

CHAPTER XII.

PREVAILING HOURS OF LABOR.

Introduction.—No attempt was made at the census of 1909 to ascertain exactly the number of employees in manufacturing industries working a given number of hours per week. The schedule, however, contained an inquiry calling for the number of hours normally worked by wage earners, the instructions being to enter under this heading the prevailing practice followed during the year in each establishment. Occasional variations in hours in an establishment from one period to another were necessarily disregarded. Moreover, no attention was or could be given to the fact that a limited number of employees might have hours differing from those of the majority.

In the tables the average number of wage earners employed during the year in each establishment is classified as a total according to the hours prevailing in that establishment, even though some employees worked a greater or a smaller number of hours. In most establishments, however, all or practically all the employees work the same number of hours, so that the figure for a given group does show substantially the number customarily working the specified number of hours per week.

All industries combined in the United States as a whole.—The data as to prevailing hours of labor in 1909 for the United States as a whole are summarized in the following table. Statistics of this character are not available for prior censuses.

PREVAILING HOURS OF LABOR PER WEEK.	WAGE EARNERS IN ESTABLISHMENTS WITH SPECIFIED NUMBER OF HOURS.	
	Average number.	Per cent of total.
Total.....	6,815,046	100.0
48 and under.....	523,652	7.9
Between 48 and 54.....	431,157	7.3
54.....	1,019,438	15.4
Between 54 and 60.....	1,999,307	30.2
60.....	2,017,280	30.5
Between 60 and 72.....	344,011	5.2
72.....	116,083	1.8
Over 72.....	114,118	1.7

It is evident that, for the great majority of wage earners employed in the manufacturing industries of the country, the prevailing hours of labor range from 54 to 60 a week. In 1909 only 15.2 per cent of the total number were employed in establishments where the prevailing hours per week were less than 54, and only 8.7 per cent in establishments where more than 60 hours a week prevailed.

Detailed tables for individual industries.—Table 8 (pp. 316 to 319) shows, for 1909, for the 259 industries for which separate statistics can be presented, the average number of wage earners in the United States, classified according to the prevailing hours of labor in the establishments where they were employed, with corresponding percentages. From this table it appears that in 112 of these 259 industries the number of wage earners employed in establishments where the prevailing hours were more than 54 but less than 60 per week exceeded the number in any other class of establishments. While the expression is not absolutely precise, it may be said that in these 112 industries the most common working time was between 54 and 60 hours per week. In 84 industries the most common working time was 60 hours; in 23, it was 54 hours; in 12, it was 48 hours or less; in 12, it was more than 48 but less than 54; in 8, it was more than 72; in 5, it was more than 60 but less than 72; and in 3, it was 72 hours.

In 106 of the industries listed there were no establishments in which the prevailing hours of labor exceeded 60 per week; on the other hand, in 22 industries there were no establishments where the prevailing hours were as low as 48 per week.

Of the 12 industries in which more wage earners were employed in establishments where the prevailing hours were 48 hours or less per week than in those of any other group, the majority are relatively unimportant and give employment to comparatively few wage earners.¹ Some of these industries, such as wood engraving, stereotyping and electrotyping, photo-engraving, lapidary work, and the manufacture of statuary and art goods, require highly skilled labor and concentrated attention on the part of the operative. Printing and publishing, marble and stone work, the brewery industry ("liquors, malt"), and photo-engraving are the only industries among these 12 in which an average of more than 5,000 wage earners were employed during 1909. In nearly all the large breweries throughout the country the prevailing hours are 48 per week, the general practice being to employ three eight-hour shifts per day.

Special statistics for the industries in which considerable numbers of wage earners are employed for 72 or more hours per week are presented later (see p. 311).

¹ These 12 industries were as follows: Calcium lights; engraving, wood; lapidary work; liquors, malt; marble and stone work; moving pictures; paper patterns; photo-engraving; printing and publishing; statuary and art goods; stereotyping and electrotyping; and wood carpet.

Prevailing hours of labor in 86 principal industries.— Table 2 shows, for the 86 industries employing over 10,000 wage earners in 1909, the percentage of the total number of wage earners employed in establishments where the prevailing hours were under 54, from 54 to 60, inclusive, and over 60 per week, respectively. More

detailed statistics with respect to the prevailing hours of labor for these industries, as for others, are shown in Table 8, already mentioned. The industries covered by this table gave employment in 1909 to more than nine-tenths of the total number of wage earners in all industries combined.

Table 2

INDUSTRY.	PER CENT OF WAGE EARNERS EMPLOYED IN ESTABLISHMENTS WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—			INDUSTRY.	PER CENT OF WAGE-EARNERS EMPLOYED IN ESTABLISHMENTS WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—		
	Under 54.	54 to 60 (Inclusive).	Over 60.		Under 54.	54 to 60 (Inclusive).	Over 60.
All industries	15.2	76.1	8.7	Gas, illuminating and heating.....	1.4	25.7	72.9
Agricultural implements.....	4.9	94.9	0.3	Glass.....	40.6	48.4	11.0
Artificial flowers and feathers and plumes.....	74.2	25.7	.....	Gloves and mittens, leather.....	13.9	86.2	.....
Automobiles, including bodies and parts.....	3.4	94.6	2.0	Hats, fur-felt.....	40.6	59.4	.....
Boots and shoes, including cut stock and findings.....	3.7	96.2	0.1	Hosiery and knit goods.....	3.3	92.9	3.8
Boots and shoes, rubber.....	.....	100.0	.....	Ice, manufactured.....	2.1	20.2	77.8
Boxes, fancy and paper.....	19.9	79.3	0.7	Iron and steel, blast furnaces.....	.....	3.5	96.6
Brass and bronze products.....	4.2	95.3	0.4	Iron and steel, steel works and rolling mills.....	9.3	56.3	34.4
Bread and other bakery products.....	9.5	79.6	10.9	Iron and steel, bolts, nuts, washers, and rivets, not made in steel works and rolling mills.....	1.7	98.3	.....
Brick and tile.....	12.4	84.3	3.2	Jewelry.....	18.9	81.0	0.2
Butter, cheese, and condensed milk.....	10.9	46.9	42.1	Leather goods.....	9.5	89.8	0.5
Buttons.....	7.0	91.3	1.7	Leather, tanned, curried, and finished.....	3.4	96.5	.....
Canning and preserving.....	6.6	84.4	9.0	Lime.....	1.9	76.9	21.1
Carpets and rugs, other than rag.....	1.0	98.9	.....	Liquors, malt.....	49.6	47.6	2.9
Carriages and wagons and materials.....	11.6	87.8	0.7	Locomotives, not made by railroad companies.....	.....	61.2	38.8
Cars and general shop construction and repairs by steam-railroad companies.....	15.4	71.3	13.3	Lumber and timber products.....	5.9	89.7	13.4
Cars and general shop construction and repairs by street-railroad companies.....	3.3	78.7	18.1	Marble and stone work.....	49.3	49.1	1.6
Cars, steam-railroad, not including operations of railroad companies.....	1.6	95.0	3.3	Mattresses and spring beds.....	18.9	80.9	0.3
Cement.....	0.1	28.9	70.9	Millinery and lace goods.....	45.1	54.8	0.1
Chemicals.....	3.3	68.2	28.5	Mineral and soda waters.....	15.6	82.3	2.1
Clocks and watches, including cases and materials.....	20.7	79.4	.....	Musical instruments, pianos and organs and materials.....	10.0	80.0	.....
Clothing, men's, including shirts.....	27.5	72.3	0.2	Oil, cottonseed, and cake.....	0.8	9.4	89.8
Clothing, women's.....	48.7	50.7	0.7	Paint and varnish.....	21.0	75.3	3.8
Coke.....	8.0	67.4	24.6	Paper and wood pulp.....	15.4	43.4	41.3
Confectionary.....	17.5	81.8	0.8	Paper goods, not elsewhere specified.....	18.4	80.0	1.6
Copperage and wooden goods, not elsewhere specified.....	16.4	83.5	0.2	Patent medicines and compounds and druggists' preparations.....	49.3	50.4	0.3
Copper, tin, and sheet-iron products.....	23.1	75.9	1.0	Petroleum, refining.....	0.3	76.2	23.4
Cordage and twine and jute and linen goods.....	1.3	96.0	2.6	Pottery, terra-cotta, and fire-clay products.....	21.8	75.8	2.5
Corsets.....	17.2	82.8	.....	Printing and publishing.....	69.8	29.9	0.3
Cotton goods, including cotton small wares.....	0.9	82.0	17.2	Rubber goods, not elsewhere specified.....	5.1	94.8	.....
Cutlery and tools, not elsewhere specified.....	11.5	88.4	0.2	Sewing machines, cases, and attachments.....	0.1	99.9	.....
Dyeing and finishing textiles.....	2.7	93.6	3.7	Shipbuilding, including boat building.....	16.1	88.9	.....
Electrical machinery, apparatus, and supplies.....	17.2	82.7	.....	Silk and silk goods, including throwsters.....	2.5	97.5	.....
Fancy articles, not elsewhere specified.....	14.5	85.4	0.1	Silverware and plated ware.....	8.4	91.6	.....
Fertilizers.....	0.4	85.4	14.2	Slaughtering and meat packing.....	10.1	88.7	1.2
Firearms and ammunition.....	0.5	98.9	0.6	Smelting and refining, copper.....	1.3	80.4	18.2
Flour-mill and gristmill products.....	10.1	59.1	30.8	Soap.....	18.5	81.2	0.2
Food preparations.....	13.9	72.9	13.3	Stoves and furnaces, including gas and oil stoves.....	12.6	87.3	0.2
Foundry and machine-shop products.....	7.4	91.8	0.8	Tobacco manufactures.....	39.4	60.2	0.4
Fur goods.....	52.4	47.6	.....	Turpentine and rosin.....	44.1	52.9	2.0
Furnishing goods, men's.....	26.4	73.6	.....	Wire.....	0.4	98.8	0.8
Furniture and refrigerators.....	8.5	91.3	0.2	Wirework, including wire rope and cable.....	5.1	93.3	1.5
Gas and electric fixtures and lamps and reflectors.....	19.7	79.3	1.0	Wood, turned and carved.....	6.3	92.2	1.5
				Woolen, worsted, and felt goods, and wool hats.....	0.8	98.5	0.6

There are very wide differences among the individual industries covered by Table 2 with respect to the prevailing hours of labor. These differences are due to a variety of causes. It is usually the case that skilled laborers are able to secure a shorter working day than the unskilled. Some industries require continuous operation day and night, and in such industries, for convenience, there are likely to be either two shifts of 12 hours each or three shifts of 8 hours each. The working day in large cities is likely to be shorter than that in small towns or rural districts, partly because of the greater length of time the working people ordinarily require to go to and from the factories. In industries chiefly conducted in such cities, therefore, the working day of a large proportion of the wage earners is likely to be shorter than the average. The presence or absence of labor organizations, or differences in the strength of such organizations, doubtless have considerable influence upon the hours of labor.

Again, the differences between different industries in the United States as a whole with respect to the prevailing hours of labor are due, in part, to differences in the geographic distribution of the establishments. In some sections of the country the customary working day in manufacturing industries generally is longer than in other sections. In industries which are mainly conducted in states where the customary working day in general is short, it is likely, of course, that a large proportion of the wage earners in the United States as a whole will be shown to have a relatively short working day.

To some extent the prevailing hours of labor in certain industries have been affected by state legislation. While state legislatures have in very few cases directly limited the hours of labor of men in any manufacturing industry, there are in certain states restrictions upon the hours of labor of women, and in many states restrictions upon those of children. In

industries in which considerable numbers of women and children are employed, the working time of the men may be indirectly determined by such legislation as to the hours of women and children.

In 7 of the 86 industries covered by Table 2, more than two-fifths of the wage earners in 1909 were employed in establishments where the prevailing hours of labor exceeded 60 per week. These industries were "iron and steel, blast furnaces" (96.6 per cent of the wage earners employed in establishments where the prevailing hours exceeded 60 per week); "oil, cottonseed, and cake" (89.8 per cent); "ice, manufactured" (77.8 per cent); "gas, illuminating and heating" (72.9 per cent); "cement" (70.9 per cent); "butter, cheese, and condensed milk" (42.1 per cent); and "paper and wood pulp" (41.3 per cent). Among these 7 industries there are 4 in which more than half of the employees were reported by establishments operating 72 hours or more per week, namely, the blast-furnace, gas, artificial-ice, and cottonseed-oil industries. In the other 3 the number working in establishments where the prevailing hours were 60 or between 60 and 72 per week (in most cases 11 hours per day) was greater than the number working 72 hours or more. There are 4 other industries in which over 25 per cent of the wage earners were in establishments where the prevailing hours exceeded 60 per week, these industries including the very important steel works and rolling mill and flour mill and gristmill industries.

On the other hand, there are 11 industries among the 86 covered by the table in which two-fifths or more of the wage earners in 1909 were in establishments

where the prevailing hours were less than 54 per week. These industries are "artificial flowers and feathers and plumes" (74.2 per cent of the wage earners employed in establishments where the prevailing hours were less than 54 per week); "printing and publishing" (69.8 per cent); "fur goods" (52.4 per cent); "liquors, malt" (49.6 per cent); "marble and stone work" (49.3 per cent); "patent medicines and compounds and druggists' preparations" (49.3 per cent); "clothing, women's" (48.7 per cent); "millinery and lace goods" (45.1 per cent); "turpentine and rosin" (44.1 per cent); "glass" (40.6 per cent); and "hats, fur-felt" (40.6 per cent). In 3 of these industries—printing and publishing, the brewery industry, and marble and stone work—more than 40 per cent of the wage earners in 1909 were employed in establishments where the prevailing hours were 48 or less.

Prevailing hours in individual industries, by states.—Table 9, at the end of this chapter, shows, for each of the 86 leading industries, the number of wage earners employed in establishments classified according to prevailing hours of labor, by states. This table contains no percentages. Figures are given for each state in which the particular industry is of any considerable importance, except in cases where individual operations would be disclosed by so doing.

The following table shows, by states, for the 5 industries which in 1909 gave employment to more than 250,000 wage earners, the per cent distribution of the wage earners according to the prevailing hours of labor in the establishments in which they were employed.

DISTRIBUTION OF WAGE EARNERS IN THE FIVE LEADING INDUSTRIES ACCORDING TO PREVAILING HOURS OF LABOR, BY STATES: 1909.

STATE.	WAGE EARNERS: 1909							STATE.	WAGE EARNERS: 1909						
	Total (average number).	Per cent in establishments where the prevailing hours per week were—							Total (average number).	Per cent in establishments where the prevailing hours per week were—					
		48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.			72 and over.	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.
LUMBER AND TIMBER PRODUCTS.															
United States	695,019	3.4	2.5	6.0	7.2	67.5	13.1	0.3							
Alabama	22,409	5.6	3.0	2.0	1.7	46.2	40.9	0.6							
Arizona	839	1.3	0.8	0.8	0.8	97.9	0.5								
Arkansas	32,932	1.5	3.4	1.2	1.6	89.0	2.8	0.5							
California	22,935	16.8	0.3	11.8	1.0	64.2	5.8	0.1							
Colorado	2,190	10.0	14.0	7.4	1.2	65.6	1.9	0.1							
Connecticut	3,495	10.4	9.1	35.7	3.2	41.5	0.1								
Delaware	1,474	5.5	25.5	5.4	31.3	32.3	0.1								
District of Columbia	309	100.0													
Florida	19,227	1.2	5.2	2.3	3.8	48.4	38.6	0.5							
Georgia	22,257	3.9	3.3	0.6	3.9	66.1	19.9	2.2							
Idaho	5,212	0.6	0.5	2.1	0.1	95.3	1.3	0.2							
Illinois	16,567	5.3	2.8	29.5	31.6	30.7	(¹)	0.2							
Indiana	10,317	2.5	4.3	10.2	11.2	71.7	(¹)								
Iowa	4,558	0.3	0.2	11.3	12.5	71.1	4.6	0.1							
Kansas	982	4.3	0.3	13.6	32.7	49.1	0.1								
Kentucky	13,942	4.9	6.6	6.8	5.1	74.9	1.2	0.4							
Louisiana	46,072	0.8	0.6	1.9	0.7	56.4	39.5	0.2							
Maine	15,986	0.2	0.9	7.0	8.7	58.2	24.9	(¹)							
Maryland	7,093	5.0	5.8	12.1	19.1	57.7	0.2	0.1							
Massachusetts	8,976	11.8	11.0	20.0	40.1	16.6	0.5	0.1							
Michigan	35,937	1.0	0.7	2.0	4.9	91.0	0.3	0.1							
Minnesota	20,704	0.6		1.1	2.1	94.5	1.6	(¹)							
Mississippi	33,397	1.5	0.9	1.5	3.7	48.9	43.3	0.2							
Missouri	13,522	8.5	5.3	12.4	1.6	71.6	0.5	(¹)							
LUMBER AND TIMBER PRODUCTS—continued.															
Montana	3,106	1.2				49.9	0.3	44.0	4.5						
Nebraska	543	0.6				27.3	48.1	24.1							
Nevada	186	0.5				24.7	74.7								
New Hampshire	8,464	0.5	0.5	10.9	36.1	48.6	3.2	0.1							
New Jersey	4,857	15.0	18.7	28.2	22.5	15.4	0.1								
New Mexico	1,475	10.0	1.1	1.3		87.5	0.1								
New York	27,471	6.8	4.9	13.9	21.7	51.3	1.4								
North Carolina	34,001	2.2	2.1	0.8	7.8	67.1	19.2	0.8							
North Dakota	63					34.9	65.1								
Ohio	13,456	5.2	2.7	20.8	16.6	54.6	(¹)	(¹)							
Oklahoma	3,175	25.2	5.7	4.9	4.9	51.4	8.0								
Oregon	15,066	2.4	0.7	1.6	1.2	91.4	2.6	0.1							
Pennsylvania	26,873	2.9	3.7	15.3	14.8	48.3	14.2	0.7							
Rhode Island	748	10.3	1.7	25.5	35.7	26.7									
South Carolina	14,604	3.9	4.3	0.5	5.1	66.3	17.7	2.3							
South Dakota	451	1.8	0.7	2.9		94.2	0.4								
Tennessee	22,389	3.3	3.1	3.7	4.2	80.3	5.3	0.2							
Texas	23,518	2.7	1.5	3.3	1.3	72.1	19.0								
Utah	431	38.3	19.7	22.5		17.4	2.1								
Vermont	4,790	0.7	0.1	5.9	21.4	70.6	1.2								
Virginia	33,287	2.7	3.7	2.9	10.2	61.1	18.9	0.5							
Washington	43,749	0.3	0.1	2.3	0.7	96.2	0.3	0.1							
West Virginia	18,643	0.0	1.1	2.0	4.1	75.1	16.9	(¹)							
Wisconsin	34,093	0.7	0.2	2.4	3.5	91.6	1.6	(¹)							
Wyoming	649	1.2	1.5	0.9	0.6	94.3	1.4								

¹ Less than one-tenth of 1 per cent.

PREVAILING HOURS OF LABOR.

DISTRIBUTION OF WAGE EARNERS IN THE FIVE LEADING INDUSTRIES ACCORDING TO PREVAILING HOURS OF LABOR, BY STATES: 1909—Continued.

Table 3—Continued.		WAGE EARNERS: 1909							WAGE EARNERS: 1909									
STATE.	Total (average number).	Per cent in establishments where the prevailing hours per week were—						STATE.	Total (average number).	Per cent in establishments where the prevailing hours per week were—								
		48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.			72 and over.	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.	
FOUNDRY AND MACHINE-SHOP PRODUCTS.																		
United States.....	531,011	2.1	5.3	28.3	37.8	25.7	0.6	0.2	Idaho.....	849			84.6	.....	0.2	15.2	.....
Alabama.....	5,898	1.4	1.5	17.5	9.7	89.6	0.3	.....	Illinois.....	23,131	1.6	6.9	57.6	2.5	10.3	20.7	0.4	
Arizona.....	64	10.9	.....	67.2	9.4	12.5	.....	Indiana.....	12,884	9.9	16.5	16.1	29.7	17.5	10.3	.....	.....
Arkansas.....	447	0.4	.....	32.4	3.6	63.5	.....	Iowa.....	6,969	24.2	.....	21.3	1.5	28.7	24.1	0.2	.....
California.....	8,377	15.8	33.1	30.9	14.5	4.9	0.7	.....	Kansas.....	7,686	4.4	.....	39.1	.....	45.8	10.8	.....	.....
Colorado.....	1,813	9.4	19.5	50.1	0.4	19.2	1.3	.....	Kentucky.....	5,605	44.5	.....	39.4	2.3	3.7	10.1	.....	.....
Connecticut.....	37,736	0.5	3.3	35.8	49.5	10.9	(¹)	.....	Louisiana.....	2,426	0.8	.....	59.4	.....	14.1	25.7	.....	.....
Delaware.....	2,210	8.4	5.0	51.9	32.8	2.0	.....	Maine.....	1,200	.....	55.8	22.3	16.0	3.7	2.2	.....	.....
District of Columbia.....	609	64.8	15.7	19.4	.....	.....	.....	Maryland.....	5,549	0.4	.....	.....	67.0	28.8	13.9	.....	.....
Florida.....	608	9.8	14.0	28.3	4.5	43.3	.....	Massachusetts.....	5,162	4.5	23.0	71.5	.....	1.0	.....	.....	.....
Georgia.....	2,892	0.2	10.6	1.4	27.5	60.3	.....	Michigan.....	5,401	.....	11.9	27.0	35.3	23.6	2.2	.....	.....
Idaho.....	74	6.8	.....	64.9	9.5	18.9	.....	Minnesota.....	8,232	4.1	18.0	48.8	.....	26.2	2.9	.....	.....
Illinois.....	52,266	1.5	6.6	42.7	26.7	21.1	(¹)	1.3	Mississippi.....	2,572	.....	20.3	61.3	.....	17.0	1.4	.....	.....
Indiana.....	15,809	2.4	8.9	13.5	35.8	39.4	(¹)	.....	Missouri.....	8,121	17.2	.....	64.5	6.6	3.4	8.0	0.3	.....
Iowa.....	5,108	0.7	0.4	13.2	34.7	50.8	0.1	0.2	Montana.....	1,913	.....	7.7	69.7	5.5	3.9	13.2	.....	.....
Kansas.....	2,110	0.6	0.4	29.4	18.0	55.5	1.1	.....	Nebraska.....	3,085	.....	.....	53.9	17.3	3.1	25.7	.....	.....
Kentucky.....	4,479	0.2	8.1	37.8	16.6	36.9	0.4	(¹)	Nevada.....	818	5.4	.....	75.1	.....	5.1	14.4	.....	.....
Louisiana.....	1,314	1.1	0.1	60.6	5.5	32.2	.....	0.6	New Hampshire.....	1,158	.....	99.7	.....	.....	0.3	.....	.....	.....
Maine.....	2,885	0.3	0.3	26.8	57.1	15.5	.....	.....	New Jersey.....	6,604	15.2	20.2	22.6	15.6	9.1	15.0	2.3	.....
Maryland.....	4,798	3.6	32.7	36.4	8.8	18.5	.....	.....	New Mexico.....	1,489	.....	17.8	2.3	.....	79.9	.....	.....	.....
Massachusetts.....	44,179	0.7	2.8	25.0	67.3	4.0	0.2	.....	New York.....	16,454	2.3	6.9	13.3	24.0	15.1	31.1	7.3	.....
Michigan.....	21,649	0.7	0.5	18.2	43.1	37.4	0.1	.....	North Carolina.....	2,568	.....	4.7	93.0	.....	2.3	.....	.....	.....
Minnesota.....	6,002	0.5	0.9	14.3	56.6	27.6	.....	.....	North Dakota.....	463	.....	26.8	46.7	.....	26.6	.....	.....	.....
Mississippi.....	583	0.2	2.2	31.6	.....	64.7	1.4	.....	Ohio.....	20,728	8.3	12.8	14.7	30.3	19.8	7.3	6.8	.....
Missouri.....	7,443	2.7	7.5	62.6	8.9	18.2	.....	.....	Oklahoma.....	1,412	13.8	.....	63.5	.....	2.2	20.5	.....	.....
Montana.....	316	87.0	.....	11.7	1.3	.....	.....	.....	Oregon.....	777	2.4	.....	89.7	.....	2.7	5.1	.....	.....
Nebraska.....	1,020	0.9	7.8	11.4	12.7	67.6	.....	0.1	Pennsylvania.....	46,645	11.2	5.5	2.8	59.2	17.2	3.2	0.9	.....
Nevada.....	44	29.5	.....	70.4	.....	.....	.....	.....	South Carolina.....	1,418	.....	.....	88.3	.....	7.5	4.2	.....	.....
New Hampshire.....	2,396	1.1	0.9	40.3	41.1	16.7	.....	.....	South Dakota.....	327	.....	.....	.....	95.7	4.3	.....	.....
New Jersey.....	27,815	1.2	6.8	42.3	84.2	15.6	(¹)	.....	Tennessee.....	5,566	3.9	.....	77.3	15.9	0.3	2.6	.....	.....
New Mexico.....	38	.....	.....	84.2	.....	15.8	.....	.....	Texas.....	9,782	10.3	1.6	52.1	7.4	17.7	10.9	0.1	.....
New York.....	64,066	3.1	11.1	36.0	23.6	26.0	0.2	.....	Utah.....	1,731	.....	.....	59.3	.....	40.7	.....	.....
North Carolina.....	1,490	0.4	0.4	7.9	15.7	75.4	0.2	.....	Vermont.....	992	.....	17.1	.....	81.0	1.0	0.8	.....	.....
Ohio.....	64,817	1.2	3.9	17.1	43.6	33.7	0.5	(¹)	Virginia.....	7,888	22.7	10.8	11.2	29.0	4.1	4.1	18.2	.....
Oklahoma.....	457	3.9	0.2	19.7	0.2	75.1	0.9	.....	Washington.....	2,716	.....	21.1	52.2	0.9	22.1	3.6	.....	.....
Oregon.....	1,055	3.4	11.6	76.0	1.6	7.4	.....	.....	West Virginia.....	3,652	.....	0.9	0.6	28.6	44.0	7.3	18.6	.....
Pennsylvania.....	86,821	3.0	1.7	25.8	36.7	30.0	2.5	0.3	Wisconsin.....	8,994	1.4	10.9	79.2	.....	3.0	4.5	1.1	.....
Rhode Island.....	10,937	0.1	3.2	11.2	76.9	8.7	.....	.....	Wyoming.....	1,690	.....	0.8	8.0	.....	91.2	.....	.....	.....
South Carolina.....	417	.....	.....	45.6	5.3	48.2	1.0	.....									
South Dakota.....	78	2.6	.....	5.1	.....	92.3	.....	.....								
Tennessee.....	4,041	0.2	0.3	24.9	10.9	63.1	0.5	(¹)										
Texas.....	2,925	1.7	9.7	60.6	1.2	26.4	0.1	0.3										
Utah.....	373	12.3	5.6	71.0	8.8	1.1	1.1	.....									
Vermont.....	1,860	.....	.....	47.4	38.7	14.0	.....	.....								
Virginia.....	2,798	0.1	1.2	20.8	20.8	57.0	(¹)	.....									
Washington.....	2,439	13.6	2.4	81.3	0.4	1.9	0.4	.....									
West Virginia.....	1,354	0.7	2.3	37.8	12.5	44.2	2.5	.....									
Wisconsin.....	24,219	0.2	1.2	2.1	60.1	36.4	(¹)	.....									

CARS AND GENERAL SHOP CONSTRUCTION AND REPAIRS BY STEAM-RAILROAD COMPANIES.																		
STATE.	Total (average number).	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.	STATE.	Total (average number).	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.	
PRINTING AND PUBLISHING.																		
United States.....	258,434	53.7	18.1	18.3	7.4	4.2	0.2	0.1	Alabama.....	1,117	40.0	2.9	31.4	8.9	16.8	.....	.....
Alabama.....	1,117	40.0	2.9	31.4	8.9	16.8	.....	.....	Arizona.....	268	79.1	.....	20.5	.....	.....	.....	.....
Arizona.....	268	79.1	.....	20.5	.....	.....	.....	.....	Arkansas.....	981	42.7	5.0	18.6	8.9	24.2	0.3	0.4	.....
Arkansas.....	981	42.7	5.0	18.6	8.9	24.2	0.3	0.4	California.....	7,556	72.6	13.7	10.3	1.6	1.6	0.2	.....	.....
California.....	7,556	72.6	13.7	10.3	1.6	1.6	0.2	.....	Colorado.....	2,368	74.3	3.3	7.3	.....	1.7	0.4	.....	.....
Colorado.....	2,368	74.3	3.3	7.3	.....	1.7	0.4	.....	Connecticut.....	2,878	47.7	22.9	15.5	12.0	0.9	.....	.....	.....
Connecticut.....	2,878	47.7	22.9	15.5	12.0	0.9	.....	.....	Delaware.....	288	60.4	1.0	27.4	5.9	5.2	.....	.....	.....
Delaware.....	288	60.4	1.0	27.4	5.9	5.2	.....	.....	District of Columbia.....	1,565	80.4	10.3	3.9	5.3	.....	0.1	.....	.....
District of Columbia.....	1,565	80.4	10.3	3.9	5.3	.....	0.1	.....	Florida.....	905	45.1	4.3	34.7	10.3	4.8	0.8	0.1	.....
Florida.....	905	45.1	4.3	34.7	10.3	4.8	0.8	0.1	Georgia.....	2,395	33.1	9.4	27.7	12.6	18.3	.....	0.8	.....
Georgia.....	2,395	33.1	9.4	27.7	12.6	18.3	.....	0.8	Idaho.....	408	66.0	8.1	21.8	.....	3.4	0.6	.....	.....
Idaho.....	408	66.0	8.1	21.8	.....	3.4	0.6	.....	Illinois.....	28,644	63.1	15.7	13.9	4.5	2.2	0.2	0.4	.....
Illinois.....	28,644	63.1	15.7	13.9	4.5	2.2	0.2	0.4	Indiana.....	6,756	57.9	7.4	14.8	9.2	10.5	(¹)	0.1	.....
Indiana.....	6,756	57.9	7.4	14.8	9.2	10.5	(¹)	0.1	Iowa.....	4,853	35.4	11.5	26.4	11.7	14.8	0.1	(¹)	.....
Iowa.....	4,853	35.4	11.5	26.4	11.7	14.8	0.1	(¹)	Kansas.....	3,232	39.9	5.7	22.3	18.8	13.7	0.2	0.2	.....
Kansas.....	3,232	39.9	5.7	22.3	18.8	13.7	0.2	0.2	Kentucky.....	3,135	34.3	25.6	24.8	5.7	9.0	0.2	0.3	.....
Kentucky.....	3,135	34.3	25.6	24.8	5.7	9.0	0.2	0.3	Louisiana.....	1,544	50.1	12.6	23.1	7.7	5.9	0.1	0.6	.....
Louisiana.....	1,544	50.1	12.6	23.1	7.7	5.9	0.1	0.6	Maine.....	1,651	34.7	8.6	41.8	12.6	2.3	.....	.....	.....
Maine.....	1,651	34.7	8.6	41.8	12.6	2.3	.....	.....	Maryland.....	3,368	34.6	32.0	20.1	7.1	6.3	.....	.....	.....
Maryland.....	3,368	34.6	32.0	20.1	7.1	6.3	.....										

This table shows that there is in some industries a certain approach toward uniformity in the hours of labor in different states, but this approach is by no means close in any of the 5 industries covered by Table 3, nor, in fact, in any of the industries shown in Table 9. The prevailing hours are often affected by local conditions and do not depend altogether upon the character of the industry itself.

In the lumber industry a very large proportion of the wage earners are employed in establishments where the prevailing hours are 60 per week; for the United States as a whole the proportion in 1909 was 67.5 per cent. In each of the states except Illinois, Massachusetts, Montana, Nebraska, New Jersey, Rhode Island, and Utah a larger number were employed in establishments working 60 hours per week than in establishments of any other class, and in 33 states more than half of all the wage earners were in such establishments. There were only 8 states in which as many as one-fifth of the wage earners in this industry were in establishments where the prevailing hours exceeded 60 per week; and, on the other hand, in only 2 states, together with the District of Columbia, were as many as one-fifth employed in establishments working 48 hours or less per week.

In the foundry and machine-shop industry the great majority of the wage earners were employed in establishments where the prevailing hours were either 54, 60, or between 54 and 60 per week. This was true not only of the United States as a whole but of nearly all of the states individually. In no state except Pennsylvania and West Virginia were as many as 2 per cent of the wage earners employed in establishments where the prevailing hours exceeded 60, and in many of the states there were no establishments of this class. In Montana and the District of Columbia more than half of the wage earners were employed in establishments where the prevailing hours were 48 or less, but in only 5 other states—Arizona, California, Nevada, Utah, and Washington—did the proportion reach 10 per cent.

In the cotton-goods industry there are marked differences between the North and South with respect to the prevailing hours of labor. In most of the northern states nearly all of the wage earners in 1909 were in establishments where the prevailing hours were either 60 or between 54 and 60 per week. In most of the southern states a considerable proportion of the wage earners in this industry were likewise in establishments working on the 60-hour basis, but large numbers were in establishments where the working time exceeded 60 hours per week. In Maryland, South Carolina, and Virginia, however, none of the establishments were reported as working more than 60 hours.

In the steam-railroad repair shops ("cars and general shop construction and repairs by steam-railroad companies") there was a considerable variation among the states with respect to the prevailing hours of labor. In the United States as a whole 35.6 per cent of the

wage earners in this industry were in establishments where the prevailing hours were 54 per week, and there were 28 states in which this was the most common working time reported. In 2 states, Connecticut and Kentucky, the most common working time was 48 hours or less; and in 3—Colorado, New York, and Wyoming—the most common period was in excess of 60 hours.

In the printing and publishing industry the 8-hour day and the 9-hour day are both common. In the United States as a whole 53.7 per cent of the wage earners in 1909 were in establishments where the prevailing hours per week were 48 or less, and in 19 states a majority of the wage earners were employed in such establishments, while in 24 other states the number so employed was greater than the number employed in establishments of any other single class. The only states in which more than one-fourth of the wage earners in this industry were in establishments where the prevailing hours exceeded 54 per week were Alabama, Arkansas, Georgia, Iowa, Kansas, Mississippi, New Hampshire, North Carolina, and South Carolina.

The degree of uniformity among different states with respect to the prevailing hours of labor in a given industry is affected by the fact that in some industries the processes and products of all or nearly all establishments are substantially similar, while in other industries there are marked differences among establishments in respect to processes and products. In the latter case it may readily happen that establishments with one class of processes and of products will have prevailing hours different from those of establishments with other processes and products; and conditions in different states may be affected by the characteristics of the establishments located in them. The effect of such conditions is brought out by Table 4, which shows, by percentages, the distribution of wage earners in the slaughtering and meat-packing industry and the paper and wood-pulp industry according to the prevailing hours of labor in the establishments where they were employed, for the states in which these industries are of importance.

In the slaughtering and meat-packing industry the great majority of the establishments are engaged—at least primarily—in substantially similar processes and turn out similar products; and in every state in which the industry is important more than half of the wage earners were, in 1909, employed in establishments where the prevailing hours were 60 per week. In no state except Georgia were any considerable proportion in establishments where the prevailing hours exceeded 60, and in only 5 states—Alabama, Illinois, Louisiana, Maine, and Montana—were 10 per cent or more in establishments where the working time was 48 hours or less per week.

On the other hand, in the paper and wood-pulp industry there are great differences among establishments with respect to the character of the processes and products. Some mills make only wood pulp, some

make both paper and pulp, and some make only paper, and there are wide differences in the kinds of paper made and in the processes employed in making it. As a result of these conditions there is very little uniformity among the states named in Table 4 with respect to the prevailing hours of labor. In a number of states

a large majority of the wage earners in 1909 were in establishments where the prevailing hours exceeded 60 per week, while in other states a majority were employed in establishments where the working time was 60 hours per week, and in 3 a majority were in establishments where it was less than 60 hours.

Table 4

STATE.	WAGE EARNERS: 1909							STATE.	WAGE EARNERS: 1909								
	Total (average number).	Per cent in establishments where the prevailing hours per week were—							Total (average number).	Per cent in establishments where the prevailing hours per week were—							
		48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.			72 and over.	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.
SLAUGHTERING AND MEAT PACKING.																	
United States.....	89,728	5.5	4.6	11.7	4.8	72.2	0.7	0.6	Utah.....	99	6.1	0.3	2.0	32.3	59.6	.....
Alabama.....	47	12.8	57.4	.....	.....	8.5	21.3	Virginia.....	342	0.6	.....	14.9	31.0	46.2	5.9		
California.....	1,641	3.4	2.3	27.7	.....	62.7	2.9	1.1	Washington.....	828	1.9	.....	3.7	.....	93.7	0.6	
Colorado.....	659	.....	.....	43.6	.....	56.4	.....	.....	West Virginia.....	167	.....	.....	12.6	.....	87.4	.....
Connecticut.....	432	0.7	68.3	6.0	9.0	10.6	4.4	0.9	Wisconsin.....	1,890	7.1	.....	38.8	.....	54.0	.....
Delaware.....	82	.....	.....	4.9	.....	95.1	.....	.....	PAPER AND WOOD PULP.								
District of Columbia.....	135	6.7	.....	.....	.....	93.3	.....	.....	United States.....	75,978	7.4	8.0	4.5	8.7	30.2	19.6	21.7
Florida.....	32	.....	43.8	.....	9.4	25.0	.....	21.9	California.....	312	.....	.....	.....	58.0	37.2	4.8	
Georgia.....	90	3.3	.....	16.7	.....	25.7	34.4	18.9	Connecticut.....	1,720	.....	.....	13.3	6.5	31.5	33.0	15.7
Idaho.....	39	.....	.....	.....	.....	87.2	12.8	.....	Delaware.....	546	.....	.....	.....	.....	52.4	47.6	
Illinois.....	26,705	10.9	0.2	4.3	0.2	84.5	(¹)	.....	Illinois.....	1,397	.....	.....	.....	13.5	31.9	9.9	44.7
Indiana.....	4,423	0.6	.....	.....	0.5	98.9	.....	(¹)	Indiana.....	1,501	.....	.....	.....	.....	17.5	9.4	73.1
Iowa.....	4,144	7.8	.....	22.3	1.4	68.4	.....	(¹)	Iowa.....	205	.....	.....	.....	.....	15.1	84.8	
Kansas.....	10,591	3.5	27.8	7.9	.....	60.8	.....	(¹)	Kansas.....	97	.....	.....	.....	.....	52.6	47.4	
Kentucky.....	354	5.7	1.1	50.3	4.0	37.9	1.1	.....	Maine.....	8,647	11.7	32.1	23.0	2.7	9.7	7.7	13.0
Louisiana.....	182	49.5	.....	4.9	.....	44.5	.....	1.1	Maryland.....	1,249	.....	.....	.....	.....	6.6	88.3	5.0
Maine.....	107	12.1	15.9	2.8	2.8	64.5	1.9	.....	Massachusetts.....	3,325	1.8	1.1	2.1	40.2	54.7	0.1	(¹)
Maryland.....	1,034	2.1	0.4	2.0	0.7	94.1	0.1	0.6	Michigan.....	902	1.6	.....	3.9	0.3	94.1	0.1	.....
Massachusetts.....	3,325	1.8	1.1	2.1	40.2	54.7	0.1	(¹)	Minnesota.....	1,921	0.1	0.7	1.1	0.1	97.9	0.1	.....
Michigan.....	902	1.6	.....	3.9	0.3	94.1	0.1	.....	Missouri.....	4,674	0.1	.....	41.9	1.3	56.7	.....	(¹)
Minnesota.....	1,921	0.1	0.7	1.1	0.1	97.9	0.1	.....	Montana.....	105	21.9	.....	.....	.....	78.1	.....	.....
Missouri.....	4,674	0.1	.....	41.9	1.3	56.7	.....	(¹)	Nebraska.....	6,015	.....	.....	12.2	24.7	62.9	(¹)	0.1
Montana.....	105	21.9	.....	.....	.....	78.1	.....	.....	New Hampshire.....	24	.....	.....	33.3	50.0	16.7	.....	.....
Nebraska.....	6,015	.....	.....	12.2	24.7	62.9	(¹)	0.1	New Jersey.....	1,817	6.4	14.4	2.4	7.5	60.0	0.9	8.5
New Hampshire.....	24	.....	.....	33.3	50.0	16.7	.....	.....	New York.....	6,110	9.0	5.3	11.8	7.4	65.4	0.8	0.4
New Jersey.....	1,817	6.4	14.4	2.4	7.5	60.0	0.9	8.5	Ohio.....	3,086	0.8	0.2	15.7	2.9	75.6	2.2	2.6
New York.....	6,110	9.0	5.3	11.8	7.4	65.4	0.8	0.4	Oklahoma.....	63	.....	.....	.....	.....	85.7	11.1	3.2
North Carolina.....	825	.....	.....	.....	.....	75.6	2.2	2.6	Oregon.....	366	.....	.....	.....	.....	92.9	1.4	5.7
Ohio.....	3,086	0.8	0.2	15.7	2.9	75.6	2.2	2.6	Pennsylvania.....	3,050	2.1	4.1	1.4	8.9	76.4	5.2	1.8
Oklahoma.....	63	.....	.....	.....	.....	85.7	11.1	3.2	Rhode Island.....	214	0.5	0.5	14.5	41.1	43.5	.....	.....
Oregon.....	366	.....	.....	.....	.....	92.9	1.4	5.7	Tennessee.....	280	1.4	.....	0.7	.....	88.9	.....	8.9
Pennsylvania.....	3,050	2.1	4.1	1.4	8.9	76.4	5.2	1.8	Texas.....	3,639	0.2	.....	44.8	.....	53.6	.....	1.4
Rhode Island.....	214	0.5	0.5	14.5	41.1	43.5	.....	.....							
Tennessee.....	280	1.4	.....	0.7	.....	88.9	.....	8.9									
Texas.....	3,639	0.2	.....	44.8	.....	53.6	.....	1.4									

¹ Less than one-tenth of 1 per cent.

Industries in which large numbers are employed 72 hours or more per week.—There are only a few industries in the United States, comparatively speaking, in which any considerable number of wage earners are employed in establishments where the prevailing hours are 72 or more per week. Table 5 presents statistics for these industries, by states, with respect to the number of wage earners employed in such establishments. The table includes all industries in which 500 or more wage earners were, in 1909, employed in establishments where the prevailing hours were 72 or more, with the exception of a few industries in which, although the number exceeded 500, the proportion employed in establishments of this class was so small (less than 10 per cent) as scarcely to justify the presentation of detailed statistics.

In most of the industries covered by Table 5 some at least of the establishments operate continuously and have arranged their working-day in two 12-hour shifts. There are considerable variations among the states listed under each industry with respect to the

proportion of wage earners employed in establishments with a long working day.

It may be noted with respect to the manufacture of illuminating gas that, since the gas must be made continuously, it is very commonly the custom to employ the men engaged in gas making proper on 12-hour shifts. In some cases, however, the number of wage earners employed outside of the gas plant—repairing mains and doing other miscellaneous work—is larger than the number employed in gas making. These outside workers usually have a shorter working-day than the gas makers, but it appears that as a rule the establishments in the industry reported as the prevailing working time of the plant that of the gas makers. As already stated, all the wage earners in each establishment have necessarily been classified according to the prevailing hours reported for the establishment as such. Consequently, the percentages in Table 5 for the gas industry probably materially exceed the actual percentages of the wage earners in the industry who were employed 72 hours or more per week.

INDUSTRIES IN WHICH LARGE NUMBERS OF WAGE EARNERS WERE EMPLOYED 72 HOURS OR MORE PER WEEK: 1909.

INDUSTRY AND STATE.	WAGE EARNERS: 1909				INDUSTRY AND STATE.	WAGE EARNERS: 1909					
	Total (average number).	In establishments where the prevailing hours were—				Total (average number).	In establishments where the prevailing hours were—				
		72.		Over 72.			72.		Over 72.		
		Number.	Per cent of total.	Number.			Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.
Beet sugar	7,204	508	7.1	4,934	68.5	Glucose and starch	4,773	658	13.8	2,102	44.6
California.....	1,727	61	3.5	1,666	96.5	Illinois.....	1,516	.....	.....	1,444	95.3
Colorado.....	2,029	.....	.....	455	22.5	Indiana.....	866	166	19.2	217	25.1
Idaho.....	391	.....	.....	391	100.0	Iowa.....	1,069	.....	.....	432	40.4
Michigan.....	1,460	.....	.....	1,460	100.0	New Jersey.....	531	492	92.7	.....	.....
Utah.....	689	375	54.4	314	45.6	Ice, manufactured	16,114	2,128	13.2	8,421	52.3
Wisconsin.....	248	.....	.....	248	100.0	Alabama.....	343	59	17.2	213	62.1
Cement	26,775	146	0.5	10,427	38.9	Arkansas.....	352	47	13.4	214	60.8
Alabama.....	135	.....	.....	115	85.2	California.....	666	1	0.2	116	17.4
California.....	2,407	.....	.....	208	8.6	Colorado.....	251	29	11.6	140	55.8
Colorado.....	409	.....	.....	334	81.7	Florida.....	461	87	18.9	210	45.6
Georgia.....	195	.....	.....	162	83.1	Georgia.....	494	66	13.4	336	68.0
Illinois.....	1,895	.....	.....	1,355	71.5	Illinois.....	804	75	9.3	259	32.2
Indiana.....	2,318	.....	.....	883	38.1	Indiana.....	563	80	14.2	356	63.2
Kansas.....	2,143	.....	.....	469	21.9	Iowa.....	151	74	49.0	44	29.1
Kentucky.....	107	.....	.....	103	96.3	Kansas.....	593	75	12.6	302	50.9
Michigan.....	1,300	.....	.....	974	74.6	Kentucky.....	472	53	11.2	362	76.7
New Jersey.....	1,445	.....	.....	326	22.6	Louisiana.....	633	65	10.3	427	67.5
New York.....	1,443	.....	.....	285	19.8	Maryland.....	355	40	11.3	241	67.9
Ohio.....	887	.....	.....	746	84.1	Mississippi.....	341	84	24.6	181	53.1
Pennsylvania.....	8,080	.....	.....	3,016	37.3	Missouri.....	761	41	5.4	509	66.9
South Dakota.....	100	.....	.....	100	100.0	New Jersey.....	456	70	15.4	146	32.0
Tennessee.....	469	.....	.....	469	100.0	New York.....	1,124	26	2.3	534	47.5
Texas.....	362	.....	.....	324	89.5	North Carolina.....	318	154	48.4	87	27.4
Washington.....	288	.....	.....	288	100.0	Ohio.....	892	152	17.0	436	48.9
West Virginia.....	116	.....	.....	116	100.0	Oklahoma.....	449	24	5.3	247	55.0
Chemicals	23,714	514	2.2	4,193	17.7	Pennsylvania.....	1,606	271	16.9	842	52.4
Illinois.....	836	48	5.7	59	7.1	South Carolina.....	218	55	25.2	119	54.6
Maryland.....	285	.....	.....	154	54.0	Tennessee.....	779	87	11.2	611	78.4
Michigan.....	3,174	96	3.0	1,441	45.4	Texas.....	1,437	181	12.6	940	65.4
New Jersey.....	5,046	74	1.5	862	17.1	Virginia.....	475	147	30.9	218	45.9
New York.....	5,748	122	2.1	375	6.5	West Virginia.....	233	33	14.2	69	29.6
Ohio.....	1,132	84	7.4	330	29.2	Iron and steel, blast furnaces	38,429	1,304	3.4	31,729	82.6
Pennsylvania.....	3,185	13	0.4	694	21.8	Alabama.....	3,783	.....	.....	2,221	58.7
Rhode Island.....	156	5	3.2	148	94.9	Connecticut.....	143	143	100.0	.....	.....
Coke	29,273	49	0.2	3,231	11.0	Illinois.....	2,493	.....	.....	2,493	100.0
Alabama.....	2,580	49	1.9	442	17.1	Indiana.....	324	.....	.....	324	100.0
Illinois.....	746	.....	.....	746	100.0	Kentucky.....	331	.....	.....	267	80.7
New York.....	517	.....	.....	517	100.0	Michigan.....	1,016	.....	.....	961	94.6
Pennsylvania.....	15,331	.....	.....	1,093	7.1	Minnesota.....	267	.....	.....	267	100.0
Virginia.....	1,425	.....	.....	316	22.2	Missouri.....	269	.....	.....	269	100.0
Flour-mill and gristmill products	39,453	7,132	18.1	338	0.9	New Jersey.....	754	235	31.2	433	57.4
Georgia.....	386	210	54.4	.....	.....	New York.....	2,298	335	14.6	1,488	64.8
Illinois.....	2,464	471	19.1	30	1.2	Ohio.....	7,295	1	(¹)	6,688	91.7
Indiana.....	2,298	571	24.8	47	2.0	Pennsylvania.....	14,521	467	3.2	13,170	90.7
Kansas.....	2,860	639	22.3	122	5.2	Tennessee.....	1,143	73	6.4	881	77.1
Kentucky.....	1,401	317	22.6	.....	.....	Virginia.....	1,320	50	3.8	1,052	79.7
Maryland.....	508	184	36.4	2	0.4	West Virginia.....	343	.....	.....	343	100.0
Minnesota.....	4,845	232	4.8	.....	.....	Wisconsin.....	758	.....	.....	758	100.0
Missouri.....	2,198	709	32.3	9	0.4	Iron and steel, steel works and rolling mills	240,076	49,364	20.6	2,954	1.2
Nebraska.....	839	116	13.8	3	0.4	Alabama.....	1,885	260	13.8	.....	.....
New York.....	2,990	335	11.2	10	0.3	Colorado.....	2,152	2,152	100.0	.....	.....
Ohio.....	2,585	253	9.8	1	(¹)	Georgia.....	500	500	100.0	.....	.....
Oklahoma.....	842	271	32.2	.....	.....	Illinois.....	17,584	10,074	57.3	128	0.7
Pennsylvania.....	2,432	263	10.8	24	1.0	Indiana.....	12,255	4,869	39.7	.....	.....
Tennessee.....	1,577	913	57.9	1	0.1	Kentucky.....	2,372	490	20.7	.....	.....
Texas.....	1,216	625	51.4	.....	.....	Maryland.....	1,928	275	14.3	.....	.....
Virginia.....	1,014	300	29.6	7	0.7	New York.....	10,091	3,161	31.3	.....	.....
Washington.....	644	177	27.5	.....	.....	Ohio.....	38,586	4,709	12.2	.....	.....
Gas, illuminating and heating ²	37,215	2,890	7.8	18,473	49.6	Pennsylvania.....	126,911	21,849	17.2	2,826	2.2
Alabama.....	259	.....	.....	114	44.0	Wisconsin.....	2,124	1,025	48.3	.....	.....
Connecticut.....	926	.....	.....	420	45.4	Lime	13,897	415	3.0	1,145	8.2
Georgia.....	459	36	7.8	416	90.6	Alabama.....	411	57	13.9	57	13.9
Illinois.....	6,801	8	0.1	5,439	80.3	Maine.....	526	.....	.....	327	62.2
Indiana.....	928	3	0.3	456	49.1	Massachusetts.....	557	147	26.4	97	17.4
Iowa.....	806	24	3.0	377	46.8	Ohio.....	1,273	26	2.0	181	14.2
Kentucky.....	386	16	4.1	305	79.0	Virginia.....	716	59	8.2	67	9.4
Louisiana.....	278	.....	.....	276	99.3	Liquors, distilled	6,430	755	11.7	42	0.7
Maine.....	216	10	4.6	92	42.6	Illinois.....	750	258	34.4	.....	.....
Maryland.....	476	4	0.8	441	92.6	Indiana.....	428	297	69.4	.....	.....
Massachusetts.....	2,292	14	0.6	999	43.0	Oil, cottonseed, and cake	17,071	12,568	73.6	477	2.8
Michigan.....	1,771	46	2.6	521	29.4	Alabama.....	1,618	841	52.0	122	7.5
Minnesota.....	848	813	95.9	.....	.....	Arkansas.....	1,086	802	73.8	22	2.0
Missouri.....	941	33	3.5	813	86.4	Georgia.....	2,888	2,146	74.3	39	1.4
Nebraska.....	400	.....	.....	347	86.8	Louisiana.....	894	624	69.8	26	2.9
New Jersey.....	1,917	4	0.2	1,595	83.2	Mississippi.....	2,503	1,788	71.4	33	1.3
New York.....	6,422	1,661	25.9	3,349	52.1	North Carolina.....	1,165	1,025	88.0	2	0.2
Ohio.....	666	8	1.2	453	68.0	Oklahoma.....	581	488	84.0	64	11.0
Pennsylvania.....	3,119	15	0.5	576	18.5	South Carolina.....	1,765	1,351	76.5	10	0.6
South Carolina.....	127	.....	.....	112	88.2	Tennessee.....	806	806	100.0	.....	.....
Tennessee.....	422	103	24.4	237	56.2	Texas.....	3,073	2,565	83.5	159	5.2
Texas.....	575	45	7.8	102	17.7						
Virginia.....	378	.....	.....	334	88.4						
Wisconsin.....	1,063	.....	.....	253	23.8						

¹ Less than one-tenth of 1 per cent.² As to the significance of the figures for this industry, see discussion in text.

PREVAILING HOURS OF LABOR.

INDUSTRIES IN WHICH LARGE NUMBERS OF WAGE EARNERS WERE EMPLOYED 72 HOURS OR MORE PER WEEK: 1909—Continued.

INDUSTRY AND STATE.	WAGE EARNERS: 1909					INDUSTRY AND STATE.	WAGE EARNERS: 1909				
	Total (average number).	In establishments where the prevailing hours were—					Total (average number).	In establishments where the prevailing hours were—			
		72.		Over 72.				72.		Over 72.	
		Number.	Per cent of total.	Number.	Per cent of total.			Number.	Per cent of total.	Number.	Per cent of total.
Oil, linseed.....	1,452	618	42.4	255	17.6	Salt.....	4,936	431	8.7	156	3.2
Illinois.....	133	100	75.2	24	18.0	Kansas.....	451	117	25.9		
Minnesota.....	374	88	23.5	142	38.0	Ohio.....	648	240	37.0		
New York.....	566	249	44.0			Smelting and refining, not from the ore.....	2,147	23	1.1	664	30.9
Ohio.....	213	125	58.7			New Jersey.....	1,057			580	54.9
Paper and wood pulp.....	75,978	15,706	20.7	751	1.0	Sugar and molasses.....	4,127	2,092	50.7	1,828	44.3
Connecticut.....	1,720	270	15.7			Virginia.....	3,931	1,992	50.7	1,788	45.5
Delaware.....	546	260	47.6			Texas.....	144	100	69.4	39	27.1
Illinois.....	1,397	624	44.7			Sugar, refining, not including beet sugar.....	9,399	2,217	23.6	743	7.9
Indiana.....	1,501	954	63.6	143	9.5	Louisiana.....	1,162	376	32.4	136	11.7
Iowa.....	205	174	84.9			Massachusetts.....	591	428	72.4		
Maine.....	8,647	1,085	12.5	40	0.5	New York.....	4,087	1,287	31.5	607	14.9
Massachusetts.....	12,848	525	4.1			Texas.....	126	126	100.0		
Michigan.....	4,327	484	11.2			Sulphuric, nitric, and mixed acids.....	2,252	130	5.8	867	38.5
New Hampshire.....	3,413	262	7.7	20	0.6	Illinois.....	323			323	100.0
New Jersey.....	2,223	843	37.9	54	2.4	New Jersey.....	434	13	3.0	264	60.8
New York.....	12,073	2,500	20.7	299	2.5	Ohio.....	129	10	7.8	99	76.7
North Carolina.....	825	825	100.0			Wood distillation, not including turpentine and rosin.....	2,721	242	8.9	699	25.7
Ohio.....	4,673	1,456	31.2	18	0.4	Michigan.....	806			367	45.5
Pennsylvania.....	6,656	2,532	38.0			New York.....	593	125	21.1	169	28.5
Virginia.....	912	194	21.3			Pennsylvania.....	933	83	8.9	79	8.5
Wisconsin.....	7,467	2,043	27.4	126	1.7						
Petroleum, refining.....	13,929	222	1.6	2,366	17.0						
California.....	930	22	2.4	285	30.6						
Illinois.....	312	5	1.6	112	35.9						
Kentucky.....	322			322	100.0						
New Jersey.....	2,906			478	16.4						
Pennsylvania.....	2,900	68	2.3	548	18.9						
Texas.....	1,281	113	8.8	495	38.6						

Prevailing hours of labor, by states, for all industries combined.—Table 6 shows, for all industries combined in each state and geographic division, the number of wage earners, classified according to the prevailing hours of labor in the establishments in which they were employed, together with corresponding percentages. As a convenient summary of this table, Table 7 is presented, which gives the percentages for broader groups.

It will be seen from Table 6 that in New England 61.3 per cent of all the wage earners were in establishments where the prevailing hours per week were more than 54 but less than 60. In a large proportion of the New England establishments the hours of labor are 10 per day, with a shorter working time on Saturdays. There is no other geographic division in which any such degree of concentration of employment at a given working time appears. In Rhode Island 81.6 per cent of the wage earners fell in this group.

Table 6 shows also that there are only a few states in which employment for 12 hours per day is at all common. In Colorado, however, 11.4 per cent of the wage earners were in establishments operating 72 or more hours per week; in Texas, 10 per cent; in Oklahoma, 9.3 per cent; in Louisiana, 8.4 per cent; in

Alabama, 7.1 per cent; in Utah, 6.8 per cent; in Tennessee, 6.7 per cent; and in Pennsylvania, 6.2 per cent. These comparatively high percentages are due largely to the importance in these states of industries which require continuous operation, such as the blast-furnace industry and steel works and rolling mills, or which have a long working day because of the comparatively short season of operation, such as the beet-sugar, cane sugar and molasses, and cottonseed oil and cake industries.

Among the individual states there were 32 in which the most common working time reported was 60 hours per week; that is, in which a larger number were employed in establishments with 60 hours per week as the prevailing hours of labor than in those of any of the other groups shown in Table 6. There were 11 states in which the most common working time reported was more than 54 but less than 60 hours, and 2 in which it was more than 60 but less than 72 hours, while in the District of Columbia, where manufacturing industries are unimportant, more than three-eighths of the employees were in establishments where the prevailing hours were 48 or less per week.

Table 7

DIVISION AND STATE.	WAGE EARNERS IN MANUFACTURING INDUSTRIES: 1909			
	Total (average number).	Per cent in establish- ments where the pre- vailing hours were—		
		Under 54.	54 to 60 (inclu- sive).	Over 60.
United States.....	6,615,046	15.2	76.1	8.7
GEOGRAPHIC DIVISIONS:				
New England.....	1,101,290	9.1	89.2	1.8
Middle Atlantic.....	2,207,747	19.3	73.6	7.1
East North Central.....	1,513,764	14.9	77.9	7.2
West North Central.....	374,337	18.4	74.8	6.9
South Atlantic.....	663,015	11.8	68.5	19.6
East South Central.....	261,772	10.5	66.8	22.7
West South Central.....	204,520	9.8	66.7	23.6
Mountain.....	75,435	18.3	65.6	16.1
Pacific.....	213,166	20.6	72.2	7.2
NEW ENGLAND:				
Maine.....	79,955	11.0	80.6	8.4
New Hampshire.....	78,658	7.0	91.5	1.6
Vermont.....	33,788	17.7	80.4	1.9
Massachusetts.....	584,559	9.9	88.7	1.3
Rhode Island.....	113,538	3.7	96.1	0.3
Connecticut.....	210,792	8.4	90.2	1.4
MIDDLE ATLANTIC:				
New York.....	1,003,981	27.5	68.4	4.1
New Jersey.....	326,223	12.9	82.5	4.6
Pennsylvania.....	877,543	12.3	76.3	11.4
EAST NORTH CENTRAL:				
Ohio.....	446,934	13.8	78.7	7.5
Indiana.....	186,934	13.2	79.1	7.7
Illinois.....	465,764	22.7	69.2	8.1
Michigan.....	231,499	7.7	88.0	4.4
Wisconsin.....	182,583	9.0	84.3	6.7
WEST NORTH CENTRAL:				
Minnesota.....	84,767	16.7	79.1	4.2
Iowa.....	61,635	14.0	76.5	9.5
Missouri.....	152,993	22.2	73.3	4.5
North Dakota.....	2,789	21.9	74.2	3.9
South Dakota.....	3,602	16.6	75.4	7.9
Nebraska.....	24,336	11.9	77.8	10.3
Kansas.....	44,215	17.5	67.7	14.8
SOUTH ATLANTIC:				
Delaware.....	21,238	8.0	87.5	4.4
Maryland.....	107,921	18.0	73.6	8.4
District of Columbia.....	7,707	48.3	38.0	13.7
Virginia.....	105,675	9.6	77.0	13.4
West Virginia.....	63,893	16.1	70.9	12.9
North Carolina.....	121,473	2.6	54.1	43.3
South Carolina.....	73,046	3.8	88.7	7.6
Georgia.....	104,588	9.6	62.8	27.7
Florida.....	57,473	30.6	53.5	15.8
EAST SOUTH CENTRAL:				
Kentucky.....	65,400	19.5	73.9	6.6
Tennessee.....	73,840	7.6	77.4	15.0
Alabama.....	72,148	7.5	57.9	34.6
Mississippi.....	50,384	7.4	54.5	38.1
WEST SOUTH CENTRAL:				
Arkansas.....	44,982	5.7	87.6	6.8
Louisiana.....	76,165	7.5	56.9	35.7
Oklahoma.....	13,143	24.9	54.6	20.4
Texas.....	70,230	12.0	66.1	21.8
MOUNTAIN:				
Montana.....	11,655	15.1	81.1	3.8
Idaho.....	8,220	8.6	81.4	10.0
Wyoming.....	2,867	9.2	35.1	55.8
Colorado.....	28,067	22.7	54.4	22.8
New Mexico.....	4,143	15.7	82.0	2.3
Arizona.....	6,441	10.5	82.9	6.5
Utah.....	11,785	25.2	57.7	17.1
Nevada.....	2,257	17.9	70.0	12.2
PACIFIC:				
Washington.....	69,120	10.7	84.5	4.8
Oregon.....	28,750	14.4	79.2	6.4
California.....	115,296	28.1	63.1	8.8

Very considerable differences appear among the geographic divisions, and still greater differences among the states, with respect to the prevailing hours of labor in manufacturing industries. For example, in the Pacific division 14.9 per cent of all wage earners in 1909 were in establishments where the prevailing hours were 48 or less per week, in the Mountain division 13.9 per cent, and in the West North Central division 12 per cent, while in the New England division the percentage was only 4.7, and in the three southern divisions it was 6.9, 7.6, and 7.4, respectively. On the other hand, in the West South Central division, 23.6 per cent of the wage earners were in establishments where the prevailing hours exceeded 60 per week, in the East South Central division 22.7 per cent, and in the South Atlantic division 19.6 per cent, while in the Pacific division and in the four divisions of the North the percentages were very much lower, that for New England being only 1.8.

Confining attention to the percentages in Table 7, it will be seen that nearly one-half of the wage earners in the District of Columbia in 1909 were employed in establishments where the prevailing hours were less than 54 per week, while there were 9 states in which the proportion exceeded one-fifth, namely, Florida, California, New York, Utah, Oklahoma, Illinois, Colorado, Missouri, and North Dakota (named in the order of the magnitude of the percentages). Only 4 of the states named are of great importance in manufacturing. It may be noted that in New York a majority of the employees in this group worked more than 48 hours (see Table 6), while in the other states named the larger part of them worked 48 hours or less per week.

On the other hand, there were 9 states in 1909 in which 20 per cent or more of all the wage earners in manufacturing industries were employed in establishments where the prevailing hours exceeded 60 per week. These were Wyoming, North Carolina, Mississippi, Louisiana, Alabama, Georgia, Colorado, Texas, and Oklahoma (named in the order of the magnitude of the percentages). The great majority of the wage earners in this group worked more than 60 but less than 72 hours per week, presumably in most instances 11 hours per day.

PREVAILING HOURS OF LABOR.

HOURS OF LABOR—AVERAGE NUMBER OF WAGE EARNERS CLASSIFIED ACCORDING TO THE PREVAILING HOURS OF LABOR PER WEEK IN THE ESTABLISHMENTS IN WHICH THEY WORK, AND PERCENTAGE WHICH WAGE EARNERS IN EACH GROUP FORM OF THE TOTAL NUMBER, UNITED STATES, BY INDUSTRIES: 1909—Continued.

[See note at the head of this table.]

Table 8—Continued.

INDUSTRY.	Total wage earners (average number).	WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS—							PER CENT IN ESTABLISHMENTS WITH PREVAILING HOURS—								
		48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72.	Over 72.	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72.	Over 72.
Screws, machine.	1,667			185	383	637	462										
Screws, wood.	3,464		63	101	1,867	1,433											
Sewing machines, cases, and attachments.	19,296	2	13	5,146	12,237	1,898											
Shipbuilding, including boat building.	40,506	3,865	2,674	9,883	10,045	14,038	1			(1)	1.8	2.9	53.9	41.4			
Shoddy.	2,041	5	28	5	387	1,320	268			9.5	6.6	24.4	24.8	34.7	(1)		
Show cases.	3,390	90	279	773	575	1,668	5			2.7	8.2	22.8	17.0	49.2	0.1		
Signs and advertising novelties.	5,540	1,112	1,597	1,212	1,359	260			20.1	28.8	21.9	24.5	4.7				
Silk and silk goods, including throwsters.	99,037	106	2,320	2,323	81,407	12,881			0.1	2.3	2.3	82.2	13.0				
Silverware and plated ware.	10,610	119	1,286	2,221	10,327	2,657			0.7	7.7	13.4	62.2	16.0				
Slaughtering and meat packing.	89,728	4,903	4,138	10,504	4,275	64,776	638	378	116	5.5	4.6	11.7	4.8	72.2	0.7	0.4	0.1
Smelting and refining, copper.	15,628	203			9,975	2,599	2,041		210	1.3			63.8	16.6	16.9		1.3
Smelting and refining, lead.	7,424	25		549	5,481	188	805		378	0.3		7.4	73.8	2.5	10.8		5.1
Smelting and refining, zinc.	6,655	606			1,471	1,123	2,885		570	9.1			22.1	16.9	43.4		8.6
Smelting and refining, not from the ore.	2,147	162	10	32	496	552	208	23	664	7.5	0.5	1.5	23.1	25.7	9.7	1.1	30.9
Soap.	12,999	635	1,786	1,998	3,849	4,706	23	2		4.8	13.7	15.4	29.6	36.2	0.2	(1)	
Soda-water apparatus.	1,797	372	330	667	90	338				20.7	18.4	37.1	5.0	18.8			
Sporting and athletic goods.	5,321	72	753	712	2,982	802				1.4	14.2	13.4	56.0	15.1			
Springs, steel, car and carriage.	3,196	21	649	132	1,525	869				0.7	20.3	4.1	47.7	27.2			
Stationery goods, not elsewhere specified.	6,206	216	718	1,780	3,414	78				3.5	11.6	28.7	55.0	1.3			
Statuary and art goods.	1,699	683	140	405	99	372				40.2	8.2	23.8	5.8	21.9			
Steam packing.	3,648	133	248	179	1,668	1,420				3.6	6.8	4.9	45.7	38.9			
Stereotyping and electrotyping.	2,850	2,010	471	281	81	7				70.5	16.5	9.9	2.8	0.2			
Stoves and furnaces, including gas and oil stoves.	37,130	2,261	2,407	7,895	10,434	14,065	68			6.1	6.5	21.3	28.1	37.9	0.2		
Sugar and molasses.	4,127	99		14		82	12	2,092	1,828	2.4		0.3		2.0	0.3	50.7	44.3
Sugar, refining, not including beet sugar.	9,399					4,557	1,882	2,217	743					48.5	20.0	23.6	7.9
Sulphuric, nitric, and mixed acids.	2,252			203	51	555	440	130	867			9.0	2.3	24.6	19.8	5.8	38.5
Surgical appliances and artificial limbs.	4,241	272	379	856	2,293	441				6.4	8.9	20.2	54.1	10.4			
Tin plate and terneplate.	5,352	729		2,841	1,503	279				13.6		53.1	28.1	5.2			
Tin foil.	683		33	34	539	77					4.8	5.0	78.9	11.3			
Tobacco manufactures.	166,810	48,434	17,318	14,174	64,344	21,841	636	57	6	28.0	10.4	8.5	38.6	13.1	0.4	(1)	(1)
Toys and games.	5,305	424	527	338	2,815	1,200				8.0	9.9	6.4	53.1	22.6		(1)	
Turpentine and rosin.	39,511	14,786	2,647	1,022	280	19,607	997	172		37.4	6.7	2.6	0.7	49.6	2.5	0.4	
Type founding and printing materials.	2,026	133	513	1,232	118	30				6.6	25.3	60.8	5.8	1.5			
Typewriters and supplies.	9,578	208	442	2,811	5,569	548				2.2	4.6	29.3	58.1	5.7			
Umbrellas and canes.	5,472	259	517	463	2,549	1,684				4.7	9.4	8.5	46.6	30.8			
Upholstering materials.	4,067	108	554	163	1,277	1,837	128			2.7	13.6	4.0	31.4	45.2	3.1		
Vault lights and ventilators.	327	30	89	161	57	10				9.2	21.1	49.2	17.4	3.1			
Vinegar and cider.	1,542	83	25	162	129	1,112	17	11	3	5.4	1.6	10.5	8.4	72.1	1.1	0.7	0.2
Wall paper.	4,037	1	12		992	2,948	84			(1)	0.3		24.6	73.0	2.1		
Wall plaster.	4,791	155	16	219	146	3,856	121	278		3.2	0.3	4.6	3.0	80.5	2.5	5.8	
Washing machines and clothes wringers.	1,835	22	57	94	405	1,257				1.2	3.1	5.1	22.1	68.5			
Waste.	1,897	3	204	80	878	269	458			0.4	10.8	4.2	46.3	14.2	24.1		
Wheelbarrows.	604	6	29	102	96	431				0.9	4.4	15.4	14.5	64.9			
Whips.	1,546	11	67	25	1,176	267				0.7	4.3	1.6	76.1	17.3			
Windmills.	2,337	1	1	658	1,054	623				(1)	(1)	28.2	45.1	28.7			
Window shades and fixtures.	3,030	322	284	774	1,266	1,283			1	8.2	7.2	19.7	32.2	32.6			(1)
Wire.	18,084		76	1	7,626	10,232	149				0.4	(1)	42.2	56.6	0.8		
Wirework, including wire rope and cable.	12,348	150	481	1,684	6,951	3,885	187			1.2	3.9	13.6	48.2	31.5	1.5		
Wood carpet.	184	94	77	4		9				51.1	41.8	2.2		4.9			
Wood distillation, not including turpentine and rosin.	2,721	51		42	6	1,023	658	242	699	1.9		1.5	0.2	37.6	24.2	8.9	25.7
Wood preserving.	2,403	439	18	294	134	1,248	213	8	49	18.3	0.7	12.2	5.6	51.9	8.9	0.3	2.0
Wood, turned and carved.	14,139	488	400	1,040	4,465	7,525	215		6	3.5	2.8	7.4	31.6	53.2	1.5		(1)
Wool pulling.	631	13		78	104	436				2.1		12.4	16.5	69.1			
Wool scouring.	1,142		10	699	433							0.9	61.2	37.9			
Woolen, worsted, and felt goods, and wool hats.	168,722	423	1,092	1,102	119,728	45,300	1,075	2		0.2	0.6	0.7	71.0	26.8	0.6	(1)	
All other industries.	96	3	8	65	19	19				3.1	8.3	67.7	1.0	19.8			

¹ Less than one-tenth of 1 per cent.

PREVAILING HOURS OF LABOR.

HOURS OF LABOR—AVERAGE NUMBER OF WAGE EARNERS CLASSIFIED ACCORDING TO THE PREVAILING HOURS OF LABOR PER WEEK IN THE ESTABLISHMENTS IN WHICH THEY WORK, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

[See explanatory note on Table 3.]

STATE.	Total wage earners (average number).	WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS—						
		48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.
BRICK AND TILE—Continued.								
Minnesota	1,038	182	40	17	798	1		
Mississippi	939	35	27		850	15	12	
Missouri	2,999	17	5	42	2,814	33	62	
Nebraska	831	70	28	17	672	28		
New Jersey	3,405	160	137	564	2,274			
New York	8,080	1,467	121	1,449	258	49	69	
North Carolina	1,460	19	86	22	288	43	10	
Ohio	7,466	355	65	852	529	22	67	
Oklahoma	730	15			693			
Pennsylvania	8,058	562	383	791	1,206		32	
South Carolina	888	68	12		46	594	147	
Tennessee	1,281	28	27	43	51	1,017	26	
Texas	1,933	20	30	222	43	1,488	128	
Utah	514	253		91	9	161	4	
Virginia	2,090	137	60	49	195	1,633	16	
Washington	1,800	5		109	12	674	500	
West Virginia	882	90	3	60	32	697		
Wisconsin	1,027		20	18	38	911	40	
BUTTER, CHEESE, AND CONDENSED MILK.								
United States	18,431	1,793	228	1,020	1,254	6,379	6,825	932
California	597	58	11	56	85	120	244	23
Illinois	1,732	131	9	59	40	495	992	6
Iowa	1,231	173	12	123	60	597	179	87
Michigan	1,073	145	13	27	44	760	68	26
Minnesota	1,184	245	4	114	40	692	43	46
New York	2,866	169	63	98	392	608	1,436	94
Ohio	1,067	64	9	27	53	401	470	38
Pennsylvania	1,177	131	49	75	156	337	411	18
Vermont	519	31	14	28	29	134	250	33
Washington	735	31		87	16	181	415	5
Wisconsin	2,863	251	22	68	192	766	1,103	461
BUTTONS.								
United States	16,427	211	934	1,736	10,306	2,960	6	274
Connecticut	1,057	1	184	19	387	466		
Illinois	548	13	140	45	169	181		
Iowa	3,172	19	9	432	1,804	694		274
Massachusetts	659	4		58	597			
New Jersey	2,261	31		169	1,874	196		
New York	6,126	113	583	370	4,453	601	6	
Pennsylvania	1,123	4		110	915	94		
CANNING AND PRESERVING.								
United States	59,968	2,632	1,311	3,077	4,641	42,908	2,904	2,495
California	7,757	332	53	428	147	6,083	514	200
Colorado	518	48		24	3	436	7	
Delaware	1,369	45	10	12	42	1,097	133	30
Illinois	2,383	61	153	74	276	1,672		147
Indiana	3,406	211	55	39	616	2,485		
Iowa	1,247	69		11	4	1,061		102
Kentucky	653	58		67	95	419	14	
Louisiana	974	24		13	2	517	317	101
Maine	3,850	10		123	79	3,617	4	17
Maryland	8,613	223	317	90	126	6,192	616	1,049
Massachusetts	1,449	66	94	1,103	154	32		
Michigan	2,073	6		68	373	1,589	15	32
Mississippi	847	11		125	32	581	98	
Missouri	952	217	23	23	30	651	8	
New Jersey	1,818	149	82	97	485	988	10	7
New York	7,075	381	279	191	735	5,269	156	64
Ohio	2,009	208	18	79	149	1,555		
Oregon	661	15	28	134		280	172	32
Pennsylvania	2,753	9	7	23	832	1,806	73	3
Virginia	1,860	80	82	34	43	1,542	19	60
Washington	2,029	101		24	58	1,359	469	18
Wisconsin	1,776		47	13	125	1,051	217	323
CARPETS AND RUGS, OTHER THAN RAG.								
United States	33,307	165	178	7,078	13,802	12,084		
Massachusetts	5,954		45		5,909			
New Jersey	884	36	3		845			
New York	11,898		124	6,463	742	4,599		
Pennsylvania	11,510	129		615	3,267	7,499		
CARRIAGES AND WAGONS AND MATERIALS.								
United States	69,928	3,204	4,875	11,659	21,954	27,771	406	59
Arkansas	973	10		34	180	746	3	
California	766	276	48	327	40	72		3
Connecticut	578		0	288	125	153		
Georgia	1,059	50		14	142	847	3	3
Illinois	5,852	114	82	1,133	3,077	1,442		4
Indiana	8,867	108	850	997	4,447	2,375		
Iowa	1,441	49	157	287	63	765		120
Kentucky	2,777	667	37	508	678	886		1
Maryland	757	3	54	276	87	337		
Massachusetts	1,539	18	498	704	172	147		
Michigan	4,034	55		53	2,105	1,821		
Minnesota	868	3	25	30	182	622		
Missouri	3,302	471	182	881	417	1,223	130	1
New Jersey	1,601	51	116	407	669	339	18	1
New York	6,116	224	1,410	1,329	1,235	1,918		
North Carolina	1,629	19	8	32	252	1,306		8
Ohio	8,815	641	1,651	1,634	1,948	3,896	4	
Pennsylvania	7,498	44	165	826	5,686	2,732	19	6
Tennessee	1,706	102	89	100	201	1,211	1	2
Virginia	1,329	3	7	343	168	788	9	11
Wisconsin	3,437	8		119	1,241	2,069		
CARS AND GENERAL SHOP CONSTRUCTION AND REPAIRS BY STEAM-RAILROAD COMPANIES.								
United States	282,174	21,131	22,230	100,363	56,850	43,877	31,743	5,880
Alabama	6,308	123		4,657		283	1,243	2
Arizona	1,089	133	92	528	13	211	112	
Arkansas	3,249			2,304	92	643	186	24
California	9,342	76		7,761	12	1,461	32	
Colorado	3,993		682	263	100	726	2,222	
Connecticut	1,226	651	168	384			23	
Delaware	1,525			1,467		39	19	
Florida	1,753	350	346	465		367	225	
Georgia	6,269	412	4,440	318	1,082	9	8	
Idaho	849			718		2	129	
Illinois	23,131	374	1,605	13,329	578	2,378	4,785	82
Indiana	12,884	1,272	2,131	2,077	3,826	2,255	1,323	
Iowa	6,969	1,085		1,487	106	1,999	1,678	14
Kansas	7,686	336		3,003		3,519	828	
Kentucky	5,605	2,495		2,208	131	207	564	
Louisiana	2,426	20		1,441		341	624	
Maine	1,200		670	268	192	44	26	
Maryland	5,549	21		3,163		1,596	769	
Massachusetts	5,162	231	1,188	3,689			54	
Michigan	5,401		642	1,460	1,905	1,276	118	
Minnesota	8,232	336	1,484	4,014		2,159	239	
Mississippi	2,572		522	1,577		436	37	
Missouri	8,121	1,397		5,237	539	280	647	21
Montana	1,913		148	1,333	105	74	253	
Nebraska	3,685			1,985	637	115	948	
Nevada	818	44		614		42	118	
New Hampshire	1,158		1,155			3	3	
New Jersey	6,694	1,002	1,337	1,490	1,032	698	990	155
New Mexico	1,489		265	34		1,190		
New York	10,454	374	1,137	2,188	3,946	2,488	5,124	1,197
North Carolina	2,568		121	2,389		58		
Ohio	20,728	1,718	2,660	3,057	6,273	4,094	1,600	1,417
Oklahoma	1,412	195		866		31	290	
Oregon	777	19		697		21	40	
Pennsylvania	46,646	5,209	2,581	1,290	27,629	8,002	1,611	423
South Carolina	1,418			1,252		107	59	
Tennessee	5,666	218		4,305	887	14	142	
Texas	9,782	1,009	153	5,092	727	1,727	1,067	7
Utah	1,731			1,027		704		
Vermont	992		170		804	10	8	

PREVAILING HOURS OF LABOR.

HOURS OF LABOR—AVERAGE NUMBER OF WAGE EARNERS CLASSIFIED ACCORDING TO THE PREVAILING HOURS OF LABOR PER WEEK IN THE ESTABLISHMENTS IN WHICH THEY WORK, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

[See explanatory note on Table 8.]

Table 9—Contd.

STATE.	Total wage earners (average number).	WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS—						
		48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.

STATE.	Total wage earners (average number).	WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS—						
		48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.

CONFECTIONERY—Continued.

Tennessee.....	894	4	8	18	373	428	55	8
Texas.....	717	22	2	64	72	545	12	
Utah.....	586	67	70	123	37	285	3	1
Washington.....	612	34	22	207	221	124	3	1
Wisconsin.....	1,780	5		350	409	1,016		

COOPERAGE AND WOODEN GOODS, NOT ELSEWHERE SPECIFIED.

United States....	26,269	2,614	1,674	3,392	5,230	13,306	30	23
Arkansas.....	504					504		
California.....	2,338	109	212	335	1,001	731		
Illinois.....	891	220	41	172	88	369		1
Indiana.....	878	56	21	114	108	579		1
Kentucky.....	966	402	13	137	82	322		10
Louisiana.....								
Massachusetts.....	974	157	8	107	494	208		
Michigan.....	2,642	252		27	17	2,346		
Minnesota.....	850	157		82	140	407		
Missouri.....	1,088	114	28	224	405	257		
New Hampshire.....	713			1	342	370		
New Jersey.....	1,048	39	337	433	54	183		
New York.....	2,611	118	113	273	1,110	989	5	3
Ohio.....	1,663	181	476	256	209	479	2	
Pennsylvania.....	1,630	245	132	432	352	469		
Tennessee.....	856	29		3	25	799		
Vermont.....	635		23		54	558		
Virginia.....	1,508	29	74		67	1,391	2	3
Wisconsin.....	1,208	219	6	75	137	771		

COPPER, TIN, AND SHEET-IRON PRODUCTS.

United States....	73,615	14,226	2,761	10,297	24,468	21,133	481	249
California.....	1,938	1,138	160	256	366	18		
Connecticut.....	2,475	189	145	51	1,293	411	356	
Georgia.....	619	16	64	139	15	376		9
Illinois.....	7,473	1,506	129	1,144	3,136	1,473	85	
Indiana.....	2,121	227	74	220	506	1,094		
Iowa.....	585	92	19	116	20	338		
Louisiana.....	979	171	9	346	105	348		
Maryland.....	5,275	237	23	265	641	4,109		
Massachusetts.....	2,627	714	347	520	937	59		
Michigan.....	2,386	81	54	907	620	723		1
Minnesota.....	1,081	463	118	143	268	89		
Missouri.....	2,637	593	128	443	860	613		
New Jersey.....	5,002	899	58	551	3,295	199		
New York.....	14,689	2,918	625	1,440	6,530	3,176		
Ohio.....	6,598	549	167	1,384	1,250	3,000		248
Pennsylvania.....	6,815	1,327	345	1,034	2,752	1,357		
Tennessee.....	572	129	90	96	2	255		
Texas.....	733	461		197		74		1
Virginia.....	818	108	3	83	25	599		
Washington.....	583	470	7	43	43	20		
West Virginia.....	916	8		67	248	593		
Wisconsin.....	2,780	318		68	1,054	1,340		

CORDAGE AND TWINE AND JUTE AND LINEN GOODS.

United States....	25,820	138	208	2,505	16,279	6,023	687
Illinois.....	1,799		65		1,570	164	
Kentucky.....	751	5			746		
Massachusetts.....	6,090	52	1	1,347	5,263	5	17
Missouri.....	820			52	768		
New Jersey.....	3,025	1		301	2,671	52	
New York.....	5,952			3	3,269	2,680	
Ohio.....	791				637	154	
Pennsylvania.....	2,119	49	111		1,110	849	

CORSETS.

United States....	17,564	231	2,727	4,714	9,357	475
Connecticut.....	6,643		1,476		5,165	2
Illinois.....	1,502	8	491	957	46	
Massachusetts.....	1,989		101	33	1,853	
Michigan.....	2,461	7	42	1,990	299	123
New Jersey.....	1,845		178	237	1,122	308
New York.....	2,436	162	364	1,441	436	3

COTTON GOODS, INCLUDING COTTON SMALL WARES.

United States....	378,880	304	2,879	571	190,598	119,226	64,687	215
Alabama.....	12,731		36		477	7,320	4,814	84
Connecticut.....	14,360		33		13,448	879		
Georgia.....	27,803	304	105		519	10,868	15,913	94
Illinois.....	1,319		887		96	336		
Indiana.....	1,582				38	1,544		
Kentucky.....	1,044					858	186	
Maine.....	14,634				1,118	13,516		
Maryland.....	3,966					3,966		
Massachusetts.....	108,914		11	41	108,766	38	58	
Mississippi.....	2,645				118	1,434	1,093	
New Hampshire.....	22,290				22,290			
New Jersey.....	6,638		3		5,537	1,098		
New York.....	10,833		247	17	1,277	9,122		
North Carolina.....	47,231				52	7,499	39,680	
Pennsylvania.....	16,293		1,112			8,294	6,887	
Rhode Island.....	28,789			34	28,658	94		
South Carolina.....	45,454		445			45,009		
Tennessee.....	3,078			65		1,333	1,643	37
Texas.....	1,590					397	1,193	
Vermont.....	683			21		662		
Virginia.....	5,057					5,057		

CUTLERY AND TOOLS, NOT ELSEWHERE SPECIFIED.

United States....	32,996	1,973	1,801	6,221	14,399	8,532	70
Connecticut.....	7,547	248	342	1,022	4,716	1,219	
Illinois.....	1,393	16	47	772	57	501	
Indiana.....	572	32		143	93	304	
Massachusetts.....	6,747	177	298	2,820	2,543	908	
Michigan.....	668			4	259	409	
New Jersey.....	2,208	97	125	117	1,514	55	
New York.....	4,478	131	550	378	1,192	2,227	
Ohio.....	2,820	40	11	118	2,007	644	
Pennsylvania.....	4,250	1,156	245	205	1,369	1,205	70
West Virginia.....	707			50		657	

DYEING AND FINISHING TEXTILES.

United States....	44,046	107	1,102	398	28,172	12,639	1,628
Connecticut.....	1,719			2	351	1,366	
Massachusetts.....	9,079	8	119	56	8,009	542	345
New Jersey.....	10,129	4	33	60	6,194	2,968	870
New York.....	5,252	65	816	197	2,830	1,324	20
Pennsylvania.....	6,086	10	39	33	2,078	3,874	52
Rhode Island.....	7,792				6,334	1,438	20

ELECTRICAL MACHINERY, APPARATUS, AND SUPPLIES.

United States....	87,256	1,114	13,909	20,781	45,538	5,874	40
Connecticut.....	3,505	7		592	2,633	273	
Illinois.....	9,641	186	8,172	734	453	90	6
Indiana.....	3,073	17	164	184	1,772	936	
Massachusetts.....	14,507	266	395	902	12,851	93	
Michigan.....	1,218	4	26	236	310	642	
Missouri.....	1,000	27	239	636	150	8	
New Jersey.....	11,099	147	107	4,160	6,561	104	20
New York.....	18,972	164	2,769	2,170	13,048	821	
Ohio.....	8,073	20	1,086	2,430	3,071	1,452	14
Pennsylvania.....	11,025	12	705	7,853	1,772	683	
Rhode Island.....	1,601	1	6	158	1,409	27	
Wisconsin.....	1,409	7	41	351	939	71	

FANCY ARTICLES, NOT ELSEWHERE SPECIFIED.

United States....	12,191	467	1,307	1,002	7,713	1,689	13
Massachusetts.....	3,558	41	181	97	2,696	543	
Michigan.....	1,147	3	6	104	1,031	3	
New Jersey.....	1,112	3	29	17	1,063		
New York.....	3,430	187	773	338	1,796	336	
Pennsylvania.....	826	32	83	60	544	109	

MANUFACTURES.

HOURS OF LABOR—AVERAGE NUMBER OF WAGE EARNERS CLASSIFIED ACCORDING TO THE PREVAILING HOURS OF LABOR PER WEEK IN THE ESTABLISHMENTS IN WHICH THEY WORK, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

[See explanatory note on Table 8.]

Table 9--Contd. FERTILIZERS. Total wage earners (average number) by STATE for FERTILIZERS, with columns for WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS (48 and under, between 48 and 54, 54, between 54 and 60, 60, between 60 and 72, 72 and over).

FIREARMS AND AMMUNITION. Total wage earners (average number) by STATE for FIREARMS AND AMMUNITION, with columns for WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS (48 and under, between 48 and 54, 54, between 54 and 60, 60, between 60 and 72, 72 and over).

FLOUR-MILL AND GRISTMILL PRODUCTS. Total wage earners (average number) by STATE for FLOUR-MILL AND GRISTMILL PRODUCTS, with columns for WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS (48 and under, between 48 and 54, 54, between 54 and 60, 60, between 60 and 72, 72 and over).

FOOD PREPARATIONS. Total wage earners (average number) by STATE for FOOD PREPARATIONS, with columns for WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS (48 and under, between 48 and 54, 54, between 54 and 60, 60, between 60 and 72, 72 and over).

FOUNDRY AND MACHINE-SHOP PRODUCTS. Total wage earners (average number) by STATE for FOUNDRY AND MACHINE-SHOP PRODUCTS, with columns for WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS (48 and under, between 48 and 54, 54, between 54 and 60, 60, between 60 and 72, 72 and over).

FOUNDRY AND MACHINE-SHOP PRODUCTS—Continued. Total wage earners (average number) by STATE for FOUNDRY AND MACHINE-SHOP PRODUCTS—Continued, with columns for WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS (48 and under, between 48 and 54, 54, between 54 and 60, 60, between 60 and 72, 72 and over).

FUR GOODS. Total wage earners (average number) by STATE for FUR GOODS, with columns for WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS (48 and under, between 48 and 54, 54, between 54 and 60, 60, between 60 and 72, 72 and over).

FURNISHING GOODS, MEN'S. Total wage earners (average number) by STATE for FURNISHING GOODS, MEN'S, with columns for WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS (48 and under, between 48 and 54, 54, between 54 and 60, 60, between 60 and 72, 72 and over).

FURNITURE AND REFRIGERATORS. Total wage earners (average number) by STATE for FURNITURE AND REFRIGERATORS, with columns for WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS (48 and under, between 48 and 54, 54, between 54 and 60, 60, between 60 and 72, 72 and over).

PREVAILING HOURS OF LABOR.

HOURS OF LABOR—AVERAGE NUMBER OF WAGE EARNERS CLASSIFIED ACCORDING TO THE PREVAILING HOURS OF LABOR PER WEEK IN THE ESTABLISHMENTS IN WHICH THEY WORK, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

[See explanatory note on Table 8.]

Table 9—Contd.		WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS—							STATE.		WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS—															
STATE.	Total wage earners (average number).	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.	STATE.	Total wage earners (average number).	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.									
GAS AND ELECTRIC FIXTURES AND LAMPS AND REFLECTORS.																										
United States	18,861	922	2,789	4,897	7,194	2,768	191																			
California	553	246	23	284					Maryland	1,022			1	41	960											
Connecticut	2,249	1	5	1,633	609				Massachusetts	9,941	12	245	86	9,598												
Illinois	2,090	56	445	1,332	238	19			Michigan	2,545	8	308	807	756	666											
Massachusetts	663	33	270	314	46				Minnesota	1,052			48	866	138											
New Jersey	1,884	33	118	310	1,380	4	39		New Hampshire	3,129			6	3,123												
New York	6,017	87	1,453	1,702	1,906	864	5		New Jersey	2,506	24	109	107	2,140	126											
Ohio	1,437	39	201	452	462	136	147		New York	35,950	427	1,312	454	7,943	24,934	878										
Pennsylvania	1,482	43	98	151	1,125	65			North Carolina	5,151				689	2,524	1,938										
Wisconsin	552	5		171	8	368			Ohio	3,149	10	45	921	1,019	1,154											
GAS, ILLUMINATING AND HEATING.																										
United States	37,215	474	21	1,049	2,716	5,806	5,786	21,363	Pennsylvania	38,206	275	381	496	24,508	12,474	74										
California	1,666	127	7	965	4	533	30		Rhode Island	1,774		1		1,762	71											
Connecticut	928	11		57	173	264	420		South Carolina	839				839												
Illinois	6,301	7		138	562	144	5,447		Tennessee	3,117				840	1,323	954										
Indiana	928	5		55	161	248	459		Vermont	946				946												
Iowa	806	43	5	67	143	101	401		Virginia	1,715				1,241	474											
Massachusetts	2,292	23		735	314	12	1,913		Wisconsin	4,282	24	96	920	2,876	366											
Michigan	1,771	1		22	49	779	353	507	ICE, MANUFACTURED.																	
Minnesota	848	15		4	7	813	7	813	United States	16,114	306	30	283	965	2,007	1,975	10,549									
Missouri	941	4		15	6	13	71	846	California	656			28	257	131	117										
New Jersey	1,917	9		47	247	1,599			Illinois	804	3		2	142	84	139	334									
New York	6,422	22		2	100	400	858	5,010	Indiana	563	4			5	45	70	456									
Ohio	668	128	2	37	2	36	461		Kansas	539	10			65	140	377										
Pennsylvania	3,119	16	3	83	65	186	134	147	Louisiana	638				51	22	68	492									
Texas	575	10		14	49	703	35	253	Missouri	761	13			14	147	37	550									
Wisconsin	1,063	9		14	49	703	35	253	New York	1,124	91			76	65	107	560									
GLASS.																										
United States	68,911	11,358	16,603	8,707	13,923	10,764	3,423	4,133	Ohio	892	8			47	109	149	588									
California	640		100	540					Pennsylvania	1,006	38			69	19	229	1,113									
Illinois	3,507	94	957	80	676	448		1,700	Tennessee	779	2			23	56	696										
Indiana	9,544	1,850	2,109	1,978	1,575	1,534			Texas	1,437	30	16		46	121	97	1,121									
Kansas	1,435	831	126	166	39	273			IRON AND STEEL, BLAST FURNACES.																	
Maryland	1,052	181	482	389					United States	38,429				199	1,149	4,057	33,033									
Missouri	1,755		102		224		1,066	363	Alabama	3,783				108	1,454	2,221										
New Jersey	5,051	1,007	2,451	420	1,773				Illinois	2,493							2,493									
New York	3,114	309	776	280	328	1,361			Michigan	1,016							961									
Ohio	10,159	1,797	2,279	1,726	2,501	1,139	652	65	New Jersey	754							668									
Pennsylvania	23,710	3,049	4,406	1,645	6,235	5,468	1,257	1,650	New York	2,298				101	374	1,823										
Virginia	524		465	59					Ohio	7,295						606	6,689									
West Virginia	6,190	1,866	2,252	1,424	385	263			Pennsylvania	14,521				117	601	166	13,637									
GLOVES AND MITTENS, LEATHER.																										
United States	11,354	555	1,017	917	7,743	1,122			Tennessee	1,143				189			954									
California	570	188	340	42					Virginia	1,320				73		145	1,102									
Illinois	1,309	134	99	356	679	41			Wisconsin	758							758									
New York	6,287	115	241	193	5,490	248			IRON AND STEEL, STEEL WORKS AND ROLLING MILLS.																	
Wisconsin	1,642	53	64	188	875	462			United States	240,076	18,283	4,094	23,982	29,622	82,130	30,247	52,313									
HATS, FUR-FELT.																										
United States	25,064	2,182	7,985	5,163	8,957	773	4		California	1,038				348	69	179	442									
Connecticut	5,217	558	3,016	22	1,468	123			Connecticut	2,352				160	147	1,984	61									
Massachusetts	2,224	83		20	2,121				Delaware	710		290			420											
New Jersey	4,657	619	3,295	108	366	269			Illinois	17,584				2,763	1,142	3,230	24,10,202									
New York	5,013	672	1,060	36	3,236	9			Indiana	12,255				1,647		4,120	1,518	4,869								
Pennsylvania	7,220	65	370	4,919	1,533	333			Kentucky	2,372		1,446			256	180	490									
HOSIERY AND KNIT GOODS.																										
United States	129,275	908	3,331	4,753	65,422	49,934	4,927		Massachusetts	3,115		13	39	376	2,687											
Alabama	611				493	118			Michigan	1,183				317	866											
Connecticut	3,340	2		441	2,622	275			Missouri	2,227		846			1,381											
Georgia	2,743				1,120	658	965		New Jersey	4,671			225	1,607	2,134	224	1,081									
Illinois	2,913	83	553	78	1,320	879			New York	10,091				67	423	1,695	4,745	3,161								
Indiana	1,933				1,090	243			Ohio	38,556		1,483	44	5,412	7,290	13,352	6,296	4,709								
IRON AND STEEL, BOLTS, NUTS, WASHERS, AND RIVETS, NOT MADE IN STEEL WORKS OR ROLLING MILLS.																										
United States	11,345	52	137	1,286	4,249	5,521			Pennsylvania	128,911	12,245	3,237	11,014	12,242	45,527	17,021	24,675									
Connecticut	678	1			457	188			West Virginia	5,030		1,778		812	312	815	1,842									
Illinois	877				430	296			Wisconsin	2,124		10		102	977		1,065									
Massachusetts	1,217				578	120			IRON AND STEEL, STEEL WORKS AND ROLLING MILLS.																	
Michigan	686				565				United States	11,345	52	137	1,286	4,249	5,521											
New York	1,394	49	52	6	18	1,269			California	678	1			457	188											
Ohio	2,797				539	1,988			Illinois	877				430	296											
Pennsylvania	2,161	1	18	2	953	1,162			Massachusetts	1,217				578	120											
Rhode Island	770				770				Michigan	686				565												

MANUFACTURES.

HOURS OF LABOR—AVERAGE NUMBER OF WAGE EARNERS CLASSIFIED ACCORDING TO THE PREVAILING HOURS OF LABOR PER WEEK IN THE ESTABLISHMENTS IN WHICH THEY WORK, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

[See explanatory note on Table 8.]

Table 9—Contd. Table with columns for STATE, Total wage earners (average number), and WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS (48 and under, 49-54, 55-60, 61-66, 67-72, 73 and over). Section: JEWELRY.

Table with columns for STATE, Total wage earners (average number), and WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS. Section: LEATHER GOODS.

Table with columns for STATE, Total wage earners (average number), and WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS. Section: LEATHER, TANNED, CURRIED, AND FINISHED.

Table with columns for STATE, Total wage earners (average number), and WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS. Section: LIME.

Table with columns for STATE, Total wage earners (average number), and WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS. Section: LIQUORS, MALT.

Table with columns for STATE, Total wage earners (average number), and WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS. Section: LIQUORS, MALT—Continued.

Table with columns for STATE, Total wage earners (average number), and WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS. Section: LOCOMOTIVES, NOT MADE BY RAILROAD COMPANIES.

Table with columns for STATE, Total wage earners (average number), and WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS. Section: LUMBER AND TIMBER PRODUCTS.

Table with columns for STATE, Total wage earners (average number), and WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS. Section: MARBLE AND STONE WORK.

HOURS OF LABOR—AVERAGE NUMBER OF WAGE EARNERS CLASSIFIED ACCORDING TO THE PREVAILING HOURS OF LABOR PER WEEK IN THE ESTABLISHMENTS IN WHICH THEY WORK, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

[See explanatory note on Table 8.]

Table 9—Contd.

STATE.	Total wage earners (average number).	WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS—						
		48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.

POTTERY, TERRA-COTTA, AND FIRE-CLAY PRODUCTS.

United States	56,168	6,488	5,709	10,071	10,590	21,909	967	434
California	1,027	18		660		250	99	
Georgia	522	3			67	270	232	
Illinois	3,157	613	2	141	1,185	1,216		
Indiana	2,180	142		512	500	972		
Kentucky	1,319	378		68	299	574	17	
Maryland	720	337		101	20	262		
Missouri	3,158	65		241	1,706	1,120		
New Jersey	9,815	652	1,908	1,448	3,028	2,719		
New York	2,367	234	423	570	617	451		72
Ohio	16,519	2,143	2,660	3,838	1,053	6,703	117	
Pennsylvania	9,003	579	404	1,739	1,464	4,339	66	302
West Virginia	2,034	1,201	217	420	33	163		

PRINTING AND PUBLISHING.

United States	258,434	138,850	41,510	47,320	19,124	10,911	488	231
Alabama	1,117	447	32	351	99	188		
Arkansas	981	419	49	182	87	237	3	4
California	7,556	5,485	1,038	778	119	119	17	
Colorado	2,366	1,759	77	173	308	39	10	
Connecticut	2,878	1,372	659	474	346	27		
District of Columbia	1,565	1,250	161	61	83		1	
Florida	905	408	39	314	93	43	7	1
Georgia	2,395	793	226	664	302	390		20
Illinois	23,644	18,064	4,496	3,983	1,293	629	57	122
Indiana	6,750	3,912	500	1,002	628	706	3	5
Iowa	4,853	1,720	560	1,282	568	719	3	1
Kansas	3,232	1,264	184	720	608	442	8	6
Kentucky	3,135	1,074	804	779	180	283	5	10
Louisiana	1,544	773	195	356	119	91	1	9
Maine	1,651	573	142	690	208	38		
Maryland	3,386	1,170	1,082	679	240	215		
Massachusetts	17,532	11,404	1,853	2,911	1,342	20		2
Michigan	7,219	2,718	833	2,334	833	500	1	
Minnesota	5,641	1,905	2,106	863	395	210	162	
Mississippi	736	337	7	117	24	247	3	1
Missouri	10,790	6,457	974	1,883	856	614	5	1
Montana	691	339	5	177	164	6		
Nebraska	2,329	971	178	792	118	258	1	11
New Hampshire	677	180	76	132	205	84		
New Jersey	5,451	3,251	1,141	640	315	79	25	
New York	63,120	34,754	15,083	8,512	4,081	670	18	2
North Carolina	1,376	527	70	308	137	297	37	
North Dakota	788	377	46	238	58	39		
Ohio	15,756	6,888	1,951	4,070	1,485	744	18	
Oklahoma	1,698	1,122	58	323	32	163		
Oregon	1,459	1,188	81	166	7	13	4	
Pennsylvania	24,696	14,412	3,297	4,267	1,965	730	25	
Rhode Island	1,454	529	525	98	278	21	3	
South Carolina	334	336	122	126	34	196	7	13
South Dakota	825	207	73	447	7	91		
Tennessee	2,914	1,149	386	782	262	335		
Texas	4,408	2,191	608	759	320	497	29	4
Utah	667	433	253	69	198	7	2	
Vermont	660	181	61	317	61	46		
Virginia	2,555	726	341	1,105	178	197	6	2
Washington	2,624	1,878	294	324	37	86	2	3
West Virginia	1,255	601	35	479	41	99		
Wisconsin	5,360	2,219	744	1,613	333	415	22	14

RUBBER GOODS, NOT ELSEWHERE SPECIFIED.

United States	26,521	163	1,201	5,413	14,481	5,256	5	2
Connecticut	2,115		131		1,707	217		
Indiana	787				328	459		
Massachusetts	3,418	5	6	1,157	2,220	30		
New Jersey	4,255		15	10	2,571	1,659		
New York	2,066	101	82	88	930	856		
Ohio	10,352		843	4,080	5,158	301		
Pennsylvania	1,295	5	39	5	784	372		
Rhode Island	774		34	3	647	90		

STATE.	Total wage earners (average number).	WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS—						
		48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.

SEWING MACHINES, CASES, AND ATTACHMENTS.

United States	19,296	2	13	5,146	12,237	1,898		
Connecticut	2,696			699	1,982	15		
Illinois	1,713			683	776	274		
Indiana	2,203			2,161	11	47		
Massachusetts	899			881	8			
New Jersey	7,663			623	7,663	1,551		
Ohio	3,831				1,657			

SHIPBUILDING, INCLUDING BOAT BUILDING.

United States	40,506	3,865	2,674	9,883	10,045	14,038	1	
California	1,844	228	1,144	400		72		
Delaware	1,239			1,159	50	30		
Maine	1,755	26	3	179	1,265	282		
Maryland	1,793	74	32	464	1,056	167		
Massachusetts	3,604	94	170	658	2,673	9		
Michigan	2,344	2	3	85	1,093	1,161		
New Jersey	4,869	150	191	1,278	340	2,910		
New York	5,644	2,271	882	2,000	160	331		
Ohio	3,200	3	16	131	375	2,675		
Pennsylvania	3,558	378	156	143	2,842	39		
Rhode Island	635	1		512		22		
Virginia	5,352	13	4	259	11	5,095		
Washington	744	272	2	452		18		
Wisconsin	906	4		501	33	368		

SILK AND SILK GOODS, INCLUDING THROWSTERS.

United States	99,037	106	2,320	2,323	81,407	12,881		
Connecticut	8,703				8,064	639		
Maryland	655					655		
Massachusetts	4,109	1	39		4,099			
New Jersey	30,285	42	477	190	29,448	128		
New York	12,903	32	1,305	1,042	7,753	2,771		
North Carolina	739				196	543		
Pennsylvania	36,469	31	490	490	27,859	7,599		
Rhode Island	1,685				1,685			
Virginia	819				669	150		

SILVERWARE AND PLATED WARE.

United States	16,610	119	1,286	2,221	10,327	2,657		
Connecticut	6,223		230	525	3,561	1,907		
Massachusetts	2,465			300	2,165			
New Jersey	1,296		593	13	687	3		
New York	3,065	99	331	1,135	1,275	225		
Rhode Island	2,294			2	2,292			

SLAUGHTERING AND MEAT PACKING.

United States	89,728	4,903	4,138	10,504	4,275	64,776	638	494
California	1,641	55	37	455		1,029	47	18
Colorado	659			287		372		
Illinois	26,705	2,900	45	1,143	57	22,557	3	
Indiana	4,423	28			22	4,373		
Iowa	4,144	324		922	60	2,836		2
Kansas	10,591	371	2,941	834		6,442		3
Maryland	1,034	22	4	21	7	973	1	6
Massachusetts	3,325	59	35	70	1,337	1,819	4	1
Michigan	902	14		35	3	849	1	
Minnesota	1,921	1	13	22	2	1,881	2	
Missouri	4,674	4		1,960	59	2,650		1
Nebraska	6,015			734	1,484	3,786	2	9
New Jersey	1,817	116	261	44	136	1,090	16	154
New York	6,110	549	326	718	450	3,995	50	22
Ohio	3,086	26	6	484	90	2,333	67	80
Pennsylvania	3,050	63	125	44	271	2,331	160	56
Texas	3,639	9		1,631		1,949		50
Washington	828	16		31		776	5	
Wisconsin	1,890	135		734		1,021		

PREVAILING HOURS OF LABOR.

HOURS OF LABOR—AVERAGE NUMBER OF WAGE EARNERS CLASSIFIED ACCORDING TO THE PREVAILING HOURS OF LABOR PER WEEK IN THE ESTABLISHMENTS IN WHICH THEY WORK, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

[See explanatory note on Table 8.]

Table 9—Contd.		WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS—									WAGE EARNERS IN ESTABLISHMENTS WITH PREVAILING HOURS—																																																																																																																																																																																																																																																																																																																								
STATE.	Total wage earners (average number).	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.	STATE.	Total wage earners (average number).	48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	72 and over.																																																																																																																																																																																																																																																																																																																		
SMELTING AND REFINING, COPPER.																																																																																																																																																																																																																																																																																																																																			
United States....	15,628	203			9,975	2,599	2,641	210	United States....	39,511	14,786	2,647	1,022	280	19,607	997	172																																																																																																																																																																																																																																																																																																																		
Arizona.....	3,129				3,129				Alabama.....	3,519	1,243	187	245	24	1,393	359	65																																																																																																																																																																																																																																																																																																																		
California.....	744				744				Florida.....	18,143	8,344	1,983	635	147	6,859	149	26																																																																																																																																																																																																																																																																																																																		
New Jersey.....	2,322					1,238	1,084		Georgia.....	12,787	2,764	428	139	109	9,032	241	74																																																																																																																																																																																																																																																																																																																		
SOAP.																																																																																																																																																																																																																																																																																																																																			
United States....	12,999	635	1,786	1,998	3,849	4,706	23	2	United States....	18,084		76	1	7,626	10,232	149																																																																																																																																																																																																																																																																																																																			
Illinois.....	2,188	8	95	19	49	2,015		2	Connecticut.....	643				287	356																																																																																																																																																																																																																																																																																																																				
Missouri.....	554	2	46	310	41	155			Illinois.....	2,510				107	2,260	149																																																																																																																																																																																																																																																																																																																			
New Jersey.....	1,999	3	1,101	202	188	105			Massachusetts.....	3,718			1	682	3,035																																																																																																																																																																																																																																																																																																																				
New York.....	2,976	20	315	1,152	753	736			New Jersey.....	5,646				5,559	87																																																																																																																																																																																																																																																																																																																				
Ohio.....	1,774	9	30	1,209	526				New York.....	1,439				640	799																																																																																																																																																																																																																																																																																																																				
Pennsylvania.....	1,197	520	16	19	396	235	11		Ohio.....	2,096		76			2,020																																																																																																																																																																																																																																																																																																																				
STOVES AND FURNACES, INCLUDING GAS AND OIL STOVES.																																																																																																																																																																																																																																																																																																																																			
United States....	37,130	2,261	2,407	7,895	10,434	14,065	68		United States....	12,348	150	481	1,684	5,951	3,895	187																																																																																																																																																																																																																																																																																																																			
Illinois.....	4,499	430	53	1,107	811	2,098			Connecticut.....	1,420		26	34	881	479																																																																																																																																																																																																																																																																																																																				
Indiana.....	1,362	122	179	173	513	375			Illinois.....	724	16	26	34	242	271	135																																																																																																																																																																																																																																																																																																																			
Kentucky.....	564			164	196	204			Indiana.....	689	2	1	25	191	470																																																																																																																																																																																																																																																																																																																				
Massachusetts.....	1,703	44	48	1,431	180				Massachusetts.....	1,578	11	89	264	1,204	10																																																																																																																																																																																																																																																																																																																				
Michigan.....	4,482	255	671	80	1,180	2,316			Michigan.....	909		21	232	259	397																																																																																																																																																																																																																																																																																																																				
Missouri.....	2,013	72	502	512	99	828			Missouri.....	710	4		40	232	434																																																																																																																																																																																																																																																																																																																				
New Jersey.....	690	4	35	152	46	459			New Jersey.....	1,126		174	225	294	381	52																																																																																																																																																																																																																																																																																																																			
New York.....	4,247	373	105	811	1,543	1,347	68		New York.....	1,649	10	104	424	820	291																																																																																																																																																																																																																																																																																																																				
Ohio.....	7,274	336	350	1,539	3,116	1,933			Ohio.....	1,455	23	23	59	1,152	168																																																																																																																																																																																																																																																																																																																				
Pennsylvania.....	4,196	187	226	773	1,303	1,709			Pennsylvania.....	968	45	14	40	421	448																																																																																																																																																																																																																																																																																																																				
Tennessee.....	1,085	5	98	239	7	736			WIREWORK, INCLUDING WIRE ROPE AND CABLE.																																																																																																																																																																																																																																																																																																																										
Wisconsin.....	1,803		74		941	788			United States....	14,139	488	400	1,040	4,465	7,625	215	6	Illinois.....	653	1	107	252	192	101			Indiana.....	677	2	34	51	89	501			Kentucky.....	652	86		82	215	299			Maine.....	1,287	3		71	235	773	199	6	Massachusetts.....	1,371	17	9	21	1,137	187			Michigan.....	1,137	10	18	20	36	1,053			New Hampshire.....	637				505	132			New York.....	1,279	215	118	160	492	270	15		Ohio.....	1,208	22	3	228	218	737			Pennsylvania.....	1,343	47	32	58	514	692			Tennessee.....	845		7	13		825			WOOD, TURNED AND CARVED.																		United States....	168,722	423	1,092	1,102	119,728	45,300	1,075	2	Connecticut.....	7,789			87	4,741	2,961			Georgia.....	660			15	306	339			Indiana.....	776			2	774				Kentucky.....	818		9		738	70	1		Maine.....	8,754				8,050		1		Massachusetts.....	53,873	359	138	255	48,567	4,554			Michigan.....	554			25	51	478			New Hampshire.....	9,486				8,889	597			New Jersey.....	12,652		153	8	11,747	744			New York.....	9,460	30	649		4,570	4,211			Ohio.....	2,566	2	6		1,990	568			Pennsylvania.....	27,409	2		77	14,810	12,511			Rhode Island.....	24,924	2	95	284	22,748	1,795			Tennessee.....	1,654	1			67	1,029	557		Vermont.....	2,294		39		2,229				Virginia.....	542				542				West Virginia.....	599			4	1	594			Wisconsin.....	1,046	2		3	376	665			WOOLEN, WORSTED, AND FELT GOODS, AND WOOL HATS.																	
United States....	14,139	488	400	1,040	4,465	7,625	215	6																																																																																																																																																																																																																																																																																																																											
Illinois.....	653	1	107	252	192	101																																																																																																																																																																																																																																																																																																																													
Indiana.....	677	2	34	51	89	501																																																																																																																																																																																																																																																																																																																													
Kentucky.....	652	86		82	215	299																																																																																																																																																																																																																																																																																																																													
Maine.....	1,287	3		71	235	773	199	6																																																																																																																																																																																																																																																																																																																											
Massachusetts.....	1,371	17	9	21	1,137	187																																																																																																																																																																																																																																																																																																																													
Michigan.....	1,137	10	18	20	36	1,053																																																																																																																																																																																																																																																																																																																													
New Hampshire.....	637				505	132																																																																																																																																																																																																																																																																																																																													
New York.....	1,279	215	118	160	492	270	15																																																																																																																																																																																																																																																																																																																												
Ohio.....	1,208	22	3	228	218	737																																																																																																																																																																																																																																																																																																																													
Pennsylvania.....	1,343	47	32	58	514	692																																																																																																																																																																																																																																																																																																																													
Tennessee.....	845		7	13		825																																																																																																																																																																																																																																																																																																																													
WOOD, TURNED AND CARVED.																																																																																																																																																																																																																																																																																																																																			
United States....	168,722	423	1,092	1,102	119,728	45,300	1,075	2																																																																																																																																																																																																																																																																																																																											
Connecticut.....	7,789			87	4,741	2,961																																																																																																																																																																																																																																																																																																																													
Georgia.....	660			15	306	339																																																																																																																																																																																																																																																																																																																													
Indiana.....	776			2	774																																																																																																																																																																																																																																																																																																																														
Kentucky.....	818		9		738	70	1																																																																																																																																																																																																																																																																																																																												
Maine.....	8,754				8,050		1																																																																																																																																																																																																																																																																																																																												
Massachusetts.....	53,873	359	138	255	48,567	4,554																																																																																																																																																																																																																																																																																																																													
Michigan.....	554			25	51	478																																																																																																																																																																																																																																																																																																																													
New Hampshire.....	9,486				8,889	597																																																																																																																																																																																																																																																																																																																													
New Jersey.....	12,652		153	8	11,747	744																																																																																																																																																																																																																																																																																																																													
New York.....	9,460	30	649		4,570	4,211																																																																																																																																																																																																																																																																																																																													
Ohio.....	2,566	2	6		1,990	568																																																																																																																																																																																																																																																																																																																													
Pennsylvania.....	27,409	2		77	14,810	12,511																																																																																																																																																																																																																																																																																																																													
Rhode Island.....	24,924	2	95	284	22,748	1,795																																																																																																																																																																																																																																																																																																																													
Tennessee.....	1,654	1			67	1,029	557																																																																																																																																																																																																																																																																																																																												
Vermont.....	2,294		39		2,229																																																																																																																																																																																																																																																																																																																														
Virginia.....	542				542																																																																																																																																																																																																																																																																																																																														
West Virginia.....	599			4	1	594																																																																																																																																																																																																																																																																																																																													
Wisconsin.....	1,046	2		3	376	665																																																																																																																																																																																																																																																																																																																													
WOOLEN, WORSTED, AND FELT GOODS, AND WOOL HATS.																																																																																																																																																																																																																																																																																																																																			

CHAPTER XIII.

POWER USED IN MANUFACTURING.

Summary for all industries combined in the United States as a whole: 1869-1909.—The increasing importance of power in the manufacturing industries of the country is shown by Table 1, which gives for all industries combined the horsepower of the engines or motors employed by manufacturing concerns, as reported at each census from 1869 to 1909, inclusive.

Primary power, as the term is used by the Bureau of the Census, comprises all power which is primary from the standpoint of the manufacturing establishments using it. It includes, therefore, not only the power of engines and water wheels owned and operated by the manufacturing establishments, but also rented power—that is, the power of electric motors run by purchased current and any other power that may be purchased or rented from outside concerns. It should not be assumed that electric motors so operated are themselves rented, however, as they are in most cases owned by the establishments using the power. Primary power does not include the power of electric motors which are run by current generated in the same establishment, since to include this would evidently result in duplication.

The horsepower of electric motors run by current generated in the establishment where it is used is presented separately. This figure indicates the extent to which electric motors are being used for the distribution of the power generated by steam engines or other primary motors within the establishment, a matter of considerable interest, though without any direct bearing on the extent of the use of power in manufacturing industries. The total horsepower of all electric motors, including that of motors run by purchased current (classified as rented electric power) is also given, as another matter of incidental interest.

The power reported for custom sawmills and gristmills and for cotton ginneries is included in the figures for the censuses prior to 1899, but not in those for that or subsequent censuses. The amount of power used in these establishments is comparatively small, however, and its inclusion has only a slight effect on the statistics for all industries combined, although it has an appreciable effect in the case of some states and of the industries directly concerned.

POWER.	HORSEPOWER. ¹						PER CENT DISTRIBUTION.					
	1909	1904	1899	1889	1879	1869	1909	1904	1899	1889	1879	1869
Primary power, total.....	18,675,376	13,487,707	10,097,893	5,938,635	3,410,837	2,346,142	100.0	100.0	100.0	100.0	100.0	100.0
Owned.....	16,802,706	12,854,805	9,778,418	5,850,064	3,410,837	2,346,142	90.0	95.3	96.8	98.5	100.0	100.0
Steam engines.....	14,199,339	10,825,348	8,139,570	4,581,305	2,185,458	1,215,711	76.0	80.3	80.6	77.1	64.1	51.8
Gas and other internal-combustion engines.....	751,188	289,423	134,742	8,630	(?)	(?)	4.0	2.1	1.3	0.2	(?)	(?)
Water wheels.....	1,807,489	1,641,049	1,454,112	1,255,045	1,225,379	1,130,431	9.7	12.2	14.4	21.1	35.9	48.2
Water motors.....	15,449	5,931	(?)	(?)	(?)	(?)	0.1	(?)	(?)	(?)	(?)	(?)
Other.....	29,293	92,154	49,985	4,784	(?)	(?)	0.2	0.7	0.5	0.1	(?)	(?)
Rented.....	1,872,670	632,902	319,475	88,571	(?)	(?)	10.0	4.7	3.2	1.5	(?)	(?)
Electric.....	1,749,031	441,589	182,562	(?)	(?)	(?)	9.4	3.3	1.8	(?)	(?)	(?)
Other.....	123,639	191,313	136,913	88,571	(?)	(?)	0.7	1.4	1.4	1.5	(?)	(?)
Electric motors.....	4,817,140	1,592,475	492,936	15,569	(?)	(?)	100.0	100.0	100.0	100.0	(?)	(?)
Run by current generated by establishment.....	3,068,109	1,150,886	310,374	(?)	(?)	(?)	63.7	72.3	63.0	100.0	(?)	(?)
Run by purchased current.....	1,749,031	441,589	182,562	(?)	(?)	(?)	36.3	27.7	37.0	(?)	(?)	(?)

¹ For 1899 the figures include the power reported for hand trades and neighborhood industries, except custom gristmills, custom sawmills, and cotton ginneries. Prior to 1899 they include that for all hand trades and neighborhood industries.

² Not reported.

³ Less than one-tenth of 1 per cent.

⁴ Not reported separately.

The total primary horsepower of manufacturing establishments in 1909 was 18,675,376, as compared with 2,346,142 in 1869. The percentages of increase for the four decades from 1869 to 1909 were 45.4, 74.1, 70, and 84.9, respectively. Of the total increase in primary power for the 40 years, amounting to 16,329,234 horsepower, steam power contributed 79.5 per cent, water power 4.2 per cent, the power of gas

and other internal-combustion engines 4.6 per cent, rented electric power 10.7 per cent, and other power nine-tenths of 1 per cent. In 1909, 90 per cent of the primary horsepower was owned power and 10 per cent was rented power, most of the latter being electric. The table shows a rapid increase in the percentage of rented power, beginning with 1899, when rented electric power was first reported separately.

Only steam power and water power (both forms representing owned power) were reported at the censuses of 1869 and 1879, other forms being then very unimportant. Slightly more than one-half (51.8 per cent) of the total power used in manufactures in 1869 was steam power. This proportion increased at each succeeding census until 1899, when the proportion had reached 80.6 per cent; during the decade 1899-1909, however, the proportion declined, being only 76 per cent in 1909. The amount of steam power reported for 1909 was 14,199,339 horsepower, or nearly twelve times the amount in 1869.

On the other hand, water power used directly in manufacturing has constituted a smaller proportion of the total primary power used in manufacturing at each succeeding census, representing only 9.8 per cent of the total primary power in 1909, as compared with 48.2 per cent in 1869. There was an actual increase in this form of power for the 40-year period, however, amounting to 692,457 horsepower, or 61.3 per cent. It should be noted, further, that a large part of the electric current purchased by manufacturing establishments is generated by water power. If the amount of the water power thus indirectly used by manufacturers could be ascertained and added to that directly used, the total would show a rapid increase, especially for the five-year period 1904-1909. The development of long-distance electric transmission, which makes it possible to use water power which is far distant from the cities and other places which are most desirable as locations for manufacturing establishments, is doubtless largely responsible for the marked increase in the use of rented electric power.

Gas engines, as the term is here used, include all kinds of internal-combustion engines, not only those using natural or manufactured gas and blast furnace gases, but also those using gasoline, crude petroleum, kerosene, and alcohol. The first United States census of manufactures at which statistics in regard to the use of internal-combustion engines (all classes of which are sometimes for brevity called gas engines) were obtained was that of 1889, when a total of 8,930 horsepower was reported for such engines. In 1909 the horsepower of this class of engines was 751,186, or more than eighty times as great, and the rates of increase for many of the states have been even more remarkable. The proportion of the total horsepower represented by that of such engines rose from two-tenths of 1 per cent in 1889 to 1.3 per cent in 1899, 2.1 per cent in 1904, and 4 per cent in 1909.

While much of the popularity of the gas engine is due to its adaptability for use where but a small amount of power is required, or where the power is not used continuously, the average capacity of these engines has increased steadily, from 9.4 horsepower in 1899 to 13.5 in 1904 and 21.9 in 1909. While the gas engine is used to some extent in states where natural gas is not available, this form of power is

most prominent in states which are large producers of natural gas. The extensive application of electric power has probably somewhat retarded the growth in the use of the gas engine, particularly in establishments where comparatively little power is required, but the further improvement of producer-gas systems, whereby the low grades of coal can be utilized for the development of power by means of these engines, will doubtless enhance their value. Again, part of the increased use of the gas engine is due to the fact that blast-furnace gas can be used in internal-combustion engines. In 1904 the blast-furnace branch of the iron and steel industry reported a total of 3,757 horsepower for gas engines, while in 1909 the horsepower of the gas engines in the industry had increased to 125,230, and their average capacity had risen from 139 horsepower to 2,087 horsepower.

The growth in the use of electricity in manufacturing industries has been remarkable. Statistics of the horsepower of electric motors used in manufacturing were first obtained at the census of 1889, when a total of 15,569 horsepower was reported. Rented electric power was first reported separately in 1899, in which year 182,562 horsepower was used. In 1909 the amount of this kind of power had increased to 1,749,031 horsepower, or nearly ten times as much as in 1899. Of the total rented power reported in 1899, electric power constituted 57.1 per cent, but the proportion had reached 93.4 per cent in 1909. All other kinds of rented power combined decreased in absolute amount during the decade.

Electric power is largely applied by means of relatively small motors distributed throughout the manufacturing establishment, some of which are in general use while others are required only at infrequent intervals. As the electric power can be used or cut off at will, it proves both convenient and economical, especially for the operation of machinery which is in use only a part of the time; and the cleanliness and quietness of the electric motor as compared with other sources of power also give it manifest advantages in certain industries, such as the clothing industries. These inherent advantages, taken in connection with the low cost, in many localities, of electric current generated by water power, explain the rapid increase in the use of rented electric power.

The electric motor run by purchased current furnishes power for manufacturing with a minimum of trouble or attention on the part of the operator, and for this reason it is often used with profit, especially in small establishments, even when rather high rates have to be paid for the current. Where large amounts of power are used, however, the cost of the current becomes of greater moment, and it often proves economical for an establishment which desires to enjoy the advantages of electrically driven machinery to install its own dynamos and transform at least a part of its primary power into electric energy, to be

thus distributed to the various machines as needed. In 1909 the horsepower of motors used in this way for the distribution of power by means of electric current generated in the same establishment was 3,068,109, as compared with 1,749,031 for motors run by purchased current; the rate of increase in the two classes between 1899, the first year when both were reported, and 1909, was about the same.

The horsepower of motors designed to be run by current generated in the establishment where used often exceeds the total primary power of the establishment, since in a number of industries many machines which are operated only a small part of the time are provided with individual motors. In the foundries and machine shops of Massachusetts, for example, there were in 1909 electric motors operated by current generated in the establishments with an indicated horsepower of 104,727, or nearly twice the total primary power of the industry in the state, which was 52,802; and in the locomotive industry as a whole the horsepower of secondary electric motors was in excess of the total primary power. It is evident, therefore, that the horsepower of these motors has no necessary relation to the total amount of power used (the total primary power), and that the extent to which secondary motors are employed will depend, in general, upon factors which do not affect the use of primary power. That is, while motors to be run by purchased current may be installed, by reason of their convenience, in establishments where no power at all would otherwise be used, secondary motors will ordinarily be installed only in plants where primary power was already previously used.

The forms of owned power included under the heading of "other" represent chiefly compressed-air and hot-air engines. Possibly some power units which, through a misunderstanding in the preparation of the reports, were not properly assigned to some one of the specified kinds of power, are included in this group.

Number of establishments using power.—As previously explained, the census of 1909 was not confined to large manufacturing establishments, but embraced all having products valued at \$500 or more, provided they were not engaged in the hand trades or neighborhood industries. In some of the industries distinguished at the census of 1909 little power is required and only a small proportion of the establishments reported any power at all. A good many small manufacturing establishments in other industries likewise used no power. A few establishments failed to report whether or not they employed power; the number of these was so small, however, as to have no appreciable effect on the statistics.

Of the 268,491 establishments covered by the census of 1909, 185,042, or 68.9 per cent, reported the use of power, as compared with 133,418 establishments,

or 64.3 per cent of the total number, in 1899. The total number of establishments shown for 1899 includes some which, under the definition of "factories" adopted for later censuses, would have been omitted, so that these figures are not strictly comparable. Undoubtedly, however, the use of power was more general in 1909 than in 1899. The total number of establishments in all industries increased 29.4 per cent during the decade 1899-1909, while the number reporting power increased 38.7 per cent. The increase in the proportion of establishments using power is due chiefly to the more general use of rented electric power by small establishments, and in some measure also to the increased use of gas or other internal-combustion engines by such establishments.

The following table presents statistics as to the number of establishments reporting power and the rented electric power used, for 1909, 1904, and 1899, for the 13 industries in which there was a great increase during the decade in the proportion of establishments using power:

Table 2	Census.	NUMBER OF ESTABLISHMENTS.			RENTED ELECTRIC POWER.	
		Total.	Reporting power.		Amount.	Per cent of total power used.
			Number.	Per cent of total.		
All industries.....	1909	268,491	185,042	68.9	1,749,031	9.4
	1904	216,180	134,481	62.2	441,589	3.3
	1899	207,514	133,418	64.3	182,562	1.8
Brick and tile.....	1909	4,215	3,523	83.6	16,719	4.0
	1904	4,634	3,476	75.0	2,566	1.0
	1899	5,423	3,232	59.6	.....	.....
Carriages and wagons and materials.....	1909	5,492	3,583	65.2	24,969	19.8
	1904	5,588	2,763	49.4	8,780	8.3
	1899	6,792	2,269	33.4	3,014	3.6
Clothing, men's, including shirts.....	1909	6,354	4,402	69.3	18,816	44.0
	1904	5,145	2,764	53.7	9,581	32.1
	1899	6,419	2,033	31.7	5,076	24.8
Clothing, women's.....	1909	4,558	3,218	70.6	15,175	68.1
	1904	3,351	1,834	54.7	7,494	50.2
	1899	2,701	979	36.2	3,093	31.0
Fur goods.....	1909	1,241	418	33.7	1,430	67.5
	1904	897	143	16.5	484	24.3
	1899	734	69	9.4	253	27.9
Liquors, distilled.....	1909	613	479	78.1	708	1.5
	1904	805	622	77.3	41	0.1
	1899	965	538	55.8	100	0.3
Millinery and lace goods.....	1909	1,579	1,025	64.9	4,048	51.1
	1904	890	477	53.5	1,663	35.1
	1899	591	251	42.5	741	40.0
Mineral and soda waters.....	1909	4,916	3,561	72.4	5,504	28.4
	1904	3,468	1,885	54.4	1,760	14.4
	1899	2,763	902	32.6	465	5.8
Printing and publishing.....	1909	31,445	21,871	69.6	197,692	66.4
	1904	27,793	16,057	57.8	75,479	45.4
	1899	23,814	11,687	49.1	33,582	28.0
Rubber goods, not elsewhere specified.....	1909	227	202	89.0	3,499	4.4
	1904	224	188	83.9	1,096	2.3
	1899	261	194	74.3	197	0.5
Shipbuilding, including boat building.....	1909	1,353	914	67.6	9,264	10.5
	1904	1,097	611	55.7	2,367	3.0
	1899	1,107	425	38.4	975	1.6
Turpentine and rosin.....	1909	1,585	1,134	71.5	.....	.....
	1904	1,287	182	14.1	.....	.....
	1899	1,503	135	9.0	.....	.....
Wirework, including wire rope and cable.....	1909	611	436	71.4	5,642	28.0
	1904	649	398	61.3	2,000	10.9
	1899	596	289	48.5	451	3.5

For the turpentine and rosin industry no electric power was reported. In the case of the brick and tile, carriage and wagon, distillery, and rubber-goods industries there was a considerable decrease in the total number of establishments reported, which may account in part for the increase in the proportion of establishments using power. The other 8 industries included in the table show a rapid increase in the use of rented electric power, and in most of them such power formed a very large proportion of the total primary power. It seems evident, therefore, that the convenience of electric motors as a source of power for small establishments, especially those located in cities, is one of the principal factors tending to increase the proportion of the total number of establishments using power.

Description of detailed tables for individual industries.—General Table II gives, among other data, detailed statistics of power in 1909 for the 259 industries for which separate figures can be given, showing the number of establishments reporting power, the total primary power, the number of engines and motors, and the amount of the different kinds of power, both owned and rented, that make up this total. It also gives the number and horsepower of electric motors run by current generated in the same establishment, as well as the number and horsepower of all electric motors taken together.

Table 9, at the end of this chapter, gives statistics of power for the 86 industries reporting 10,000 or more wage earners, by states.

Horsepower in leading industries: 1909, 1904, and 1899.—Table 3 shows for 102 industries the amount of each of the several kinds of primary power reported in 1909, 1904, and 1899. The total electric power is also shown, including that of motors operated by current generated in the establishments, in addition to that of motors operated by purchased current. The first 86 of these industries were selected because they were the most important from the standpoint of employment, each reporting 10,000 or more wage earners in 1909. There were a number of industries, however, that reported a greater amount of power than some of those included in these 86 leading industries, and the statistics of power for 16 of these industries—those which in 1909 reported more than 20,000 horsepower—are also shown in the table. The cane sugar and molasses industry and the sugar-refining industry, each of which used more than 20,000 horsepower in 1909, have been combined in this table under the heading of "sugar and molasses, not including beet sugar," because comparative figures for 1904 and 1899 are not available for the industries separately.

The total primary power used in 1909 exceeded 800,000 horsepower in 7 industries, namely, the lumber industry, the steel works and rolling mills, the manufacture of paper and wood pulp, and of cotton goods, the blast-furnace industry, the foundries and machine shops, and the flour mills and gristmills. The primary power for these 7 industries combined amounted

to 10,438,153 horsepower, or 55.9 per cent of the total for all industries.

The industries listed in Table 3 differ very widely with respect to the relative importance of the several kinds of power. This is due partly to differences in the geographic location of the industries, which affect the character of the power most easily available, and partly to differences in the character of the machinery used, which affect the adaptability of the different kinds of power.

Steam power constituted 76 per cent of the total primary power reported for all industries combined, and in very many of the individual industries it was by far the most important kind of power used. In 2 of the 5 industries reporting the largest amounts of primary power—the lumber industry and the steel works and rolling mills, it formed more than nine-tenths of the total and in one other—the blast furnaces—it formed more than seven-eighths; and in each of these 5 industries the horsepower of steam engines exceeded 1,000,000.

In only one of the industries included in Table 3, the manufacture of paper and wood pulp, was water power the most important kind of power used. The water power used in this industry amounted to 788,146 horsepower, or 60.4 per cent of the total primary power. Large amounts of water power were also used in the cotton-goods industry and in the flour-mill and grist-mill industry.

Electric power (rented) formed a larger proportion of the total primary power than any other kind in 1909 in 11 industries, namely, the street-railroad repair shops, the manufacture of fur goods, printing and publishing, the manufacture of artificial flowers and feathers and plumes, the roasting and grinding of coffee and spice, the manufacture of millinery and lace goods, of leather goods, of mattresses and spring beds, and of jewelry, the bakery industry, and the men's clothing industry. In 1899, however, steam engines constituted the most important source of power for 8 of these industries, and gas engines for the other 2.

The total primary horsepower in each of the 97 industries for which comparative statistics for 1899 are given in Table 3 increased during the decade 1899–1909, and all except 5—the manufacture of glucose and starch, coke, firearms and ammunition, explosives, and rubber boots and shoes—show an increase for the five-year period 1904–1909. Steam power decreased in 2 of the industries between 1899 and 1909, and in 14 industries between 1904 and 1909. Water power, however, shows a decrease for the decade in 34 industries, and for the five-year period 1904–1909 in 43 industries. Twenty-four industries show a decrease in the amount reported for gas-engine and "other" power for the decade, and 30 for the period from 1904 to 1909. Only 2 of the industries covered by the table, however, show any decrease, either for the decade or for the period 1904–1909, in the amount of rented electric power.

MANUFACTURES.

HORSEPOWER USED IN 102 LEADING INDUSTRIES: 1909, 1904, AND 1899.

Table 3 INDUSTRY.	PRIMARY HORSEPOWER.					Electric horsepower owned and rented.
	Total.	Steam engines. ¹	Water wheels and motors. ¹	Gas engines ¹ and "other." ²	Electric, rented.	
All industries:						
1909	18,675,376	14,199,339	1,822,888	904,118	1,749,031	4,817,140
1904	13,467,707	10,825,348	1,647,860	572,890	441,589	1,592,475
1899	10,097,693	8,139,579	1,454,112	321,640	182,562	492,936
INDUSTRIES WITH OVER 10,000 WAGE EARNERS IN 1909.						
Agricultural implements:						
1909	100,601	71,394	8,390	5,133	15,684	38,905
1904	89,738	75,018	6,300	4,592	3,828	20,713
1899	70,646	61,147	6,758	1,641	1,100	7,643
Artificial flowers and feathers and plumes:						
1909	334	81	12	37	204	244
1904	184	110		32	42	42
1899	113	28		45	40	40
Automobiles, including bodies and parts:³						
1909	75,550	39,325	287	8,297	27,641	41,829
1904	10,109	7,376	80	1,602	1,051	4,229
Boots and shoes, including cut stock and findings:						
1909	96,302	60,772	2,815	15,334	17,381	32,881
1904	63,968	44,387	2,270	11,352	5,959	12,663
1899	55,489	38,621	2,663	10,382	3,823	5,525
Boots and shoes, rubber:						
1909	25,903	22,293	1,883	15	1,712	3,407
1904	26,084	24,145	1,300	600	39	1,191
1899	25,017	23,442	1,525	50		188
Boxes, fancy and paper:						
1909	23,323	10,727	2,425	3,244	6,927	9,415
1904	15,117	8,337	1,718	2,924	2,138	3,057
1899	9,280	6,077	364	1,991	854	1,811
Brass and bronze products:						
1909	106,120	78,101	3,374	6,246	18,399	33,462
1904	69,494	58,869	2,959	4,523	3,143	8,846
1899	47,257	40,330	2,271	3,917	739	1,635
Bread and other bakery products:						
1909	65,298	25,506	334	8,298	31,160	39,795
1904	37,241	22,008	452	5,818	8,363	11,993
1899	22,472	17,802	329	2,316	2,025	2,477
Brick and tile:						
1909	341,169	313,164	272	11,014	16,719	21,130
1904	255,362	246,200	458	6,138	2,506	3,086
1899	176,700	175,456	208	1,036		505
Butter, cheese, and condensed milk:						
1909	101,349	90,802	1,465	3,716	5,360	8,276
1904	93,845	88,077	1,411	2,160	1,597	2,378
1899	88,062	84,606	1,594	1,486	316	627
Buttons:						
1909	12,831	7,594	850	1,554	2,833	3,416
1904	6,982	4,374	517	1,523	568	679
1899	4,165	2,305	144	1,599	117	187
Canning and preserving:						
1909	81,179	70,362	398	4,950	5,469	8,728
1904	60,831	56,065	400	2,530	1,776	3,150
1899	38,624	35,990	219	1,792	623	1,542
Carpets and rugs, other than rag:						
1909	38,553	30,680	3,305	1,859	2,709	10,906
1904	33,945	29,631	2,988	1,033	293	5,587
1899	26,740	23,091	3,145	504		192
Carriages and wagons and materials:⁴						
1909	126,032	82,911	4,667	13,485	24,969	39,424
1904	106,159	82,414	3,917	11,048	8,780	16,434
1899	83,771	70,864	3,842	6,051	3,014	5,895
Cars and general shop construction and repairs by steam-railroad companies:						
1909	293,361	254,942	450	4,183	33,786	161,288
1904	167,973	143,110	203	18,588	6,074	52,635
1899	95,087	90,342	56	4,469	20	4,563
Cars and general shop construction and repairs by street-railroad companies:						
1909	35,794	4,831		9	30,954	33,024
1904	3,154	1,355	600	40	1,159	10,358
1899	6,443	4,530	75	650	1,188	7,399
Cars, steam-railroad, not including operations of railroad companies:						
1909	97,797	89,123	370	1,848	6,456	61,060
1904	55,994	52,261	225	3,192	316	14,505
1899	33,395	32,293	392	710		1,292
Cement:⁴						
1909	371,799	295,038	3,430	19,165	54,166	158,749
1904	149,604	137,112	2,980	3,761	5,751	35,292
Chemicals:⁵						
1909	208,604	103,273	11,066	2,208	92,057	156,699
1904	132,262	70,194	6,469	45,521	10,078	18,188
1899	90,349	69,560	1,915	643	18,281	20,263
Clocks and watches, including cases and materials:						
1909	14,957	12,593	284	468	1,612	7,023
1904	10,731	9,180	449	210	892	3,513
1899	7,251	6,300	443	377	131	845
Clothing, men's, including shirts:						
1909	42,725	16,003	1,380	6,526	18,816	22,894
1904	29,829	14,621	910	4,717	9,581	11,337
1899	20,457	10,533	695	4,153	5,076	6,279
Clothing, women's:						
1909	22,294	4,112	206	2,801	15,175	16,085
1904	14,916	4,172	309	2,941	7,494	8,027
1899	9,962	2,822	519	3,528	3,093	3,376

¹ Owned power only.² Under "other" are included all kinds of primary power, both owned and rented, not specifically covered by other headings. The amount of such power reported at the respective censuses was as follows: 1909, 152,932 horsepower; 1904, 283,467 horsepower; 1899, 186,898 horsepower.³ "Carriages and wagons and materials" for 1899 includes "automobiles, including bodies and parts."⁴ Included under "lime" for 1899.⁵ Includes for 1899 "sulphuric, nitric, and mixed acids" and "wood distillation, not including turpentine and rosin."⁶ Includes electricity used in the electrolytic process of extracting aluminum from alumina.

HORSEPOWER USED IN 102 LEADING INDUSTRIES: 1909, 1904, AND 1899—Continued.

Table 3—Continued.

INDUSTRY.	PRIMARY HORSEPOWER.					Electric horsepower owned and rented.
	Total.	Steam engines. ¹	Water wheels and motors. ¹	Gas engines ¹ and "other." ²	Electric, rented.	
INDUSTRIES WITH OVER 10,000 WAGE EARNERS IN 1909—continued.						
Coke:						
1909.....	62,602	44,591	500	3,757	13,754	41,004
1904.....	66,669	59,829	188	5,465	1,187	10,509
1899.....	34,767	29,148		5,619		1,402
Confectionery:						
1909.....	35,870	25,090	8	2,165	8,607	16,983
1904.....	24,292	19,597	21	1,314	3,360	6,832
1899.....	19,410	14,197	162	2,497	2,554	3,793
Cooperage and wooden goods, not elsewhere specified:						
1909.....	65,108	54,971	3,818	3,500	2,819	4,524
1904.....	56,988	49,940	4,060	2,013	969	2,086
1899.....	38,462	34,481	2,770	996	215	683
Copper, tin, and sheet-iron products: ³						
1909.....	62,366	34,650	420	9,398	17,898	30,771
1904.....	30,229	20,645	272	4,306	5,006	7,454
1899.....	28,829	14,571	118	2,590	11,550	12,160
Cordage and twine and jute and linen goods:						
1909.....	78,549	58,855	15,768	1,404	2,522	15,816
1904.....	66,244	52,532	12,599	354	759	8,293
1899.....	47,999	38,473	8,249	1,249	28	1,624
Corsets:						
1909.....	4,581	3,320		200	1,061	2,804
1904.....	3,284	2,695	10	317	262	434
1899.....	3,638	2,971	30	446	191	455
Cotton goods, including cotton small wares:						
1909.....	1,296,517	869,838	303,024	15,143	108,512	235,902
1904.....	980,604	707,607	252,923	11,979	14,095	67,139
1899.....	795,834	531,611	251,850	10,292	2,081	17,594
Cutlery and tools, not elsewhere specified:						
1909.....	68,294	38,780	13,382	7,807	8,325	17,785
1904.....	54,397	34,104	11,459	5,181	3,653	8,427
1899.....	38,283	22,711	11,988	3,003	581	1,223
Dyeing and finishing textiles:						
1909.....	107,746	92,284	10,114	2,683	2,685	24,011
1904.....	84,868	70,385	10,130	3,266	1,087	11,724
1899.....	69,238	57,216	9,474	2,498	50	1,999
Electrical machinery, apparatus, and supplies:						
1909.....	158,768	99,883	1,114	7,726	50,045	164,540
1904.....	105,376	77,099	1,181	5,873	21,313	61,753
1899.....	43,674	34,018	835	4,747	4,074	24,256
Fancy articles, not elsewhere specified:						
1909.....	8,310	5,131	452	944	1,783	4,115
1904.....	6,886	3,537	296	1,261	792	1,021
1899.....	4,386	2,834	426	848	278	343
Fertilizers:						
1909.....	64,711	49,740	365	2,027	12,579	19,238
1904.....	47,989	44,672	353	606	2,358	5,275
1899.....	38,680	37,121	359	980	220	1,061
Firearms and ammunition:						
1909.....	17,840	10,741	989	3,832	2,278	8,472
1904.....	21,408	18,083	1,139	1,554	632	3,777
1899.....	6,146	755	755	398	171	639
Flour-mill and gristmill products:						
1909.....	853,584	473,363	264,131	66,189	49,901	67,066
1904.....	775,318	473,639	258,352	27,693	15,584	20,308
1899.....	670,719	407,475	242,621	16,217	4,206	5,571
Food preparations: ⁴						
1909.....	55,166	35,283	1,150	5,273	13,480	20,924
1904.....	28,162	22,118	1,158	1,763	3,123	4,239
1899.....	16,485	12,984	683	1,234	584	799
Foundry and machine-shop products: ⁵						
1909.....	889,305	546,206	18,702	111,420	192,977	623,914
1904.....	608,165	450,891	18,633	81,282	55,359	199,625
1899.....	443,085	302,096	22,209	42,751	16,929	54,907
Fur goods:						
1909.....	2,120	648		42	1,430	1,440
1904.....	1,904	1,027	272	211	484	484
1899.....	907	465	25	164	253	271
Furnishing goods, men's: ⁶						
1909.....	12,116	7,501	480	1,147	2,988	4,860
1904.....	5,421	3,504	28	912	977	1,586
1899.....	3,552	2,371	206	430	539	543
Furniture and refrigerators:						
1909.....	221,451	184,425	6,848	9,758	20,420	43,252
1904.....	169,774	149,482	6,890	8,816	4,588	9,565
1899.....	119,608	105,550	6,637	5,815	1,606	3,392
Gas and electric fixtures and lamps and reflectors:						
1909.....	15,862	6,930	244	2,792	5,896	8,788
1904.....	8,444	5,125	77	1,878	1,364	2,213
1899.....	6,991	4,916	165	1,322	588	1,081
Gas, illuminating and heating:						
1909.....	128,350	115,332	2,814	7,481	2,723	17,436
1904.....	73,101	67,482	359	3,806	1,454	3,978
1899.....	31,797	31,165	33	547	52	271
Glass:						
1909.....	123,132	98,971	5	20,731	3,425	43,589
1904.....	91,478	76,599	31	14,283	583	16,769
1899.....	52,943	49,791	27	3,081	44	6,630
Gloves and mittens, leather:						
1909.....	2,889	1,625	250	164	850	1,000
1904.....	2,725	1,676	250	363	436	472
1899.....	2,165	1,312	211	407	235	258

¹ Owned power only.² Under "other" are included all kinds of primary power, both owned and rented, not specifically covered by other headings.³ Includes for 1909 some establishments manufacturing enameled stamped ware which were included under "enameling and japanning" in 1904 and 1899.⁴ Includes for 1909 some establishments compounding table sirups which were included under "sugar and molasses" in 1904 and 1899.⁵ Includes for 1899 "stoves and furnaces, including gas and oil stoves," and "locomotives, not made by railroad companies."⁶ Includes for 1909 some establishments manufacturing suspenders, garters, and elastic woven goods, which were classified under "rubber goods, not elsewhere specified," or under "millinery and lace goods" in 1904 and 1899.

MANUFACTURES.

HORSEPOWER USED IN 102 LEADING INDUSTRIES: 1909, 1904, AND 1899—Continued.

Table 3—Continued.	INDUSTRY.	PRIMARY HORSEPOWER.				Electric horsepower owned and rented.
		Total.	Steam engines. ¹	Water wheels and motors. ¹	Gas engines ¹ and "other." ²		Electric, rented.
INDUSTRIES WITH OVER 10,000 WAGE EARNERS IN 1909—continued.						
Hats, fur-felt:						
1909	19,245	16,653	20	400	2,172	6,186
1904	16,630	15,871	68	322	369	2,434
1899	11,843	11,570	25	109	79	861
Hosiery and knit goods:						
1909	103,709	74,560	12,038	3,825	13,286	25,485
1904	78,709	57,460	13,532	3,129	4,648	9,724
1899	57,346	39,693	14,824	1,525	1,304	2,049
Ice, manufactured:						
1909	317,789	304,572	2,262	5,541	5,414	14,253
1904	191,660	184,570	1,075	4,947	1,658	4,579
1899	100,421	95,937	807	3,288	389	1,881
Iron and steel, blast furnaces:						
1909	1,173,422	1,033,033	309	125,230	14,850	135,143
1904	773,278	762,382	680	10,077	139	52,610
1899	497,272	494,798	582	1,892		8,663
Iron and steel, steel works and rolling mills:						
1909	2,100,978	1,955,346	5,829	81,006	58,797	716,609
1904	1,640,299	1,610,612	4,795	27,094	6,798	254,258
1899	1,100,801	1,086,897	8,067	4,960	877	64,653
Iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills:						
1909	22,113	14,838	954	2,142	4,179	8,625
1904	13,825	11,582	461	1,065	717	2,888
1899	9,165	7,612	935	473	145	1,815
Jewelry:						
1909	11,204	2,744	200	3,081	5,179	5,759
1904	7,872	2,413	92	2,568	2,799	2,974
1899	6,656	1,885	228	2,992	1,551	1,577
Leather goods:						
1909	28,148	10,028	1,373	1,801	14,946	16,663
1904	16,257	9,231	1,409	1,976	3,641	4,578
1899	10,947	7,150	679	1,565	1,553	1,685
Leather, tanned, curried, and finished:						
1909	148,140	131,311	1,556	3,786	6,487	35,919
1904	117,450	107,510	1,955	5,971	2,014	14,539
1899	88,850	84,229	2,231	1,537	863	3,920
Lime: ³						
1909	27,671	24,271	441	1,462	1,497	2,560
1904	18,198	16,500	243	980	475	1,231
1899	93,540	88,083	2,230	2,251	897	5,372
Liquors, malt:						
1909	347,726	330,705	340	2,491	14,190	66,519
1904	266,159	258,305	678	3,807	3,369	22,508
1899	197,901	195,430	319	1,612	540	7,172
Locomotives, not made by railroad companies: ⁴						
1909	35,102	28,831	200	4,520	1,551	40,504
1904	29,806	26,007	1,200	1,095	1,474	13,267
Lumber and timber products:						
1909	2,840,082	2,587,487	140,568	49,892	62,200	130,707
1904	1,886,624	1,720,185	119,461	32,797	14,181	33,517
1899	1,658,594	1,480,098	159,044	16,820	2,032	11,315
Marble and stone work: ⁵						
1909	187,656	132,236	9,618	13,770	32,062	53,748
1904	102,887	80,223	6,281	9,545	6,838	11,278
1899	83,119	70,756	6,247	3,977	2,139	3,814
Mattresses and spring beds:						
1909	17,689	6,206	378	2,790	8,315	10,192
1904	13,220	7,893	318	2,087	2,922	3,850
1899	7,980	5,648	198	1,207	927	971
Millinery and lace goods: ⁶						
1909	7,918	2,869	117	884	4,048	4,560
1904	4,737	2,192	46	836	1,663	2,110
1899	1,852	750	18	343	741	743
Mineral and soda waters:						
1909	19,392	8,688	375	4,845	5,504	6,218
1904	12,214	7,364	414	2,676	1,760	1,903
1899	8,037	6,312	113	1,147	455	541
Musical instruments, pianos and organs and materials:						
1909	41,623	33,314	1,106	1,848	5,355	13,256
1904	30,134	25,700	867	1,635	1,932	5,085
1899	20,789	18,258	872	1,166	493	1,457
Oil, cottonseed, and cake:						
1909	192,342	183,440	175	2,333	6,304	10,855
1904	150,246	148,878	559	151	658	3,079
1899	73,071	71,574	785	352	360	1,297
Paint and varnish:						
1909	56,162	42,166	2,006	4,176	7,814	17,037
1904	41,288	34,952	997	2,689	2,650	7,540
1899	30,443	26,890	950	1,747	856	1,788
Paper and wood pulp:						
1909	1,304,265	469,089	788,146	8,420	33,610	130,120
1904	1,093,708	370,852	717,989	2,119	2,748	31,604
1899	762,118	255,854	504,762	1,417	85	2,814
Paper goods, not elsewhere specified:						
1909	27,067	10,246	1,340	1,236	5,245	12,680
1904	16,226	13,541	285	807	1,593	3,990
1899	10,421	8,651	277	1,066	427	887
Patent medicines and compounds and druggists' preparations:						
1909	25,659	15,938	264	2,575	6,882	11,175
1904	17,008	12,153	173	2,209	2,468	4,894
1899	12,707	10,176	231	1,299	1,001	1,831

¹ Owned power only.² Under "other" are included all kinds of primary power, both owned and rented, not specifically covered by other headings.³ Includes, for 1899, "cement" and "wall plaster."⁴ Included under "foundry and machine-shop products" for 1899.⁵ Includes for 1899 "artificial stone."⁶ Includes for 1904 and 1899 some establishments manufacturing suspenders, garters, and elastic woven goods, which were classified under "furnishing goods, men's," for 1909.

HORSEPOWER USED IN 102 LEADING INDUSTRIES: 1909, 1904, AND 1899—Continued.

INDUSTRY.	PRIMARY HORSEPOWER.					Electric horsepower owned and rented.
	Total.	Steam engines. ¹	Water wheels and motors. ¹	Gas engines ¹ and "other." ²	Electric, rented.	
INDUSTRIES WITH OVER 10,000 WAGE EARNERS IN 1909—continued.						
Petroleum, refining:						
1909.....	90,268	83,707		6,533	28	8,808
1904.....	46,019	43,480		2,389	150	3,468
1899.....	36,127	30,508		5,559		925
Pottery, terra-cotta, and fire-clay products:						
1909.....	110,017	101,965	95	4,413	3,544	10,643
1904.....	104,918	99,086	355	3,630	1,847	4,684
1899.....	75,802	73,848	773	1,181		1,892
Printing and publishing:						
1909.....	297,763	59,240	2,320	33,511	197,692	229,312
1904.....	166,380	54,897	3,332	32,672	75,479	93,219
1899.....	119,775	54,723	2,821	28,649	33,582	41,413
Rubber goods, not elsewhere specified: ³						
1909.....	79,062	71,635	2,455	1,473	3,499	18,848
1904.....	48,381	44,726	1,984	575	1,096	8,596
1899.....	40,885	36,747	3,120	771	197	891
Sewing machines, cases, and attachments:						
1909.....	19,426	18,131	291	107	897	14,063
1904.....	17,162	16,301	452	135	274	4,694
1899.....	10,069	8,966	740	329	34	323
Shipbuilding, including boat building:						
1909.....	88,063	73,149	88	5,564	9,264	35,334
1904.....	78,127	69,253	87	6,420	2,367	17,630
1899.....	61,797	55,899	1,700	3,223	975	7,177
Silk and silk goods, including throwsters:						
1909.....	97,947	72,059	8,383	7,151	10,354	23,758
1904.....	71,760	56,362	6,974	6,031	2,393	9,521
1899.....	57,397	45,959	6,666	4,163	609	4,607
Silverware and plated ware:						
1909.....	15,183	10,355	695	1,196	2,937	7,319
1904.....	12,573	8,671	802	1,770	1,630	3,637
1899.....	8,486	6,163	665	1,255	403	965
Slaughtering and meat packing:						
1909.....	208,707	190,636	46	2,978	15,047	78,677
1904.....	119,311	113,479	311	2,080	3,441	40,538
1899.....	87,060	85,149	13	771	1,127	11,304
Smelting and refining, copper:						
1909.....	158,126	114,862	12,725	1,126	29,413	55,229
1904.....	76,524	61,402	9,400	2,607	3,115	12,419
1899.....	61,630	48,126	9,497	4,037		4,612
Soap: ⁴						
1909.....	28,360	24,498	255	1,633	1,974	12,839
1904.....	20,228	18,747	53	911	517	4,410
1899.....	17,514	15,573	187	1,634	120	1,064
Stoves and furnaces, including gas and oil stoves: ⁵						
1909.....	45,524	32,993	259	3,306	8,966	18,159
1904.....	32,017	25,973	555	2,658	2,831	6,794
Tobacco manufactures:						
1909.....	28,514	21,929	245	973	5,367	11,203
1904.....	24,604	20,155	257	2,251	1,941	6,515
1899.....	22,296	20,450	438	997	411	2,989
Turpentine and rosin:						
1909.....	4,129	3,864	14	251		
1904.....	1,175	1,128	3	44		
1899.....	866	706		160		
Wire:						
1909.....	71,959	63,409	2,151	3,368	3,031	18,824
1904.....	25,856	23,696	1,054	759	347	1,710
1899.....	9,979	8,695	1,200	84		135
Wirework, including wire rope and cable:						
1909.....	20,131	10,553	930	3,006	5,642	8,891
1904.....	18,280	12,716	714	2,850	2,000	5,119
1899.....	12,772	10,234	653	1,434	451	973
Wood, turned and carved:						
1909.....	48,447	37,198	5,311	3,655	2,283	2,966
1904.....	47,595	38,379	5,250	3,274	692	993
1899.....	31,133	22,360	4,809	3,637	327	376
Woolen, worsted, and felt goods, and wool hats:						
1909.....	362,209	261,364	79,250	7,812	13,783	79,223
1904.....	288,969	199,615	76,366	9,058	3,930	22,222
1899.....	244,825	163,161	75,911	955	4,798	7,303
OTHER INDUSTRIES WITH OVER 20,000 HORSEPOWER IN 1909.						
Beet sugar:						
1909.....	57,202	54,369	200	543	2,090	8,888
1904.....	35,490	35,016	429	40	5	4,702
1899.....	14,450	14,442		18		2,388
Belting and hose, woven and rubber:						
1909.....	20,547	14,160	770	2,080	3,537	6,460
1904.....	13,491	11,696	950	188	657	904
1899.....	5,612	4,779	625	185	23	23
Coffee and spice, roasting and grinding: ⁶						
1909.....	22,334	8,825	150	1,145	12,205	22,413
1904.....	15,703	9,327	183	1,151	5,037	8,160
1899.....	16,270	11,497	127	1,730	2,916	5,331
Dyestuffs and extracts:						
1909.....	22,213	21,685	320	17	191	1,664
1904.....	17,671	17,343	196	107	20	659
1899.....	11,409	10,508	325	556	20	179

¹ Owned power only.² Under "other" are included all kinds of primary power, both owned and rented, not specifically covered by other headings.³ Includes for 1904 and 1899 some establishments manufacturing suspenders, garters, and elastic woven goods, which were classified under "furnishing goods, men's," for 1909.⁴ Includes for 1899 "candles."⁵ Included under "foundry and machine-shop products" for 1899.⁶ Includes for 1899 "peanuts, grading, roasting, cleaning, and shelling."

HORSEPOWER USED IN 102 LEADING INDUSTRIES: 1909, 1904, AND 1899—Continued.

INDUSTRY.	PRIMARY HORSEPOWER.					Electric horsepower owned and rented.
	Total.	Steam engines. ¹	Water wheels and motors. ¹	Gas engines ¹ and "other." ²	Electric, rented.	
OTHER INDUSTRIES WITH OVER 20,000 HORSEPOWER IN 1909—continued.						
Explosives:						
1909.....	28,601	25,558	2,689	221	133	14,836
1904.....	29,665	21,636	7,177	852	110	7,889
1899.....	19,195	13,242	5,674	169	110	2,995
Glucose and starch:						
1909.....	28,257	27,835	185	74	163	27,230
1904.....	35,985	33,406	2,180	231	169	12,890
1899.....	26,642	24,490	1,895	194	63	1,888
Iron and steel forgings:						
1909.....	27,803	17,261	520	5,452	4,570	11,493
1904.....	16,069	13,459	904	1,393	313	1,945
1899.....	7,697	6,419	975	192	111	159
Iron and steel pipe, wrought:						
1909.....	20,656	19,892	-----	-----	764	12,644
1904.....	15,094	14,966	-----	9	119	2,821
1899.....	11,717	10,774	400	506	37	632
Kaolin and ground earths:						
1909.....	20,920	13,029	6,283	233	1,375	1,664
1904.....	17,325	11,861	4,414	760	290	305
1899.....	18,404	10,198	7,750	436	20	50
Liquors, distilled:						
1909.....	46,120	44,623	252	537	708	3,736
1904.....	42,349	41,251	410	647	41	813
1899.....	31,427	30,779	377	171	100	352
Malt:						
1909.....	26,441	20,417	197	560	5,287	9,911
1904.....	20,288	17,633	631	509	1,515	3,298
1899.....	13,834	12,570	675	213	376	995
Salt:						
1909.....	27,263	24,930	108	984	1,241	3,425
1904.....	19,434	18,169	33	1,036	196	664
1899.....	23,865	23,104	8	728	25	220
Smelting and refining, lead:						
1909.....	26,954	23,090	-----	35	3,829	12,166
1904.....	25,667	22,440	1	100	3,126	10,107
1899.....	16,342	13,948	373	611	1,410	2,020
Smelting and refining, zinc:						
1909.....	21,457	19,952	192	1,313	-----	8,448
1904.....	18,404	17,556	-----	848	-----	5,048
1899.....	11,145	11,095	-----	50	-----	1,401
Sugar and molasses, not including beet sugar: ³						
1909.....	160,603	158,682	-----	605	1,316	18,730
1904.....	140,650	139,187	240	1,119	104	7,315
1899.....	152,569	151,377	211	939	42	3,011
Wall plaster: ⁴						
1909.....	25,892	19,095	845	1,435	4,517	6,167
1904.....	20,054	16,161	1,580	1,254	1,059	1,640
All other industries:						
1909.....	666,034	465,053	32,866	56,801	111,314	212,032
1904.....	506,357	397,339	29,334	42,631	37,053	81,385
1899.....	545,851	434,957	33,211	47,821	29,862	45,343

¹ Owned power only.² Under "other" are included all kinds of primary power, both owned and rented, not specifically covered by other headings.³ Includes the two industries shown separately in some tables of this report under the headings "sugar and molasses" and "sugar, refining, not including beet sugar" which were classified as a single industry in 1904 and 1899. Figures for 1904 and 1899 includes those for a few establishments compounding table syrups which were classified under "food preparations" in 1909.⁴ Included under "lime" for 1899.

Average horsepower per establishment.—While the number of establishments using power has increased greatly, the average amount of power used per establishment has also increased in most industries. Table 4 gives, for the 102 industries covered by Table 3, the average horsepower per establishment reporting the use of power at the censuses of 1909, 1904, and 1899. It also shows the percentage which the number of establishments using power formed of the total number of establishments in 1909.

For all industries combined the average horsepower per establishment reporting the use of power increased from 76 in 1899 to 100 in 1904 and 101 in 1909.

The average horsepower per establishment in 1909 was greatest in the industry "iron and steel, blast furnaces," followed by "iron and steel, steel works

and rolling mills," "smelting and refining, copper," "cement," and "locomotives, not made by railroad companies."

All but 16 of the industries given in this table show an increase in the average horsepower per establishment in 1909 as compared with 1899. The majority of the 16 industries which show a decrease used comparatively little power. In most of the industries the number of small establishments which require only a small amount of power has increased rapidly, thus tending to reduce the average per establishment.

There were 9 industries in 1909 in which the average horsepower exceeded 1,000 per establishment, including one, the construction of street-railroad cars, that is not included in the 102 industries shown in Table 4.

AVERAGE HORSEPOWER PER ESTABLISHMENT, FOR 102 LEADING INDUSTRIES: 1909, 1904, AND 1899.

INDUSTRY.	AVERAGE PRIMARY HORSEPOWER PER ESTABLISHMENT USING POWER.			PER CENT OF ESTABLISHMENTS USING POWER: 1909	INDUSTRY.	AVERAGE PRIMARY HORSEPOWER PER ESTABLISHMENT USING POWER.			PER CENT OF ESTABLISHMENTS USING POWER: 1909
	1909	1904	1899			1909	1904	1899	
All industries.....	101	100	76	68.9					
INDUSTRIES WITH OVER 10,000 WAGE EARNERS IN 1909.					INDUSTRIES WITH OVER 10,000 WAGE EARNERS IN 1909—continued.				
Agricultural implements.....	168	152	119	93.8	Jewelry.....	9	10	10	78.1
Artificial flowers and feathers and plumes.....	4	9	5	18.2	Leather goods.....	22	19	18	23.6
Automobiles, including bodies and parts.....	114	62	(1)	89.4	Leather, tanned, curried, and finished.....	179	129	90	90.2
Boots and shoes, including cut stock and findings.....	59	42	34	84.8	Lime.....	77	73	215	42.0
Boots and shoes, rubber.....	1,177	1,186	1,137	100.0	Liquors, malt.....	254	185	148	96.7
Boxes, fancy and paper.....	26	23	17	94.8	Locomotives, not made by railroad companies.....	2,194	1,987	(*)	100.0
Brass and bronze products.....	123	103	86	84.2	Lumber and timber products.....	72	79	59	96.9
Bread and other bakery products.....	11	13	15	25.9	Marble and stone work.....	65	70	56	87.9
Brick and tile.....	97	73	55	83.6	Mattresses and spring beds.....	27	29	25	69.6
Butter, cheese, and condensed milk.....	16	15	13	75.7	Millinery and lace goods.....	8	10	7	64.9
Buttons.....	39	30	21	74.1	Mineral and soda waters.....	5	6	9	72.4
Canning and preserving.....	33	31	31	64.8	Musical instruments, pianos and organs and materials.....	97	90	82	84.8
Carpets and rugs, other than rag.....	297	251	211	93.5	Oil, cottonseed, and cake.....	240	210	200	98.3
Carriages and wagons and materials.....	35	38	137	65.2	Paint and varnish.....	84	81	79	85.0
Cars and general shop construction and repairs by steam-railroad companies.....	293	174	102	87.5	Paper and wood pulp.....	1,679	1,437	999	100.0
Cars and general shop construction and repairs by street-railroad companies.....	87	42	80	76.2	Paper goods, not elsewhere specified.....	77	63	53	87.1
Cars, steam-railroad, not including operations of railroad companies.....	949	848	557	93.6	Patent medicines and compounds and druggists' preparations.....	24	23	25	29.5
Cement.....	2,928	1,187	(*)	94.1	Petroleum, refining.....	694	450	602	88.4
Chemicals.....	732	558	265	81.7	Pottery, terra-cotta, and fire-clay products.....	156	140	96	85.5
Clocks and watches, including cases and materials.....	134	117	77	93.3	Printing and publishing.....	14	10	10	69.6
Clothing, men's, including shirts.....	10	11	10	69.3	Rubber goods, not elsewhere specified.....	391	287	219	100.0
Clothing, women's.....	7	8	10	70.6	Sewing machines, cases, and attachments.....	442	343	194	93.6
Coke.....	450	338	276	44.1	Shipbuilding, including boat building.....	146	128	145	67.6
Confectionery.....	32	29	11	56.9	Silk and silk goods, including throwsters.....	116	118	121	99.1
Cooperage and wooden goods, not elsewhere specified.....	89	77	62	43.4	Silverware and plated ware.....	96	87	53	96.2
Copper, tin, and sheet-iron products.....	45	34	40	32.5	Slaughtering and meat packing.....	177	158	114	72.0
Cordage and twine and jute and linen goods.....	504	487	350	95.1	Smelting and refining, copper.....	4,274	2,068	1,311	97.4
Corsets.....	41	41	38	80.4	Soap.....	89	67	49	75.5
Cotton goods, including cotton small wares.....	979	859	787	100.0	Stoves and furnaces, including gas and oil stoves.....	94	77	(*)	83.9
Cutlery and tools, not elsewhere specified.....	81	74	63	88.2	Tobacco manufactures.....	45	44	48	4.9
Dyeing and finishing textiles.....	278	259	284	91.1	Turpentine and rosin.....	4	6	6	71.5
Electrical machinery, apparatus, and supplies.....	174	148	89	90.5	Wire.....	1,285	1,034	344	100.0
Fancy articles, not elsewhere specified.....	25	22	18	67.0	Wirework, including wire rope and cable.....	46	46	44	71.4
Fertilizers.....	133	137	107	88.2	Wood, turned and carved.....	53	45	33	86.8
Flour-mill and gristmill products.....	324	446	138	83.3	Woolen, worsted, and felt goods, and wool hats.....	373	272	193	98.6
Food preparations.....	73	77	71	100.0					
Foundry and machine-shop products.....	61	52	41	74.9	OTHER INDUSTRIES WITH OVER 20,000 HORSEPOWER IN 1909.				
Fur goods.....	5	14	13	93.3	Beet sugar.....	956	696	482	100.0
Furnishing goods, men's.....	21	18	18	64.8	Belting and hose, woven and rubber.....	489	375	244	91.3
Furniture and refrigerators.....	85	80	76	82.9	Coffee and spice, roasting and grinding.....	38	39	38	98.0
Gas and electric fixtures and lamps and reflectors.....	31	25	27	83.7	Dyestuffs and extracts.....	271	224	193	78.6
Gas, illuminating and heating.....	132	97	50	75.1	Explosives.....	345	241	206	96.5
Glass.....	349	236	160	97.2	Glucose and starch.....	248	265	218	98.6
Gloves and mittens, leather.....	11	12	11	70.6	Iron and steel forgings.....	165	121	91	97.7
Hats, fur-felt.....	93	101	90	76.2	Iron and steel pipe, wrought.....	765	604	617	96.4
Hosiery and knit goods.....	88	77	69	91.3	Knolin and ground earths.....	184	133	131	95.8
Ice, manufactured.....	180	150	133	99.3	Liquors, distilled.....	96	68	58	78.1
Iron and steel, blast furnaces.....	5,641	4,091	2,230	100.0	Malt.....	245	149	190	85.6
Iron and steel, bolt works and rolling mills.....	4,711	3,993	2,474	100.0	Salt.....	281	169	204	78.2
Iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills.....	207	161	138	99.1	Smelting and refining, lead.....	598	556	454	96.4
					Smelting and refining, zinc.....	740	594	360	100.0
					Sugar and molasses, not including beet sugar.....	662	430	311	95.6
					Wall plaster.....	139	123	(*)	93.9

1 "Carriages and wagons and materials" includes "automobiles, including bodies and parts."
 2 "Lime" includes "cement" and "wall plaster."
 3 "Foundry and machine-shop products" includes "stoves and furnaces, including gas and oil stoves," and "locomotives, not made by railroad companies."
 4 Includes the two industries shown separately in some tables under the headings "sugar and molasses" and "sugar, refining, not including beet sugar."

Average horsepower per wage earner.—Table 5 shows for 1909, 1904, and 1899 the average horsepower per establishment and per wage earner for all industries combined and for 29 important industries in which practically all of the establishments reported power.

Although 55.9 per cent of the total horsepower was reported by 7 industries in 1909, there is a growing tendency in nearly all branches of manufacturing to increase productivity by means of power machinery. This is indicated by the fact that the average horsepower per wage earner for all manufacturing industries combined increased from 2.1 in 1899 to 2.5 in 1904 and 2.8 in 1909. These averages are based on

the entire number of wage earners, including those in establishments using no power.

The rank of the 29 industries shown in Table 5 on the basis of the average horsepower per wage earner was considerably different from their rank in average horsepower per establishment. The blast-furnace industry, with 31 horsepower per wage earner, ranked first in this respect, and the flour-mill and gristmill industry, with 22 horsepower per wage earner, ranked second. The artificial-ice industry, with 20 horsepower per wage earner, was third, and the paper and wood-pulp industry and the cleaning and polishing of rice were fourth and fifth, respectively.

INDUSTRY.	Census.	AVERAGE HORSEPOWER.		INDUSTRY.	Census.	AVERAGE HORSEPOWER.	
		Per establishment. ¹	Per wage earner. ²			Per establishment. ¹	Per wage earner. ²
All industries.....	1909 1904 1899	101 100 76	2.8 2.5 2.1	Oil, linseed.....	1909 1904 1899	456 327 177	9.1 7.0 6.4
Agricultural implements.....	1909 1904 1899	168 152 119	2.0 1.9 1.5	Oilcloth and linoleum.....	1909 1904 1899	520 375 302	3.1 2.6 2.3
Beet sugar.....	1909 1904 1899	986 696 482	7.9 9.0 7.3	Paper and wood pulp.....	1909 1904 1899	1,679 1,437 909	17.2 16.6 15.4
Cars, steam-railroad, not including operations of railroad companies.	1909 1904 1899	949 848 557	2.3 1.6 1.0	Petroleum, refining.....	1909 1904 1899	694 490 602	6.5 2.7 3.0
Cars, street-railroad, not including operations of railroad companies.	1909 1904 1899	1,083 504 270	4.2 1.5 1.4	Rice, cleaning and polishing.....	1909 1904 1899	275 214 97	15.8 10.6 11.6
Chemicals.....	1909 1904 1899	732 558 265	9.0 6.7 4.8	Salt.....	1909 1904 1899	281 189 204	5.5 4.2 5.0
Cotton goods, including cotton small wares.....	1909 1904 1899	979 859 767	3.4 3.1 2.6	Saws.....	1909 1904 1899	132 100 67	2.5 1.6 1.7
Dyeing and finishing textiles.....	1909 1904 1899	278 259 254	2.4 2.4 2.3	Shoddy.....	1909 1904 1899	159 129 110	6.8 6.9 5.9
Explosives.....	1909 1904 1899	345 241 206	4.6 5.1 4.3	Slaughtering and meat packing.....	1909 1904 1899	177 138 114	2.3 1.6 1.3
Fertilizers.....	1909 1904 1899	133 137 107	3.5 3.4 3.3	Smelting and refining, copper.....	1909 1904 1899	4,274 2,068 1,311	10.1 6.0 6.4
Flour-mill and gristmill products.....	1909 1904 1899	73 77 71	21.6 19.8 20.8	Smelting and refining, lead.....	1909 1904 1899	998 856 454	3.6 3.4 2.0
Ice, manufactured.....	1909 1904 1899	160 150 133	19.7 19.0 14.6	Smelting and refining, zinc.....	1909 1904 1899	740 594 360	3.2 2.8 2.3
Iron and steel, blast furnaces.....	1909 1904 1899	5,641 4,091 2,230	30.5 22.0 12.7	Sugar and molasses, not including beet sugar ³	1909 1904 1899	692 450 311	11.9 10.4 10.8
Iron and steel, steel works and rolling mills.....	1909 1904 1899	4,711 3,993 2,474	8.8 7.9 6.0	Wire.....	1909 1904 1899	1,285 1,034 344	4.0 5.5 6.2
Oil, cottonseed, and cake.....	1909 1904 1899	240 210 200	11.3 9.7 6.6	Woolen, worsted, and felt goods, and wool hats.....	1909 1904 1899	373 272 193	2.1 2.0 1.9

¹ Based on the number of establishments reporting power.

² Based on total number of wage earners in all establishments, including those not reporting power.

³ Includes the two industries shown separately in some tables under the headings "sugar and molasses" and "sugar, refining, not including beet sugar."

Of the 29 industries included in the table, there were 8 in all—the blast-furnace, flour-mill and gristmill, artificial-ice, and paper and wood-pulp industries, the cleaning and polishing of rice, the manufacture of sugar and molasses, not including beet sugar, the cotton-seed oil industry, and the smelting and refining of copper—that had an average of more than 10 horsepower per wage earner in 1909. In each of these industries the processes are largely mechanical, requiring the minimum amount of labor. On the other hand, in 6 of the industries shown in the table—the manufacture of agricultural implements, the construction of steam-railroad cars, the dyeing and finishing of textiles, the manufacture of saws, slaughtering and

meat packing, and the manufacture of woolen, worsted, and felt goods, and wool hats—the average per wage earner was less than three horsepower. In but one of the industries listed, the manufacture of wire, was the average horsepower per wage earner less in 1909 than in 1899.

Summary by states and geographic divisions: 1909.—The detailed statistics of power for all manufacturing industries combined in each state and geographic division as reported for 1909 are given in General Table IV. The following table summarizes the statistics on the subject contained in General Table IV and in addition gives percentages showing the relative importance of the different kinds of power.

POWER USED.

HORSEPOWER USED IN MANUFACTURING INDUSTRIES, BY GEOGRAPHIC DIVISIONS AND STATES: 1909.

Table 6 DIVISION AND STATE.	PRIMARY HORSEPOWER.											HORSEPOWER OF ELECTRIC MOTORS.		
	Total.	Owned by establishments reporting.				Rented.		Per cent distribution.					Total (including motors run by purchased current.)	Run by current generated by establishment.
		Steam engines.	Gas engines.	Water wheels and motors.	Other.	Electric.	Other.	Steam.	Gas.	Water.	Electric, rented.	Other (owned and rented).		
United States.....	18,675,376	14,199,339	751,186	1,822,888	29,293	1,749,031	123,639	76.0	4.0	9.8	9.4	0.8	4,817,140	3,068,109
GEOGRAPHIC DIVISIONS:														
New England.....	2,715,121	1,656,911	41,801	757,332	2,055	218,642	38,350	61.0	1.5	27.9	8.1	1.5	663,143	444,501
Middle Atlantic.....	5,531,502	4,151,662	274,274	470,488	11,736	568,723	54,619	75.1	5.0	8.5	10.3	1.2	1,737,236	1,168,513
East North Central..	4,382,070	3,491,418	283,450	208,441	4,766	375,876	18,119	79.7	6.5	4.8	8.6	0.5	1,297,447	921,571
West North Central..	1,101,990	838,988	57,434	86,330	939	115,002	3,297	76.1	5.2	7.8	10.4	0.4	266,634	151,532
South Atlantic.....	1,832,001	1,431,423	36,441	183,158	5,321	171,145	4,512	78.1	2.0	10.0	9.3	0.5	343,393	172,247
East South Central..	1,036,560	953,511	12,270	29,315	1,690	38,580	1,194	92.0	1.2	2.8	3.7	0.3	108,409	69,829
West South Central..	873,350	805,640	29,291	3,108	2,513	31,807	991	92.2	3.4	0.4	3.6	0.4	78,893	47,086
Mountain.....	400,766	306,786	4,188	21,543	224	66,956	1,069	76.5	1.0	5.4	16.7	0.3	113,954	47,028
Pacific.....	802,016	563,000	12,037	63,173	49	162,299	1,458	70.2	1.5	7.9	20.2	0.2	268,101	45,802
NEW ENGLAND:														
Maine.....	459,599	168,595	3,933	258,392	179	27,203	1,297	36.7	0.9	56.2	5.9	0.3	54,266	27,063
New Hampshire.....	293,991	139,128	1,238	128,011	30	21,209	4,375	47.3	0.4	43.5	7.2	1.5	45,351	24,142
Vermont.....	159,445	64,252	2,160	79,062	415	12,917	639	40.3	1.4	49.6	8.1	0.7	21,233	8,316
Massachusetts.....	1,175,071	834,701	18,326	186,516	895	109,996	24,637	71.0	1.6	15.9	9.4	2.2	402,492	292,496
Rhode Island.....	226,740	175,293	3,300	31,417	39	13,697	2,994	77.3	1.5	13.9	6.0	1.3	42,130	28,423
Connecticut.....	400,275	274,942	12,844	73,934	497	33,620	4,438	68.7	3.2	18.5	8.4	1.2	97,671	64,051
MIDDLE ATLANTIC:														
New York.....	1,997,662	1,080,877	99,899	395,618	3,583	389,945	27,740	54.1	5.0	19.8	19.5	1.6	689,976	300,031
New Jersey.....	612,293	529,668	20,867	19,676	180	33,157	8,745	86.5	3.4	3.2	5.4	1.5	182,475	149,318
Pennsylvania.....	2,921,547	2,541,117	153,508	55,194	7,973	145,621	18,134	87.0	5.3	1.9	5.0	0.9	864,785	719,164
EAST NORTH CENTRAL:														
Ohio.....	1,583,155	1,362,134	103,801	16,107	1,586	93,592	5,935	86.0	6.6	1.0	5.9	0.5	417,844	324,252
Indiana.....	633,377	448,528	109,105	7,893	599	65,548	1,704	70.8	17.2	1.2	10.3	0.4	233,193	167,645
Illinois.....	1,013,071	838,199	37,025	12,691	1,433	117,007	6,716	82.7	3.7	1.3	11.5	0.8	398,621	281,614
Michigan.....	598,288	465,520	13,988	42,019	16	74,270	2,475	77.8	2.3	7.0	12.4	0.4	133,064	58,794
Wisconsin.....	554,179	377,037	19,531	129,731	1,132	25,459	1,289	68.0	3.5	23.4	4.6	0.4	114,725	89,266
WEST NORTH CENTRAL:														
Minnesota.....	297,670	199,777	7,174	59,570	25	30,297	827	67.1	2.4	20.0	10.2	0.3	52,212	21,915
Iowa.....	155,384	121,882	8,025	6,411	147	18,463	456	78.4	5.2	4.1	11.9	0.4	40,736	22,273
Missouri.....	340,467	280,489	11,159	3,738	5	44,056	1,020	82.4	3.3	1.1	12.9	0.3	106,941	62,885
North Dakota.....	13,196	10,170	1,304	530		1,164	28	77.1	9.9	4.0	8.8	0.2	1,698	534
South Dakota.....	17,666	12,257	2,784	939		1,683	3	69.4	15.8	5.3	9.5	(1)	2,084	401
Nebraska.....	64,466	44,806	4,408	7,436	76	7,530	210	69.5	6.8	11.5	11.7	0.4	15,942	8,412
Kansas.....	213,141	169,607	22,580	7,706	686	11,809	753	79.6	10.6	3.6	5.5	0.7	46,921	35,112
SOUTH ATLANTIC:														
Delaware.....	52,770	42,266	766	5,195		4,502	50	80.1	1.5	9.8	8.5	0.1	17,910	13,408
Maryland.....	218,244	181,326	5,736	12,074	1,069	17,108	931	83.1	2.6	5.5	7.8	0.9	44,921	27,813
District of Columbia.	16,563	12,169	1,073	775	43	2,433	70	73.5	6.5	4.7	14.7	0.7	4,627	2,094
Virginia.....	283,928	221,303	3,664	45,155	38	13,856	412	77.9	1.3	15.9	4.7	0.2	42,043	26,687
West Virginia.....	217,496	184,591	16,705	10,617		5,330	253	84.9	7.7	4.9	2.5	0.1	28,543	23,213
North Carolina.....	378,556	271,944	2,356	41,626	1,035	60,044	1,251	71.8	0.6	11.1	15.9	0.6	86,002	25,958
South Carolina.....	276,378	193,052	1,264	38,497	2,400	41,130	35	69.9	0.5	13.9	14.9	0.9	67,620	26,490
Georgia.....	298,241	240,264	3,380	28,748	536	23,890	1,423	80.6	1.1	9.6	8.0	0.7	44,264	20,374
Florida.....	89,816	84,508	1,497	171	200	3,353	87	94.1	1.7	0.2	3.7	0.3	7,563	4,210
EAST SOUTH CENTRAL:														
Kentucky.....	230,224	207,591	4,724	5,377	915	11,314	303	90.2	2.1	2.3	4.9	0.5	31,268	19,954
Tennessee.....	242,277	215,338	1,853	9,777	4	14,666	639	88.9	0.8	4.0	6.1	0.3	29,586	14,920
Alabama.....	357,837	328,275	4,616	13,923	732	10,104	187	91.7	1.3	3.9	2.8	0.3	39,928	29,824
Mississippi.....	206,222	202,307	1,077	288	39	2,496	65	98.1	0.5	0.1	1.2	(1)	7,627	5,131
WEST SOUTH CENTRAL:														
Arkansas.....	173,088	168,152	1,374	674	52	2,581	255	97.1	0.8	0.4	1.5	0.2	7,417	4,836
Louisiana.....	346,652	331,370	3,496	75	2,401	9,077	233	95.6	1.0	(1)	2.6	0.8	27,139	18,062
Oklahoma.....	71,139	56,643	8,676	472		5,281	67	79.6	12.2	0.7	7.4	0.1	7,887	2,606
Texas.....	282,471	249,475	15,745	1,887	60	14,868	436	88.3	5.6	0.7	5.3	0.2	36,450	21,582
MOUNTAIN:														
Montana.....	90,402	49,654	223	13,646		26,504	375	54.9	0.2	15.1	29.3	0.4	27,301	797
Idaho.....	42,804	35,529	242	2,407		4,606	20	83.0	0.6	5.6	10.8	(1)	8,409	3,803
Wyoming.....	7,623	6,467	182	465		514		54.8	2.4	6.1	6.7		801	287
Colorado.....	154,615	135,645	1,464	1,426	105	15,874	101	87.7	0.9	0.9	10.3	0.1	35,944	20,070
New Mexico.....	15,465	11,781	365	74		3,245		76.2	2.4	0.5	21.0		4,586	1,341
Arizona.....	39,140	34,193	1,285	129	19	3,314	200	87.4	3.3	0.3	8.5	0.6	15,100	11,786
Utah.....	42,947	28,984	226	2,997	100	10,592	48	67.5	0.5	7.0	24.7	0.3	15,402	4,810
Nevada.....	7,765	4,533	201	399		2,307	325	58.4	2.6	5.1	29.7	4.2	6,441	4,134
PACIFIC:														
Washington.....	297,897	257,230	1,494	8,065	19	30,951	138	86.3	0.5	2.7	10.4	0.1	43,615	12,664
Oregon.....	175,019	112,244	428	47,438		14,811	98	84.1	0.2	27.1	8.5	0.1	20,802	5,991
California.....	329,100	193,526	10,115	7,670	30	116,537	1,222	58.8	3.1	2.3	35.4	0.4	143,684	27,147

¹ Less than one-tenth of 1 per cent.

Of the total horsepower reported for 1909 (18,675,376), 5,531,502 horsepower, or 29.6 per cent, is shown for the Middle Atlantic division and 4,382,070, or 23.5 per cent, for the East North Central. The New England division is next in order of importance, with 2,715,121 horsepower. These three divisions together had over two-thirds of the entire horsepower of the manufacturing industries of the United States.

The four northern divisions taken together—the New England, Middle Atlantic, East North Central, and West North Central—reported 13,730,683 horsepower as used in manufacturing industries in 1909, or 73.5 per cent of the total for the United States. The three southern divisions—the South Atlantic, East South Central, and West South Central—together reported 3,741,911 horsepower, or 20 per cent of the total, and the West, comprising the Mountain and Pacific divisions, reported 1,202,782 horsepower, or 6.4 per cent of the total. The North reported a smaller percentage of the total horsepower of the country than of the total value of manufactured products, while the opposite was the case with the South and West.

The rank of the states in 1909, with respect to the amount of power used in manufacturing industries, was somewhat different from that with respect to value of products and other leading items in the statistics of manufactures. Although New York ranked first among the states in value of products, average number of wage earners, and various other items, Pennsylvania greatly outranked New York in the amount of power used in manufacturing industries. New York stood second in amount of power used, Ohio third, Massachusetts fourth, and Illinois fifth. The relative amount of power used in any state is largely determined by the character of the industries predominant in the state.

The relative importance of the different kinds of power in the several divisions and states is dependent in part upon the character of the industries, and in part upon the location of the division or state with reference to supplies of coal, petroleum, and natural gas, and to the availability of water power. The percentages given in Table 6 show that there are very marked differences among the several states and divisions of the country in respect to the relative importance of the different kinds of primary power used in manufacturing establishments. Of all the geographic divisions, New England showed in 1909 the lowest proportion for steam power (61 per cent of the total) and the highest proportion for water power (27.9 per cent). The percentage for steam power was also relatively low in the Pacific division (70.2), but in this division rented electric power was much more important than water power. It should be borne in mind, however, that, as already stated, much of the rented electric power in all divisions—most of it in the Pacific division—is derived in the first place from water wheels. Rented electric power was also relatively

important in the Mountain, West North Central, and Middle Atlantic divisions, and water power in the South Atlantic and Middle Atlantic divisions, but in the East South Central and West South Central divisions more than nine-tenths of the total power used in manufacturing establishments in 1909 was that of steam engines, and in the East North Central division the corresponding proportion was nearly four-fifths.

Among the individual states, Maine showed the lowest percentage for steam power (36.7) and the highest percentage for water power (56.2). In Vermont and New Hampshire also steam power constituted less than half of the total primary power, water power being very important. In New York, which ranked second among the states in the use of power in manufacturing industries, only 54.1 per cent of the primary power was generated by steam engines, while 19.8 per cent was that of water wheels owned by the establishments using the power, and 19.5 per cent was rented electric power. In a large majority of the states, however, steam power constituted 70 per cent or more of the total, and in several the proportion exceeded 90 per cent. Water power represented one-fifth or more of the total primary horsepower used in manufacturing in Maine, New Hampshire, Vermont, Wisconsin, Minnesota, and Oregon. Rented electric power was relatively most important in California, where it constituted, in 1909, 35.4 per cent of the total primary power. In New York, North Carolina, Montana, New Mexico, Utah, and Nevada also the proportion of rented electric power was relatively high, in each case exceeding 15 per cent of the total.

The horsepower of gas and other internal-combustion engines was relatively most important in Indiana, where it constituted 17.2 per cent of the total primary power, but in South Dakota, Oklahoma, and Kansas also such power constituted more than 10 per cent of the total.

In absolute amount of water power New York led in 1909, with 395,618 horsepower, followed by Maine, Massachusetts, Wisconsin, and New Hampshire, in the order named, each of these states reporting more than 100,000 horsepower of this kind. In absolute amount of rented electric power New York also led, with 389,945 horsepower, followed by Pennsylvania, Illinois, California, and Massachusetts, in the order named, each reporting more than 100,000 horsepower. In the use of gas and similar engines in manufacturing industries, Pennsylvania ranked first, with 153,508 horsepower, followed by Indiana and Ohio, each of which had more than 100,000 horsepower, and by New York, which had nearly 100,000, while in but one other state (Illinois) did the horsepower of such engines exceed 25,000.

Comparative statistics of horsepower, by states: 1869–1909.—As to most of the items derived from the manufactures census, comparisons for states and geographic divisions can not properly be made between all the censuses from 1869 to 1909 for the reason

that the earlier censuses, as more fully explained in Chapter I, included the hand trades and neighborhood industries, which were excluded at the later censuses. With respect to horsepower, however, approximately exact comparisons can be made for each census back to 1869, for the reason that the amount of horsepower used in the hand trades and neighborhood industries was so small that it had little effect upon the totals for the earlier censuses. Table 8, on the next page,

shows, for each state and geographic division, the total horsepower used in manufacturing industries as reported at each census from 1869 to 1909, and the amount of each of the principal kinds of power. It also shows, for each decennial or quinquennial period, the percentage of increase in each kind of power. Table 7, which follows, shows the percentage which each kind of power formed of the total primary power in each division at each census.

Table 7

PER CENT OF TOTAL PRIMARY POWER—UNITED STATES AND GEOGRAPHIC DIVISIONS: 1869-1909

KIND OF POWER.	Census.	PER CENT OF TOTAL PRIMARY POWER—UNITED STATES AND GEOGRAPHIC DIVISIONS: 1869-1909									
		United States.	New England division.	Middle Atlantic division.	East North Central division.	West North Central division.	South Atlantic division.	East South Central division.	West South Central division.	Mountain division.	Pacific division.
Steam.....	1909	76.0	61.0	75.1	79.7	76.1	78.1	92.0	92.2	76.5	79.2
	1904	80.3	62.8	78.2	86.4	82.6	84.2	94.8	95.5	84.7	78.9
	1899	80.6	61.0	80.6	88.2	84.7	82.3	93.5	97.5	84.7	78.9
	1889	77.1	54.3	80.3	86.8	84.1	68.2	88.1	95.1	73.5	80.5
	1879	64.1	43.1	66.6	80.5	67.8	50.5	72.0	92.0	48.8	54.4
	1869	51.8	29.7	50.3	71.8	70.6	38.4	62.7	92.3	56.7	70.9
Water.....	1909	9.8	27.9	8.5	4.8	7.8	10.0	2.8	0.4	5.4	7.9
	1904	12.2	31.0	12.1	6.2	8.4	11.2	3.2	0.6	7.6	7.1
	1899	14.4	34.5	13.1	7.1	8.6	14.7	4.9	0.7	14.8	11.2
	1889	21.1	43.0	17.1	11.7	14.6	31.1	11.5	3.3	14.3	13.6
	1879	35.9	56.9	33.4	19.5	32.2	49.5	28.0	8.0	51.2	39.9
	1869	48.2	70.3	49.7	28.2	29.4	66.6	37.3	7.7	43.3	38.6
Electric (rented) ¹	1909	9.4	8.1	10.3	8.6	10.4	9.3	3.7	3.6	16.7	20.2
	1904	3.3	2.8	3.3	3.0	4.4	2.4	1.1	1.5	5.0	12.1
	1899	1.8	1.8	2.4	1.3	2.4	0.6	0.7	1.0	3.3	5.3
	1889	4.8	3.0	6.2	7.0	5.6	2.5	1.5	3.8	1.4	1.7
Other ²	1904	4.2	3.4	6.4	4.3	4.5	2.2	0.9	1.4	2.7	2.5
	1899	3.2	2.7	4.0	3.4	4.3	2.4	0.9	0.8	2.5	3.1
	1889	1.7	2.3	2.1	1.5	1.2	0.7	0.5	0.5	1.0	2.6
	1879										

¹ Rented electric power not reported separately for 1889; no electric power of any kind reported for 1879 or 1869.
² No power other than steam and water power reported for 1879 or 1869.

In seven of the nine geographic divisions the relative importance of water power directly used by manufacturing establishments declined steadily from 1879 to 1909, a slight gain appearing in the Pacific division between 1904 and 1909, and in the Mountain division between 1889 and 1899. This decrease in the importance of water power was at first accompanied by an increase in the relative importance of steam power, but for the period 1904-1909 every division shows a decrease in the proportion represented by steam power and a great increase in that represented by rented electric power, which was first reported at the census of 1899. As already stated, much of the rented electric power is derived originally from water wheels. The proportion of steam power reached its maximum in the Middle Atlantic, Mountain, and Pacific divisions in 1889; in the East North Central, West North Central, and West South Central divisions in 1899, and in the New England, South Atlantic, and East South Central divisions in 1904.

The most conspicuous changes with reference to the relative importance of water power in manufacturing industries took place in the South Atlantic and New England divisions. In the former, water power constituted 66.6 per cent of the total power used in manufacturing industries in 1869 as compared with 10 per cent in 1909, while in the New England division the proportion fell from 70.3 per cent in 1869 to 27.9 per cent in 1909.

The manner in which these changes in the relative importance of the different kinds of power in the sev-

eral divisions have come about may be readily seen by comparing the increases and decreases in the several kinds of power from census to census in each division, as shown in Table 8.

It will be seen that in every division each census has shown an increase in steam power over the preceding census (save only that in the Mountain division there was a decrease between 1869 and 1879), and that this increase has in almost every case been more rapid than the increase in water power. In two of the divisions, the East South Central and West South Central, the water power used by manufacturing industries was less in 1909 than in 1869; and in the Middle Atlantic and West South Central divisions less water power was used in 1909 than in 1904. In the New England and Pacific divisions the increase in the utilization of water power was continuous throughout the period from 1869 to 1909, but in all other divisions decreases were shown at one or more censuses.

In every division rented electric power increased several fold between 1899 and 1909, and even between 1904 and 1909 it more than trebled in eight of the nine divisions. The amount of gas engine and "other" power reported in 1889 was insignificant in every division, so that very high percentages of increase appear for the period 1889-1899. For the decade 1899-1909 the most conspicuous percentage of increase in this item is shown for the West South Central division, but the most conspicuous absolute increase took place in the East North Central and Middle Atlantic divisions.

HORSEPOWER USED IN MANUFACTURING INDUSTRIES, BY DIVISIONS AND STATES: 1869-1909—Continued.

Table 8—Continued.		PRIMARY HORSEPOWER.					Electric horse-power, owned and rented.	PER CENT OF INCREASE. ¹					
DIVISION AND STATE.	Census.	Total.	Steam engines. ²	Water wheels and motors. ²	Gas engines ² and "other." ³	Electric, rented.		Period.	Total.	Steam.	Water.	Gas and "other." ²	Electric, owned and rented.
MOUNTAIN—Continued.													
Arizona.....	1909	39,140	34,193	129	1,504	3,314	15,100	1899-1909	358.5	346.8	-67.8	237.2	2,727.7
	1904	21,412	18,828	267	2,152	165	4,821	1904-1909	82.8	81.6	-51.7	-30.1	213.2
	1899	8,537	7,653	400	446	38	534	1899-1904	150.8	146.0	-33.3	382.5	802.8
	1889	826	457	329	40			1889-1899	933.5	1,574.6	21.6		
	1879	530	370	160				1879-1889	55.8	23.5	105.6		
	1869	90	80	10				1869-1879					
Utah.....	1909	42,047	28,984	2,997	374	10,592	15,402	1899-1909	238.9	281.1	-11.0	228.1	444.4
	1904	19,397	12,162	3,252	1,042	2,941	4,272	1904-1909	121.4	138.3	-7.8	-64.1	260.5
	1899	12,674	7,606	3,368	114	1,588	2,829	1899-1904	53.0	59.9	-3.4	814.0	51.0
	1889	5,064	2,530	2,492	42		64	1889-1899	150.3	200.6	35.1		
	1879	4,689	1,154	3,535				1879-1889	8.0	119.2	-29.5		
	1869	2,500	331	2,169				1869-1879	87.6	248.6	63.0		
Nevada.....	1909	7,765	4,533	399	526	2,307	6,441	1899-1909	397.4	621.8	-55.3		
	1904	2,834	1,092	782	410	550	550	1904-1909	174.0	315.1	-49.0	28.3	1,071.1
	1899	1,561	898	895	39	1	1	1899-1904	81.6	73.9	-12.4		
	1889	372	318	6	48			1889-1899	319.6	67.5			
	1879	710	608	108				1879-1889	-48.0	-47.7	-94.4		
	1869	8,545	6,007	2,538				1869-1879	-91.6	-89.9	-95.7		
PACIFIC.													
Washington.....	1909	297,897	257,230	8,065	1,651	30,951	43,615	1899-1909	240.1	230.8	17.7	277.8	1,290.3
	1904	168,342	150,312	4,642	1,738	11,660	15,290	1904-1909	77.0	71.1	73.7	-5.0	185.3
	1899	87,601	77,749	6,853	437	2,562	3,137	1899-1904	92.2	93.3	-32.3	297.7	387.4
	1889	42,579	37,659	4,851	69		63	1889-1899	105.7	106.5	41.3		
	1879	4,395	3,210	1,185				1879-1889	868.8	1,073.2	309.4		
	1869	2,823	1,411	1,412				1869-1879	55.7	127.5	-16.1		
Oregon.....	1909	175,019	112,244	47,438	526	14,811	20,802	1899-1909	191.7	195.5	146.3	2.5	673.3
	1904	81,348	55,512	20,660	449	4,727	5,223	1904-1909	115.1	102.2	129.6	17.1	298.3
	1899	60,005	37,986	19,263	513	2,243	2,690	1899-1904	35.6	46.1	7.3	-12.5	94.2
	1889	32,508	22,430	9,280	798		37	1889-1899	84.6	69.4	107.6	-35.7	
	1879	13,589	4,334	9,255				1879-1889	139.2	417.5	0.3		
	1869	8,277	2,471	5,806				1869-1879	64.2	75.4	59.4		
California.....	1909	329,100	193,526	7,670	11,367	116,537	143,684	1899-1909	159.2	84.0	63.9	52.4	811.6
	1904	210,359	153,178	7,260	10,558	39,363	49,575	1904-1909	56.4	26.3	5.6	7.7	189.8
	1899	126,953	105,190	4,680	7,459	9,624	15,762	1899-1904	65.7	45.6	55.1	41.5	214.5
	1889	72,931	64,864	5,091	2,976		393	1889-1899	74.1	62.2	-8.1	150.6	3,919.7
	1879	32,921	28,071	4,850				1879-1889	121.5	131.1	5.0		
	1869	25,370	18,493	6,877				1869-1879	29.8	51.8	-29.5		

¹ A minus sign (-) denotes decrease. Per cent not shown where base is less than 100.

² Owned power only.

³ Under "other" are included all kinds of primary power, both owned and rented, not specifically covered by other headings. In 1879 and 1869 no statistics were obtained for the kinds of power included under this heading.

POWER USED.

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POWER AND FUEL USED, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

CARS AND GENERAL SHOP CONSTRUCTION AND REPAIRS BY STEAM-RAILROAD COMPANIES—Continued.

Table 9—Contd.		PRIMARY HORSEPOWER.							ELECTRIC HORSEPOWER.		FUEL USED.						
STATE.	Number of establishments reporting.	Total horsepower.	Owned by establishments reporting.				Rented.		Total rented and generated by establishments reporting.	Generated in the establishments reporting.	Coal.						
			Total.	Steam engines.	Gas engines.	Water wheels and motors.	Oth. er.	Elec. tric.			Oth. er.	Anthra- cite (long tons).	Bitumi- nous (short tons).	Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
Illinois.....	61	20,740	19,902	19,687	177	38		823	15	12,291	11,468	6,825	602,367	4,025	6,232	50,636	11,197
Indiana.....	31	13,550	11,711	11,110	29	312	200	1,839		4,216	2,377	2,371	274,918	2,390	3,634	12,005	12
Iowa.....	28	5,937	5,907	5,807	62			30		1,675	1,845	213	225,117	273	1,286	2,594	
Kansas.....	15	10,380	10,261	10,159	102			129		4,924	4,795	120	283,122	412	661	35,953	473,472
Kentucky.....	23	4,994	4,936	4,936				58		4,521	4,463	54	69,390	2,094		12,394	
Louisiana.....	21	1,799	1,406	1,406				343	50								
Maine.....	14	953	890	806	49	35		63		163	100	100	9,306	48		5,793	64,743
Maryland.....	16	7,308	3,755	3,755				3,553		4,773	1,220	11,279	63,978	2,429		11,288	367
Massachusetts.....	19	5,997	5,387	5,387				310		5,139	4,829	146	45,753	7,719	208		
Michigan.....	30	6,742	3,377	3,365	12			2,295	70	3,463	1,168	722	79,292	795	1,153	10,171	799
Minnesota.....	27	10,680	9,967	9,609	358			713		7,042	6,329	142	132,504	689	274	2,966	
Mississippi.....	10	2,232	2,065	2,065				167		628	461		31,574	649		2,391	
Missouri.....	31	9,042	8,408	8,379	29			634		5,043	4,409	1,454	155,228	1,580	102	34,797	
Montana.....	12	2,670	1,878	1,824	54			792		1,047	255		51,584	145		334	
Nebraska.....	12	6,616	6,595	6,572	22		1	21		2,201	2,180	27	363,945	151	3,123	4,066	191
Nevada.....	9	1,011	978	978				633		1,182	549	115	3,116	41	134	25,288	
New Hampshire.....	5	1,626	794	794				832		862	30	25	13,157	1,043			895
New Jersey.....	19	7,640	7,122	6,657	465			518		7,262	6,744	62,135	50,519		4	923	
New Mexico.....	11	3,059	3,059	3,039						1,294	1,294		40,712	110	20,800	1,944	
New York.....	61	21,423	10,031	15,886	145			5,392		10,121	4,729	89,602	183,584	176	120	25,222	1,610
North Carolina.....	10	1,458	1,458	1,458						1,184	1,184		21,156	350			
Ohio.....	67	19,422	18,843	18,190	178		475	569	10	10,250	9,681	187	379,198	2,012	7,414	23,014	227,694
Oklahoma.....	8	957	845	845				112		147	35	616	23,879	392	300	1,510	
Oregon.....	7	933	923	923				10		602	592		2,816		1,201	4,394	
Pennsylvania.....	113	56,774	53,511	53,137	349		25	3,263		34,774	31,511	255,490	643,881	6,962	7,576	75,061	134,868
South Carolina.....	9	1,029	1,029	1,023	6					81	81		9,289	24		12	
Tennessee.....	14	5,145	4,990	4,988	2			155		2,315	2,100		83,602	1,289		4,300	
Texas.....	50	7,385	7,180	6,561	619			155		2,398	2,243	598	68,085	3,339	1,826	233,947	15,166
Utah.....	6	1,735	1,330	1,330				405		1,244	839	9	36,698	997		986	
Vermont.....	6	965	705	705				280		260	260	185	7,794	216	152		
Virginia.....	25	6,412	6,312	6,243	69			100		3,029	2,929	13	98,876	7,967	45	191	
Washington.....	17	3,009	2,194	2,194				1,415		2,221	806	2,082	29,555	88	726	2,863	
West Virginia.....	21	5,394	5,394	5,334	60					2,767	2,767		65,653	1,038	18	3,300	159,460
Wisconsin.....	20	4,196	4,196	4,186	6		4	778		778	778	3,556	113,175	369	542	3,365	
Wyoming.....	9	1,550	1,425	1,425				125		210	85	4	552,801	108	151	972,801	
All other states.....	13	1,435	1,069	1,069				366		540	174		45,758	10		17	

CARS AND GENERAL SHOP CONSTRUCTION AND REPAIRS BY STREET-RAILROAD COMPANIES.

United States.....	412	35,794	4,840	4,831	9			30,954		33,024	2,070	21,548	53,189	651	77	10,458	18,366
California.....	17	2,055	120	120				1,935		1,935		105	882			9,502	
Connecticut.....	14	388						388		388			14				45
Illinois.....	20	2,225	600	600				1,625		2,115	490	4	12,341				
Indiana.....	22	713	241	241				472		605	133	44	1,510				109
Maryland.....	2	217	20	20				197		214	17		2,542				
Massachusetts.....	31	1,788	100	100				1,688		1,778	90	140	2,527				
Michigan.....	14	1,704	625	625				1,079		1,079	107	107	2,606			3	
Missouri.....	6	3,065	150	150				2,855		3,345	490		2,927	4			584
New Jersey.....	12	2,276	40	40				2,236		2,286		2	2,339			302	1,258
New York.....	50	4,367	60	60	9			4,298		4,923	625	15,504	8,256	110		48	1,500
Ohio.....	44	3,635	805	805				2,830		2,855	25		2,374				2,004
Pennsylvania.....	39	4,370						4,370		4,395	25	5,028	5,711	27			1,680
All other states.....	141	9,051	2,070	2,070				6,981		7,156	175	614	9,160	510	77	603	11,176

CARS, STEAM-RAILROAD, NOT INCLUDING OPERATIONS OF RAILROAD COMPANIES.

United States.....	103	97,797	91,341	89,123	1,148	370	700	6,456		61,060	54,604	38,895	664,638	113,013	6,223	140,725	552,806
Delaware.....	3	3,388	2,173	2,173				1,215		2,780	1,565	149	13,400	330		220	369
Illinois.....	24	18,651	17,593	16,836	60		700	1,055		10,792	9,737	1,967	108,273	51,993	3,199	33,697	5,987
Indiana.....	7	10,690	9,779	9,779				920		5,807	4,887	2	122,422	11,756		29,429	
Kansas.....	2	320	145	145				175		175			1,422	95			
Massachusetts.....	4	1,510	1,510	1,460	50					710	710	512	5,457	43		4,309	
Missouri.....	6	6,013	5,575	5,575				438		4,702	4,324		57,031	11,951	750	3,990	
New York.....	4	3,345	3,100	3,100				245		305	60	172	14,914	1,826	232	2,749	
Ohio.....	6	4,410	4,380	4,125	255			30		5,590	5,560	96	18,490	2,383		6,000	81,877
Pennsylvania.....	13	31,732	31,570	31,025	551			150		19,971	19,915	34,516	169,365	9,763		47,966	458,862
Tennessee.....	3	1,400	1,125	1,125				273		605	330		2,185	350	772	2,144	
All other states.....	31	16,329	14,382	13,780	232	370		1,047		9,563	7,016	1,541	151,739	22,833	1,240	10,221	55,768

MANUFACTURES.

POWER AND FUEL USED, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

CEMENT.

Table 9—Contd.

STATE.	Number of establishments reporting.	PRIMARY HORSEPOWER.						ELECTRIC HORSEPOWER.		FUEL USED.							
		Total horsepower.	Owned by establishments reporting.					Rented.		Total rented and generated by establishments reporting.	Generated in the establishment reporting.	Coal.		Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
			Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Electric.	Other.			Anthracite (long tons).	Bituminous (short tons).				
United States...	127	371,799	317,633	295,038	19,065	3,430	100	54,166	.....	158,749	104,583	259,220	4,815,758	4,103	5,540	1,515,697	14,721,568
California.....	7	28,892	2,020	2,000	20	.....	.....	26,872	.....	28,801	1,929	.....	.....	.....	.....	891,130	.....
Illinois.....	6	15,270	14,750	14,750	.....	.....	.....	520	.....	8,833	8,313	.....	502,367	.....	10	16	.....
Indiana.....	11	28,191	18,030	18,030	.....	.....	.....	10,161	.....	16,521	6,360	.....	558,777	.....	.....	204,129	12,573,989
Kansas.....	5	61,754	61,754	54,104	7,650	.....	.....	.....	.....	13,828	13,828	1,786	2,000	.....	.....	212	.....
Michigan.....	13	21,773	21,773	20,025	1,748	1,600	.....	.....	.....	6,273	6,273	.....	390,390	1,934	5,490	385	.....
Missouri.....	4	3,750	3,750	3,750	.....	.....	.....	.....	.....	3,000	3,000	.....	62,669	.....	.....	.....	.....
New Jersey.....	3	16,393	16,393	16,343	.....	50	.....	.....	.....	4,330	4,330	44,166	545,919	.....	.....	.....	150
New York.....	16	24,385	22,460	21,990	240	130	100	1,925	.....	5,275	3,350	39,627	207,445	.....	222	30	687,429
Ohio.....	9	12,685	11,785	11,785	.....	.....	.....	900	.....	3,370	2,470	.....	202,742	.....	.....	.....	.....
Pennsylvania.....	27	102,804	97,418	97,368	.....	50	.....	5,486	.....	33,406	27,920	155,886	1,660,750	168	10	11,891	1,460,000
All other states.....	27	55,802	47,500	34,893	11,007	1,600	.....	8,302	.....	35,112	26,810	17,755	682,699	1,779	.....	407,914	.....

CHEMICALS.

United States...	285	208,604	115,701	103,273	1,147	11,066	215	92,057	846	156,699	64,642	650,480	2,161,768	63,520	3,644	110,276	1,300,265
Illinois.....	18	5,907	5,639	5,625	14	.....	.....	43	225	3,913	3,870	.....	150,942	1,026	.....	38	13,840
Massachusetts.....	21	3,731	2,494	2,294	150	15	65	1,232	5	1,855	623	6,234	35,099	9,764	17	357	159
Michigan.....	14	26,594	23,835	23,681	4	150	.....	2,759	.....	5,281	2,822	1	1,065,882	320	2,194	2,440	.....
Missouri.....	9	886	855	855	.....	.....	.....	31	.....	221	190	.....	40,069	786	.....	.....	2,852
New Jersey.....	47	13,880	13,821	13,751	20	.....	50	8	51	3,835	3,827	.....	215,265	1,863	50	3,939	1,850
New York.....	64	116,187	30,204	26,086	78	4,000	100	85,713	220	136,519	50,806	366,505	105,056	3,514	54	6,872	229,978
Ohio.....	28	11,715	11,706	11,473	232	1	.....	9	.....	395	386	.....	100,558	23,231	360	403	876,615
Pennsylvania.....	32	6,771	9,271	8,671	600	.....	.....	500	.....	1,875	1,375	57,575	298,534	6,008	126	27,378	35,723
All other states.....	52	19,923	17,816	10,867	49	6,900	.....	1,762	345	2,805	1,043	4,900	228,894	17,008	843	68,849	139,248

CLOCKS AND WATCHES, INCLUDING CASES AND MATERIALS.

United States...	112	14,957	13,302	12,593	425	284	.....	1,612	43	7,023	5,411	11,221	55,169	540	59	7,546	88,628
Connecticut.....	16	4,273	4,236	3,949	19	268	.....	37	.....	1,886	1,849	366	17,329	.....	.....	98	4,935
Illinois.....	18	2,578	2,377	2,362	9	6	.....	201	.....	1,470	1,269	9	16,540	200	.....	690	29,120
Massachusetts.....	12	2,874	2,810	2,760	40	10	.....	64	.....	1,139	1,075	1,110	5,813	.....	54	1,526	14,463
New Jersey.....	9	1,414	750	660	190	.....	.....	651	13	784	133	4,119	804	1	5	1,199	1,220
New York.....	23	1,311	1,211	1,000	121	.....	.....	164	26	674	510	2,456	4,496	139	.....	1,828	9,933
Ohio.....	9	877	719	.....	.....	.....	.....	156	2	212	56	.....	5,219	200	.....	1,285	27,916
Pennsylvania.....	8	1,033	915	870	45	.....	.....	116	2	631	515	3,151	769	.....	.....	765	934
All other states.....	17	597	374	373	1	.....	.....	223	.....	227	4	10	4,199	.....	.....	155	107

CLOTHING, MEN'S, INCLUDING SHIRTS.

United States...	4,402	42,725	22,648	18,003	5,259	1,380	6	18,816	1,261	22,894	4,078	55,770	89,342	1,013	1,344	8,904	828,622
California.....	52	540	120	120	.....	.....	.....	420	.....	467	47	4	24	.....	3	1,321	1,909
Connecticut.....	20	418	312	300	7	5	.....	103	3	206	103	71	1,532	.....	.....	9	791
Georgia.....	22	290	107	.....	77	30	.....	183	.....	185	2	10	45	.....	.....	189	36
Illinois.....	606	3,729	988	848	117	20	3	2,737	4	2,849	112	1,848	15,001	51	52	3	51,754
Indiana.....	38	784	168	113	55	.....	.....	611	5	698	37	.....	4,046	.....	25	183	3,337
Iowa.....	27	479	240	195	45	.....	.....	230	.....	247	8	30	2,197	.....	4	148	1,800
Kentucky.....	99	807	446	282	164	.....	.....	361	.....	443	82	.....	3,583	.....	.....	859	3,428
Louisiana.....	12	136	.....	.....	.....	.....	.....	136	.....	136	.....	.....	.....	.....	.....	.....	35
Maine.....	23	229	79	41	13	25	.....	120	30	120	.....	168	511	.....	37	117	157
Maryland.....	262	4,061	3,116	2,840	276	.....	.....	945	.....	1,969	1,024	1,016	14,412	.....	88	834	26,334
Massachusetts.....	198	1,753	1,155	1,120	35	.....	.....	500	98	709	209	452	7,692	.....	5	25	14,820
Michigan.....	38	1,151	631	627	4	.....	.....	510	10	662	152	18	3,561	7	8	26	2,455
Minnesota.....	40	421	8	.....	8	.....	.....	413	.....	417	4	38	557	.....	43	54	279
Missouri.....	69	1,569	662	553	109	.....	.....	883	14	1,221	338	9	8,196	.....	2	477	10,279
Nebraska.....	11	323	20	20	.....	.....	.....	303	.....	303	.....	8	808	.....	.....	8	.....
New Jersey.....	121	1,351	937	693	240	4	.....	399	15	409	10	5,254	193	.....	8	239	110,111
New York.....	1,723	13,821	7,833	4,304	2,518	1,011	.....	5,224	764	5,818	594	29,108	6,546	799	383	350	380,852
North Carolina.....	21	213	95	60	35	.....	.....	118	.....	138	20	24	535	.....	8	133	300
Ohio.....	279	1,794	675	343	322	10	.....	1,119	.....	1,311	192	35	5,470	88	.....	808	71,453
Oregon.....	5	217	140	140	.....	.....	.....	77	.....	156	82	.....	80	.....	96	924	.....
Pennsylvania.....	492	5,283	3,434	2,520	861	50	3	1,608	186	2,522	854	15,940	5,037	.....	13	1,565	131,776
Tennessee.....	32	503	226	106	24	96	.....	247	30	247	.....	.....	1,090	.....	.....	139	583
Texas.....	25	359	179	150	29	.....	.....	180	.....	185	5	20	1,026	4	18	142	72
Vermont.....	11	323	122	55	.....	67	.....	141	60	141	.....	.....	361	2	45	1	400
Virginia.....	19	346	186	154	32	.....	.....	157	3	183	26	6	903	.....	.....	167	180
Wisconsin.....	72	691	327	187	126	14	.....	364	.....	458	94	654	3,164	10	96	58	8,791
All other states.....	85	1,139	442	232	162	48	.....	658	39	601	33	231	2,142	34	410	180	7,190

POWER USED.

POWER AND FUEL USED, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

CUTLERY AND TOOLS, NOT ELSEWHERE SPECIFIED.

Table 9—Contd.

STATE.	Number of establishments reporting.	PRIMARY HORSEPOWER.								ELECTRIC HORSEPOWER.		FUEL USED.					
		Total horsepower.	Owned by establishments reporting.					Rented.		Total rented and generated by establishment.	Generated in the establishment reporting.	Coal.			Oil, including gasoline (barrels).	Gas (1,000 feet).	
			Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Electric.	Other.			Anthracite (long tons).	Bituminous (short tons).	Coke (short tons).			Wood (cords).
United States...	846	68,294	58,928	38,780	6,731	13,382	35	8,325	1,041	17,785	9,460	47,253	188,201	11,248	2,103	77,194	747,731
Connecticut.....	75	14,135	12,774	7,205	435	5,134	.....	921	440	2,864	1,943	17,449	43,852	2,335	498	6,017	9,996
Illinois.....	70	2,385	1,822	1,628	187	7	.....	509	54	752	243	217	13,442	377	42	5,814	5,866
Indiana.....	20	1,733	1,405	1,300	105	.....	.....	326	2	326	.....	155	8,073	927	6	3,273	2,700
Massachusetts.....	129	13,203	11,374	7,024	470	3,880	.....	1,708	181	3,779	2,071	5,924	22,993	943	517	23,190	2,610
Michigan.....	33	1,379	1,152	1,015	137	.....	.....	225	1	409	153	600	5,047	444	154	335	1,255
New Jersey.....	56	2,540	2,201	1,414	177	10	.....	179	160	209	30	6,123	7,217	254	6	2,432	4,087
New York.....	138	6,571	5,226	2,470	565	2,191	.....	1,278	67	1,818	540	5,303	10,930	1,741	56	5,487	104,897
Ohio.....	66	6,567	5,693	4,767	926	.....	.....	834	40	1,816	932	1,087	17,977	1,849	2	4,692	229,058
Pennsylvania.....	113	11,311	10,259	7,088	2,397	774	.....	1,036	16	2,314	1,278	8,597	48,280	1,563	8	8,162	349,181
West Virginia.....	4	3,445	3,445	3,025	420	.....	.....	1,635	.....	1,635	.....	56	.....	255	.....	12,123	34,933
All other states.....	142	4,965	3,577	1,844	312	1,356	35	1,308	80	1,863	555	1,792	10,334	560	814	5,669	3,139

DYEING AND FINISHING TEXTILES.

United States...	388	107,746	103,605	92,284	1,207	10,114	.....	2,665	1,476	24,011	21,346	593,093	869,216	2,576	746	10,037	64,657
Connecticut.....	10	5,851	5,851	2,911	15	2,925	.....	.....	.....	974	974	1,456	53,795	.....	10	993	3,850
Massachusetts.....	46	24,513	23,956	21,466	.....	2,490	.....	370	187	7,524	7,154	106,083	171,315	2,016	.....	1,143	49
New Jersey.....	61	19,989	19,521	18,965	16	540	.....	401	67	3,607	3,206	304,610	109,535	190	.....	1,690	39,122
New York.....	63	8,750	7,588	7,239	114	235	.....	758	404	1,284	526	49,371	65,844	.....	74	24	7,953
Pennsylvania.....	126	13,560	12,986	12,829	62	95	.....	203	371	1,513	1,310	69,512	166,532	228	.....	22	5,766
Rhode Island.....	44	21,179	20,987	18,131	1,000	1,856	.....	75	117	6,248	6,173	57,061	192,327	140	635	6,213	7,443
All other states.....	38	13,904	12,716	10,743	.....	1,973	.....	858	330	2,861	2,003	5,000	109,868	.....	27	2	467

ELECTRICAL MACHINERY, APPARATUS, AND SUPPLIES.

United States...	913	158,768	107,764	99,883	6,753	1,114	14	50,045	959	164,540	114,495	87,096	632,870	20,123	2,013	104,467	1,761,969
Connecticut.....	39	4,457	3,385	3,040	27	318	.....	1,032	40	2,117	1,085	485	18,771	.....	119	257	3,229
Illinois.....	115	11,636	9,535	9,258	277	.....	.....	2,015	83	10,656	8,638	166	71,903	5,720	1	1,100	235,963
Indiana.....	37	5,285	4,705	4,407	284	14	.....	580	.....	2,358	1,808	702	21,296	32	.....	4,086	61,160
Massachusetts.....	80	14,835	12,939	12,545	214	180	.....	1,820	76	29,188	27,368	7,946	103,916	4,154	40	27,066	241,011
Michigan.....	37	1,355	651	500	151	.....	.....	704	.....	888	184	67	3,492	185	.....	623	12,292
Missouri.....	20	1,180	531	500	31	.....	.....	642	7	1,432	790	.....	5,977	16	1	610	6,156
New Jersey.....	62	11,326	9,679	9,341	133	205	.....	1,544	103	8,691	7,147	26,633	45,910	549	30	3,248	74,605
New York.....	196	53,813	34,105	33,854	233	18	.....	19,485	223	71,599	52,114	44,898	139,883	5,303	36	34,605	80,966
Ohio.....	105	11,959	8,627	6,306	15	.....	.....	3,200	132	10,829	7,629	1,063	65,015	2,443	.....	6,452	615,288
Pennsylvania.....	80	33,829	16,196	14,332	1,844	20	.....	17,576	57	19,853	2,277	3,876	116,955	946	.....	10,223	131,782
Rhode Island.....	11	2,837	2,798	2,728	70	.....	.....	31	8	414	383	470	16,932	30	.....	5,223	867
Wisconsin.....	29	2,333	2,067	1,910	157	.....	.....	261	5	4,023	3,762	345	14,467	729	14	6,282	3,974
All other states.....	102	3,923	2,546	1,162	1,096	288	.....	1,152	225	2,462	1,310	445	8,344	16	1,772	4,687	293,816

FANCY ARTICLES, NOT ELSEWHERE SPECIFIED.

United States...	331	8,310	6,062	5,131	479	452	.....	1,783	465	4,115	2,332	8,497	22,063	1,323	63	2,725	22,277
Massachusetts.....	69	2,382	1,906	1,098	16	192	.....	385	91	474	89	697	8,816	1	41	7	1,444
Michigan.....	9	87	3	.....	.....	.....	.....	79	5	79	.....	.....	1,050	5	.....	145	.....
New Jersey.....	19	730	479	429	50	.....	.....	235	18	235	.....	3,940	807	.....	.....	2,010	2,068
New York.....	102	2,785	2,288	2,136	135	15	.....	249	250	2,430	2,190	2,362	5,659	1,300	7	101	10,818
Pennsylvania.....	33	498	325	272	53	.....	.....	108	65	108	.....	1,167	605	.....	.....	1	2,859
All other states.....	99	1,828	1,063	596	225	242	.....	727	38	780	53	331	5,140	17	15	606	4,843

FERTILIZERS.

United States...	485	64,711	51,967	49,740	1,825	365	37	12,579	165	19,238	6,659	20,698	462,023	6,148	9,795	19,721	111,859
Alabama.....	42	4,484	2,845	2,745	73	.....	27	1,014	25	1,684	70	.....	33,549	.....	420	85	.....
Florida.....	12	1,710	1,365	970	395	.....	.....	345	.....	1,279	934	290	4,956	.....	702	.....	.....
Georgia.....	91	10,488	6,493	5,803	600	.....	.....	3,995	.....	4,577	582	.....	43,977	25	4,333	377	848
Maryland.....	30	5,324	4,224	4,090	84	50	.....	1,100	.....	1,383	283	.....	25,183	10	10	61	150
New Jersey.....	18	2,469	2,459	2,424	35	.....	.....	.....	.....	1,368	1,368	11,479	30,304	10	10	50	7
New York.....	14	2,799	1,650	1,625	25	.....	.....	1,039	110	1,114	75	2,177	18,645	4,507	.....	.....	.....
North Carolina.....	32	3,132	2,597	2,537	60	.....	.....	535	.....	547	12	.....	19,220	.....	1,270	74	.....
Ohio.....	24	3,059	2,819	2,689	130	.....	.....	240	.....	585	345	.....	24,111	.....	50	.....	11,306
Pennsylvania.....	46	5,174	4,967	4,852	10	105	.....	177	30	981	804	4,701	55,930	583	.....	17	.....
South Carolina.....	26	4,766	4,379	4,338	41	.....	.....	387	.....	607	220	.....	45,046	.....	986	27	.....
Tennessee.....	10	2,152	1,799	1,799	.....	.....	.....	353	.....	629	276	.....	16,160	1,000	12	48	.....
Virginia.....	38	5,560	5,335	5,228	72	35	.....	225	.....	573	348	1,937	49,238	.....	233	37	.....
All other states.....	102	13,604	11,035	10,550	300	175	10	2,503	.....	3,911	1,342	114	85,653	23	1,719	18,945	99,543

POWER AND FUEL USED, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

FOUNDRY AND MACHINE-SHOP PRODUCTS—Continued.

STATE.	PRIMARY HORSEPOWER.									ELECTRIC HORSEPOWER.		FUEL USED.					
	Number of establishments reporting.	Total horsepower.	Owned by establishments reporting.					Rented.		Total, rented and generated by establishments reporting.	Generated in the establishments reporting.	Coal.		Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
			Total.	Steam engines.	Gas engines.	Water wheels and motors.	Oth-er.	Elec-tric.	Oth-er.			Anthra-cite (long tons).	Bitumi-nous (short tons).				
North Carolina.....	100	2,700	1,377	1,038	278	61	.....	1,309	14	1,331	22	139	4,276	4,454	2,601	576	125
Ohio.....	1,172	112,538	97,336	77,996	18,612	690	38	14,331	821	72,470	53,039	18,730	690,612	193,338	4,455	60,917	1,533,226
Oregon.....	77	2,709	598	499	49	50	.....	2,111	.....	2,111	.....	154	668	2,566	2,351	4,469	275
Pennsylvania.....	1,612	162,414	142,703	108,413	32,918	1,007	365	18,591	1,120	118,785	100,194	201,535	770,178	270,793	9,974	116,179	4,136,380
Rhode Island.....	140	11,033	6,717	6,028	516	148	25	3,970	346	6,454	2,434	17,110	33,883	10,179	563	2,202	9,698
Tennessee.....	117	7,488	4,971	4,844	117	10	.....	2,517	.....	4,335	1,818	11	46,889	43,801	1,635	746	875
Texas.....	133	5,287	3,120	2,051	463	.....	6	2,082	85	2,723	641	202	13,138	16,075	4,603	15,025	32,901
Vermont.....	52	4,510	3,740	1,582	217	1,641	300	766	23	2,125	1,369	1,222	9,001	1,636	390	374	497
Virginia.....	103	4,012	2,579	2,118	249	212	.....	1,423	20	3,785	2,362	490	31,520	23,178	1,602	4,355	774
Washington.....	171	5,117	1,556	1,433	123	.....	.....	3,551	10	3,651	100	100	4,514	8,873	7,451	4,332	832
West Virginia.....	80	3,639	3,429	1,741	1,088	.....	.....	110	.....	1,535	1,425	32	9,265	8,899	16	46	233,273
Wisconsin.....	422	33,709	29,766	24,359	4,602	645	150	3,852	101	35,305	31,453	9,544	267,670	60,431	4,942	56,865	68,312
All other states.....	249	5,064	2,015	1,718	817	30	50	2,363	86	2,619	256	209	11,156	9,092	2,180	3,696	60,812

FUR GOODS.

State	Number of establishments reporting.	Total horsepower.	Total.	Steam engines.	Gas engines.	Water wheels and motors.	Oth-er.	Elec-tric.	Oth-er.	Total, rented and generated by establishments reporting.	Generated in the establishments reporting.	Coal.	Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).	
United States.....	418	2,120	681	648	33	.....	.....	1,430	9	1,440	10	2,212	7,022	45	80	21	16,517
Michigan.....	24	232	188	188	.....	.....	.....	41	3	41	.....	278	3,873	.....	.....	.....	249
Minnesota.....	26	288	86	76	10	.....	.....	202	.....	212	10	29	527	30	13	13	322
New York.....	241	1,102	240	240	.....	.....	.....	856	6	856	.....	1,607	952	13	8	4	10,753
All other states.....	127	498	167	144	23	.....	.....	331	.....	331	.....	295	1,670	2	59	4	5,192

FURNISHING GOODS, MEN'S.

State	Number of establishments reporting.	Total horsepower.	Total.	Steam engines.	Gas engines.	Water wheels and motors.	Oth-er.	Elec-tric.	Oth-er.	Total, rented and generated by establishments reporting.	Generated in the establishments reporting.	Coal.	Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).	
United States.....	583	12,116	8,721	7,501	740	480	.....	2,988	407	4,860	1,872	15,872	33,615	32	194	2,596	80,512
Connecticut.....	13	1,674	1,648	1,328	65	255	.....	21	5	248	227	3,040	7,602	.....	3	5	547
Indiana.....	51	796	472	470	2	.....	.....	272	52	434	162	33	2,936	.....	.....	12	1,020
Massachusetts.....	32	520	128	66	62	.....	.....	392	.....	392	.....	130	738	25	.....	67	588
New Jersey.....	47	2,306	1,817	1,619	65	133	.....	316	173	453	137	815	9,266	.....	78	124	6,999
.....	19	973	887	877	10	.....	.....	76	10	534	458	2,508	2,903	.....	.....	5	1,893
New York.....	159	3,284	2,455	2,401	39	15	.....	713	116	1,541	828	9,118	6,064	.....	1,794	27,665	
Ohio.....	55	917	420	99	321	.....	.....	439	8	489	.....	.....	870	4	16	40	14,354
Pennsylvania.....	48	254	150	106	44	.....	.....	88	16	93	5	112	630	.....	33	.....	16,653
Rhode Island.....	9	617	440	365	.....	75	.....	155	22	190	35	20	1,614	.....	11	144	.....
All other states.....	150	775	304	170	132	2	.....	466	5	486	.....	96	962	3	86	306	10,763

FURNITURE AND REFRIGERATORS.

State	Number of establishments reporting.	Total horsepower.	Total.	Steam engines.	Gas engines.	Water wheels and motors.	Oth-er.	Elec-tric.	Oth-er.	Total, rented and generated by establishments reporting.	Generated in the establishments reporting.	Coal.	Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).	
United States.....	2,616	221,451	197,715	184,425	5,830	6,848	612	20,420	3,316	43,252	22,832	54,427	728,841	17,009	38,304	7,540	181,463
Arkansas.....	18	1,985	1,940	1,915	25	.....	.....	45	.....	49	4	350	3,580	.....	3	2	34,513
California.....	100	2,338	355	148	207	.....	.....	1,956	22	1,956	.....	12	2	520	80	1,990	2,286
Georgia.....	37	2,610	2,318	2,293	25	.....	.....	292	.....	309	17	609	5,579	145	1,435	29	.....
Illinois.....	225	20,375	18,741	18,281	260	200	.....	1,614	520	5,882	4,268	443	106,511	486	50	449	5,555
Indiana.....	187	20,449	18,877	18,582	120	175	.....	1,572	.....	2,952	1,890	714	103,666	576	185	332	1,638
Iowa.....	39	2,453	2,213	2,246	67	.....	.....	140	.....	140	.....	4	13,888	.....	167	88	53
Kentucky.....	27	2,936	2,868	2,865	3	.....	.....	68	.....	122	.....	54	9,636	.....	890	10	68
Maryland.....	37	2,876	2,089	1,840	224	25	.....	787	.....	787	.....	333	6,732	.....	12	244	3,638
Massachusetts.....	129	12,203	11,188	8,899	166	1,523	600	333	632	1,395	1,012	4,856	15,854	1,002	10,557	121	3,882
Michigan.....	187	27,485	25,581	24,590	186	806	.....	1,886	18	3,821	1,935	5,430	100,371	1,480	1,526	295	3,206
Minnesota.....	45	2,782	2,518	2,433	85	.....	.....	254	10	785	531	308	10,065	17	2,441	215	25
Missouri.....	83	6,203	5,386	5,154	232	.....	.....	752	65	1,012	260	97	16,111	971	416	319	14,514
New Hampshire.....	26	2,695	2,570	1,835	35	700	.....	125	.....	148	23	8	2,082	.....	425	25	5
New Jersey.....	37	2,340	2,046	1,975	71	.....	.....	284	10	554	270	4,059	4,717	1,006	301	10	1,743
New York.....	487	28,300	23,607	19,880	1,365	2,250	12	3,372	1,381	7,171	3,799	22,462	73,829	5,300	2,395	233	31,404
North Carolina.....	105	11,379	11,173	11,121	12	40	.....	181	25	267	86	.....	14,708	350	3,792	22	.....
Ohio.....	207	15,951	14,820	13,627	1,098	105	.....	1,027	94	4,243	3,216	41	68,481	480	700	193	33,434
Oregon.....	18	1,501	853	822	8	23	.....	648	.....	688	40	.....	40	.....	825	1,720	1,092
Pennsylvania.....	231	17,211	15,694	14,582	972	40	.....	1,210	407	3,737	2,627	13,168	66,582	1,295	244	101	23,952
Tennessee.....	41	3,758	3,380	3,330	.....	50	.....	323	55	416	93	.....	15,757	4	255	12	.....
Texas.....	20	1,879	940	935	5	.....	.....	939	.....	944	5	.....	2,190	.....	886	2	5,000
Vermont.....	19	2,767	2,637	2,170	18	349	.....	180	50	345	165	5	2,780	.....	30	49	.....
Virginia.....	33	2,326	1,976	.....	.....	.....	.....	350	.....	359	9	.....	3,240	.....	1,043	.....	100
Washington.....	33	1,284	828	828	.....	.....	.....	456	.....	501	45	.....	80	.....	1,546	.....	15
West Virginia.....	19	1,469	1,469	1,270	177	13	.....	105	.....	105	.....	.....	5,293	.....	6	.....	7,207
Wisconsin.....	106	18,697	18,299	17,904	185	210	.....	358	10	3,335	2,877	1,281	65,187	3,237	7,466	987	2,905
All other states.....	120	4,774	3,539	2,915	284	340	.....	1,218	17	1,229	11	247	11,610	145	644	87	5,298

MANUFACTURES.

POWER AND FUEL USED, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

GAS AND ELECTRIC FIXTURES AND LAMPS AND REFLECTORS.

Table 9—Contd.

STATE.	PRIMARY HORSEPOWER.								ELECTRIC HORSEPOWER.		FUEL USED.						
	Number of establishments reporting.	Total horsepower.	Owned by establishments reporting.					Rented.		Total rented and generated by establishment.	Generated in the establishment reporting.	Coal.		Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
			Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Elec.	Other.			Anthra-cite (long tons).	Bitumi-nous (short tons).				
United States...	518	15,822	8,718	6,930	1,544	244	.....	5,898	1,248	8,788	2,892	14,857	94,000	3,115	344	3,056	114,463
California.....	38	540	80	.....	30	.....	.....	508	2	508	2	1,793	89	97	.....	144	3,039
Connecticut.....	12	1,946	1,863	1,850	13	.....	.....	8	75	935	927	9,033	860	206	.....	363	2,239
Illinois.....	55	1,833	1,307	1,015	50	242	.....	493	83	1,030	537	8,018	162	.....	499	4,980	
Massachusetts.....	24	478	10	.....	.....	.....	.....	416	52	416	.....	69	.....	.....	446	971	
New Jersey.....	28	1,124	986	583	403	.....	.....	103	35	689	586	3,205	60,375	203	22	160	4,870
New York.....	145	3,831	2,228	1,982	244	2	.....	1,123	480	1,635	512	6,942	4,782	864	17	302	26,109
Ohio.....	60	2,850	743	400	343	.....	.....	1,508	105	1,548	40	36	3,602	349	.....	176	18,983
Pennsylvania.....	59	1,249	547	385	162	.....	.....	339	363	484	145	2,274	605	249	4	684	25,164
Wisconsin.....	12	353	160	160	.....	.....	.....	193	.....	263	70	25	1,680	235	.....	.....	4,741
All other states.....	95	2,102	844	545	299	.....	.....	1,205	53	1,280	75	84	5,016	96	35	342	23,420

GAS, ILLUMINATING AND HEATING.

United States...	973	128,350	125,456	115,332	7,128	2,814	182	2,723	171	17,336	14,613	898,984	4,668,096	759,245	3,722	11,816,282	605,408
California.....	61	7,502	7,084	6,542	539	3	.....	418	.....	6,537	6,119	.....	300	.....	9	2,205,961	600
Connecticut.....	22	4,100	3,995	3,383	12	600	.....	105	.....	1,064	959	33,925	89,977	5,691	7	192,870	1,419
Illinois.....	64	18,385	18,116	17,359	757	.....	.....	257	12	330	73	5,551	437,127	253,479	.....	1,520,486	200
Indiana.....	41	5,845	5,815	5,767	44	.....	.....	5	25	252	247	2,478	180,994	26,750	.....	140,915	13,645
Iowa.....	97	2,043	2,026	1,453	530	42	1	17	.....	84	67	216	94,175	24,234	.....	138,484	2
Massachusetts.....	42	7,371	7,075	7,051	9	15	.....	247	49	1,193	948	109,399	290,835	58,940	3	484,513	.....
Michigan.....	45	6,055	6,018	5,506	512	.....	.....	37	.....	56	19	2,423	428,703	3,192	.....	111,857	.....
Minnesota.....	33	3,538	3,530	1,117	904	1,509	.....	8	.....	314	306	44	97,083	1,266	200	190,502	5,188
Missouri.....	15	3,635	3,595	2,917	678	.....	.....	40	.....	40	.....	3,147	220,858	3,508	.....	283,744	60
New Jersey.....	40	0,717	6,694	6,364	250	.....	.....	23	80	51	28	72,990	179,915	3,428	4	628,280	.....
New York.....	91	30,089	29,467	28,748	99	618	2	588	34	4,567	3,979	485,900	832,970	119,602	120	3,430,773	.....
Ohio.....	28	2,165	2,155	2,113	42	.....	.....	10	.....	10	.....	1,290	311,070	4,313	6	54,127	223,176
Pennsylvania.....	76	9,374	9,238	8,365	871	2	.....	136	.....	469	333	99,297	348,241	79,675	4	948,620	44,268
Texas.....	23	1,090	1,077	1,067	10	.....	.....	2	11	27	25	7,930	31,985	7,322	.....	99,624	241,102
Wisconsin.....	44	3,278	3,125	1,659	1,441	25	.....	153	.....	981	823	496	139,477	26,953	64	36,856	17,190
All other states.....	251	17,163	16,446	15,921	430	.....	95	677	40	1,361	684	73,898	936,681	140,822	3,299	1,348,870	58,559

GLASS.

United States...	353	123,132	119,707	98,871	20,731	5	.....	3,425	.....	43,589	40,164	17,006	1,859,001	17,393	12,488	468,894	43,711,519
California.....	3	592	295	295	.....	.....	.....	297	.....	297	.....	.....	270,826	4,713	10	72,808	870
Illinois.....	11	6,638	6,205	6,155	50	.....	.....	433	.....	1,619	1,186	.....	457,900	7,736	175	33,693	75,000
Indiana.....	44	21,031	20,637	17,951	2,736	.....	.....	344	.....	4,045	4,301	443	.....	.....	.....	66,957	146,069
Kansas.....	23	1,031	976	603	373	.....	.....	55	.....	140	85	.....	.....	.....	.....	1,020	2,289,789
Maryland.....	7	427	257	235	22	.....	.....	170	.....	230	60	640	21,888	175	331	5,642	17,630
Missouri.....	4	3,820	3,770	8,770	.....	.....	.....	50	.....	11,833	11,783	.....	169,028	30	100	27,000	.....
New Jersey.....	22	3,081	3,080	3,046	14	.....	.....	21	.....	372	351	5,583	104,230	2,381	8,491	138,011	1,998
New York.....	24	1,774	1,604	1,184	420	.....	.....	170	.....	605	335	4,363	68,340	1,204	625	63,700	93,899
Ohio.....	44	16,198	15,652	11,782	3,870	.....	.....	546	.....	9,995	9,449	89	210,815	1,397	5	4,493	12,728,097
Pennsylvania.....	111	55,182	54,294	43,393	10,836	5	.....	898	.....	12,804	11,906	6,788	453,613	4,093	2,079	34,066	22,605,773
Virginia.....	5	245	170	170	.....	.....	.....	75	.....	85	10	.....	17,653	1	2	1,047	.....
West Virginia.....	44	5,233	4,957	2,602	2,355	.....	.....	276	.....	719	443	.....	8,483	.....	.....	30	5,734,514
All other states.....	11	2,880	2,790	2,785	5	.....	.....	90	.....	345	255	.....	81,725	2,663	670	19,462	17,830

GLOVES AND MITTENS, LEATHER.

United States...	266	2,889	2,016	1,625	141	250	.....	850	23	1,000	150	1,756	11,346	19	602	186	19,491
California.....	20	58	.....	.....	.....	.....	.....	58	.....	58	.....	.....	.....	.....	.....	36	284
Illinois.....	25	657	505	504	1	.....	.....	147	5	147	.....	57	4,537	.....	.....	2	607
New York.....	145	1,003	629	545	48	33	.....	370	4	370	.....	1,382	3,474	.....	127	112	8,983
Wisconsin.....	22	301	177	135	42	.....	.....	124	.....	249	125	241	1,342	15	6	1	8,329
All other states.....	54	870	705	433	60	217	.....	151	14	176	25	76	1,993	4	469	15	1,288

HATS, FUR-FELT.

United States...	208	19,245	16,845	16,653	147	20	25	2,172	228	6,186	4,014	62,704	103,370	117	31	257	43,772
Connecticut.....	68	5,619	4,589	4,464	100	.....	25	988	42	1,333	345	1,499	33,162	39	6	169	8,478
Massachusetts.....	9	1,149	1,125	1,125	.....	.....	.....	24	.....	274	250	30	33,773	.....	.....	.....	1,168
New Jersey.....	43	5,046	4,600	4,582	15	12	.....	392	45	956	594	29,097	8,902	.....	15	1	16,350
New York.....	30	1,451	1,114	1,110	4	.....	.....	252	85	314	62	4,465	7,790	.....	9	.....	5,525
Pennsylvania.....	31	5,335	4,951	4,925	18	8	.....	343	41	2,924	2,581	27,626	13,608	.....	.....	85	7,624
All other states.....	27	645	457	447	10	.....	.....	173	15	355	182	87	6,135	78	1	2	4,627

MANUFACTURES.

POWER AND FUEL USED, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

MARBLE AND STONE WORK.

STATE.	PRIMARY HORSEPOWER.									ELECTRIC HORSEPOWER.		FUEL USED.					
	Num-ber of estab-lish-ments re- port- ing.	Total horse- power.	Owned by establishments reporting.					Rented.		Total rented and gener- ated by estab- lish- ment.	Gener- ated in the estab- lish- ment re- port- ing.	Coal.		Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
			Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Elec- tric.	Other.			Anthra- cite (long tons).	Bitum- inous (short tons).				
United States...	2,875	187,686	152,969	132,236	10,874	9,618	241	32,062	2,655	53,748	21,686	49,962	682,447	1,149	8,313	20,238	133,436
California.....	79	3,502	2,055	1,729	241	85	.....	1,507	.....	1,577	70	.....	5,976	.....	10	7,964	.....
Connecticut.....	40	2,317	1,952	1,749	163	40	.....	311	54	426	115	93	5,181	.....	14	156	1,754
Georgia.....	56	3,370	3,153	3,094	59	.....	.....	205	12	588	333	.....	29,535	.....	70	224	.....
Illinois.....	148	5,003	3,353	2,625	728	.....	.....	1,625	25	2,026	401	317	18,150	9	.....	1,106	4,882
Indiana.....	121	17,143	16,292	16,055	237	.....	.....	835	10	4,014	3,179	19	120,921	135	29	280	6,114
Kentucky.....	33	1,685	1,632	1,491	141	.....	.....	51	2	599	548	.....	7,090	.....	.....	429	698
Maine.....	66	7,785	6,900	6,532	173	195	.....	885	.....	1,031	196	150	17,743	.....	235	208	8
Maryland.....	36	4,241	3,649	3,629	14	.....	.....	582	10	942	360	1,814	19,718	1	.....	12	65
Massachusetts.....	227	16,515	14,089	13,179	835	75	.....	1,274	1,152	2,560	1,286	1,836	43,997	115	13	1,388	4,843
Michigan.....	86	1,570	1,108	887	216	.....	.....	448	14	491	43	41	3,525	36	86	593	567
Minnesota.....	88	5,422	3,019	2,708	251	.....	.....	2,403	.....	2,428	25	149	10,834	8	145	570	265
Missouri.....	74	4,306	3,486	2,910	536	40	.....	813	7	1,047	234	11	37,239	.....	1,930	339	9,723
New Hampshire.....	69	3,620	2,371	2,206	119	16	30	1,213	86	1,213	.....	82	11,684	1	66	249	320
New Jersey.....	67	2,756	2,383	2,105	218	60	.....	373	.....	729	356	3,586	3,957	3	.....	323	917
New York.....	313	18,110	12,838	11,108	1,492	238	.....	4,935	337	9,199	4,264	24,461	20,511	738	39	1,192	25,895
North Carolina.....	19	1,863	1,563	1,555	8	.....	.....	150	150	280	130	11	5,021	.....	146	12	.....
Ohio.....	139	7,070	6,819	5,098	1,720	1	.....	248	3	2,273	2,025	401	40,818	.....	.....	684	32,872
Pennsylvania.....	382	29,037	26,878	24,863	1,902	53	60	1,778	381	2,647	869	15,465	105,316	30	26	1,386	28,355
Rhode Island.....	26	1,754	1,611	1,504	41	.....	.....	142	1	142	.....	101	4,806	.....	7	110	.....
Tennessee.....	33	2,781	2,590	2,452	138	.....	.....	191	.....	221	30	96	19,071	.....	.....	175	35
Texas.....	49	1,016	608	418	190	.....	.....	408	.....	408	.....	1	4,188	.....	159	518	.....
Vermont.....	283	29,107	21,467	13,822	202	7,339	104	7,214	426	12,949	5,735	879	82,166	11	1,213	376	829
Virginia.....	32	4,553	4,465	3,500	10	925	30	88	.....	470	382	4	24,097	.....	1,600	9	.....
Wisconsin.....	93	4,847	4,000	3,163	422	415	.....	847	.....	1,342	495	157	18,747	81	127	347	2,230
All other states.....	201	8,253	4,688	3,734	818	136	.....	3,536	29	4,096	560	283	22,147	22	2,348	1,583	13,076

MATTRESSES AND SPRING BEDS.

United States...	647	17,689	9,223	6,206	2,639	378	.....	8,315	151	10,192	1,877	4,898	34,139	1,799	2,177	1,825	84,043
California.....	33	727	50	.....	50	.....	.....	677	.....	677	.....	81	66	.....	.....	558	100
Illinois.....	46	849	502	432	70	.....	.....	847	.....	398	51	14	2,915	36	1	62	2,897
Indiana.....	23	791	621	525	56	40	.....	170	.....	482	312	382	4,276	.....	.....	172	.....
Massachusetts.....	38	592	294	262	32	.....	.....	296	2	356	60	2,254	1,428	.....	16	1	1,081
New York.....	82	1,581	1,094	703	341	50	.....	418	69	455	37	.....	1,903	92	20	28	10,223
Ohio.....	32	2,060	1,759	1,253	501	.....	.....	310	.....	1,094	784	9	7,905	30	.....	4	22,132
Pennsylvania.....	54	1,102	907	525	377	5	.....	190	5	522	332	1,538	837	.....	6	15	22,733
Wisconsin.....	18	917	702	640	62	.....	.....	215	.....	406	191	21	2,574	15	393	.....	1,400
All other states.....	321	9,061	3,294	1,861	1,160	283	.....	5,692	75	5,802	110	599	12,235	1,626	1,741	985	23,507

MILLINERY AND LACE GOODS.

United States...	1,025	7,918	3,547	2,869	561	117	.....	4,048	323	4,560	512	8,644	12,050	480	78	342	80,292
Illinois.....	72	549	239	150	89	.....	.....	310	.....	431	121	164	2,951	65	2	31	5,159
Massachusetts.....	68	391	56	12	17	27	.....	278	57	278	.....	42	871	.....	.....	8	1,591
Missouri.....	24	94	18	13	.....	.....	.....	70	.....	76	.....	474	207	.....	.....	.....	2,566
New Jersey.....	126	1,380	866	707	114	45	.....	448	66	510	62	2,167	2,618	2	13	39	3,118
New York.....	581	3,511	1,059	835	224	.....	.....	2,308	144	2,369	61	4,562	340	13	6	4	49,068
Ohio.....	25	603	402	340	62	.....	.....	201	.....	348	147	.....	2,180	.....	.....	.....	16,548
Pennsylvania.....	53	841	555	547	8	.....	.....	246	40	246	.....	335	1,984	.....	.....	30	4,679
All other states.....	66	549	352	260	47	45	.....	181	16	302	121	900	899	400	57	230	3,583

MINERAL AND SODA WATERS.

United States...	3,561	19,392	13,633	8,668	4,580	375	10	5,504	255	6,218	714	17,532	45,841	666	4,367	6,946	112,234
Georgia.....	131	363	240	35	205	.....	.....	114	9	114	.....	9	701	58	93	549	190
Illinois.....	227	1,620	1,009	835	164	10	.....	611	.....	745	137	108	5,765	31	12	248	1,146
Massachusetts.....	121	657	403	340	44	9	10	247	7	303	56	518	2,430	11	96	81	1,706
New Jersey.....	111	879	719	558	157	4	.....	100	.....	169	.....	2,556	444	.....	13	30	3,410
New York.....	391	2,820	2,227	1,400	763	64	.....	550	43	773	223	8,928	3,240	227	233	209	17,363
Pennsylvania.....	283	1,851	1,466	1,033	406	27	.....	385	.....	510	125	3,682	2,579	6	84	108	15,469
All other states.....	2,292	11,202	7,569	4,467	2,841	261	.....	3,437	196	3,610	173	1,721	30,682	333	3,881	5,721	72,956

POWER USED.

POWER AND FUEL USED, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

MUSICAL INSTRUMENTS, PIANOS AND ORGANS AND MATERIALS.

STATE.	PRIMARY HORSEPOWER.									ELECTRIC HORSEPOWER.		FUEL USED.					
	Number of establishments reporting.	Total horsepower.	Owned by establishments reporting.					Rented.		Total rented and generated in the establishment reporting.	Generated in the establishment reporting.	Coal.		Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
			Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Electric.	Other.			Anthracite (long tons).	Bituminous (short tons).				
United States...	430	41,623	35,702	33,314	1,271	1,106	11	5,355	566	13,256	7,901	37,796	202,934	4,930	789	1,457	46,988
Connecticut.....	17	2,559	2,301	1,951	15	325	10	258	23	1,017	759	4,195	9,955		3		500
Illinois.....	64	8,123	7,508	7,378	79	50	1	592	23	2,576	1,984	2,406	83,958		6	403	448
Indiana.....	14	2,650	2,274	2,268	6			376		811	435		18,701		25	200	
Maryland.....	4	613	610	385	225			3		438	435	1,613	2,011		60	620	
Massachusetts.....	54	4,454	4,197	3,970	52	175		195	62	933	738	1,652	17,852	678	515	64	779
Michigan.....	16	2,690	2,670	2,640		30		2	18	369	307	88	19,414		6		
New Jersey.....	15	1,121	948	940		8		152	21	642	490	3,110	5,125	556	10	241	98
New York.....	138	10,905	8,938	8,605	170	163		1,550	417	3,184	1,634	23,062	26,120	1,338	83	19	4,673
Ohio.....	30	2,254	1,366	870	496			888		1,189	301	7	6,061	2,284	73	33	32,776
Pennsylvania.....	24	1,260	958	819	139			302		588	286	1,560	3,767		1		4,421
Vermont.....	4	1,966	1,430	1,265		165		536		572	36	35	2,168		4		462
All other states.....	50	3,028	2,502	2,223	89	190		501	25	937	436	78	7,712	14	34	46	2,631

OIL, COTTONSEED, AND CAKE.

STATE.	Number of establishments reporting.	Total horsepower.	Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Electric.	Other.	Total rented and generated in the establishment reporting.	Generated in the establishment reporting.	Anthracite (long tons).	Bituminous (short tons).	Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
United States...	803	192,342	185,478	183,440	1,674	175	189	6,394	470	10,855	4,461	8,583	828,357	800	156,447	376,789	372,880
Alabama.....	71	17,215	16,712	16,512	75	125		503		679	176	5	81,733		5,553	45	
Arkansas.....	44	13,029	13,024	13,008	16			5		173	168		62,692		6,227	2,032	57,980
Georgia.....	142	29,510	27,983	27,283	694			1,527		1,866	339	4,591	121,576		65,401	45	
Louisiana.....	42	12,142	11,854	11,222	482		150	288		523	643	676	31,353		2,411	75,081	68,274
Mississippi.....	87	24,534	24,240	24,207			29	288		892	604	720	147,191		859		
North Carolina.....	53	9,641	8,460	8,403	3			1,175		1,414	239		40,785		17,642	6	
Oklahoma.....	39	10,720	10,389	10,061	328			331		753	422		23,516		1,564	25,708	203,066
South Carolina.....	103	17,730	15,560	15,492	18	50		2,170		2,599	429	1,232	62,119	800	39,475	8	
Tennessee.....	20	7,472	7,455	7,455				17		334	317		47,208		500		
Texas.....	183	45,185	45,005	44,959	46			90	90	754	604	1,359	159,919		9,254	271,438	43,560
All other states.....	19	5,164	4,784	4,772	12			380		808	460		50,260		4,561	1,776	

PAINT AND VARNISH.

STATE.	Number of establishments reporting.	Total horsepower.	Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Electric.	Other.	Total rented and generated in the establishment reporting.	Generated in the establishment reporting.	Anthracite (long tons).	Bituminous (short tons).	Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
United States...	672	58,182	47,487	42,168	3,290	2,006	25	7,814	861	17,037	9,223	66,597	299,930	24,667	1,318	19,613	269,367
Illinois.....	66	7,108	6,524	6,221	298		5	574	10	3,196	2,622	378	55,018	3,988	178	2,736	8,729
Michigan.....	16	2,362	2,098	2,098				244	20	419	375	31	17,827	2,040		50	631
Missouri.....	28	2,706	2,335	2,331	4			371		721	90	2	20,414	310	30	49	3,061
New Jersey.....	49	5,924	5,203	5,129	45	29		721		1,875	1,154	17,903	42,871	1,581	3	13	1,054
New York.....	126	10,857	8,882	8,133	259	475	15	1,412	563	3,200	1,788	37,408	22,408	4,518	11	331	8,634
Ohio.....	74	5,572	4,666	3,337	1,329			896	10	2,548	1,632	1	29,040	6,523	64	24	32,702
Pennsylvania.....	98	9,862	9,399	7,567	1,012	820		377	85	1,112	735	9,821	70,635	1,948	667	447	181,924
All other states.....	215	11,771	8,380	7,850	343	682	5	3,219	172	4,687	897	1,053	40,717	3,759	365	15,963	32,632

PAPER AND WOOD PULP.

STATE.	Number of establishments reporting.	Total horsepower.	Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Electric.	Other.	Total rented and generated in the establishment reporting.	Generated in the establishment reporting.	Anthracite (long tons).	Bituminous (short tons).	Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
United States...	777	1,304,265	1,264,185	469,089	6,675	788,146	275	38,810	1,470	130,120	91,510	558,677	5,460,314	500	226,001	584,536	6,485,293
Connecticut.....	51	19,509	19,454	11,449		8,005		55		255	200	23,184	92,807		64	97	540
Delaware.....	6	4,318	4,318	3,677		641							60,334				700
Illinois.....	19	15,169	15,165	11,185	14	3,966		4		1,925	1,921		223,676				700
Indiana.....	27	18,382	17,085	14,930	1,050	1,105		1,297		2,695	1,398	2	285,274			2,535	18,482
Maine.....	45	228,787	215,985	48,271	30	167,684		7,572	230	22,395	14,823	15,202	590,101		41,099		
Maryland.....	13	11,407	11,162	10,251		911		10	235	6,413	6,403		132,467				354,808
Massachusetts.....	88	115,792	113,133	59,727	285	53,121		2,004	655	6,241	4,237	60,131	465,347		4,769	19	
Michigan.....	32	48,700	47,630	31,900		15,630		1,170		4,232	3,062		385,344		11,298		47
Minnesota.....	9	23,440	22,940	2,310		20,630		500		1,258	758		35,360		8,880		
New Hampshire.....	34	79,912	74,747	19,603		55,144		5,165		13,963	8,798	8,133	186,189		73,847		42
New Jersey.....	37	22,996	22,816	19,338	500	2,978		180		1,068	856	167,046	79,431				52
New York.....	178	337,548	323,062	66,196	65	257,701		13,586		28,149	14,563	173,387	872,378		2,775	176	
North Carolina.....	3	9,650	6,800			2,850				8,000	8,090		125,600				
Ohio.....	47	51,492	50,398	43,815	2,600	3,708	275	1,004		9,776	8,772		492,136				4,581,706
Oregon.....	5	39,651	39,651	5,857	5	33,789				1,270	1,270					228,562	
Pennsylvania.....	62	66,910	64,493	58,155	25	6,313		2,417		10,982	8,565	98,456	733,072		15,855	2,188	58,269
Vermont.....	25	38,191	38,161	3,376		34,785		30		232	202	4,136	51,642		4,711		
Virginia.....	9	9,770	4,510			5,260				50	50		111,287		200		
West Virginia.....	9	11,025	10,760	5,910	650	4,200		265		695	430		49,442				1,392,857
Wisconsin.....	57	136,903	135,683	30,214	1,429	104,040		870	350	5,603	4,733		432,234		37,673	4,756	
All other states.....	21	19,803	17,322	11,615	22	5,655		2,481		4,550	2,469		50,193	500	24,825	346,109	77,894

POWER AND FUEL USED, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

PRINTING AND PUBLISHING—Continued.

Table 9—Contd.

STATE.	PRIMARY HORSEPOWER.					ELECTRIC HORSEPOWER.		FUEL USED.								
	Number of establishments reporting.	Total horsepower.	Owned by establishments reporting.				Rented.		Total, rented and generated by establishments reporting.	Generated in the establishments reporting.	Coal.		Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
			Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Electric.			Other.	Anthracite (long tons).				
Missouri.....	874	10,472	3,538	2,201	1,253	65	6,934	8,803	1,869	2,106	28,071	30	1,494	3,442	70,006	
Montana.....	94	679	228	54	109	65	451	451	.....	195	640	.....	254	264	1,677
Nebraska.....	453	2,552	1,044	249	786	9	1,403	1,428	25	324	6,351	114	1,198	5,535	.....
New Hampshire.....	110	1,865	139	42	49	48	1,701	1,718	17	623	214	7	261	60	1,237	
New Jersey.....	504	5,636	2,750	2,161	535	54	2,714	3,681	967	8,518	5,624	62	25	276	19,200	
New York.....	2,883	53,973	17,413	13,586	3,073	752	33,594	2,966	41,571	75,871	20,814	244	629	1,840	235,216	
North Carolina.....	203	1,119	422	146	268	8	689	8	89	215	1,555	22	1,035	540	2,751	
North Dakota.....	220	948	528	4	524	.....	417	3	417	504	1,434	.....	59	943	1,768
Ohio.....	1,302	18,417	9,082	5,537	3,473	72	9,140	195	11,873	562	40,242	26	96	1,118	225,115	
Oklahoma.....	393	1,604	658	94	564	.....	1,004	2	1,004	35	872	14	244	834	35,112
Oregon.....	227	1,927	178	64	73	41	1,749	.....	1,749	27	469	.....	1,502	3,677	4,526
Pennsylvania.....	1,796	25,839	13,522	8,368	4,885	269	11,608	709	16,225	36,151	11,718	17	93	1,026	406,160	
Rhode Island.....	110	1,944	1,130	1,080	43	7	806	8	1,138	406	2,526	238	34	30	5,829	
South Carolina.....	116	603	189	35	154	.....	414	.....	414	200	499	.....	203	329	494
South Dakota.....	240	931	628	5	616	7	303	.....	304	632	1,490	23	318	960	2,241
Tennessee.....	227	2,965	1,494	1,251	215	28	1,461	10	2,128	667	11,699	375	198	521	6,681	
Texas.....	684	4,392	1,480	525	951	4	2,902	10	3,203	285	3,174	75	647	2,728	8,931	
Utah.....	78	1,367	836	800	35	1	521	.....	684	163	3,869	.....	33	39	4,637
Vermont.....	97	625	173	44	64	65	452	.....	452	577	80	1	207	67	3,612
Virginia.....	252	2,210	618	262	225	31	1,692	.....	1,692	770	3,996	.....	11	330	5,774
Washington.....	371	2,232	355	95	161	99	1,874	3	1,878	21	11,136	10	1,700	309	48,156	
West Virginia.....	171	1,600	973	58	851	64	578	9	741	163	750	.....	27	222	65,369
Wisconsin.....	634	5,293	1,968	822	1,075	71	3,053	272	3,442	1,607	7,888	431	3,035	1,042	18,071	
All other states.....	305	2,496	432	47	360	.....	2,064	.....	2,065	364	1,814	.....	648	702	3,271

RUBBER GOODS, NOT ELSEWHERE SPECIFIED.

United States.....	202	79,062	74,863	71,635	398	2,455	375	3,499	700	18,848	15,349	59,372	479,906	25	1	1,346	52,173
Connecticut.....	12	6,138	5,848	4,885	12	576	375	290	.....	876	586	5,561	24,461	.....	.....	4	651
Indiana.....	10	5,276	4,350	3,750	.....	600	.....	925	.....	1,163	237	.....	28,538	.....	.....	120	20
Massachusetts.....	29	10,123	9,708	9,208	.....	500	.....	415	.....	1,241	826	3,665	61,904	.....	.....	9	.....
New Jersey.....	35	12,906	12,184	11,833	.....	351	.....	112	610	2,102	1,900	20,120	69,485	25	.....	5	4,187
New York.....	37	6,898	5,356	4,910	18	428	.....	1,479	63	1,970	393	18,071	10,392	1	.....	.....	.....
Ohio.....	34	25,885	25,857	25,496	361	.....	.....	28	.....	10,210	10,182	5,196	221,853	.....	.....	8	46,015
Pennsylvania.....	12	5,800	5,220	5,230	.....	.....	.....	70	.....	927	857	1,617	34,671	.....	.....	.....	1,200
Rhode Island.....	5	1,075	1,050	1,050	7	.....	.....	13	12	91	78	5,148	2,245	.....	.....	.....	.....
All other states.....	28	5,461	5,273	5,273	.....	.....	.....	166	15	366	200	4	26,307	.....	.....	1,200	60

SEWING MACHINES, CASES, AND ATTACHMENTS.

United States.....	44	19,426	18,484	18,131	62	291	.....	897	45	14,063	13,166	51,180	72,041	6,691	336	2,280	36,635
Connecticut.....	0	1,870	1,020	1,605	15	.....	.....	250	.....	1,472	1,222	9,293	2,088	645	.....	.....	4,533
Illinois.....	7	2,366	2,108	2,108	.....	.....	.....	258	.....	1,083	825	398	20,979	1,482	110	.....	3,539
Indiana.....	3	3,360	3,325	3,325	.....	.....	.....	35	.....	1,029	994	.....	23,421	497	.....	.....	2,119
Massachusetts.....	6	1,364	1,319	1,020	8	291	.....	10	35	258	248	55	3,465	499	.....	30	180
New Jersey.....	3	7,242	7,241	7,233	8	.....	.....	1	.....	8,363	8,362	41,106	6,945	3,015	226	2,194	26,445
New York.....	4	2,973	2,773	2,766	7	.....	.....	200	.....	1,715	1,515	.....	14,462	553	.....	.....	1,393
Ohio.....	4	251	98	74	24	.....	.....	143	10	143	.....	328	681	.....	.....	56	911
All other states.....	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

SHIPBUILDING, INCLUDING BOAT BUILDING.

United States.....	914	88,063	78,769	73,149	3,563	86	2,031	9,284	30	35,334	26,070	12,080	301,501	10,725	12,652	89,916	274,071
California.....	39	3,129	2,995	2,900	95	.....	.....	134	.....	1,098	964	6	1,113	67	150	60,511	15
Delaware.....	8	3,582	2,808	2,798	10	.....	.....	774	.....	3,226	2,452	49	9,912	984	.....	1,762	178
Maine.....	86	2,447	1,201	901	285	15	1,246	.....	.....	1,246	.....	317	5,103	104	270	296	203
Maryland.....	27	6,795	6,680	6,032	157	497	109	.....	.....	1,284	1,175	323	24,776	466	671	5,557	.....
Massachusetts.....	81	3,783	3,471	3,174	297	.....	.....	282	30	1,285	1,003	870	33,042	164	222	567	263
Michigan.....	58	6,485	6,165	5,976	174	15	.....	320	.....	1,898	1,578	13	26,933	636	279	2,346	14
New Jersey.....	66	9,904	9,590	9,149	441	.....	.....	314	.....	5,225	4,911	3,526	33,460	1,543	83	380	506
New York.....	164	13,835	9,754	8,921	778	55	4,081	.....	.....	4,471	390	6,247	30,851	100	272	1,623	3,782
Ohio.....	29	8,125	7,940	7,867	73	.....	.....	185	.....	3,272	3,087	172	28,588	1,513	5	3,607	266,428
Pennsylvania.....	20	7,771	7,621	6,086	35	1,500	.....	150	.....	4,210	4,060	50	44,633	976	325	222	924
Rhode Island.....	10	1,030	966	966	30	.....	.....	34	.....	34	.....	6	4,109	.....	.....	16	.....
Virginia.....	29	7,533	7,170	7,087	103	.....	.....	363	.....	5,613	5,250	8	35,745	3,200	9	5,067	1,506
Washington.....	45	2,105	1,769	1,639	111	19	.....	336	.....	610	280	.....	1,696	529	8,682	5,199	.....
Wisconsin.....	41	3,506	3,393	3,281	112	.....	.....	113	.....	608	555	206	9,477	265	53	553	.....
All other states.....	211	8,033	7,210	6,392	802	16	.....	823	.....	1,188	365	257	12,033	178	1,631	2,188	252

MANUFACTURES.

POWER AND FUEL USED, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

SILK AND SILK GOODS, INCLUDING THROWSTERS.

Table 9—Contd.

STATE.	Number of establishments reporting.	Total horsepower.	PRIMARY HORSEPOWER.						ELECTRIC HORSEPOWER.		FUEL USED.						
			Owned by establishments reporting.					Rented.		Total, rented and generated by establishment.	Generated in the establishment reporting.	Coal.		Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
			Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Elec.	Other.			Anthracite (long tons).	Bituminous (short tons).				
United States...	844	97,947	81,719	72,059	1,277	8,383	.....	10,354	5,874	23,758	13,404	242,771	155,256	3,601	993	3,072	49,673
Connecticut.....	47	8,564	8,050	6,577	.....	1,473	.....	514	.....	2,286	1,772	2,268	39,794	.....	557	135	484
Maryland.....	4	915	850	850	.....	.....	.....	65	.....	65	.....	.....	4,539	.....	.....	.....	.....
Massachusetts.....	19	5,305	4,012	1,991	20	2,001	.....	1,281	12	1,823	542	13	12,682	180	.....	60	.....
New Jersey.....	345	22,376	15,709	14,378	303	1,118	.....	2,381	4,196	5,731	3,350	74,090	16,817	8	273	5,040	.....
New York.....	165	11,110	8,549	6,422	639	1,488	.....	1,924	637	3,642	1,718	16,140	20,357	3,601	6	114	36,591
North Carolina.....	4	805	865	865	.....	.....	.....	.....	.....	320	320	402	3,441	.....	60	.....	.....
Pennsylvania.....	225	41,962	38,096	37,410	154	502	.....	2,960	936	7,616	4,656	143,313	41,746	43	637	5,508	.....
Rhode Island.....	13	2,318	1,655	1,265	.....	390	.....	630	33	779	149	134	4,156	.....	.....	.....	.....
Virginia.....	7	1,853	1,484	685	.....	799	.....	374	.....	763	389	438	3,476	.....	.....	.....	.....
All other states.....	14	2,674	2,389	1,616	161	612	.....	225	60	733	508	973	8,248	159	1,913	1,390	.....

SILVERWARE AND PLATED WARE.

United States...	176	15,183	11,832	10,355	782	695	.....	2,937	414	7,319	4,382	12,225	49,528	612	256	12,402	39,820
Connecticut.....	31	5,751	5,245	4,725	55	465	.....	497	9	2,441	1,944	1,464	27,363	116	216	3,759	4,742
Massachusetts.....	21	2,113	1,868	1,638	.....	230	.....	178	69	532	356	2,217	6,027	105	28	1,443	1,581
New Jersey.....	22	1,211	1,049	950	99	.....	.....	34	128	284	250	1,164	2,016	70	6	636	3,341
New York.....	51	2,819	1,398	1,275	123	.....	.....	1,342	79	1,761	419	6,287	3,747	202	1	822	9,580
Rhode Island.....	11	1,515	1,335	885	450	.....	.....	156	24	1,159	1,003	665	5,494	112	.....	5,014	14,299
All other states.....	40	1,774	937	832	55	.....	.....	732	105	1,142	410	428	4,881	1	5	78	6,277

SLAUGHTERING AND MEAT PACKING.

United States...	1,182	298,707	192,920	190,636	2,208	46	30	15,047	740	78,677	63,630	193,935	2,512,864	978	37,603	1,102,550	1,091,164
California.....	67	3,867	2,492	2,441	51	.....	.....	1,975	.....	1,606	231	108	294	32	1,501	153,290	990
Colorado.....	12	2,450	2,337	2,337	.....	.....	.....	113	.....	795	682	.....	41,871	.....	40	.....	.....
Illinois.....	98	56,651	53,221	53,075	116	30	.....	3,430	.....	26,296	22,866	3,609	957,879	600	4,093	1,929	123,563
Indiana.....	49	5,973	5,786	5,648	133	.....	.....	145	42	2,472	2,327	.....	151,800	.....	1,852	3	3,602
Iowa.....	29	8,309	7,881	7,718	163	.....	.....	428	.....	3,275	2,847	.....	167,903	.....	1,198	205	812
Kansas.....	15	24,560	24,420	24,405	15	.....	.....	140	.....	10,758	10,618	.....	203,730	.....	631	517,451	395,895
Maryland.....	40	3,024	2,882	2,872	10	.....	.....	142	.....	1,030	888	30	40,765	.....	1,225	14	1,014
Massachusetts.....	66	4,844	3,411	3,350	61	.....	.....	1,999	34	1,554	155	34,007	12,584	103	2,320	13	1,583
Michigan.....	37	3,404	2,924	2,895	29	.....	.....	480	.....	911	431	45	19,644	.....	1,283	36	281
Minnesota.....	26	4,579	4,058	.....	.....	.....	.....	521	.....	1,023	502	980	68,005	.....	682	.....	.....
Missouri.....	33	11,735	11,639	11,535	54	.....	.....	96	.....	5,004	4,908	2,533	187,072	.....	1,440	6,586	365,289
Nebraska.....	11	11,873	11,851	11,821	30	.....	.....	22	.....	3,930	3,908	.....	242,154	.....	7	1,336	126
New Jersey.....	63	3,610	3,149	2,999	150	.....	.....	303	158	3,894	591	54,468	2,395	.....	1,031	284	4,606
New York.....	170	18,936	11,458	11,168	290	.....	.....	2,328	150	3,885	1,537	71,124	83,556	152	1,328	566	13,473
Ohio.....	97	9,876	9,274	8,910	364	.....	.....	599	.....	2,456	1,857	.....	87,452	4	1,424	524	118,502
Pennsylvania.....	113	12,139	11,678	11,450	228	.....	.....	461	.....	3,098	2,637	25,795	68,697	.....	3,396	265	35,744
Texas.....	12	11,330	11,291	11,291	.....	.....	.....	39	.....	4,177	4,138	.....	21,639	.....	360	383,902	.....
Washington.....	12	1,883	726	.....	.....	.....	.....	1,157	.....	1,160	3	.....	11,805	.....	8,736	50	12
Wisconsin.....	36	3,233	3,120	3,043	74	3	.....	163	.....	1,474	1,311	751	45,681	.....	674	60	636
All other states.....	196	11,884	9,322	8,844	435	13	30	1,706	356	2,899	1,193	464	97,838	85	4,332	35,986	20,096

SMELTING AND REFINING, COPPER.

United States...	37	158,126	128,713	114,862	1,107	12,725	19	29,413	.....	55,229	25,816	310,953	1,081,031	1,008,059	16,496	658,923	3,889
Arizona.....	8	29,042	28,342	27,257	1,066	.....	19	700	.....	12,297	11,597	7,459	40,543	463,016	1,494	420,148	.....
California.....	3	3,832	3,930	3,930	.....	.....	.....	4,952	.....	4,952	.....	.....	193	70,858	3	191,770	.....
New Jersey.....	4	22,320	22,170	22,135	35	.....	.....	150	.....	5,264	5,114	223,608	92,829	36,626	.....	25,225	1,173
All other states.....	22	97,882	74,271	61,540	6	12,725	.....	23,611	.....	32,716	9,105	79,886	947,466	437,559	14,999	21,780	2,716

SOAP.

United States...	317	28,360	25,038	24,498	245	255	40	1,974	1,348	12,839	10,865	55,528	461,206	1,389	1,665	69,347	57,885
Illinois.....	26	5,155	3,199	3,194	5	.....	.....	744	1,212	1,481	737	21	113,638	.....	72	13	3,318
Missouri.....	8	854	855	855	.....	.....	.....	99	.....	281	182	.....	28,114	.....	.....	.....	2
New Jersey.....	16	2,761	2,720	2,720	.....	.....	.....	37	4	1,863	1,825	27,240	21,625	81	.....	1	360
New York.....	49	5,873	5,284	5,277	7	.....	.....	548	41	4,585	4,037	22,441	83,609	80	24	.....	2,049
Ohio.....	38	3,579	3,501	3,472	29	.....	.....	78	.....	2,298	2,220	426	115,220	1,145	.....	.....	35,887
Pennsylvania.....	41	2,598	2,549	2,493	36	.....	.....	44	5	164	80	4,729	24,963	5	87	3	14,353
All other states.....	139	7,440	6,930	6,517	118	255	40	424	86	2,197	1,773	671	74,037	78	1,482	69,330	1,416

POWER USED.

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POWER AND FUEL USED, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

STOVES AND FURNACES, INCLUDING GAS AND OIL STOVES.

Table 9—Contd.

STATE.	PRIMARY HORSEPOWER.							ELECTRIC HORSEPOWER.		FUEL USED.							
	Number of establishments reporting.	Total horsepower.	Owned by establishments reporting.				Rented.		Total, rented and generated by establishment.	Generated in the establishment reporting.	Coal.		Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).	
			Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Electric.			Other.	Anthracite (long tons).					Bituminous (short tons).
United States...	483	45,524	36,312	32,993	3,060	259	8,966	246	18,159	9,193	38,407	181,585	102,947	4,762	3,273	285,194	
Illinois.....	60	4,983	3,604	3,279	325		1,367	12	1,930	563	506	32,978	9,927	856	154	2,604	
Indiana.....	23	1,704	1,085	1,045	50		609		799	190	27	9,245	4,617	205		395	
Kentucky.....	8	613	389	389	2		233		233			1,584	2,028	12	2	320	
Massachusetts.....	19	1,804	1,515	1,454	46	15	289		317	28	2,303	5,672	6,542	407	183	1,266	
Michigan.....	31	5,910	5,423	5,253	170		412	75	3,239	2,827	98	26,658	12,482	685	499	3,752	
Missouri.....	17	2,241	1,800	1,835	21	4	381		1,146	765	47	12,923	3,653	36		7,332	
New Jersey.....	6	1,146	1,070	1,045	25		76		681	605		12,200	3,100			400	
New York.....	48	6,273	4,681	4,504	172	5	1,567	25	2,985	1,418	11,718	16,098	12,470	771	1,057	10,253	
Ohio.....	87	9,478	8,311	6,782	1,529		1,055	112	2,680	1,625		41,590	16,730	341	35	216,443	
Pennsylvania.....	58	4,675	4,010	3,591	389	30	643	22	1,152	509	8,800	13,315	9,495	309	110	16,833	
Tennessee.....	17	1,380	675	665	10		705		705			4,474	5,441	143	48	535	
Wisconsin.....	11	1,631	1,552	1,404	148		79		742	663		7,661	5,178	201	908	425	
All other states.....	98	3,681	2,131	1,753	173	205	1,550		1,550			2,074	9,204	11,284	796	279	4,616

TOBACCO MANUFACTURES.

United States...	637	28,514	22,976	21,929	795	245	7	5,367	171	11,203	5,836	57,259	186,808	1,324	4,054	545	267,586
California.....	4	71	10	10				61		61		7	69		92	123	436
Connecticut.....	7	48						48		48		610	25	1	15	22	452
Florida.....	15	109	55	40	15			54		57	3	11			30		29,100
Illinois.....	35	878	717	704	13			159	2	564	405	3,405	10,417	214	29	22	2,641
Indiana.....	7	123	95	95				28		28		136	2,798	48	60	3	451
Iowa.....	6	55	25	25				30		30		386	2,008	40	47	1	217
Kentucky.....	28	2,713	2,657	2,657				56		627	571	1	11,616	3	17		828
Louisiana.....	6	405	315	315				70	20	125	55	1	4,063		3		
Maryland.....	7	559	318	310	8			241		405	164	468	4,430	23	8	27	1,859
Massachusetts.....	32	251	154	45	4	105		97		101	4	905	474	14	28	11	3,592
Michigan.....	23	937	699	660	39			238		614	376	865	9,890	150	617	1	689
Minnesota.....	8	37	7	7	7			30		30		471	555	25	364		194
Missouri.....	8	2,034	2,005	2,005				29		1,548	1,519	20	37,509	2	65		1,700
Nebraska.....	1	1						1		1		55	521	10			
New Hampshire.....	1	5						5		5		61	1		17		293
New Jersey.....	26	3,302	2,745	2,617	40	88		557		762	205	20,296	1,529		85	77	8,101
New York.....	133	2,657	1,781	1,700	81			828	48	953	155	11,818	2,754	31	136	55	26,755
North Carolina.....	28	3,712	2,748	2,748				964		1,854	890	1,107	32,080		588		220
Ohio.....	51	1,401	899	809	90			488	14	883	395	47	12,152	136	46	5	37,152
Pennsylvania.....	125	2,638	1,873	1,554	317	2		688	77	976	288	14,605	6,356	6	397	112	86,234
South Carolina.....	3	48	20	20				28		28		73	52			18	18
Tennessee.....	18	1,371	1,239	1,239				122	10	374	252		11,931	304	83		
Virginia.....	36	3,591	3,140	3,136	4			451		970	519	356	28,667		92	22	507
Wisconsin.....	14	286	232	200	32			54		54		1,000	1,489	300	909	12	252
All other states.....	15	1,282	1,242	1,040	145	50	7	40		75	35	555	5,421	7	306	34	66,864

TURPENTINE AND ROSIN.

United States...	1,134	4,129	4,122	3,864	231	14	13		7					515	134,366	521	10,050
Alabama.....	69	334	384	375	4	5								225	16,310	3	
Florida.....	508	1,916	1,913	1,787	108	5	13		3					250	59,554	237	
Georgia.....	495	1,407	1,407	1,338	65	4								40	39,255	68	50
Louisiana.....	18	105	105	105											4,852		
Mississippi.....	38	286	286	236	50										7,035	200	10,000
All other states.....	6	31	27	23	4				4						7,060	13	

WIRE.

United States...	56	71,959	68,923	63,409	3,256	2,151	107	3,031	5	18,824	15,793	84,208	518,121	22,280	818	71,663	217,620
Connecticut.....	3	7,154	7,154	6,585	445	124				1,592	1,592	313	22,821	776		2,104	5,414
Illinois.....	8	12,380	12,380	11,630		750				2,103	2,103		180,052	1,432			2,405
Massachusetts.....	10	10,498	10,401	9,610	68	723		92	5	4,839	4,747	42,191	62,025	206	697	17,331	
New Jersey.....	7	17,436	17,428	16,084	1,344			8		5,591	5,583	13,628	113,117	2,614		42,930	
New York.....	7	5,455	4,466	4,195	50	114	107	989		1,719	730	18,356	23,580	7,059	50	4,891	131,010
Ohio.....	6	10,086	8,669	7,545	1,124			1,417		1,607	190		73,347	8,375		1,990	33,266
Pennsylvania.....	8	2,930	2,830	2,355	225	350		50		890	840	9,720	15,499	773	54	104	
All other states.....	8	5,970	5,495	5,405		90		475		483	8		37,380	1,045	17	2,313	45,525

MANUFACTURES.

POWER AND FUEL USED, FOR SELECTED INDUSTRIES, BY STATES: 1909—Continued.

WIREWORK, INCLUDING WIRE ROPE AND CABLE.

STATE.	PRIMARY HORSEPOWER.								ELECTRIC HORSEPOWER.		FUEL USED.						
	Number of establishments reporting.	Total horsepower.	Owned by establishments reporting.					Rented.		Total, rented and generated by establishment.	Generated in the establishment reporting.	Coal.		Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas (1,000 feet).
			Total.	Steam engines.	Gas engines.	Water wheels and motors.	Other.	Elec- tric.	Oth- er.			Anthra- cite (long tons).	Bitumi- nous (short tons).				
United States...	436	20,131	13,975	10,553	2,492	930	5,642	514	8,891	3,249	7,253	69,842	1,752	927	4,022	64,257	
Connecticut.....	23	1,517	1,246	855	85	296	266	5	391	125	752	4,225	295	1,286	1,636		
Illinois.....	42	1,655	1,025	548	102	375	606	24	766	160	49	4,801	53	5	262	183	
Indiana.....	27	1,182	695	269	426	.....	457	.....	573	86	76	2,092	.....	.....	163	17,807
Massachusetts.....	26	1,468	1,333	1,300	33	.....	85	50	237	152	496	7,185	48	.....	3	872
Michigan.....	34	1,900	843	673	170	.....	907	150	1,208	301	9	4,929	140	.....	160	722
Missouri.....	10	902	877	840	37	.....	13	12	163	150	15	9,631	100	150	169	1,600
New Jersey.....	18	1,066	920	805	115	.....	111	35	198	87	1,578	3,318	362	16	163	1,440
New York.....	65	2,402	1,869	1,376	248	45	559	174	871	312	3,356	9,902	763	30	909	8,995	
Ohio.....	48	2,511	2,024	1,555	468	1	440	47	1,724	1,284	4	12,230	250	.....	128	17,125
Pennsylvania.....	49	2,435	1,828	1,384	440	4	595	12	977	382	770	7,003	20	.....	96	10,393
All other states....	94	3,093	1,515	938	368	209	1,573	5	1,783	210	148	4,526	16	431	683	3,475	

WOOD, TURNED AND CARVED.

United States...	911	48,447	44,371	37,198	1,829	5,311	33	2,283	1,793	2,966	683	3,890	25,882	45	6,305	1,249	65,318
Illinois.....	40	1,508	1,007	973	34	.....	.....	252	249	262	10	.....	1,768	.....	.....	115	913
Indiana.....	38	2,754	2,717	2,648	41	28	.....	.....	37	3	3	.....	1,715	.....	62	.....	.....
Kentucky.....	17	1,446	1,025	.....	.....	.....	.....	286	135	286	.....	.....	.....	1,176	.....	.....	.....
Maine.....	60	4,625	4,387	3,413	60	914	.....	58	80	123	65	44	256	.....	168	64	.....
Massachusetts.....	61	2,558	2,329	1,578	97	654	.....	54	175	467	413	119	1,426	25	434	52	545
Michigan.....	41	4,695	4,291	4,137	79	75	.....	160	244	181	21	92	2,776	.....	684	128	1,176
New Hampshire.....	29	2,327	2,087	1,193	.....	894	.....	50	190	58	8	.....	115	.....	5	.....	.....
New York.....	134	3,223	2,405	1,831	213	361	.....	406	412	472	66	1,202	703	.....	69	48	43,960
Ohio.....	59	4,811	4,660	4,364	296	.....	.....	116	35	155	39	55	4,936	20	7	88	5,638
Pennsylvania.....	82	3,624	3,381	2,781	454	146	.....	159	84	169	.....	1,125	2,086	.....	570	81	8,125
Tennessee.....	42	2,519	2,519	2,486	15	18	.....	.....	.....	35	35	.....	1,415	.....	280	92	.....
All other states....	308	14,457	13,563	10,769	540	2,221	33	742	152	765	23	1,253	6,461	.....	2,912	519	4,959

WOOLEN, WORSTED, AND FELT GOODS, AND WOOL HATS.

United States...	971	362,209	342,691	261,364	2,077	79,250	.....	13,783	5,735	79,223	65,440	277,755	2,365,268	6,985	34,843	26,611	104,746
Connecticut.....	56	17,518	17,310	10,431	50	6,829	.....	158	50	2,157	2,042	1,993	76,533	.....	14,684	131	229
Georgia.....	7	1,437	1,437	1,225	.....	212	.....	.....	426	426	60	.....	8,536	.....	.....	.....	.....
Indiana.....	11	1,678	1,677	1,507	.....	170	.....	1	.....	61	60	.....	14,427	.....	.....	.....	.....
Kentucky.....	14	2,506	2,451	2,417	.....	64	.....	25	.....	137	112	.....	11,671	.....	200	.....	.....
Maine.....	65	22,299	19,715	7,905	87	11,723	.....	2,578	6	3,799	1,221	3,170	82,605	.....	2,779	825	.....
Massachusetts.....	182	117,119	114,005	89,876	745	23,354	.....	2,497	617	39,945	37,448	43,709	1,390,218	253	1,260	1,636	3,535
Michigan.....	15	1,900	1,815	1,657	50	108	.....	85	.....	272	187	.....	13,127	.....	44	.....	.....
New Hampshire.....	39	30,455	29,023	16,395	5	12,623	.....	1,457	5	4,880	3,423	805	91,829	208	1,886	500	6,366
New Jersey.....	33	20,254	19,883	19,435	10	438	.....	8	363	4,709	4,701	126,841	26,436	.....	1,358	.....	.....
New York.....	60	22,374	20,607	13,306	8	7,293	.....	1,575	192	5,665	4,090	30,972	99,821	.....	153	18	889
Ohio.....	18	6,504	5,686	5,397	150	139	.....	818	.....	2,349	1,531	.....	25,634	6,044	.....	.....	9,212
Pennsylvania.....	215	50,405	43,636	41,320	769	1,547	.....	2,917	3,852	5,711	2,794	53,238	210,160	.....	25	1,448	63,302
Rhode Island.....	38	43,715	42,631	37,321	90	5,220	.....	571	513	7,295	6,724	16,867	198,684	.....	1,108	127	.....
Tennessee.....	21	2,371	2,371	2,283	17	72	.....	.....	.....	412	412	.....	26,591	.....	2,373	10	.....
Vermont.....	17	7,213	7,213	3,885	3	3,325	.....	.....	.....	55	55	.....	35,788	480	2,175	.....	.....
Virginia.....	16	1,352	1,092	388	20	684	.....	260	.....	260	.....	62	3,471	.....	278	.....	.....
West Virginia.....	13	1,327	980	902	20	58	.....	347	.....	387	40	.....	7,126	.....	.....	.....	9,028
Wisconsin.....	33	3,059	3,045	1,647	13	1,385	.....	14	.....	19	5	16	13,838	.....	452	56	.....
All other states....	68	8,693	8,084	4,068	40	3,976	.....	472	137	684	169	82	28,773	.....	6,970	20,458	12,185

CHAPTER XIV.

CONSUMPTION OF FUEL IN MANUFACTURING INDUSTRIES.

Methods of consumption of fuel.—Fuel is used in manufacturing in three different ways. First, and most important, it is employed for generating power by means of steam engines or internal-combustion engines; second, it is used to produce heat which is applied directly to materials to transform them or to facilitate their manipulation; and third, it is itself used as a material and enters into the actual composition of the product.

The only important industries using fuel in the manner last described are the charcoal industry, where by a process of slow partial combustion wood is transformed into charcoal; the coke industry, where coal is transformed into coke by the combustion or distillation of the lighter hydrocarbons; and the gas industry, in which coal and oil form important constituent materials. Besides these, there are the manufactured fuel industry, and the manufacture of bone, carbon, and lamp black, both of which are minor industries.

There are about 35 industries in which, by the combustion of coal or some other form of fuel, heat is applied directly to material in the process of manufacture. Among these the most important are the brick and tile, foundry and machine-shop, glass, and blast-furnace industries, the steel works and rolling mills, the various metal smelting industries, the lime and cement industries, petroleum refining, and the salt industry.

Quantity of different kinds of fuel consumed in all manufacturing industries combined.—The census inquiry in regard to fuel was designed to ascertain the quantity used in manufacturing processes or for the development of power. Establishments using fuel for lighting or heating purposes only were not asked to report the amount used. On the other hand, when fuel was so used and also used for the development of power or in the processes of manufacture, no attempt was made to separate the quantities used for the different purposes, but the total consumption was reported.

The table following shows the quantity of the principal kinds of fuel reported for 1909 by all manufacturing establishments:

Table 1	KIND.	Quantity.
	Anthracite coal, long tons.....	14, 339, 220
	Bituminous coal, short tons.....	1 162, 632, 338
	Coke, short tons.....	37, 959, 970
	Wood, cords.....	5, 481, 311
	Oil, including gasoline, etc., barrels.....	34, 331, 632
	Gas (excluding blast-furnace gas), 1,000 feet.....	451, 302, 493

¹ Includes 58,788,398 tons used in making coke at coke ovens, besides coal used in gas works.

The figures given for bituminous coal cover all that was consumed in the manufacture of coke. Under "coke" are reported both oven and gas-house coke. The greater part of the oil used as fuel was crude petroleum. There were, however, large quantities of the products of petroleum refining—gasoline, naphtha, gas oil, fuel oil, and illuminating oil—reported under this heading. Natural gas formed by far the larger proportion of the total quantity of gas reported. A good many concerns use coal for power or other purposes by converting it into "producer" gas. In general, in such cases the quantity of coal consumed, rather than that of gas made and consumed, was reported. The blast-furnace gas used as fuel is not included in the table (see discussion of figures for blast-furnace industry following Table 3).

The census schedule for manufactures called specifically for the six kinds of fuel named in the above table. It also called for "other" fuel, but the results obtained proved untrustworthy, and it was decided not to publish the statistics. The figures returned were especially defective in certain industries. Spent tanbark is utilized for fuel in many tanneries, and by some it was so reported; the larger proportion of the establishments, however, kept no account of it, and were unable to make any estimate of the amount used. Again, in lumber mills and other woodworking establishments sawdust and other mill refuse are used as fuel to a large extent, but accurate figures as to quantities could seldom be secured. Charcoal is of some importance as a fuel in manufacturing. In the blast-furnace industry, the leading consumer of charcoal, 380,326 tons were used in 1909. A large part of the charcoal manufactured is made in wood distillation plants. Their product, in 1909, amounted to 55,478,503 bushels, which is equivalent to 610,264 tons, assuming the average weight of a bushel to be 22 pounds. According to the returns, it was valued at \$3,509,019, the average value per ton being \$5.75. The quantity of charcoal produced by the ordinary pit or mound method was not reported, but its value was reported as \$872,522, which would represent about 150,000 tons, if the value per ton of this charcoal was the same as that of charcoal produced in wood distillation plants. The total quantity of charcoal produced in the United States in 1909, therefore, may be estimated as about 760,000 tons, and much the larger part of this was doubtless used in manufacturing industries.

There is a considerable element of duplication involved in the statistics of fuel used in manufacturing industries. Bituminous coal used to manufacture coke is not destroyed as a fuel in the process, but, on the

contrary, the fuel efficiency of the coke is greater for some purposes than that of the coal from which it was made. There were 58,788,398 tons of bituminous coal used in 1909 for making coke (other than gas-house coke); deducting this amount from the total shown in Table 1 as used in manufacturing leaves 103,843,940 tons, which quantity represents approximately the amount of bituminous coal used to produce heat or power for manufacturing purposes, although some small part of this quantity was converted into illuminating gas and gas-house coke, some of which in turn was used as fuel in manufacturing industries. Likewise, of the wood reported in Table 1, 190,600 cords were used in the charcoal industry, while most of the product of that industry was in turn used in manufacturing establishments.

It is impossible to determine with any approach to accuracy the relative importance of these several kinds of fuel used in manufacturing industries. There is no general standard by which a given quantity of one fuel can be reduced to an equivalent of another; for example, a barrel of oil to a quantity of bituminous coal equal in thermal efficiency. Of course, fuels are frequently tested by laboratory analysis as to their thermal efficiency, and conversion factors are ascertained, but such tests relate only to particular grades and varieties of the fuels compared, and the results are of little value as indicating the relative efficiency of the different classes of fuels in the aggregate. Again, one fuel may be peculiarly adapted to the mechanical appliances and processes employed in a particular industry and therefore be of much greater relative efficiency in that industry than in most others.

Relation of fuel consumption in manufacturing industries to total production.—The manufacturing industries of the United States consume a large proportion of the total output of fuel. This is indicated by Table 2, which shows the total production in 1909 of the different kinds of fuel for which figures are given in Table 1, with the exception of wood, the quantity used in manufacturing, and the percentage that it formed of the total quantity produced. Wood is omitted from the table, for the reason that there are no satisfactory statistics as to the total amount of wood used as fuel. While the production of coke is a manufacturing industry, according to census usage, it would obviously overstate the importance of manufacturing industries as consumers of fuel to credit them with consuming both the coal and the coke derived from the coal; consequently the coal used in the coke industry, 58,788,398 tons, has been deducted both from the coal production and from the coal consumption of manufacturing industries.

Of the total production of anthracite coal in 1909, only 19.8 per cent was consumed in manufacturing industries. The demand for this fuel is chiefly for domestic purposes, as its cost usually makes its use in manufacturing establishments uneconomical. Although there are no statistics available from previous censuses to indicate the extent of the use of anthracite coal in manufacturing operations, it seems

very probable that the quantity so consumed is constantly decreasing. The blast-furnace industry affords an example of the decreasing use of anthracite coal in metallurgical operations. The number of long tons consumed, as reported for 1879, was 2,334,984; for 1889, 1,796,854; for 1899, 886,564; for 1904, 560,637; and for 1909, 273,543.

According to Table 2 the quantity of bituminous coal used in manufacturing was 32.6 per cent of the production, after excluding the coal used in the coke industry. Railroads, navigation companies, electric power plants, and other concerns not engaged in manufacturing use large quantities of bituminous coal and the household consumption is also large.

Oven coke is made chiefly for use in metallurgical processes in blast furnaces, copper, lead, and zinc smelters, etc., and this explains the very large proportion of the coke, 92.7 per cent in 1909, which is used for manufacturing. The production shown includes coke made as a by-product in illuminating gas works, which is used for domestic purposes to a considerable extent, and the coke which was not used in manufacturing industries (3,004,958 tons) was largely of this class.

Combining the tonnage of coal and coke, it appears that of the total production, amounting to 440,010,170 short tons, 157,863,836 tons, or 35.9 per cent, were used in manufacturing.

A large portion of the manufactured gas is used in the household and for lighting streets, and a considerable quantity of the crude oil produced and of the products derived from it are used for purposes other than for fuel.

KIND.	Produced.	USED IN MANUFACTURING.	
		Quantity.	Per cent of production.
Anthracite coal, long tons.....	73,292,973	14,339,220	19.8
Bituminous coal, excluding coal converted into coke in coke industry, short tons.....	318,077,112	103,843,940	32.6
Coke, short tons.....	140,964,923	37,959,970	92.7
Manufactured gas, 1,000 feet.....	150,835,793	451,302,498	77.0
Natural gas, 1,000 feet.....	430,958,486		
Oil, barrels.....	171,557,485	34,331,632	20.0

¹ Includes gas-house coke.

Fuel consumed in individual industries.—Statistics as to the amount of the different kinds of fuel consumed in 1909 are shown in General Table II for each of the 259 industries for which separate statistics can be given. Table 9, Chapter XIII, gives for each of the 86 leading industries, in addition to the statistics relating to power, statistics as to the fuel consumed in the industry for each state in which it gave employment to an average of 500 wage earners, so far as this can be done without disclosing individual operations. The following table shows, for 1909, the total cost of fuel, including rent of power, and the quantities of the different kinds of fuel reported by each of the 50 industries, showing the largest expenditures for fuel and rent of power.

CONSUMPTION OF FUEL IN 50 LEADING FUEL-CONSUMING INDUSTRIES: 1909.

INDUSTRY.	Cost of fuel and rent of power.	Anthracite coal (long tons).	Bituminous coal (short tons).	Coke (short tons).	Wood (cords).	Oil, including gasoline (barrels).	Gas ¹ (1,000 ft.).
All industries.....	\$570,067,824	14,339,220	162,632,338	37,959,970	5,481,311	34,331,632	451,302,493
Agricultural implements.....	2,042,974	15,114	550,085	98,819	14,528	244,759	313,412
Automobiles, including bodies and parts.....	1,061,724	17,346	310,497	14,282	2,183	80,873	385,468
Beet sugar.....	1,899,408	8,981	565,672	28,300	3,602	554,174	383
Boots and shoes, including cut stock and findings.....	1,847,885	45,089	285,545	2,124	4,313	4,324	128,314
Brass and bronze products.....	3,005,514	206,396	589,309	59,152	49,473	200,862	248,798
Bread and other bakery products.....	7,375,847	383,390	250,165	195,971	310,933	151,371	2,732,911
Brick and tile.....	17,788,091	236,336	5,773,232	40,785	1,069,973	1,040,406	16,003,049
Butter, cheese, and condensed milk.....	2,771,983	47,344	588,169	1,069	182,587	94,325	115,218
Canning and preserving.....	1,551,363	37,613	287,294	2,156	62,278	165,042	230,434
Carriages and wagons and materials.....	1,771,984	52,258	451,304	18,741	13,503	44,176	477,367
Cars and general shop construction and repairs by steam-railroad companies.....	8,465,983	438,349	5,255,477	54,827	66,872	982,329	1,116,127
Cars, steam-railroad, not including operations of railroad companies.....	2,097,689	38,895	604,638	113,013	6,223	140,725	652,803
Cement.....	13,153,180	259,220	4,815,758	4,103	5,540	1,515,697	14,721,568
Chemicals.....	8,046,840	650,480	2,101,768	63,520	3,644	110,276	1,300,265
Clothing, men's, including shirts.....	2,240,019	59,342	89,342	1,013	1,344	8,904	828,622
Clothing, women's.....	1,076,832	21,405	14,807	76	203	1,295	377,872
Coke.....	60,905,891	.....	59,030,005	34,632	84	21	5,615,712
Copper, tin, and sheet-iron products.....	2,252,642	51,448	334,754	14,917	4,027	85,096	1,337,887
Cotton goods, including cotton small wares.....	13,985,890	415,604	3,327,802	20,665	130,572	38,792	278,256
Dyeing and finishing textiles.....	4,451,077	593,093	809,216	2,576	746	10,637	64,667
Electrical machinery, apparatus, and supplies.....	3,056,066	87,090	632,870	20,123	2,013	104,467	1,761,969
Flour-mill and gristmill products.....	6,980,675	67,459	1,880,702	3,347	202,748	424,386	3,037,006
Foundry and machine-shop products.....	23,750,838	624,988	4,220,640	1,919,916	119,626	677,828	13,687,341
Furniture and refrigerators.....	2,571,562	54,427	728,841	17,009	38,304	7,540	181,463
Gas, illuminating and heating.....	39,190,031	898,984	4,068,096	7,722	.....	11,816,282	606,408
Glass.....	7,523,937	17,906	1,859,001	17,393	12,488	468,894	43,711,519
Hosiery and knit goods.....	1,970,277	124,420	441,187	1,080	6,845	2,182	33,861
Ice, manufactured.....	7,780,397	244,396	2,430,454	6,872	183,984	908,962	4,348,929
Iron and steel, blast furnaces.....	108,536,921	273,543	1,166,135	31,649,865	179,012	19,446	949,622
Iron and steel, steel works and rolling mills.....	46,136,725	763,145	19,759,678	645,637	55,809	2,063,736	261,601,204
Leather, tanned, curried, and finished.....	3,292,831	98,724	1,028,215	806	20,143	48,129	598,532
Lime.....	3,439,986	106,929	674,304	71,471	517,915	33,147	1,424,724
Liquors, malt.....	8,570,892	554,028	2,424,798	11,530	69,637	527,699	3,649,280
Lumber and timber products.....	5,082,287	79,330	1,134,218	5,854	162,644	144,499	521,034
Marble and stone work.....	2,546,081	49,962	682,447	1,149	8,313	20,238	183,436
Oil, cottonseed, and cake.....	3,144,795	8,583	828,357	800	156,447	376,789	372,880
Paper and wood pulp.....	18,320,266	558,677	5,460,314	500	220,001	584,536	6,455,293
Petroleum, refining.....	8,376,383	1,347,519	1,264,841	99,595	.....	3,478,758	7,519,859
Pottery, terra-cotta, and fire-clay products.....	7,560,532	98,348	3,026,546	4,562	38,743	370,354	10,366,943
Printing and publishing.....	7,601,152	154,932	348,698	2,895	19,834	41,264	1,633,886
Salt.....	1,590,746	108,816	642,373	15	9,441	85,074	1,688,731
Silk and silk goods, including throwsters.....	1,687,981	242,771	155,256	3,601	6,493	3,072	49,673
Slaughtering and meat packing.....	6,700,834	193,935	2,512,864	976	37,608	1,102,550	1,091,164
Smelting and refining, copper.....	13,320,517	310,953	1,081,031	1,008,059	16,496	658,923	3,880
Smelting and refining, lead.....	3,508,126	31,958	427,479	351,983	560	99,157	47,383
Smelting and refining, zinc.....	2,218,576	432,161	634,932	52,172	465	41,595	11,676,965
Sugar, refining, not including beet sugar.....	2,866,371	511,640	542,148	302	85	578,633	453
Wire.....	1,640,172	84,208	518,121	22,250	818	71,663	217,620
Wood distillation, not including turpentine and rosin.....	3,169,377	48,518	225,471	35	859,064	8	2,288,372
Woolen, worsted, and felt goods, and wool hats.....	6,489,196	277,755	2,365,268	6,985	34,843	26,611	104,746
All other industries.....	52,604,142	2,307,007	12,643,124	500,187	564,147	4,070,375	24,730,993

¹ Not including blast-furnace gas.

For some industries, such as the lumber and leather industries, in which large quantities of mill refuse and waste products are consumed as fuel, the figures do not represent the total quantity of fuel consumed.

The blast-furnace industry led all others in the cost of fuel used. Vast quantities of coke are used, the consumption in 1909 being 31,649,865 tons, or 83.4 per cent of the total quantity used in all industries. In the consumption of the other kinds of fuel this industry holds a subordinate place. Practically all of the coke, as well as much of the coal, used in this industry is consumed in the stacks for smelting the ore. The statistics for gas used in this industry, as shown in Table 3, do not include blast-furnace gas. The utilization of this gas for power generation is an exceptional practice, only a few establishments having reported it, but these used no less than 654,520,000,000 feet, of which

480,415,000,000 feet, with an estimated value of \$2,174,000, were utilized in the furnace plants, while the remaining 174,105,000,000 feet were used in the rolling mills operated in connection with the blast furnaces. The quantity and value of this gas are omitted from the table, because it was produced and consumed within the industry and was not a primary fuel. Blast-furnace gas has only about one-tenth as much heat value per unit as natural gas.

The coke industry was second in importance in the amount expended for fuel. The principal material of the industry is bituminous coal, of which 59,030,005 tons were used in 1909, or 36.3 per cent of the total for all industries. Most of this, of course, is simply transformed into coke, as the quantity of fuel required for the generation of power in the manufacture of coke is comparatively small.

The steel works and rolling mills ranked third in fuel consumption in 1909, as measured by the amount expended for this purpose. Much fuel is required in this industry for smelting and heating the materials, but large quantities are also used to generate the power for operating the heavy machinery required in all branches of the industry.

The brick and tile and the foundry and machine-shop industries are also very large consumers of fuel. The brick and tile industry used 6,050,353 tons of anthracite coal, bituminous coal, and coke combined in 1909, and the foundry and machine-shop industry 6,765,514 tons, while the former consumed much more wood, oil, and gas than the latter.

Other important industries in the use of fuel are the paper and wood-pulp industry, the manufacture of cotton goods, including cotton small wares, the smelting and refining of copper, and the manufacture of cement.

Establishments in industries in which the fuel cost is an important factor show a tendency to locate near the sources of fuel supply, and in such cases a given expenditure for fuel often represents a much larger quantity than in an industry in which the location of establishments is governed by other considerations. The following statement, which relates to the manufacture of pottery, terra-cotta, and fire-clay products, and to the bakery industry, respectively, is introduced to illustrate this fact:

	Pottery, terra-cotta, and fire-clay products.	Bread and other bakery products.
Cost of fuel and rent of power.....	\$7,560,532	\$7,375,847
Rented power, horsepower.....	3,554	31,289
Fuel used:		
Anthracite coal, long tons.....	98,348	383,390
Bituminous coal, short tons.....	3,026,546	250,165
Coke, short tons.....	4,562	195,971
Wood, cords.....	38,743	310,933
Oil, barrels.....	370,334	151,371
Gas, 1,000 feet.....	10,365,943	2,732,911

These two industries have widely different characteristics in respect to the use of fuel. The absolute cost of fuel, including rent of power, was nearly equal in 1909 in the two industries, but in the manufacture of pottery, terra-cotta, and fire-clay products it formed 11.5 per cent of the total expenditures, and in the bakery industry only 2.2 per cent. The Ohio pottery district, which leads all others in the value of output, is in the immediate vicinity of a plentiful supply of coal, gas, and oil, and is thus enabled to obtain its fuel at a minimum cost; and this to a large extent is true of the industry generally. Bakeries, on the other hand, are scattered over the entire country, but are numerous and important in large cities. Fuel is purchased in comparatively small lots and, by reason of freight and delivery charges, frequently at a high cost.

The amount of coal and coke combined and of gas consumed in the manufacture of pottery, terra-cotta, and fire-clay products was more than three times as great as the amount consumed in the bakery indus-

try, and the amount of oil more than twice as great, and although the latter industry reported a larger amount of wood and of rented power than the former, the difference was insufficient to offset to any significant extent the differences shown for the three kinds of fuel first mentioned.

Fuel consumed, by states.—General Table IV shows the quantity of fuel consumed in all manufacturing industries combined in each state and division. The following table shows, by percentages, the distribution of the total consumption of each kind of fuel among the geographic divisions:

DIVISION AND STATE.	PER CENT OF TOTAL AMOUNT CONSUMED IN MANUFACTURING INDUSTRIES IN THE UNITED STATES: 1909					
	Anthracite coal (long tons).	Bituminous coal (short tons).	Coke (short tons).	Wood (cords).	Oil, including gasoline (bbls.).	Gas ¹ (1,000 ft.).
United States.....	100.0	100.0	100.0	100.0	100.0	100.0
New England.....	10.9	6.2	0.9	10.7	4.5	0.3
Middle Atlantic.....	83.3	42.4	40.0	14.6	21.0	54.4
East North Central.....	2.8	24.5	32.6	24.8	13.5	26.1
West North Central.....	0.8	4.9	1.0	7.4	8.2	8.6
South Atlantic.....	1.3	9.7	4.2	18.0	2.1	7.2
East South Central.....	0.3	6.1	10.4	7.6	0.7	0.5
West South Central.....	0.3	1.9	0.3	7.7	18.1	2.7
Mountain.....	0.1	4.0	4.2	1.7	2.3	0.1
Pacific.....	0.1	0.3	0.4	7.5	29.6	0.1

¹ Not including blast-furnace gas.

More coke, gas, and coal of both varieties were consumed in the Middle Atlantic division than in any other, but the East North Central division led in the quantity of wood used as fuel and the Pacific division in the quantity of oil. The rank of a state or geographic division in the value of manufactured products does not necessarily determine its position as a consumer of fuel; that position depends also on the character of the predominating industries. Nor does the amount expended for fuel furnish an accurate standard of comparison as to quantity of fuel used, since a given expenditure may represent a much larger quantity of fuel in one state than in another. The following statement for Kentucky and New Hampshire illustrates this condition. Kentucky is selected for the comparison because of its natural advantage in respect to fuel, while New Hampshire, on the other hand, is very disadvantageously situated, practically all of its primary fuel, except wood, being brought from a great distance. It is evident that for a given expenditure a larger fuel value can be obtained in Kentucky than in New Hampshire, since the difference in the amount of payments for rented power included in the total expenditures shown is by no means sufficient to offset the differences in the quantity of fuel used.

	Kentucky.	New Hampshire.
Cost of fuel and rent of power.....	\$3,589,757	\$3,191,981
Rented power, horsepower.....	11,617	25,534
Fuel used:		
Anthracite coal, long tons.....	2,207	23,768
Bituminous coal, short tons.....	1,464,731	605,459
Coke, short tons.....	193,238	16,532
Wood, cords.....	45,157	124,867
Oil, barrels.....	156,448	40,199
Gas, 1,000 feet.....	2,203,914	32,392