6,095	239	.....	.....	31,231,060	
32	Engraving, steel and copper plate, including plate printing.....	6	60	3	2	3	3	44	De 58	Ja <sup>a</sup> 30	54	44	9	1	.....	47,369	
33	Food preparations, not elsewhere specified.....	8	69	5	11	5	4	44	My 58	Mh <sup>a</sup> 33	49	36	13	.....	.....	428,010	
34	Foundry and machine-shop products.....	171	15,674	64	840	737	627	13,400	.....	.....	14,934	13,974	951	0	3	39,839,344	
35	Foundries.....	20	3,615	3	148	89	37	3,338	No 3,922	Ap 2,739	3,879	3,769	110	.....	.....	6,306,335	
36	Machine shops.....	140	10,890	55	663	610	560	9,002	No 10,189	Fe 8,123	9,796	8,059	828	0	3	31,496,732	
37	All other.....	11	1,169	6	35	38	30	1,060	De 1,250	Ap 833	1,259	1,246	13	.....	.....	1,970,277	
38	Fur goods.....	17	429	17	18	45	39	310	De 355	Ja 270	340	117	229	.....	.....	1,910,000	
39	Furnishing goods, men's, neckwear.....	3	42	3	2	5	4	28	Au 32	De 25	27	5	22	.....	.....	77,064	
40	Furniture.....	16	1,285	7	62	32	51	1,133	.....	.....	1,185	955	228	2	.....	3,442,200	
41	Wood furniture, other than rattan and willow.....	12	1,222	3	54	29	48	1,088	My 1,142	Ja 1,044	1,117	887	228	2	.....	3,290,357	
42	All other.....	4	63	4	8	3	4	45	De 68	Ja 12	68	68	.....	.....	.....	151,843	
43	Glass, cutting, staining, and ornamenting.....	9	89	8	10	1	4	66	No <sup>a</sup> 87	Ja 48	87	84	3	.....	.....	2,025,852	
44	Hand stamps.....	8	41	10	5	3	5	18	Ja <sup>a</sup> 20	De 9	18	16	2	.....	.....	39,237	
45	Hardware.....	15	1,443	2	62	71	53	1,255	No 2,627	De 1,753	1,416	1,207	209	.....	.....	2,010,610	
46	House-furnishing goods, not elsewhere specified.....	5	70	5	9	3	6	47	Ja 71	My 34	70	30	34	.....	.....	128,450	
47	Iron and steel, forgings, not made in steel works or rolling mills.....	6	720	.....	30	38	14	638	Au 864	Ja 320	705	705	.....	.....	.....	3,443,231	
48	Iron and steel, tempering and welding.....	13	146	8	24	6	3	105	No 127	Mh 92	108	108	.....	.....	.....	209,690	
49	Jewelry.....	19	177	22	16	8	22	109	De 127	Ja 92	126	115	11	.....	.....	478,701	
50	Knit goods.....	8	275	2	21	6	10	236	De 264	Ap 192	306	75	231	.....	.....	1,006,883	
51	Leather goods, not elsewhere specified.....	10	163	8	20	4	8	123	Ap 143	Ja 95	129	80	49	.....	.....	581,175	
52	Leather, tanned, curried, and finished.....	3	403	.....	25	22	7	349	Se 369	Ap 300	301	284	17	.....	.....	3,753,497	
53	Liquors, malt.....	9	648	5	59	60	20	504	Jy 701	Fe 348	449	445	4	.....	.....	4,006,553	
54	Lumber, planing-mill products, not including planing mills connected with sawmills.....	32	1,400	18	69	55	26	1,232	Au 1,403	Mh 1,047	1,324	1,311	8	5	.....	5,164,142	
55	Machine tools.....	14	2,318	2	60	114	98	2,049	No 2,176	My 1,949	2,142	1,045	101	0	.....	9,997,264	
56	Marble and stone work.....	22	270	21	27	20	6	205	.....	.....	232	232	.....	.....	.....	1,030,041	
57	Monuments and tombstones.....	8	50	12	2	4	2	30	My 35	Fe 25	31	31	.....	.....	.....	159,213	
58	Other marble and stone work, except slate.....	14	229	9	25	16	4	175	No 258	Ja 104	201	201	.....	.....	.....	870,828	
59	Mattresses and spring beds, not elsewhere specified.....	6	109	6	7	5	6	85	Se 114	Ja 50	100	78	22	.....	.....	291,265	
60	Millinery and lace goods, not elsewhere specified.....	7	70	5	4	2	15	44	Se 48	Je 36	42	4	38	.....	.....	57,555	

<sup>1</sup> Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

<sup>2</sup> Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



# MANUFACTURES—MICHIGAN.

707

## COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.						
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.	
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.					Rent- <sup>2</sup>
											Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>		

### CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES.

Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	308,250	82,379	22,453	3,406	200,012	79,688	1
31,073,381	31,542,425	245,433,882	1,298,522	3,292,484	54,797,732	639,955,795	15,957,608	1,234,519,842	578,606,379									
4,940	4,160	12,762		4,650	129	10,501	784	57,509	46,274			16				16		2
23,876	4,585	156,614		8,968	3,332	200,974	6,039	526,061	319,048			119			7	112		3
4,430,610	3,506,466	55,650,295	61,972	185,253	6,117,625	95,672,059	2,038,643	201,455,132	103,744,480	52,920		5,140	620	414		46,746	1,901	4
5,158,737	5,841,750	48,441,007		492,033	17,975,236	220,029,653	1,993,113	348,772,599	117,749,833	37,221		8,746	40	40		28,395	16,465	5
38,504	31,068	360,356	290	46,827	1,251	257,561	9,204	827,935	561,220	145						145		6
79,418	66,826	173,921		19,983	73,430	750,292	4,604	1,379,577	618,081	87						87		7
44,787	21,148	134,781		15,315	5,540	122,742	1,821	484,158	359,595	81						81		8
19,034	43,424	170,908		7,563	18,888	546,276	5,880	932,107	379,945	129		80				49	70	9
27,076	5,806	161,426		4,057	3,325	152,893	4,749	409,544	251,802	146				90		53		10
71,149	22,475	221,177	1,045	19,132	23,831	426,734	9,281	987,132	551,117	156						156		11
87,834	21,350	512,234		19,790	30,983	921,078	21,591	1,812,856	870,192	1,750		925				825		12
1,502,318	1,132,674	12,429,056	16,404	50,030	888,507	28,106,593	1,185,737	49,239,768	19,947,438	24,866		7,230	1,000			16,636	811	13
454,927	1,455,127	3,120,705	8,563	199,824	222,118	13,121,250	420,685	22,631,347	9,080,412	3,258		145		8		3,105		14
68,750	4,852	199,806	9,010	1,800	25,909	33,510	92,452	614,736	488,774	480		450				80		15
95,425	100,001	321,121		14,763	63,873	0,715,643	42,443	7,777,022	1,018,936	1,305				70		1,325		16
				1,205		1,955	240	9,835	7,640	2						2		17
				300	95	1,243	121	8,161	0,707	2						2		18
541,928	541,587	2,755,963	761	20,638	418,867	2,361,237	1,199,351	11,355,383	7,794,792	20,339		10,444	8,122			1,773	9,375	19
12,663	2,513	13,037		4,775	420	47,555	903	172,111	123,953	14						14		20
245,453	450,769	1,000,451	22,300	29,701	100,131	4,390,316	25,130	7,124,219	2,708,761	833		750				83	370	21
92,083	44,389	354,355	722	15,559	33,157	821,230	5,940	1,559,372	732,196	96						96		22
80,858	41,309	297,583	412	9,954	32,642	603,711	4,421	1,210,545	602,413	77						77		23
6,725	2,360	52,932	310	4,405	467	216,019	1,525	348,827	129,783	19						19		24
39,660	33,860	50,003		15,800	4,700	1,685,136	12,834	2,004,404	306,434	390						390		25
55,353	45,680	123,351	720	5,420	50,041	330,837	5,297	774,567	438,433	189		54				185		26
117,210	140,361	731,226		123,466	253,301	2,809,320	65,392	5,393,154	2,401,442	2,021		277				1,744	1	27
87,813	53,755	543,105	8,060	20,020	23,379	850,961	8,276	2,043,402	1,178,135	313						313		28
719,330	486,460	2,094,059	800	703,908	4,461,297	4,461,297	122,967	12,970,284	8,380,020	3,084				25		3,059		29
37,677	7,058	188,571		14,223	1,738	60,908	17,309	426,434	348,217	489		26				463		30
1,007,985	1,276,943	10,429,954	500	33,703	1,150,046	14,141,983	336,769	36,611,142	22,132,300	16,109		1,400	50			14,659	7,681	31
3,000	3,748	60,425	300	5,010	8	26,303	955	149,550	122,301	14						14		32
15,080	0,974	48,245		5,240	7,904	216,600	10,611	374,536	147,265	187		150				37	100	33
2,932,065	1,898,706	19,800,079	65,606	272,992	1,923,268	21,088,054	1,235,422	58,384,369	36,060,893	22,950		4,134		426		18,346	1,735	34
643,161	167,221	5,359,399	12,000	42,420	554,774	4,223,388	564,781	13,324,581	8,536,412	13,324,581		1,344		10		5,468	461	35
2,139,877	1,000,865	12,060,495	28,306	101,733	1,093,589	15,432,144	600,597	40,708,491	24,660,750	14,543		2,150		416		11,977	1,159	36
149,027	130,090	1,700,785	25,300	38,833	274,905	1,432,522	64,044	4,351,297	2,854,731	1,591		690				901	115	37
63,890	159,563	328,094	1,000	32,230	40,310	1,059,576	8,956	2,031,793	968,262	6						6		38
7,000	0,277	22,290		2,815	527	110,104	255	201,085	90,726	46						46		39
202,115	203,072	1,225,460	3,645	12,044	144,456	1,483,347	56,087	3,955,855	2,416,421	1,454		1,215	30			209	802	40
194,141	197,073	1,177,637	3,645	10,104	143,072	1,380,234	53,797	8,760,491	2,332,460	1,328		1,165	30			133	802	41
7,974	5,390	47,823		1,940	1,384	103,113	2,290	189,364	83,961	126		50				76		42
25,205	0,905	108,017	572	8,020	3,694	159,279	3,150	354,080	191,651	67						67		43
8,000	8,485	19,426		5,417	351	43,429	1,571	133,170	88,170	23						23		44
220,412	145,018	1,582,377	11,100	50,449	128,637	2,053,416	57,871	5,326,455	3,215,168	1,599		180		40		1,379		45
25,390	20,596	41,961		6,465	2,702	189,226	2,797	343,017	150,994	611		450				461		46
120,087	61,272	978,840		9,400	53,760	1,118,560	100,522	2,416,250	1,197,168	2,979		1,775	150			1,054	900	47
77,915	15,240	163,661	242	12,064	10,928	93,157	39,885	532,091	199,040	322				70		252	70	48
52,707	55,050	151,942	4,010	17,561	2,775	416,620	1,402	937,784	519,702	72						72		49
71,020	15,740	193,707		27,810	55,316	608,629	11,040	1,102,769	483,100	316		220				96	140	50
78,406	16,562	99,409		10,720	8,729	600,916	2,304	933,871	529,651	105				42		63		51
111,428	155,717	603,374			483,277	6,164,997	47,402	8,624,215	2,411,816	1,072		835				237	900	52
247,847	123,005	754,735		24,000	511,885	1,281,422	142,156	3,763,420	2,339,842	3,905		1,735				2,170	180	53
280,366	126,320	1,754,346	357	27,449	143,800	5,618,093	98,695	9,114,453	3,397,755	5,895		3,613		160		2,122	1,114	54
379,185	311,921	2,894,785	25,476	21,002	430,741	2,556,309	94,647	8,245,106	5,594,150	2,547		275		320		1,952		55
75,880	32,715	316,027	11,827	10,326	12,018	414,510	19,022	1,156,101	752,569	1,309		135				1,160		56
12,425	8,828	43,011	300	600	2,185	92,457	2,841	244,040	148,742	95						81		57
63,455	23,887	272,416	11,527	9,726	10,733	322,053	16,181	942,061	603,827	1,214		135				1,079		58
27,451	13,933	120,015	355	9,670	5,028	449,275	6,521	818,698	362,902	185						185		59
11,909	9,608	38,580	2,000	8,133	13,114	122,004	414	246,387	123,960	10						10		60

<sup>1</sup> Same number reported for one or more other months.

<sup>2</sup> Same number reported throughout the year.



## MANUFACTURES—MICHIGAN.

TABLE 36.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.							WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.		
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.		Total.	16 and over.		Under 16.			
					Male.	Female.	Average number.	Number, 15th day of—		Male.	Female.	Male.		Female.	
								Maximum month.							Minimum month.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

DETROIT—Continued.																	Dollars.	
1	Mineral and soda waters.....	28	403	35	32	16	38	282	Jy	397	Ja	194	245	242	2	1	1,837,898	
2	Models and patterns, not including paper patterns.....	29	792	19	53	15	12	093	De	864	Ja	574	885	882	3		1,018,167	
3	Oil, vegetable and composite.....	3	117	-----	10	17	3	87	De	143	Ja	31	90	96	-----	-----	1,306,195	
4	Optical goods.....	4	225	1	13	9	37	165	Au	178	De	140	148	94	54	-----	451,008	
5	Paints.....	11	812	2	50	213	119	410	Oc	536	Fe	360	422	386	34	1	4,411,062	
6	Patent medicines and compounds.....	25	1,739	14	181	183	193	1,108	No	1,215	Jy	1,021	1,209	533	674	2	5,312,434	
7	Patent and proprietary medicines.....	18	1,647	10	159	169	178	1,131	No	1,215	Jy	1,021	1,107	506	050	2	4,925,209	
8	Patent and proprietary compounds, not elsewhere specified.....	7	92	4	22	14	15	37	No	46	Fe	28	42	27	15	-----	387,225	
9	Perfumery and cosmetics.....	15	155	10	18	2	21	104	Oc	133	Ja	66	122	41	70	2	423,945	
10	Photo-engraving.....	12	221	7	30	22	18	144	No	157	Ja	116	156	149	7	-----	278,537	
11	Pickles, preserves, and sauces.....	12	159	10	20	13	5	111	Oc	124	De	98	97	52	45	-----	460,736	
12	Plumbers' supplies, not elsewhere specified.....	5	110	5	6	7	5	87	De	124	Ja	49	124	116	8	-----	310,176	
13	Printing and publishing, book and job.....	186	2,958	157	242	229	232	2,098	-----	-----	-----	-----	2,227	1,511	097	18	6,080,385	
14	Job printing.....	171	2,023	147	218	134	160	1,964	De	2,108	Ja	1,835	2,113	1,415	079	18	5,397,891	
15	Book publishing without printing.....	8	172	3	10	94	03	2	(*)	2	(*)	2	2	2	-----	-----	361,647	
16	Book publishing and printing, linotype work and typesetting.....	7	163	7	14	1	9	132	No	149	Ap	119	112	94	18	-----	327,347	
17	Printing and publishing, newspapers and periodicals.....	70	2,307	25	177	619	404	1,082	-----	-----	-----	-----	1,181	1,109	62	10	7,034,682	
18	Printing and publishing.....	7	1,067	2	93	498	258	816	De	896	Ja	751	801	873	18	-----	5,924,365	
19	Printing, publishing, and job printing.....	19	392	5	33	60	41	253	De	277	Ja	239	277	226	42	0	772,031	
20	Publishing without printing.....	44	248	18	51	61	105	13	My	14	Ja	12	13	10	2	1	338,286	
21	Sausage, not made in slaughtering and meat-packing establishments.....	9	116	9	7	13	2	85	De	88	Ap	82	88	78	10	-----	219,880	
22	Screws, machine.....	15	1,391	7	67	53	52	1,212	No	1,347	Ja	1,071	1,281	1,111	170	-----	5,287,072	
23	Shipbuilding, wooden.....	4	110	-----	7	1	3	99	Mh	127	Se	81	111	111	-----	-----	189,936	
24	Shirts.....	3	48	2	2	2	1	41	De	42	Mh	40	42	4	38	-----	23,669	
25	Signs and advertising novelties.....	14	91	18	5	2	4	62	So	72	Ja	43	68	65	3	-----	107,021	
26	Slaughtering and meat packing.....	11	1,957	5	57	188	85	1,622	De	1,083	My	1,375	1,983	1,683	207	2	10,082,320	
27	Stamped ware, not elsewhere specified.....	15	1,197	1	67	31	43	1,055	Ja	1,223	Ap	845	954	747	236	1	3,147,044	
28	Statuary and art goods.....	4	22	7	-----	-----	1	14	De	16	Fe	12	16	16	-----	-----	11,820	
29	Steam fittings and steam and hot-water heating apparatus.....	9	549	-----	23	12	19	495	Oc	788	My	181	771	742	29	-----	2,031,229	
30	Stereotyping and electrotyping.....	5	154	3	14	8	8	121	De	131	Ja	92	131	126	4	1	191,607	
31	Stoves and hot-air furnaces.....	5	2,715	-----	02	204	93	2,350	No	2,553	Ja	2,098	2,442	2,415	19	8	9,850,350	
32	Structural ironwork, not made in steel works or rolling mills.....	21	1,990	10	79	317	127	1,457	De	1,872	My	1,101	1,872	1,840	22	1	7,792,394	
33	Tobacco, cigars and cigarettes.....	73	3,735	65	177	47	25	3,421	No	3,627	Fe	2,717	3,612	346	3,264	1	6,485,293	
34	Tools, not elsewhere specified.....	74	2,729	47	162	92	101	2,327	No	2,843	Fe	1,955	2,737	2,030	106	1	6,000,985	
35	Toys and games.....	6	22	10	-----	-----	-----	12	Jy	11	Mh	7	28	4	23	1	35,744	
36	Trunks and valises.....	7	65	9	3	4	3	46	Jy	47	Ja	44	46	40	0	-----	121,057	
37	Window and door screens and weather strips.....	6	40	7	3	5	5	20	Ja	30	Fe	14	30	30	-----	-----	178,002	
38	Wirework, not elsewhere specified.....	17	890	13	44	17	26	790	Au	978	Jy	477	772	575	197	-----	1,606,650	
39	Wood, turned and carved.....	4	65	2	5	-----	4	64	Oc	66	Ja	40	64	62	-----	2	101,837	
40	All other industries*.....	280	38,301	137	1,416	3,152	1,739	31,857	-----	-----	-----	-----	34,189	27,858	6,178	110	37	211,983,760

\*All other industries embrace—  
 Agricultural implements..... 1  
 Aluminum manufactures..... 2  
 Babbitt metal and solder..... 6  
 Bags, other than paper, not including bags made in textile mills..... 4  
 Belting, leather..... 1  
 Bluing..... 2  
 Brooms, from broom corn..... 4  
 Brushes..... 6  
 Buttons..... 3  
 Card cutting and designing..... 1  
 Carriages and wagons, including repairs..... 2  
 Cars and general shop construction and repairs by steam-railroad companies..... 2  
 Cars, steam-railroad, not including operations of railroad companies..... 1

Cash registers and calculating machines..... 5  
 Cement..... 1  
 Chewing gum..... 1  
 Clocks..... 2  
 Cloth, sponging and refinishing..... 1  
 Coal-tar products..... 1  
 Condensed milk..... 1  
 Cooperage..... 3  
 Cordials and flavoring sirups..... 1  
 Corsets..... 2  
 Cotton goods..... 1  
 Cutlery and edge tools..... 1  
 Dairymen's, poultrymen's, and apiarists' supplies..... 1  
 Dental goods..... 7  
 Druggists' preparations..... 10  
 Dyeing and finishing textiles, exclusive of that done in textile mills..... 1

Emery and other abrasive wheels..... 3  
 Enameling..... 5  
 Engraving and die-sinking..... 1  
 Engraving, wood..... 1  
 Envelopes..... 3  
 Fancy articles, not elsewhere specified..... 2  
 Fertilizers..... 1  
 Files..... 3  
 Fire extinguishers, chemical..... 2  
 Flags and banners..... 3  
 Flavoring extracts..... 5  
 Flour-mill and gristmill products..... 4  
 Foundry supplies..... 2  
 Furs, dressed..... 2  
 Galvanizing..... 1  
 Gas and electric fixtures..... 12  
 Gas and water motors..... 1  
 Gas, illuminating and heating..... 1

Gloves and mittens, cloth, not including gloves made in textile mills..... 2  
 Gloves and mittens, leather..... 1  
 Gold and silver, reducing and refining, not from the ore..... 1  
 Graphite, ground and refined..... 1  
 Grease and tallow, soap stock..... 1  
 Hat and cap materials..... 1  
 Hats and caps, other than felt, straw, and wool..... 4  
 Hats, straw..... 1  
 Horseshoes, not made in steel works or rolling mills..... 1  
 Ice, manufactured..... 2  
 Ink, printing..... 1  
 Ink, writing..... 1  
 Instruments, professional and scientific..... 3  
 Iron and steel, blast furnaces..... 1

1 Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

2 Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



## COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.				
											Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>	

## CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars. 116,743 212,916	Dollars. 73,232 36,950	Dollars. 406,130 1,483,932	Dollars. 1,000 .....	Dollars. 14,718 43,373	Dollars. 146,463 38,543	Dollars. 1,026,670 296,172	Dollars. 31,877 16,178	Dollars. 2,384,184 2,703,024	Dollars. 1,325,637 2,390,674	803 438	40 .....	.....	.....	.....	763 438	..... 8	1 2
31,612 28,440 237,595 550,659 404,507	42,643 55,892 407,107 590,133 468,006	81,422 153,646 576,905 1,021,230 980,888	..... ..... 1,667 8,876 4,676	2,678 1,700 28,510 44,910 28,398	10,218 3,408 239,164 295,970 283,298	2,550,973 322,255 3,742,397 3,373,310 2,890,212	20,325 4,851 54,476 56,660 53,228	2,819,776 836,904 7,036,782 8,091,447 7,280,137	248,478 539,798 3,239,909 4,661,477 4,336,697	321 141 1,826 794 719	200 90 675 535 535	..... ..... ..... ..... .....	..... ..... ..... ..... .....	..... ..... ..... ..... .....	121 61 1,151 259 184	82 4 279 840 840	3 4 5 6 7
86,152	32,127	40,342	4,200	16,512	12,672	483,098	3,432	811,310	324,780	75	.....	.....	.....	.....	75	.....	8
46,642 87,002 55,309 17,630	18,210 60,231 37,978 14,344	91,044 270,990 112,477 114,212	..... 21,066 ..... .....	17,066 21,216 6,849 6,904	25,685 6,455 17,920 7,013	330,886 95,345 477,494 200,041	4,688 6,107 8,638 10,600	717,050 850,812 892,635 516,194	381,476 749,360 406,505 305,553	125 117 100 219	30 ..... 30 125	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....	95 117 70 94	..... ..... ..... 125	9 10 11 12
769,897 709,290 22,966 37,641	782,773 353,591 418,729 10,453	2,769,607 2,572,516 2,548 194,543	441,130 310,865 128,596 1,000	245,545 227,895 8,508 9,142	188,521 181,808 4,276 2,437	4,121,348 4,033,066 55,802 32,540	73,102 69,273 424 3,405	11,430,857 10,270,035 720,265 440,557	7,236,407 6,167,756 664,039 404,612	2,023 1,977 ..... 46	..... ..... ..... .....	..... ..... ..... .....	5 5 ..... .....	..... ..... ..... .....	2,018 1,972 ..... 46	..... ..... ..... .....	13 14 15 16
587,335	1,495,641	1,783,875	363,137	66,650	608,914	4,945,757	50,967	14,017,463	9,020,739	2,948	.....	.....	40	.....	2,908	.....	17
333,311 88,049	1,169,110 145,910	1,358,841 408,219	379 1,300	19,885 17,055	547,712 21,568	4,277,812 469,250	37,140 13,220	11,321,031 1,318,577	7,006,079 830,097	2,466 440	.....	.....	40	.....	2,466 406	..... .....	18 19
165,975 18,280	180,621 24,704	16,815 119,867	361,458 .....	29,719 2,119	39,634 3,473	198,695 1,313,923	597 10,643	1,377,855 1,693,309	1,178,593 362,743	36 320	.....	15	.....	.....	36 311	..... .....	20 21
288,093 18,654 2,600 21,697 289,548 230,342	135,952 4,324 3,700 8,281 341,273 92,985	1,575,027 147,648 30,228 94,477 2,170,786 1,090,826	26,084 3,770 5,576 7,269 1,540 4,850	2,750 3,770 5,576 6,279 172,595 480,768	344,448 103,359 115,295 101,511 47,993,092 3,414,629	2,658,853 103,359 115,295 101,511 47,993,092 3,414,629	82,554 2,576 210 780 178,125 65,670	6,019,583 287,998 176,915 305,208 57,648,125 6,973,264	3,278,176 182,063 61,410 202,817 9,478,908 3,492,965	2,920 85 7 2 4,352 1,100	500 ..... ..... ..... 2,615	..... ..... ..... ..... 500	..... ..... ..... ..... .....	..... ..... ..... ..... .....	2,420 85 7 2 1,237 1,160	..... ..... ..... ..... 2,259 .....	22 23 24 25 26 27
74,883	109,311	707,442	.....	8,305	28,210	882,597	75,317	1,950,840	992,926	728	315	.....	.....	.....	413	179	29
56,282 390,236 360,559	15,297 487,761 483,740	174,078 3,499,130 2,345,906	494 ..... .....	13,979 325,073 22,879	5,739 2,667,070 411,050	77,035 157,670 7,200,330	10,278 157,670 179,008	535,989 10,144,806 11,271,015	448,676 7,320,096 3,891,677	205 3,591 2,941	.....	2,100	30	80 4	205 1,381 2,037	..... 1,502 .....	30 31 32
321,306 704,404	141,733 296,335	2,820,710 3,838,302	10,010 10,300	76,357 109,138	1,347,041 311,502	5,532,945 2,322,691	23,936 105,534	11,606,301 9,216,733	6,049,420 6,788,508	123 2,351	.....	100	12	.....	123 2,289	1 .....	33 34
5,390 10,438	0,684 9,075	58,725 38,141	200 750	9,200 4,721	3,135 4,159	93,214 90,816	1,294 997	202,955 190,227	108,447 98,414	22 54	.....	.....	.....	.....	22 54	..... .....	35 36 37
128,815 15,050 5,282,328	68,497 4,587 7,028,604	994,416 66,244 45,019,210	5,115 ..... 137,381	18,683 2,988 409,616	78,268 3,358 17,449,699	1,323,661 24,524 88,555,444	33,150 2,567 5,107,130	2,930,334 199,032 233,407,399	1,573,523 171,941 139,744,825	1,104 152 65,877	400 100 24,075	.....	.....	.....	704 52 28,352	3 ..... 33,195	38 39 40

Iron and steel, steel works and rolling mills..... 5  
Iron and steel, bolts, nuts, washers, and rivets, not made in rolling mills..... 4  
Iron and steel, doors and shutters..... 3  
Japanning..... 1  
Lamps and reflectors..... 5  
Lead, bar, pipe, and sheet..... 1  
Lithographing..... 9  
Looking-glass and picture frames..... 2  
Malt..... 2  
Mirrors, framed and unframed, not elsewhere specified..... 1  
Motorcycles, bicycles, and parts..... 1  
Mudilage, paste, and other adhesives, not elsewhere specified..... 2  
Musical instruments and materials, not specified..... 1

Musical instruments, pianos..... 1  
Needles, pins, and hooks and eyes..... 2  
Oleomargarine and other butter substitutes..... 1  
Paper and wood pulp..... 1  
Paper goods, not elsewhere specified..... 2  
Paving materials..... 2  
Pottery..... 2  
Printing and publishing, music..... 1  
Printing materials..... 2  
Pumps, not including power pumps..... 2  
Refrigerators..... 1  
Roofing materials..... 1  
Rubber tires, tubes, and rubber goods, not elsewhere specified..... 2  
Saddlery and harness..... 3  
Salt..... 1  
Sand-lime brick..... 1

Saws..... 2  
Scales and balances..... 2  
Shipbuilding, steel, new vessels..... 2  
Show cases..... 4  
Smelting and refining, not from the ore..... 3  
Soap..... 2  
Sporting and athletic goods..... 2  
Springs, steel, automobile..... 1  
Stationery goods, not elsewhere specified..... 2  
Steam packing..... 3  
Steel barrels, drums, and tanks..... 1  
Stencils and brands..... 3  
Stoves, gas and oil..... 3  
Surgical appliances..... 2  
Suspenders, garters, and elastic woven goods..... 1  
Tinware, not elsewhere specified..... 4

Tobacco, chewing and smoking, and snuff..... 12  
Typewriters and supplies..... 1  
Umbrellas and canes..... 2  
Upholstering materials, not elsewhere specified..... 3  
Varnishes..... 3  
Wall plaster, and composition flooring..... 2  
Washing machines and clothes wringers..... 1  
Window shades and fixtures..... 2  
Wire..... 1  
Wood preserving..... 1  
Wooden goods, not elsewhere specified..... 1

\* Same number reported throughout the year.

\* Same number reported for one or more other months.



TABLE 36.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.		Total.	16 and over.		Under 16.			
					Male.	Female.	Average number.	Number, 15th day of—		Male.	Female.	Male.	Female.		
								Maximum month.							Minimum month.

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

															Dollars.
1	FLINT—All industries.....	107	28,575	95	1,065	1,650	1,162	24,603	De 29,414	Ja 18,350	29,411	27,021	2,380	10	124,142,377
2	Artificial stone products.....	5	19	6	1	1	1	12	Jy <sup>s</sup> 16	Ja <sup>s</sup> 7	13	13	12		47,510
3	Automobile bodies and parts.....	3	1,218	38	61	25	1,094	Se 1,357	Ja 827	1,215	1,203	12			3,433,227
4	Automobile repairing.....	4	29	4	1	1	22	Se <sup>s</sup> 24	Ja <sup>s</sup> 20	25	24	1			18,895
5	Bread and other bakery products.....	20	285	21	12	60	23	170	Au 198	Fe 152	178	153	24	1	679,049
6	Confectionery and ice cream.....	6	54	11	2	2	40	Jy <sup>s</sup> 48	Ja <sup>s</sup> 36	38	23	15			55,184
7	Copper, tin, and sheet-iron work.....	5	26	3	2	1	18	Se <sup>s</sup> 23	Ap 14	21	21				54,768
8	Foundry and machine-shop products.....	5	521	2	18	33	27	441	Jy 523	Ja 328	448	297	151		906,790
9	Lumber, planing-mill products, not including planing mills connected with sawmills.....	3	93	14	4	3	72	My 76	Ap 67	70	70				251,043
10	Mineral and carbonated waters.....	3	20	7	1	1	11	Au 19	Ja 5	8	8				33,992
11	Printing, job.....	9	103	6	11	2	6	Jy 93	Ap 60	83	47	35	1		240,750
12	Tobacco, cigars.....	7	67	10	1	1	55	De 78	Je 43	75	19	56			50,453
13	All other industries *.....	37	26,140	25	967	1,483	1,075	22,590			27,237	25,143	2,086	8	118,352,110

\*All other industries embrace—  
 Automobiles..... 4  
 Awnings, tents, and sails..... 1  
 Blacking, stains, and dressings..... 1  
 Brass and bronze products..... 1

Brooms, from broom corn..... 1  
 Butter..... 1  
 Carriage and wagon materials..... 1  
 Clothing, men's..... 1  
 Electroplating..... 1

Electrical machinery, apparatus, and supplies..... 3  
 Flour-mill and gristmill products..... 3  
 Gas, illuminating and heating..... 1

Ice, manufactured..... 1  
 Iron and steel, forgings, not made in steel works or rolling mills..... 1

1	GRAND RAPIDS.....	611	27,927	452	1,242	1,641	1,044	23,548	De 20,918	Ja 20,724	27,431	22,146	4,928	214	143	80,670,385
2	All industries.....	5	10	2	1	1	1	6	Jy <sup>s</sup> 7	Ja <sup>s</sup> 4	6	6				83,472
3	Artificial stone products.....	19	1,263	12	76	42	44	1,089	No 1,447	My 705	1,434	1,363	70	1		3,836,494
4	Automobile bodies and parts.....	3	181	20	7	11	143	De 180	Se 128	180	177	3				915,494
5	Automobiles.....	8	202	11	14	18	9	150	Jy 191	Ja 106	131	128	3			473,540
6	Automobile repairing.....	4	86	4	6	3	73	De 92	My 60	92	45	44	3			121,848
7	Bookbinding and blank-book making.....	4	380	4	20	20	316	No 392	Je 245	383	321	62				825,566
8	Brass and bronze products.....	74	787	84	9	68	38	588	No 652	Je <sup>s</sup> 559	633	363	206	4		1,707,637
9	Bread and other bakery products.....	5	99	1	5	14	22	57	Jy 77	No 44	47	37	10			541,665
10	Butter.....	3	3	3	1	1	30	Ja <sup>s</sup> 32	My <sup>s</sup> 28	31	12	19				10,609
11	Cleansing and polishing preparations.....	3	38	2	3	2	1	30	Ja <sup>s</sup> 32	My <sup>s</sup> 28	31	12	19			67,655
12	Clothing, men's.....	4	68	2	4	4	6	52	Au 84	Ja 25	70	2	68			113,845
13	Clothing, women's.....	6	120	4	6	22	10	78	De 87	Ap <sup>s</sup> 72	87	61	20			498,645
14	Coffins, burial cases, and undertakers' goods.....	23	370	25	10	38	10	287			298	143	151	3	1	1,141,360
15	Confectionery and ice cream.....	13	311	14	7	33	7	250	Oc 200	Jy 190	240	102	140		1	808,842
16	Confectionery.....	10	59	11	3	5	3	37	Jy 71	Ja <sup>s</sup> 20	40	41	5	3		242,518
17	Ice cream.....	7	60	5	8	2	1	44	Jy 58	Ja 26	52	50	2			140,244
18	Copper, tin, and sheet-iron work.....	3	26	1	3	1	21	No 20	Je <sup>s</sup> 15	28	24	4				17,800
19	Electroplating.....	9	201	10	19	20	10	124	Au 133	Mh 112	123	122	1			1,737,967
20	Flour-mill and gristmill products.....	41	1,430	27	75	66	52	1,210	De 518	Ap 340	522	487	35			3,494,018
21	Foundry and machine-shop products.....	7	450	3	14	18	8	412	De 821	Ja 598	821	803	18			1,158,028
22	Foundries.....	30	532	22	53	44	45	608	De 148	Mh 116	148	148				2,131,906
23	Machine shops.....	4	148	2	8	4	4	130								202,484
24	Boiler shops and machine shop and foundry combined.....	71	10,444	37	359	427	249	9,372			11,086	9,010	1,122	47	7	27,452,997
25	Furniture.....	58	8,731	34	306	239	185	7,967	De 9,410	Ja 6,650	9,396	8,374	977	40	5	22,546,800
26	Wood, other than rattan and willow.....	4	281	2	10	5	9	246	De 333	Ja 175	333	262	67	2	2	454,430
27	Rattan and willow, and metal furniture.....	9	1,432	1	34	183	55	1,159	De 1,356	Ja 940	1,357	1,274	78	5		4,451,767
28	Store and office fixtures.....	9	818	7	19	32	32	728	De 961	Ja 522	941	604	318	18	1	1,061,568
29	Hardware.....	4	597	15	31	25	520	No 622	Je 455	615	124	487		4		2,290,461
30	Knit goods.....	4	230	13	7	2	208	Fe 230	De 179	216	211	5				932,300
31	Leather, tanned, curried, and finished.....	3	105	8	19	1	77	Jy 120	De <sup>s</sup> 53	53	53					729,775
32	Liquors, malt.....	7	431	0	21	19	20	365	De 403	Ja 300	352	317	20	15		1,796,094
33	Lumber, planing-mill products, not including planing mills connected with sawmills.....	6	46	8	1	7	2	28	Je <sup>s</sup> 30	Ja 19	30	30				115,601
34	Marble and stone work, monuments and tombstones.....	7	30	5	3	2	20	Jy 33	Ja 11	15	15					76,083
35	Mineral and carbonated waters.....	13	70	10	7	3	1	49			63	7	56			123,139
36	Patent medicines and compounds.....	10	59	8	5	1	45	De 55	Au <sup>s</sup> 38	55	3	52				36,083
37	Patent and proprietary medicines.....	3	11	2	2	3	4	Je <sup>s</sup> 9	Ja 6	8	4	4				86,456
38	Patent and proprietary compounds, not elsewhere specified.....	4	182	1	19	29	25	108								
39	Phonographs and graphophones.....	54	667	45	59	52	54	457	De 216	Ja 27	268	206	62			1,144,819
40	Printing and publishing, book and job.....	46	607	37	56	33	40	441	Oc <sup>s</sup> 473	Ja 409	488	356	119	13		1,372,523
41	Job printing.....	4	35	3	2	19	11									1,285,615
42	Book publishing without printing.....	4	25	5	1	3	3	16	De <sup>s</sup> 17	Ja <sup>s</sup> 14	17	17				26,830
	Book publishing and printing, and linotype work and type-setting.....															60,178

<sup>1</sup> Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

<sup>2</sup> Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-bolt or transmitted power from neighboring power plants).



## COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.				
										Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>	Rent. <sup>2</sup>	

## CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars. 2,820,557	Dollars. 3,403,437	Dollars. 38,092,615	Dollars. 18,111	Dollars. 190,352	Dollars. 12,134,492	Dollars. 170,650,052	Dollars. 2,173,712	Dollars. 275,779,638	Dollars. 102,955,874	33,610	2,198	2,150	127	100	20,035	1,625	1
122,818	87,114	1,357,508	3,472	1,684	516	26,303	2,606	82,731	53,822	37	15	509	22		1,854	200	2
2,600	1,816	39,866		2,015	111,840	5,792,502	62,619	8,537,634	2,682,513	2,354					47		3
30,590	45,213	195,652	247	12,810	236	76,600	1,012	142,688	64,476	47					147		4
	3,405	30,934		9,700	22,336	1,013,978	21,889	1,621,915	565,048	147					27		5
6,800	9,385	20,710		1,730	1,331	263,719	4,585	353,488	175,184	27					9		6
59,010	62,934	503,084		10,136	6,759	45,806	362	115,721	70,053	9					338		7
14,617	3,405	91,208			51,379	1,093,704	22,936	2,148,759	1,082,119	338					355		8
					6,518	337,705	8,010	484,834	139,119	475	120						9
1,063	779	12,286		910	394	49,295	1,152	103,099	52,652	13					13		10
33,718	10,885	86,714		12,204	2,318	134,245	4,556	363,703	224,902	90			5		85		11
1,300	1,000	100,098		2,415	17,656	80,475	490	173,701	92,736	1					1		12
2,556,441	3,176,301	35,627,159	14,392	136,656	11,913,119	161,796,220	2,042,895	261,621,365	97,782,250	30,072	1,563	2,150	100	100	26,159	1,425	13

Marble and stone work, monuments and tombstones.....	1	Paints.....	2	Sand-lime brick.....	1	Slaughtering and meat packing.....	1
Mattresses and spring beds, not elsewhere specified.....	1	Patent medicines and compounds.....	2	Sausage, not made in slaughtering and meat-packing establishments.....	2	Springs, steel, automobile.....	1
		Printing and publishing, newspapers and periodicals.....	3	Screws, machine.....	1	Varnishes.....	1

4,556,267	4,184,220	26,170,377	1,228,015	446,774	3,503,301	49,213,898	1,047,863	109,135,055	57,973,294	44,048	22,578	3,053	679	922	16,816	6,817	1
100	75	7,580	600	500	89	11,557	824	29,782	17,401	7			2		5		2
271,154	61,541	1,544,058	1,040	35,683	358,493	2,608,235	62,980	5,656,674	2,985,459	1,910	1,110				830		3
51,067	17,573	206,125			16,491	569,819	9,652	1,254,478	675,007	191	15				176		4
30,640	35,383	156,446	12,662	8,699	6,712	610,484	5,040	1,038,425	422,901	133			1		132		5
34,680	2,506	65,623		2,290	1,970	83,476	1,618	206,566	181,472	33					33		6
62,231	40,438	329,061		8,112	13,063	302,526	22,309	610,555	585,720	478			200		278	210	7
24,910	160,535	441,740		19,422	29,382	2,173,459	54,530	3,605,027	1,377,038	424	70		10		344	1	8
15,635	48,186	69,558	42	3,452	11,026	1,422,753	11,284	1,647,484	213,447	234					284		9
1,300	780			180		2,266	9	7,200	4,935								10
6,800	4,203	30,551	1,940	4,886	1,252	113,736	2,119	227,142	111,287	18					18		11
12,765	19,742	29,039		2,876	3,137	83,747	4,484	190,917	106,686	14					14		12
38,038	70,085	87,150	279	2,290	13,406	274,962	7,115	537,458	255,381	238					238		13
67,104	111,219	182,801		23,607	219,395	1,266,838	18,649	2,344,970	1,059,492	426	185				241	256	14
61,723	103,554	136,312		20,397	217,785	910,523	11,390	1,847,950	926,037	204	185				19	256	15
5,381	7,665	46,579		3,210	1,610	350,315	7,269	497,029	133,455	222					222		16
15,360	5,224	53,715		1,889	1,184	117,638	1,599	248,122	128,885	36					36		17
4,940	1,435	23,736		1,278	209	6,131	3,554	49,865	40,180	53			8		45		18
73,013	64,340	143,090	100	423	33,943	4,921,985	30,420	5,453,586	501,181	1,037	850			625	462	345	19
226,218	121,375	1,484,304	4,062	70,393	92,419	1,620,210	156,723	3,987,657	2,310,724	2,569	675	25		147	1,722	254	20
63,950	29,400	508,195		375	31,542	471,272	100,919	1,479,688	907,497	731	360	25			136	115	21
134,046	84,732	791,086	4,062	35,496	43,851	944,409	46,087	2,170,741	1,180,245	1,516	240			147	1,129	136	22
28,222	7,174	155,113		34,522	17,026	104,529	9,717	337,228	222,982	322	75				247	3	23
1,603,827	1,510,798	10,594,498	54,599	65,092	969,706	13,502,587	320,303	34,962,294	21,079,404	11,815	9,057			75	2,683	1,501	24
1,340,065	797,524	8,942,732	40,893	60,694	837,770	10,893,833	261,555	28,400,720	17,255,332	9,615	7,722			75	1,818	831	25
62,140	11,870	250,437	7,706	4,308	7,385	344,540	9,293	894,654	540,821		250				87		26
201,022	707,395	1,401,329		90	124,551	2,324,214	59,455	5,666,920	3,283,251	1,863	1,085				778	760	27
88,784	89,440	778,899		2,901	65,334	826,065	22,977	2,802,248	1,953,206	809	575				234	113	28
68,150	25,100	440,044	141,341	7,640	91,392	1,254,395	15,862	2,478,656	1,208,399	290	200				90		29
70,948	12,107	219,552		1,270	28,466	916,484	28,631	1,855,337	940,222	963	368	45			550	501	30
26,225	27,442	90,038			46,045	107,809	35,031	489,563	346,723	936	700				236		31
122,820	54,211	397,512	110,863	36	32,755	1,010,278	23,794	2,015,250	981,208	1,728	1,500				228		32
500	23,394	44,266	400	108	1,534	85,838	3,328	190,403	101,237	168					168		33
2,430	1,320	21,310	25	2,270	4,204	39,981	1,336	81,370	40,053	16					16		34
13,996	3,102	28,788		1,700	2,640	90,545	2,356	225,553	132,652	36					6		35
10,746	1,002	25,988		1,580	684	29,845	756	129,057	99,056	30					30		36
3,250	2,100	2,800		120	1,950	60,700	1,600	95,896	33,596								37
36,273	99,812	121,133	712,169	2,456	80,686	559,039	5,130	1,996,429	1,432,260	133					133		38
135,487	80,631	710,884	81,229	27,497	18,798	606,679	17,888	1,775,419	1,151,353	594	120				474	98	39
129,897	77,521	691,007	61,596	24,564	17,967	558,526	16,851	1,635,918	1,060,541	591	120				471	98	40
4,550	10,788		19,633	1,945	236	1,394		51,849	50,455								41
1,040	1,322	10,277		988	595	46,758	537	87,652	40,357	3					3		42

\* Same number reported for one or more other months.



## MANUFACTURES—MICHIGAN.

TABLE 36.—DETAILED STATEMENT OF ALL INDUSTRIES

INDUSTRY AND CITY.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.		Female.
								Maximum month.	Minimum month.						

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

GRAND RAPIDS—Continued.																	Dollars.	
1	Printing and publishing, newspapers and periodicals.	20	580	11	34	164	62	309	.....				333	264	63	4	2	1,169,067
2	Printing and publishing.....	7	417	2	16	145	45	209	De	220	Fe	196	220	197	10	3	1	792,213
3	Printing, publishing, and job printing.	5	146	3	13	14	17	99	De	112	Fe	88	112	66	44	1	1	360,372
4	Publishing without printing.....	8	17	6	5	5	.....	1	( <sup>3</sup> )	1	( <sup>3</sup> )	1	1	1	.....	.....	.....	7,482
5	Saddlery and harness.....	4	27	2	2	.....	.....	23	( <sup>3</sup> )	23	( <sup>3</sup> )	23	23	23	.....	.....	.....	105,155
6	Sausage, not made in slaughtering and meat-packing establishments.	3	15	5	.....	.....	1	9	Jy	10	Ja	8	10	10	.....	.....	.....	328,900
7	Saws.....	3	15	2	4	1	2	6	( <sup>3</sup> )	6	( <sup>3</sup> )	6	7	7	.....	.....	.....	23,800
8	Shirts.....	3	66	1	4	18	3	40	Oc	43	Ja	34	37	8	20	.....	.....	58,086
9	Signs, other than electric.....	3	23	4	3	.....	.....	10	Au	20	Ja	13	16	16	.....	.....	.....	21,785
10	Tobacco, cigars.....	25	761	24	32	18	9	678	Au	795	De	625	779	106	664	2	7	869,468
11	Tools, not elsewhere specified.....	3	7	3	.....	.....	.....	4	( <sup>3</sup> )	4	( <sup>3</sup> )	4	6	4	.....	.....	.....	17,875
12	Wood, turned and carved.....	10	139	11	7	2	3	116	De	152	Ja	85	151	141	10	.....	.....	220,044
13	All other industries*.....	134	7,350	74	352	479	304	6,141	.....				6,839	5,425	1,194	103	117	21,059,566

*All other industries embrace—	Brushes.	2	Cordage and twine.	2	Glass, cutting, staining, and ornamenting.	1
Aluminum manufactures.	Buttons.	1	Cordials and flavoring sirups.	1	Gloves and mittens, cloth, not including gloves made in textile mills.	1
Artificial limbs.	Canning and preserving, fruits.	1	Cutlery and edge tools.	2	Grease and tallow, not including lubricating greases.	1
Awnings, tents, and sails.	Carpets, rag.	2	Dental goods.	1	Hand work.	1
Baskets, and rattan and willow ware.	Carriages and wagons, including repairs.	2	Electrical machinery, apparatus, and supplies.	2	Hand stamps.	1
Belting, leather.	Cars and general shop construction and repairs by electric-railroad companies.	1	Engraving, steel and copper plate, including plate printing.	2	Hats and caps, other than felt, straw, and wool.	1
Blacking, stains, and dressings.	Cars and general shop construction and repairs by steam-railroad companies.	2	Fancy articles, paper novelties.	1	House-furnishing goods, not elsewhere specified.	1
Boots and shoes.	Cash registers and calculating machines.	1	Flavoring extracts.	2	Ice, manufactured.	1
Boxes, cigar.	China decorating.	1	Food preparations, not elsewhere specified.	3	Ink, writing.	1
Boxes, paper and other, not elsewhere specified.			Fur goods.	1		
Boxes, wooden packing, except cigar boxes.			Gas, illuminating and heating.	1		
Brick, building.			Gas machines and gas and water meters.	1		
Brooms, from broom corn.						

LANSING—All industries....		147	14,297	100	509	739	600	12,349	No 13,712	Ja 10,185	12,770	11,765	987	17	1	61,031,509
1	Artificial stone products.....	4	28	5	2	2	.....	19	Jy 31	Fe 9	14	14	.....	.....	.....	58,328
2	Automobile bodies and parts.....	6	2,351	.....	52	66	31	2,202	No 2,361	Ja 1,842	2,204	1,919	285	.....	.....	6,590,290
3	Automobile repairing.....	8	39	16	.....	1	3	25	Jy 30	Ja 20	22	21	1	.....	.....	85,072
4	Bread and other bakery products.....	10	99	16	4	1	9	69	Au 71	Mh 67	66	59	7	.....	.....	166,163
5	Copper, tin, and sheet-iron work.....	5	37	4	5	1	2	25	Oc 35	Ap 18	36	36	.....	.....	.....	94,314
6	Engines, steam, gas, and water.....	4	950	.....	46	36	30	838	De 939	Ja 715	939	884	52	3	.....	3,271,744
7	Flour-mill and gristmill products.....	3	33	3	2	4	4	20	Oc 25	Je 14	24	22	2	.....	.....	334,852
8	Foundry and machine-shop products.....	16	1,143	4	60	29	67	983	De 1,148	Mh 860	1,143	1,036	98	9	.....	4,189,119
9	Iron and steel, forgings, not made in steel works or rolling mills.....	4	783	.....	21	56	17	689	Oc 927	Ja 515	780	717	63	.....	.....	2,509,790
10	Iron and steel, welding.....	3	6	3	.....	.....	.....	3	(3)	(3)	3	2	.....	.....	.....	13,605
11	Lumber, planing-mill products, not including planing mills connected with sawmills.....	6	208	.....	23	20	7	158	Se 180	Fe 125	173	173	.....	.....	.....	1,146,001
12	Models and patterns, not including paper patterns.....	3	8	3	.....	.....	.....	5	De 6	Mh 4	6	6	.....	.....	.....	15,865
13	Printing, job.....	17	210	14	13	3	5	175	My 183	Ja 160	182	108	71	2	1	390,224
14	Printing and publishing, newspapers and periodicals.....	5	147	.....	5	33	27	82	De 93	Au 62	93	54	38	1	.....	390,008
15	Tobacco, cigars.....	4	15	4	.....	.....	1	10	Ja 13	Se 8	12	3	9	.....	.....	19,689
16	All other industries*.....	49	8,240	34	276	487	397	7,046	.....	.....	7,074	6,711	361	2	.....	41,741,436

*All other industries embrace—	Boxes, cigar.	1	Chewing gum.	1	Confectionery and ice cream.	2
Automobiles.	Brass and bronze products.	1	Clothing, women's, undergarments and petticoats.	1	Dairymen's, poultrymen's, and apirists' supplies.	1
Awnings, tents, and sails.	Brick, building.	1	Coffee, roasting and grinding.	1	Druggists' preparations.	1
Bags, other than paper, not including bags made in textile mills.	Brooms, from broom corn.	1	Coffins, burial cases, and undertakers' goods.	1	Electrical machinery, apparatus, and supplies.	2
Baking powders.	Carpets, rag.	2	Condensed milk.	1	Furniture, store and office fixtures.	1
Bookbinding and blank-book making.	Carriages and wagons, repair work only.	1				

Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

\*Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-bolt or transmitted power from neighboring power plants).



# MANUFACTURES—MICHIGAN.

713

COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.						
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.	
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.					Rent- ed. <sup>2</sup>
											Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>		

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars. 133, 818	Dollars. 253, 034	Dollars. 306, 834	Dollars. 64, 950	Dollars. 18, 256	Dollars. 98, 975	Dollars. 582, 223	Dollars. 17, 153	Dollars. 2, 343, 763	Dollars. 1, 744, 387	600					600	1	
98, 170	214, 091	200, 375	150	16, 320	92, 518	485, 081	13, 371	1, 771, 394	1, 272, 942	492					492	2	
32, 533	32, 126	96, 575	50, 000	1, 108	6, 395	93, 712	3, 782	531, 343	433, 849	108					108	3	
3, 115	6, 817	884	14, 800	828	62	3, 430		41, 026	37, 596							4	
2, 900		23, 338		250	328	192, 399	220	253, 775	61, 156	7					7	5	
	600	13, 090		780	126	94, 639	2, 412	121, 993	24, 942	53					53	6	
10, 200	2, 025	7, 355	500	1, 015	359	12, 824	540	40, 177	26, 813	13					13	7	
6, 022	2, 750	26, 753		1, 716	489	72, 026	435	176, 500	104, 039	8					8	8	
6, 307		18, 138		675	328	16, 077	64	57, 331	41, 190	1					1	9	
42, 941	78, 540	507, 433	5, 588	11, 363	313, 859	790, 054	3, 162	1, 982, 897	1, 189, 681	27					27	10	
		4, 200	16, 866	720		12, 410	187	23, 900	11, 303	10					10	11	
25, 078	7, 553	137, 721		6, 494	2, 001	89, 710	9, 105	342, 335	243, 520	288					288	12	
1, 208, 597	1, 135, 727	6, 828, 763	0, 960	109, 653	937, 064	12, 202, 025	1, 049, 570	27, 433, 945	14, 182, 350	16, 822	7, 153	2, 983	458	75	6, 153	3, 448	13

Iron and steel, forgings, not made in steel works or rolling mills.....	1	Mirrors, framed and unframed, not elsewhere specified.....	1	Photographic materials, motion-picture films, not exposed.....	1	Stereotyping and electrotyping....	1
Jewelry.....	1	Models and patterns, not including paper patterns.....	2	Pickles and sauces.....	1	Stoves and hot-air furnaces.....	1
Labels and tags.....	1	Motorcycles, bicycles, and parts.....	1	Plumbers' supplies, not elsewhere specified.....	1	Structural ironwork, not made in steel works or rolling mills.....	2
Lamps and reflectors.....	2	Musical instruments and materials, not specified.....	3	Refrigerators.....	1	Surgical appliances.....	1
Leather goods, not elsewhere specified.....	1	Musical instruments, pianos.....	2	Roofing materials.....	2	Textile machinery and parts.....	1
Lithographing.....	1	Musical instruments, piano materials	2	Rubber tires, tubes, and rubber goods, not elsewhere specified....	2	Toys and games.....	1
Looking-glass and picture frames....	1	Optical goods.....	2	Sand-lime brick.....	1	Trunks and valises.....	2
Lumber and timber products.....	1	Paints.....	1	Soap.....	1	Typewriters and parts.....	1
Machine tools.....	2	Paper and wood pulp.....	2	Steam fittings and steam and hot-water heating apparatus.....	1	Upholstering materials, excelsior....	2
Mattresses and spring beds, not elsewhere specified.....	2	Paper goods, not elsewhere specified	3	Steam packing.....	1	Varnishes.....	1
Millinery and lace goods, not elsewhere specified.....	3	Perfumery and cosmetics.....	3	Stencils and brands.....	1	Vinegar and cider.....	1
		Photo-engraving.....	5			Window and door screens and weather strips.....	2
						Wirework, not elsewhere specified..	3

1, 435, 320	1, 535, 491	13, 957, 051	14, 370	55, 051	3, 776, 420	63, 783, 131	1, 198, 209	104, 722, 115	39, 740, 775	23, 602	4, 907	100	6	243	18, 340	2, 129	1
2, 500	1, 300	27, 876		400	180	48, 073	1, 904	114, 415	65, 838	17					17		2
129, 027	121, 095	2, 485, 552	335	0, 009	270, 825	4, 957, 424	64, 426	9, 220, 855	4, 208, 005	4, 420	1, 875				2, 545	1, 310	3
	4, 629	38, 710		8, 725	12, 804	111, 054	4, 540	207, 429	91, 235	49					49		4
9, 300	10, 356	88, 832		1, 840	3, 897	514, 412	12, 987	840, 135	312, 736	122					122		5
10, 925	4, 747	31, 064		1, 308	1, 078	93, 270	360	168, 453	74, 817	2					2		6
115, 025	85, 813	936, 170		1, 500	283, 406	1, 382, 955	86, 104	3, 227, 820	1, 758, 701	1, 182	460		6		716	300	7
2, 900	8, 960	24, 735			3, 021	757, 650	5, 157	840, 933	84, 126	503				213	290		8
102, 548	102, 722	1, 092, 396	9, 054	2, 074	340, 476	2, 055, 379	53, 325	4, 556, 250	2, 447, 546	1, 822	550	100		30	1, 142	480	9
90, 696	112, 527	913, 826			140, 683	2, 319, 385	169, 741	4, 174, 718	1, 085, 502	2, 509	520				1, 989		10
		4, 732		2, 400	15	8, 960	426	25, 198	15, 812	11					11		11
63, 400	44, 813	175, 068		3, 030	20, 008	1, 632, 779	10, 971	2, 226, 531	582, 781	564	60				504		12
		5, 538		540	50	6, 241	759	17, 825	10, 825	23					23		13
38, 800	0, 620	214, 072	2, 613	15, 937	6, 050	239, 463	5, 775	665, 197	419, 959	139					139		14
39, 800	34, 800	82, 051	2, 308	1, 440	17, 592	143, 413	4, 604	495, 507	347, 430	117					117		15
	720	0, 852		1, 500	4, 240	13, 997	227	35, 537	21, 313								16
709, 079	993, 480	7, 825, 371		8, 840	2, 054, 029	49, 499, 476	776, 837	77, 890, 312	27, 613, 999	12, 125	1, 442				10, 683	39	17

Gas, illuminating and heating.....	1	Mattresses and spring beds, not elsewhere specified.....	1	Screws, machine.....	1	Sugar, beet.....	1
Glass, cutting, staining, and ornamenting.....	1	Mineral and carbonated waters.....	1	Show cases.....	1	Tinware, not elsewhere specified....	1
Hardware.....	1	Patent and proprietary medicines.....	1	Signs, other than electric.....	1	Tools, not elsewhere specified.....	1
Ice, manufactured.....	1	Pumps, power, other than steam.....	1	Stoves and hot-air furnaces.....	1	Windmills.....	1
Marble and stone work, monuments and tombstones.....	2			Structural ironwork, not made in steel works or rolling mills.....	2	Window and door screens.....	1

<sup>1</sup> Same number reported throughout the year.

<sup>2</sup> Same number reported for one or more other months.



## MANUFACTURES—MICHIGAN.

TABLE 36.—DETAILED STATEMENT OF ALL INDUSTRIES.

INDUSTRY AND CITY.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.		Female.
								Maximum month.	Minimum month.						

CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

	208	11,116	180	424	625	415	9,472	No 11,379	Ja 7,990	11,350	9,415	1,881	38	16	Dollars. 45,240,435
1 SAGINAW—All industries....	208	11,116	180	424	625	415	9,472	No 11,379	Ja 7,990	11,350	9,415	1,881	38	16	45,240,435
2 Artificial stone products.....	6	44	6	6	1	31	31	Se 59	Mh 5	43	43				89,653
3 Automobile bodies and parts.....	5	270	1	23	15	222	222	De 327	Fe 116	327	293	34			708,536
4 Automobile repairing.....	4	8	4			4	4	(S) 4	(S) 4	4	4				3,926
5 Brass and bronze products.....	3	27	2		1	19	19	Se 41	Mh 5	27	27				36,109
6 Bread and other bakery products.....	18	313	23	8	24	240	240	De 248	Ja 234	234	117	115	2		505,201
7 Butter.....	3	24	3	2	4	15	15	Jy 19	Ja 12	10	8				99,721
8 Confectionery and ice cream.....	7	47	8		2	29	29	Jy 35	Ja 23	27	21	0			115,113
9 Copper, tin, and sheet-iron work.....	10	51	16	7	4	24	24	De 33	Ap 15	34	33	1			84,788
10 Foundry and machine-shop products.....	17	3,182	3	82	169	101	2,837	De 755	Ja 637	3,855	3,687	160	2		19,355,859
11 Machines.....	11	787	3	38	29	35	682	De 3,007	Ja 1,107	3,099	2,938	161			3,321,225
12 All other.....	6	2,395	44	140	66	2,145	2,145	No 3,007	Ja 1,107	3,099	2,938	161			16,034,634
13 Iron and steel, welding.....	3	9	6			3	3	No 4	Mh 2	4	4				4,949
14 Liquors, malt.....	3	86	2	9	5	70	70	Au 108	De 26	62	62				469,651
15 Lumber, planing-mill products, not including planing mills connected with sawmills.....	11	537	15	27	31	28	436	De 497	Mh 368	500	487	13			2,216,696
16 Marble and stone work.....	5	29	8	2	6	2	11	Oc 13	Ja 7	12	11	1			38,188
17 Mineral and carbonated waters.....	3	18	2	2	1	13	13	Au 19	Mh 10	10	10				33,847
18 Patent medicines and compounds.....	4	21	4	1	4	12	12	(S) 12	(S) 12	8	3	5			125,457
19 Printing and publishing, book and job.....	14	139	17	12	2	17	91	No 98	Ap 88	96	80	16			397,067
20 Tobacco, cigars.....	18	113	21	4	2	86	86	De 103	Jy 74	110	66	44			95,481
21 All other industries *.....	74	6,108	43	225	366	225	5,339			5,987	4,459	1,478	34	16	20,740,103

\*All other industries embrace—  
 Automobiles..... 1  
 Awnings, tents, and sails..... 1  
 Bookbinding and blank-book making..... 1  
 Boxes, cigar..... 1  
 Boxes, set-up paper boxes..... 1  
 Canning and preserving, vegetables..... 1  
 Carriages and wagons, including repairs..... 2

Cars and general shop construction and repairs by steam-railroad companies..... 1  
 Cash registers and parts..... 1  
 Chemicals..... 1  
 Clothing, women's, shirt waists and dresses, except house dresses..... 1  
 Coal-tar products..... 1  
 Coffee, roasting and grinding..... 2

Coffins, burial cases, and undertakers' goods..... 1  
 Cooperage, hogsheds and barrels..... 2  
 Corsets..... 1  
 Electrical machinery, apparatus, and supplies..... 1  
 Electroplating..... 2  
 Enameling..... 1  
 Engines, steam, gas, and water..... 2

Engraving, steel and copper plate, including photo printing..... 1  
 Flags and banners..... 1  
 Flour-mill and gristmill products..... 2  
 Fur goods..... 3  
 Furniture..... 2  
 Gas, illuminating and heating..... 1  
 Glass, cutting, staining, and ornamenting..... 1

CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

1 ADRIAN.....	62	2,260	58	95	163	74	1,870	Oc 2,082	My 1,715	2,217	1,775	431	11		7,070,936
2 ALPENA.....	38	1,500	30	45	36	17	1,372	Oc 1,590	Fe 1,218	1,570	1,406	104			7,140,433
3 ANN ARBOR.....	78	1,899	69	89	61	68	1,612	Jy 1,711	Ap 1,502	1,674	1,503	171			7,381,020
4 BATTLE CREEK.....	118	8,346	85	338	794	449	6,680	Au 7,554	Ja 5,868	6,723	5,724	992	3	4	38,863,882
5 BAY CITY.....	108	6,173	73	313	439	291	5,057	De 6,127	Au 4,305	5,820	4,635	1,104	20	1	21,878,831
6 BENTON HARBOR.....	65	2,879	45	136	219	151	2,328	De 2,507	My 2,092	2,682	2,280	393	9		8,117,598
7 ESCANABA.....	45	992	42	33	60	15	842	Fe 882	Au 774	870	657	212	1		2,358,540
8 HOLLAND.....	64	3,281	36	158	192	144	2,748	Se 3,089	Ja 2,432	3,243	2,628	573	22	20	14,024,531
9 IRONWOOD.....	28	479	29	20	18	13	399	De 451	My 271	453	425	17	11		1,182,500
10 ISHPEMING.....	21	191	20	18	32	14	107	Oc 164	Fe 61	154	141	12	1		1,531,533
11 JACKSON.....	156	11,205	110	445	586	444	9,620	No 11,075	Ja 8,145	11,161	9,408	1,698	22	3	37,870,437
12 KALAMAZOO.....	185	9,535	120	483	778	525	7,629	De 8,724	My 7,080	8,670	6,703	1,910	31	20	36,855,912
13 MARQUETTE.....	84	1,605	18	62	70	40	1,415	My 1,469	Je 1,266	1,457	1,405	40	12		9,404,813
14 MONROE.....	41	3,224	10	114	108	79	2,904	De 3,135	Ja 2,678	3,145	1,998	1,145	1	1	10,654,823
15 MUSKEGON.....	141	10,954	101	362	372	403	9,716	De 10,993	Mh 8,069	11,155	9,421	1,696	16	22	36,751,190
16 OWosso.....	40	2,043	31	90	93	48	1,781	De 2,121	Fe 1,488	2,121	1,808	211	12		7,537,438
17 PONTIAC.....	78	9,167	96	282	590	517	7,682	No 9,345	Ja 5,622	9,317	8,018	699			42,693,258
18 PORT HURON.....	83	2,681	67	123	119	91	2,231	Oc 2,767	Ja 1,717	2,861	2,426	422	12	1	10,001,596
19 SAULT STE. MARIE.....	26	1,421	18	51	76	28	1,248	No 1,325	Mh 1,170	1,321	1,207	113	1		22,410,301
20 TRAVERSE CITY.....	56	1,182	52	66	63	41	930	No 1,094	Ja 843	1,110	896	210	4		3,141,355
21 WYANDOTTE.....	26	6,806	20	81	332	159	6,214	Ja 6,957	Jy 4,720	7,215	6,921	289	5		26,345,649
22 ALL OTHER CITIES.....	50	69,956	38	797	3,244	1,248	64,629	No 74,426	Ja 50,186	74,598	73,228	1,367	3		442,141,530

1 Includes water wheels and turbines (irrespective of ownership of water supply), and water motors (operated by water from city mains).

2 Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).



## COMBINED AND SPECIFIED INDUSTRIES: 1919—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.						
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.	
Officials.	Clerks, etc.	Wago earners.		Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Total.	Owned.					Rent-ed. <sup>2</sup>
											Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>1</sup>		

## CITIES OF 50,000 INHABITANTS OR MORE—ALL INDUSTRIES COMBINED AND SPECIFIED INDUSTRIES—Continued.

Dollars. 1,450,240	Dollars. 1,373,206	Dollars. 0,963,380	Dollars. 1,262,078	Dollars. 58,590	Dollars. 1,121,658	Dollars. 20,546,630	Dollars. 709,132	Dollars. 43,146,125	Dollars. 21,830,363	31,402	9,005	802	35	.....	21,500	2,541	1
9,252	2,170	42,232	500,000	1,059	914	50,817	1,176	118,760	66,767	68	.....	.....	6	.....	62	.....	2
71,191	25,643	237,003	1,014	1,730	65,733	235,067	14,816	695,137	445,254	404	150	.....	.....	.....	314	232	3
.....	.....	4,116	.....	1,101	15	1,659	588	10,808	8,561	5	.....	.....	.....	.....	5	.....	4
6,892	1,091	35,343	.....	950	27	17,034	1,171	117,363	99,158	23	.....	.....	.....	.....	23	.....	5
36,944	53,606	169,982	.....	5,590	6,619	893,939	19,891	1,479,984	566,154	291	150	.....	.....	.....	141	150	6
8,000	7,352	14,800	.....	1,200	1,071	645,972	3,084	754,126	104,470	54	.....	.....	.....	.....	54	.....	7
9,653	1,360	26,685	.....	2,724	1,279	181,119	3,521	309,904	125,204	107	.....	.....	.....	.....	107	.....	8
8,200	1,855	23,575	.....	2,100	693	58,556	701	118,020	58,763	18	.....	.....	15	.....	3	.....	9
329,724	385,185	3,029,118	743,565	50	322,108	5,903,959	231,681	13,598,454	7,459,814	14,586	680	.....	4	.....	13,902	469	10
115,700	106,707	1,048,590	8,400	.....	106,210	828,756	41,726	3,023,729	2,153,247	1,626	175	.....	.....	.....	1,447	50	11
214,024	278,478	1,980,528	735,165	50	215,988	5,078,203	189,955	10,574,725	5,306,567	12,960	505	.....	.....	.....	12,455	419	12
.....	.....	5,762	.....	710	.....	1,551	94	11,207	9,562	7	.....	.....	.....	.....	7	.....	13
17,129	8,731	46,903	.....	2,100	38,351	64,240	15,384	165,744	88,120	246	210	.....	.....	.....	36	86	14
105,970	74,489	348,514	8,994	.....	40,982	1,491,133	16,159	2,474,337	967,045	2,515	1,740	675	.....	.....	100	644	15
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3,000	5,025	10,163	3,852	144	423	25,998	754	86,162	59,410	29	.....	.....	.....	.....	29	.....	16
3,205	1,200	12,811	.....	757	1,562	32,717	437	81,744	48,590	8	.....	.....	.....	.....	8	.....	17
10,374	5,662	14,082	.....	650	969	57,407	496	112,602	54,699	21	.....	.....	.....	.....	21	.....	18
24,554	16,464	90,137	169	11,331	2,976	189,763	7,843	401,874	204,268	208	150	.....	.....	.....	58	125	19
4,191	2,125	68,228	.....	1,735	23,208	114,984	915	239,512	123,613	5	.....	.....	.....	.....	5	.....	20
801,070	781,188	5,783,326	4,454	25,593	614,638	10,577,715	449,821	22,370,387	11,342,851	12,747	5,925	127	10	.....	6,685	835	21

Gloves and mittens, cloth, not including gloves made in textile mills....	1	Matches.....	1	Printing and publishing, newspapers and periodicals.....	3	Tobacco, smoking.....	1
Graphite, ground and refined.....	1	Mattresses and spring beds, not elsewhere specified.....	1	Saddlery and harness.....	1	Tools, not elsewhere specified.....	2
Grease and tallow, not including lubricating greases.....	1	Models and patterns, not including paper patterns.....	2	Sausage, not made in slaughtering and meat-packing establishments.....	2	Vinegar.....	1
Hand stamps.....	1	Musical instruments, piano materials.....	1	Saws.....	1	Window and door screens and weather strips.....	1
Leather, tanned, curried, and finished.....	2	Optical goods.....	1	Shipbuilding, wooden, small boats... 1	1	Window shades and fixtures.....	1
Lumber and timber products.....	2	Phonographs and graphophones.....	1	Show cases.....	1	Wood, turned and carved.....	1
Machine tools.....	1	Pickles and sauces.....	2	Structural ironwork, not made in steel works or rolling mills.....	1	Wooden goods, not elsewhere specified.....	2

## CITIES OF 10,000 TO 50,000 INHABITANTS—ALL INDUSTRIES COMBINED.

227,368	353,169	1,714,133	1,327	25,805	188,498	9,073,970	178,958	14,549,031	4,396,103	3,317	1,396	.....	33	68	1,820	1,225	1
181,336	70,249	1,528,379	20,089	4,908	335,107	4,000,687	826,788	9,356,190	4,468,715	23,318	4,300	14,350	35	2,100	2,583	11,047	2
238,415	134,476	2,102,025	61,708	16,356	409,172	5,083,093	293,554	9,793,696	4,417,049	3,629	1,036	.....	6	.....	2,588	13	3
1,500,811	1,506,827	8,067,501	58,509	95,131	2,798,882	26,010,026	1,377,965	56,139,953	28,151,062	22,432	7,457	644	13	1,881	12,437	5,187	4
1,183,186	730,588	5,302,522	6,490	91,867	1,245,158	14,765,768	465,828	28,214,525	12,952,929	14,540	5,772	1,692	.....	.....	7,076	4,520	5
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
510,759	632,923	2,563,222	324,232	36,718	658,386	4,285,508	346,015	11,345,034	6,713,511	3,374	378	.....	20	.....	2,976	8	6
84,100	98,203	875,002	150	6,010	66,258	1,063,448	89,483	3,017,912	1,804,981	2,201	1,817	.....	21	.....	363	.....	7
513,375	625,862	2,708,869	5,826	9,078	420,350	9,068,362	256,629	17,711,095	7,486,104	4,937	2,538	400	.....	.....	1,999	845	8
36,145	23,268	580,658	191	5,160	15,834	519,693	34,458	1,381,200	827,139	725	512	.....	.....	.....	213	4	9
58,450	63,125	124,413	24	3,041	12,843	441,074	41,624	1,007,432	524,734	370	210	.....	.....	.....	160	193	10
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1,371,181	1,374,066	10,898,509	437,842	97,874	605,391	29,006,420	982,292	49,517,712	19,529,000	18,744	1,715	.....	40	.....	16,959	410	11
1,497,758	1,730,242	8,182,319	32,537	82,609	1,611,751	22,857,069	1,379,274	46,254,917	22,018,574	20,147	16,013	1,432	115	140	8,447	6,987	12
151,086	143,867	1,592,063	445	8,949	60,171	3,817,158	848,138	7,210,375	2,545,079	6,138	2,580	1,000	2	.....	2,566	1,231	13
426,438	362,519	3,362,497	1,422	6,025	683,110	7,595,365	765,762	16,052,331	7,691,204	14,503	11,137	1,425	73	20	1,908	3,571	14
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1,120,120	1,078,570	10,852,010	84,395	43,125	2,843,277	24,585,375	1,090,354	55,969,347	30,293,618	24,026	5,253	300	14	.....	18,459	1,317	15
308,206	274,211	2,220,894	17,404	4,266	513,735	4,873,237	335,853	9,948,736	4,739,040	4,220	2,195	450	.....	.....	1,575	1,015	16
1,462,366	993,694	10,880,763	.....	58,398	5,271,983	66,076,608	709,554	104,990,133	38,203,971	12,841	1,033	.....	2	94	11,712	154	17
372,273	273,268	2,482,382	36,183	19,440	265,889	4,447,905	483,052	9,545,578	4,614,621	5,884	1,880	.....	181	.....	3,823	97	18
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
146,605	163,878	1,532,761	.....	6,354	553,611	4,696,114	2,064,327	10,699,767	3,939,326	5,598	568	.....	524	.....	4,506	3	19
137,922	96,771	846,635	11,211	9,965	93,443	2,198,406	83,575	4,099,960	1,817,979	3,131	1,140	.....	.....	70	1,921	.....	20
426,344	741,088	10,659,415	200	1,900	1,369,796	10,562,077	2,877,907	33,382,791	19,942,807	29,528	10,557	17,315	9	100	1,547	11,341	21
11,930,110	6,764,868	103,194,750	2,004	10,561	47,873,654	304,984,927	4,085,201	569,208,377	260,138,249	38,788	4,392	1,000	220	.....	33,176	62,448	22

<sup>a</sup> Same number reported throughout the year.<sup>4</sup> Same number reported for one or more other months.<sup>6</sup> All other cities comprise Hamtramck and Highland Park.