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## RAILROAD REPAIR SHOPS

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# STEAM AND ELECTRIC CARS AND RAILROAD REPAIR SHOPS.

## SUMMARY AND ANALYSIS.

**Scope of the report.**—This report presents statistics for (1) establishments building cars for use on steam railroads; (2) those building cars for use on electric railroads; (3) the operations of repair shops by steam-railroad companies; and (4) the operations of repair shops by electric-railroad companies. The first two classes include the reports of car-manufacturing establishments only, while the last two classes include the reports of railroad companies covering the operations of their machine and repair shops. The value of products of the latter group is not a selling value, but equals operating expenses—salaries and wages, cost of materials, rent and taxes, etc.

**Cars, steam and electric railroad, and railroad repair shops, summary.**—Table 1 summarizes the statistics of the four industries for 1919 and gives a comparison of the total with 1914.

**Cars made.**—Table 2 shows, for 1919 and 1914, the number and value of cars of all kinds, whether for steam or for electric roads, made by establishments reporting them as the chief product, by railroad repair shops, and by establishments engaged primarily in other lines of manufacture. The number of cars built showed an increase of 23,331, or 16.9 per cent, while the value increased \$238,077,877, or 144.3 per cent. Indicative of the high prices prevailing during the year 1919, the average value of steam-railroad cars increased from \$1,147 in 1914 to \$2,443 in 1919, and of electric-railroad cars from \$3,550 in 1914 to \$6,960 in 1919.

**Cars made, classified by type of construction.**—Table 3 gives, for 1919, the number of the different classes of cars, distributed according to material used, and the total value of each class.

TABLE 1.—CARS, STEAM AND ELECTRIC RAILROAD AND RAILROAD REPAIR SHOPS, SUMMARY: 1919.

	TOTAL.			CARS: 1919.		RAILROAD REPAIR SHOPS: 1919.	
	1919	1914	Percent of increase.	Steam.	Electric.	Steam.	Electric.
Number of establishments.....	2,474	2,128	16.3	99	7	1,744	624
Persons engaged.....	611,467	453,414	34.9	58,782	3,286	516,279	33,120
Proprietors and firm members.....	6	16	.....	2	1	2	1
Salaried employees.....	40,534	29,368	38.0	6,482	365	31,840	1,847
Wage earners (average number).....	570,927	424,030	34.6	52,298	2,920	484,487	31,272
Primary horsepower.....	815,600	615,684	32.5	157,865	9,390	594,515	53,830
Capital.....	\$1,120,358,163	\$590,268,801	91.3	\$335,207,363	\$17,306,485	\$694,285,410	\$82,557,905
Salaries and wages.....	893,632,913	330,655,874	170.3	92,030,039	4,084,941	754,565,412	42,052,521
Salaries.....	84,525,710	33,645,325	151.2	13,745,392	852,851	66,945,100	2,979,367
Wages.....	809,107,203	297,010,549	172.4	78,284,647	4,132,090	687,617,312	39,073,154
Paid for contract work.....	1,546,581	355,875	334.6	39,054	.....	1,389,192	118,335
Rent and taxes.....	34,644,871	3,329,777	940.5	30,359,241	446,989	3,003,178	765,493
Cost of materials.....	915,972,181	399,983,119	129.0	356,084,545	12,058,942	515,803,210	32,025,434
Value of products.....	1,911,110,901	757,888,412	152.2	638,222,831	18,441,976	1,279,235,393	75,210,701
Value added by manufacture <sup>1</sup> .....	995,138,720	357,900,293	178.0	182,138,286	6,883,034	763,432,183	43,185,217

<sup>1</sup> Value of products less cost of materials.

TABLE 2.—CARS MADE, NUMBER AND VALUE: 1919 AND 1914.

INDUSTRY.	Census year.	CARS MADE.					
		Total.		For steam railroads.		For electric railroads.	
		Number.	Value.	Number.	Value.	Number.	Value.
Total.....	1919	161,154	\$403,037,542	159,102	\$388,754,942	2,052	\$14,282,600
	1914	137,823	164,959,665	134,960	154,796,515	2,863	10,163,150
Cars, steam-railroad, not including operations of railroad companies.....	1919	153,483	376,135,819	153,288	373,945,213	195	2,190,606
	1914	120,278	140,868,781	120,084	140,157,583	194	711,198
Cars, electric-railroad, not including operations of railroad companies....	1919	1,703	11,312,047	.....	.....	1,703	11,312,047
	1914	2,365	8,150,382	17	72,034	2,348	8,078,348
Cars and general shop construction and repairs by steam-railroad companies.	1919	2,685	5,133,115	2,685	5,133,115	.....	.....
	1914	10,745	11,999,983	10,745	11,999,983	.....	.....
Cars and general shop construction and repairs by electric-railroad companies.	1919	151	762,293	.....	.....	151	762,293
	1914	304	811,104	.....	.....	304	811,104
All other industries.....	1919	3,132	9,694,268	3,129	9,676,614	3	17,654
	1914	4,131	3,120,415	4,114	2,566,915	17	562,500

## MANUFACTURES.

TABLE 3.—CARS MADE, CLASSIFIED BY TYPE OF CONSTRUCTION: 1919.

CLASS.	NUMBER.					Value.	CLASS.	NUMBER.					Value.
	Total.	All wood.	Steel under frame.	Steel body with wood interior.	All steel.			Total.	All wood.	Steel under frame.	Steel body with wood interior.	All steel.	
Total <sup>1</sup> .....	158,022	4,240	105,482	4,126	44,174	\$393,343,274	Electric-railroad cars.....	2,049	73	938	899	139	\$14,264,946
Steam-railroad cars.....	155,973	4,107	104,544	3,227	44,035	379,678,328	Passenger.....	1,814	41	840	898	85	12,131,561
Passenger.....	254	15	45	85	109	5,046,459	Freight and all other..	235	32	98	1	104	2,133,385
Freight and all other..	155,719	4,152	104,499	3,142	43,926	374,631,869							

<sup>1</sup> Does not include 3,132 cars, valued at \$9,694,238, made as subsidiary products by establishments engaged primarily in other lines of manufacture.

# CARS, STEAM AND ELECTRIC RAILROAD, NOT INCLUDING OPERATIONS OF RAILROAD COMPANIES.

## GENERAL STATISTICS.

**General character of the industry.**—This classification includes establishments engaged in the manufacture of all kinds of cars for use on steam and electric railroads. It does not include, however, the manufacture of steam and electric cars in railroad repair shops or in establishments engaged primarily in the manufacture of other products. Some establishments, besides making finished cars, reported the manufacture, for sale as such, of car materials and parts, such as brake beams, axles, underframes, trucks, car wheels, bolsters, castings, and car bodies; there is thus some duplication in value of products within the industry. Most concerns making exclusively or primarily parts or materials for cars are, however, reported under other classifications, such as "brass, bronze, and copper products," "foundry and machine-shop products," "lumber and timber products," and "springs, steel, car and carriage," for which statistics are shown in the general report on manufactures.

**Comparative summary.**—Table 4 summarizes the statistics of establishments engaged in the manufacture of steam and electric railroad cars for each census from 1899 to 1919 and gives percentages of increase.

The large increases, from 1914 to 1919, in salaries and wages, cost of materials, and value of products are due largely to a general rise in prices and wages following the World War, and do not, therefore, fairly measure the growth of the industry for that period. A truer index of the conditions is found in the average number of wage earners and primary horsepower. The addition of the Federal income tax since 1914 will account for the increase in "Rent and taxes."

**Principal states, ranked by value of products.**—Table 5 summarizes the more important statistics of the steam-railroad car industry, by states, the states being arranged according to the value of products reported for 1919.

Pennsylvania ranked first in 1919 in the value of products manufactured and second in the average number of wage earners employed. In 1914 Illinois was the leading state, Pennsylvania ranking second in importance.

Similar statistics can not be shown for the electric-railroad car industry without disclosing individual operations.

**Persons engaged in the industry.**—The age classification of the average number of wage earners in Table 6 is an estimate obtained by the method de-

scribed in the "Explanation of terms." The classification, by sex, for 1919 was reported separately, but for 1914 and 1909 was obtained in the same manner as the distribution by age. Figures in detail will be found in Table 16.

**Wage earners, by months.**—As shown by Table 7, the number of wage earners employed in the steam-railroad car industry month by month ranged from a maximum of 64,974 in January to a minimum of 45,031 in October, the minimum number being equivalent to 69.3 per cent of the maximum.

In the electric-railroad car industry the number of wage earners employed ranged from a maximum of 3,965 in January to a minimum of 2,471 in May, the minimum number being equivalent to 62.3 per cent of the maximum. Separate figures, by states, can not be given for this industry without disclosing individual operations.

The total number of males and females employed in the United States in 1919 is shown separately for each industry.

**Average number of wage earners, by prevailing hours of labor per week.**—Table 8 shows a marked shortening of the working day for both industries since 1914. In that year, in the steam-railroad car industry, only 10.4 per cent of the wage earners were reported as employed fewer than 54 hours per week as against 62.7 per cent in 1919. In 1914 the "60" group constituted 23 per cent of the total wage earners, as compared with 3.4 per cent in 1919.

**Size of establishments, by average number of wage earners.**—Analysis of Table 9 shows that both industries are largely concentrated in establishments employing 100 or more wage earners. In the steam-railroad car industry there were 66 establishments, or 66.7 per cent of the total establishments in the industry, employing more than 100 wage earners each. These establishments employed 50,857 wage earners, or 97.2 per cent of the total employed in the industry.

**Size of establishments, by value of products.**—At the censuses of 1909 and 1914 establishments with products valued at "\$100,000 to \$1,000,000" constituted one group, but at the census of 1919 this group was subdivided into "\$100,000 to \$500,000," and "\$500,000 to \$1,000,000." Separate figures for the number of establishments and value of products have been compiled, however, from the returns for 1914. Table 10, therefore, gives combined figures for these two groups for the steam-railroad car industry in the case of all items for 1909 and in the case of average number of wage earners and value added by manufacture for 1914.

Similar figures for the electric-railroad car industry are omitted for the reason that they can not be given without disclosing individual operations.

**Number and horsepower of types of prime movers.**—In the steam-railroad car industry from 1914 to 1919, as shown by Table 11, there was an increase in the total horsepower of 31,178, or 24.6 per cent, due wholly to an increase of 42,136 horsepower, or 202.9 per cent in rented power, since owned power decreased 10,958 horsepower, or 10.3 per cent, during this five-year period.

In the electric-railroad car industry the total power

decreased 624 horsepower, or 6.2 per cent, from 1914 to 1919. Owned power decreased 3,256 horsepower, or 63.1 per cent, while rented power increased 2,632 horsepower, or 54.2 per cent, during the same period.

**Fuel consumed.**—Table 12 shows the principal kinds of fuel used for the steam-railroad car industry in 1919 and 1914, and also gives separately the amounts consumed in states requiring considerable quantities of fuel for manufacturing purposes.

Only the total quantities of the various kinds of fuel used in the United States in the electric-railroad car industry are shown.

TABLE 4.—COMPARATIVE SUMMARY: 1919, 1914, 1909, 1904, AND 1899.

	1919	1914	1909	1904	1899	PER CENT OF INCREASE. <sup>1</sup>			
						1914-1919	1909-1914	1904-1909	1899-1904
CARS, STEAM-RAILROAD.									
Number of establishments.....	99	103	110	73	65	-3.9	-6.4	.....	.....
Persons engaged.....	58,782	58,988	47,094	36,367	34,826	-0.3	25.3	29.5	4.4
Proprietors and firm members.....	2	11	7	6	7	.....	.....	.....	.....
Salaried employees.....	6,482	4,689	4,001	2,303	1,366	38.2	17.2	73.7	68.6
Wage earners (average number).....	52,298	54,288	43,086	34,058	33,453	-3.7	26.0	26.5	1.8
Primary horsepower.....	157,865	126,687	97,797	55,994	33,395	24.6	29.5	74.7	67.7
Capital.....	\$335,207,363	\$157,811,109	\$139,804,667	\$88,170,047	\$88,323,852	112.4	12.9	58.5	-0.2
Salaries and wages.....	92,030,039	48,348,202	32,272,977	23,102,511	18,525,426	90.3	40.8	39.7	24.7
Salaries.....	13,745,302	6,954,623	5,187,755	2,854,690	1,538,132	97.6	35.4	80.0	85.6
Wages.....	78,284,647	41,393,579	27,135,222	20,247,821	16,987,294	89.1	52.5	34.0	19.2
Paid for contract work.....	39,054	.....	344,127	31,449	405,634	.....	.....	994.2	-92.2
Rent and taxes.....	30,339,241	909,050	686,385	2,408,634	191,037	3,237.4	32.4	68.0	113.9
Cost of materials.....	356,084,545	132,200,159	78,752,861	75,657,126	61,742,747	160.4	67.9	4.1	22.5
Value of products.....	538,222,831	194,775,669	123,729,627	111,175,310	90,510,180	176.3	57.4	11.3	22.8
Value added by manufacture <sup>2</sup> .....	182,138,286	62,575,510	44,976,766	35,518,184	28,767,433	191.1	39.1	26.6	23.5
CARS, ELECTRIC-RAILROAD.									
Number of establishments.....	7	14	14	14	20	.....	.....	.....	.....
Persons engaged.....	3,286	4,286	4,005	4,997	3,736	-23.3	7.0	-19.9	33.8
Proprietors and firm members.....	1	.....	1	3	7	.....	.....	.....	.....
Salaried employees.....	365	446	421	264	144	-18.2	5.9	59.5	83.3
Wage earners (average number).....	2,920	3,840	3,583	4,730	3,585	-24.0	7.2	-24.2	31.9
Primary horsepower.....	9,390	10,014	15,161	7,054	4,865	-6.2	-33.9	114.9	45.0
Capital.....	\$17,306,485	\$14,751,582	\$14,167,990	\$12,975,703	\$7,615,397	17.3	4.1	9.2	70.4
Salaries and wages.....	4,984,941	3,199,674	2,770,566	3,237,825	2,185,379	55.8	15.5	-14.4	48.2
Salaries.....	852,851	732,647	593,617	398,246	234,503	16.4	23.4	49.1	69.8
Wages.....	4,132,090	2,467,027	2,176,949	2,839,579	1,950,876	67.5	13.3	-23.3	45.6
Paid for contract work.....	.....	129,904	233,508	.....	3,000	.....	-44.4	.....	.....
Rent and taxes.....	446,989	108,718	55,495	240,177	78,962	311.1	95.9	38.1	-49.1
Cost of materials.....	12,058,942	6,349,779	4,260,470	5,341,444	3,966,863	89.9	49.0	-20.2	34.7
Value of products.....	18,441,976	10,494,953	7,809,856	10,844,196	7,305,368	75.7	34.4	-28.0	48.4
Value added by manufacture <sup>2</sup> .....	6,383,034	4,145,174	3,540,396	5,502,752	3,338,505	54.0	16.8	-35.5	64.3

<sup>1</sup> A minus sign (—) denotes decrease. Percentages are omitted where base is less than 100. <sup>2</sup> Exclusive of internal revenue. <sup>3</sup> Value of products less cost of materials.

TABLE 5.—STEAM-RAILROAD CARS—PRINCIPAL STATES, RANKED BY VALUE OF PRODUCTS: 1919.

STATE.	Number of establishments.	WAGE EARNERS.			VALUE OF PRODUCTS.			VALUE ADDED BY MANUFACTURE.			STATE.	Number of establishments.	WAGE EARNERS.			VALUE OF PRODUCTS.			VALUE ADDED BY MANUFACTURE.		
		Average number.	Per cent distribution.	Rank.	Amount (expressed in thousands).	Per cent distribution.	Rank.	Amount (expressed in thousands).	Per cent distribution.	Rank.			Average number.	Per cent distribution.	Rank.	Amount (expressed in thousands).	Per cent distribution.	Rank.	Amount (expressed in thousands).	Per cent distribution.	Rank.
United States..	99	52,298	100.0	....	\$538,223	100.0	....	\$182,138	100.0	...	Indiana.....	9	6,650	12.7	3	\$86,021	16.0	3	\$19,946	11.0	3
Pennsylvania.....	15	11,675	22.3	2	146,879	27.3	1	58,012	31.9	1	Ohio.....	6	2,177	4.2	6	28,146	5.2	5	6,830	3.7	6
Illinois.....	19	13,775	26.3	1	126,218	23.3	2	42,790	23.5	2	Kansas.....	5	393	0.8	19	1,257	0.2	20	770	0.4	19
											All other states...	43	17,628	33.7	....	150,702	28.0	....	53,790	29.5	....

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TABLE 6.—PERSONS ENGAGED IN THE INDUSTRY: 1919, 1914, AND 1909.

CLASS.	Cen- sus year.	Total.	Male.	Fe- male.	PER CENT OF TOTAL.		CLASS.	Cen- sus year.	Total.	Male.	Fe- male.	PER CENT OF TOTAL.	
					Male.	Fe- male.						Male.	Fe- male.
CARS, STEAM-RAILROAD.							CARS, ELECTRIC-RAILROAD.						
All classes.....	1919	58,782	57,162	1,620	97.2	2.8	All classes.....	1919	3,280	3,118	168	94.9	5.1
	1914	58,988	58,487	501	99.2	0.8		1914	4,286	4,228	58	98.6	1.4
	1909	47,094	46,715	379	99.2	0.8		1909	4,005	3,940	56	98.0	1.4
Proprietors and officials.....	1919	1,904	1,849	55	97.1	2.9	Proprietors and officials.....	1919	84	83	1	98.8	1.2
	1914	980	975	5	99.5	0.5		1914	189	189	0	100.0	0.0
	1909	1,041	1,041	0	100.0	0.0		1909	158	157	1	99.4	0.6
Proprietors and firm members...	1919	2	2	0	100.0	0.0	Proprietors and firm members...	1919	1	1	0	100.0	0.0
	1914	11	7	4	63.6	36.4		1914	1	1	0	100.0	0.0
	1909	7	7	0	100.0	0.0		1909	1	1	0	100.0	0.0
Salaried officers of corporations...	1919	218	214	4	98.2	1.8	Salaried officers of corporations...	1919	16	16	0	100.0	0.0
	1914	209	208	1	99.5	0.5		1914	39	39	0	100.0	0.0
	1909	241	241	0	100.0	0.0		1909	36	36	0	100.0	0.0
Superintendents and managers...	1919	1,684	1,633	51	97.0	3.0	Superintendents and managers...	1919	67	66	1	98.5	1.5
	1914	760	760	0	100.0	0.0		1914	150	150	0	100.0	0.0
	1909	793	793	0	100.0	0.0		1909	121	121	0	100.0	0.0
Clerks and other subordinate salaried employees.	1919	4,580	3,535	1,045	77.2	22.8	Clerks and other subordinate salaried employees.	1919	282	184	98	65.2	34.8
	1914	3,720	3,419	301	91.9	8.1		1914	257	224	33	87.2	12.8
	1909	2,967	2,729	238	92.0	8.0		1909	264	231	33	87.5	12.5
Wage earners (average number).....	1919	52,298	51,778	520	99.0	1.0	Wage earners (average number).....	1919	2,920	2,851	69	97.6	2.4
	1914	54,288	54,093	195	99.6	0.4		1914	3,840	3,815	25	99.3	0.7
	1909	43,086	42,945	141	99.7	0.3		1909	3,583	3,561	22	99.4	0.6
16 years of age and over.....	1919	52,276	51,758	520	99.0	1.0	16 years of age and over.....	1919	2,917	2,848	69	97.6	2.4
	1914	54,273	54,078	195	99.6	0.4		1914	3,819	3,794	25	99.3	0.7
	1909	43,058	42,917	141	99.7	0.3		1909	3,569	3,547	22	99.4	0.6
Under 16 years of age.....	1919	22	22	0	100.0	0.0	Under 16 years of age.....	1919	3	3	0	100.0	0.0
	1914	15	15	0	100.0	0.0		1914	21	21	0	100.0	0.0
	1909	28	28	0	100.0	0.0		1909	14	14	0	100.0	0.0

TABLE 7.—WAGE EARNERS, BY MONTHS: 1919.

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

STATE.	Average number em- ployed during year.	NUMBER EMPLOYED ON 15TH DAY OF THE MONTH OR NEAREST REPRESENTATIVE DAY.												Per cent mini- mum is of maxi- mum.
		Janu- ary.	Febru- ary.	March.	April.	May.	June.	July.	August.	Sep- tember.	Octo- ber.	Novem- ber.	Decem- ber.	
CARS, STEAM-RAILROAD.														
United States:														
1919.....	52,298	64,974	61,127	56,409	55,783	54,419	51,545	50,020	48,608	46,619	45,031	45,159	47,882	69.3
Males.....	51,778	64,306	60,579	55,884	55,303	53,955	51,076	49,642	48,217	46,199	44,497	44,437	47,241	69.1
Females.....	520	668	548	525	480	464	469	373	391	420	534	722	641	56.6
1914.....	54,288	63,678	58,077	55,359	51,080	50,532	53,214	56,893	58,529	56,184	54,707	50,050	45,153	70.9
1909.....	43,086	43,218	40,810	38,290	38,370	34,486	38,979	38,531	37,363	45,329	48,308	55,166	58,183	69.2
Illinois.....	13,775	15,964	15,150	15,942	15,599	12,869	12,054	11,151	12,846	13,489	14,067	13,458	12,711	69.9
Indiana.....	6,650	6,701	7,503	7,191	7,343	7,842	7,767	7,583	5,519	5,476	5,510	5,494	5,881	69.8
Ohio.....	2,177	2,494	2,213	2,242	2,134	1,952	1,847	1,921	1,934	2,091	2,332	2,425	2,539	72.7
Pennsylvania.....	11,675	16,239	13,117	11,961	11,981	12,066	12,131	12,151	11,676	9,909	7,894	9,596	11,679	45.5
CARS, ELECTRIC-RAILROAD.														
United States.....	2,920	3,965	3,658	3,213	2,500	2,471	2,680	2,829	2,763	2,706	2,814	2,779	2,662	62.3
Males.....	2,851	3,889	3,587	3,147	2,431	2,404	2,616	2,758	2,694	2,637	2,742	2,710	2,597	61.8
Females.....	69	76	71	66	69	67	64	71	69	69	72	69	65	84.2

## MANUFACTURES.

TABLE 8.—AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK: 1919 AND 1914.

STATE.	Cen- sus year.	Total.	IN ESTABLISHMENTS WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—							
			44 and under.	Between 44 and 48.	48. <sup>1</sup>	Between 48 and 54.	54.	Between 54 and 60.	60.	Over 60.
United States.....  Illinois.....  Indiana.....  Ohio.....  Pennsylvania.....	CARS, STEAM-RAILROAD.									
	1919	52,298	1,875	4,084	9,864	16,055	858	16,883	1,779	.....
	1914	54,288	( <sup>2</sup> )	( <sup>2</sup> )	341	5,294	19,291	16,885	12,477	.....
	1909	43,086	( <sup>2</sup> )	( <sup>2</sup> )	3	711	12,111	14,235	14,585	1,441
	1919	13,775	14	.....	2,134	7,083	.....	4,544	.....	.....
	1914	18,000	.....	.....	.....	1,009	12,949	1,115	2,927	.....
	1919	6,650	417	311	2,427	1,088	.....	2,407	.....	.....
	1914	5,800	.....	.....	.....	1,591	95	818	3,296	.....
	1919	2,177	132	773	.....	213	.....	1,059	.....	.....
	1914	2,385	.....	.....	.....	929	98	1,858	.....	.....
	1919	11,675	939	3,261	170	6,067	196	1,042	.....	.....
	1914	9,955	.....	.....	.....	.....	222	9,353	380	.....
United States.....	CARS, ELECTRIC-RAILROAD.									
	1919	2,920	493	.....	335	25	366	1,701	.....	.....
	1914	3,840	( <sup>2</sup> )	( <sup>2</sup> )	892	.....	403	2,103	442	.....

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

TABLE 9.—SIZE OF ESTABLISHMENTS, BY AVERAGE NUMBER OF WAGE EARNERS: 1919.

STATE.	TOTAL.		ESTABLISHMENTS EMPLOYING—															
	Establishments.	Wage earners (average number).	1 to 5 wage earners, inclusive.		6 to 20 wage earners, inclusive.		21 to 50 wage earners, inclusive.		51 to 100 wage earners, inclusive.		101 to 250 wage earners, inclusive.		251 to 500 wage earners, inclusive.		501 to 1,000 wage earners, inclusive.		Over 1,000 wage earners.	
			Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.
CARS, STEAM-RAILROAD.																		
United States..... 1919.....	90	52,298	.....	.....	9	94	10	321	14	1,026	22	3,724	11	4,405	19	12,947	14	29,781
..... 1914.....	103	54,288	5	20	6	72	13	440	15	1,214	20	2,943	16	5,821	13	9,154	15	34,624
Illinois.....	19	13,775	.....	.....	2	26	2	74	3	206	4	821	1	413	1	571	6	11,664
Indiana.....	9	6,650	.....	.....	.....	.....	1	45	1	97	.....	.....	3	1,102	2	1,713	2	3,693
Ohio.....	8	2,177	.....	.....	.....	.....	1	27	2	144	3	383	.....	.....	2	1,623	.....	.....
Pennsylvania.....	15	11,675	.....	.....	2	16	2	54	1	80	3	507	2	772	2	1,764	3	8,476
CARS, ELECTRIC-RAILROAD.																		
United States.....	7	2,920	.....	.....	1	10	1	25	.....	.....	1	150	3	1,184	.....	.....	1	1,551

TABLE 10.—STEAM-RAILROAD CARS—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS: 1919, 1914, AND 1909.

VALUE OF PRODUCT.	NUMBER OF ESTABLISHMENTS.			AVERAGE NUMBER OF WAGE EARNERS.			VALUE OF PRODUCTS.			VALUE ADDED BY MANUFACTURE.		
	1919	1914	1909	1919	1914	1909	1919	1914	1909	1919	1914	1909
All classes.....	99	103	110	52,298	54,288	43,086	\$533,222,831	\$194,775,669	\$123,729,627	\$182,138,286	\$82,575,510	\$44,978,766
\$5,000 to \$20,000.....	1	5	5	8	25	19	17,141	50,919	32,657	10,321	31,927	13,837
\$20,000 to \$100,000.....	12	16	29	200	478	1,099	646,030	859,503	1,796,326	344,021	425,297	888,406
\$100,000 to \$500,000.....	23	31	51	1,660	7,484	9,781	6,362,534	3,888,607	22,058,927	3,029,260	7,921,895	10,063,316
\$500,000 to \$1,000,000.....	10	15	.....	1,740	.....	.....	6,998,803	10,670,791	.....	3,213,834	.....	.....
\$1,000,000 and over.....	53	36	25	48,678	46,301	32,187	524,198,323	174,405,849	99,841,717	175,540,850	54,196,391	34,011,207
PER CENT DISTRIBUTION.												
All classes.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
\$5,000 to \$20,000.....	1.0	4.9	4.5	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	0.1	( <sup>1</sup> )
\$20,000 to \$100,000.....	12.1	15.5	26.4	0.4	0.9	2.6	0.1	0.4	1.5	0.2	0.7	2.0
\$100,000 to \$500,000.....	23.2	30.1	46.4	3.2	13.8	22.7	1.2	4.6	17.8	1.7	12.6	22.4
\$500,000 to \$1,000,000.....	10.1	14.6	.....	3.3	.....	.....	1.3	5.4	.....	1.8	.....	.....
\$1,000,000 and over.....	53.5	35.0	22.7	93.1	85.3	74.7	97.4	89.5	80.7	96.4	86.6	75.6

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

## CARS, STEAM AND ELECTRIC RAILROAD.

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TABLE 11.—NUMBER AND HORSEPOWER OF TYPES OF PRIME MOVERS: 1919, 1914, AND 1909.

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
	1919	1914	1909	Amount			Per cent distribution.		
				1919	1914	1909	1919	1914	1909
CARS, STEAM-RAILROAD.									
Primary power, total.....	3,777	1,772	929	157,805	126,087	97,797	100.0	100.0	100.0
Owned.....	315	438	504	94,963	105,921	91,341	60.2	83.6	93.4
Steam.....	297	410	484	92,015	99,934	89,823	58.3	78.9	91.8
Engines.....	201	( <sup>2</sup> )	( <sup>2</sup> )	55,519	( <sup>2</sup> )	( <sup>2</sup> )	35.2		
Turbines.....	36	( <sup>2</sup> )	( <sup>2</sup> )	36,496	( <sup>2</sup> )	( <sup>2</sup> )	23.1		
Internal-combustion engines.....	17	24	12	2,848	5,757	1,148	1.8	4.5	1.2
Water wheels and turbines.....	1	4	8	100	230	370	0.1	0.2	0.4
Rented.....	3,462	1,334	425	62,902	20,766	6,456	39.8	16.4	6.6
Electric.....	3,462	1,334	425	62,827	20,416	6,456	39.8	16.1	6.6
Other.....				75	350		( <sup>3</sup> )	0.3	
Electric.....	10,157	7,263	3,710	170,485	115,479	61,060	100.0	100.0	100.0
Rented.....	3,462	1,334	425	62,827	20,416	6,456	36.9	17.7	10.6
Generated by establishments reporting.....	6,695	5,929	3,285	107,658	95,063	54,604	63.1	82.3	89.4
CARS, ELECTRIC-RAILROAD.									
Primary power, total.....	575	223	237	9,390	10,014	15,161	100.0	100.0	100.0
Owned—Steam engines.....	7	31	67	1,900	5,156	11,032	20.2	51.6	72.8
Rented.....	568	192	170	7,490	4,858	4,129	79.8	48.5	27.2
Electric.....	568	192	170	7,490	4,405	4,089	79.8	44.0	27.0
Other.....					453	40		4.5	0.2
Electric.....	692	399	325	9,020	8,483	7,984	100.0	100.0	100.0
Rented.....	568	192	170	7,490	4,405	4,089	83.0	51.9	51.2
Generated by establishments reporting.....	124	207	155	1,530	4,078	3,895	17.0	48.1	48.8

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

TABLE 12.—FUEL CONSUMED: 1919 AND 1914.

STATE.	Census year.	COAL.		Coke (tons, 2,000 pounds).	Fuel oils (barrels).	Gasoline and other volatile oils (barrels).	Gas (1,000 cubic feet).
		Anthracite (tons, 2,240 pounds).	Bituminous (tons, 2,000 pounds).				
CARS, STEAM-RAILROAD.							
United States.....	1919	53,044	819,988	73,638	552,007	8,462	1,108,259
	1914	34,978	698,097	70,886	294,826	(1)	1,221,695
Illinois.....	1919	709	177,503	21,114	149,754	046	5,577
	1914	2,815	149,472	10,608	138,389	(1)	10,061
Indiana.....	1919	.....	153,949	12,406	135,204	682	1,894
	1914	.....	124,221	11,453	41,116	(1)	138
Ohio.....	1919	.....	22,444	582	8,389	2	98,448
	1914	53	34,163	1,375	22,361	(1)	126,309
Pennsylvania.....	1919	37,863	212,111	16,109	61,727	1,015	765,588
	1914	30,915	185,044	15,220	14,377	(1)	963,585
All other states.....	1919	15,072	253,981	23,427	196,953	5,217	236,752
	1914	1,195	205,207	32,230	78,604	(1)	121,002
CARS, ELECTRIC-RAILROAD.							
United States.....	1919	199	46,628	2,083	16,349	16	4,444
	1914	3,032	53,841	686	15,107	(1)	3,805

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



## SPECIAL STATISTICS.

Table 13 shows in detail for the census years 1919, 1914, 1909, and 1904, statistics of establishments constructing steam and electric railroad cars, not including the work of steam and electric railroad companies in their repair shops.

The total number of steam-railroad cars manufactured increased 33,187, or 27.6 per cent, from 1914 to 1919. There was a decrease of 3,211, or 93.2 per cent, in cars made for use in passenger service during this period. There was, however, an increase of 36,398 cars, or 31.2 per cent, in those made for use in freight service, due entirely to the increases in box cars, gondolas, hoppers, and tank cars. Electric-railroad cars

decreased 644, or 25.3 per cent, from 1914 to 1919. The item "All other products" includes largely the amount received for repair work done in establishments engaged primarily in the manufacture of cars. It also includes parts of cars such as trucks, etc., ordnance material and work in progress.

Table 14 shows, for 1919, the number and kind of cars, distributed according to character of construction, together with the value of each kind. All-steel cars and those with steel underframe constituted the most important kinds. Of the total cars made those with steel underframe represented 67.4 per cent and all steel cars 28.4 per cent.

TABLE 13.—DETAILED STATISTICS OF NUMBER AND VALUE: 1919, 1914, 1909, AND 1904.

	1919	1914	1909	1904		1919	1914	1909	1904
Total value <sup>1</sup> .....	\$556,064,807	\$205,270,622	\$131,530,493	\$122,019,506	Steam-railroad cars—Con.				
Steam-railroad cars:					Freight service—Con.				
Number.....	153,288	120,101	74,945	102,782	Hopper <sup>2</sup> .....	16,670	9,754	11,473	27,998
Value.....	\$373,945,213	\$140,229,617	\$75,033,245	\$87,348,911	Number.....	\$45,757,395	\$10,708,407	\$9,419,655	\$21,367,213
Passenger service <sup>3</sup> —					Refrigerator <sup>4</sup> .....	629	5,800	2,618	3,353
Number.....	234	3,445	1,601	2,030	Value.....	\$1,237,557	\$8,077,062	\$2,747,957	\$3,042,535
Passenger—					Stock—				
Number.....	78	1,653	957	428	Number.....	410	3,929	2,349	4,235
Value.....	\$1,285,630	\$19,007,416	\$7,209,425	\$2,955,517	Value.....	\$900,018	\$2,587,065	\$1,586,008	\$2,453,123
Baggage and express,					Tank—				
chair, dining, and					Number.....	11,592	1,250	.....	.....
buffet, parlor, sleep-					Value.....	\$26,540,682	\$1,255,167	.....	.....
ing, mail, and all other—					Other varieties <sup>5</sup> —				
Number.....	156	1,792	644	1,002	Number.....	5,195	15,584	4,337	12,052
Value.....	\$3,569,138	\$24,404,406	\$6,620,182	\$15,184,776	Value.....	\$7,245,572	\$6,708,662	\$3,905,585	\$5,425,572
Freight service—					Electric-railroad cars:				
Number.....	153,054	116,056	73,344	100,752	Number.....	1,898	2,542	2,525	4,384
Value.....	\$369,090,445	\$90,217,735	\$61,803,038	\$69,208,618	Value.....	\$13,502,653	\$8,789,546	\$6,026,357	\$9,297,160
Box—					Passenger—				
Number.....	59,089	50,481	29,728	38,184	Number.....	1,726	2,335	2,345	4,008
Value.....	\$160,903,210	\$40,952,538	\$23,982,446	\$28,508,032	Value.....	\$11,495,791	\$8,075,710	\$6,249,415	\$8,809,261
Flat—					Other varieties—				
Number.....	4,029	4,781	3,232	5,412	Number.....	172	207	180	376
Value.....	\$7,592,168	\$3,120,984	\$2,033,801	\$2,893,154	Value.....	\$2,006,802	\$713,836	\$376,942	\$487,905
Gondolas—					All other products,				
Number.....	54,840	25,077	19,607	9,518	value.....	\$109,216,941	\$56,251,459	\$49,279,891	\$25,373,420
Value.....	\$118,853,843	\$22,808,750	\$18,128,186	\$5,518,084					

<sup>1</sup> In addition, 5,814 steam-railroad cars, valued at \$14,809,729, 154 electric-railroad cars, valued at \$779,947, and parts and repairs, valued at \$3,200,165, were reported in 1919; 14,859 steam-railroad cars, valued at \$14,568,898, 321 electric-railroad cars, valued at \$1,373,604, and parts and repairs, valued at \$980,074 were reported in 1914, and 23,526 steam-railroad cars, valued at \$19,251,042, 247 electric-railroad cars, valued at \$636,762, and parts and repairs, valued at \$210,487 were reported in 1909, by establishments engaged primarily in other industries.

<sup>2</sup> Includes gasoline motor cars for use as passenger cars by steam railroads for 1914 and 1909.

<sup>3</sup> Reported as coal and coke cars in 1909 and 1904.

<sup>4</sup> Includes fruit cars for 1919.

<sup>5</sup> Includes 2,391 logging, mining, industrial, and dump cars, valued at \$2,916,806 in 1919, and 9,737 cars of the same classes, valued at \$1,825,693 in 1914; and 167 cars in 1914, and 136 cars in 1909 whose type was not specifically designated.

TABLE 14.—CARS MADE, CLASSIFIED BY KIND AND TYPE OF CONSTRUCTION: 1919.

KIND.	NUMBER.					Value.		NUMBER.					Value.
	Total.	All wood.	Steel under-frame.	Steel body with wood interior.	All steel.			Total.	All wood.	Steel under-frame.	Steel body with wood interior.	All steel.	
Aggregate.....	155,186	2,840	104,553	3,698	44,095	\$387,447,866							
Steam-railroad cars.....	153,288	2,796	103,089	2,810	43,993	\$373,945,213							
Passenger service, total.....	234	8	43	85	98	4,854,768							
Passenger.....	78	5	24	7	42	1,285,630							
Baggage and express, chair, dining and buffet, parlor, sleeping, mail, and other.....	156	3	19	78	56	3,569,138							
Freight service, total.....	153,054	2,788	103,046	2,725	43,895	\$369,090,445							
Box.....	59,089	143	57,446	2,100	.....	\$160,903,210							
Flat.....	4,029	36	3,910	.....	88	\$7,592,168							
Steam-railroad cars—Con.													
Freight service—Con.													
Gondolas.....	54,840	100	40,042	.....	14,698	\$118,853,843							
Hopper.....	16,670	2	.....	.....	16,668	45,757,395							
Refrigerator <sup>1</sup> .....	629	.....	504	125	.....	1,237,557							
Stock.....	410	200	100	.....	110	900,018							
Tank.....	11,592	.....	.....	.....	11,592	26,540,682							
All other freight.....	5,195	2,307	1,644	500	744	7,245,572							
Electric-railroad cars.....	1,898	44	864	888	102	13,502,653							
Passenger.....	1,726	28	810	888	.....	11,495,791							
Other varieties.....	172	16	54	.....	102	2,006,862							

<sup>1</sup> Includes fruit cars.

## GENERAL TABLES.

Table 15 gives, for 1919, 1914, and 1909, by states, the number of establishments, average number of wage earners, primary horsepower, wages, cost of materials, and value of products for the steam-railroad car industry.

Table 16 presents, for 1919, statistics in detail for the steam-railroad car industry as a whole, and for each

state that can be shown separately without the possibility of disclosing the operations of individual establishments.

Similar figures are shown in Table 16 for the electric-railroad car industry as a whole only, as no states could be shown separately without disclosing the operations of individual establishments.

TABLE 15.—STEAM-RAILROAD CARS—COMPARATIVE SUMMARY, BY STATES: 1919, 1914, AND 1909.

STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earn- ers (aver- age num- ber).	Primary horse- power.	Wages.	Cost of mate- rials.	Value of prod- ucts.	STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earn- ers (aver- age num- ber).	Primary horse- power.	Wages.	Cost of mate- rials.	Value of prod- ucts.
					Expressed in thousands.								Expressed in thousands.		
United States...	1919	99	52,298	157,865	\$78,285	\$356,085	\$538,223	Ohio.....	1919	8	2,177	12,685	\$3,336	\$21,315	\$28,146
	1914	103	54,288	126,687	41,394	132,200	194,776		1914	5	2,885	6,420	2,434	8,558	11,796
	1909	110	43,086	97,797	27,135	78,753	123,730		1909	6	2,282	4,410	1,304	4,195	6,451
Illinois.....	1919	19	13,775	32,429	20,340	82,428	125,218	Pennsylvania.....	1919	15	11,675	43,044	16,738	88,867	146,879
	1914	23	18,000	37,622	15,686	40,429	61,310		1914	12	9,955	26,462	6,635	29,377	39,831
	1909	28	10,945	18,661	7,824	15,336	27,001		1909	13	7,766	31,732	4,819	19,002	27,510
Indiana.....	1919	9	6,650	21,325	11,502	66,075	86,021	All other states.....	1919	48	18,021	48,382	26,369	97,400	151,959
	1914	10	6,800	13,171	3,981	13,711	21,570		1914	53	17,648	43,012	12,658	40,125	60,263
	1909	7	4,084	10,699	1,991	6,309	9,498		1909	56	18,009	32,305	11,197	33,911	53,270

## MANUFACTURES.

TABLE 16.—DETAILED STATEMENT, BY STATES: 1919.

STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.										WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	EXPENSES.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.	Salaries and wages.				
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.		Male.	Officials.		Clerks, etc.	
								Maximum month.	Minimum month.									
CARS, STEAM-RAILROAD.																		
United States....	99	58,782	2	1,002	3,535	1,045	52,298	Ja 64,974	Oc 45,031	50,999	50,549	429	21	\$335,207,363	\$6,376,052	\$7,309,340		
Illinois.....	19	15,145	.....	389	791	190	13,775	Ja 15,964	Jy 11,151	13,109	12,970	139	.....	63,884,050	1,105,959	1,465,712		
Indiana.....	9	7,494	.....	292	419	133	6,650	My 7,842	Se 5,476	7,045	7,018	27	.....	62,901,805	1,166,008	930,851		
Kansas.....	5	430	.....	17	13	7	393	Mh 445	Aug 355	331	330	1	.....	2,039,262	33,473	31,091		
Ohio.....	8	2,576	.....	79	237	83	2,177	De 2,539	Je 1,847	2,539	2,536	2	1	20,576,710	561,454	348,080		
Pennsylvania.....	15	13,307	.....	270	1,075	287	11,675	Ja 16,239	Oc 7,394	11,710	11,557	146	7	98,092,625	1,201,367	2,485,003		
All other states <sup>1</sup> .....	43	19,830	2	855	1,000	845	17,628	.....	.....	16,265	16,138	114	13	88,712,911	2,307,191	2,108,597		
CARS, ELECTRIC-RAILROAD.																		
United States <sup>2</sup> ...	7	3,286	1	83	184	98	2,920	Ja 3,965	My 2,471	2,709	2,641	65	3	17,306,485	475,212	377,039		
EXPENSES—continued.																		
STATE.	Salaries and wages—Con		Rent and taxes.		For materials.		Value of products.	Value added by manufacture.	POWER.						Electric horsepower generated in establishments reporting.			
	Wage earners.	For contract work.	Rent of factory.	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.			Primary horsepower.					Rented. <sup>4</sup>				
									Owned.									
									Total.	Steam engines (not turbines).	Steam turbines.	Internal-combustion engines.	Water power. <sup>3</sup>					
CARS, STEAM-RAILROAD.																		
United States....	\$78,284,647	\$39,054	\$158,045	\$30,181,196	\$349,903,930	\$6,180,615	\$538,222,831	\$182,138,286	157,865	55,519	36,496	2,848	100	62,902	107,658			
Illinois.....	20,339,878	.....	50,031	6,704,792	81,077,615	1,350,119	125,217,722	42,789,988	32,429	8,451	18,333	1,000	.....	4,645	32,007			
Indiana.....	11,501,903	.....	.....	4,336,086	64,987,248	1,087,746	86,021,028	19,946,034	21,325	5,375	6,100	.....	.....	9,850	12,036			
Kansas.....	478,226	252	6,000	9,816	461,097	26,152	1,257,225	769,970	775	.....	.....	45	.....	730	.....			
Ohio.....	3,335,505	8,585	22,835	922,410	21,097,856	217,288	28,145,542	6,830,398	12,685	1,905	.....	450	.....	10,330	300			
Pennsylvania.....	16,787,740	.....	13,993	6,302,131	87,425,755	1,440,929	146,879,011	58,012,327	43,044	21,434	7,933	675	.....	13,002	29,724			
All other states <sup>1</sup> .....	25,891,395	30,217	65,186	11,905,961	94,854,359	2,058,381	150,702,303	53,789,563	47,607	18,354	4,130	678	100	24,345	33,561			
CARS, ELECTRIC-RAILROAD.																		
United States <sup>2</sup> ...	4,132,090	.....	10,879	436,110	11,681,416	377,526	18,441,076	6,383,034	9,390	1,900	.....	.....	.....	7,490	1,530			

<sup>1</sup> All other states embrace: Alabama, 1 establishment; California, 4; Delaware, 2; Georgia, 1; Iowa, 2; Kentucky, 1; Maryland, 1; Massachusetts, 2; Michigan, 1; Mississippi, 1; Missouri, 8; Nebraska, 1; New Hampshire, 1; New Jersey, 2; New York, 2; Oklahoma, 1; Oregon, 1; Tennessee, 2; Texas, 2; Virginia, 2; Washington, 2; West Virginia, 1; and Wisconsin, 2.

<sup>2</sup> Comprises: Missouri, 1 establishment; North Carolina, 1; Ohio, 3; Pennsylvania, 2.

<sup>3</sup> Includes water wheels and turbines (irrespective of ownership of water supply) and water motors (operated by water from city mains).

<sup>4</sup> Chiefly electric motors operated by rented (or purchased) current; other power included (chiefly shaft-belt or transmitted power from neighboring power plants).

# STEAM AND ELECTRIC RAILROAD REPAIR SHOPS.

## GENERAL STATISTICS.

**General character of the industry.**—This industry is divided for census purposes into two classes—cars and general shop construction and repairs by steam-railroad companies, and cars and general shop construction and repairs by electric-railroad companies.

The products are not ordinarily given a selling or contract value. The amount reported as the value represents the cost of materials, salaries, wages, rent, and taxes. Measured by the number of persons employed, the steam-railroad repair shops constitute one of the important industries covered by the statistics of manufactures.

**Comparative summary.**—Table 17 summarizes the statistics for each census since 1899, with percentages of increase for each five-year period.

With few exceptions increases are noticeable at each succeeding census. The large increases, however, from 1914 to 1919, in salaries and wages, cost of materials, and value of products are due largely to a general rise of prices and wages following the World War, and do not, therefore, fairly measure the growth of the industry for that period. A truer index of the conditions is found in the increases in the average number of wage earners and primary horsepower.

**Persons engaged in the industry.**—The classification by sex, for 1919 was reported separately, but for 1914 and 1909 was obtained in the same manner as the distribution by age. The age classification of the average number of wage earners in Table 18 is an estimate obtained by the method described in the "Explanation of terms." Figures in detail will be found in Table 25.

**Wage earners, by months.**—Table 19 presents separately for steam and electric railroad repair shops, the number of wage earners employed on the 15th of each month, or the nearest representative day, for 1919, 1914, and 1909, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

**Average number of wage earners, by prevailing hours of labor per week.**—Table 20 shows a marked shortening of the working day for the industry since 1914. In that year only 21.9 per cent were reported as employed in steam-railroad repair shops 48 hours or less per week, as against 73.3 per cent in 1919. In

1914 the "60" and "Over 60" groups constituted 19.8 per cent of the total wage earners, as compared with seven-tenths of 1 per cent in 1919.

In electric-railroad repair shops in 1914 only 12.5 per cent were employed fewer than 54 hours per week, as compared with 51.1 per cent in 1919.

**Size of establishments, by average number of wage earners.**—Analysis of Table 21 discloses the significant fact that in 1919, 303,277 wage earners, or 62.6 per cent of the total employed in steam-railroad repair shops, were employed in shops having more than 500 wage earners each.

In electric-railroad repair shops in 1919, 403 establishments, or 64.6 per cent of the total number for the industry, employed fewer than 21 wage earners each, while only 2,709, or 8.7 per cent of the total number of wage earners, were employed therein, evidencing the predominance of small establishments based on the average number of wage earners.

**Size of establishments, by value of products.**—At the censuses of 1909 and 1914 establishments with products valued at "\$100,000 to \$1,000,000" constituted one group, but at the census of 1919 this group was subdivided into "\$100,000 to \$500,000," and "\$500,000 to \$1,000,000." Separate figures for the number of establishments and value of products have been compiled, however, from the returns for 1914. Table 22, therefore, gives combined figures for these two groups in the case of all items for 1909, and in the case of average number of wage earners and value added by manufacture for 1914.

**Number and horsepower of types of prime movers.**—From 1914 to 1919, as shown by Table 23, there was an increase in the total horsepower for the steam-railroad repair shop industry of 160,521 horsepower, or 37 per cent, due to an increase in owned power of 52,098 horsepower, or 15.7 per cent, and to an increase in rented power of 108,423 horsepower, or 105.6 per cent.

From 1914 to 1919 there was an increase in the total horsepower for the electric-railroad repair shop industry of 8,841 horsepower, or 19.6 per cent, due entirely to an increase in rented power of 10,530 horsepower, or 28.6 per cent, since owned power decreased 1,689 horsepower, or 20.8 per cent.

## MANUFACTURES.

TABLE 17.—COMPARATIVE SUMMARY: 1919, 1914, 1909, 1904, AND 1899.

	1919	1914	1909	1904	1899	PER CENT OF INCREASE. <sup>1</sup>			
						1914-1919	1909-1914	1904-1909	1899-1904
STEAM-RAILROAD REPAIR SHOPS.									
Number of establishments.....	1,744	1,362	1,145	1,140	1,292	23.0	19.0	0.4	-11.8
Persons engaged.....	516,279	361,925	301,273	250,199	180,689	42.6	20.1	20.4	38.5
Proprietors and firm members.....	2	1	2	13,329	7,094	42.1	17.0	43.3	37.9
Salaried employees.....	31,840	22,406	19,097	236,370	173,595	42.7	20.3	19.1	36.4
Wage earners (average number).....	484,437	339,518	282,174	236,870	173,595	42.7	20.3	19.1	36.4
Primary horsepower.....	594,515	433,994	293,361	167,973	95,087	37.0	47.9	74.6	76.7
Capital.....	\$694,286,410	\$354,092,369	\$238,317,497	\$146,886,479	\$119,473,042	96.1	48.6	62.2	22.9
Salaries and wages.....	754,565,412	258,548,615	198,683,273	154,072,306	102,214,817	191.8	30.1	29.0	50.7
Salaries.....	66,948,100	24,043,517	17,338,977	11,919,558	6,208,247	178.4	38.7	45.5	92.0
Wages.....	687,617,312	234,505,098	181,344,296	142,152,748	96,006,570	193.2	29.3	27.6	48.1
Paid for contract work.....	1,389,192	201,375	265,036	(2)	(2)	589.9	-24.0	.....	.....
Rent and taxes.....	3,093,178	1,730,343	1,178,887	(2)	(2)	78.8	46.8	.....	.....
Cost of materials.....	515,803,210	243,828,607	199,413,412	151,104,801	109,472,353	111.5	22.3	32.0	38.0
Value of products.....	1,279,235,393	514,041,225	405,600,727	300,775,089	218,113,658	148.9	26.7	30.9	42.0
Value added by manufacture <sup>2</sup> .....	763,432,183	270,212,618	206,187,315	158,670,288	108,641,305	182.5	31.1	29.9	46.0
ELECTRIC-RAILROAD REPAIR SHOPS.									
Number of establishments.....	624	649	541	86	108	-3.9	20.0	.....	-20.4
Persons engaged.....	33,120	28,215	23,699	11,551	7,226	17.4	19.1	105.2	59.9
Proprietors and firm members.....	1	4	1	499	201	1.1	42.6	150.7	148.3
Salaried employees.....	1,847	1,827	1,281	11,052	7,025	18.5	17.7	102.8	57.2
Wage earners (average number).....	31,272	26,384	22,418	11,052	7,025	18.5	17.7	102.8	57.2
Primary horsepower.....	53,830	44,989	35,794	3,154	6,443	19.7	25.7	1,034.9	-51.0
Capital.....	\$82,557,905	\$63,613,741	\$38,898,686	\$12,905,853	\$10,781,939	29.8	63.5	201.4	19.7
Salaries and wages.....	42,052,521	20,559,383	15,690,228	7,555,485	4,598,268	104.5	31.0	107.7	64.3
Salaries.....	2,979,367	1,914,638	1,204,219	542,687	193,675	55.6	59.0	121.9	180.2
Wages.....	39,073,154	18,644,745	14,486,009	7,012,798	4,404,593	109.6	28.7	106.6	59.2
Paid for contract work.....	118,335	24,596	23,480	13,195	23,392	381.1	4.8	77.9	-43.6
Rent and taxes.....	765,463	581,657	351,626	4,119,598	4,136,193	31.6	65.4	.....	-12.2
Cost of materials.....	32,025,484	17,609,574	15,167,899	5,463,360	4,336,744	81.9	16.1	177.6	26.0
Value of products.....	75,210,701	35,576,565	31,982,561	13,437,121	9,370,811	95.0	20.7	137.9	43.4
Value added by manufacture <sup>2</sup> .....	43,185,217	20,966,991	16,794,662	7,973,761	5,034,067	106.0	24.8	110.6	58.4

<sup>1</sup> A minus sign (-) denotes decrease. Percentages are omitted where base is less than 100.<sup>2</sup> Figures not available.<sup>3</sup> Value of products less cost of materials.<sup>4</sup> Exclusive of internal revenue.

TABLE 18.—PERSONS ENGAGED IN THE INDUSTRY: 1919, 1914, AND 1909.

CLASS.	Cen- sus year.	Total.	Male.	Fe- male.	PER CENT OF TOTAL.		CLASS.	Cen- sus year.	Total.	Male.	Fe- male.	PER CENT OF TOTAL.	
					Male.	Fe- male.						Male.	Fe- male.
STEAM-RAILROAD REPAIR SHOPS.													
All classes.....	1919	516,279	507,467	8,812	98.3	1.7	All classes.....	1919	33,120	32,361	759	97.7	2.3
	1914	361,925	360,842	1,083	99.7	0.3		1914	28,215	28,022	193	99.3	0.7
	1909	301,273	300,454	819	99.7	0.3		1909	23,699	23,550	149	99.4	0.6
Proprietors and officials.....	1919	15,476	15,451	25	99.8	0.2	Proprietors and officials.....	1919	867	867	.....	100.0	.....
	1914	6,825	6,825	.....	100.0	.....		1914	803	799	4	99.5	0.5
	1909	6,974	6,973	1	100.0	.....		1909	658	657	1	99.8	0.2
Proprietors and firm members ..	1919	2	2	.....	100.0	.....	Proprietors and firm members ..	1919	1	1	.....	100.0	.....
	1914	1	1	.....	100.0	.....		1914	4	4	.....	100.0	.....
	1909	2	2	.....	100.0	.....		1909	.....	.....	.....	.....	.....
Salaried officers of corporations..	1919	136	136	.....	100.0	.....	Salaried officers of corporations..	1919	65	65	.....	100.0	.....
	1914	133	133	.....	100.0	.....		1914	101	97	4	96.0	4.0
	1909	1,877	1,877	.....	100.0	.....		1909	107	106	1	99.1	0.9
Superintendents and managers..	1919	15,338	15,313	25	99.8	0.2	Superintendents and managers..	1919	801	801	.....	100.0	.....
	1914	6,691	6,691	.....	100.0	.....		1914	698	698	.....	100.0	.....
	1909	5,095	5,094	1	100.0	.....		1909	551	551	.....	100.0	.....
Clerks and other subordinate salaried employees.	1919	16,366	12,057	4,309	73.7	26.3	Clerks and other subordinate salaried employees.	1919	981	721	260	73.5	26.5
	1914	15,382	14,935	647	95.8	4.2		1914	1,028	941	87	91.5	8.5
	1909	12,125	11,732	393	96.8	3.2		1909	623	579	44	92.9	7.1
Wage earners (average number).....	1919	484,437	479,959	4,478	99.1	0.9	Wage earners (average number).....	1919	31,272	30,773	499	98.4	1.6
	1914	339,518	339,082	436	99.9	0.1		1914	26,384	26,282	102	99.6	0.4
	1909	282,174	281,749	425	99.8	0.2		1909	22,418	22,314	104	99.5	0.5
16 years of age and over.....	1919	434,395	429,917	4,478	99.1	0.9	16 years of age and over.....	1919	31,262	30,763	499	98.4	1.6
	1914	339,433	339,002	436	99.9	0.1		1914	26,377	26,275	102	99.6	0.4
	1909	281,993	281,568	425	99.8	0.2		1909	22,403	22,300	103	99.5	0.5
Under 16 years of age.....	1919	42	42	.....	100.0	.....	Under 16 years of age.....	1919	10	10	.....	100.0	.....
	1914	80	80	.....	100.0	.....		1914	7	7	.....	100.0	.....
	1909	181	181	.....	100.0	.....		1909	15	14	1	93.3	6.7

## RAILROAD REPAIR SHOPS.

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TABLE 19.—WAGE EARNERS, BY MONTHS: 1919, 1914, AND 1909.

MONTH.	NUMBER. <sup>1</sup>			PER CENT OF MAXIMUM.			MONTH.	NUMBER. <sup>1</sup>			PER CENT OF MAXIMUM.		
	1919	1914	1909	1919	1914	1909		1919	1914	1909	1919	1914	1909
STEAM-RAILROAD REPAIR SHOPS.							ELECTRIC-RAILROAD REPAIR SHOPS.						
January.....	487,141	343,590	278,705	95.3	90.0	92.5	January.....	31,499	26,267	<b>21,922</b>	98.8	97.4	95.7
February.....	484,047	340,925	273,678	94.7	88.2	90.8	February.....	31,702	26,709	22,005	99.4	99.0	98.1
March.....	472,266	340,933	273,622	92.4	98.2	90.7	March.....	31,686	26,889	22,189	99.3	99.6	96.8
April.....	467,674	333,423	269,502	91.5	96.1	89.4	April.....	31,332	26,880	22,198	98.2	99.7	96.9
May.....	460,995	332,026	<b>268,700</b>	91.4	95.7	89.1	May.....	30,937	26,919	22,280	97.0	99.8	97.3
June.....	<i>464,919</i>	332,735	272,165	91.0	95.9	90.3	June.....	<b>30,220</b>	26,745	22,325	94.8	99.2	97.5
July.....	476,570	343,576	276,061	93.0	99.0	91.6	July.....	30,896	26,970	22,273	98.9	100.0	97.3
August.....	480,705	345,275	284,253	94.0	99.5	94.3	August.....	30,796	26,694	22,411	96.6	99.0	97.9
September.....	493,057	347,031	292,042	96.5	100.0	96.9	September.....	30,960	26,338	22,557	97.1	97.6	99.8
October.....	502,119	345,195	296,302	98.2	99.5	98.3	October.....	31,568	25,945	22,869	99.0	96.2	99.9
November.....	507,617	338,300	299,381	99.3	97.5	99.3	November.....	31,774	25,139	22,825	99.6	93.2	99.7
December.....	511,134	<b>351,207</b>	301,538	100.0	95.4	100.0	December.....	31,894	<b>25,155</b>	22,898	100.0	93.2	100.0

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

TABLE 20.—AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK: 1919 AND 1914.

PREVAILING HOURS OF LABOR PER WEEK.	WAGE EARNERS IN ESTABLISHMENTS WITH SPECIFIED NUMBER OF HOURS.				PREVAILING HOURS OF LABOR PER WEEK.	WAGE EARNERS IN ESTABLISHMENTS WITH SPECIFIED NUMBER OF HOURS.			
	Average number.		Per cent of total.			Average number.		Per cent of total.	
	1919	1914	1919	1914		1919	1914	1919	1914
	STEAM-RAILROAD REPAIR SHOPS.					ELECTRIC-RAILROAD REPAIR SHOPS.			
Total.....	484,437	339,518	100.0	100.0	Total.....	31,272	26,384	100.0	100.0
44 and under.....	2,893	(1)	0.6	.....	44 and under.....	1,278	(1)	4.1	.....
Between 44 and 48.....	45,481	(1)	9.4	.....	Between 44 and 48.....	829	(1)	2.7	.....
48 <sup>2</sup> .....	306,639	74,431	63.3	21.9	48 <sup>2</sup> .....	5,209	1,665	16.7	6.3
Between 48 and 54.....	10,671	50,616	2.2	14.9	Between 48 and 54.....	8,062	1,638	27.7	6.2
54.....	7,061	100,759	1.5	29.7	54.....	7,302	6,180	23.3	23.3
Between 54 and 60.....	108,403	46,375	22.4	13.7	Between 54 and 60.....	3,124	6,040	10.0	25.2
60.....	1,968	16,767	0.4	4.9	60.....	2,523	6,040	8.1	22.9
Over 60.....	1,321	50,570	0.3	14.9	Over 60.....	2,345	4,241	7.5	16.1

<sup>1</sup> Figures not available.<sup>2</sup> Includes 48 and under for 1914.

TABLE 21.—SIZE OF ESTABLISHMENTS, BY AVERAGE NUMBER OF WAGE EARNERS: 1919 AND 1914.

WAGE EARNERS PER ESTABLISHMENT.	NUMBER OF ESTABLISHMENTS.		AVERAGE NUMBER OF WAGE EARNERS.		WAGE EARNERS PER ESTABLISHMENT.	NUMBER OF ESTABLISHMENTS.		AVERAGE NUMBER OF WAGE EARNERS.	
	1919	1914	1919	1914		1919	1914	1919	1914
STEAM-RAILROAD REPAIR SHOPS.					ELECTRIC-RAILROAD REPAIR SHOPS.				
All establishments.....	1,744	1,362	484,437	339,518	All establishments.....	624	649	31,272	26,384
1 to 5 wage earners.....	125	76	374	234	1 to 5 wage earners.....	229	253	640	719
6 to 20 wage earners.....	206	194	2,617	2,503	6 to 20 wage earners.....	174	193	2,069	2,134
21 to 50 wage earners.....	253	202	8,582	6,840	21 to 50 wage earners.....	111	112	3,696	3,537
51 to 100 wage earners.....	255	213	18,857	15,834	51 to 100 wage earners.....	47	37	3,467	2,823
101 to 250 wage earners.....	897	287	64,735	45,788	101 to 250 wage earners.....	41	34	5,884	4,862
251 to 500 wage earners.....	238	197	85,905	67,492	251 to 500 wage earners.....	9	9	2,890	3,366
501 to 1,000 wage earners.....	164	131	117,723	91,041	501 to 1,000 wage earners.....	9	8	6,738	5,265
Over 1,000 wage earners.....	106	62	186,554	109,986	Over 1,000 wage earners.....	4	3	5,918	3,878

## MANUFACTURES.

TABLE 22.—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS: 1919, 1914, AND 1909.

VALUE OF PRODUCT.	NUMBER OF ESTABLISHMENTS.			AVERAGE NUMBER OF WAGE EARNERS.			VALUE OF PRODUCTS.			VALUE ADDED BY MANUFACTURE.		
	1919	1914	1909	1919	1914	1909	1919	1914	1909	1919	1914	1909
STEAM-RAILROAD REPAIR SHOPS.												
All classes.....	1,744	1,362	1,145	484,437	330,518	282,174	\$1,279,235,393	\$514,041,225	\$405,600,727	\$763,432,183	\$270,212,618	\$206,187,315
Less than \$5,000.....	38	44	52	57	115	152	113,082	133,531	163,034	79,282	81,776	98,548
\$5,000 to \$20,000.....	130	154	149	686	1,584	1,515	1,646,002	1,895,290	1,760,898	1,137,072	1,202,354	1,124,545
\$20,000 to \$100,000.....	300	358	288	8,544	14,430	12,059	19,320,863	19,648,203	14,701,893	13,799,747	12,158,925	8,963,187
\$100,000 to \$500,000.....	618	529	504	68,005	108,586	152,534	159,630,899	127,284,994	109,892,669	100,792,732	133,985,665	109,493,358
\$500,000 to \$1,000,000.....	246	155	94	70,515	154,803	115,914	177,503,358	255,310,562	189,111,816	114,119,338	122,783,898	86,507,877
\$1,000,000 and over.....	352	122	94	336,630	154,803	115,914	921,012,119	255,310,562	189,111,816	524,504,012	122,783,898	86,507,877
PER CENT DISTRIBUTION.												
All classes.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than \$5,000.....	2.2	3.2	4.5	(1)	(1)	0.1	(1)	(1)	(1)	(1)	(1)	(1)
\$5,000 to \$20,000.....	7.5	11.3	13.0	0.1	0.5	0.5	0.1	0.4	0.4	0.1	0.4	0.5
\$20,000 to \$100,000.....	20.6	26.3	25.0	1.8	4.3	4.3	1.5	3.8	3.6	1.8	4.5	4.3
\$100,000 to \$500,000.....	35.4	38.8	40.3	14.0	40.7	54.1	12.5	24.7	49.3	14.4	49.6	53.1
\$500,000 to \$1,000,000.....	14.1	11.4	8.2	14.6	45.6	41.1	13.9	21.4	46.0	14.9	45.4	42.0
\$1,000,000 and over.....	20.2	9.0	8.2	69.5	45.6	41.1	72.0	49.7	46.0	68.7	45.4	42.0
ELECTRIC-RAILROAD REPAIR SHOPS.												
All classes.....	624	640	541	31,272	20,334	22,418	\$75,210,701	\$38,576,565	\$31,962,561	\$43,185,217	\$20,966,991	\$10,794,662
Less than \$5,000.....	73	154	125	117	344	279	220,890	446,504	361,072	126,332	253,087	197,379
\$5,000 to \$20,000.....	200	242	199	925	1,842	1,693	2,233,145	2,594,138	2,230,661	1,289,514	1,410,960	1,254,306
\$20,000 to \$100,000.....	227	176	155	4,883	5,140	4,834	10,618,287	7,020,094	6,261,138	6,174,511	4,023,670	3,370,762
\$100,000 to \$500,000.....	100	58	55	9,654	12,462	10,034	22,212,434	10,169,255	14,366,014	12,983,540	9,825,494	7,693,202
\$500,000 to \$1,000,000.....	9	12	7	2,317	6,596	5,003	6,432,118	8,319,230	8,743,676	3,408,327	5,453,780	4,279,013
\$1,000,000 and over.....	15	7	7	13,370	6,596	5,003	38,493,777	10,058,338	8,743,676	19,249,984	5,453,780	4,279,013
PER CENT DISTRIBUTION.												
All classes.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than \$5,000.....	11.7	23.7	23.1	0.4	1.3	1.2	0.3	1.2	1.1	0.3	1.2	1.2
\$5,000 to \$20,000.....	32.1	37.3	36.8	3.0	7.0	7.4	3.0	6.6	7.0	3.0	6.7	7.5
\$20,000 to \$100,000.....	36.4	27.1	28.6	15.6	19.5	21.6	14.1	13.2	19.6	14.3	19.2	20.1
\$100,000 to \$500,000.....	16.0	8.9	10.2	30.9	47.2	44.8	29.5	26.3	44.9	30.0	46.9	45.8
\$500,000 to \$1,000,000.....	1.4	1.9	1.3	7.4	25.0	25.0	8.6	21.6	27.4	7.9	28.0	25.5
\$1,000,000 and over.....	2.4	1.1	1.3	42.8	25.0	25.0	44.5	26.1	27.4	44.6	28.0	25.5

1 Less than one-tenth of 1 per cent.

TABLE 23.—NUMBER AND HORSEPOWER OF TYPES OF PRIME MOVERS: 1919, 1914, AND 1909.

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
	1919	1914	1909	Amount.			Per cent distribution.		
				1919	1914	1909	1919	1914	1909
STEAM-RAILROAD REPAIR SHOPS.									
Primary power, total.....	14,295	8,245	4,195	594,515	433,994	293,361	100.0	100.0	100.0
Owned.....	2,659	2,716	2,366	383,440	331,342	259,430	64.5	76.3	88.4
Steam.....	2,490	2,514	2,220	375,606	323,634	255,840	63.2	74.6	87.2
Engines.....	2,358	(2)	(2)	326,738	(2)	(2)	54.8		
Turbines.....	132	(2)	(2)	49,808	(2)	(2)	8.4		
Internal-combustion engines.....	158	175	130	6,993	5,916	3,140	1.2	1.4	1.1
Water wheels, turbines, and motors.....	11	27	16	841	1,792	450	0.1	0.4	0.2
Rented.....	11,636	5,529	1,829	211,075	102,652	33,931	35.5	23.7	11.6
Electric.....	11,636	5,529	1,829	207,630	102,652	33,786	34.9	23.6	11.5
Other.....				3,445	90	145	0.6	(2)	(2)
Electric.....	30,185	19,056	9,468	500,141	325,054	161,288	100.0	100.0	100.0
Rented.....	11,636	5,529	1,829	207,630	102,652	33,786	41.5	31.6	20.9
Generated by establishments reporting.....	18,549	13,527	7,639	292,511	222,402	127,502	58.5	68.4	79.1
ELECTRIC-RAILROAD REPAIR SHOPS.									
Primary power, total.....	3,577	2,649	1,830	53,830	44,989	35,794	100.0	100.0	100.0
Owned.....	56	44	38	6,439	8,128	4,840	12.0	18.1	13.5
Steam engines.....	45	34	37	5,875	5,997	4,831	10.9	13.3	13.5
Internal-combustion engines.....	11	8	1	564	1,121	9	1.0	2.5	(2)
Water wheels and turbines.....		2			1,010			2.2	
Rented.....	3,521	2,605	1,792	47,391	36,861	30,954	88.0	81.9	86.5
Electric.....	3,521	2,605	1,792	47,366	36,861	30,954	88.0	81.9	86.5
Other.....				25			(2)		
Electric.....	3,711	3,095	1,887	50,016	44,670	33,024	100.0	100.0	100.0
Rented.....	3,521	2,605	1,792	47,366	36,861	30,954	94.7	82.5	93.7
Generated by establishments reporting.....	190	490	95	2,650	7,809	2,070	5.3	17.5	6.3

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

## SPECIAL STATISTICS.

Table 24 gives in detail the statistics of steam and electric railroad repair shops for 1919, 1914, 1909, and 1904.

A gradual decline is shown in the number of locomotives built in steam-railroad repair shops since 1909. The total number of cars built in steam and electric railroad repair shops decreased considerably during the decade.

In 1919 the motive power and machinery department of steam-railroad repair shops reported 48.7 per

cent of the total value of products; car department, 44.8 per cent; bridge and building department, seven-tenths of 1 per cent; and all other, or unclassified products, 5.8 per cent. In the same year the motive power and machinery department of electric-railroad repair shops reported 10.5 per cent of the total value of products; car department, 85.4 per cent; bridge and building department, four-tenths of 1 per cent; and all other, or unclassified products, 3.7 per cent.

TABLE 24.—DETAILED STATISTICS OF NUMBER AND VALUE: 1919, 1914, 1909, AND 1904.

	1919	1914	1909	1904		1919	1914	1909	1904
STEAM-RAILROAD REPAIR SHOPS.					ELECTRIC-RAILROAD REPAIR SHOPS.				
Total value.....	\$1,279,235,303	\$514,041,225	\$405,600,727	\$309,775,089	Total value.....	\$75,210,701	\$38,576,595	\$31,962,561	\$13,437,121
Motive power and machinery department, value.....	\$622,480,393	\$230,723,724	\$184,971,870	\$149,643,953	Motive power and machinery department, value.....	\$7,926,303	\$5,330,573	\$4,510,332	\$510,946
Locomotives built—					Repairs to motors, etc.....	\$7,081,735	\$4,833,430	\$4,004,336	.....
Number.....	109	187	215	148	Work for other corporations.....	\$75,182	\$59,944	\$88,070	\$2,636
Value.....	\$5,825,096	\$3,594,003	\$3,280,140	\$1,853,939	All other products or work.....	\$769,386	\$390,193	\$417,926	\$508,320
Repairs to locomotives, motors, etc.....	\$403,952,871	\$169,057,032	\$127,928,773	\$101,326,805	Car department, value.....	\$64,227,805	\$31,086,043	\$25,835,463	\$12,581,365
Work for other corporations.....	\$16,889,147	\$7,053,430	\$4,735,004	\$5,681,307	Cars built, value.....	\$762,293	\$311,104	\$626,762	\$605,144
All other products or work.....	\$135,813,279	\$57,018,359	\$49,018,953	\$40,781,902	Passenger—				
Car department, value.....	\$573,709,875	\$242,976,774	\$199,768,939	\$149,748,820	Number.....	88	235	129	288
Cars built, value.....	\$5,133,115	\$11,099,983	\$13,326,171	\$12,990,011	Value.....	\$635,770	\$737,926	\$498,709	\$580,669
Passenger—					Freight—				
Number.....	20	123	218	414	Number.....	46	11	63	13
Value.....	\$101,691	\$1,233,302	\$1,291,354	\$2,337,977	Value.....	\$95,038	\$21,190	\$59,102	\$11,366
Freight—					Other—				
Number.....	2,394	10,314	13,972	14,742	Number.....	17	58	51	9
Value.....	\$4,590,482	\$10,513,670	\$11,767,664	\$10,000,042	Value.....	\$30,885	\$51,982	\$68,941	\$13,109
Other—					Repairs to cars of all kinds.....	\$60,060,255	\$27,628,802	\$22,869,777	\$11,264,505
Number.....	271	308	359	2,000	Work for other corporations.....	\$1,174,282	\$441,323	\$624,805	\$36,714
Value.....	\$350,042	\$253,005	\$207,153	\$945,392	All other products or work.....	\$2,240,975	\$2,204,814	\$1,714,129	\$685,002
Repairs to cars of all kinds.....	\$479,229,076	\$183,753,538	\$147,194,065	\$105,319,032	Bridge and building department (shopwork), value.....	\$268,655	\$434,427	\$330,948	\$327,855
Work for other corporations.....	\$31,101,248	\$14,810,984	\$8,784,239	\$9,946,990	Repairs and renewals... value.....	\$261,679	\$199,751	\$273,581	\$253,133
All other products or work.....	\$53,246,436	\$32,403,269	\$30,464,464	\$24,492,787	All other products or work.....	\$6,976	\$234,676	\$57,367	\$74,722
Bridge and building department (shopwork), value.....	\$5,535,303	\$3,127,644	\$2,799,898	\$5,096,141	All other products and work not classified, value.....	\$2,777,938	\$1,675,522	\$1,285,818	\$16,955
Repairs and renewals... value.....	\$7,288,373	\$2,449,821	\$1,906,737	\$4,351,487					
Work for other corporations.....	\$22,804	\$37,061	\$40,496	\$40,581					
All other products or work.....	\$1,224,126	\$640,762	\$846,665	\$704,073					
All other products and work not classified, value.....	\$74,509,822	\$31,213,088	\$18,060,020	\$5,286,175					

<sup>1</sup> Includes the value of 2 electric locomotives.

<sup>2</sup> Includes the value of 1 locomotive.

<sup>3</sup> Includes the value of 3 electric locomotives.

## GENERAL TABLE.

Table 25 presents for 1919 statistics in detail for both steam and electric railroad repair shops as a whole, and for each state that can be shown sepa-

rately without the possibility of disclosing the operations of individual establishments.



## MANUFACTURES.

TABLE 25.—DETAILED STATEMENT,

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

## STEAM-RAILROAD REPAIR SHOPS.

	1,744	516,279	2	15,474	12,067	4,300	484,437	De 511,134	Je 464,919	510,334	500,365	3,975	44	\$694,286,410	\$41,225,228
1 United States.....															
2 Alabama.....	20	9,291	.....	282	291	53	8,665	De 9,104	Je 7,643	9,105	9,070	24	2	11,038,405	785,379
3 Arizona.....	17	2,258	.....	75	71	9	2,108	Mh 2,196	Ja 2,023	2,108	2,105	2	1	2,145,750	220,500
4 Arkansas.....	17	5,008	.....	176	105	34	4,691	No 4,973	Je 4,529	4,870	4,894	6	.....	4,374,588	440,130
5 California.....	60	17,206	.....	494	449	50	16,213	De 17,382	Ja 15,234	17,006	16,893	113	.....	14,628,648	1,306,573
6 Colorado.....	30	6,161	.....	203	194	25	5,739	Ap 6,089	My 5,093	6,060	6,054	6	.....	21,076,400	484,939
7 Delaware.....	5	3,485	.....	15	208	39	3,223	De 3,601	Mh 2,884	3,599	3,522	71	6	2,985,731	59,903
8 Florida.....	19	3,970	.....	119	78	17	3,762	My 4,073	Jy 3,352	3,992	3,981	11	.....	8,121,237	360,337
9 Georgia.....	29	8,534	.....	176	102	46	8,210	Mh 8,579	Jy 7,796	8,418	8,298	120	.....	10,630,529	496,602
10 Idaho.....	9	1,080	.....	63	28	12	1,877	No 1,959	Au 1,741	1,894	1,872	22	.....	3,199,004	168,376
11 Illinois.....	133	43,498	.....	1,219	1,605	455	40,219	No 41,833	My 38,978	41,917	41,658	257	2	80,181,297	4,142,766
12 Indiana.....	77	25,090	.....	893	852	246	23,099	De 24,841	Ap 21,821	25,075	24,962	113	.....	28,456,300	2,341,708
13 Iowa.....	51	14,214	.....	522	29	127	13,536	De 14,037	Je 13,157	14,015	13,944	71	.....	17,410,294	1,409,793
14 Kansas.....	32	12,033	.....	449	290	98	11,196	De 11,853	Jy 10,787	11,852	11,806	40	.....	10,414,426	1,178,654
15 Kentucky.....	30	13,124	.....	245	460	47	12,372	De 13,387	Je 11,257	13,370	13,358	12	.....	13,991,435	778,030
16 Louisiana.....	28	4,635	.....	86	101	24	4,424	Mh 4,584	Je 4,118	4,625	4,585	40	.....	4,727,861	191,792
17 Maine.....	16	1,829	.....	47	45	16	1,721	De 1,808	Ja 1,634	1,808	1,800	8	.....	3,192,350	131,989
18 Maryland.....	17	8,842	.....	236	187	56	8,363	Je 8,808	Je 7,909	8,402	8,273	129	.....	11,594,990	630,689
19 Massachusetts.....	14	8,260	.....	220	245	71	7,724	De 8,101	Je 7,414	8,101	8,044	49	8	9,607,976	639,655
20 Michigan.....	36	7,579	.....	297	170	87	7,025	De 7,268	Ap 6,910	7,280	7,214	05	1	14,479,362	763,232
21 Minnesota.....	75	16,808	.....	381	294	157	15,976	Se 16,375	Au 15,100	15,809	15,620	189	.....	30,083,982	1,047,769
22 Mississippi.....	13	4,266	.....	92	107	37	4,030	De 4,287	Jy 3,746	4,224	4,199	25	.....	4,394,222	259,869
23 Missouri.....	46	14,321	.....	460	309	81	13,471	No 14,294	Ap 12,942	14,209	14,133	65	11	17,585,442	1,235,125
24 Montana.....	30	5,530	.....	134	36	48	5,312	No 5,662	Ap 5,043	5,340	5,261	89	.....	9,584,572	355,746
25 Nebraska.....	24	6,662	.....	254	153	77	6,178	De 6,849	My 5,687	6,747	6,720	27	.....	12,248,191	567,959
26 Nevada.....	13	1,839	.....	51	25	13	1,750	Au 1,791	Je 1,609	1,771	1,752	14	5	1,650,077	140,529
27 New Jersey.....	36	11,252	.....	508	276	147	10,321	De 10,902	Ap 9,455	10,869	10,800	68	1	12,367,108	1,156,203
28 New Mexico.....	15	3,219	.....	115	95	16	2,993	No 3,127	Ja 2,847	3,109	3,103	6	.....	3,646,746	334,513
29 New York.....	136	32,551	.....	1,056	1,077	291	30,427	De 32,215	Je 29,418	32,200	31,974	226	.....	44,039,781	2,647,106
30 North Carolina.....	11	4,287	.....	124	81	11	4,071	Ap 4,327	Au 3,788	4,162	4,085	77	.....	7,179,529	301,990
31 North Dakota.....	21	1,617	.....	58	17	8	1,539	De 1,679	Je 1,418	1,640	1,521	19	.....	2,839,577	143,495
32 Ohio.....	117	38,534	.....	1,177	1,742	420	35,245	De 37,236	Ap 32,088	37,234	36,973	261	.....	42,581,602	2,847,966
33 Oklahoma.....	12	2,828	.....	71	52	18	2,687	De 3,012	Ap 2,472	3,012	3,007	5	.....	1,672,447	215,618
34 Oregon.....	21	2,924	.....	95	47	31	2,751	De 3,145	Je 2,551	3,145	3,106	39	.....	3,858,129	242,710
35 Pennsylvania.....	195	82,347	.....	2,440	300	868	78,749	No 84,867	Ap 71,979	84,859	83,107	1,250	2	108,688,781	6,022,612
36 Rhode Island.....	4	354	.....	1	1	1	351	My 368	Oc 325	330	330	.....	.....	194,138	2,880
37 South Carolina.....	8	2,030	.....	68	34	15	1,911	Se 2,083	Ja 1,680	2,004	1,979	23	2	4,964,639	203,505
38 South Dakota.....	15	1,295	.....	37	17	19	1,222	De 1,392	Au 1,126	1,388	1,378	10	.....	1,202,945	95,045
39 Tennessee.....	20	10,837	.....	292	307	65	10,173	De 11,041	Je 8,901	11,039	10,970	69	.....	14,172,907	810,629
40 Texas.....	85	17,740	.....	531	405	101	16,703	De 17,622	Ja 15,869	17,623	17,616	6	1	26,968,028	1,419,690
41 Utah.....	9	3,473	.....	88	42	25	3,318	De 3,511	My 2,847	3,502	3,488	14	.....	2,388,659	238,271
42 Vermont.....	6	1,639	.....	29	27	17	1,566	Oc 1,608	Jy 1,531	1,598	1,585	13	.....	1,336,285	70,193
43 Virginia.....	31	12,914	.....	370	393	60	12,086	De 13,022	Je 11,090	13,023	12,978	45	.....	16,561,810	1,147,917
44 Washington.....	35	6,813	.....	177	103	58	6,480	De 6,832	Ap 6,280	6,572	6,490	82	.....	11,908,741	441,668
45 West Virginia.....	38	12,300	.....	367	215	79	11,609	De 12,394	Ap 10,534	12,401	12,316	85	.....	10,539,844	992,561
46 Wisconsin.....	53	13,163	.....	408	190	74	12,491	Jy 12,827	Oc 12,049	12,094	11,998	96	.....	21,893,856	1,059,020
47 Wyoming.....	10	3,312	.....	122	79	54	3,057	De 3,492	My 2,675	3,488	3,485	2	1	6,853,775	337,402
48 All other states.....	15	4,073	.....	126	118	21	3,808	.....	.....	4,095	4,080	5	1	3,753,905	304,256

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

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

## RAILROAD REPAIR SHOPS.

921

BY STATES: 1919.

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

## STEAM-RAILROAD REPAIR SHOPS.

\$25, 722, 872	\$687, 617, 312	\$1,389,102	\$102, 185	\$2,000,903	\$484, 402, 576	\$31, 400, 034	\$1,279,235,303	\$763, 432, 183	594, 515	325, 738	49, 868	6, 903	841	211, 075	202, 511	1
429, 858	12, 139, 646	.....	.....	50, 140	7, 390, 769	364, 322	21, 233, 516	13, 478, 425	10, 275	7, 466	50	.....	.....	2, 759	3, 016	2
91, 526	3, 152, 502	11, 570	.....	15, 399	1, 547, 030	355, 857	5, 398, 489	3, 495, 602	3, 405	2, 343	133	370	.....	559	517	3
192, 250	6, 824, 275	11, 580	.....	18, 307	3, 350, 425	214, 653	11, 030, 400	7, 459, 331	8, 534	3, 709	500	22	.....	4, 303	2, 447	4
708, 103	24, 069, 764	.....	.....	98, 744	14, 284, 057	1, 476, 852	41, 026, 975	26, 166, 066	13, 598	2, 752	.....	127	.....	12, 719	1, 834	5
260, 010	8, 585, 725	1, 176	15, 000	100, 248	5, 244, 405	403, 782	15, 130, 423	9, 482, 236	8, 282	4, 615	.....	30	138	3, 499	1, 332	6
588, 843	4, 107, 745	.....	.....	16, 992	2, 829, 457	80, 072	7, 687, 013	4, 771, 484	2, 515	1, 765	750	.....	.....	.....	3, 018	7
122, 806	4, 744, 412	.....	.....	2, 520	2, 363, 803	864, 801	8, 465, 318	5, 230, 709	3, 557	1, 460	733	6	.....	1, 358	1, 100	8
239, 459	11, 192, 179	900, 000	10	10, 505	7, 366, 790	304, 644	19, 731, 320	12, 059, 886	12, 903	4, 375	4, 170	8	.....	4, 350	3, 453	9
63, 781	1, 815, 010	.....	100	58, 000	2, 186, 857	63, 352	4, 401, 733	2, 151, 524	2, 788	1, 074	.....	.....	.....	1, 714	154	10
2, 889, 576	55, 000, 064	310, 107	6, 600	258, 343	37, 290, 565	2, 510, 261	103, 210, 253	63, 418, 426	54, 852	32, 680	3, 789	117	.....	18, 266	31, 705	11
1, 474, 525	32, 393, 390	.....	15, 025	70, 902	23, 232, 855	1, 633, 808	61, 232, 356	36, 365, 693	30, 354	17, 376	2, 208	22	8	10, 740	14, 593	12
546, 470	18, 906, 237	1, 015	.....	105, 075	11, 221, 140	997, 830	33, 098, 600	20, 870, 630	12, 063	7, 020	2, 418	166	.....	2, 459	12, 390	13
463, 067	15, 987, 475	3, 064	.....	142, 565	9, 482, 878	952, 211	28, 230, 850	17, 795, 761	11, 028	9, 683	740	.....	250	1, 355	8, 949	14
624, 190	17, 125, 442	.....	2, 500	81, 013	11, 543, 502	413, 746	30, 597, 962	18, 640, 714	8, 799	7, 233	900	.....	.....	9, 691	16	15
164, 544	6, 282, 928	33, 127	15	48, 121	2, 614, 186	184, 342	9, 510, 050	6, 720, 531	3, 214	1, 921	.....	453	.....	840	2, 203	16
100, 538	2, 738, 157	.....	.....	23, 883	1, 625, 422	130, 992	6, 743, 759	2, 987, 345	2, 466	908	.....	.....	.....	1, 558	687	17
331, 689	11, 627, 441	.....	.....	8, 776	9, 128, 451	369, 441	22, 837, 066	13, 339, 174	14, 341	6, 886	50	10	.....	7, 395	5, 606	18
352, 893	11, 271, 605	.....	.....	83, 229	9, 862, 210	428, 338	22, 637, 990	12, 347, 442	11, 259	7, 528	1, 000	6	.....	2, 725	6, 196	19
300, 385	9, 882, 344	965	.....	66, 485	5, 751, 556	477, 086	17, 223, 189	10, 994, 547	11, 070	3, 250	260	33	.....	7, 536	955	20
598, 507	21, 070, 163	57, 021	.....	11, 593, 979	1, 098, 575	1, 098, 575	35, 360, 704	22, 658, 210	15, 157	7, 252	1, 416	142	.....	6, 347	9, 725	21
224, 958	5, 048, 985	.....	.....	15, 333	3, 853, 543	205, 343	10, 225, 791	6, 166, 905	4, 433	1, 557	.....	.....	.....	2, 876	.....	22
464, 744	18, 529, 088	1, 015	5, 240	71, 879	11, 950, 929	776, 136	33, 020, 800	20, 293, 735	14, 904	6, 917	2, 450	25	.....	5, 512	7, 090	23
116, 348	7, 477, 056	.....	.....	83, 234	2, 673, 637	216, 910	10, 957, 439	8, 066, 892	5, 689	3, 078	.....	.....	.....	2, 611	2, 056	24
236, 628	0, 831, 822	188	.....	56, 778	0, 715, 666	501, 021	17, 909, 063	10, 682, 376	11, 407	5, 965	4, 394	36	.....	1, 012	10, 640	25
47, 016	2, 309, 593	.....	.....	25, 015	1, 311, 387	163, 251	3, 901, 838	2, 517, 200	3, 816	2, 154	.....	30	.....	1, 632	1, 273	26
538, 067	15, 198, 882	.....	.....	154, 302	11, 176, 053	609, 859	29, 467, 415	17, 681, 503	19, 056	12, 370	2, 760	103	.....	3, 823	8, 216	27
151, 771	3, 990, 313	.....	.....	28, 049	2, 253, 840	326, 227	7, 084, 719	4, 504, 040	3, 905	2, 703	1, 200	.....	.....	1, 163	.....	28
1, 721, 590	43, 054, 547	26, 508	.....	222, 586	31, 804, 989	1, 086, 387	82, 790, 533	48, 999, 187	48, 186	26, 963	1, 412	518	.....	19, 243	19, 176	29
234, 722	5, 757, 259	.....	300	6, 047	7, 417, 667	230, 918	13, 898, 873	6, 250, 288	3, 432	2, 592	.....	198	.....	642	4, 880	30
28, 064	2, 016, 073	.....	.....	53, 204	789, 940	151, 209	3, 182, 706	2, 241, 497	720	522	60	.....	.....	198	350	31
3, 135, 954	50, 604, 380	.....	81, 000	89, 567	36, 907, 952	2, 592, 096	96, 483, 946	56, 893, 898	50, 650	24, 943	5, 187	1, 610	.....	18, 910	22, 252	32
80, 600	3, 777, 544	.....	.....	3, 332	1, 859, 992	195, 108	6, 149, 067	4, 093, 967	2, 130	415	.....	866	.....	849	50	33
110, 436	3, 693, 827	.....	.....	4, 420	2, 232, 075	222, 263	6, 472, 962	4, 018, 624	763	763	.....	.....	.....	2, 175	72	34
4, 314, 836	115, 028, 406	64, 875	177, 474	98, 479, 080	4, 684, 467	4, 684, 467	231, 533, 870	128, 370, 353	90, 678	64, 216	6, 907	1, 206	.....	18, 259	61, 786	35
2, 006	516, 064	.....	.....	232	120, 482	60, 487	712, 579	522, 610	445	60	.....	.....	.....	385	.....	36
64, 982	2, 694, 780	5, 800	120	4, 280	2, 132, 804	29, 347	5, 137, 658	2, 975, 507	713	664	.....	17	.....	32	293	37
39, 800	1, 939, 082	.....	.....	17, 372	780, 871	98, 972	2, 970, 399	2, 084, 556	878	878	.....	.....	.....	4, 013	430	38
417, 574	14, 901, 103	.....	.....	28, 052	10, 212, 234	307, 508	26, 678, 565	16, 158, 823	9, 627	3, 415	1, 267	32	.....	4, 013	2, 148	39
1, 268, 020	24, 190, 080	252	1, 400	172, 189	12, 990, 983	1, 279, 038	41, 486, 708	27, 216, 682	17, 233	8, 050	200	565	300	8, 112	4, 966	40
98, 752	4, 911, 623	.....	.....	30, 045	3, 003, 376	230, 561	8, 584, 993	5, 351, 056	3, 415	1, 588	.....	.....	.....	1, 827	1, 424	41
43, 580	2, 225, 997	.....	.....	40	2, 112, 000	155, 286	4, 607, 671	2, 340, 385	2, 015	252	.....	.....	.....	1, 763	.....	42
530, 221	16, 724, 737	.....	.....	120, 339	13, 692, 816	640, 095	32, 777, 078	18, 444, 167	19, 081	5, 160	2, 081	.....	.....	11, 240	10, 927	43
204, 032	8, 470, 604	.....	.....	91, 282	5, 200, 982	432, 829	14, 935, 008	9, 211, 197	6, 785	1, 853	.....	12	.....	4, 920	1, 417	44
309, 829	16, 065, 221	.....	.....	63, 710	9, 889, 339	586, 391	28, 248, 489	17, 772, 759	12, 332	8, 003	2, 133	67	50	2, 079	5, 280	44
415, 757	16, 360, 414	7, 698	.....	35, 234	18, 074, 699	882, 494	36, 790, 522	17, 833, 339	6, 959	5, 257	10	.....	.....	1, 692	7, 845	45
176, 136	5, 284, 652	17, 497	.....	47, 258	3, 058, 883	197, 743	9, 111, 184	5, 854, 558	6, 573	2, 353	.....	31	.....	4, 189	46	47
148, 903	5, 941, 601	.....	.....	21, 747	3, 595, 038	307, 673	10, 326, 478	6, 423, 767	3, 196	1, 845	150	67	95	1, 031	900	48

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

\* All other states embrace: Connecticut, 10 establishments; District of Columbia, 2; and New Hampshire, 3.

## MANUFACTURES.

TABLE 25.—DETAILED STATEMENT,

STATE.	Num-ber of estab-lish-ments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS, DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Capital.	EXPENSES.
		Total.	Propri-eters and firm mem-bers.	Sala-ried offi-cers, su-perin-tend-ents, and man-agers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Un-der 16.	Salaries and wages.		
					Male.	Fe-male.	Aver-age num-ber.	Number, 15th day of—			Male.	Fe-male.		Male		Officials.
								Maximum month.	Minimum month.							

## ELECTRIC-RAILROAD REPAIR SHOPS.

1	United States.....	624	33,120	1	866	721	260	31,272	De	31,894	Je	30,220	32,108	31,660	438	10	\$82,557,905	\$1,932,578
2	Alabama.....	6	174	.....	0	2	2	164	Jy	182	Oc	137	155	155	.....	.....	1,124,109	7,060
3	California.....	22	1,829	.....	50	33	15	1,731	Fe	1,839	Je	1,552	1,727	1,705	22	.....	3,784,097	87,485
4	Colorado.....	5	203	.....	1	5	.....	197	Ja	214	Jy	188	206	205	1	.....	713,975	3,000
5	Connecticut.....	22	475	.....	4	15	2	454	Ja	459	Au	448	466	465	1	.....	1,918,702	5,388
6	Florida.....	5	102	.....	9	4	.....	89	Ja	113	De	43	91	91	.....	.....	542,671	15,779
7	Georgia.....	0	232	.....	7	5	2	218	Mh	238	De	199	199	197	1	1	769,697	18,895
8	Idaho.....	3	20	.....	2	.....	.....	18	No <sup>1</sup>	10	Fe <sup>2</sup>	17	19	19	.....	.....	51,313	3,800
9	Illinois.....	49	3,314	.....	72	62	29	3,151	De	3,474	Jy	2,842	3,463	3,443	20	.....	14,390,576	153,539
10	Indiana.....	30	1,042	.....	37	23	5	977	Jy	1,001	Je	949	996	970	26	.....	1,770,669	68,238
11	Iowa.....	15	345	.....	13	4	5	323	Mh	331	Au	312	321	316	5	.....	841,603	28,327
12	Kansas.....	11	183	.....	8	9	4	162	Au	172	Fe	152	170	168	2	.....	292,531	18,637
13	Kentucky.....	7	210	.....	7	5	2	196	Je	227	Se	74	213	213	.....	.....	734,622	21,400
14	Louisiana.....	7	440	.....	10	13	.....	417	De	482	Ja	330	482	481	1	.....	684,158	12,793
15	Maine.....	11	166	.....	11	3	1	151	Ja	156	De	145	145	145	.....	.....	569,384	20,468
16	Maryland.....	6	965	.....	17	10	5	927	Ja	1,062	De	875	893	826	67	.....	1,222,232	44,783
17	Massachusetts.....	30	1,945	.....	27	55	17	1,846	Mh	1,938	My	1,738	1,813	1,796	16	1	2,855,884	57,308
18	Michigan.....	15	1,513	.....	18	34	10	1,401	My	1,433	Je	1,318	1,381	1,377	2	2	3,139,419	35,955
19	Minnesota.....	5	479	.....	24	11	8	436	De	511	Je	346	511	498	13	.....	2,027,634	46,552
20	Mississippi.....	8	18	.....	2	.....	.....	16	Ap <sup>3</sup>	17	Ja <sup>4</sup>	15	17	17	.....	.....	38,897	2,700
21	Missouri.....	8	1,208	.....	16	16	14	1,162	Oc	1,228	Ap <sup>5</sup>	1,117	1,211	1,206	5	.....	2,181,551	40,650
22	Montana.....	5	57	.....	5	2	.....	50	Ja	60	Oc	43	49	49	.....	.....	434,150	8,470
23	New Hampshire.....	7	70	.....	2	1	.....	70	Je	79	Ap	73	75	75	.....	.....	244,274	3,636
24	New Jersey.....	15	1,366	.....	19	11	3	1,333	Ja	1,533	Je	1,178	1,324	1,323	1	.....	3,094,024	49,625
25	New York.....	53	6,009	.....	142	153	58	5,656	Oc	5,807	Ja	5,517	5,596	5,564	32	.....	14,255,592	366,189
26	Ohio.....	60	2,009	1	60	19	26	1,903	Mh	1,965	Ja	1,767	1,899	1,894	5	.....	4,942,950	173,436
27	Oklahoma.....	10	151	.....	7	4	2	138	No	145	Mh	130	144	144	.....	.....	545,870	15,900
28	Oregon.....	4	250	.....	6	12	2	230	Ja <sup>6</sup>	239	My	221	237	235	2	.....	631,351	16,957
29	Pennsylvania.....	80	4,361	.....	152	78	14	4,122	Ja	4,298	Je	4,023	4,172	4,017	162	3	8,140,200	299,780
30	Rhode Island.....	4	249	.....	3	10	1	235	Ap	247	Jy <sup>7</sup>	203	239	239	.....	.....	758,637	10,600
31	Tennessee.....	5	303	.....	15	4	4	280	Jy	294	Fe	250	290	268	20	2	922,003	38,251
32	Texas.....	18	601	.....	23	10	1	537	De	598	Mh	550	614	613	1	.....	1,204,411	43,181
33	Utah.....	3	150	.....	4	3	.....	152	Oc	169	No	142	151	148	3	.....	554,838	9,040
34	Vermont.....	7	31	.....	2	.....	.....	29	Je <sup>8</sup>	30	Ja <sup>9</sup>	28	31	30	1	.....	79,842	2,527
35	Virginia.....	10	422	.....	13	1	1	407	De	427	Ja	377	434	432	2	.....	629,483	75,439
36	Washington.....	16	711	.....	10	13	3	679	No	787	Mh	495	975	966	8	1	1,535,850	27,370
37	West Virginia.....	13	204	.....	6	2	1	195	Fe	203	Oc <sup>10</sup>	191	192	187	5	.....	452,918	10,644
38	Wisconsin.....	17	644	.....	24	22	19	579	Fe	631	Jy	479	587	566	21	.....	2,061,486	87,692
39	All other states <sup>4</sup> .....	23	651	.....	26	16	4	605	.....	.....	.....	.....	620	617	3	.....	2,415,701	49,070

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

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

<sup>3</sup> Same number reported for one or more other months.

## RAILROAD REPAIR SHOPS.

923

BY STATES: 1919—Continued.

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

## ELECTRIC-RAILROAD REPAIR SHOPS.

\$1,046,789	\$39,073,154	\$118,335	\$61,576	\$703,887	\$30,820,218	\$1,205,266	\$75,210,701	\$43,185,217	53,830	5,875	.....	564	.....	47,891	2,650	1
2,280	250,762	.....	.....	13,730	229,762	11,964	515,536	273,810	551	500	.....	.....	.....	51	90	2
62,517	2,066,769	3,000	170	9,027	1,739,446	64,838	4,057,871	2,263,537	4,307	350	.....	4	.....	3,953	.....	3
5,153	253,380	.....	.....	8,001	139,362	26,390	435,291	269,530	421	.....	.....	.....	.....	421	.....	4
25,491	521,874	2,000	.....	495,284	7,132	1,062,676	560,260	1,321	10	.....	.....	.....	.....	1,311	5	5
2,341	103,989	.....	.....	5,671	58,594	769	175,778	116,415	133	.....	.....	.....	.....	133	.....	6
8,530	204,701	.....	129	3,083	221,231	4,523	461,653	235,899	170	.....	.....	65	.....	105	274	7
.....	22,186	3,184	240	721	28,440	721	58,331	29,170	11	.....	.....	.....	.....	11	.....	8
92,378	4,369,343	.....	7,805	29,806	2,717,837	79,136	7,478,033	4,681,060	6,305	965	.....	.....	.....	5,400	.....	9
21,440	1,005,083	.....	.....	11,910	808,076	41,011	1,060,617	1,111,530	2,054	1,400	.....	.....	.....	654	47	10
9,185	401,530	7,183	.....	12,971	297,402	14,303	769,560	457,771	538	50	.....	.....	.....	488	8	11
6,899	182,147	.....	.....	4,252	138,496	6,500	360,154	215,222	827	.....	.....	375	.....	452	.....	12
6,840	215,481	.....	.....	4,711	200,726	12,266	463,563	250,571	251	40	.....	.....	.....	211	.....	13
13,768	568,212	11,249	.....	14,275	443,850	2,121	1,066,129	620,153	396	.....	.....	.....	.....	396	.....	14
3,475	178,219	627	.....	8,421	182,146	9,264	402,621	211,211	149	.....	.....	.....	.....	149	.....	15
19,131	1,176,062	.....	.....	17,224	639,522	7,045	1,904,353	1,257,780	501	.....	.....	.....	.....	501	.....	16
108,229	2,446,126	9,282	.....	50,412	1,696,710	59,688	4,504,579	2,748,181	2,790	225	.....	.....	.....	2,565	18	17
36,362	2,085,383	.....	9,266	25,451	1,580,140	45,050	3,828,271	2,203,072	849	385	.....	.....	.....	464	.....	18
26,511	548,909	.....	82	4,219	396,585	43,876	1,065,144	624,683	1,285	.....	.....	.....	.....	1,285	.....	19
.....	18,942	.....	.....	486	13,802	1,231	40,556	25,523	48	10	.....	.....	.....	38	.....	20
36,063	1,407,212	.....	870	300	1,203,459	30,437	2,719,021	1,485,125	540	.....	.....	.....	.....	540	1,511	21
3,937	53,932	.....	.....	5,322	46,465	4,420	121,952	71,061	153	.....	.....	.....	.....	153	.....	22
1,735	98,196	1,917	.....	2,300	74,961	6,108	188,853	107,784	76	.....	.....	.....	.....	76	.....	23
21,173	1,754,803	.....	15,000	15,641	1,536,849	41,239	3,489,418	1,911,330	3,887	.....	.....	.....	.....	3,887	.....	24
242,288	7,230,904	20,471	3,200	229,741	6,128,091	234,595	14,369,285	8,006,599	7,276	20	.....	.....	.....	7,256	.....	25
52,735	2,269,966	13,499	8,129	30,412	1,914,056	202,382	4,724,631	2,608,193	2,545	129	.....	2	.....	2,414	374	26
6,475	162,973	.....	.....	1,542	108,272	4,118	312,753	200,363	238	.....	.....	100	.....	138	.....	27
15,431	328,169	.....	.....	364	206,775	12,050	578,091	359,260	728	.....	.....	.....	.....	728	.....	28
100,813	4,673,154	42,691	12,130	53,518	3,043,935	72,076	8,306,228	5,190,217	5,199	25	.....	15	.....	5,159	.....	29
12,978	322,769	.....	.....	7,581	341,052	9,000	704,040	353,928	420	50	.....	.....	.....	370	8	30
8,145	297,405	.....	.....	4,890	278,947	7,561	690,266	403,758	1,478	1,255	.....	.....	.....	223	90	31
10,310	493,592	.....	.....	8,829	364,165	13,628	924,504	546,771	1,713	400	.....	3	.....	1,310	35	32
3,283	189,798	.....	.....	3,965	99,235	6,507	313,028	206,986	1,025	.....	.....	.....	.....	1,025	.....	33
.....	25,867	.....	.....	1,848	38,218	4,056	82,092	39,818	244	1	.....	.....	.....	243	5	34
2,042	385,116	1,000	.....	7,156	358,931	2,093	830,937	469,913	638	.....	.....	.....	.....	638	.....	35
15,671	939,984	832	.....	17,628	547,908	30,781	1,580,174	1,001,485	1,390	30	.....	.....	.....	1,360	.....	36
3,350	216,675	.....	1,877	8,007	138,409	2,283	395,919	255,227	331	.....	.....	.....	.....	331	.....	37
39,717	790,994	.....	1,100	43,223	1,640,372	65,448	2,622,802	916,982	1,956	.....	.....	.....	.....	1,956	.....	38
21,204	779,421	2,400	497	28,352	672,768	18,138	1,595,925	905,019	906	.....	.....	.....	.....	906	185	39

<sup>1</sup> All other states embrace: Arizona, 2 establishments; Arkansas, 3; Delaware, 1; District of Columbia, 2; Nebraska, 4; Nevada, 1; North Carolina, 3; North Dakota, 2; South Carolina, 2; South Dakota, 2; and Wyoming, 1.