

CENSUS BULLETIN.

No. 167.

WASHINGTON, D. C.

March 4, 1892.

FISHERIES OF THE PACIFIC STATES.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., February 16, 1892.

The figures herein presented exhibit the extent and condition of the ocean, shore, and river fisheries of California, Oregon, and Washington. The bulletin has been prepared by Mr. CHARLES F. PIDGIN and Dr. HUGH M. SMITH, special agents of the Census Office. In 1889 the United States commission of fish and fisheries conducted an exhaustive inquiry into the fisheries of this region, the results of which have been embodied in a report (*a*) not yet published, the proofs of which have been consulted in the tabulation of this bulletin. Although the data thus made available mostly pertain to the year 1888, it is known that the changes which occurred in the fisheries of this region between that time and the census year were not marked, and will not invalidate the presentation of the following figures as the census of 1889.

As will be seen on consulting the appended tables, the fisheries of this region gave employment to 13,850 persons in various capacities. These had \$6,498,239 invested in the industry and took products to the value of \$6,387,803.

The tables show that the fisheries of California are more important than those of either Oregon or Washington. Of the persons engaged in the fisheries of these states, 5,338, or 38.54 per cent, are to be credited to California. Of the capital invested, \$2,684,210, or 41.31 per cent, represented California interests, and of the value of products, \$4,463,369, or 69.87 per cent, accrued from the sale of fish and other marine objects taken by the citizens of that state.

The fisheries of Oregon rank next in importance to those of California, giving employment to 4,682 persons, or 33.81 per cent of the total number engaged in the 3 states, the capital invested amounting to \$2,296,632, or 35.34 per cent, and the products yielding \$1,033,574, or 16.18 per cent.

There were engaged in the industry in Washington 3,830 persons, or 27.65 per cent of the aggregate number of employés in the Pacific fisheries. The amount of investment was \$1,517,397, or 23.35 per cent. The value of the catch was \$890,860, or 13.95 per cent.

The canning of salmon is the most important fishery industry in the Pacific states, and the capture of salmon in many places is wholly dependent on and tributary to the canning business. Of the 63 factories, 8 were located in California, 34 in Oregon, and 21 in Washington. The quantity of fresh salmon utilized in the preparation of the canned product was 41,632,223 pounds, for which the fishermen received \$1,783,227. The canned goods consisted of 622,037 cases, worth \$3,703,838 at the ruling market prices.

Compared with 1880, the fisheries of this region have, as a whole, greatly advanced, although a few special branches show a decline. The increase in persons employed has been 28 per cent, in capital invested 182 per cent, and in value of products 50 per cent. California has advanced 72

a Report on the Fisheries of the Pacific Coast of the United States, by J. W. Collins. 8vo, 262 pages, 15 folding charts of fishing grounds, 34 full-page illustrations, and 4 text figures.

per cent in persons employed, 136 per cent in the amount of investment, and 38 per cent in the value of catch. Oregon has declined 12 per cent (*a*) in the number of fishery employes, but has advanced 176 and 69 per cent, respectively, in the items of capital invested and value of products. Washington exhibits a large increase in personnel, capital, and results, amounting to 71, 359, and 113 per cent, respectively.

In making comparisons between the figures given in the reports of the census of 1880 and those contained in the present bulletin it has been found necessary to slightly modify the statistics of the former year in order to bring them to the same basis. The following are the points in which changes have been made: (1) in California, Oregon, and Washington the enhancement in value of salmon in the process of canning has been omitted, and the value credited to salmon represents the first price of the fish; (2) the manufacture of marine salt and the taking of eggs of sea birds are not considered fishery enterprises, and are eliminated from the figures of 1880; (3) the fur-seal and sea-otter fisheries prosecuted by California capital in Alaska have been shown under California in this bulletin, and have been added to the returns for 1880 in noting comparisons; (4) an examination of the 1880 report plainly indicates that the entire salmon industry of the Columbia river was assigned to Oregon for the reason that the statistics were obtained with a view to exhibit the stream as a unit rather than an interstate boundary, while in the present bulletin the fisheries on each side of the river are credited to their respective states. In the comparisons an attempt has been made to separate the figures for the two states, and, although some estimates have been made, it is known that the proportions used are approximately correct.

Among the causes which may be mentioned as having contributed to this great advance in the fisheries of the Pacific states are the rapid growth of the country, the natural abundance of fish in the rivers and adjacent to the shores, and the decreased supply of mackerel, whales, etc., on the Atlantic coast. Especially worthy of notice is the great increase in the whale fleet of this coast and the maintenance of the extensive salmon fisheries in the face of the enormous yearly drain on the species.

Condensed tables showing the salient features of the fisheries of this region are here presented. The first table gives the number of persons engaged in different capacities in the fisheries of each state and the percentage of vessel fishermen, shore or boat fishermen, and shore employes. The next table presents, by states, the fishery investment and the percentage of capital devoted to vessels, boats, apparatus, shore property, and cash capital. The number and tonnage of vessels are also given. The third tabular statement exhibits the value of the principal marine and fresh-water animals credited to each state, with the proportion of fish, mollusks and crustaceans, whale and seal products, and other objects taken. The final table relates to the salmon-canning industry, and shows, by states, the number of employes, number of canneries in operation, quantity and value of fresh salmon used for canning purposes, and the quantity and value of canned or prepared salmon placed on the market.

PERSONS EMPLOYED.

STATES.	Total.	Vessel fishermen.	Shore fishermen.	Shoresmen, factory hands, etc.
Total.....	13,850	1,679	8,804	3,167
California.....	5,338	1,543	3,188	607
Oregon.....	4,682	53	3,045	1,584
Washington.....	3,830	283	2,571	976
Percentage.....	100.00	13.57	63.57	22.86

a The decrease of 12 per cent in the number of persons employed in the fisheries of Oregon was due to the decline in the salmon-canning industry of the Columbia river. There were fewer canneries than in 1880, and these required a relatively smaller force of employes, owing to the introduction of improved methods and machinery. This accounts in part for the increase in the investment. The quantity and value of apparatus of capture were also greatly increased, and the industry had an innovation in the introduction of expensive steam vessels. A change in the methods of marketing the canned salmon also necessitated an increase in cash capital.

VALUE OF INVESTMENT.

STATES.	Total capital invested.	VESSELS.				BOATS.		Value of apparatus.	Shore property and cash capital.
		No.	Net tonnage.	Value.	Value of outfit.	No.	Value.		
Total	\$6,498,239	124	13,283.84	\$1,192,150	\$490,395	4,101	\$591,985	\$1,194,795	\$3,028,914
California	2,681,210	94	12,108.81	1,046,500	447,475	1,354	245,010	354,675	590,550
Oregon	2,296,632	13	422.30	74,050	11,400	1,545	201,095	437,943	1,572,144
Washington	1,517,397	17	752.73	71,600	31,520	1,202	145,880	402,177	866,220
Percentage	100.00			18.34	7.55		9.11	18.39	46.61

VALUE OF PRODUCTS.

STATES.	Total.	Value of fish.	Value of mol-lusks and crustaceans.	Value of whale and seal products.	Value of all other products.
Total	\$6,387,803	\$2,865,340	\$971,673	\$2,523,281	\$27,500
California	4,463,369	1,091,398	866,538	2,490,373	15,060
Oregon	1,033,574	1,010,843	14,291		8,440
Washington	890,860	763,108	90,844	32,908	4,000
Percentage	100.00	44.86	15.21	39.50	0.43

THE SALMON-CANNING INDUSTRY OF THE PACIFIC STATES.

STATES.	Number of canneries.	Number of employes.	SALMON FOR CANNING.		CANNED SALMON PREPARED.	
			Pounds.	Value.	Cases.	Value.
Total	63	2,920	41,632,223	\$1,783,227	622,037	\$3,703,838
California	8	360	4,933,655	245,683	74,822	464,232
Oregon	34	1,584	21,300,648	889,772	320,822	1,901,617
Washington	21	976	15,397,920	647,772	226,393	1,337,989

Robert D. Tolson

Superintendent of Census.

FISHERIES OF THE PACIFIC STATES.

BY CHARLES F. PIDGIN AND HUGH M. SMITH.

I.—GENERAL REMARKS.

The natural conditions of the Pacific states are unusually favorable to the development of commercial fisheries of great importance. Compared with the fishing communities of the Atlantic coast, the fisheries interests of the west coast states are of recent origin, and may be considered as only in their infancy, although their growth has been remarkable and has kept pace with the rapid settlement of the region. It is true that the salmon fishery, which has existed for a quarter of a century, has declined, and will probably never reach its former importance unless radical measures for the increase and protection of the fish are taken; but the general shore and ocean fisheries have been carried only far enough to demonstrate the wonderful prolificness of the waters and have never fully tested the resources of the region.

Especially capable of great development are the offshore vessel fisheries for miscellaneous food fish. The characteristic vessel fisheries at the present time are those for whales, cod, fur seals, and sea otters, all of which are of great economic value, while the market fisheries are generally unimportant. The use of vessels in the whale fishery is restricted to the port of San Francisco, which has become the great whaling rendezvous of the world. The ocean vessel fishery for dried cod is also carried on only from San Francisco, although in Puget sound there is a small fresh and salt cod fishery prosecuted adjacent to the land. Fur seals and sea otters are taken by vessels sailing from both California and Washington ports. From Puget sound there has recently been developed a market fishery for halibut, salmon, and other species, which is chiefly engaged in by vessels formerly belonging in New England. The most extensive market fisheries at present are prosecuted with small vessels in southern California. Oregon has no vessels actually employed in fishing, although it has been deemed proper to credit to this state, as well as to California and Washington, those vessels connected with the fisheries in the capacity of carriers of fish when their operations have been restricted to this commodity. Such vessels are principally engaged on the rivers in collecting salmon for the canneries.

The shore fisheries are practically limited to the California coast and Puget sound. In the former section they are mostly in the hands of Chinese, who take large quantities of mollusks and crustaceans in addition to food fish.

The river fishery for salmon on this coast is the most extensive in the world, and the business of canning salmon, which is dependent on the fishery, is of great magnitude.

In the tables herein presented the entire ocean, shore, and river fisheries of each state are shown. The shore line represented has a length of about 4,425 miles, of which California is credited with 1,910, Oregon 1,170, and Washington 1,345.

The figures given for California include the fur-seal and sea-otter fisheries prosecuted in Alaska by California capital. The fisheries of the state present a generally satisfactory improvement over 1880, although there has been a decline in certain branches. The vessel fisheries show a decided advance, which is especially noticeable in the whale fishery. This has become a most prominent factor in the industrial life of California, and has grown to such large proportions that Massachusetts, which has hitherto held unquestionable supremacy in this fishery, now takes second rank. Among the shore fisheries the yield of shrimps has more than doubled in value; the oyster industry, of which no mention was made in 1880, now returns products worth over half a million dollars; the clam fishery has undergone an advance, while the catch of abalones has greatly declined.

In the tables for Oregon statistics are given which for the first time cover the salmon fishing and canning on the smaller coast rivers. Although individually unimportant, when taken in the aggregate the fisheries of these streams are of considerable extent. An especially prominent feature of the fisheries of Oregon is the catching and packing of salmon. In recent years there has been some decline in the salmon fishery so far as the catch and pack are concerned, but owing to the fact that a higher price has been paid to the fishermen the value of products has increased. In the fisheries in general there has been a large increase. The oyster industry and the sturgeon fishery have both been established since 1880, and the latter now ranks next to the salmon fishery in productiveness.

The figures given for Washington indicate a decided advance in the fishing interests of the state since 1880, this increase being especially marked in the case of the oyster and salmon fisheries. The vessel fisheries for food fish, including halibut and salmon, also show a great improvement during the decade. The fur-seal fishery has fallen off in value, although the number of skins taken is about the same as in 1880.

The statistical statements covering the fishery industry of the Pacific states will be presented in the following order: capital invested, persons employed, products, and special features.

II.—INVESTMENT.

CASH CAPITAL AND SHORE PROPERTY.

In the subjoined table the amount of cash capital, the value of land, buildings, and wharves, and the total capital invested in these items are shown for each state. The arrangement is by civil or geographical divisions.

CASH CAPITAL AND SHORE PROPERTY.

STATES AND LOCALITIES.	Total.	Amount of cash capital.	Value of land, buildings, and wharves.
Total.....	\$3,028,914	\$1,753,350	\$1,275,564
California.....	500,550	267,500	323,050
Del Norte county.....	23,600	10,000	13,600
Humboldt county.....	4,000	2,500	1,500
Los Angeles county.....	500		500
Monterey county.....	500		500
Sacramento and San Joaquin rivers.....	300,000	100,000	200,000
San Diego county.....	1,000		1,000
San Francisco bay and vicinity.....	260,000	155,000	105,000
San Luis Obispo county.....	200		200
Santa Barbara county.....	300		300
Santa Cruz county.....	450		450
Oregon.....	1,572,144	952,850	619,294
Alsea river.....	37,500	28,000	9,500
Columbia river.....	1,118,594	655,000	463,594
Coos bay and river.....	44,000	24,000	20,000
Coquille river.....	60,800	45,000	15,800
Necanicum creek.....	2,300	1,500	800
Nestucca river.....	32,000	20,000	12,000
Rogue river.....	100,000	60,000	40,000
Stuslaw river.....	37,000	25,000	12,000
Tillamook river.....	71,000	49,000	22,000
Umpqua river.....	38,000	25,000	13,000
Yaquina river.....	30,350	20,350	10,000
Washington.....	866,220	532,000	334,220
Chehalis river and Grays harbor.....	114,000	70,000	44,000
Columbia river.....	543,220	340,000	203,220
Puget sound.....	111,000	68,000	43,000
Shoalwater bay.....	98,000	55,000	43,000

An examination of the preceding table shows that working capital and shore property worth \$3,028,914 are invested in the fisheries of the 3 states under consideration. Of this amount more than one-half is invested in the state of Oregon, while Washington ranks next. In the Sacramento and San Joaquin rivers, in California, \$300,000 is thus invested in the fisheries, while \$260,000 is so employed in San Francisco bay and vicinity. The citizens of Oregon have invested \$1,118,594 in shore property and cash capital in the fisheries of the Columbia river, to which sum the citizens of the state of Washington have added \$543,220. Sums of \$100,000 and over are similarly invested in Rogue river, Oregon, Chehalis river and Grays harbor, and Puget sound, Washington.

NUMBER, NET TONNAGE, AND VALUE OF VESSELS AND OUTFIT.

The number of vessels engaged in the fisheries, by states and localities, is shown in the following table, together with their net tonnage and value. The value of outfit, which includes fuel, provisions, bait, ice, salt, and boats, is also given.

NUMBER, NET TONNAGE, AND VALUE OF VESSELS AND OUTFIT.

STATES AND LOCALITIES.	VESSELS.			Value of outfit.
	Number.	Net tonnage.	Value.	
Total.....	124	13,283.84	\$1,192,170	\$490,325
California.....	94	12,198.81	1,045,500	447,475
Monterey county.....	1	11.00	800	100
San Diego county.....	22	277.16	13,200	7,500
San Francisco bay and vicinity.....	71	11,829.65	1,032,500	449,875
Oregon.....	13	422.30	74,050	11,400
Columbia river.....	9	145.85	40,550	7,000
Coos bay and river.....	1	85.87	7,500	2,000
Rogue river.....	3	190.58	26,000	1,500
Washington.....	17	752.73	71,000	31,520
Columbia river.....	3	64.05	17,000	2,020
Puget sound.....	14	688.68	54,000	29,500

Of the whole number of vessels, or 124, the citizens of California owned 94, with an average tonnage of 128.82 and an average value of \$11,133. The average value of outfit was \$4,760. Considering the two states of Oregon and Washington together, 30 vessels engaged in the fisheries have an average net tonnage of 39.17 and an average value of \$4,855, while the average value of outfit amounts to \$1,431.

The vessels engaged in connection with the fisheries of the Pacific states may be classified by fisheries as follows:

FISHERIES.	Total.	California.	Oregon.	Washington.
Total.....	124	94	13	17
Cod.....	9	9		
Halibut.....	3			03
General food fish.....	25	25		
Whale.....	28	28		
Fur seal, sea otter, and walrus.....	23	12		11
Miscellaneous, including salmon and oyster freighting.	36	20	13	3

a Including 2 also engaged in the fur-seal and sea-otter fisheries.

BOATS.

The number and value of boats, by states, counties, and other localities, are given in the next table. These boats are such as are used in the shore and river fisheries, and are in addition to those carried on vessels and constituting a part of their outfit.

BOATS.

STATES AND LOCALITIES.	Number.	Value.	STATES AND LOCALITIES.	Number.	Value.
Total	4,101	\$591,985	Oregon—Continued.		
California	1,354	245,010	Coquille river	84	\$3,540
Del Norte county	84	2,150	Elk river	1	25
Humboldt county	93	1,800	Neconicum creek	3	225
Los Angeles county	60	10,510	Nestucca river	15	450
Monterey county	50	8,375	Rogue river	25	1,300
Sacramento and San Joaquin rivers	520	100,800	Sixes river	2	175
San Diego county	43	8,910	Siuslaw river	68	2,380
San Francisco bay and vicinity	432	95,030	Tillamook river	76	11,200
San Luis Obispo county	19	2,500	Umpqua river	39	2,925
Santa Barbara county	24	2,375	Willamette river	40	800
Santa Cruz county	20	10,900	Windhuck river	2	100
Oregon	1,545	201,695	Yaquina bay and river	75	3,600
Alsea river	43	1,300	Washington	1,202	145,880
Chetco river	4	200	Chehalis river and Grays harbor	85	10,125
Columbia river	1,025	160,885	Columbia river	516	87,680
Coos bay and river	43	2,900	Puget sound	414	28,660
			Shoalwater bay	187	19,415

In the 3 states combined there were 4,101 boats engaged in the fisheries, worth \$591,985, the average value of the boats being \$144. The boats used in the California fisheries were worth on an average \$181, those in Oregon \$130, and those in Washington \$121.

GILL NETS.

With the usual specification by states, counties, and other localities, the number and value of gill nets are given in the following table. In Santa Barbara county and San Francisco bay and vicinity numbers of trammel nets or "3-mesh" nets are employed, which have been combined with the gill nets for purposes of convenience. The number and value of the trammel nets are shown in a footnote to the table.

GILL NETS.

STATES AND LOCALITIES.	Number.	Value.	STATES AND LOCALITIES.	Number.	Value.
Total	6,371	\$781,165	Oregon—Continued.		
California	2,696	271,200	Coquille river	150	\$9,000
Del Norte county	60	5,000	Elk river	1	50
Humboldt county	127	7,350	Neconicum creek	3	300
Los Angeles county	73	2,150	Nestucca river	15	1,125
Monterey county	80	2,400	Rogue river	123	3,675
Sacramento and San Joaquin rivers	504	151,200	Sixes river	2	100
San Diego county	20	525	Siuslaw river	68	5,100
San Francisco bay and vicinity (a)	1,617	94,895	Tillamook river	109	9,925
San Luis Obispo county	40	2,000	Umpqua river	45	6,300
Santa Barbara county (b)	35	1,280	Willamette river	190	5,000
Santa Cruz county	110	4,400	Yaquina bay and river	75	7,200
Oregon	2,545	322,620	Washington	1,130	187,345
Alsea river	52	5,200	Chehalis river and Grays harbor	170	23,375
Columbia river	1,578	232,725	Columbia river	765	138,300
Coos bay and river	134	6,920	Puget sound	87	10,820
			Shoalwater bay	108	14,850

a Including 315 trammel nets, valued at \$14,175.

b Including 14 trammel nets, valued at \$60.

Of the 6,371 gill nets and trammel nets 2,696, with an average value of \$101, were employed in California; 2,545, with an average value of \$127, were operated in Oregon, and 1,130, with an average value of \$166, were used in Washington. The average value of the nets in the 3 states was \$123.

WEIRS AND POUND NETS.

The number and value of these important forms of nets are presented in the next table, the localities specified being the natural water divisions.

Pound nets and weirs have not yet obtained a position in the fisheries of California, although in the Columbia river and all the fishing localities north to Puget sound they are among the most prominent apparatus in use.

WEIRS AND POUND NETS.

STATES AND LOCALITIES.	Number.	Value.
Total	215	\$163,950
Oregon	56	41,550
Columbia river	52	40,050
Umpqua river	2	1,000
Yaquina bay and river	2	500
Washington	159	122,400
Chehalis river and Grays harbor	37	25,900
Columbia river	68	64,700
Puget sound	12	9,800
Shoalwater bay	42	22,000

FYKE NETS AND POTS.

These minor forms of apparatus are used only in California. Their number and value are given in the table. The average value of these nets is only \$3. The most expensive are found in Sacramento and San Joaquin rivers, where they are valued at \$23 each.

FYKE NETS AND POTS.

STATE AND LOCALITIES.	Number.	Value.
California	1,490	\$4,420
Los Angeles county	140	210
Sacramento and San Joaquin rivers	30	700
San Diego county	60	90
San Francisco bay and vicinity	1,200	3,300
Santa Barbara county	60	120

FISH WHEELS.

The most ingenious and effective form of apparatus employed in the fisheries of the west coast states is the fish wheel, of which 2 types are recognized, the stationary and the floating. The wheel has been aptly called the apotheosis of the dip net. The extent to which this means of capture is used is shown in the table.

From the table it will be seen that wheels are found only in the Columbia river, and that about two-thirds are on the Oregon side of the stream. The value of wheels is greater than that of any other apparatus used in these fisheries. The average cost is \$2,792. The stationary wheels have an average value of \$3,572, while those arranged on scows are worth only \$1,400.

FISH WHEELS.

STATES AND LOCALITIES.	Stationary.	Value.	Floating.	Value.
Total	25	\$89,300	14	\$19,600
Oregon—Columbia river	17	53,580	7	10,033
Washington—Columbia river	8	35,720	7	9,567

SEINES.

In the following table are shown the number and value of seines, under which general head have been grouped the several forms of this apparatus, known as purse seines, haul seines, sweep seines, and bag nets or paranzellas. The latter variety of seine is restricted to the Chinese fisheries of California, while in the more northern portions of the coast the haul seine is the predominant type.

SEINES.

STATES AND LOCALITIES.	Number.	Value.	STATES AND LOCALITIES.	Number.	Value.
Total	1,713	\$109,685	Oregon—Continued.		
California	1,629	57,625	Columbia river	2	\$1,050
Del Norte county	2	300	Coquille river	9	1,800
Humboldt county	18	4,800	Elk river	1	150
Los Angeles county	12	1,635	Regne river	2	1,700
Monterey county	20	3,965	Sikhs river	1	150
San Diego county	5	1,600	Tillamook river	2	460
San Francisco bay and vicinity	1,563	44,275	Umpqua river	1	500
Santa Barbara county	3	300	Windhuck river	1	250
Santa Cruz county	6	750	Yaquina bay and river	2	300
Oregon	25	7,200	Washington	50	44,200
Alsea river	2	400	Columbia river	23	24,900
Clifton river	2	500	Puget sound	36	19,300

It is seen by the table that by far the greatest number of seines is employed in San Francisco bay and vicinity, after which come the Columbia river and Puget sound.

OTHER APPARATUS.

Besides the various kinds of apparatus of capture which have been designated by name, \$27,275 are invested in apparatus not included under previous classifications. This consists chiefly of hand lines, trawl lines, dip nets, tongs, rakes, and such minor forms, the value of which is given in the following statement:

California:	
Los Angeles county	\$830
Monterey county	533
San Diego county	200
San Francisco bay and vicinity	17,955
San Luis Obispo county	925
Santa Barbara county	77
Santa Cruz county	910
	<hr/>
	\$21,430
Oregon:	
Columbia river	2,900
Washington:	
Puget sound	2,070
Shoalwater bay	875
	<hr/>
	2,945
Total	<hr/>
	27,275

III.—PERSONNEL.

NUMBER OF FISHERMEN AND SHORESMEN.

The number of fishermen and shoresmen is shown in the following table. The fishermen are classified as vessel fishermen and boat or shore fishermen. Shoresmen represent those people connected with the fisheries in any capacity on shore, but not engaged in the actual capture of the fish; factory hands constitute the most numerous class of shoresmen.

NUMBER OF FISHERMEN AND SHORESMEN.

STATES AND LOCALITIES.	Grand total.	FISHERMEN.			Shoresmen.
		Total.	On vessels.	On boats.	
Total.....	13,850	10,683	1,879	8,804	3,167
California.....	5,338	4,731	1,543	3,188	607
Del Norte county.....	118	70		70	48
Humboldt county.....	400	388		388	12
Los Angeles county.....	137	137		137	
Monterey county.....	127	127	4	123	
Sacramento and San Joaquin rivers.....	1,497	1,202		1,202	295
San Diego county.....	159	159	88	71	
San Francisco bay and vicinity.....	2,833	2,583	1,461	1,132	250
San Luis Obispo county.....	27	25		25	2
Santa Barbara county.....	15	15		15	
Santa Cruz county.....	25	25		25	
Oregon.....	4,682	3,098	53	3,045	1,584
Alsea river.....	157	92		92	65
Choteo river.....	30	30		30	
Columbia river.....	3,172	2,135	31	2,104	1,037
Coos bay and river.....	108	62	4	58	46
Coquille river.....	224	184		184	40
Elk river.....	5	5		5	
Necanicum creek.....	14	6		6	8
Nestucca river.....	68	30		30	38
Rogue river.....	165	59	18	41	106
Stikine river.....	7	7		7	
Stoutlaw river.....	181	136		136	45
Tillamook river.....	241	154		154	87
Umpqua river.....	80	38		38	51
Willamette river.....	80	80		80	
Windemuck river.....	2	2		2	
Yaquina bay and river.....	139	78		78	61
Washington.....	3,830	2,854	283	2,571	976
Chohutis river and Grays harbor.....	412	236		236	176
Columbia river.....	1,037	1,403	13	1,390	534
Puget sound.....	1,058	917	270	647	141
Shoalwater bay.....	423	208		208	125

The whole number of persons employed in the fisheries of the 3 states under consideration was 13,850. Of this number 3,167, or 22.86 per cent, are shoresmen. This leaves 10,683 fishermen, of whom 1,879, or 13.57 per cent of the total number of persons engaged, are employed on vessels, while 8,804, or 63.57 per cent, do their fishing from boats. California has the largest number of fishermen employed on vessels, while Oregon has the largest number of shoresmen.

NATIVITY AND NATIONALITY.

There is the greatest diversity of nativity and nationality seen among the fishermen of the Pacific states. In no other region are so many countries represented in the fisheries. In the tables which follow the subject is presented in great detail, the native born and naturalized citizens of this country and the aliens being shown. Following is the plan of presentation by states and localities: (1) the white persons born in the United States; (2) the Indians and negroes of native origin; (3) the persons born in foreign countries, specifying the number still owing allegiance to other governments; (4) aggregate figures for the entire coast, showing the native born by races and the foreign born by countries, designating aliens:

NATIVE BORN.

STATES AND LOCALITIES.	White.	Indian or negro.	STATES AND LOCALITIES.	White.	Indian or negro.
Total	2,859	824	Oregon—Continued.		
California	994	103	Coquille river	40	
Del Norte county	26	77	Elk river	4	
Humboldt county	76	26	Neconicum creek	8	
Los Angeles county	3		Nestucca river	8	
Sacramento and San Joaquin rivers	100		Rogue river	74	1
San Diego county	46		Sikhs river	6	
San Francisco bay	715		Siuslaw river	76	
San Luis Obispo county	6		Tillamook river	68	14
Santa Barbara county	7		Umpqua river	31	10
Santa Cruz county	15		Willamette river	46	10
Oregon	924	109	Windchuck river	2	
Alsea river	68	65	Yaquina bay and river	39	
Chetco river	15	15	Washington	941	612
Columbia river	409	54	Chehalis river and Grays harbor	126	15
Coos bay and river	30		Columbia river	483	50
			Puget sound	173	434
			Shoalwater bay	159	113

a Includes 2 negroes born in the United States.

FOREIGN BORN.

AUSTRIA.				BRITISH PROVINCES.			
STATES AND LOCALITIES.	Total.	Naturalized.	Alien.	STATES AND LOCALITIES.	Total.	Naturalized.	Alien.
Total	336	109	227	Total	375	135	240
California	19	1	18	California	236	50	186
Monterey county	2		2	Del Norte county	3		3
San Francisco bay	13	1	12	Los Angeles county	1	1	
Santa Barbara county	4		4	San Francisco bay	231	49	182
Oregon	273	87	186	San Luis Obispo county	1		1
Columbia river	197	65	132	Oregon	97	71	26
Nestucca river	15	5	10	Columbia river	55	42	13
Rogue river	2	2		Coos bay and river	15	6	9
Tillamook river	52	13	39	Elk river	1	1	
Umpqua river	7	2	5	Rogue river	13	12	1
Washington :				Sikhs river	1	1	
Columbia river	44	21	23	Tillamook river	2	1	1
				Umpqua river	2		2
				Willamette river	8	8	
				Washington	42	14	28
				Columbia river	29	14	15
				Puget sound	13		13

FOREIGN BORN—CONTINUED.

CHINA.				GREECE—Continued.			
STATES AND LOCALITIES.	Total.	Naturalized.	Alien.	STATES AND LOCALITIES.	Total.	Naturalized.	Alien.
Total	3,493		3,493	Oregon:			
California	1,283		1,283	Columbia river	86	51	35
Del Norte county	2		2	Washington	53	24	29
Humboldt county	12		12	Columbia river	46	24	22
Monterey county	74		74	Puget sound	7		7
Sacramento and San Joaquin rivers	255		255				
San Diego county	52		52	ITALY.			
San Francisco bay	887		887	Total	959	286	673
Santa Barbara county	1		1	California	793	252	541
Oregon	1,345		1,345	Humboldt county	65	36	29
Alsea river	49		49	Los Angeles county	15	7	8
Columbia river	913		913	Monterey county	17	10	7
Coos bay and river	40		40	Sacramento and San Joaquin rivers	477	125	352
Coquille river	36		36	San Diego county	12		12
Neconicum creek	6		6	San Francisco bay	171	71	100
Nestucca river	35		35	Santa Barbara county	3		3
Rogue river	53		53	Santa Cruz county	3	3	
Siuslaw river	40		40	Oregon	97	16	81
Tillamook river	75		75	Alsea river	2		2
Umpqua river	43		43	Columbia river	27	14	13
Yaquina bay and river	55		55	Siuslaw river	2		2
Washington	865		865	Tillamook river	2		2
Chehalis river and Grays harbor	155		155	Umpqua river	2		2
Columbia river	483		483	Yaquina bay and river	2	2	
Puget sound	117		117	Washington	69	18	51
Shoalwater bay	110		110	Columbia river	6		6
				Puget sound	61	14	47
GERMANY.				NORWAY.			
Total	247	166	142	Total	684	354	330
California	145	36	109	California	129	8	121
Sacramento and San Joaquin rivers	90	27	63	San Francisco bay	124	6	118
San Francisco bay	55	9	46	San Luis Obispo county	5	2	3
Oregon	89	58	31	Oregon	268	172	96
Alsea river	10	10		Alsea river	10	5	5
Columbia river	43	27	16	Columbia river	188	131	55
Siuslaw river	22	14	8	Coos bay and river	10	6	4
Umpqua river	12	7	5	Coquille river	50	23	27
Willamette river	2		2	Umpqua river	2	2	
Washington	13	11	2	Yaquina bay and river	8	3	5
Columbia river	9	7	2	Washington	287	178	109
Puget sound	1	1		Chehalis river and Grays harbor	12	3	9
Shoalwater bay	3	3		Columbia river	214	148	66
				Puget sound	59	25	34
GREECE.							
Total	171	82	89	Shoalwater bay	2	2	
California	32	6	26				
Los Angeles county	6		6				
San Francisco bay	26	6	20				

The individual figures for the Umpqua, Coos, Tillamook, and Coquille rivers will, if added, give 116 persons more than have been credited to these streams in the aggregate table for Oregon. These additional fishermen came from the Columbia river, and during a portion of the season distributed themselves on the smaller rivers named to catch salmon, returning to the Columbia river to engage in their regular fishing. In the tables relating to nativity and nationality they have been shown in both regions for the purpose of exhibiting the exact extent of the fishing industry on each stream, but in the aggregate figures they appear only under the Columbia river.

RECAPITULATION BY NATIVITY AND NATIONALITY.

STATES AND LOCALITIES.	Total.	Native born or naturalized.	Alien.
Total.....	13,850	6,780	7,070
Native born.....	3,671	3,671	
United States, white.....	2,847	2,847	
United States, negroes.....	2	2	
United States, Indians.....	822	822	
Foreign born.....	10,179	3,109	7,070
Africa.....	1	1	
Austria.....	330	107	223
Belgium.....	1		1
British provinces.....	367	137	230
Central America.....	2		2
China.....	3,493		3,493
Denmark.....	30	15	15
France.....	25	2	23
Germany.....	235	98	137
Greece.....	171	82	89
Holland.....	3		3
Italy.....	957	286	671
Japan.....	34		34
Mexico.....	4		4
Norway.....	668	353	315
Portugal.....	954	383	571
Russia.....	1,092	532	560
Sandwich islands.....	15	2	13
South America.....	24		24
South Sea islands.....	14	2	12
Spain.....	50	4	46
Sweden.....	1,709	1,105	604

Of the whole number of persons employed in the fishing industry on the Pacific coast 26.50 per cent are native born, 22.45 per cent are foreign born but naturalized, while 51.05 per cent, or more than one-half, are foreign born and remain aliens. The foreign-born element, including both naturalized and alien, represents 73.49 per cent of the whole number engaged in the fisheries.

The foreign countries showing a fair proportion of naturalized fishermen are Austria, with 107 out of 330; British provinces, 137 out of 367; Denmark, 15 out of 30; Germany, 98 out of 235; Greece, 82 out of 171; Norway, 353 out of 668; Portugal, 383 out of 954; Russia, 532 out of 1,092, and Sweden, 1,105 out of 1,709. The Chinese are all aliens, 3,493 in number, while but 286 out of 957 Italians have become citizens.

FISH.—OREGON.

LOCALITIES.	FRESH.								PICKLED.					
	Total.		Salmon.		Shad.		Miscellaneous.		Total.		Salmon.		Miscellaneous.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
Total	24,435,166	\$981,774	23,415,242	\$963,616	10,000	\$500	1,000,924	\$20,658	734,100	\$26,069	532,000	\$21,565	201,200	\$4,474
Alsea river	813,400	12,901	813,400	12,901										
Chetco river	30,000	450	30,000	450					73,000	2,920	73,000	2,920		
Columbia river	16,718,303	\$82,639	15,698,469	\$11,481	10,000	500	1,000,924	\$20,658	519,100	17,369	327,900	13,305	191,200	\$4,374
Coos bay and river	745,000	12,975	745,000	12,975										
Coquille river	734,000	10,860	734,000	10,860					15,000	600	15,000	600		
Elk river	26,000	300	26,000	300					10,000	400	10,000	400		
Necanicum creek	28,000	420	28,000	420										
Nestucca river	350,000	5,250	350,000	5,250										
Rogue river	1,554,340	31,837	1,554,340	31,837										
Sikhs river	20,000	300	20,000	300					12,000	480	12,000	480		
Siletz river	100,764	3,023	100,764	3,023										
Stuslaw river	837,200	12,558	837,200	12,558										
Tillamook river	1,074,310	21,236	1,074,310	21,236										
Umpqua river	675,000	13,500	675,000	13,500					72,000	2,880	72,000	2,880		
Willamette river	228,609	11,430	228,609	11,430					17,000	780	7,000	280	10,000	500
Windchuck river	500,150	15,005	500,150	15,005					16,000	640	16,000	640		

FISH.—WASHINGTON.

FRESH.

LOCALITIES.	TOTAL.		COD.		HALIBUT.		SALMON.		SHAD.		MISCELLANEOUS.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
Total	18,480,436	\$748,203	239,400	\$10,820	920,000	\$21,800	16,165,836	\$681,808	200	\$50	1,135,000	\$33,725
Chehalis river and Grays harbor.	2,775,000	83,250					2,775,000	83,250				
Columbia river	9,725,586	504,903					9,725,586	504,903				
Puget sound	4,224,850	107,400	239,400	10,820	920,000	21,800	1,930,250	41,065	200	50	1,135,000	33,725
Shoalwater bay	1,755,000	52,650					1,755,000	52,650				

PICKLED.

LOCALITIES.	TOTAL.		HALIBUT.		SALMON.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
Total	432,900	\$14,965	300,000	\$10,100	132,900	\$4,865
Chehalis river and Grays harbor					27,900	1,335
Columbia river	27,900	1,335				
Puget sound	406,000	13,510	300,000	10,100	106,000	3,419
Shoalwater bay						

MAMMALS AND THEIR PRODUCTS.

CALIFORNIA.

LOCALITIES.	Total value.	FUR-SEAL SKINS.		HAIR-SEAL SKINS.		SEA-OTTER SKINS.	
		Number.	Value.	Number.	Value.	Number.	Value.
Total.....	\$2,490,373	104,455	\$1,576,730	666	\$1,050	2,671	\$217,659
San Francisco bay and vicinity.....	2,484,373	104,455	1,576,730			2,646	215,159
San Luis Obispo county.....	2,340						
Santa Barbara county.....	3,600			666	1,050	25	2,500

LOCALITIES.	WALRUS AND SEA-LION SKINS.		WHALEBONE AND IVORY.		WHALE AND SEAL OIL.	
	Number.	Value.	Pounds.	Value.	Gallons.	Value.
Total.....	121	\$4,205	197,000	\$585,895	292,209	\$104,834
San Francisco bay and vicinity.....	121	4,205	197,000	585,895	284,959	102,384
San Luis Obispo county.....					6,750	2,340
Santa Barbara county.....					500	110

a Includes 16 live seals, valued at \$400.

WASHINGTON.

LOCALITIES.	Total value.	FUR-SEAL SKINS.		HAIR-SEAL SKINS.		SEA-OTTER SKINS.	
		Number.	Value.	Number.	Value.	Number.	Value.
Puget sound.....	\$32,908	5,351	\$29,458			30	\$3,450

MOLLUSKS, CRUSTACEANS, AND REPTILES.

STATES AND LOCALITIES.	GRAND TOTAL.		MOLLUSKS.									
	Pounds.	Value.	Total.		Oysters.		Clams.		Abalone shells and ment.		Octopus and squid.	
			Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
California.....	12,580,255	\$81,598	7,156,835	\$679,655	910,500	\$509,175	2,396,415	\$78,284	3,605,920	\$78,576	244,000	\$13,620
Humboldt county.....	72,000	1,200	72,000	1,200			72,000	1,200				
Los Angeles county.....	150,460	3,761										
Monterey county.....	240,855	13,015	240,855	13,015								
Sacramento and San Joaquin rivers.....	8,400	2,160						10,855	515	230,000	12,500	
San Diego county.....	996,400	22,960	999,000	21,680			20,000	336	940,000	20,750		
San Francisco bay and vicinity.....	11,027,875	844,331	5,818,915	649,543	910,500	509,175	2,294,415	75,248	2,600,000	55,000	14,000	1,120
San Luis Obispo county.....	11,240	920	11,240	920			10,000	900		1,240	20	
Santa Barbara county.....	73,025	3,251	53,825	2,291					53,825	2,291		
Oregon.....	106,705	14,291	92,380	13,575	17,500	6,250	74,880	7,325				
Columbia river.....	89,205	8,041	74,880	7,325			74,880	7,325				
Yaquina bay and river.....	17,500	6,250	17,500	6,250	17,500	6,250						
Washington.....	321,500	99,844	314,634	89,774	284,634	86,574	30,000	3,200				
Puget sound.....	92,175	25,320	85,000	24,250	55,000	31,050	30,000	3,200				
Shoalwater bay.....	229,325	65,524	229,634	65,524	229,634	65,524						

MOLLUSKS, CRUSTACEANS, AND REPTILES—CONTINUED.

STATES AND LOCALITIES.	CRUSTACEANS.								REPTILES.	
	Total.		Crabs.		Crayfish.		Shrimp and prawn.		Turtles and frogs.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
California	5,363,420	\$186,883	230,000	\$7,200	231,000	\$7,000	4,902,360	\$141,683	60,000	\$15,000
Humboldt county.....										
Los Angeles county.....	150,460	3,761			150,460	3,761				
Monterey county.....										
Sacramento and San Joaquin rivers.....									8,400	2,100
San Diego county.....	36,400	1,274			36,400	1,274				
San Francisco bay and vicinity.....	5,157,360	180,888	230,000	7,200	25,000	2,000	4,902,360	141,683	51,600	12,900
San Luis Obispo county.....										
Santa Barbara county.....	10,200	960			10,200	960				
Oregon.....	14,325	716			14,325	716				
Columbia river.....	14,325	716			14,325	716				
Yaquina bay and river.....										
Washington.....	6,875	1,070	1,875	570			5,000	500		
Puget sound.....	6,875	1,070	1,875	570			5,000	500		
Shoalwater bay.....										

SECONDARY PRODUCTS.

STATES AND LOCALITIES.	Total value.	CAVIARE.		FERTILIZER.		FISH OIL.	
		Pounds.	Value.	Pounds.	Value.	Gallons.	Value.
Oregon:							
Columbia river.....	\$8,440	96,760	\$4,840	180,000	\$1,800	8,000	\$1,800
Washington:							
Puget sound.....	4,000					10,000	4,000

The final table of the product series is a general summary for the entire coast, showing the quantity and value of the most important species, and in each division of products the percentage of the individual items to the total yield. This is concluded by a recapitulation which gives the percentage of value of each class to the total output.

TOTAL PRODUCTS, VALUES, AND PERCENTAGES.

SPECIES.	Pounds.	Value.	PERCENTAGES.		SPECIES.	Pounds.	Value.	PERCENTAGES.	
			Quan- tity.	Value.				Quan- tity.	Value.
Total		\$6,387,803							
Fish	67,386,926	2,865,349	100.00	100.00	Mammals, etc.—Cont'd.				
Barracuda, fresh	729,425	26,369	1.10	0.92	Sea-otter skins, number	2,701	\$221,109		8.76
Barracuda, salted	243,300	10,040	0.36	0.35	Walrus and sea-lion skins, number	121	4,295		0.17
Bonito, fresh	263,848	6,896	0.39	0.24	Whalebone and ivory, pounds	197,060	585,895		23.22
Bonito, salted	259,409	10,456	0.38	0.36	Whale and seal oil, gallons	292,209	104,834		4.15
Cod, fresh	239,400	10,829	0.36	0.38	Mollusks, crustaceans, and reptiles.	13,008,469	986,733	100.00	100.00
Cod, salted	3,590,000	89,947	5.33	3.14	Abalone shells and meats	3,605,020	78,576	27.72	7.96
Halibut, fresh	920,000	21,800	1.36	0.76	Clams	2,501,295	88,809	19.23	9.00
Halibut, salted	300,000	10,100	0.45	0.35	Crabs	231,875	37,770	1.78	3.83
Salmon, fresh	47,625,113	2,637,759	70.66	71.12	Crayfish	245,385	8,711	1.89	0.88
Salmon, salted	1,181,800	45,050	1.75	1.57	Octopus and squid	244,000	13,620	1.88	1.38
Shad, fresh	101,071	7,063	0.15	0.25	Oysters	1,212,634	601,999	9.32	61.01
Miscellaneous, fresh	10,337,377	564,696	16.23	19.71	Shrimp and prawn	4,907,360	142,188	37.72	14.41
Miscellaneous, salted	1,656,183	24,473	1.57	0.85	Terrapins and frogs	60,000	15,060	0.46	1.53
Mammals and their products		2,523,281		100.00	Secondary products		12,440		100.00
Fur-seal skins, number	109,806	1,606,188		63.66	Caviare	96,760	4,840		38.91
Hair-seal skins, number	666	1,050		0.04	Fertilizer	180,000	1,800		14.47
					Fish oil, gallons	18,000	5,800		46.62

RECAPITULATION.

SPECIES.	Value.	Percentage of value.
Total	\$6,387,803	100.00
Fish	2,865,349	44.86
Mammals and their products	2,523,281	39.50
Mollusks, crustaceans, and reptiles	986,733	15.45
Secondary products	12,440	0.19

From the table it is seen that the average value of the fish proper is 4.25 cents per pound, this representing the gross price received by the fishermen. An examination of the percentage columns discloses the interesting fact that salmon constitute 72.41 per cent of the entire quantity of fish taken and 72.69 per cent of the value. No other single species shown exceeds 5.33 per cent of the catch or 3.14 per cent of the value. The relative economic importance of the salmon among the fishes of the Pacific states is thus definitely exhibited. It may also be stated that of the total value of fishery products in this region salmon constitute 32.61 per cent.

In the mammal fisheries the killing of fur seals yields larger returns than any other branch, amounting to 63.66 per cent of the total value of all skins, bone, ivory, and oil taken. This is nearly 3 times the extent of the next important industry, the whale fishery. The taking of sea otters ranks third among the mammal fisheries, yielding 8.76 per cent of the value. The great intrinsic worth of the pelts of the sea otter may be appreciated when it is stated that while these animals represented only 2.38 per cent of the number of marine mammals killed their value was 12.07 per cent.

Oysters take first place as regards value among the mollusks, crustaceans, and reptiles. The quantity given in the table represents the weight of the edible portion, or "meat", and amounts to 9.32 per cent of the total yield, while the value is 61.01 per cent. This disproportion

between quantity and value indicates the high position occupied by oysters among the fish food products of the Pacific states. For shrimp and prawn the percentages for quantity and value are 37.72 and 14.41, respectively. Abalones and clams are the other important species in this class. Both show a much larger percentage of quantity than of value. The average price of the products in this group is 7.59 cents per pound.

The total value of the products of the fisheries of the Pacific states is \$6,387,803, of which \$2,865,349, or 44.86 per cent, accrued from the sale of fish; \$2,523,281, or 39.50 per cent, represented mammals and products derived therefrom; \$986,733, or 15.45 per cent, was the output of the molluscan, crustacean, and reptilian fisheries, and \$12,440, or 0.19 per cent, covered certain secondary articles that are not included under the 3 previous heads.

V.—SPECIAL STATISTICS OF THE FISHERIES OF THE PACIFIC STATES.

Among the data collected by the United States fish commission in the year 1889, which could not properly be considered in connection with the tables already presented, was the material contained in the following tabulations. It relates to (1) the salmon canning industry of the Pacific states, (2) the wholesale fresh fish trade of the city of San Francisco, and (3) the San Francisco export trade in fishery products.

The canning of salmon, to which the first tables relate, has long been one of the most important business enterprises of the Pacific states, and, although now of less magnitude and value than formerly, it still continues to exert a powerful influence upon the economic development of the region.

In the following table the extent of this is given in detail, the special points brought out being, under each state and locality, the number of canneries, the number of factory hands, the quantity of salmon used for canning, the value of same as determined by the price paid to fishermen, and the quantity and value of canned salmon placed on the market:

SALMON CANNING IN 1888.

STATES AND LOCALITIES.	Number of canneries.	Number of factory hands.	SALMON USED FOR CANNING.		CANNED SALMON PLACED ON MARKET.	
			Pounds.	Price paid to fishermen.	Cases.	Value.
Total	63	2,920	41,632,223	\$1,789,227	622,667	\$3,706,838
California	8	360	4,933,655	245,683	74,822	464,232
Klamath river	1	12	288,200	14,410	4,400	26,400
Sacramento river	4	295	4,039,200	201,960	61,200	382,500
San Francisco	2	33	453,700	22,685	6,875	41,250
Smith river	1	20	152,555	6,628	2,347	14,082
Oregon	34	1,584	21,390,648	889,772	320,822	1,901,617
Alsea river	3	65	673,400	10,101	9,620	55,315
Columbia river	18	1,037	14,771,654	769,325	227,559	1,365,354
Coos bay and river	1	46	385,000	5,775	5,500	31,625
Coquille river	2	40	770,000	11,550	11,000	63,250
Neconicum creek	1	8	28,000	420	400	2,300
Nestucca river	1	38	350,000	5,250	5,000	28,750
Rogue river	1	106	1,474,340	29,487	21,062	121,107
Siuslaw river	1	45	837,200	12,558	11,060	68,770
Tillamook river	2	87	1,074,310	21,226	14,633	84,140
Umpqua river	1	51	675,000	13,500	9,000	51,750
Yaquina bay and river	3	61	352,344	10,570	5,088	29,256
Washington	21	976	15,307,920	647,772	226,333	1,337,989
Chelalis river and Grays harbor	4	176	2,775,000	89,250	37,000	212,750
Columbia river	10	534	9,419,670	480,907	144,918	863,568
Puget sound	4	141	1,538,250	26,665	21,975	126,356
Shoalwater bay	3	125	1,375,000	47,250	22,500	129,375

The number of salmon canneries on the Pacific coast in 1888 was 63. They employed 2,920 factory hands. There was paid to fishermen \$1,783,227 for 41,632,223 pounds of salmon taken. This catch represented 622,037 cases, averaging 48 1-pound cans each, valued at \$3,703,838. From these figures it is possible to arrive at the gross profits in the salmon-canning industry. The related points are brought out in the following analysis table:

GROSS PROFITS IN THE SALMON-CANNING INDUSTRY.

STATES	Average price per pound paid fishermen. (Cents.)	Average number of pounds of salmon used per case.	Average value per case.	Percentage of waste.	Gross profits per pound can. (Cents.)
Total	4.28	66.93	\$5.95	28.28	6.44
California	4.98	65.91	6.20	27.20	6.08
Oregon	4.16	66.67	5.93	28.01	6.58
Washington	4.23	67.62	5.91	29.01	6.35

The average price per pound paid to fishermen is 4.28 cents. A case containing 48 1-pound cans is valued at \$5.95. Into the packing of this case enter 66.93 pounds of fish for which the fishermen were paid, showing a loss by waste of 28.28 per cent. The resulting gross profits are 6.44 cents per pound.

It must be borne in mind that these profits are gross, and that nothing has been deducted for salaries or wages of factory hands, for cans, labels, and cases, nor for any of the usual expenses of management. The wholesale price of canned salmon being about 12.5 cents per can, it is evident that this popular food supply does not pay an inordinate profit to packers, nor to retailers after the cost of transportation and selling expenses are added to the figures already given indicating the cost of the fish and the packers' gross profit.

Three interesting and valuable tables are next presented, which relate to the fish trade of the city of San Francisco. The first is a summary of the fresh fish trade of San Francisco in 1888 and 1889. The second shows the exports of whale and fish oil from the port of San Francisco during the year 1888. The third gives the exports of fishery products of all kinds from the port of San Francisco during the year 1888.

San Francisco is the great receiving and distributing center of the Pacific coast for fresh fish and other water products. The extent of the wholesale trade is given in the following table. Records are not generally available to show the quantities of the different species handled by each dealer, and the figures presented are simply careful estimates, based on the experience of the most reliable dealers, supplemented by information obtained from the books of transportation agencies

SUMMARY OF THE FRESH FISH TRADE OF SAN FRANCISCO IN 1888 AND 1889.

FISH.

SPECIES.	1888.			1889.		
	Pounds.	Average price.	Retail value.	Pounds.	Average price.	Retail value.
Total.....	10,848,100		\$729,125	9,723,500		\$696,300
Anchovies.....	200,000	\$0.030	6,000	120,000	\$0.050	6,000
Barracuda.....	125,000	0.080	10,000	110,000	0.100	11,000
Bonito.....	50,000	0.040	2,000	80,000	0.050	4,000
Carp.....	100,000	0.070	7,000	60,000	0.080	4,800
Catfish.....	10,000	0.170	1,700	12,000	0.100	1,200
Cultus cod.....	187,500	0.080	15,000	100,000	0.080	8,000
Eels.....	1,000	0.300	300	700	0.300	210
Flatfish.....	483,000	0.086	41,470	360,000	0.100	36,000
Herring.....	2,612,000	0.050	130,600	1,600,000	0.060	96,000
Kingfish.....	40,000	0.060	2,400	30,000	0.080	2,400
Mackerel, bull's-eye.....	25,000	0.100	2,500	30,000	0.125	3,750
Mackerel, horse.....	100,000	0.080	8,000	125,000	0.080	10,000
Mackerel, spanish.....	100	1.500	150	100	1.500	150
Perch, fresh-water.....	432,000	0.125	54,000	425,000	0.125	53,125
Perch, salt-water.....	220,000	0.085	18,700	200,000	0.090	18,000
Pike.....	20,000	0.060	1,200	18,000	0.070	1,260
Pompano.....	3,500	0.800	2,800	2,500	1.000	2,500
Rockfish.....	800,000	0.080	68,800	540,000	0.100	54,000
Salmon.....	3,300,000	0.064	211,200	3,100,000	0.068	209,250
Sardines.....	40,000	0.050	2,000	800,000	0.040	32,000
Sea bass.....	350,000	0.060	21,000	400,000	0.060	24,000
Shad.....	75,000	0.100	7,500			
Skates.....	40,000	0.030	1,200	75,000	0.050	3,750
Smelts.....	850,000	0.080	68,000	820,000	0.080	65,600
Striped bass.....				1,000	1.000	1,000
Sturgeon.....	460,000	0.060	27,600	495,000	0.060	29,700
Suckers.....	175,000	0.025	4,375	150,000	0.040	6,000
Tom cod.....	8,000	0.125	1,000	5,000	0.150	750
Trout, lake.....	50,000	0.200	10,000	40,000	0.250	10,000
Trout, brook.....	2,000	0.300	600	1,200	0.300	360
Miscellaneous.....	29,000	0.070	2,030	23,000	0.065	1,495

MOLLUSKS, CRUSTACEANS, ETC.

SPECIES.	Basis.	1888.			1889.		
		Quantity.	Average price.	Retail value.	Quantity.	Average price.	Retail value.
Total.....				\$707,329		\$741,228	
Oysters.....	Bushels	130,000	\$3.917	509,175	150,000	\$3.000	585,000
Clams, hard shell.....	Sacks	1,500	3.000	4,500	1,200	3.000	3,600
Clams, soft shell.....	Boxes	31,200	1.500	46,800	18,500	1.000	18,500
Mussels.....	Buckets	43,800	0.500	21,900	33,000	0.500	17,500
Crayfish.....	Pounds	25,500	0.088	2,250	28,400	0.075	2,880
Crabs.....	Dozens	77,800	0.980	76,214	77,600	0.980	76,048
Shrimp.....	Pounds	200,000	0.080	23,200	175,000	0.080	14,000
Prawn.....	Pounds	25,000	0.200	5,000	20,000	0.200	4,000
Squid and octopus.....	Pounds	25,000	0.080	2,000	15,000	0.080	1,200
Terrapins.....	Dozens	1,000	3.000	3,000	1,200	3.000	3,600
Turtles.....	Pounds	25,200	0.050	1,260	28,000	0.050	1,400
Frogs.....	Dozens	4,000	3.000	12,000	4,500	3.000	13,500

Considering quantities of fish sold, 7 species show an increase in 1889 as compared with 1888, 23 species show a decrease, while 1 shows no change in quantity. Comparing average prices, 18 species show an increase in 1889 as compared with 1888, while 4 have declined in price, and 9 have experienced no change in average value. Of the mollusks, crustaceans, etc., 5 species show an increase in quantity in 1889 as compared with 1888, while 7 species were taken in less quantities. The average prices of 3 species of mollusks, crustaceans, etc., have declined, while in the case of 9 species the average price was the same for the 2 years. Considering total quantities and values, it is found that the sales of 31 species of fish decreased 10.36 per cent in quantity and 4.50 per cent in value in 1889 as compared with 1888; the mollusks, crustaceans, etc., increased 4.79 per cent in value, and the increase for 43 species of fish, mollusks, crustaceans, etc., was 0.07 per cent in value.

The importance of San Francisco as a distributing center of fishery products is well shown by a consideration of the exports, as contained in the two following tables, the first of which gives the names of the foreign countries to which whale oil and fish oil were exported from San Francisco during the year 1888, the respective quantities and values for each of the countries considered, and the corresponding percentages of quantity and value:

EXPORTS OF WHALE AND FISH OIL FROM SAN FRANCISCO DURING 1888.

COUNTRIES TO WHICH EXPORTED.	WHALE AND FISH OIL.		PERCENTAGES.	
	Gallons.	Value.	Quantity.	Value.
Total -----	287,638	\$65,003	100.00	100.00
Australia-----	44,510	12,370	15.48	19.03
England-----	71,405	12,569	24.83	19.34
France-----	147,237	33,128	51.19	50.96
Hongkong-----	17,097	4,876	5.93	7.50
Hawaiian islands-----	1,621	681	0.56	1.05
Mexico-----	5,392	1,280	1.84	1.97
Philippine islands-----	496	99	0.17	0.15

The total exports amounted to 287,638 gallons, of which 147,237 gallons, or 51.19 per cent, were sent to France. The exports to England reached 71,405 gallons, or 24.83 per cent of the total quantity exported. Australia took 44,510 gallons, or 15.48 per cent. Relatively, as regards value, the best grades were exported to Australia, Hongkong, the Hawaiian islands, and Mexico, while the percentages of value were less than the percentages of quantity in the cases of England, France, and the Philippine islands.

The final special table of the series gives the names of the foreign countries to which fishery products were exported from San Francisco during the year 1888, the respective quantities and values of cured codfish, other cured fish, and canned salmon, and the values of pickled and smoked salmon, other canned fish, oysters and other shellfish, and crustaceans sent to the countries named. Australia and the Hawaiian islands were the largest customers for cured codfish. Of other cured fish the largest quantities were sent to the Hawaiian islands and China. More than nine-tenths of the exports of canned salmon were sent to Great Britain, aggregating 18,054,804 pounds, worth \$2,054,353. The Hawaiian islands took comparatively the largest quantities of pickled and smoked salmon, other canned fish, and oysters, while the greatest quantity of other shellfish and crustaceans was exported to China.

Considering the values of all exports of fishery products, Great Britain took 75.77 per cent, Australia 10.40 per cent, China 7.37 per cent, the Hawaiian islands 4.01 per cent, and other foreign countries the remaining 2.45 per cent.

EXPORTS OF FISHERY PRODUCTS FROM SAN FRANCISCO DURING THE YEAR 1888.

COUNTRIES TO WHICH EXPORTED.	Total value of exports.	CODFISH, CURED.		OTHER CURED FISH.		CANNED SALMON.		Pickled and smoked salmon.	Other canned fish.	Oysters.	Other shell-fish and crustaceans. (c)
		Pounds.	Value.	Pounds.	Value.	Pounds.	Value.				
Total	\$2,711,377	799,435	\$48,152	858,827	\$46,902	20,625,266	\$2,352,218	\$40,093	\$7,432	\$14,888	\$201,692
Great Britain	2,054,353					18,054,804	2,054,353				
Australia	282,032	407,910	26,511	12,000	516	2,046,328	240,413	11,283		44	3,265
British Columbia	8,845	9,390	607	8,700	470			50	187	5,997	1,534
British East Indies	4,951	17,250	1,127	7,000	390	24,690	3,035		314		85
French possessions	7,375	9,800	571	1,000	56	35,498	3,893	1,798	372	238	447
Germany	109										100
China	199,749	48,450	2,851	297,010	16,878	121,394	14,748		296	176	164,800
Japan	5,457	7,600	455	26,380	1,397	21,395	2,588		195	83	739
Russia	24										24
Mexico	6,771	12,015	722			27,875	3,028		1,627	1,694	360
Costa Rica	3,788	2,500	146			23,360	2,561		645	128	108
Ecuador	151								66	85	
Guatemala	2,402	17,830	1,163			4,440	512	86	260	212	169
Honduras	130								108	22	
Nicaragua	695	240	16			1,456	172		323	164	
San Salvador	954	1,300	78			2,075	233		188	325	130
United States of Colombia	8,339					57,820	6,479	177	77		1,606
Chile	7,771										7,771
Hawaiian islands	108,843	204,150	13,848	506,737	27,195	163,841	15,189	23,765	2,307	6,167	20,372
Other islands and ports	8,647	1,000	57			40,290	5,014	2,934	267	193	182

^a Consist mostly of abalone and shrimp, the largest part being shrimp exported by the Chinese to Hongkong and the Sandwich Islands. Squid is included under "Other cured fish", for the reason that it is impossible to secure separate figures for that mollusk from the records of exports.

CENSUS BULLETIN.

No. 168.

WASHINGTON, D. C.

March 7, 1892.

MANUFACTURES.—IRON AND STEEL.

PRODUCTION OF THE CAST-IRON PIPE FOUNDRIES.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,

WASHINGTON, D. C., February 25, 1892.

The following bulletin, relating to the manufacture of cast-iron pipe in the United States, has been prepared by Dr. WILLIAM M. SWEET, special agent, under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of Statistics of Manufactures. This is the first publication of the statistics of cast-iron pipe works separate from the operations of the general foundries of the country.

The bulletin shows that during the census year 1890 36 establishments reported the manufacture of cast-iron pipe as a leading specialty of their business. The total capital invested in these works was \$14,300,933, which includes \$68,500 reported by 2 establishments not in operation during the census year. The hands employed, including officers and clerks, numbered 7,788, to whom \$3,794,407 in wages was paid. The total cost of materials consumed was \$9,483,389, and the value of the products was \$15,168,682.

The principal material consumed by the pipe foundries was pig iron, the quantity used amounting to 591,258 net tons, costing \$7,860,408, while cast-iron pipe formed the principal product, the output being 513,030 tons of 2,000 pounds, valued at \$12,556,315.

The pipe foundries in operation in 1880 were tabulated with other foundries of the country, so that no data are available for comparison. There has, however, been a considerable growth in this industry during the past decade, especially in the south and west. The returns for 1890 show that 20 of the establishments reporting were built since the census of 1880.



Superintendent of Census.

CAST-IRON PIPE INDUSTRY IN THE UNITED STATES.

BY DR. WILLIAM M. SWEET.

The manufacture of cast-iron pipe is one of the leading branches of the foundry industry in the United States, the business being confined almost exclusively to establishments devoted to this class of work as a specialty. On account of the distinctive character of the industry it has been possible to separate the statistics of the pipe works from the operations of foundries engaged in the production of miscellaneous castings. A comparatively small amount of iron pipe is made by foundries devoted to general work, but as the pipe thus produced is chiefly for local trade or for specific purposes no account has been taken of the output in this bulletin. The character of the demand for standard sizes of cast-iron pipe necessitates its manufacture on a large scale in plants especially equipped for this work, although many of them also produce hydrants, fittings, and connections. A few of the pipe manufacturers make hydraulic and gas machinery and general foundry and machine shop products, but this work forms only a small part of the aggregate business of these establishments.

During the census year 1890 there were 36 establishments in the United States reported as engaged principally in the manufacture of cast-iron pipe, and of this number 34 were in operation in that year. The statistics of this industry in 1890 are summarized in the following table. In the census of 1880 the statistics of the cast-iron pipe works were included with the other foundries, and comparisons with that period are therefore not possible.

STATES.	Number of establishments.	Capital invested.	Average number of hands employed.	Wages paid.	Cost of materials.	Value of products.
Total	36	\$14,300,933	7,788	\$3,794,407	\$9,483,389	\$15,168,682
New York and the New England states	3	589,463	398	163,244	292,361	516,421
New Jersey	6	4,543,204	2,298	1,217,813	3,105,401	5,032,571
Pennsylvania	6	1,300,107	711	341,650	979,085	1,491,805
Southern states	8	3,561,162	2,024	937,141	2,256,258	3,714,293
Ohio	4	1,950,311	1,004	550,054	1,405,425	2,189,565
Other western states	7	2,266,086	1,323	584,406	1,444,250	2,224,027

a Includes 2 establishments reporting \$98,500 capital, which were not in operation during the census year 1890.

In the tabulation of individual reports for the cast-iron pipe industry no account has been taken of the miscellaneous items of expense incurred in manufacture other than expenditures for wages and materials. This was found necessary because the data reported in several instances include charges belonging to other branches of business conducted in connection with the manufacture of pipe, the separation of such charges being impracticable.

It has been found necessary to group a number of states in order to avoid disclosing the operations of individual establishments. Of the works located in the southern states 2 are in Virginia, 2 in Kentucky, 2 in Tennessee, 1 in Alabama, and 1 in Texas. Of the 8 establishments in operation in this section in 1890, 5 have been built since 1880. The works grouped under the head of "Other western states" include 2 in Missouri, and 1 in Illinois, Michigan, Wisconsin, Colorado, and Oregon, respectively. Of these 7 establishments 6 have been built and put in operation since 1880.

The oldest seat of the cast-iron pipe industry is in eastern Pennsylvania and the adjoining sections of New Jersey, the largest works being located in the immediate vicinity of Philadelphia, Pennsylvania. One establishment, situated at Millville, New Jersey, has been in operation since 1803, and has been conducted by the same interests since its organization, but it did not begin the manufacture of pipe

until some years later. Two other works in this section were established prior to 1850, and 5 works were built and put in operation between 1850 and 1880. During the last decade 5 cast-iron pipe foundries have been built in this territory. The older establishments in this section are all of large size, while those recently built are of comparatively small capacity. During the census year 1890 the pipe foundries in eastern Pennsylvania and New Jersey produced 43 per cent of the total output. Until within recent years these works supplied the demands of almost the entire country, but the advance in municipal improvement in the west and southwest and the growth of the pig-iron industry in those sections have resulted in the establishment of large plants nearer to the new markets and at points where pig iron and fuel can be cheaply obtained. The cost of transportation is a very important factor in the cast-iron pipe industry, and tends, with the wider distribution of the industry and the increasing competition, to restrict the trade of each establishment to a limited territory.

Although it has been found impossible to obtain any accurate statistics concerning the manufacture of cast-iron pipe during the census year 1880, the growth of the industry during the past 10 years is indicated by the large number of establishments erected since 1880. Of the 36 establishments reporting for 1890, 20 were built since 1880 and 16 were erected prior to that year. By far the larger number of the works built during the past decade are located in the southern and western sections of the country, and the majority of them are establishments of large capacity.

LABOR AND WAGES.

In the following table are given the average number and aggregate salaries of officers and clerks and the average number and aggregate earnings of skilled and unskilled labor and piece hands employed in the cast-iron pipe industry in the census year 1890:

CLASSES.	AGGREGATE.		MALES ABOVE 16 YEARS.		CHILDREN.	
	Average number employed.	Total wages paid.	Average number employed.	Total wages paid.	Average number employed.	Total wages paid.
Total (a).....	7,788	\$3,794,407	7,755	\$3,788,089	33	\$6,318
Officers or firm members.....	71	189,415	71	189,415		
Clerks or salesmen.....	102	92,646	102	92,646		
Skilled workmen.....	2,565	1,589,680	2,565	1,589,680		
Unskilled workmen.....	4,787	1,773,712	4,754	1,767,394	33	6,318
Piecework.....	263	148,954	263	148,954		

a Includes convict laborers at the Texas penitentiary, receiving an average of 50 cents each per day.

The following table gives the weekly rates of wages and the average number of hands employed at each rate during the year, not including those employed at piecework:

RATES PER WEEK.	Males above 16 years.	Children.
Total (a).....	7,492	33
Under \$5.....	215	22
\$5 and over, but under \$6.....	121	9
\$6 and over, but under \$7.....	634	2
\$7 and over, but under \$8.....	1,321	
\$8 and over, but under \$9.....	1,358	
\$9 and over, but under \$10.....	1,023	
\$10 and over, but under \$12.....	896	
\$12 and over, but under \$15.....	940	
\$15 and over, but under \$20.....	689	
\$20 and over, but under \$25.....	157	
\$25 and over.....	118	

a Includes convict laborers at the Texas penitentiary, receiving an average of 50 cents each per day.

During the census year 1890 the cast-iron pipe foundries were in operation an average of 10 months each. The average term of employment for men was 11 months and for children 10.6 months, the excess of the average term of employment over the average term of operation being caused by the fact that the establishments employing the greater number of hands also report the maximum term of operation.

MATERIALS CONSUMED.

In the following table are given the total quantity and cost of the pig iron used and the total cost of the fuel and other materials consumed by the cast-iron pipe works during the census year 1890:

STATES.	Pig iron. (Tons of 2,000 pounds.)	Cost of pig iron.	Cost of fuel.	Cost of other ma- terials.	Total cost of all materials.
Total	591,258	\$7,860,408	\$662,155	\$960,826	\$9,483,389
New York and the New England states	12,524	188,825	23,372	80,164	292,361
New Jersey.....	190,568	2,603,297	202,712	299,392	3,105,401
Pennsylvania	58,446	856,932	54,078	68,675	979,685
Southern states.....	146,263	1,920,200	156,520	179,538	2,256,258
Ohio.....	90,813	1,156,617	122,537	126,271	1,405,425
Other western states	83,644	1,134,537	102,936	206,786	1,444,259

Most of the works used pig iron exclusively in the manufacture of pipe, a few of the establishments reporting the consumption of a small quantity of purchased scrap iron, the cost of which is included in the "Cost of other materials", which also covers the amount paid for miscellaneous foundry supplies and for materials consumed by a few of the works in the manufacture of products other than cast-iron pipe.

PRODUCTS MADE.

The quantities and values of cast-iron pipe made during the census year 1890 are given in the following table, together with the values of other castings and products. The quantities are in tons of 2,000 pounds.

STATES.	Tons of pipe.	Value of pipe.	Value of other castings.	Value of other products.	Total value of all products.
Total	513,030	\$12,556,315	\$1,802,679	\$809,688	\$15,168,682
New York and the New England states.....	13,066	412,382	13,950	90,089	516,421
New Jersey.....	185,510	4,293,816	364,561	374,194	5,032,571
Pennsylvania.....	48,460	1,193,090	223,715	75,000	1,491,805
Southern states.....	128,253	3,178,175	401,568	44,550	3,714,293
Ohio.....	73,734	1,829,680	304,030	55,855	2,189,565
Other western states.....	64,007	1,649,172	404,855	170,000	2,224,027

The item of "other castings" is made up chiefly of pipe fittings and specials, and also includes some general foundry products. The "other products" embrace valves, gates, hydrants, gas and water machinery, and miscellaneous machine work. The gates, valves, and hydrants made by the pipe foundries constitute only a small portion of the aggregate production of these fittings, as the manufacture of this class of products forms in itself an important industry.

No account has been taken in this statement of a number of works that were in course of erection during the census year 1890, but which were not completed and put in operation during that year. Since the close of the census year 6 new pipe foundries have been completed and put in operation, all in the southern states, 1 being in Virginia, 4 in Alabama, and 1 in Texas.

CENSUS BULLETIN.

No. 169.

WASHINGTON, D. C.

March 8, 1892.

STATISTICS OF MANUFACTURES.—THE WOOL INDUSTRY.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., March 4, 1892.

Herewith is presented a preliminary report on the wool manufacture of the United States, prepared by Mr. S. N. D. NORRIS, special agent, under the direction of Mr. FRANK R. WILLIAMS, in charge of statistics relating to all branches of manufactures. The inquiry made for the Eleventh Census respecting this important industry has been much more comprehensive than in any previous census, and it is believed that the details to be hereafter published will have corresponding value. The data contained in this bulletin will complete, under the more important heads, general information which has been previously furnished to Congress at the request of the Ways and Means committee. The data therefore are not final, but preliminary and subject to revision.

The tables now presented are 6 in number, as follows:

1. Comparative statement by state totals, 1890-1880.
2. Comparative statement by totals for the various branches, 1890-1880.
3. Idle capital and machinery, 1890.
4. Active machinery, 1890-1880.
5. Comparative statement in detail of raw materials consumed, 1890-1880.
6. The manufacture of shoddy, 1890-1880.

The number of establishments reported for 1890 as engaged in the manufacture of "woolen goods" proper, when compared with the number reported for 1880, shows a decrease of 678. The number reported in 1880 for this branch of the industry showed a decrease of 901 establishments from the number reported in 1870. It is explained that this continued decrease in number of establishments is principally due to the disappearance of the custom or neighborhood carding mills, which formerly carded wool to be spun in families.

The number of fully equipped woolen and worsted mills in the United States has considerably increased since 1880, as well as their aggregate machinery capacity.

It is stated that a great reduction has taken place in the market value of the products of the wool industry. The true measure of the progress of the industry is therefore the quantity rather than the value of the product. This quantity will be presented in detail in future reports. The most striking feature of progress is shown in that branch of the industry presented under the title of hosiery and knit goods. In this connection it is proper to call attention to the fact that the hosiery and knit goods industry is classified and reported under the general head of wool manufacture, because its conditions are such that it is impracticable to make a proper division of its statistics under the heads of cotton and wool manufactures, respectively.

The following table presents for the industry the percentages of increase or decrease under the principal heads of inquiry :

COMPARATIVE STATEMENT OF ALL BRANCHES OF WOOL MANUFACTURE,
EXCEPTING SHODDY.

GENERAL HEADS.	1890	1880	Percentage of increase.
Number of establishments reported	a2,503	2,689	b6.92
Capital invested.....	a\$206,983,164	\$159,091,869	c86.67
Value of hired property	\$17,326,780		
Number of hands employed.....	221,087	161,557	36.84
Wages paid.....	\$76,768,871	\$47,389,087	62.00
Miscellaneous expenses.....	\$19,547,200		
Cost of materials used	\$209,095,642	\$164,371,551	23.56
Value at factory of goods manufactured.....	\$338,231,109	\$267,252,913	26.56

a Not including 267 idle establishments reporting invested capital amounting to \$6,107,360.
b Decrease.
c See page 5, post.

It will be observed that the item of miscellaneous expenses is reported for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used, and this fact should be borne in mind in comparing all industrial statistics of 1880 with those of 1890.

The increase in the machinery capacity of mills in operation, excluding shoddy, is shown to be as follows :

MACHINERY.	1890	1880	Percentage of increase.
Cards.....	8,200	7,581	8.17
Combing machines.....	855	518	65.06
Spindles	3,286,280	2,254,906	45.73


Superintendent of Census.

STATISTICS OF WOOL MANUFACTURE.

BY S. N. D. NORTH.

In the following presentation of the statistics of wool manufacture the tendency to a geographical concentration is especially noteworthy. Its great seats are in the New England states, Pennsylvania, New York, and New Jersey. With the disappearance of custom carding mills in the outlying states, the actual product of several of these states shows a decline. This tendency to concentration follows that marked in the cotton manufacture and is also peculiar to the textile industries in the European countries.

The inquiry for the Eleventh Census relating to the wool industry, while embracing the full scope of preceding inquiries, has been much more specific under the general heads of "Capital" and "Labor and wages".

The results will be presented in detail in future reports, so that it will be possible to ascertain definitely the relations which capital, expense, wages, and cost of materials bear to the value, at the works, of the products of the various branches of wool manufacture.

The following table makes a comparison by states between the censuses of 1890 and 1880 for the wool manufacture as a whole, exclusive of shoddy mills, ignoring the subdivision into the several branches, and shows the number of establishments reporting, capital invested, labor and wages, cost of materials, and value of products:

TABLE I. COMPARATIVE STATEMENT, 1890-1880.

STATES.	Number of establishments reporting.	CAPITAL.				LABOR AND WAGES.					Cost of materials used.	Value of products.
		Total.	Value of land, buildings, and machinery. (a)	Live assets.	Miscellaneous expenses.	Average number of hands employed.			Total amount paid in wages.			
						Total.	Males above 16 years.	Females above 16 years.		Children.		
United States.....	1890 2,770 1880 2,080	\$3320,417,304 159,001,800	\$153,558,230	\$100,859,074	\$10,547,200	221,087 101,657	90,318 75,459	104,112 66,814	15,657 10,284	\$70,768,871 47,380,087	\$203,095,642 104,371,551	\$338,231,109 207,252,913
Alabama.....	1890 9 1880 14	113,008 28,000	70,871	36,225	3,811	428 18	36 13	142 5	250	67,963 3,037	114,800 40,361	207,875 63,745
Arkansas.....	1890 7 1880 25	42,435 85,650	30,800	5,635	802	31 40	16 62	12 21	3 7	6,231 13,220	27,080 85,972	38,380 127,430
California.....	1890 14 1880 9	3,391,350 1,676,500	1,870,473	1,120,877	171,435	1,375 835	933 708	418 108	24 10	328,824 331,318	822,061 997,539	1,421,903 1,631,868
Connecticut.....	1890 109 1880 102	25,000,110 14,221,637	10,681,000	11,408,150	1,501,950	13,017 12,024	6,907 6,317	5,557 4,245	583 1,432	4,910,783 3,083,905	12,530,719 14,742,091	20,843,065 24,857,720
Delaware.....	1890 4 1880 5	500,974 352,550	313,000	103,974	27,404	207 201	146 171	112 59	39 31	103,305 108,504	205,605 448,285	482,022 605,253
Georgia.....	1890 19 1880 32	444,633 180,733	329,940	114,093	21,492	528 142	135 72	202 45	101 25	104,353 25,070	169,396 105,005	349,095 239,300
Illinois.....	1890 61 1880 67	3,205,704 1,433,353	1,404,372	1,801,422	182,102	2,792 1,749	831 687	1,898 836	73 226	858,880 388,610	1,766,270 1,023,603	3,280,541 2,380,584
Indiana.....	1890 65 1880 86	3,827,105 2,318,703	1,844,096	1,083,000	306,976	3,109 2,025	1,218 872	1,718 788	173 305	817,387 487,381	2,287,080 1,023,670	3,863,786 2,887,547
Iowa.....	1890 24 1880 37	601,300 553,700	500,150	401,750	40,460	387 505	180 310	182 136	10 60	135,790 118,252	507,478 437,301	700,981 682,812
Kansas.....	1890 (b) 1880 6	..... 131,925	..... .....	..... .....	..... .....	124	66	40	18	25,825	107,251	211,525
Kentucky.....	1890 45 1880 98	2,002,383 800,750	1,474,227	1,431,150	186,743	2,012 823	923 353	641 253	178 217	615,055 160,180	1,656,710 852,405	2,784,708 1,204,988
Louisiana.....	1890 4 1880 (c)	123,000	90,000	32,000	3,178	280	28	258 .....	..... .....	62,517	58,004	152,455

a Capital invested in 1890 includes hired property to the value of \$17,326,780; also capital, including hired property, to the value of \$6,107,360, controlled by 207 establishments that were idle during the census year, located as follows: Arkansas, 1; California, 4; Connecticut, 11; Delaware, 1; Georgia, 1; Illinois, 5; Indiana, 10; Iowa, 7; Kansas, 5; Kentucky, 1; Maine, 7; Maryland, 2; Massachusetts, 43; Michigan, 9; Minnesota, 2; Missouri, 4; Nebraska, 1; New Hampshire, 9; New Jersey, 5; New York, 36; North Carolina, 6; Ohio, 13; Pennsylvania, 47; Rhode Island, 6; Tennessee, 6; Texas, 1; Utah, 1; Vermont, 2; Virginia, 5; West Virginia, 3; Wisconsin, 3.

b See group of "All other states, 1890", at end of table.

c No reports received from this state in 1880.

TABLE 1.—COMPARATIVE STATEMENT, 1890-1880—CONTINUED.

STATES.	Number of establishments reporting.	CAPITAL.			Miscellaneous expenses.	LABOR AND WAGES.				Total amount paid in wages.	Cost of materials used.	Value of products.
		Total.	Value of land, buildings, and machinery.	Live assets.		Average number of hands employed.						
						Total.	Males above 16 years.	Females above 15 years.	Children.			
Maine.....	1890 89	\$9,700,825	\$4,172,286	\$5,528,539	\$599,002	5,453	3,291	2,012	150	\$1,991,676	\$5,704,508	\$8,814,256
	1880 97	4,016,828				3,265	1,811	1,160	294	1,091,329	4,444,990	6,902,003
Maryland.....	1890 29	582,681	314,999	247,682	24,394	829	242	320	267	189,994	520,870	781,723
	1880 16	344,010				389	246	101	42	69,491	382,224	539,028
Massachusetts.....	1890 336	75,665,637	32,977,313	42,688,324	4,959,715	43,038	22,358	18,838	1,842	16,154,034	44,767,072	72,681,408
	1880 271	38,231,375				38,128	18,374	16,473	3,281	11,635,889	41,677,919	67,451,805
Michigan.....	1890 52	1,899,460	1,017,853	881,607	120,071	1,428	489	907	32	390,147	886,541	1,689,974
	1880 50	706,189				1,309	283	820	206	168,564	583,241	858,766
Minnesota.....	1890 27	885,716	506,648	379,068	72,825	470	220	249	1	167,323	399,487	730,226
	1880 14	198,500				241	114	77	50	48,927	160,867	263,378
Mississippi.....	1890 7	1,553,455	876,030	677,425	18,054	1,082	415	443	224	306,270	508,039	924,185
	1880 8	331,500				218	111	61	46	53,100	211,646	299,005
Missouri.....	1890 46	823,013	554,085	268,928	34,522	635	268	308	59	156,887	341,461	629,302
	1880 162	755,550				807	415	258	134	129,177	723,286	1,015,901
New Hampshire.....	1890 99	15,090,286	5,662,006	9,428,280	877,421	9,446	4,341	4,805	300	3,350,195	8,808,688	14,477,572
	1880 85	8,374,855				7,352	3,351	3,382	619	2,237,736	7,854,955	13,220,850
New Jersey.....	1890 55	8,370,697	4,500,494	3,870,203	652,717	7,248	3,364	3,548	336	2,416,371	6,029,588	9,984,070
	1880 45	3,735,695				5,142	2,607	1,722	813	1,392,515	4,117,035	6,823,074
New York.....	1890 378	49,636,433	25,708,479	23,917,954	2,674,640	38,596	15,046	20,866	2,684	13,058,598	30,444,306	53,438,146
	1880 264	23,583,574				24,256	9,794	11,401	3,091	7,225,256	19,550,793	34,978,287
North Carolina.....	1890 38	437,628	252,970	184,658	17,955	508	194	230	84	95,739	265,183	435,821
	1880 49	263,100				185	120	50	15	23,195	255,707	303,160
Ohio.....	1890 133	3,857,889	1,969,803	1,948,056	208,342	3,865	1,150	2,246	429	935,506	2,334,026	3,969,462
	1880 146	1,570,340				2,177	826	1,019	332	374,472	1,395,512	2,193,294
Oregon.....	1890 6	1,330,585	342,820	1,007,765	87,156	402	245	134	23	175,313	327,252	614,932
	1880 10	566,800				216	166	83	17	86,088	227,486	549,030
Pennsylvania.....	1890 753	68,967,256	35,920,758	33,076,498	4,062,615	55,786	23,502	26,802	5,482	19,800,446	53,929,476	89,533,725
	1880 654	35,642,016				42,261	19,025	17,506	5,730	12,338,157	43,664,468	67,821,397
Rhode Island.....	1890 91	28,886,337	14,507,212	14,379,125	2,011,146	19,325	9,811	8,138	1,876	7,049,109	21,562,318	34,722,493
	1880 62	13,023,116				12,164	5,877	4,411	1,876	3,711,657	13,094,650	21,024,204
South Carolina.....	1890 (a) 11	7,900				13	13			1,173	19,455	24,075
Tennessee.....	1890 55	1,421,879	700,213	721,666	56,533	998	428	446	124	239,657	759,766	1,216,419
	1880 106	418,664				402	249	111	42	67,063	423,054	620,724
Texas.....	1890 6	470,170	349,130	121,040	17,333	402	185	176	41	139,395	211,607	394,089
	1880 1	97,500				36	28	8		25,700	44,435	80,560
Utah.....	1890 15	643,329	327,795	315,534	29,751	344	170	155	19	121,176	188,889	392,094
	1880 11	382,000				277	150	79	48	68,108	147,223	270,424
Vermont.....	1890 41	4,264,264	1,677,666	2,586,598	244,714	2,303	1,222	1,039	42	895,284	2,081,026	3,829,641
	1880 50	2,812,161				2,467	1,309	1,010	148	645,175	2,372,428	3,813,077
Virginia.....	1890 43	1,011,447	562,503	448,944	69,537	636	372	233	31	171,463	466,340	795,309
	1880 48	456,750				365	251	95	19	71,720	388,080	577,968
Washington.....	1890 (a) 1	40,900				29	18	8	3	4,000	52,000	70,000
West Virginia.....	1890 35	357,881	185,970	171,911	16,008	307	178	118	11	67,380	210,461	350,132
	1880 56	298,170				357	223	96	33	44,861	247,543	359,586
Wisconsin.....	1890 65	4,049,529	1,663,398	2,386,131	234,949	3,513	876	2,481	156	819,623	2,015,658	3,493,155
	1880 52	1,359,964				875	432	398	45	218,357	901,918	1,498,886
All other states.....	1890 517	263,029	168,908	94,121	11,414	151	49	98	4	46,098	98,092	206,063

^a See group of "All other states, 1890", at end of table.

^b Includes states in which there were less than 3 establishments in operation during the census year, so that the operations of individual establishments may not be disclosed. These establishments were distributed as follows: Colorado, 2; Florida, 1; Idaho, 1; Kansas, 7 (including 5 idle); Nebraska, 2 (including 1 idle); South Carolina, 1; South Dakota, 2; Washington, 1.

CAPITAL INVESTED.

In the foregoing table, owing to the changed form of inquiry used in 1890, the amount of capital invested in land, buildings, and machinery is for the first time separately shown, together with an additional column stating the value of all other property or assets used in the business. The great increase shown in the amount of capital employed as between 1890 and 1880 is more apparent than real, and is largely due to the fact that the capital returned for the census of 1880 did not take cognizance of all items which properly go to make up "live assets", and which, it is believed, are for the first time fully included in the census of 1890. In future publications an itemized table will be presented, comprehending the amounts given in the column under the head of "Live assets".

PENAL, REFORMATORY, AND ELEEMOSYNARY INSTITUTIONS.

The statements herein presented include the reports of operations conducted by 15 penal, reformatory, and eleemosynary institutions, located as follows: Indiana, 1; Maryland, 1; Minnesota, 1; New Hampshire, 1; New York, 3; Ohio, 2; Pennsylvania, 3; Texas, 1; Virginia, 1; Wisconsin, 1.

The data reported for such institutions are as follows:

Capital	\$601,183
Number of hands employed	2,248
Males.....	1,066
Females.....	180
Children.....	1,002
Wages paid	\$169,129
Cost of materials used.....	\$389,500
Miscellaneous expenses.....	\$34,872
Value of products.....	\$659,585

MISCELLANEOUS EXPENSES.

In Table 1 appears a column for 1890, not hitherto reported in the census, covering all miscellaneous expenses of manufacture, such as taxes, insurance, repairs, interest, etc. These items aggregate \$19,547,200 in the wool manufacture. The total reveals how important an element of cost has been omitted from previous census data relating to this industry.

The data for 1890 contained in Table 1 cover every branch of the manufacture of wool, including card rolls made in custom mills, yarns made for sale, every description of woollen and worsted cloths and woollen and worsted dress goods, blankets, flannels, braids, felts of every description, carpets, wool hats, and hosiery and knit goods (including all wool, merino, and cotton hosiery and knit goods). There were also 93 mills reported as engaged in the manufacture of shoddy as their principal product, the data regarding which are presented in Table 6, post.

Table 2, on the following page, is a summary classification of the wool manufacture into its several branches. From this table all idle establishments have been excluded, 267 in number, of which 181 were woollen mills proper.

TABLE 2.—SUMMARY CLASSIFICATION OF WOOL MANUFACTURING INDUSTRIES, 1890-1880.

INDUSTRIES.	Number of establishments reporting.	CAPITAL.			Miscellaneous expenses.	LABOR AND WAGES.				Total amount paid in wages.	Cost of materials used.	Value of products.
		Total.	Value of land, buildings, and machinery. (a)	Live assets.		Average number of hands employed.						
						Total.	Males above 16 years.	Females above 15 years.	Children.			
Total.....1890	62,503	\$314,309,944	\$147,450,870	\$166,859,074	\$19,547,200	221,087	99,318	106,112	15,657	\$76,768,871	\$203,095,642	\$338,231,109
.....1880	2,689	159,991,869	.....	.....	.....	161,557	75,459	66,814	19,284	47,389,087	164,371,551	207,252,918
Woolen goods...1890	1,312	137,939,014	64,754,417	73,175,597	8,511,292	79,394	44,528	30,240	4,626	28,479,531	82,184,666	133,612,827
.....1880	1,990	96,095,561	.....	.....	.....	86,504	46,978	29,372	10,151	25,836,392	100,845,611	160,608,721
Worsted goods...1890	143	72,194,642	32,000,336	40,194,306	4,080,187	43,593	19,658	20,110	3,825	15,880,183	50,644,342	79,194,652
.....1889	76	20,374,043	.....	.....	.....	18,803	6,435	9,473	2,895	5,683,027	22,013,628	33,549,942
Felt goods.....1890	34	4,589,021	1,994,384	2,594,637	233,621	2,266	1,594	510	162	1,041,296	2,809,187	4,654,768
.....1880	26	1,958,254	.....	.....	.....	1,524	1,203	233	88	439,760	2,530,710	3,619,632
Wool hats.....1890	32	4,369,184	1,421,349	2,947,835	251,818	3,592	2,309	1,124	159	1,368,944	2,799,791	5,329,921
.....1880	43	3,615,830	.....	.....	.....	5,470	3,222	1,459	789	1,893,215	4,785,774	8,516,569
Carpets, other than rag. 1890	175	39,769,441	18,915,634	20,853,807	1,839,568	29,189	14,101	13,083	2,005	11,639,176	28,649,031	47,801,499
.....1889	195	21,468,587	.....	.....	.....	20,371	10,104	8,570	1,697	6,835,218	18,984,877	31,792,802
Hosiery and knit goods. 1890	807	55,457,642	28,364,750	27,092,892	3,739,714	63,053	17,128	41,045	4,880	18,364,741	36,008,625	67,637,442
.....1889	359	15,579,591	.....	.....	.....	28,885	7,517	17,707	3,661	6,701,475	15,210,951	29,167,227

a Includes property hired to the value of \$17,326,780.

b Excluding 267 establishments that were idle during the census year.

IDLE MACHINERY.

This is the first census that has differentiated the active and idle machinery of the wool manufacture. The present effort is merely tentative, as it affords no clew to the proportion of machinery which may have been idle in mills partially in operation. The proportion of machinery absolutely idle was about 7 per cent of the whole number of sets of wool machinery; a larger percentage would be required to indicate the productive capacity of our wool mills in excess of the actual output reported. The character and location of the idle machinery reported is shown in Table 3.

TABLE 3.—STATEMENT OF IDLE CAPITAL AND MACHINERY FOR 1890, EXCLUDING SHODDY.

STATES.	Number of establishments reporting.	CAPITAL.				MACHINERY.				
		Total.	Land.	Buildings.	Machinery.	Sets of cards.	Comb-ing machines.	Spindles.	Looms.	Knitting machines.
Total.....	267	\$6,107,360	\$841,916	\$2,273,239	\$2,985,705	612	35	172,634	53,018	1,821
California.....	4	225,000	22,700	76,300	128,000	9	.....	2,815	31	.....
Connecticut.....	11	635,408	52,400	320,100	262,908	41	.....	3,620	195	148
Illinois.....	5	24,300	3,800	10,000	9,900	6	.....	840	24	.....
Indiana.....	10	83,125	13,725	24,500	44,900	17	.....	3,923	74	20
Iowa.....	7	180,350	17,350	66,000	93,800	16	.....	4,180	68	1
Kansas.....	5	47,600	2,600	22,000	23,000	6	.....	2,646	5	45
Maine.....	7	126,200	8,500	31,500	86,200	25	.....	3,830	62	16
Massachusetts.....	43	1,184,110	135,395	433,150	615,565	135	.....	34,798	770	818
Michigan.....	9	198,056	16,300	98,151	81,105	15	.....	1,282	12	426
Missouri.....	4	23,100	2,000	5,300	15,800	4	.....	888	28	9
New Hampshire.....	9	121,600	17,200	51,000	53,400	10	.....	1,760	52	50
New Jersey.....	5	255,000	14,300	46,500	194,200	8	3	4,100	194	8
New York.....	36	899,711	248,700	301,600	349,411	113	.....	24,654	411	391
North Carolina.....	6	19,440	3,040	8,600	7,800	2	.....	3,240	5	40
Ohio.....	18	99,100	12,700	38,700	47,700	18	.....	4,204	70	172
Pennsylvania.....	47	1,265,460	177,310	434,050	654,100	116	23	48,124	635	56
Rhode Island.....	6	294,500	33,500	160,000	96,000	30	.....	13,572	208	25
Tennessee.....	6	25,500	5,000	9,500	11,000	5	.....	1,930	42	12
Virginia.....	5	29,500	3,100	14,400	12,000	6	.....	950	14	11
West Virginia.....	3	10,200	2,600	4,900	2,700	3	.....	600	18	.....
Wisconsin.....	8	164,300	16,196	43,888	103,216	7	9	5,270	6	57
All other states (c).....	13	195,800	28,300	72,500	95,000	20	.....	5,408	94	16

a Includes hired property valued at \$6,500.

b Includes 34 hand looms.

c Includes states in which there were less than 3 establishments that were reported as idle during the census year, so that the value of individual establishments may not be disclosed. These establishments were located as follows: Arkansas, 1; Delaware, 1; Georgia, 1; Kentucky, 1; Maryland, 2; Minnesota, 2; Nebraska, 1; Texas, 1; Utah, 1; Vermont, 2.

ACTIVE MACHINERY.

The following table shows the machinery capacity of the industry in 1890 and 1880, exclusive of shoddy mills and of the machinery wholly idle in 1890, as shown in Table 3:

TABLE 4.—ACTIVE MACHINERY, EXCLUDING SHODDY MILLS, 1890-1880.

STATES.	NUMBER OF ESTABLISHMENTS REPORTING.		SETS OF CARDS.		COMBING MACHINES.		SPINDLES.		LOOMS.		KNITTING MACHINES.	
	1890	1880	1890	1880	1890	1880	1890	1880	1890	1880	1890	1880
Total	2,503	2,689	8,200	7,581	855	518	3,285,280	2,254,996	669,876	257,559	36,924	14,769
Alabama	9	14	8	15			288	169	12	10	128	
Arkansas	6	25	7	29			735	1,299	24	41		1
California	19	9	70	66			18,508	18,740	292	239	34	198
Colorado	2										7	
Connecticut	98	102	646	622	34	21	223,982	191,892	3,640	3,156	1,265	1,109
Delaware	3	5	15	13			7,306	4,306	229	126		
Florida	1										24	
Georgia	18	32	22	42			4,512	2,224	119	88	227	
Idaho	1		1				480		19			
Illinois	58	67	71	190			24,568	21,672	823	379	1,527	441
Indiana	55	86	153	160	4	1	54,682	36,886	1,066	814	671	295
Iowa	17	37	36	56			10,828	11,025	156	166	19	19
Kansas	2	5	1	9			240	2,636	4	41	22	4
Kentucky	44	98	104	154	4		41,171	14,110	1,679	513	65	3
Louisiana	4		1				1,850		2		169	
Maine	82	97	387	274	5		126,418	68,192	2,020	1,103	91	1
Maryland	18	16	30	30			11,150	6,580	114	136	268	
Massachusetts	293	271	1,837	1,660	265	190	780,774	597,969	16,354	15,869	3,360	1,359
Michigan	43	50	68	55			17,239	11,608	158	167	636	536
Minnesota	25	14	37	21			7,519	3,852	125	59	172	12
Mississippi	7	8	31	15			9,196	3,734	376	121		
Missouri	42	102	52	126			12,984	12,622	261	193	145	83
Nebraska	1										20	
New Hampshire	90	85	493	385	29	21	173,654	155,763	4,049	2,003	3,670	1,144
New Jersey	50	45	235	181	29	9	89,617	41,839	1,532	1,285	694	345
New York	342	264	1,403	1,150	88	80	530,904	269,428	5,103	3,870	5,607	1,416
North Carolina	32	49	35	57			11,502	2,374	169	30	136	1
Ohio	115	146	112	182	5	2	34,719	35,260	717	638	1,683	453
Oregon	6	10	21	21			6,282	4,248	95	56	11	9
Pennsylvania	706	654	1,299	1,155	191	124	592,036	411,647	22,173	16,991	14,571	7,342
Rhode Island	85	62	572	495	196	70	356,151	225,262	6,608	6,941	764	54
South Carolina	1	11	1	11								
South Dakota	2		3				808		19			
Tennessee	49	106	80	98			19,938	6,860	925	167		
Texas	5	1	10	2			5,000	600	175	12		
Utah	14	11	31	21			7,960	5,422	99	114	73	
Vermont	39	50	157	167			51,423	50,069	682	746	221	69
Virginia	38	48	60	54			14,398	8,486	212	154	56	
Washington	1	1		2				400		12	6	
West Virginia	32	56	42	72			7,404	8,081	153	179	10	15
Wisconsin	57	52	69	75	6		27,602	16,689	258	220	1,184	19

a Includes 3,105 hand looms.

b Includes 4,776 hand looms.

The number of sets of cards reported in 1880 was 7,581, which is now increased to 8,200 in operation, exclusive of the 612 sets previously shown as wholly idle during the census year. The number of sets of cards in operation in 1890 thus appears to have increased by 619. The actual increase of machinery capacity has been greatly beyond what these figures indicate, for the following reasons:

1. A large portion of the cards reported in 1880 were single cards, of old-fashioned make and limited capacity, running in custom carding mills for a short time in the year. In the modern manufacture a set of cards consists of three cylinders, 48, 60, and in some cases 72 inches in width, and often making 125 revolutions. The introduction of the modern card has enormously increased the capacity for production and rendered quite unsatisfactory any calculations of comparative capacity based upon the number of sets of cards. Of the 267 mills reported idle during the census year the great majority were equipped with old-fashioned machinery, which establishments have found it impossible to compete with more advanced competitors. The measure of the machinery capacity of the wool industry, as in the cotton industry, should be the spindle.

2. A further evidence of the increased capacity of our wool machinery appears in the increase of combing machines from 518 in 1880 to 855 in 1890. This increase marks the tendency in the manufacture from woolen goods to worsted goods, a tendency further shown by the increase in the value of worsted products, while the value of the products of woolen mills has declined. This is one of many evidences of the radical influence of changes in fashion upon the wool manufacture. A combing machine, with its accompanying preparatory machinery, is estimated to equal the productive capacity of from two to three sets of cards, and the increased machinery capacity arising from the substitution of combs for cards is thus greater than appears on the face.

DISAPPEARANCE OF CUSTOM CARDING MILLS.

A marked decrease in the number of woolen mills proper is observable beyond the decrease accounted for by the explanation above given. This is a continuance of the tendency observable in 1880. The census of 1870 reported 2,891 woolen mills; that of 1880 1,990; that of 1890 shows 1,312. This decrease is due to the disappearance of the custom carding mills, which formerly carded wool to be spun in families. The census of 1880 contained returns from 570 of these neighborhood carding mills, besides 233 other mills, each of which used less than 5,000 pounds of raw material per annum.

These local carding mills have now almost disappeared, while the number of fully equipped mills, supplied with machinery for all the processes of manufacture, has considerably increased.

The custom carding mill is so distinctly an adjunct of household industry that the propriety of continuing to enumerate it in statistics relating to manufacture by modern power machinery may be doubted, unless for the purpose of illustrating the gradual disappearance of the household manufacture before the advance of the factory system.

The column showing "number of establishments" is deceptive, for the reason that 2 and sometimes 3 mills, formerly reported separately, are frequently consolidated and operated under one management, from which but one report is received.

The decrease in the number of wool-hat manufacturing establishments will also be noted. This is attributable to the development of the fur-hat industry, which has been excluded from these statistics.

REDUCED VALUES—QUANTITY THE TRUE MEASURE OF PROGRESS.

There has occurred during the decade a great and general reduction in the market value of the goods covered by this report. The value of the products given, therefore, indicates a much greater quantity of production than the same value in 1880 or any previous year would have signified. The true measure of the progress of the wool industry is therefore the quantity of the products rather than the total value of those products. This quantity it will be possible to supply in detail when the tabulation is completed. It is a fact commercially well known that the year 1889-1890 was a comparatively dull year in the wool manufacture. It is now being compared with the year 1879-1880, which is generally recognized as the most prosperous year this industry has yet known in the United States.

The values are in all cases values at the mill, exclusive of the amounts paid for commissions and expenses of the sales department. These expenses are returned at \$13,346,152, which is 3.95 per cent of the total value of the product, and this sum must be added to the mill value of the goods as reported, to obtain their actual value as placed upon the market.

CONNECTICUT.

The reported value of the products of Connecticut, as shown in Table 1, is less by \$4,011,764 than that reported in 1880, notwithstanding an increase in the machinery capacity of the state. The suspicion of inaccuracy excited by this fact led the special agent to make a very careful comparison of his returns with those received by the Connecticut state bureau of statistics of labor. The comparison showed that the returns from the mills reporting to the state bureau were substantially

the same as those made to the Census Office, thus confirming, in a striking manner, the accuracy of both. The decrease is partly due to the substitution of fur for wool in the hat manufacture, and it also extends to the manufacture of woolen and worsted goods. An examination of individual returns made in 1880 leads the special agent to believe that the value of the products of Connecticut was exaggerated 10 years ago.

HOSIERY AND KNIT GOODS.

The most striking feature of Table 2 is the growth of the knit goods industry. The number of knitting machines employed increased from 14,338 in 1880 to 36,764 in 1890, and the value of the products increased from \$29,167,227 to \$67,637,442, or 132 per cent. It is believed that no single branch of industry will show a more remarkable advance over the totals presented in 1880 than the manufacture of hosiery and knit goods.

In this connection it is proper to add that the hosiery and knit goods industry is classified with the wool manufacture, in accordance with the rule of classification in mixed textiles, which groups them according to their component material of chief value. The value of the wool consumed in hosiery and knit goods in 1890 was \$8,269,418 and of the cotton \$3,714,065. If it were practicable to so take the census of this industry, the value of their product would probably be apportioned between the wool manufacture and the cotton manufacture in about the same ratio.

COTTON HOSIERY AND KNIT GOODS.

It must be considered that the statistics presented under the head of "Hosiery and knit goods" necessarily include a great branch of industry that is distinctly a cotton industry. The quantity of cotton consumed in the wool manufacture proper will be exaggerated in calculations based upon the foregoing tables, which do not take this fact into account. Of the total of 75,638,865 pounds of cotton here reported, 32,447,617 pounds were used in hosiery and knit goods, and of the total value of the products of hosiery and knit goods establishments (\$67,637,442) about \$20,000,000 was pure cotton hose or knit goods, into which not a particle of wool entered.

Attention is also directed to the fact that many woolen mills are also equipped with cotton machinery, and their report of product includes the purely cotton goods manufactured by them. In the final analysis of products by character and quantity the purely cotton goods included in the present total value of products will be separately shown.

In the following table is presented a classified statement of the quantities and values of the various raw materials and other supplies consumed in the several branches of the industry during the census year:

TABLE 5.—COMPARATIVE DETAILED STATEMENT OF RAW MATERIALS CONSUMED, 1890-1880.

INDUSTRIES.	Number of establishments reporting.	WOOL.				SHODDY.		CAMEL'S HAIR AND NOILS.		
		Quantity in condition purchased.		Total quantity of foreign and domestic wool in scoured pounds as prepared for cards. (Pounds.)	Cost of foreign and domestic wool.	Pounds.	Cost.	Pounds.	Cost.	
		Foreign. (Pounds.)	Domestic. (Pounds.)							
Total.....	1890 1880	2,503 2,689	114,116,612 73,200,698	258,757,101 222,991,531	215,001,813 171,880,831	\$98,566,004 97,681,604	61,626,261 52,163,926	\$6,935,459 8,045,895	7,689,804 1,583,119	\$1,251,367 401,789
Woolen goods.....	1890 1880	1,312 1,990	16,822,138 20,482,667	168,525,806 177,042,288	100,246,094 109,724,213	48,867,811 67,380,250	51,862,397 46,583,983	5,398,617 7,014,100	1,781,240 1,234,004	289,970 332,419
Worsted goods.....	1890 1880	143 76	37,869,023 15,667,815	59,832,451 25,461,511	54,989,746 26,334,635	28,280,287 15,235,878	2,608,831 190,800	347,006 31,300	4,411,543 207,005	672,392 40,341
Felt goods.....	1890 1880	34 26	1,689,588 709,067	5,039,495 4,204,806	4,213,230 2,733,796	1,841,382 1,624,871	1,450,384 2,406,849	179,505 383,267	68,250 70,000	3,071 7,501
Wool hats.....	1890 1880	32 43	259,925 1,864,139	4,278,623 6,107,471	3,018,114 3,597,279	1,448,799 2,644,293	308,351 1,368,562	85,963 370,963	11,688 3,911	5,610 1,375
Carpets, other than rag.....	1890 1880	175 195	54,742,234 34,008,252	2,145,632 2,029,318	35,733,137 23,563,216	9,858,307 6,975,129	653,154 90,469	43,420 12,442	1,001,929 46,300	140,175 8,808
Hosiery and knit goods.....	1890 1880	307 359	2,734,304 443,758	18,935,089 8,146,137	16,801,492 5,927,692	8,269,418 3,821,183	4,745,144 1,523,263	880,948 233,823	415,154 21,779	140,149 10,846

INDUSTRIES.	MOHAIR AND NOILS.		ALL OTHER ANIMAL HAIR.		COTTON PURCHASED.		Oil, soap, chemicals, and dye-stuffs. (Cost.)	Fuel. (Cost.)	Cost of all other materials, including yarn purchased.	Total cost of all materials.	
	Pounds.	Cost.	Pounds.	Cost.	Pounds.	Cost.					
Total.....	1890 1880	2,136,244 159,678	\$848,533 36,995	16,865,764 6,335,169	\$1,153,997 295,870	75,638,865 48,000,857	\$8,590,999 6,233,175	\$9,150,217 7,648,618	\$3,894,492 2,809,192	\$72,704,574 41,168,413	\$203,095,642 164,371,551
Woolen goods.....	1890 1880	60,533 84,080	15,991 50,837	9,619,277 4,497,524	493,492 238,046	37,158,712 24,744,964	4,213,527 3,395,569	4,602,765 4,758,498	1,711,169 1,832,703	16,591,324 15,843,189	82,184,006 100,845,611
Worsted goods.....	1890 1880	2,038,732 31,598	824,869 19,458	1,083,690 519	120,585 237	3,881,743 1,757,842	438,637 211,293	2,037,729 565,060	1,048,245 314,918	16,874,592 5,594,543	50,644,342 22,013,928
Felt goods.....	1890 1880	..... .....	..... .....	2,355,928 1,728,000	48,301 45,850	395,032 1,181,500	37,133 114,660	169,522 150,921	92,551 77,437	437,722 126,204	2,809,187 2,530,710
Wool hats.....	1890 1880	4,508	2,130	147,600 7,436	113,873 3,615	135,400 21,870	..... .....	159,700 173,040	84,904 110,985	898,807 1,459,133	2,709,791 4,785,774
Carpets, other than rag.....	1890 1880	32,302 4,000	5,456 700	3,645,096 96,540	373,823 7,604	1,755,761	187,637	1,265,267 1,309,439	447,517 263,480	16,327,429 10,347,275	28,649,031 18,984,877
Hosiery and knit goods.....	1890 1880	169 40,000	87 16,000	14,173 5,150	3,918 518	32,447,617 20,131,151	3,714,065 2,489,783	915,234 681,060	510,106 209,669	21,574,700 7,798,069	36,008,625 15,210,951

THE WOOL CONSUMPTION.

The returns of manufacturers were made under the head of foreign wool and domestic wool "In condition purchased", and also the total consumption in scoured pounds as prepared for the cards, the third column representing the sum of the first two when made ready for manufacture by scouring. The total consumption of wool, as reported in the first two columns, was 372,873,713 pounds, which appears in the third column as 215,001,813 scoured pounds, as compared with 171,880,831 scoured pounds in 1880. The apparent average shrinkage was thus 42.3 per cent. As the actual average rate of shrinkage of wool in the grease runs from 50 to 65 per cent in scouring, it appears that the quantity of wool which was already washed and scoured when purchased was large.

The total quantity of greasy wool consumed, as above indicated, is below the actual consumption of the census year for the following reasons:

1. Of the mills reported as idle a number were operated for a limited period during the year, but it was impossible to obtain any data of their operations during such period.

2. While the bulk of the wool reported was in the grease, much of it was washed, and some of it scoured. In making his return of the wool manufacture for the census of 1880, Mr. George Win. Bond, of Boston, the special agent in charge, said: "It is estimated that from 10,000,000 to 15,000,000 pounds should be added to the domestic wool reported, and from 2,000,000 to 3,000,000 pounds to the foreign to reach the true consumption". The habit of buying scoured wool has become more general during the last 10 years, and the present special agent estimates the allowance now necessary in both domestic and foreign at 25,000,000 pounds in order to reach the true consumption of wool as it originally came to market.

3. Camel's hair, mohair, and alpaca are regarded in the trade as the equivalents, the first of Class III, or carpet wools, and the others of superior grades of Class II, or combing wools. The quantity of camel's hair and noils consumed has increased from 1,583,119 pounds in 1880 to 7,689,804 pounds in 1890, and of mohair and noils from 159,678 pounds in 1880 to 2,136,244 pounds in 1890. The alpaca has been lost in the "hair of other animals", which is in the main an adulterant, and the consumption of which has increased from 6,335,169 pounds to 16,865,764 pounds.

4. The table as presented takes no cognizance of the quantity of wool contained in the imported yarns consumed by American manufacturers, the value of which is included in the amounts reported under the head "All other materials". The quantity of woollen and worsted yarn entered for consumption in the fiscal year ending June 30, 1890 (contemporaneous with the census year), was 3,229,777.83 pounds, valued at \$1,844,849.15, an average of 57.1 cents a pound, and may be accounted the equivalent of 9,000,000 pounds of greasy wool.

Adding all these items to the 373,000,000 pounds of foreign and domestic wool above shown, we have an approximate consumption of 434,000,000 pounds of wool in the grease. Similar additions must be made to the consumption reported in 1880 to institute an exact comparison and per cent of increase.

The Department of Agriculture estimated the wool clip of the year preceding the census year at 265,000,000 pounds. The foreign wools entered for consumption in the fiscal year ending June 30, 1890, were 109,902,105 pounds and in the prior year 126,181,272 pounds. The commercial estimate of the domestic clip of the year preceding the census year was 295,779,479 pounds. The census figures of consumption tend to show that the actual clip is above the estimate of the Department of Agriculture and below the commercial estimate.

CARPET WOOLS.

The quantity of foreign wool consumed in the carpet manufacture during the census year is not fully shown in Table 5, because the separate manufacture of worsted yarn for carpets is primarily classified under the worsted industry. The true consumption of foreign wool by the carpet manufacture will appear in later publications.

THE SHODDY MANUFACTURE.

So much discussion has arisen on the subject of shoddy that the census figures of this manufacture are separately presented in conjunction with the similar statistics from the census of 1880. 10 years ago the statistics of shoddy manufacture were collected on the general schedule of inquiry relating to manufactures, and were not reported in connection with wool manufacture. In 1890 this industry was for the first time made the subject of special inquiry, with the result that the details are now presented with much greater fullness; also with the certainty that no establishments known to exist have been omitted. The statistics of this manufacture will be found in Table 6, on the following page.

TABLE 6.—THE MANUFACTURE OF SHODDY, 1890-1880.

STATES.	Number of establishments reporting.	Capital.	LABOR AND WAGES.					Miscellaneous expenses.	No. of sets of cards.	Cost of materials used.	PRODUCTS.			
			Average number of hands employed.				Total amount paid in wages.				Shoddy and mungo.		Value of all other products.	Total value of all products.
			Total.	Males above 16 years.	Females above 15 years.	Children.					Pounds.	Value.		
United States.....1890	a 93	b \$4,091,207	2,266	1,369	859	38	\$840,259	\$234,327	470	\$5,875,382	35,502,054	\$5,735,934	\$1,975,781	\$7,711,715
.....1880	73	1,165,100	1,282	695	496	91	400,320			3,366,650				4,989,615
Connecticut.....1890	7	401,986	180	154	18	8	85,816	26,399	47	442,552	2,398,000	390,760	257,300	648,060
.....1880	8	86,000	139	93	38	8	35,345			261,200				347,500
Illinois.....1890	8	118,037	114	41	73		36,254	11,744	12	103,588	2,528,616	167,607	14,503	182,110
.....1880	2	22,000	31	16	12	3	12,300			74,500				100,000
Maine.....1890	(c) 1	6,000	8	4	1	3	1,905			7,200				12,000
Maryland.....1890	(d) 1	5,000	15	5	4	6	3,100			14,150				22,600
.....1880														
Massachusetts.....1890	29	939,050	435	329	106		180,748	63,475	167	1,170,080	10,018,424	1,418,817	195,642	1,614,459
.....1880	30	460,500	471	334	105	32	173,439			1,308,715				2,305,985
New Hampshire.....1890	3	33,463	25	25			11,683	1,795	12	86,816	911,763	111,848		111,848
.....1880	3	17,300	23	13	8	2	5,700			38,900				49,600
New Jersey.....1890	4	353,225	127	74	49	4	43,755	20,650	19	300,613	1,252,000	315,640	74,000	389,040
.....1880	1	35,000	30	10	5	15	25,000			80,734				137,500
New York.....1890	12	489,020	192	159	27	6	77,361	12,540	36	342,112	2,616,000	383,200	88,278	471,478
.....1880	7	32,700	78	43	32	3	33,610			321,220				407,590
Ohio.....1890	3	756,530	696	191	485	20	182,700	28,266	43	1,100,480	4,800,000	1,377,500		1,377,500
.....1880	1	250,000	246	30	216		40,000			575,000				700,000
Pennsylvania.....1890	17	663,813	306	223	83		134,852	42,029	62	1,082,114	8,007,875	1,191,378	267,107	1,458,485
.....1880	11	186,000	143	90	40	13	47,441			510,977				655,895
Rhode Island.....1890	10	256,750	146	143	3		68,014	23,578	58	1,163,935	1,711,000	274,741	1,076,051	1,350,792
.....1880	6	49,600	83	51	26	6	18,590			137,054				195,045
Vermont.....1890	(c) 2	15,000	15	6	9		3,896			37,000				56,000
.....1880														
All other states.....1890	e 5	79,333	45	30	15		19,076	3,851	14	83,092	1,258,376	104,443	2,900	107,343

a 4 idle shoddy mills not included in this table were reported as follows: Massachusetts, 1; New York, 1; Pennsylvania, 1; Rhode Island, 1, with a total capital of \$26,500, and machinery consisting of 6 cards.

b Includes hired property to the value of \$415,913.

c See group of "All other states, 1890", at end of table.

d No establishment reported in 1890.

e Includes states in which there were less than 3 establishments, in order that the operations of individual establishments may not be disclosed. These establishments were located as follows: California, 1; Maine, 2; Vermont, 1; Wisconsin, 1.

In addition to the 470 sets of cards stated in the foregoing table as operated in shoddy mills, machinery was reported for the shoddy industry as follows: 2 combing machines, 3,170 spindles, and 22 looms.

But little more than half the product of these 93 mills reporting in 1890 was shoddy, the remainder being yarns and goods of various kinds worked up out of the raw material they produced. The difference between the quantity of shoddy produced for sale in these 93 mills (35,502,054 pounds) and the quantity consumed in the wool manufacture (61,626,261 pounds) indicates the amount of shoddy manufactured for their own consumption by mills whose chief product was some description of woolen goods.

CENSUS BULLETIN.

No. 170.

WASHINGTON, D. C.

March 9, 1892.

STATISTICS OF MANUFACTURES: 1890.

CITY OF SAINT LOUIS, MISSOURI.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,

WASHINGTON, D. C., February 23, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Saint Louis, Missouri, for the year ended May 31, 1890, prepared under the direction of Mr. FRANK R. WILLIAMS, special agent in charge of Statistics of Manufactures. The several tables contain a full statistical presentation of the respective classes of industry under the general heads of "Capital invested", "Miscellaneous expenses", "Labor and wages", "Materials used", and "Goods manufactured". The statements contained in this bulletin are preliminary and subject to modification for final report; therefore fair criticism and suggestions are invited, with a view to such revision and correction as may appear necessary.

It is proposed to publish from time to time bulletins in a form similar to this for all principal cities.

Subjoined will be found a comparative statement of manufacturing industries in the city of Saint Louis for the census years 1890 and 1880:

GENERAL HEADS.	1890.	1880.
Number of establishments reported.....	6,148	2,924
Number of hands employed.....	93,610	41,825
Capital invested	\$140,775,392	\$50,832,985
Miscellaneous expenses.....	\$17,587,215	
Wages paid.....	\$53,165,242	\$17,743,532
Cost of materials used.....	\$122,010,805	\$75,379,867
Value at factory of goods manufactured.....	\$228,714,317	\$114,333,375

In comparing the results with the returns of 1880 it will be observed that the item of "Miscellaneous expenses" is given for 1890 only. No previous census inquiry has embraced the cost incurred in manufacturing operations other than wages paid and materials used. This fact should be borne in mind in comparing industrial statistics of 1880 with those of 1890. Differences in method of inquiry and the inclusion in the Eleventh Census of certain industries entirely omitted in the Tenth Census account in part for the apparent increase shown above. The true increase is more nearly

shown by the following comparative table, which does not include the following classes of industry omitted in the census of 1880, viz: china and pottery, decorating; clothing, women's, dressmaking; druggists' preparations, not including prescriptions; gas, manufactured, heating and illuminating, and millinery, custom work:

GENERAL HEADS.	1890.	1880.	Percentage of increase.
Number of establishments reported	5,453	2,924	86.49
Number of hands employed.....	90,966	41,825	117.49
Capital invested.....	\$133,292,699	\$50,832,885	162.22
Miscellaneous expenses.....	\$17,381,274		
Wages paid.....	\$52,170,536	\$17,743,532	194.03
Cost of materials used	\$120,887,355	\$75,379,867	60.37
Value at factory of goods manufactured	\$225,500,657	\$114,333,375	97.23

Attention is called to the presentation in the following report of labor and wage statistics and the classification of labor employed. The "average wages" paid to all classes employed has always proved a stumbling block in census reports. It is believed the Eleventh Census, in showing the average term of employment, the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, has taken a step in advance which will be appreciated by students of these and kindred statistical data.

Robert S. Forster

Superintendent of Census.

STATISTICS OF MANUFACTURES: 1890.

CITY OF SAINT LOUIS, MISSOURI.

The act of Congress approved March 1, 1889, providing for the Eleventh Census, directs the Superintendent of Census to investigate and ascertain the statistics of the manufacturing industries of the country. Enumerators appointed under the provisions of the said act were charged with the duty of personally visiting every establishment of productive industry in their respective districts (with certain exceptions hereafter noted) and obtaining distinct reports from each establishment while engaged in their work relating to population and agriculture. The law required this work to be completed within a period of 30 days. By virtue of the authority conferred by section 18 of the said act the collection of statistics of all establishments of productive industry located in certain cities and towns was withdrawn from enumerators and assigned to special agents, who were appointed and entered upon their duties as soon after the completion of the work assigned the general enumerators as was practicable.

Special schedules of inquiry were prepared for 27 principal industries and one general schedule for the reports of establishments the operations of which were not embraced by such special schedules. The schedules were uniform with respect to securing full statistical information as to capital employed, cost of manufacture, and value of product.

The collection of statistics of certain industries having peculiar characteristics was assigned to experts in such industries, and local agents and enumerators were instructed not to visit establishments engaged in such industries.

The instructions issued by this office to enumerators and special agents relating to the collection of statistics of manufactures were as follows:

It shall be their duty personally to visit every establishment of productive industry in their respective districts (except as noted) and to obtain the required information in the case of each manufacturing establishment.

The term "establishment of productive industry" must be understood in its broadest sense to embrace not only mills and factories, but also the operation of all small establishments and the mechanical trades.

Restaurants, saloons, barber shops, the compounding of individual prescriptions by druggists and apothecaries, the operations of mercantile establishments, transportation corporations and lines, and professional services (except mechanical dentistry) are not considered as coming within the meaning of the law in this connection.

Great care must be taken by special agents and enumerators to guard against the omission from their returns of any establishment that comes properly within the scope of this investigation. * * * They should have their eyes open to every indication of the presence of productive industry, and should supplement personal observation by frequent and persistent inquiry.

Wherever practicable, establishments of productive industry have been credited to the locality in which the works were located.

The tabulated statements include only establishments which reported a product of \$500 or more in value during the census year.

A specific statement is made for each class of industry reports for which were received from 3 or more establishments. Industries in which less than 3 establishments are engaged are stated in a group, in order that the operations of individual establishments may not be disclosed.

For the purpose of ready comparison, the first table presents the statistics of 1880 and 1890 in the form of publication used in the reports for 1880. In comparing industrial statistics for 1880 and 1890 it should be borne in mind that radical changes have been made in 1890, as well in the form and scope of inquiry as in the method of presentation.

In order to obviate, as far as practicable, the objections interposed that the results of previous census inquiries respecting manufactures were misleading in various particulars, it has been the aim of this office in formulating its schedules to construct them with the view of obtaining more accurate results. The objections referred to have been mainly directed at the statistics presented under the heads of "Capital invested" and "Labor and wages". Owing to the tendency of manufacturers to understate the amount of capital employed, obtaining correct data relating thereto is the most difficult duty pertaining to the collection of industrial statistics.

The form of question respecting capital used at the census of 1880 was as follows: "Capital (real and personal) invested in the business"? It became evident from the results then obtained that this question was neither sufficiently comprehensive nor properly understood, and therefore the full amount of capital employed in productive industry was not reported, thus forming an erroneous basis for deductions.

The word "capital", as used for the purpose of census inquiry respecting manufactures, means that portion of the wealth of the country employed in productive industry. Capital is the product of former labor used to provide the materials and tools required for the various processes of manufacture and for payment of wages to the employed. The present census inquiry is based upon this definition and intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property be owned, borrowed, or hired.

The various subheads into which the general inquiry is divided will be found in Table 2, and they are believed to embrace all the amounts which form the aggregate of capital employed.

PROPERTY HIRED.

The amount of capital reported under the head of "Property hired" represents the value of that class of property held in tenancy. The cost to the manufacturer for this class of capital is shown in Table 3, under the head of "Rent".

In the following table, making a comparison with the statistics of 1880, the value of the property hired is not included in the capital reported in 1890, because it was not included in the report of 1880:

TABLE 1. COMPARATIVE STATEMENT FOR 1880 AND 1890 OF STATISTICS OF MANUFACTURES. (a)

MECHANICAL AND MANUFACTURING INDUSTRIES.	Year.	Number of establishments reporting. (b)	Capital. (b)	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages.	Cost of materials used.	Value of products.
				Males above 16 years.	Females above 16 years.	Children.			
All industries.....	1880	2,024	\$50,832,885	33,080	4,761	3,084	\$17,743,532	\$75,379,867	\$114,333,375
	1890	6,148	140,775,302	76,374	14,837	2,300	53,165,242	122,010,805	228,714,317
Agricultural implements.....	1880	7	434,000	443		5	190,170	478,140	856,430
	1890	4	686,484	511	5	24	345,360	447,677	1,107,454
Artificial feathers and flowers (c).....	1880	3	36,000	9	50	15	25,450	66,000	147,250
	1890								
Artificial limbs. (d) (See also Surgical appliances.)	1880								
	1890	3	2,650	6			6,332	2,000	10,500
Awnings, tents, and sails.....	1880	9	127,200	47	165	5	54,850	249,185	388,940
	1890	16	323,450	132	191	3	118,645	352,459	602,330
Babbitt metal and solder (d).....	1880								
	1890	6	341,400	76	1	1	59,328	966,349	1,120,650
Bagglog, flax, hemp, and jute (e).....	1880	3	370,000	149	161	70	150,216	545,900	867,395
	1890								
Bags, paper.....	1880	4	88,250	12	30	42	29,700	174,800	231,500
	1890	3	174,425	39	30	1	39,314	306,728	431,228
Baking and yeast powders. (See also Chemicals.)	1880	8	111,700	48	26	10	39,714	182,000	323,500
	1890	14	373,181	79	71	1	73,176	201,288	493,772
Baskets and rattan and willow ware.....	1880	7	9,015	13			6,140	3,960	18,020
	1890	15	57,104	75	18	14	44,793	49,582	117,891
Bellovs (e).....	1880								
	1890	3	20,225	17			12,732	19,375	47,000
Bicycles and tricycles, repairing (e).....	1880								
	1890	5	4,005	17		1	6,103	2,900	11,100
Blacksmithing and wheelwrighting. (See also Carriages and wagons.)	1880	220	276,095	453		9	236,652	244,230	757,030
	1890	219	406,121	724	3	16	476,985	224,672	898,177
Blading (d).....	1880								
	1890	3	6,072	11		2	6,990	6,637	26,400
Bookbinding and blank-book making. (See also Printing and publishing.)	1880	10	132,590	148	59	7	80,700	105,600	257,087
	1890	14	198,018	194	180	7	166,735	106,149	336,227
Boot and shoe uppers.....	1880	3	12,000	13			7,032	17,400	29,200
	1890	5	18,950	21	18		22,524	35,128	63,800
Boots and shoes, including custom work and repairing. (f)	1880	184	679,630	658	217	197	425,664	874,812	1,634,594
	1890	501	3,604,256	2,250	963	134	1,519,114	2,269,059	4,926,693
Bottling. (e) (See also Mineral and soda waters; Liquors, malt.)	1880								
	1890	15	163,155	77		6	55,972	151,853	277,006
Boxes, cigar (e).....	1880	6	57,550	51	22	11	34,100	47,700	105,600
	1890								
Boxes, fancy and paper.....	1880	6	21,500	27	44	19	23,300	45,800	91,200
	1890	8	141,195	90	288	7	105,810	368,163	624,520
Boxes, wooden, packing. (See also Lumber, planing mill products.)	1880	11	40,600	80		2	33,001	75,430	140,400
	1890	27	499,303	500	62	48	330,652	594,937	1,172,859
Brass castings. (See also Plumbers' materials.)	1880	14	180,100	149		8	70,087	395,275	570,450
	1890	11	304,604	273		1	181,762	312,588	643,486
Bread and other bakery products.....	1880	195	719,070	614	57	68	312,913	1,072,843	2,575,350
	1890	291	1,244,167	1,146	204	24	796,247	2,173,432	3,597,392
Brick and tile. (See also Clay and pottery products.)	1880	45	727,250	787		153	307,581	197,588	701,032
	1890	38	2,531,128	1,760	4	189	877,619	380,103	1,691,692
Bridges (d).....	1880								
	1890	6	276,156	480			297,116	500,300	1,019,519

a This table only embraces establishments which reported goods manufactured to the value of \$500 or over.

b Reports stating the amount of invested capital were received from 4 establishments not in operation during the census year 1890. The data contained in such reports are not included in the foregoing table, but the capital invested is classified as follows: foundry and machine-shop products, \$322,590; iron and steel, \$1,500,000; wood preserving, \$90,500. Total, \$1,880,000.

c See group of "All other industries", 1880 (note b), at end of table.

d See group of "All other industries", 1880 (note a), at end of table.

e No reports received for this industry in 1880.

f The statement for 1890 includes 477 establishments engaged in custom work and repairing; also, 24 establishments reported as operating factories. A distinct report is made for each class in the tables following for 1890.

TABLE 1.—COMPARATIVE STATEMENT FOR 1880 AND 1890, ETC.—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Year.	Number of establishments reporting.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages.	Cost of materials used.	Value of products.
				Males above 16 years.	Females above 15 years.	Children.			
Brooms and brushes.....	1880 1890	25 41	\$95,175 166,446	117 234	2 26	110 47	\$83,349 121,279	\$140,770 144,965	\$281,280 343,305
Carpentering.....	1880 1890	185 407	361,840 4,364,659	1,108 3,905	..... 1	9 30	667,900 3,011,377	1,585,094 5,794,199	3,005,411 10,364,922
Carpets, rag.....	1880 1890	3 15	350 3,978	2 16	..... .....	..... 2	450 7,324	900 6,490	5,100 16,682
Carriages and sleds, children's (a).....	1880 1890	..... 3	..... 73,910	..... 61	..... 16	..... .....	..... 57,052	..... 61,445	..... 161,180
Carriage and wagon materials (b).....	1880 1890	3	126,000	189 .....	..... .....	3	91,638	184,440	264,600
Carriages and wagons. (See also Blacksmithing and wheelwrighting.)	1880 1890	39 114	740,050 2,523,448	1,012 2,250	8 29	51 4	447,831 1,279,592	811,865 1,778,240	1,614,286 3,603,795
Cars, railroad, street, and repairs (c).....	1880 1890	7 24	314,200 2,453,443	601 2,908	..... 11	..... 6	293,384 1,850,460	732,460 3,313,939	1,100,809 5,641,252
Cheese and butter, urban dairies (d).....	1880 1890	..... 6	..... 28,124	..... 16	..... 1	..... .....	..... 10,108	..... 66,471	..... 90,856
Chemicals. (See also Baking and yeast powders; Fertilizers; Patent medicines and compounds.)	1880 1890	15 16	696,000 1,560,063	216 456	57 127	28 6	123,940 344,406	665,365 1,559,707	1,166,743 2,672,749
China decorating. (e) (See also Clay and pottery products.)	1880 1890	..... 3	..... 10,985	..... 13	..... 6	..... .....	..... 7,480	..... 2,882	..... 13,000
Clay and pottery products. (f) (See also Brick and tile.)	1880 1890	7 13	184,500 933,996	108 723	..... 2	10 10	49,090 391,204	109,385 234,438	234,215 899,855
Cleansing and polishing preparations (d).....	1880 1890	..... 4	..... 13,530	..... 22	..... 9	..... 1	..... 14,973	..... 34,100	..... 63,105
Clothing, men's, wholesale (g).....	1880 1890	109 348	1,351,335 5,763,150	1,191 3,509	1,652 3,690	12 103	779,908 2,976,954	1,895,342 4,321,978	3,425,167 9,630,688
Clothing, women's.....	1880 1890	13 11	140,800 300,520	75 63	451 432	30 4	119,775 151,945	238,700 297,752	483,000 541,894
Clothing, women's, dressmaking (e).....	1880 1890	..... 472	..... 261,278	..... 50	..... 1,370	..... 27	..... 446,881	..... 445,112	..... 1,176,078
Coffee and spices, roasting and grinding.....	1880 1890	6 9	230,000 816,588	90 190	2 28	4 6	41,840 143,432	391,500 2,076,771	568,000 2,466,392
Coffins and burial cases, trimming and finishing (d).....	1880 1890	..... 27	..... 126,703	..... 80	..... 1	..... .....	..... 52,332	..... 94,688	..... 202,207
Coffins, burial cases, and undertakers' goods.....	1880 1890	5 5	30,500 346,762	23 231	4 22	..... .....	12,530 118,352	109,200 171,430	157,396 436,684
Confectionery.....	1880 1890	31 48	307,560 1,078,426	207 587	185 566	21 89	159,640 514,453	774,790 1,361,930	1,158,185 2,462,037
Cooperage.....	1880 1890	78 71	493,295 1,042,643	860 1,092	..... 1	88 15	377,056 587,105	798,262 1,033,102	1,431,405 1,912,779
Cordage and twine.....	1880 1890	14 7	12,875 322,124	37 98	..... 54	40 63	16,423 89,457	33,250 474,497	67,604 664,305
Cordials and syrups (a).....	1880 1890	..... 3	..... 3,130	..... 5	..... .....	..... .....	..... 4,470	..... 17,451	..... 27,680
Corsets.....	1880 1890	3 8	720 81,787	2 60	3 164	..... .....	1,450 68,113	2,410 51,625	6,460 188,450
Cotton goods (b).....	1880 1890	3	825,500	106	171	163	86,325	335,381	453,295
Cutlery and edge tools. (See also Hardware; Tools.)	1880 1890	4 9	4,000 76,875	20 83	..... 11	..... .....	9,596 59,983	8,450 28,087	24,400 177,555

a See group of "All other industries", 1880 (note a), at end of table.

b See group of "All other industries", 1890 (note b), at end of table.

c The statement for 1890 in the foregoing table comprises 24 establishments which are reported in the tables following as cars and general shop construction and repairs by steam railways, 4; cars and general shop construction and repairs by street railways, 14; cars, steam railroad, not including operations of railway companies, 3.

d No reports received for this industry in 1890.

e No inquiry respecting this industry in 1890.

f This class includes reports for the manufacture in 1890 of drain and sewer pipe by 3 establishments; stone and earthen ware, 7 establishments; terra cotta ware, 2 establishments, and white ware and pottery, 1 establishment. In 1880 there were but 7 establishments against terra cotta ware.

g The statement for 1890 in the foregoing table comprises 348 establishments reported in the tables following against "clothing, men's, factory product, 48; clothing, men's, custom work and repairing, 300".

TABLE 1.—COMPARATIVE STATEMENT FOR 1880 AND 1890, ETC.—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Year.	Number of establishments reporting.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages.	Cost of materials used.	Value of products.
				Males above 16 years.	Females above 15 years.	Children.			
Dentistry, mechanical	1880	8	\$6,700	5	3	1	\$1,184	\$3,400	\$32,400
	1890	52	43,779	96	8	3	65,894	28,026	140,527
Druggists' preparations, not including prescriptions. (a) (See also Perfumery and cosmetics.)	1880								
	1890	138	227,039	216	7	8	103,741	117,927	344,013
Dyeing and cleaning	1880	5	16,450	17	6	1	6,950	2,650	23,900
	1890	33	93,725	131	40	6	98,061	25,588	168,284
Dyeing and finishing of textiles (b)	1880	3	16,000	14	5	4	7,500	5,500	22,200
	1890								
Electrical apparatus, instruments, and supplies. (c)	1880								
	1890	35	700,247	371	19	9	265,411	236,689	674,950
Electric lights and power (c)	1880								
	1890	4	2,685,286	214			159,348	130,153	428,090
Electroplating	1880	8	17,600	29	1	2	12,725	9,420	43,200
	1890	9	40,845	93	2	2	49,165	14,490	88,788
Engraving and diesinking	1880	7	9,675	14		1	7,165	10,750	30,000
	1890	14	40,730	76	2	3	50,023	18,427	96,067
Engraving, steel, including plate printing. (See also Lithographing and engraving.)	1880	10	72,100	47	2	3	25,050	62,500	120,900
	1890	3	59,672	31	3	3	20,707	11,015	47,102
Engraving, wood	1880	3	12,200	22		2	11,350	1,370	21,070
	1890	14	23,677	75	3	2	46,151	7,340	74,987
Fancy articles, not elsewhere specified (c)	1880								
	1890	13	31,972	16	63	4	32,680	24,095	88,624
Fertilizers. (d) (See also Chemicals; Slaughtering and meat packing.)	1880								
	1890	4	204,058	94	1		49,416	124,823	212,716
Files (c)	1880	6	38,900	35			17,142	7,870	34,300
	1890								
Flavoring extracts (d)	1880								
	1890	3	33,128	11			10,358	38,239	61,799
Flouring and grist mill products	1880	24	2,067,500	608			488,879	12,031,364	13,783,178
	1890	21	4,320,955	705	17	2	590,577	10,998,006	12,641,000
Food preparations	1880	4	17,100	13			4,800	11,375	39,840
	1890	16	224,846	140	47	2	86,522	242,519	477,160
Foundry and machine shop products. (f) (See also Iron work, architectural and ornamental; Steam fittings and heating apparatus.)	1880	62	3,605,713	3,433		33	1,854,046	2,700,844	5,952,770
	1890	163	10,184,020	6,264	35	46	3,877,946	5,095,621	11,945,493
Fruits and vegetables, canning and preserving	1880	3	31,500	38	8	1	11,614	54,902	123,250
	1890	4	330,703	117	71	21	110,020	1,038,884	1,347,951
Fur goods. (c) (See also Hats and caps.)	1880								
	1890	4	118,869	34	56	1	41,165	96,386	191,840
Furniture and upholstery (g)	1880	72	1,120,727	1,092	15	74	632,705	1,144,925	2,128,410
	1890	115	2,283,343	1,807	62	96	1,209,149	1,817,298	3,827,109
Furniture, chairs (d)	1880								
	1890	6	819,863	714	88	13	400,683	262,540	831,437
Glass	1880	5	280,000	395		220	261,098	238,046	597,277
	1890	5	842,354	650	1	49	364,709	314,756	838,930
Glass, cutting, staining, and ornamenting	1880	3	11,000	16			9,450	7,100	27,000
	1890	9	78,926	174	5		73,844	76,279	194,859
Gloves and mittens. (See also Hosiery and knit goods.)	1880	3	13,000	20	35	4	18,000	19,000	46,000
	1890	3	24,475	24	23	1	18,836	26,772	53,247
Glue (c)	1880	5	34,350	24		4	13,220	41,575	73,800
	1890								
Grease and tallow	1880	6	43,250	20			9,150	66,220	167,300
	1890	10	78,325	61			43,598	342,522	426,920

a No inquiry respecting this industry in 1880.

b No reports received for this industry in 1890.

c No reports received for this industry in 1890.

d See group of "All other industries", 1880 (note a), at end of table.

e See group of "All other industries", 1890 (note b), at end of table.

f Reports stating the amount of invested capital were received from 4 establishments not in operation during the census year 1890. The data contained in such reports are not included in the foregoing table, but the capital invested is classified as follows: foundry and machine shop products, \$322,500; iron and steel, \$1,500,000; wood preserving, \$36,500. Total, \$1,869,000.

g The statistics presented above for 115 establishments in 1890 represent the aggregate of 82 reports for furniture, cabinet making, repairing, and upholstery, and 33 reports for furniture and factory products, which are specifically presented in the tables following for 1890.

TABLE 1.—COMPARATIVE STATEMENT FOR 1880 AND 1890, ETC.—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Year.	Number of establishments reporting.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages.	Cost of materials used.	Value of products.
				Males above 16 years.	Females above 15 years.	Children.			
Hairwork.....	1880 1890	8 9	\$17,600 64,505	6 10	23 83	..... .....	\$7,375 37,490	\$19,350 51,598	\$40,700 125,890
Hand stamps (a).....	1880 1890	5 5	24,070	20	1	6	16,004	18,816	44,400
Hardware. (b) (See also Cutlery and edge tools.)	1880 1890	10	210,150	111	.....	1	51,321	102,256	188,862
Hats and caps, not including wool hats. (See also Fur goods.)	1880 1890	9 8	69,400 39,394	49 66	82 31	4 4	42,865 58,238	77,740 58,928	177,581 135,352
Hosiery and knit goods (c).....	1880 1890	7	32,247	7	118	.....	34,477	29,840	81,445
Ink (d).....	1880 1890	3	9,600	8	.....	.....	3,568	7,290	16,234
Instruments, professional and scientific.....	1880 1890	4 8	54,600 121,050	22 62	.....	1	12,700 37,318	35,725 9,763	81,450 72,900
Iron and steel (e) (f).....	1880 1890	10 6	5,960,600 2,658,199	2,158 939	.....	110 1	616,575 526,998	2,823,058 1,583,648	3,950,530 2,513,761
Iron and steel: bolts, nuts, washers, and rivets.	1880 1890	4 4	235,000 225,253	123 148	.....	14 26	60,498 48,767	301,937 147,823	493,560 248,941
Ironwork, architectural and ornamental. (See also Foundry and machine shop products.)	1880 1890	10 23	57,400 1,732,748	78 1,003	.....	5 9	38,610 644,127	57,220 880,089	181,010 2,023,326
Jewelry. (See also Watch, clock, and jewelry repairing.)	1880 1890	8 10	52,000 132,200	55 162	.....	7 8	37,600 131,422	98,000 158,098	189,500 385,040
Kaolin and other earth grinding (g).....	1880 1890	3	104,463	55	.....	.....	30,260	48,816	133,400
Kindling wood (h).....	1880 1890	11	14,500	31	.....	3	13,350	11,090	30,140
Labels and tags.....	1880 1890	2 4	10,300 16,875	12 12	.....	5	7,868 11,100	10,910 4,706	25,500 19,600
Lamps and reflectors.....	1880 1890	7 4	291,600 135,350	139 132	.....	20 15	74,139 53,242	376,540 73,916	519,300 184,682
Leather goods (i).....	1880 1890	3	16,253	23	5	.....	16,636	18,278	43,800
Leather, tanned and curried (j).....	1880 1890	24 15	182,700 682,753	122 323	3	7	55,786 192,101	540,723 1,104,567	682,380 1,502,680
Lightning rods (k).....	1880 1890	3	54,000	16	.....	.....	7,250	14,491	30,292
Lime and cement.....	1880 1890	4 4	64,500 76,136	33 96	.....	.....	13,800 40,281	32,925 46,467	63,200 102,321
Liquors, malt.....	1880 1890	23 8	4,184,600 15,910,417	1,230 2,752	.....	105 115	634,988 2,278,194	2,565,074 6,289,053	4,535,680 16,185,560
Liquors, vinous.....	1880 1890	3 7	380,000 349,040	30 69	.....	3	18,830 58,042	52,000 68,803	131,000 208,300
Lithographing and engraving. (See also Engraving, steel; Photolithographing and engraving; Printing and publishing.)	1880 1890	5 9	71,500 205,850	94 181	6 44	17	51,265 122,364	83,344 69,158	214,989 244,275
Lock and gun smithing.....	1880 1890	17 46	5,325 50,304	18 89	.....	1 1	8,514 57,568	4,970 23,882	24,714 115,048
Looking-glass and picture frames.....	1880 1890	19 31	323,900 311,399	129 256	1 11	22 38	80,251 170,876	102,825 209,092	268,682 622,169
Lumber and other mill products from logs or bolts.	1880 1890	3 7	620,000 2,767,012	119 840	.....	14	72,086 363,004	251,600 875,654	412,000 1,680,832

a No reports received for this industry in 1880.

b Most of the establishments reported in this class in 1880 are included in more specific classes in 1890.

c See group of "All other industries", 1880 (note a), at end of table.

d See group of "All other industries", 1890 (note b), at end of table.

e Reports stating the amount of invested capital were received from 4 establishments not in operation during the census year 1890. The data contained in such reports are not included in the foregoing table, but the capital invested is classified as follows: foundry and machine shop products, \$322,590; iron and steel, \$1,500,000; wood preserving, \$66,500. Total, \$1,889,090.

f Includes the operations of blast furnaces, iron and steel rolling mills, Bessemer steel works, and pig and scrap bloomeries. Saint Louis had neither open-hearth steel works nor crucible steel works in 1880 or 1890. There was one bloomery in 1880, but none in 1890.

g Leather, tanned, and leather, curried, constituted two distinct classes in the inquiry of 1880; consequently distinct reports for each were required from an establishment engaged in both branches of leather manufacture. This fact accounts for the apparent excess in the number of establishments reported in 1880, which embraces 7 reports for currying and 17 reports for tanning, the combined operations being in fact conducted by 17 establishments.

TABLE 1.—COMPARATIVE STATEMENT FOR 1880 AND 1890, ETC.—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Year.	Number of establishments reporting.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages.	Cost of materials used.	Value of products.
				Males above 16 years.	Females above 15 years.	Children.			
Lumber, planing mill products, including sash, doors, and blinds. (See also Boxes, wooden, packing; Refrigerators; Wood, turned and carved.)	1880	21	\$858,545	996		65	\$427,930	\$1,172,613	\$1,948,606
	1890	23	1,860,036	1,531		51	976,052	1,568,942	3,061,178
Malt. (a) (See also Liquors, malt).....	1880								
	1890	11	977,918	129			106,547	499,992	725,924
Mantels, slate, marble, and marbleized (a).....	1880								
	1890	4	72,460	67			48,053	36,470	99,810
Marble and stone work. (See also Monuments and tombstones.)	1880	56	237,825	473		18	237,207	245,707	707,721
	1890	44	403,119	495			347,102	581,769	1,186,060
Masonry, brick and stone. (See also Plastering and stucco work.)	1880	68	82,375	386			206,389	216,321	575,700
	1890	160	4,435,578	4,601		2	3,177,469	4,558,128	9,122,962
Mattresses and spring beds. (See also Furniture and upholstering.)	1880	8	21,750	50		19	24,934	75,436	135,300
	1890	14	269,757	238		22	171,182	427,270	737,174
Millinery and lace goods (b).....	1880								
	1890	3	22,100	12		42	18,727	60,670	93,500
Millinery, custom work (c).....	1880								
	1890	81	168,391	63		489	187,171	235,371	533,972
Mineral and soda waters. (See also Bottling).....	1880	11	112,100	97		5	45,846	58,090	193,000
	1890	28	342,032	265		27	150,850	124,242	454,838
Models and patterns.....	1880	3	11,700	10			6,400	1,420	16,400
	1890	10	25,864	50			34,332	5,614	45,334
Monuments and tombstones. (d) (See also Marble and stone work.)	1880								
	1890	23	273,115	190		1	121,268	147,506	355,417
Musical instruments and materials, not elsewhere specified.	1880	8	60,000	10		1	5,350	8,775	28,250
	1890	14	22,192	19		1	10,238	4,359	28,715
Musical instruments, organs, and materials.....	1880	3	10,600	9			6,000	5,200	16,600
	1890	4	38,520	27			24,504	13,990	46,340
Musical instruments, pianos, and materials.....	1880	7	21,350	19			10,398	8,060	27,200
	1890	3	13,800	18			11,606	4,848	23,600
Oil, lard. (e) (See also Oil, lubricating).....	1880	3	96,000	25			13,050	505,750	539,000
	1890								
Oil, linseed (b).....	1880								
	1890	3	1,018,562	156			131,238	1,118,707	1,438,201
Oil, lubricating. (a) (See also Oil, lard).....	1880								
	1890	8	129,605	45		2	49,808	166,006	350,170
Optical goods (b).....	1880								
	1890	5	14,875	12		1	9,866	5,288	19,500
Painting and paper hanging.....	1880	119	309,945	863		15	393,932	549,654	1,255,532
	1890	331	867,194	2,140		35	1,403,759	872,231	2,841,041
Paints. (See also Varnish).....	1880	13	1,688,350	522		10	250,532	2,006,450	2,570,860
	1890	14	3,498,107	448		24	329,608	1,998,404	3,163,818
Paper patterns (b).....	1880								
	1890	3	2,674	4		1	4,400	3,166	11,450
Patent medicines and compounds. (See also Druggists' preparations.)	1880	24	1,383,200	198		87	134,696	482,235	1,145,060
	1890	53	1,601,999	360		22	373,200	676,589	2,196,416
Paving and paving materials (a).....	1880								
	1890	15	158,141	239			134,507	219,708	421,961
Perfumery and cosmetics. (a) (See also Druggists' preparations.)	1880								
	1890	4	36,855	11		49	26,535	30,175	107,400
Photography.....	1880	25	86,050	59		18	43,130	48,950	170,064
	1890	47	147,784	193		55	156,919	82,779	384,782
Pickles, preserves, and sauces.....	1880	3	48,200	53		25	41,999	134,200	211,200
	1890	9	482,372	234		98	147,394	603,005	958,519
Pipes, tobacco (b).....	1880								
	1890	5	37,870	50		6	23,239	12,445	49,430
Plastering and stucco work (f).....	1880								
	1890	64	177,244	334			261,665	164,944	551,737

a See group of "All other industries", 1880 (note a), at end of table.
b No reports received for this industry in 1880.
c No inquiry respecting this industry in 1880.

d Reported with marble and stone work in 1880.
e No reports received for this industry in 1890.
f Included with masonry, brick and stone, in 1880.

TABLE 1.—COMPARATIVE STATEMENT FOR 1880 AND 1890, ETC.—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Year.	Number of establishments reporting.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages.	Cost of materials used.	Value of products.
				Males above 16 years.	Females above 15 years.	Children.			
Plumbers' materials (a).....	1880								
	1890	4	\$1,250,456	490	1	\$842,358	\$857,800	\$1,465,371	
Plumbing and gas fitting.....	1880	61	115,775	239		126,099	214,958	494,683	
	1890	124	581,067	1,005		701,265	648,389	1,051,169	
Printing and publishing, (b) (See also Book-binding and blank-book making.)	1880	101	2,480,060	1,978	175	1,239,299	1,249,094	3,668,287	
	1890	213	5,192,065	4,257	812	3,423,806	2,578,016	8,551,249	
Pumps, not including steam pumps (c).....	1880	9	529,850	109		65,900	701,570	926,750	
	1890								
Refrigerators. (See also Lumber, planing mill products.)	1880	3	28,700	86		42,950	183,300	309,500	
	1890	3	504,850	250	19	151,490	1,110,913	1,376,179	
Regalia and society banners and emblems (d)..	1880								
	1890	4	14,540	19	18	16,734	3,580	26,750	
Roofing and roofing materials. (See also Tinsmithing, etc.)	1880	5	58,760	75		48,000	81,900	177,800	
	1890	62	804,960	603	8	398,144	667,345	1,452,875	
Saddlery and harness.....	1880	92	1,370,350	1,143	4	533,442	1,382,074	2,364,858	
	1890	119	2,160,963	1,179	11	810,044	1,347,982	2,803,961	
Sausage. (c) (See also Slaughtering and meat packing, wholesale.)	1880								
	1890	13	41,848	39	2	24,462	44,022	82,806	
Scales and balances (a).....	1880								
	1890	4	13,895	25		16,730	4,418	27,000	
Sewing machines, re-pairing (a).....	1880								
	1890	8	30,877	13	2	8,522	5,785	22,007	
Shipbuilding.....	1880	7	243,000	279		137,380	265,592	506,712	
	1890	4	122,300	352		160,848	132,966	400,995	
Shirts, factory product. (See also Furnishing goods, men's.)	1880	17	122,160	52	274	84,416	127,100	278,700	
	1890	25	176,935	81	398	152,236	275,183	534,895	
Show cases.....	1880	4	23,000	74	4	28,499	11,750	89,100	
	1890	4	43,560	66	1	24,160	81,410	138,600	
Slaughtering and meat packing, wholesale (f)..	1880	32	1,243,000	564		269,763	7,085,909	8,424,064	
	1890	60	3,274,671	715	43	536,237	9,860,939	12,047,316	
Soap and candles.....	1880	15	718,927	253	2	95,561	1,262,701	1,607,541	
	1890	10	806,301	295	9	136,437	917,150	1,203,406	
Steam fittings and heating apparatus (d) (See also Foundry and machine shop products.)	1880								
	1890	9	254,115	153	2	118,805	294,868	514,517	
Stencils and brands.....	1880	6	4,750	11		5,925	5,565	21,425	
	1890	5	6,910	10		7,431	2,540	13,492	
Sugar and molasses, refining (d).....	1880								
	1890	3	121,500	28	4	27,944	340,650	453,000	
Surgical appliances. (d) (See also Artificial limbs.)	1880								
	1890	7	28,201	13	6	11,550	7,536	33,200	
Tinsmithing, coppersmithing, and sheet-iron working. (See also Roofing and roofing materials; Stamped ware.)	1880	123	421,825	517	13	233,746	565,208	1,110,959	
	1890	132	1,132,588	1,070	13	643,236	1,115,173	2,369,510	
Tobacco, chewing, smoking, and snuff.....	1880	21	1,146,200	763	146	402,959	3,950,856	4,813,769	
	1890	12	3,894,320	1,430	1,361	1,352,906	7,638,608	14,354,165	
Tobacco, cigars, and cigarettes.....	1880	291	272,925	576	6	265,967	312,725	888,963	
	1890	296	787,520	1,094	78	623,633	655,834	1,553,401	
Tools, not elsewhere specified. (a) (See also Cutlery and edge tools; Hardware.)	1880								
	1890	9	257,935	149	2	99,173	130,932	287,532	
Trunks and valises.....	1880	14	105,500	156		73,125	205,775	340,560	
	1890	15	231,730	234		160,810	195,037	501,150	
Umbrellas and canes.....	1880	4	1,400	3		1,020	1,150	4,370	
	1890	9	27,505	23	10	20,701	48,234	83,802	
Upholstery materials (d).....	1880								
	1890	4	116,325	75	17	68,370	75,825	188,500	

a No reports received for this industry in 1880.

b The statement for 1890 includes 105 establishments reported in the tables following as engaged in printing and publishing, book and job; also 4 establishments reported under the head of printing and publishing, music, and 104 establishments reported under the head of printing and publishing, newspapers and periodicals.

c See group of "All other industries", 1890 (note b), at end of table.

d See group of "All other industries", 1880 (note a), at end of table.

e Included with slaughtering and meat packing in 1880.

f The statement for 1890 in the foregoing table comprises 60 establishments which are reported in the tables following as slaughtering, wholesale, 4; slaughtering and meat packing, wholesale, 56.

TABLE 1.—COMPARATIVE STATEMENT FOR 1880 AND 1890, ETC.—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Year.	Number of establishments reporting.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages.	Cost of materials used.	Value of products.
				Males above 16 years.	Females above 15 years.	Children.			
Varnish. (See also Paints).....	1880	3	\$26,500	10			\$8,962	\$25,000	\$54,600
	1890	5	88,815	23	1		21,350	73,279	134,968
Vinegar and cider.....	1880	14	249,650	115	12	4	69,520	296,000	572,400
	1890	12	372,558	109	2		77,251	225,982	450,499
Watch, clock, and jewelry repairing.....	1880	17	36,250	19		1	9,367	13,175	39,740
	1890	124	128,940	244	7	8	133,359	49,219	251,883
Whips.....	1880	4	1,260	12			4,629	8,960	17,414
	1890	3	7,315	4	2		1,508	1,995	3,925
Window shades (a)	1880								
	1890	6	72,646	73	3		44,864	57,849	129,750
Wirework, including wire rope and cable.....	1880	8	153,700	134	4	38	40,890	112,620	371,690
	1890	16	570,300	234	43	11	158,728	254,264	501,235
Wood, turned and carved. (See also Lumber, planed.)	1880	18	28,725	42		2	19,183	19,945	84,297
	1890	18	114,406	159		8	107,350	155,469	323,305
All other industries (a).....	1880	83	6,150,388	2,867	381	288	1,438,217	19,622,123	17,088,967
All other industries (b).....	1890	106	17,515,340	5,169	1,339	352	3,565,715	11,759,836	21,044,244

a Embracing artificial limbs, 1; babbitt metal and solder, 1; bags, other than paper, 2; belting and hose, leather, 1; billiard tables and materials, 2; bluing, 2; bone, ivory, and lamp black, 1; bridges, 1; carriages and sleds, children's, 1; cordials and sirups, 2; cork cutting, 1; dentists' materials, 1; explosives and fireworks, 1; fertilizers, 2; flavoring extracts, 1; furniture, chairs, 2; furs, dressed, 2; gold and silver, reduced and refined, 1; hosiery and knit goods, 2; ice, artificial, 1; iron, forgings, 2; jewelry and instrument cases, 1; lard, refined, 2; lead, bar, pipe, sheet, and shot, 2; liquors, distilled, 2; malt, 1; mantels, slate, marble, and marbleized, 2; oil, castor, 2; oil, cottonseed and cake, 2; oil, lubricating, 1; oil, neat's foot, 2; paving materials, 2; perfumery and cosmetics, 1; photographic apparatus, 1; plated and britannia ware, 1; regalia and society banners and emblems, 2; safes, doors, and vaults, fireproof, 2; saws, 2; silk and silk goods, 1; silversmithing, 2; sporting goods, 1; stamped ware, 1; stationery goods, 1; steam fittings and heating apparatus, 1; stereotyping and electrotyping, 1; sugar and molasses, refined, 1; surgical appliances, 2; tar and turpentine, 1; telegraph and telephone apparatus, 2; toys and games, 1; type founding, 2; upholstering materials, 1; washing machines and clothes wringers, 1; watch cases, 1; window blinds and shades, 1; wire, 2, and wooden ware, 2.

b Embracing ammunition, 2; artificial feathers and flowers, 2; axle grease, 2; bagging, flax, hemp, and jute, 1; bags, other than paper, 2; bells, 2; billiard tables and materials, 2; bone, ivory, and lamp black, 2; boots and shoes, cut stock, 1; boxes, cigar, 2; brass ware, 2; calcium lights, 1; carriage and wagon materials, 2; clocks, 1; cork cutting, 1; cotton goods, 2; cotton ties, 1; dentists' materials, 2; dyestuffs and extracts, 1; engravers' materials, 1; files, 2; fireworks, 1; furnishing goods, men's, 1; galvanizing, 1; gas, manufactured, heating and illuminating, 1; glue, 1; hardware, 2; house furnishing goods, not elsewhere specified, 2; ice, artificial, 1; ink, printing, 1; ink, writing, 1; iron and steel, nails and spikes, cut and wrought, 2; ivory and bone work, 1; japanning, 1; lapidary work, 1; lard, refined, 1; leather, morocco, 1; lightning rods, 2; liquors, distilled, 2; matches, 1; muelage and paste, 2; nets and seines, 2; oil, castor, 2; photographic materials, 2; photolithographing and engraving, 2; plated and britannia ware, 1; pocketbooks, 1; printing materials, 1; pulp from fiber, other than wood, 1; pumps, not including steam pumps, 2; rubber and other elastic goods, 2; safes and vaults, 1; saws, 1; screws, machine, 1; silk and silk goods, 1; smelting and refining (base scrap metal, not from the ore), 1; sporting goods, 2; springs, steel, car and carriage, 2; stamped ware, 1; stereotyping and electrotyping, 1; tar and turpentine, 1; taxidermy, 2; timber products, not manufactured at mill, 1; tin foil, 1; toys and games, 2; type founding, 2; typewriters and supplies, 2; washing machines and clothes wringers, 2; watch cases, 1; wire, 2; wooden ware, not elsewhere specified, 2, and zinc, 1.

Industries are classified according to the component product of chief value, and some of the changes shown in the foregoing table are probably due to differences in the classifications of 1880 and 1890.

It is probable that the great increase shown in the reports for those industries coming under the head of "Hand trades" is largely due to the fact that no previous census of the United States has so fully obtained the full production of hand trades, such as those of the mason, carpenter, blacksmith, cooper, painter, plumber, and similar trades operating machinery to a limited extent. Previous census inquiries have entirely omitted the dressmakers' and milliners' industries, for which a product valued at \$1,730,050 is now reported for the city of Saint Louis.

Considering the reports for the following-named building trades as a group, viz: carpentering; marble and stone work; masonry, brick and stone; painting and paper hanging; plastering and stucco work; plumbing and gas fitting, and roofing and roofing materials, the value of the product is found to be \$27,170,756.

TABULAR STATEMENTS FOR 1890.

In the following tables the statements for each industry are intended to present the true amount of capital employed, the cost of miscellaneous expenses, details showing the interests of wage workers in the respective industries, the cost of materials used, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

It must be understood, however, that the statistics furnish no more reliable data for ascertaining net profits than an incomplete ledger balance sheet bears to that exact statement of resources and liabilities which forms the only true basis for obtaining such a result. The inquiry conducted by this office was intended to ascertain the true relations which capital, expense, wages, and cost of materials bear to the value at the works of the products of manufacturing industry, excluding all cost or expense pertaining to the mercantile portion of the business.

CAPITAL INVESTED (TABLE 2).

Table 2 presents a statement for 230 classified industries of the total capital (represented by property of every kind, owned, borrowed, and hired) employed in the respective industries, as shown by the individual reports.

MISCELLANEOUS EXPENSES (TABLE 3).

Table 3 exhibits, first, those items of expense incurred in manufacturing operations which are a proper charge thereon; secondly, the cost for rent and interest, which is a charge against capital, because the item of rent represents the cost to the manufacturer of that portion of capital reported under the head of "Property hired", and the item of interest represents the cost of borrowed capital.

The aggregate represents all expenses of manufacture not reported under the heads of "Labor and wages" and "Materials used", excepting the cost of depreciation of plant. The data supplied in the reports relating to depreciation of plant in the respective industries are not sufficient to form a basis for correct computation.

LABOR EMPLOYED AND WAGES PAID (TABLE 4).

In the form of inquiry used in the Eleventh Census respecting labor and wages the classified occupation and wage system was adopted. Officers or firm members engaged in productive labor or supervision of the business constitute one class, for which the wages reported are those which would be paid to employes performing similar service. Clerical labor is embraced by distinct classification, also piecework.

Wage workers proper are divided into two classes, described as follows:

First. Operatives, engineers and other skilled workmen, overseers, and foremen or superintendents (not general superintendents or managers).

Second. Watchmen, laborers, teamsters, and other unskilled workmen.

It should be noted that the first class includes all operatives, that is, those directly engaged in productive labor, as well as skilled mechanics, while the second class includes all unskilled workmen other than operatives. The questions required a statement of the average number of men, women, and children, respectively, employed during the year in each class; also the actual amount of wages paid to each number.

A statement was requested showing the various rates of wages per week, the average number of men, women, and children, respectively, employed at each rate, exclusive of those previously reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained are stated in detail in Tables 6 and 7 for 50 specified industries. In compiling these data it has been found in some instances that sufficient care was not exercised by persons reporting in computing the true average number of hands employed for the term of operation reported. In such cases the manufacturer making the report was requested before its tabulation to make the proper corrections.

The average number of hands employed during the year in each class, the actual wages paid, and the number of months in operation were reported by individual establishments. The averages stated for the respective industries under the heads "Average number of weeks employed during the year" and "Average weekly wages per hand" were computed in this office upon the basis afforded by such reports.

The foundry and machine shop industry employs the greatest number of hands (6,345), and the greatest average annual earnings to wage workers are reported for "Oil, lubricating".

MATERIALS USED AND GOODS MANUFACTURED (TABLE 5).

In Table 5 is presented the reported cost at the place of consumption of all materials used, the reported market value at the works of goods manufactured, and the value really produced by the process of manufacturing, as computed on the basis of manufacturers' reports.

This table includes reports of establishments which only use materials furnished by others. In such instances the value of product is simply the amount received for the labor performed, and is reported under the head of "Custom work". The establishment furnishing the material reports it under the proper head, and the amount paid for such custom work appears in Table 3 under the head of "Sundry miscellaneous expenses".

VALUE OF PRODUCT.

The value stated under the head "Total products" is the reported market value at the factory, not including any allowance for commissions or expenses of selling. The amounts stated under the head "Actual produced value" are presented for the purpose of showing the contributions of the respective industries to the actual wealth of the country, and are obtained by deducting the cost of materials used from the market value of products. This becomes necessary, because it frequently occurs that the products of one industry become the materials for another, and the repetition may occur through several processes of manufacture, thus constantly adding to the total value of product by the repeated duplication and inclusion of the cost of the original materials. This is obviously unavoidable, and is statistically correct, but is liable to form a basis for erroneous deductions unless accompanied by a statement of the "actual produced value".

In making the calculation referred to, the cost of materials includes the amount reported under the head of "Miscellaneous expenses" as paid for power and heat, because these items largely represent materials consumed in the processes of manufacturing.

Applying this method of calculation to the market value of product reported by the respective industries, the sum of \$106,621,026 is obtained as the aggregate produced value of manufacturing industry in the city of Saint Louis for the census year 1890.

ANALYSIS OF THE PRINCIPAL INDUSTRIES (TABLES 6, 7, 8, AND 9).

The statements presented in Tables 6, 7, 8, and 9 constitute an analysis of data for 50 principal industries, representing 60.73 per cent of the total value of manufactures in the city of Saint Louis, 59.04 per cent of the aggregate capital, employing 54.06 per cent of the total number of hands, and receiving 52.88 per cent of the aggregate wages.

TABLE 2.—CAPITAL EMPLOYED, 1890.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Number of establishments reporting. (a)	Aggregate capital. (a)	VALUE OF PROPERTY HIRED.			VALUE OF PLANT.			
			Number of establishments reporting.	Amount.	Total capital (direct investment).	Total.		Land.	
						Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.
All industries	6,148	\$169,782,341	4,671	\$29,006,949	\$140,775,392	6,061	\$58,576,174	1,547	\$14,823,866
1 Agricultural implements.....	4	806,484	1	120,000	686,484	4	242,300	3	56,200
2 Artificial limbs. (See also Surgical appliances.)	3	14,050	3	11,400	2,650	3	1,450		
3 Awnings, tents, and sails.....	15	474,075	15	150,625	323,450	15	22,810		
4 Babbitt metal and solder.....	5	350,000	2	8,000	341,400	5	66,800	3	28,000
5 Bags, paper.....	3	259,705	2	85,280	174,425	3	6,525	1	189
6 Baking and yeast powders. (See also Chemicals.)	14	472,981	12	99,800	373,181	14	56,750	2	12,400
7 Baskets and rattan and willow ware.....	15	78,605	11	21,501	57,104	14	29,172	4	8,250
8 Bellows.....	3	53,225	2	33,000	20,225	3	10,900	1	2,250
9 Bicycles and tricycles, repairing.....	5	17,755	5	12,850	4,905	5	1,150		
10 Blacksmithing and wheelwrighting. (See also Carriages and wagons.)	219	786,096	137	379,975	406,121	219	267,631	82	116,302
11 Bluing.....	3	18,952	3	12,280	6,672	3	1,102		
12 Bookbinding and blank-book making. (See also Printing and publishing.)	14	311,918	14	113,300	198,618	14	56,187		
13 Boot and shoe uppers.....	5	31,670	5	15,720	18,950	5	2,040		
14 Boots and shoes, custom work and repairing.	477	995,761	409	632,032	273,729	477	162,481	68	50,058
15 Boots and shoes, factory product.....	24	4,170,027	23	839,500	3,330,527	24	338,646	1	4,200
16 Bottling. (See also Liquors, malt; Mineral and soda waters.)	15	258,445	12	95,290	163,155	15	25,980	3	7,400
17 Boxes, fancy and paper.....	8	222,975	7	79,780	143,195	8	54,800	1	3,000
18 Boxes, wooden, packing. (See also Lumber, planing mill products.)	27	692,655	21	196,350	496,305	27	245,920	6	66,100
19 Brass castings. (See also Plumbers' materials.)	11	406,640	8	102,036	304,604	11	119,104	3	21,800
20 Bread and other bakery products.....	291	2,194,713	202	950,546	1,244,167	289	824,966	89	238,565
21 Brick and tile. (See also Clay and pottery products.)	38	2,763,828	18	232,700	2,531,128	38	1,805,252	20	766,700
22 Bridges.....	6	296,356	5	20,200	276,156	6	66,000	1	10,000
23 Brooms and brushes.....	41	306,131	33	139,685	166,446	41	70,986	8	34,950
24 Carpentery.....	407	4,884,969	225	520,310	4,364,659	404	796,672	179	275,655
25 Carpets, rag.....	15	23,978	14	20,000	3,978	15	2,540	1	295
26 Carriages and sleds, children's.....	3	86,410	2	12,500	73,910	3	51,510	1	25,000
27 Carriages and wagons. (See also Blacksmithing and wheelwrighting.)	114	3,203,659	62	680,211	2,523,448	114	920,883	53	844,625
28 Cars, general shop construction by steam railroad companies.	4	518,386			518,386	4	412,699	4	121,000
29 Cars, general shop construction by street railroad companies.	14	125,050	2	3,200	121,850	14	109,950	12	50,500
30 Cars, steam railroad.....	3	1,011,927			1,011,927	3	230,243	3	80,369
31 Cars, street railroad.....	3	841,182	1	39,902	801,280	3	213,634	2	94,500
32 Cheese and butter, urban dairies.....	6	33,224	4	5,100	28,124	6	22,061	2	6,500
33 Chemicals. (See also Baking and yeast powders; Fertilizers; Patent medicines and compounds.)	16	1,606,268	10	106,200	1,500,068	16	542,548	7	173,500
34 China decorating. (See also Clay and pottery products.)	3	22,985	2	12,000	10,985	3	5,495	1	1,000
35 Clay and pottery products. (b) (See also Brick and tile.)	13	1,107,716	6	171,720	935,996	13	530,880	7	183,500
36 Cleansing and polishing preparations.	4	32,530	4	19,000	13,530	4	3,670		
37 Clothing, men's, wholesale.....	48	6,077,041	45	1,727,622	4,349,419	48	292,287	3	47,700
38 Clothing, men's, custom work and repairing.	300	2,922,668	263	1,506,937	1,415,731	297	818,403	37	146,416
39 Clothing, women's.....	11	444,250	10	143,730	300,520	11	41,540	1	600
40 Clothing, women's, dressmaking.....	473	1,052,164	420	791,686	261,278	471	161,430	40	51,890
41 Coffee and spices, roasting and grinding.	9	1,233,888	8	417,300	816,588	9	79,500	1	2,000
42 Coffins and burial cases, trimming and finishing.	27	182,003	16	55,300	126,703	27	57,885	11	31,150
43 Coffins, burial cases, and undertakers' goods.	5	543,762	3	199,000	346,762	5	46,490	2	1,600
44 Confectionery.....	48	1,691,716	43	613,290	1,078,426	48	399,392	5	101,000
45 Cooperage.....	71	1,104,558	30	61,915	1,042,643	71	537,481	41	187,887
46 Cordage and twine.....	7	357,374	3	35,250	322,124	7	129,515	4	22,200

a Reports stating the amount of invested capital were received from 4 establishments not in operation during the census year. The data contained in such reports are not included in the foregoing table, but the capital invested is reported in the following classes of industry: foundry and machine shop products, \$322,590; iron and steel, \$1,500,000; wood preserving, \$66,500; total, \$1,889,090.

TABLE 2.—CAPITAL EMPLOYED, 1890.

VALUE OF PLANT—continued.				LIVE ASSETS.							
Buildings.		Machinery, tools, and implements.		Total.		Raw materials.		Stock in process and finished products.		Cash, bills receivable, accounts receivable, and all sundries not elsewhere reported.	
Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.
1,552	\$18,391,400	6,056	\$25,360,818	5,659	\$82,199,218	5,068	\$16,649,210	4,200	\$23,462,636	4,678	\$42,087,372
3	40,000	4	146,100	4	444,184	4	96,665	3	102,992	4	244,527
3		3	1,450	3	1,200	3	500	1	200	1	500
		15	22,810	15	300,640	15	81,310	14	51,530	15	167,800
3	19,000	5	19,800	5	274,600	5	87,500	5	25,600	5	161,500
1	150	3	6,185	3	107,900	3	34,900	2	28,800	2	104,200
2	17,500	14	26,850	14	316,431	14	15,466	13	100,595	14	290,370
4	12,600	13	8,322	15	27,932	14	9,358	14	9,899	8	8,765
1	4,000	3	4,650	3	9,325	3	2,675	3	3,150	2	3,500
		5	1,150	5	3,755	5	665	3	2,050	2	1,100
90	105,080	219	47,249	215	133,490	101	38,673	134	37,659	176	62,158
		3	1,102	3	5,570	3	515	2	1,550	3	3,565
		14	56,187	11	142,431	11	26,235	10	32,376	11	83,820
		5	2,040	3	16,910	3	6,000	3	2,310	2	8,600
70	82,950	477	29,473	450	111,248	433	18,747	250	33,855	296	58,646
1	10,000	24	324,446	24	2,991,881	24	248,584	24	960,029	24	1,783,268
3	7,800	15	10,760	14	137,175	8	39,575	8	32,210	13	65,290
1	3,000	3	48,800	8	88,395	7	32,235	6	14,510	7	41,650
6	56,150	27	123,670	26	250,385	25	109,710	22	27,175	22	113,500
3	30,200	11	67,104	11	185,500	11	46,400	8	29,000	9	110,100
93	371,300	289	215,101	288	419,201	282	208,120	230	51,262	214	159,819
23	533,422	38	505,130	37	725,876	23	64,036	34	177,716	37	484,124
1	5,000	6	51,000	6	210,156	3	13,130	4	58,488	6	132,538
8	19,300	41	16,736	40	95,460	40	55,269	32	20,718	31	19,473
185	367,085	404	153,932	370	3,567,987	342	214,681	246	2,286,132	353	1,067,174
1	1,300	15	945	15	1,438	12	331	15	477	5	630
1	15,000	3	11,510	3	22,400	2	5,500	3	11,400	2	5,500
56	435,960	114	140,298	113	1,602,565	113	358,346	101	437,085	109	807,134
4	97,000	4	194,699	4	105,687	4	98,100	3	7,587		
12	46,000	13	13,450	14	11,900	14	9,400	2	2,500		
3	99,932	3	58,942	3	772,684	3	93,043	3	19,946	3	659,695
2	47,000	3	72,134	3	587,646	3	171,734	3	209,557	3	206,355
2	12,000	6	3,561	4	6,063	2	237	4	2,577	4	3,229
8	157,263	16	201,780	16	957,325	15	170,463	15	345,210	15	441,852
1	1,500	3	2,995	3	5,490	2	4,010	2	1,030	3	450
8	151,900	13	245,480	13	405,116	10	17,845	13	187,525	11	199,746
		4	3,670	4	9,860	3	2,800	2	1,500	3	5,560
4	160,700	48	83,887	46	4,057,132	44	867,224	41	1,047,970	39	2,141,935
37	120,000	297	51,987	254	1,097,328	225	608,192	178	187,857	227	301,279
2	22,700	11	18,240	11	258,980	10	42,700	10	53,430	10	162,850
50	75,500	471	34,040	346	99,848	212	33,952	231	30,293	200	45,603
1	3,000	9	74,500	8	737,088	8	281,688	8	63,000	7	392,400
12	23,170	25	3,565	26	68,818	23	11,900	9	2,733	18	54,185
2	350	5	44,450	5	300,272	5	37,289	3	113,853	2	149,130
7	149,950	48	148,442	46	679,034	44	91,957	40	162,321	40	424,756
42	217,531	71	132,063	69	505,162	69	247,976	55	62,053	59	185,133
4	31,600	7	75,715	7	192,609	7	53,540	7	48,315	6	90,754

5 Includes drain and sewer pipe, 3 establishments; stone and earthen ware, 7 establishments; terra cotta ware, 2 establishments; white ware and pottery, 1 establishment.

TABLE 2.—CAPITAL EMPLOYED, 1890—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Number of establishments reporting.	Aggregate capital.	VALUE OF PROPERTY HIRED.		Total capital (direct investment).	VALUE OF PLANT.			
			Number of establishments reporting.	Amount.		Total.		Land.	
						Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.
1 Cordials and sirups.....	3	\$13,030	3	\$9,900	\$3,130	3	\$975		
2 Corsets.....	8	136,537	8	54,750	81,787	8	18,215		
3 Cutlery and edge tools. (See also Hardware; Tools.)	9	156,875	9	80,000	76,875	9	12,375		
4 Dentistry, mechanical.....	52	100,419	51	146,640	43,779	52	18,927	2	\$625
5 Druggists' preparations, not including prescriptions. (See also Perfumery and cosmetics.)	138	610,929	117	383,890	227,039	134	121,858	20	40,450
6 Dyeing and cleaning.....	35	202,575	32	108,850	93,725	35	64,450	3	19,600
7 Electrical apparatus, instruments, and supplies.....	35	960,847	34	260,600	700,247	34	213,181	2	13,000
8 Electric lights and power.....	4	2,722,286	4	37,000	2,685,286	4	1,184,001	2	61,000
9 Electroplating.....	9	83,305	8	42,460	40,845	9	22,600	1	2,500
10 Engraving and diesinking.....	14	106,380	13	65,650	40,730	14	19,470	1	500
11 Engraving steel, including plate printing. (See also Lithographing and engraving.)	3	75,912	3	16,240	59,672	3	29,447		
12 Engraving, wood.....	14	56,227	14	32,550	23,677	14	8,575		
13 Fancy articles, not elsewhere specified.	13	74,922	11	42,950	31,972	13	14,117	2	3,500
14 Fertilizers. (See also Chemicals; Slaughtering and meat packing.)	4	209,658	1	5,000	204,658	4	107,835	3	10,159
15 Flavoring extracts.....	3	44,528	3	11,400	33,128	3	1,135		
16 Flouring and grist mill products.....	21	4,561,255	6	240,300	4,320,955	20	1,919,300	15	327,200
17 Food preparations.....	16	363,966	13	139,120	224,846	16	52,935	4	15,500
18 Foundry and machine shop products. (See also Iron work, architectural and ornamental; Steam fittings and heating apparatus.)	103	11,034,365	77	849,439	10,184,926	103	4,555,744	25	1,396,494
19 Fruits and vegetables, canning and preserving.	4	439,705	4	100,000	339,705	4	70,000		
20 Fur goods. (See also Hats and caps.)	4	266,868	4	148,000	118,868	4	5,409		
21 Furniture, cabinet making, repairing and upholstering. (See also Mattresses and spring beds.)	82	870,876	77	534,040	336,836	81	71,111	5	14,800
22 Furniture, chairs.....	6	877,863	3	58,000	819,863	6	388,292	3	113,000
23 Furniture, factory products.....	33	2,449,712	14	498,200	1,951,512	33	1,951,470	19	201,235
24 Glass.....	5	842,354		842,354		5	576,000	5	119,000
25 Glass, cutting, staining, and ornamenting.	9	153,126	8	74,200	78,926	9	22,120	1	3,000
26 Gloves and mittens. (See also Hosiery and knit goods.)	3	31,375	2	6,900	24,475	3	3,750	1	600
27 Grease and tallow.....	10	109,325	5	31,000	78,325	10	39,950	5	4,500
28 Hairwork.....	9	141,421	9	76,916	64,505	9	12,360		
29 Hand stamps.....	5	62,430	5	38,360	24,070	5	11,000		
30 Hats and caps, not including wool hats. (See also Fur goods.)	8	74,824	8	35,520	39,304	8	4,455		
31 Hosiery and knit goods.....	7	67,347	7	34,100	33,247	7	9,507		
32 Instruments, professional and scientific.	8	163,510	7	42,460	121,050	8	33,000	1	1,050
33 Iron and steel (a).....	6	2,775,059	2	119,860	2,655,199	5	1,724,000	6	659,000
34 Iron and steel: bolts, nuts, washers, and rivets.	4	252,153	3	26,900	225,253	4	117,400	1	40,000
35 Iron work, architectural and ornamental. (See also Foundry and machine shop products.)	23	1,828,148	7	95,400	1,732,748	23	688,851	17	237,639
36 Jewelry. (See also Watch, clock, and jewelry repairing.)	10	270,760	10	138,560	132,200	10	32,215		
37 Kaolin and other earth grinding.....	3	136,463	2	32,000	104,463	3	75,145	1	16,000
38 Kindling wood.....	11	31,860	8	17,360	14,500	11	8,320	3	5,500
39 Labels and tags.....	4	28,375	2	11,500	16,875	4	4,475	2	550
40 Lamps and reflectors.....	4	156,950	4	21,600	135,350	4	30,850		
41 Leather goods.....	3	39,253	3	23,000	16,253	3	8,153		
42 Leather, tanned and curried.....	15	744,953	6	62,200	682,753	15	182,907	9	63,200
43 Lime and cement.....	4	109,136	3	33,000	76,136	3	51,500	1	15,000
44 Liquors, malt. (See also Bottling.)	8	15,925,617	2	15,200	15,910,417	7	8,796,873	6	1,440,067
45 Liquors, vinous.....	7	436,040	3	87,000	349,040	7	113,200	4	28,600
46 Lithographing and engraving. (See also Engraving, steel, including plate printing; Photolithographing and engraving; Printing and publishing.)	9	289,700	0	83,850	205,850	9	116,028		
47 Lock and gun smithing.....	46	150,824	42	100,520	50,304	46	26,355	4	4,020
48 Looking-glass and picture frames.....	31	549,879	28	238,480	311,399	31	109,849	3	21,325
49 Lumber and other mill products from logs or bolts.	7	2,886,262	4	119,250	2,767,012	7	1,611,200	4	1,158,600

a Includes the operations of blast furnaces, iron and steel rolling mills, bessemer steel works, and pig and scrap bloomaries.

TABLE 2.—CAPITAL EMPLOYED, 1890—CONTINUED.

VALUE OF PLANT—continued.				LIVE ASSETS.								
Buildings.		Machinery, tools, and implements.		Total.		Raw materials.		Stock in process and finished products.		Cash, bills receivable, accounts receivable, and all sundries not elsewhere reported.		
Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.							
		3	\$975	3	\$2,155	1	\$600	3	\$750	2	\$775	1
		8	18,215	6	63,572	6	19,567	5	22,380	4	21,625	2
		9	12,375	9	61,500	6	15,520	5	21,575	9	27,465	3
2	\$1,500	52	16,802	47	24,852	40	2,424	24	2,729	42	19,699	4
21	64,775	134	16,033	138	105,181	131	34,712	128	39,367	65	31,102	5
3	29,000	35	15,850	31	29,275	19	7,347	17	5,454	25	16,474	6
3	22,675	34	177,506	35	487,066	31	19,572	31	72,472	34	355,022	7
4	245,500	4	877,501	4	1,501,295	3	5,000			4	1,456,285	8
1	2,000	9	18,100	9	18,245	9	3,195	5	2,275	9	12,775	9
1	400	14	18,570	10	21,260	8	5,120	10	6,840	7	9,390	10
		3	29,447	2	30,225	2	5,310	2	1,300	1	23,615	11
		14	8,575	12	15,102	11	1,245	10	3,180	11	19,677	12
2	3,200	13	7,417	10	17,855	10	7,725	9	1,960	8	8,170	13
4	41,890	4	55,780	4	96,823	3	12,300	4	42,511	4	42,012	14
		3	1,135	3	31,993	1	4,000	3	7,365	3	29,628	15
17	543,000	20	1,049,100	21	2,401,655	20	653,545	21	325,850	20	1,422,260	16
3	13,700	16	23,735	16	171,911	12	16,960	15	33,972	14	129,979	17
34	1,232,784	103	1,926,466	95	5,629,182	95	754,952	85	1,228,190	95	3,646,040	18
		4	70,000	4	269,705	4	35,250	4	62,750	3	171,705	19
		4	5,409	4	113,459	4	23,897	4	47,869	4	41,693	20
6	22,000	81	34,311	77	265,725	69	72,017	54	62,021	65	130,787	21
4	171,085	6	104,207	6	431,571	6	119,715	6	157,340	6	154,516	22
20	265,900	33	184,335	33	1,300,042	32	361,349	33	376,669	30	562,024	23
5	368,000	5	89,000	5	266,354	5	36,950	5	165,519	3	63,885	24
1	5,000	9	14,120	9	56,806	8	17,200	8	18,350	8	21,256	25
1	1,000	3	2,150	3	20,725	3	1,425	3	8,400	3	10,900	26
6	12,550	10	22,900	10	38,375	10	4,255	7	19,429	7	14,790	27
1	6,000	9	6,360	9	52,145	9	17,535	7	25,210	8	9,400	28
		5	11,000	5	13,070	5	5,785	4	1,135	5	6,150	29
		8	4,455	8	34,849	8	16,495	4	3,310	8	15,044	30
		7	9,507	7	23,740	7	9,080	7	8,372	6	6,288	31
1	500	8	31,450	7	88,050	6	2,300	6	51,450	5	34,300	32
5	415,000	5	650,000	6	931,199	5	229,188	5	380,499	6	321,522	33
1	10,000	4	67,400	4	107,853	4	35,524	4	40,346	3	31,983	34
17	204,601	23	246,611	24	1,043,897	23	177,827	21	234,850	24	631,220	35
		10	32,215	10	99,985	9	11,135	10	62,000	8	26,850	36
1	20,000	3	39,145	3	29,318	3	4,000	3	4,900	3	29,418	37
5	900	11	1,920	11	6,180	11	1,515	5	1,115	5	4,550	38
2	900	4	3,025	4	12,400	4	2,325	4	8,715	3	1,360	39
1	10,000	4	20,850	4	104,500	3	30,600	4	47,590	4	26,400	40
1	1,499	3	6,654	3	8,100	3	1,800	3	5,200	2	1,100	41
10	65,600	15	54,107	15	499,846	15	57,950	15	219,330	13	222,566	42
3	33,200	3	4,300	4	24,636	4	2,661	3	1,475	3	20,500	43
6	5,322,977	7	2,033,829	8	7,113,544	5	1,176,533	7	1,579,608	7	4,357,403	44
4	48,000	7	36,600	7	235,840	3	60,650	7	129,100	6	52,090	45
		9	116,023	9	89,822	5	15,515	9	33,458	8	35,849	46
5	8,820	46	13,515	42	23,949	37	9,115	19	5,720	30	9,114	47
4	49,750	31	38,774	30	201,550	29	42,864	27	56,335	27	102,351	48
6	229,000	7	223,600	6	1,155,812	5	208,200	6	598,990	6	348,712	49

TABLE 2.—CAPITAL EMPLOYED, 1890—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Number of establishments reporting.	VALUE OF PROPERTY HIRED.				VALUE OF PLANT.			
		Aggregate capital.	Number of establishments reporting.	Amount.	Total capital (direct investment).	Total.		Land.	
						Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.
1 Lumber, planing mill products, including sash, doors, and blinds. (See also Boxes, wooden, packing; Refrigerators; Wood, turned and carved.)	23	\$2,334,841	11	\$274,805	\$1,860,036	23	\$667,872	12	\$170,541
2 Malt. (See also Liquors, malt.)	11	1,098,018	2	30,100	977,918	11	491,200	9	174,650
3 Mantels, slate, marble, and marbleized.	4	84,460	2	12,000	72,460	4	40,210	2	31,000
4 Marble and stone work. (See also Monuments and tombstones.)	44	820,574	32	417,455	403,119	30	109,375	11	66,320
5 Masonry, brick and stone.	160	4,705,498	79	268,920	4,436,578	159	340,529	71	85,285
6 Mattresses and spring beds. (See also Furniture, cabinet making, repairing and upholstering; Furniture, factory products; Wirework.)	14	475,357	12	205,600	269,757	13	67,425	2	7,075
7 Millinery and lace goods. (See also Artificial leathers and flowers.)	3	43,900	3	21,800	22,100	3	3,200		
8 Millinery, custom work.	81	559,091	72	390,700	168,391	77	42,265	9	15,150
9 Mineral and soda waters. (See also Bottling.)	28	453,032	17	111,000	342,032	28	288,225	11	64,100
10 Models and patterns.	10	48,564	9	22,700	25,864	10	15,725	1	2,000
11 Monuments and tombstones. (See also Marble and stone work.)	23	337,315	15	64,200	273,115	23	83,030	8	52,075
12 Musical instruments and materials, not elsewhere specified.	14	64,002	12	41,810	22,192	14	7,830	2	1,600
13 Musical instruments, organs, and materials.	4	46,320	2	7,800	38,520	4	21,520	2	8,000
14 Musical instruments, pianos, and materials.	3	29,750	3	15,950	13,800	3	1,300		
15 Oil, linseed.	3	1,119,696	2	101,134	1,018,562	3	411,400	1	90,000
16 Oil, lubricating.	8	230,805	8	101,200	129,605	8	14,830		
17 Optical goods.	5	29,775	5	14,900	14,875	5	3,350		
18 Painting and paper hanging.	331	1,568,754	251	701,560	867,194	328	334,141	80	106,510
19 Paints. (See also Varnish.)	14	5,643,536	10	145,429	3,498,107	14	1,716,236	5	515,005
20 Paper patterns.	3	9,874	3	7,200	2,674	3	33		
21 Patent medicines and compounds. (See also Druggists' preparations.)	58	1,902,481	49	300,482	1,601,999	54	153,757	9	30,350
22 Paving and paving materials.	15	191,149	8	33,008	158,141	15	73,168	8	13,900
23 Perfumery and cosmetics. (See also Druggists' preparations.)	4	71,855	4	35,000	36,855	4	2,200		
24 Photography.	47	454,234	45	306,450	147,784	47	80,938	2	6,200
25 Pickles, preserves, and sauces.	9	557,872	8	75,500	482,372	9	98,550	1	20,000
26 Pipes, tobacco.	5	60,870	4	23,000	37,870	5	17,650	1	1,250
27 Plastering and stucco work. (See also Masonry, brick and stone.)	64	267,139	41	89,895	177,244	64	85,632	23	31,350
28 Plumbers' materials.	4	1,360,486	2	80,000	1,280,486	4	464,470	2	134,000
29 Plumbing and gas fitting.	124	1,048,477	110	467,410	581,067	124	191,930	15	42,110
30 Printing and publishing. (See also Bookbinding and blank-book making.)	105	4,205,597	92	1,388,822	2,816,775	105	1,441,907	13	76,500
31 Printing and publishing, music.	4	48,250	4	19,500	28,750	4	26,300		
32 Printing and publishing, newspapers and periodicals.	104	2,975,070	92	628,530	2,346,540	71	1,190,682	12	228,000
33 Refrigerators. (See also Lumber, planing mill products.)	3	521,750	2	16,900	504,850	3	194,200	1	80,000
34 Regalia and society banners and emblems.	4	32,640	4	18,100	14,540	4	1,825		
35 Roofing and roofing materials. (See also Tinsmithing, etc.)	62	1,128,275	48	323,375	804,900	62	295,045	14	160,235
36 Saddlery and harness.	110	2,900,018	74	739,055	2,160,963	110	472,737	36	141,725
37 Sausage. (See also Slaughtering and meat packing, wholesale.)	13	74,388	9	32,540	41,848	12	34,910	4	15,870
38 Scales and balances.	4	29,195	4	25,300	13,895	4	11,345		
39 Sewing machines, repairing.	8	57,417	7	26,540	30,877	8	9,035		
40 Shipbuilding.	4	124,700	1	2,400	122,300	4	113,300	1	5,000
41 Shirts, factory product. (See also Furnishing goods, men's.)	25	335,515	23	158,580	176,935	25	37,935	2	42,000
42 Show cases.	4	88,760	4	45,200	43,560	4	2,925		
43 Slaughtering, wholesale, not including meat packing.	4	19,230	1	10,000	9,230	3	7,220	3	3,050
44 Slaughtering and meat packing, wholesale.	56	3,383,991	13	118,550	3,265,441	56	938,865	42	363,120
45 Soap and candles.	10	833,797	5	27,496	806,301	10	398,184	5	140,000
46 Steam fittings and heating apparatus. (See also Foundry and machine shop products.)	9	328,515	6	74,400	254,115	9	98,500	3	47,000
47 Stencils and brands.	5	19,990	5	13,080	6,910	5	4,960		

TABLE 2.—CAPITAL EMPLOYED, 1890—CONTINUED.

VALUE OF PLANT—continued.				LIVE ASSETS.								
Buildings.		Machinery, tools, and implements.		Total.		Raw materials.		Stock in process and finished products.		Cash, bills receivable, accounts receivable, and all sundries not elsewhere reported.		
Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	
14	\$181,616	23	\$112,685	23	\$1,102,164	20	\$288,080	19	\$416,143	22	\$487,332	1
9	260,000	11	56,550	9	486,718	9	116,250	7	106,500	8	263,968	2
2	8,000	4	1,210	4	32,250	4	11,300	4	6,950	4	14,000	3
13	8,850	30	34,205	43	293,744	43	56,930	30	80,094	37	156,720	4
69	74,900	159	180,254	155	4,000,049	107	210,907	100	2,996,382	146	898,760	5
3	22,000	13	38,350	14	202,332	12	61,363	13	18,891	13	122,078	6
		3	3,200	3	18,900	2	4,500	3	6,400	3	8,000	7
10	18,400	77	8,715	79	120,126	75	58,397	68	35,249	62	32,480	8
11	38,900	28	135,225	28	103,807	26	8,250	25	32,762	24	62,795	9
1	1,000	10	12,725	10	10,130	10	1,524	6	3,575	7	5,040	10
8	25,200	23	3,755	23	190,985	23	39,540	21	46,575	21	103,970	11
2	2,800	14	3,430	12	14,362	11	943	7	10,084	11	3,335	12
2	10,000	4	3,520	3	17,000	3	5,000	3	5,000	2	6,100	13
		3	1,300	3	12,500	2	1,600	2	4,800	3	6,100	14
1	83,000	3	230,400	3	607,162	2	340,510	3	122,550	2	144,096	15
		8	14,380	8	114,775	8	18,785	7	10,575	8	85,415	16
		5	3,330	4	11,625	4	1,625	4	4,900	4	5,100	17
87	121,025	324	104,608	215	533,653	208	153,153	155	123,401	276	255,499	18
0	538,000	14	662,241	13	1,781,871	13	123,189	13	721,757	12	936,925	19
		3	33	2	2,041	1	81	2	2,531	1	26	20
9	40,120	54	81,287	57	1,448,242	54	210,564	53	91,661	46	1,146,017	21
9	19,850	15	39,418	15	84,973	10	5,975	7	8,315	13	70,683	22
		4	2,200	4	34,655	3	3,400	4	6,700	4	24,555	23
2	6,400	47	68,338	45	60,846	40	15,663	35	23,077	43	28,076	24
1	30,000	9	48,550	9	383,822	6	61,830	9	100,888	8	231,095	25
1	1,500	5	14,000	5	20,220	5	7,270	5	3,150	5	9,800	26
25	31,550	64	22,252	63	91,592	51	6,506	33	18,951	55	66,045	27
3	203,000	4	125,470	4	816,010	4	93,127	4	155,744	4	567,145	28
15	91,200	134	58,620	110	380,137	111	68,985	58	117,147	108	203,005	29
13	59,850	105	1,305,657	104	1,374,668	94	290,823	85	260,364	97	823,681	30
		4	20,300	4	2,450	2	300	4	950	2	1,200	31
12	323,200	71	649,482	90	1,155,858	57	109,097	51	81,135	94	965,626	32
1	30,000	3	84,200	3	310,650	3	41,050	2	95,000	3	174,000	33
		4	1,825	4	12,715	4	5,370	2	5,200	4	2,145	34
16	80,910	61	83,900	62	599,855	60	100,837	46	90,310	58	318,658	35
30	229,100	110	101,912	110	1,088,226	110	386,602	102	475,156	101	826,468	36
5	13,800	12	5,210	12	6,938	9	1,080	8	693	10	5,165	37
		4	11,345	4	2,550	3	450	2	1,050	3	1,050	38
1	2,000	8	2,035	7	21,842	6	5,402	3	11,110	6	5,330	39
2	12,000	4	59,300	3	6,000	3	7,500	2	300	2	1,200	40
2	6,000	25	29,035	24	130,000	24	28,500	24	82,449	21	53,051	41
		4	2,025	4	40,635	3	7,085	4	11,450	4	22,100	42
3	3,400	3	170	4	2,010	3	710	2	600	3	700	43
42	443,300	56	132,445	55	2,326,570	45	903,363	48	718,227	51	704,986	44
6	138,143	10	120,041	10	468,117	10	152,907	10	113,350	10	141,770	45
3	21,000	9	30,500	9	165,615	9	14,515	8	53,500	7	87,600	46
		5	4,000	4	1,050	4	525	3	600	3	825	47

TABLE 2.—CAPITAL EMPLOYED, 1890—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Number of establishments reporting.	VALUE OF PROPERTY HIRED.				VALUE OF PLANT.			
		Aggregate capital.	Number of establishments reporting.	Amount.	Total capital (direct investment).	Total.		Land.	
						Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.
1 Sugar and molasses, refining, and candy making.....	3	513,000	3	571,500	\$121,500	3	\$11,500		
2 Surgical appliances. (See also Artificial limbs.).....	7	65,991	5	37,700	28,201	7	15,850	2 32,200	
3 Tinsmithing, copper-smithing, and sheet-iron working. (See also Roofing and roofing materials; Stamped ware.).....	132	1,737,968	98	605,250	1,132,588	132	362,413	34 83,100	
4 Tobacco chewing, smoking, and snuff.	12	4,223,470	7	429,150	3,894,320	12	817,887	5 165,500	
5 Tobacco, cigars, and cigarettes.....	295	1,530,442	252	742,922	787,520	295	137,110	44 44,080	
6 Tools, not elsewhere specified. (See also Cutlery and edge tools; Hardware.).....	9	278,335	6	20,400	257,935	8	115,701	3 32,250	
7 Trunks and valises.....	15	445,050	14	164,200	281,730	15	82,490	1 26,000	
8 Umbrellas and canes.....	9	62,555	7	35,050	27,505	9	5,510	2 1,700	
9 Upholstery materials.....	4	140,825	2	64,500	116,325	4	58,800	2 29,600	
10 Varnish. (See also Paints.).....	5	102,115	4	13,300	88,815	5	11,922	1 5,898	
11 Vinegar and cider.....	12	469,868	8	97,250	372,558	12	275,342	4 175,900	
12 Watch, clock, and jewelry repairing.....	124	411,220	115	282,280	128,940	124	62,180	9 17,125	
13 Whips.....	3	7,565	1	250	7,315	2	5,930	2 1,500	
14 Window shades.....	6	128,846	5	56,200	72,646	6	16,540	1 3,000	
15 Wire-work, including wire rope and cable.....	16	690,150	15	119,850	570,300	15	131,030	1 25,000	
16 Wood, turned and carved. (See also Lumber, planed.).....	18	182,066	16	67,660	114,406	18	73,465	2 9,700	
17 All other industries (by groups).....	106	18,734,413	77	1,239,073	17,515,340	105	10,979,078	106 1,850,597	

a. Brazing ammunition, 2; artificial feathers and flowers, 2; axle grease, 2; bagging, flax, hemp, and jute, 1; bags, other than paper, 2; beds, 2; billiard tables and materials, 2; bone, ivory, and hump black, 2; boots and shoes, cut stock, 1; boxes, cigar, 2; brass ware, 2; calcium lights, 1; carriage and wagon materials, 2; clocks, 1; cork cutting, 1; cotton goods, 2; cotton ties, 1; dentists' materials, 2; dyestuffs and extracts, 1; engravers' materials, 1; files, 2; brewworks, 1; furnishing goods, men's, 1; galvanizing, 1; gas, manufactured, heating and illuminating, 1; glue, 1; hardware, 2; house-furnishing goods, not elsewhere specified, 2; ice, artificial, 1; ink, printing, 1; ink, writing, 1; iron and steel, nails and spikes, cut and wrought, 2; ivory and bone work, 1; japanning, 1; lapidary work, 1; lard, refined, 1; leather, moccasins, 1; lightning rods, 2; liquors, distilled, 2; matches, 1; maulage and paste, 2; nets and seines, 2; oil, castor, 2; photographic

TABLE 2.—CAPITAL EMPLOYED, 1890—CONTINUED.

VALUE OF PLANT—continued.				LIVE ASSETS.								
Buildings.		Machinery, tools, and implements.		Total.		Raw materials.		Stock in process and finished products.		Cash, bills receivable, accounts receivable, and all sundries not elsewhere reported.		
Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.							
		3	\$11,500	3	\$110,000	3	\$41,500	3	\$30,500	3	\$34,000	1
3	\$11,000	7	2,650	6	12,351	6	2,685	4	7,135	4	2,531	2
37	86,000	132	193,313	128	770,175	124	224,652	96	195,511	108	350,612	3
6	379,257	12	273,130	12	3,076,433	11	1,334,559	12	516,856	10	1,225,018	4
44	69,284	295	23,746	295	650,410	285	229,914	253	139,343	239	281,153	5
3	22,320	8	61,131	9	142,234	9	40,085	7	24,629	9	77,529	6
1	26,000	15	30,490	15	199,240	14	61,965	14	59,375	13	77,990	7
2	1,100	9	2,710	7	21,995	7	8,510	7	7,885	5	5,600	8
2	8,000	4	21,200	4	57,525	4	18,925	3	20,160	4	18,500	9
1	1,000	5	5,024	5	76,893	5	12,612	5	17,975	5	46,306	10
5	70,800	12	28,642	12	97,216	9	17,320	11	17,196	11	62,700	11
9	19,400	124	25,655	104	66,760	88	8,094	54	27,020	72	31,646	12
2	4,375	2	55	3	1,385	3	110	3	375	2	900	13
1	5,000	6	8,510	6	56,106	4	9,500	3	32,257	5	14,249	14
2	23,000	15	83,030	13	439,270	12	91,575	13	79,495	12	268,200	15
5	27,775	18	35,990	18	40,941	15	14,218	13	9,533	14	17,190	16
33	1,442,546	105	7,676,935	104	6,536,262	99	1,491,060	93	1,713,255	91	3,331,947	17

materials, 2; photolithographing and engraving, 2; plated and britannia ware, 1; pocketbooks, 1; printing materials, 1; pulp, from fiber, other than wood, 1; pumps, not including steam pumps, 2; rubber and other elastic goods, 2; safes and vaults, 1; saws, 1; screws, machine, 1; silk and silk goods, 1; smelting and refining (base scrap metal, not from the ore), 1; sporting goods, 2; springs, steel, car and carriage, 2; stamped ware, 1; stereotyping and electrotyping, 1; tar and turpentine, 1; taxidermy, 2; timber products, not manufactured at mill, 1; tin foil, 1; toys and games, 2; type founding, 2; typewriters and supplies, 2; washing machines and clothes wringers, 2; watch cases, 1; wire, 2; wooden ware, not elsewhere specified, 2; zinc, 1.

TABLE 3.—MISCELLANEOUS EXPENSES, 1890.

MECHANICAL AND MANUFACTURING INDUSTRIES.			ITEMS INCLUDED IN COST OF MANUFACTURE.		
	Number of establishments reporting.	Aggregate.	Power and heat.		
			Total.	Number of establishments reporting.	Amount.
All industries.....	6,143	\$17,587,215	\$14,508,614	238	\$82,486
1 Agricultural implements.....	4	66,221	55,908		
2 Artificial limbs. (See also Surgical appliances).....	3	1,885	715	1	120
3 Awnings, tents, and sails.....	15	54,106	38,804	4	862
4 Babbit metal and solder.....	5	19,832	11,572		
5 Bags, paper.....	3	16,287	7,759	2	1,752
6 Baking and yeast powders. (See also Chemicals).....	14	18,610	10,986	1	120
7 Baskets and rattan and willow ware.....	15	3,293	928		
8 Bellows.....	3	1,715	695		
9 Bicycles and tricycles, repairing.....	5	1,202	202		
10 Blacksmithing and wheelwrighting. (See also Carriages and wagons).....	219	44,984	18,807		
11 Bluing.....	3	1,004	200		
12 Bookbinding and blank-book making. (See also Printing and publishing, book and job.).....	14	24,332	7,473	6	1,879
13 Boot and shoe uppers.....	5	2,162	590	1	150
14 Boots and shoes, custom work and repairing.....	477	64,050	7,399	8	192
15 Boots and shoes, factory product.....	24	265,585	168,304	11	6,163
16 Bottling. (See also Liquors, malt; Mineral and soda waters).....	15	14,395	5,273		
17 Boxes, fancy and paper.....	8	13,888	4,820		
18 Boxes, wooden, packing. (See also Lumber, planing mill products).....	27	49,559	28,330	5	1,044
19 Brass castings. (See also Plumbers' materials).....	11	22,728	14,325	1	400
20 Bread and other bakery products.....	291	139,768	51,291		
21 Brick and tile. (See also Clay and pottery products).....	38	114,367	81,657		
22 Bridges.....	6	42,729	40,361		
23 Brooms and brushes.....	41	20,854	6,698	5	1,691
24 Carpentering.....	407	191,698	75,095	9	1,240
25 Carpets, rag.....	15	1,868	153	1	24
26 Carriages and sleds, children's.....	3	5,186	2,150		
27 Carriages and wagons. (See also Blacksmithing and wheelwrighting).....	113	161,953	87,958	2	480
28 Cars, general shop construction by steam railroad companies. (a).....					
29 Cars, general shop construction by street railroad companies.....	14	10,912	10,682		
30 Cars, steam railroad.....	3	59,473	49,473		
31 Cars, street railroad.....	3	41,980	33,230		
32 Cheese and butter, urban dairies.....	6	1,050	572		
33 Chemicals. (See also Baking and yeast powders; Fertilizers; Patent medicines and compounds.).....	16	102,735	84,941	2	290
34 China, decorating. (See also Clay and pottery products).....	3	1,408	100		
35 Clay and pottery products. (b) (See also Brick and tile).....	13	109,799	96,645	1	500
36 Cleansing and polishing preparations.....	4	2,337	657		
37 Clothing, men's, wholesale.....	48	326,934	194,690	9	5,050
38 Clothing, men's, custom work and repairing.....	300	176,916	46,145	7	1,282
39 Clothing, women's.....	11	19,289	6,458	1	1,100
40 Clothing, women's, dressmaking.....	472	77,822	6,743	8	189
41 Coffee and spices, roasting and grinding.....	9	47,505	28,457		
42 Coffins and burial cases, trimming and finishing.....	27	7,929	3,239		
43 Coffins, burial cases, and undertakers' goods.....	5	26,869	10,119		
44 Confectionery.....	48	105,454	41,608		
45 Cooperage.....	71	57,243	47,701		
46 Cordage and twine.....	7	25,127	12,568		
47 Cordials and sirups.....	3	866	164		
48 Corsets.....	8	15,338	11,113	3	870
49 Cutlery and edge tools. (See also Hardware; Tools).....	9	9,610	2,431	3	445
50 Dentistry, mechanical.....	52	14,079	1,270	1	50
51 Druggists' preparations, not including prescriptions. (See also Perfumery and cosmetics.).....	138	36,884	10,556		
52 Dyeing and cleaning.....	35	14,586	5,024		
53 Electrical apparatus, instruments, and supplies.....	35	41,478	20,249	5	2,058
54 Electric lights and power.....	4	25,473	22,608		
55 Electroplating.....	9	7,474	3,278	1	120
56 Engraving and diesinking.....	14	10,688	3,918	4	494
57 Engraving, steel, including plate printing. (See also Lithographing and engraving.).....	3	5,697	3,523	1	587
58 Engraving, wood.....	14	4,956	1,803	1	132
59 Fancy articles, not elsewhere specified.....	13	4,989	690		
60 Fertilizers. (See also Chemicals; Slaughtering and meat packing).....	4	14,362	11,452		
61 Flavoring extracts.....	3	1,567	427		
62 Flouring and grist mill products.....	21	354,232	269,623		
63 Food preparations.....	16	17,778	8,203	2	850
64 Foundry and machine shop products. (See also Iron work, architectural and ornamental; Steam fittings and heating apparatus.).....	103	894,527	748,501	6	1,160
65 Fruits and vegetables, canning and preserving.....	4	75,971	65,171	1	100

a No miscellaneous expenses reported for this industry.

TABLE 3.—MISCELLANEOUS EXPENSES, 1890.

ITEMS INCLUDED IN COST OF MANUFACTURE—continued.							ITEMS NOT INCLUDED IN COST OF MANUFACTURE.					
Taxes.		Insurance.		Repairs, ordinary, of buildings and machinery.		Sundries not elsewhere reported.		Rent.			Interest on cash used in the business.	
Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Total.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.
3,809	\$7,490,968	4,036	\$869,012	1,812	\$1,323,161	2,935	\$4,742,987	\$9,078,661	4,671	\$2,273,619	612	\$804,982
4	3,700	4	6,255	4	12,670	4	33,283	10,313	1	6,655	2	3,658
2	42	2	53	3	1,670	1	500	1,170	3	1,140	1	30
13	1,354	15	2,138	9	2,350	10	32,785	15,362	15	14,162	2	1,200
5	1,195	6	618	3	3,050	4	7,409	8,260	2	860	2	7,400
3	1,280	3	1,617	2		1	60	8,528	2	8,528		4
13	763	14	1,363	7	1,700	13	7,040	7,624	12	6,940	3	684
10	226	11	367	3	220	3	115	2,365	11	1,559	1	375
3	115	3	130	2	350			1,120	2	1,120		8
3	53	3	82			2	67	1,000	5	1,000		9
118	4,910	122	2,271	62	2,396	61	4,230	31,177	137	30,953	7	234
2	60	2	75	1	15	1	50	804	3	804		11
9	369	12	3,465	6	975	7	785	16,559	14	13,589	3	3,270
3	135	3	130			3	175	1,572	5	1,572		13
124	2,357	151	1,189	44	1,097	83	2,654	56,651	409	56,410	8	241
21	10,400	24	16,153	21	15,755	24	119,833	97,281	23	73,969	12	23,372
11	1,451	13	1,287	3	640	11	1,895	9,122	12	8,222	2	900
7	843	5	1,397	6	930	3	1,850	9,068	7	9,068		17
19	3,314	23	8,421	16	5,745	13	9,806	21,223	21	16,892	3	4,336
9	1,143	7	2,652	4	4,240	4	5,890	8,403	8	8,163	1	300
243	12,654	242	7,406	94	10,640	63	20,591	82,477	292	81,787	11	690
30	10,177	22	9,458	28	39,385	17	22,687	32,710	18	10,340	11	22,379
5	606	5	1,635	2	700	3	37,420	2,368	5	1,370	2	398
27	1,167	24	1,065	8	674	13	2,101	14,156	33	11,902	5	2,254
246	14,628	278	11,449	101	7,083	220	40,695	56,603	227	42,539	41	14,014
1	84	1	45					1,715	14	1,702	1	13
2	280	3	870	1	500	1	500	3,636	2	1,036	1	2,000
65	12,420	103	19,646	64	8,581	75	46,831	73,965	62	46,800	24	27,195
12	1,403	13	1,304	8	1,910	13	6,065	230	2	230		23
3	9,770	3	10,752	3	4,200	3	24,751	6,000			1	6,000
3	1,566	3	5,256	3	4,391	3	22,017	8,750	1	684	3	8,066
4	65	3	20	4	484	1	3	473	4	478		32
15	10,855	16	12,670	11	17,371	10	44,265	17,794	10	7,565	3	10,229
2	67	3	33					1,308	2	1,200	1	108
11	5,642	12	5,314	12	30,405	12	54,821	13,154	6	7,285	4	5,869
1	62	2	95	2	450	1	50	1,680	4	1,680		36
34	12,549	41	24,483	20	4,223	27	148,345	132,214	45	99,198	10	33,056
171	9,568	204	7,971	57	4,305	195	23,019	130,771	263	128,368	6	2,373
10	1,776	9	1,817	2	1,020	5	743	12,831	10	12,793	1	38
142	2,151	182	1,938	18	349	87	2,708	71,079	429	71,025	2	54
8	3,420	9	5,280	9	3,933	6	15,809	19,048	8	18,548	3	500
12	485	21	304	3	340	19	2,110	4,600	16	4,600	1	30
4	645	4	6,239	3	1,035	2	2,200	16,750	3	16,750		43
41	9,703	35	6,804	21	16,483	18	8,616	63,846	43	56,522	5	7,324
60	8,310	63	10,913	23	11,303	16	17,175	9,542	30	4,584	9	4,638
5	1,813	6	3,104	4	4,041	3	4,110	12,559	3	1,975	3	10,584
1	10	2	24	1	50	1	100	2,682	3	682		47
3	402	7	621	2	450	5	8,770	4,225	8	4,225		48
8	630	6	750	2	530	2	70	7,183	9	6,238	2	950
24	161	31	209	10	211	17	639	12,809	51	12,809		50
69	2,349	109	1,342	13	809	77	6,056	26,328	117	25,795	11	533
20	825	24	742	8	1,230	19	2,227	9,562	32	9,562		52
19	1,294	19	1,922	6	5,760	23	9,215	21,220	34	20,679	1	250
4	2,556	4	4,360	2	5,125	4	10,567	2,865	4	2,865		54
4	213	5	330	3	635	9	1,980	4,196	8	4,098	1	98
7	240	9	288	5	221	4	2,675	6,770	13	6,680	2	90
2	115	1	406	1	200	3	2,215	2,174	3	1,324	1	850
4	69	8	112	3	152	7	1,338	3,153	14	3,123	1	90
2	113	7	317	1	50	4	210	4,299	11	4,299		59
4	1,433	3	3,435	4	6,084	2	500	2,910	1	500	2	2,410
3	118	2	119	1	40	2	150	1,140	3	1,140		61
21	23,188	21	60,327	20	76,264	15	109,844	84,609	6	33,961	12	59,648
13	999	15	1,274	8	1,155	5	3,925	9,575	13	9,500	1	75
78	51,296	90	55,920	58	94,838	54	545,287	146,026	77	63,647	29	82,379
3	1,055	4	2,250	4	2,050	4	59,716	10,500	4	8,600	2	2,200

Includes drain and sewer pipe, 3 establishments; stone and earthen ware, 7 establishments; terra cotta ware, 2 establishments; white ware and pottery, 1 establishment.

TABLE 3.—MISCELLANEOUS EXPENSES, 1890—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.		Number of establishments reporting.	Aggregate.	ITEMS INCLUDED IN COST OF MANUFACTURE.		
				Total.	Power and heat.	
					Number of establishments reporting.	Amount.
1	Fur goods. (See also Hats and caps)	4	\$24,974	\$9,608		
2	Furniture, cabinet making, repairing and upholstering. (See also Mattresses and spring beds)	82	77,648	31,163	2	\$180
3	Furniture, chairs	6	34,871	28,871		
4	Furniture, factory products	33	151,197	79,984	2	410
5	Glass	5	79,824	66,387	1	8,500
6	Glass, cutting, staining, and ornamenting	9	9,368	3,022	1	100
7	Gloves and mittens. (See also Hosiery and knit goods)	3	1,346	498		
8	Grease and tallow	10	8,826	5,126	1	300
9	Hairwork	9	9,922	2,628		
10	Hand stamps	5	4,478	612		
11	Hats and caps, not including wool hats. (See also Fur goods)	8	4,360	1,428	1	100
12	Hosiery and knit goods	7	4,487	1,743	3	684
13	Instruments, professional and scientific	8	9,908	5,562	4	1,084
14	Iron and steel (a)	6	148,439	126,236		
15	Iron and steel: bolts, nuts, washers, and rivets	4	6,490	4,990		
16	Iron work, architectural and ornamental. (See also Foundry and machine shop products)	23	82,019	62,380		
17	Jewelry. (See also Watch, clock, and jewelry repairing)	10	18,472	7,446	2	200
18	Kaolin and other earth grinding	3	15,793	11,295		
19	Kindling wood	11	1,374	262		
20	Labels and tags	4	1,188	663		
21	Lamps and reflectors	4	8,960	5,040		
22	Leather goods	3	1,827	572		
23	Leather, tanned and curried	15	25,224	16,464	1	170
24	Lime and cement	4	8,898	4,470	1	100
25	Liquors, malt (b) (See also Bottling)	8	2,936,172	2,933,142		
26	Liquors, vinous	7	16,062	8,462		
27	Lithographing and engraving. (See also Engraving, steel, including plate printing; Photolithographing and engraving; Printing and publishing.)	9	17,288	9,174	4	1,290
28	Lock and gun smithing	46	12,765	3,768	2	100
29	Looking-glass and picture frames	31	40,085	17,305	2	337
30	Lumber and other mill products from logs or bolts	7	188,338	90,958		
31	Lumber, planing mill products, including sash, doors, and blinds. (See also Boxes, wooden, packing; Refrigerators; Wood, turned and carved.)	23	133,574	97,934	2	2,200
32	Malt. (See also Liquors, malt)	11	40,012	32,004		
33	Mantles, slate, marble, and marbleized	4	2,672	1,552		
34	Marble and stone work. (See also Monuments and tombstones)	44	22,555	10,801		
35	Masonry, brick and stone	160	127,942	97,620	1	600
36	Mattresses and spring beds. (See also Furniture, cabinet making, repairing and upholstering; Furniture, factory products; Wirework.)	14	34,319	13,494	2	800
37	Millinery and lace goods. (See also Artificial feathers and fowers)	3	1,804	529		
38	Millinery, custom work	81	31,295	5,393	1	120
39	Mineral and soda waters. (See also Bottling)	28	35,840	23,395	2	320
40	Models and patterns	10	3,276	1,449	4	354
41	Monuments and tombstones. (See also Marble and stone work)	23	25,430	19,588		
42	Musical instruments and materials, not elsewhere specified	14	3,451	1,085		
43	Musical instruments, organs, and materials	4	2,702	1,622		
44	Musical instruments, pianos, and materials	3	2,141	836		
45	Oil, linseed	3	58,913	49,051	1	480
46	Oil, lubricating	8	12,131	7,021	1	100
47	Optical goods	5	1,844	374		
48	Painting and paper hanging	331	97,217	42,614	1	45
49	Paints. (See also Varnish)	14	258,824	233,561		
50	Paper patterns	3	854	74		
51	Patent medicines and compounds. (See also Druggists' preparations)	58	377,515	344,148	5	600
52	Paving and paving materials	15	13,375	10,201		
53	Perfumery and cosmetics. (See also Druggists' preparations)	4	31,249	30,839	1	120
54	Photography	47	46,936	16,157		
55	Pickles, preserves, and sauces	9	23,635	13,163		
56	Pipes, tobacco	5	3,201	1,041		
57	Plastering and stucco work. (See also Masonry, brick and stone)	61	17,506	9,028		
58	Plumbers' materials	4	105,063	93,563	1	3,200
59	Plumbing and gas fitting	124	59,506	20,331		
60	Printing and publishing, book and job. (See also Bookbinding and blank-book making)	105	274,198	147,639	32	9,164
61	Printing and publishing, music	4	2,490	650		
62	Printing and publishing, newspapers and periodicals	104	262,329	196,844	2	1,054
63	Refrigerators. (See also Lumber, planing mill products)	3	17,635	8,275		
64	Regalia and society banners and emblems	4	2,361	668	1	192
65	Roofing and roofing materials. (See also Tinsmithing, etc.)	62	92,756	63,841	1	450

a Includes the operations of blast furnaces, iron and steel rolling mills, bessemer steel works, and pig and scrap bloomaries.

TABLE 3.—MISCELLANEOUS EXPENSES, 1890—CONTINUED.

ITEMS INCLUDED IN COST OF MANUFACTURE—continued.						ITEMS NOT INCLUDED IN COST OF MANUFACTURE.						
Taxes.		Insurance.		Repairs, ordinary, of buildings and machinery.		Sundries not elsewhere reported.		Rent.		Interest on cash used in the business.		
Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Total.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.
7	\$174	4	\$2,760			3	\$3,674	\$15,366	4	\$14,720	1	\$946
39	2,422	55	3,659	16	\$1,735	27	23,167	46,485	77	41,289	6	2,196
6	4,843	6	9,728	4	5,600	3	8,700	6,000	3	1,980	5	4,020
31	12,858	33	27,264	25	10,791	18	28,661	71,213	14	53,820	4	17,393
4	3,216	5	6,966	4	12,995	2	35,700	13,437			20	12,437
6	264	7	321	3	471	4	1,866	6,346	8	6,081	2	265
3	232	3	186	2	80			848	2	748	1	100
8	508	8	578	10	1,755	4	1,985	3,700	5	3,500	1	200
8	395	9	633	2	350	2	1,250	7,294	9	7,294		
3	49	3	170	2	140	4	283	3,836	5	3,836		
5	143	4	435	1	180	6	570	2,932	8	2,832	1	100
5	111	6	193	2	105	3	650	2,744	7	2,684	1	60
6	328	8	650	3	3,225	2	275	4,346	7	4,346		
5	8,990	4	9,571	6	63,063	4	44,622	22,203	2	11,986	3	10,217
4	1,811	4	729	4	2,400	1	50	1,500	3	1,500		
20	6,586	23	6,346	17	6,005	11	43,443	19,639	7	6,250	8	13,389
7	2,177	10	769	6	3,350	3	950	11,026	10	11,026		
2	1,300	3	925	3	1,607	3	7,463	4,498	2	3,240	2	1,258
8	171	6	85			1	6	1,112	8	1,112		
4	39	2	90	3	112	2	422	525	2	525		
4	448	4	897	3	2,520	4	1,175	3,920	4	1,920	1	2,000
2	74	3	345	2	103	1	50	1,255	3	1,040	1	215
13	2,636	14	6,456	10	3,337	9	3,865	8,760	6	4,296	5	4,464
4	475	4	745	4	1,350	2	1,800	4,428	3	2,300	3	2,128
8	61,810,934	7	77,541	6	325,116	5	719,551	3,630	2	700	3	2,330
7	2,649	6	638	7	3,250	6	1,925	7,600	3	6,200	2	1,400
6	612	7	1,734	5	907	4	4,631	8,114	9	7,914	3	200
20	357	21	179	10	469	22	2,663	8,997	42	8,997		
18	1,661	27	3,889	18	3,085	19	8,333	22,789	28	18,580	3	4,200
6	7,765	7	14,224	6	10,750	6	58,219	47,380	4	5,780	4	41,600
21	10,374	21	31,701	17	12,179	7	41,480	35,640	11	19,845	8	15,795
11	6,217	11	7,747	9	8,335	10	9,705	8,008	2	2,550	4	5,453
2	472	3	190			2	890	1,120	2	1,120		
25	2,507	12	1,223	10	3,686	31	3,385	11,751	32	9,354	3	2,400
83	10,234	81	5,844	85	23,157	139	57,785	30,322	79	30,322	24	14,443
10	1,140	14	3,209	8	2,100	8	6,245	20,825	12	17,390	4	3,435
2	35	3	78			2	416	1,275	3	1,275		
56	977	67	880	2	276	33	3,140	28,902	72	28,932	2	70
24	2,103	27	1,752	22	3,770	14	15,450	12,445	17	12,445	5	1,905
5	61	8	219	5	362	9	453	1,827	9	1,797	1	30
22	1,501	17	921	12	1,158	17	16,008	5,842	15	4,052	4	1,790
7	85	10	92	2	210	13	698	2,366	12	2,366		
3	460	4	213	3	474	4	475	1,080	2	780	1	300
3	44	2	107	2	35	3	150	1,805	3	1,625	1	160
3	4,786	3	13,554	3	15,437	3	14,794	9,862	2	2,000	2	7,862
7	412	7	631	5	289	7	5,589	5,110	8	5,020	1	90
4	188	2	34			5	152	1,470	5	1,470		
157	5,015	209	3,551	67	3,617	193	30,386	51,693	251	53,018	15	1,555
12	14,647	13	21,365	12	25,195	9	172,354	25,263	10	10,089	5	15,183
2	20	2	20			3	34	780	3	780		
38	2,716	41	4,050	11	2,024	37	334,668	33,367	49	26,874	10	6,493
15	507	10	191	8	1,174	12	8,329	3,174	8	2,520	2	654
3	237	3	270	2	62	3	30,150	3,410	4	3,410		
31	1,304	39	1,885	18	1,644	36	11,824	30,779	45	30,719		
7	1,766	8	3,812	5	2,275	5	5,310	10,472	8	5,792	1	60
3	106	4	485	2	175	3	275	2,160	4	1,890	2	270
41	1,305	39	547	18	1,221	61	5,955	8,478	41	8,006	4	472
4	2,781	4	5,716	4	14,750	4	67,116	11,500	2	7,500	2	4,000
78	3,695	78	2,539	16	895	66	13,202	39,175	110	39,063	2	112
83	10,373	91	23,866	62	10,872	45	93,364	126,559	92	110,825	20	15,734
1	150	1	500					1,840	4	1,840		
52	14,129	64	22,453	28	17,215	71	141,993	65,485	92	61,000	11	4,485
1	1,800	2	4,400	1	2,000	1	75	9,410	2	1,410	1	8,000
2	31	4	193	2	57	3	195	1,693	4	1,693		
47	7,338	47	6,069	20	2,579	25	47,465	28,915	48	21,616	8	7,299

b The amount of taxes reported includes internal revenue taxes.

TABLE 3.—MISCELLANEOUS EXPENSES, 1890—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.			ITEMS INCLUDED IN COST OF MANUFACTURE.				
			Number of establishments reporting.	Aggregate.	Total.	Power and heat.	
						Number of establishments reporting.	Amount.
1	Saddlery and harness.....	110	\$110,396	\$37,674	3	\$965	
2	Sawage. (See also Slaughtering and meat packing, wholesale).....	13	4,768	2,322	1	20	
3	Scales and balances.....	4	2,882	427			
4	Sewing machines, repairing.....	8	2,794	826			
5	Shoemaking.....	4	17,792	17,672	1	4,000	
6	Shirts, factory product. (See also Furnishing goods, men's).....	25	21,721	7,023	3	865	
7	Show cases.....	4	6,597	1,737			
8	Slaughtering, wholesale, not including meat packing.....	4	5,094	4,194			
9	Slaughtering and meat packing, wholesale.....	56	93,405	59,413	1	200	
10	Soap and candles.....	10	46,824	30,568			
11	Steam fittings and heating apparatus. (See also Foundry and machine shop products).....	9	17,377	6,877	2	750	
12	Stencils and brands.....	5	1,500	117			
13	Sugar and molasses, refining.....	2	13,335	6,335			
14	Surgical apparatus. (See also Artificial limbs).....	7	4,385	917			
15	Tinsmithing, copper-smithing, and sheet-iron working. (See also Roofing and roofing materials; Stamped ware).....	132	122,091	76,438	4	1,074	
16	Tobacco, chewing, smoking and snuff (a).....	12	4,087,125	4,030,009	1	3,000	
17	Tobacco, cigars, and cigarettes (a).....	236	200,102	136,980	2	29	
18	Tools, not elsewhere specified. (See also Cutlery and edge tools; Hardware).....	9	22,537	18,855	1	420	
19	Trunks and valises.....	15	24,755	10,835	4	1,575	
20	Umbrellas and canes.....	9	4,015	510			
21	Upholstery materials.....						
22	Varnish. (See also Paints).....	4	12,331	6,281			
23	Veneer and cider.....	5	10,892	7,897			
24	Watch, clock, and jewelry repairing.....	12	17,478	7,985			
25	Whips.....	124	30,389	5,841	1	120	
		3	62	37			
26	Window shades.....						
27	Wirework, including wire rope and cable.....	6	8,841	3,261			
28	Wood, turned and carved. (See also Lumber, planed).....	16	21,927	10,284	4	1,538	
29	All other industries, (a) (c).....	18	9,552	5,395	2	120	
		106	2,487,377	2,269,325	10	3,082	

a The amount of taxes reported includes internal revenue taxes.

b Contracting ammunition, 2; artificial feathers and flowers, 2; axle grease, 2; bagging, flax, hemp, and jute, 1; bags, other than paper, 2; billiard tables and materials, 2; bone, ivory, and lamp black, 2; boots and shoes, cut stock, 1; boxes, cigar, 2; brass ware, 2; calcium chloride, 1; carriage and wagon materials, 2; clocks, 1; cork cutting, 1; cotton goods, 2; cotton ties, 1; dentists' materials, 2; dyestuffs and dyes, 1; engraving materials, 1; files, 2; fireworks, 1; furnishing goods, men's, 1; galvanizing, 1; gas, manufactured, heating and illuminating, 1; glue, 1; hardware, 2; house furnishing goods, not elsewhere specified, 2; ice, artificial, 1; ink, printing, 1; ink, writing, 1; iron and steel, nails and spikes, cut and wrought, 2; ivory and bone work, 1; japanning, 1; lapidary work, 1; lard, refined, 1; leather, Morocco, 1; lightning rods, 2; liquors, distilled, 2; matches, 1; maulage and paste, 2; nets and seines, 2; oil, castor, 2; photographic materials, 2;

TABLE 3.—MISCELLANEOUS EXPENSES, 1890—CONTINUED.

ITEMS INCLUDED IN COST OF MANUFACTURE—continued.							ITEMS NOT INCLUDED IN COST OF MANUFACTURE.						
Taxes.		Insurance.		Repairs, ordinary, of buildings and machinery.		Sundries not elsewhere reported.		Total.	Rent.		Interest on cash used in the business.		
Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.		Number of establishments reporting.	Amount.	Number of establishments reporting.	Amount.	
80	\$12,881	93	\$12,873	42	\$6,448	55	\$21,508	\$52,722	74	\$17,712	15	\$5,010	1
10	725	10	292	5	815	4	470	2,446	9	2,308	1	48	2
1	37	2	40	1	100	1	350	2,455	4	2,430	1	25	3
5	100	4	111	1	100	5	485	1,968	7	1,968			4
2	1,125	3	547	1	10,000	1	2,000	120	1	120			5
18	1,077	23	1,187	7	955	10	2,059	14,698	23	14,098	1	600	6
4	121	4	406	2	435	4	775	4,860	4	4,860			7
3	217	4	117			2	3,860	900	1	900			8
47	11,082	51	14,430	22	5,407	28	27,298	33,992	13	9,374	14	24,618	9
10	4,928	9	9,231	9	11,503	3	5,806	16,256	5	2,124	7	14,132	10
6	1,028	8	819	6	1,025	5	3,225	10,500	6	5,230	4	5,270	11
2	21	2	33	1	25	2	35	1,383	5	1,308	1	75	12
2	200	3	735	3	700	2	4,700	7,000	3	5,800	2	1,200	13
7	134	5	168	3	75	5	600	3,468	5	3,468			14
101	8,014	100	8,643	47	9,928	116	48,779	45,653	98	41,386	20	4,267	15
12	63,428,250	11	31,854	10	48,020	7	517,085	57,116	7	28,313	3	28,803	16
206	6127,134	110	4,465	45	2,110	122	3,272	63,122	252	61,603	7	1,519	17
7	322	8	2,174	5	6,303	9	9,636	3,682	6	2,402	1	1,280	18
9	2,240	11	1,937	4	2,600	12	2,473	13,920	14	13,008	2	912	19
5	118	8	212	2	50	3	100	3,505	7	3,505			20
4	473	3	1,258	3	3,300	3	1,250	6,050	2	4,450	3	1,600	21
4	272	5	618	4	938	2	6,069	2,995	4	1,230	1	1,705	22
10	1,596	11	1,323	5	1,250	4	3,816	9,493	8	6,295	4	3,198	23
70	1,201	69	932	20	680	95	2,308	24,548	115	24,473	2	75	24
2	8	2	4			3	25	25	1	25			25
6	406	6	687	3	218	5	1,890	5,580	5	5,580			26
9	692	10	1,674	10	3,300	16	3,090	11,643	15	10,923	2	720	27
9	624	10	1,396	7	1,370	17	1,185	4,157	16	4,157			28
79	61,619,324	93	82,219	59	160,004	71	374,096	218,052	77	97,416	36	120,636	29

photolithographing and engraving, 2; plated and britannia ware, 1; pocketbooks, 1; printing materials, 1; pulp, from fiber, other than wood, 1; pumps, not including steam pumps, 2; rubber and other elastic goods, 2; safes and vaults, 1; saws, 1; screws, machine, 1; silk and silk goods, 1; smelting and refining (base scrap metal, not from the ore), 1; sporting goods, 2; springs, steel, car and carriage, 2; stamped ware, 1; stereotyping and electrotyping, 1; tar and turpentine, 1; taxidermy, 2; timber products, not manufactured at mill, 1; tin foil, 1; toys and games, 2; type founding, 2; typewriters and supplies, 2; washing machines and clothes wringers, 2; watch cases, 1; wire, 2; wooden ware, not elsewhere specified, 2; zinc, 1.

c The amount of taxes reported includes internal revenue taxes for liquors distilled.

TABLE 4.—SUMMARY OF LABOR AND WAGES, 1890.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Number of establishments reporting.	Average annual term of industrial operations per establishment. (Weeks.)	AGGREGATE.			LABOR EMPLOYED AND WAGES PAID TO MEN, WOMEN, AND CHILDREN, BOTH SKILLED AND UNSKILLED, NOT INCLUDING PIECEWORKERS.			
			Average number of hands employed during year.	Average annual earnings per hand.	Total wages paid.	Summary.			
						Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.
All industries.....	6,148		93,610		\$53,165,242	80,190	(a)	(b)	\$47,319,778
1 Agricultural implements.....	4	49	570	\$605.89	345,360	548	50	\$12.01	327,810
2 Artificial limbs. (See also Surgical appliances).	3	52	6	1,055.33	6,332	6	52	20.29	6,332
3 Awnings, tents, and sails.....	15	47	326	363.94	118,645	212	47	9.66	96,382
4 Babbits, metal and solder.....	5	52	78	760.62	59,328	78	52	14.63	59,328
5 Bags, paper.....	3	51	76	517.29	39,314	76	51	10.22	39,314
6 Baking and yeast powders. (See also Chemicals.)	14	47	151	517.72	78,176	151	50	10.43	78,176
7 Baskets and rattan and willow ware.....	15	51	107	418.63	44,793	30	52	9.47	14,693
8 Bellows.....	3	52	17	748.94	12,732	11	52	13.52	7,732
9 Bicycles and tricycles, repairing.....	5	48	18	339.06	6,103	18	47	7.28	6,103
10 Blacksmithing and wheelwrighting. (See also Carriages and wagons.)	219	51	743	640.76	476,085	732	51	12.65	472,487
11 Blinding.....	3	52	13	468.46	6,090	13	52	9.01	6,090
12 Bookbinding and blank-book making. (See also Printing and publishing, book and job.)	14	52	381	437.62	166,735	365	51	8.70	162,115
13 Boot and shoe uppers.....	5	52	39	577.54	22,524	34	52	11.36	20,060
14 Boots and shoes, custom work and repairing.....	477	50	755	481.43	363,479	647	50	9.55	310,621
15 Boots and shoes, factory product.....	24	48	2,592	445.85	1,155,635	2,300	49	8.76	993,763
16 Bottling. (See also Liquors, malt; Mineral and soda waters.)	15	51	83	674.36	55,972	83	51	13.13	55,972
17 Boxes, fancy and paper.....	8	50	391	270.64	105,819	181	52	7.13	66,559
18 Boxes, wooden, packing. (See also Lumber, planing mill products.)	27	48	669	494.25	330,652	526	49	10.78	277,634
19 Brass castings. (See also Plumbers' materials.)	11	52	274	663.36	181,762	273	52	12.80	181,752
20 Bread and other bakery products.....	291	51	1,434	555.26	796,247	1,391	52	10.92	785,558
21 Brick and tile. (See also Clay and pottery products.)	38	37	1,952	449.60	877,619	1,866	42	10.65	836,468
22 Bridges.....	6	52	489	607.60	297,116	489	52	11.68	297,116
23 Brooms and brushes.....	41	47	307	395.05	121,279	236	45	9.42	99,366
24 Carpentening.....	407	44	3,936	765.09	3,011,377	3,877	45	16.81	2,959,631
25 Carpets, rag.....	15	48	18	406.89	7,324	18	48	8.54	7,324
26 Carriages and sleds, children's.....	3	52	77	740.94	57,052	77	52	14.25	57,052
27 Carriages and wagons. (See also Blacksmithing and wheelwrighting.)	114	50	2,283	560.49	1,279,592	2,035	48	11.60	1,135,918
28 Cars, general shop construction by steam railroad companies.....	4	46	782	617.66	483,013	782	50	12.47	483,013
29 Cars, general shop construction by street railroad companies.....	14	52	171	770.42	131,742	162	52	14.82	124,858
30 Cars, steam railroad.....	3	49	1,406	618.85	870,101	906	50	13.19	591,601
31 Cars, street railroad.....	3	52	566	656.54	371,604	566	52	12.63	371,604
32 Cheese and butter, urban dairies.....	6	48	17	594.59	10,108	17	43	13.80	10,108
33 Chemicals. (See also Baking and yeast powders; Fertilizers; Patent medicines and compounds.)	16	51	589	584.73	344,406	579	51	11.62	344,006
34 China decorating. (See also Clay and pottery products.)	3	43	19	393.68	7,480	19	44	8.99	7,480
35 Clay and pottery products, (c) (See also Brick and tile.)	13	44	735	532.25	391,204	723	50	10.59	387,808
36 Cleansing and polishing preparations.....	4	52	32	497.91	14,973	32	52	9.00	14,973
37 Clothing, men's, wholesale.....	48	49	5,003	346.79	1,734,979	2,233	49	9.67	1,063,706
38 Clothing, men's, custom work and repairing.....	300	49	2,299	540.22	1,241,975	1,320	49	11.58	752,144
39 Clothing, women's.....	11	52	499	304.50	151,945	203	52	10.20	107,645
40 Clothing, women's, dressmaking.....	472	50	1,447	308.83	446,881	1,424	50	6.28	443,307
41 Coffee and spices, roasting and grinding.....	9	49	224	640.32	143,432	224	52	12.40	143,432
42 Coffins and burial cases, trimming and finishing.....	27	46	81	646.07	52,332	81	50	12.94	52,332
43 Coffins, burial cases, and undertakers' goods.....	5	44	253	467.79	118,352	214	51	8.79	96,794
44 Confectionery.....	48	47	1,242	414.21	514,453	1,178	47	8.57	488,123
45 Cooperage.....	71	48	1,108	529.88	587,105	750	49	11.01	407,871
46 Carriage and wire.....	7	49	215	416.08	89,457	213	51	8.14	89,957

a The difference between the average term of factory operation and the average term of employment for employé is due to the fact that in some industries the establishments reporting the longest or shortest terms of operation employ the greatest number of hands per establishment.

b Average weekly wages per hand are computed from data in individual reports. The number of hands reported by each establishment is multiplied by the number of weeks embraced by the term of operation; the result is the number of weeks required for one hand to perform

TABLE 4.—SUMMARY OF LABOR AND WAGES, 1890.

LABOR EMPLOYED AND WAGES PAID TO MEN, WOMEN, AND CHILDREN, BOTH SKILLED AND UNSKILLED, NOT INCLUDING PIECEWORKERS—continued.												PIECEWORK.	
Males above 16 years.				Females above 15 years.				Children.				Average number of hands employed during year.	Total wages paid.
Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.	Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.	Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.		
67,907			\$13,992,562	10,020			\$2,939,513	2,263			\$387,698	13,420	\$5,945,469
519	50	\$12.32	318,955	5	50	\$9.95	2,480	24	48	\$5.57	6,375	22	17,550
6	52	20.29	6,332										
116	46	14.17	76,198	94	48	4.38	19,784	2	39	5.13	400	114	22,263
76	52	14.78	58,408	1	52	13.85	720	1	52	3.85	209		
39	50	14.30	28,108	36	51	6.04	11,050	1	52	3.00	156		
79	49	15.27	58,883	71	51	5.33	19,137	1	52	3.00	156		
24	52	11.16	13,825	1	52	3.85	200	5	52	2.57	668	77	30,100
11	52	13.52	7,732									6	5,000
37	46	7.56	5,947					1	52	3.00	156		
718	51	12.89	468,606	3	52	6.51	1,016	16	52	3.44	2,865	11	3,598
11	52	10.05	5,750					2	52	3.27	340		
194	51	11.17	111,095	164	51	5.98	49,741	7	52	3.51	1,279	16	4,620
20	52	13.89	14,450	14	52	7.73	5,630					5	2,444
627	50	9.72	305,898	10	52	5.39	2,907	10	52	3.49	1,316	108	52,858
1,247	49	11.80	723,655	930	49	5.69	269,132	123	51	1.57	9,916	292	161,932
77	51	13.82	54,602					6	52	4.39	1,270		
86	51	10.84	47,749	94	52	3.80	18,550	1	52	5.00	250	210	39,260
471	49	11.56	267,035	7	39	7.42	2,025	48	49	3.62	8,574	143	53,018
272	52	12.84	181,596					1	52	3.00	156	1	10
1,143	52	12.11	715,733	224	52	5.55	64,502	24	50	4.40	5,323	43	10,689
1,677	42	11.35	799,979	4	45	13.16	2,352	185	42	4.36	31,132	86	41,156
489	52	11.68	297,116										
173	47	11.17	91,281	24	26	5.00	3,165	39	45	2.82	4,920	71	21,913
3,846	45	16.91	2,952,482	1	52	6.00	312	30	46	4.99	6,837	59	51,746
16	48	9.16	6,989					2	48	3.51	395		
61	52	15.92	50,512	16	52	7.86	6,540						
2,002	48	11.65	1,123,246	29	46	8.88	11,961	4	52	3.39	706	248	149,679
782	50	12.47	483,013										
162	52	14.82	124,858									9	6,884
896	50	13.24	587,116	10	51	8.79	4,485					500	278,590
559	52	12.72	369,628	1	52	8.00	416	6	52	5.00	1,560		
16	43	14.56	9,908	1	52	3.85	200						
456	51	13.35	310,127	117	52	5.36	32,509	6	52	4.39	1,370	10	400
13	40	12.08	6,280	6	52	3.85	1,200						
716	50	10.68	384,869	2	51	9.03	920	10	50	4.02	2,019	7	3,396
22	52	11.72	13,403	9	52	3.13	1,466	1	52	2.00	104		
1,058	49	14.15	739,655	1,094	49	5.88	316,827	81	47	1.89	7,224	2,770	671,973
960	49	14.12	662,143	340	50	5.07	86,686	20	47	3.52	3,315	979	489,831
63	52	16.75	54,875	136	52	7.39	52,253	4	52	2.46	512	296	44,300
47	43	17.89	36,213	1,353	50	6.02	404,911	24	50	1.82	2,183	23	8,574
190	52	13.85	135,746	28	52	4.48	6,530	6	52	3.71	1,156		
80	50	12.90	51,732	1	52	11.54	600						
196	51	9.09	91,572	18	52	5.58	5,222					39	21,558
562	47	13.16	348,656	532	45	5.32	123,633	84	52	2.50	10,834	64	26,330
734	49	11.13	403,851	1	52	17.31	900	15	47	4.39	3,120	858	179,234
96	51	12.64	62,216	54	51	5.75	15,741	63	52	3.39	11,100	2	400

the labor. Aggregating such results of individual reports the number of weeks required for one hand to perform the labor of the entire industry is obtained. This number used as a divisor for the total wages reported for the industry produces the true average weekly wages.

c Includes drain and sewer pipe, 3 establishments; stone and earthen ware, 7 establishments; terra cotta ware, 2 establishments; white ware and pottery, 1 establishment.

TABLE 4.—SUMMARY OF LABOR AND WAGES, 1890—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.		Number of establishments reporting.	Average annual term of industrial operations per establishment. (Weeks.)	AGGREGATE.			LABOR EMPLOYED AND WAGES PAID TO MEN, WOMEN, AND CHILDREN, BOTH SKILLED AND UNSKILLED, NOT INCLUDING PIECEWORKERS.			
				Average number of hands employed during year.	Average annual earnings per hand.	Total wages paid.	Summary.			
							Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.
1	Cordials and syrups.....	3	52	5	\$894.00	\$1,470	5	52	\$17.19	\$1,470
2	Corsets.....	8	51	224	304.08	68,113	100	52	7.87	43,229
3	Cutlery and edge tools. (See also Hardware; Tools.)	9	48	94	638.12	59,983	94	50	12.72	59,983
4	Dentistry, mechanical.....	52	49	107	615.83	65,894	106	49	12.55	65,604
5	Druggists' preparations, not including prescriptions. (See also Perfumery and cosmetics.)	138	33	230	451.05	103,741	280	37	12.29	103,741
6	Dyeing and cleaning.....	35	49	193	535.85	98,061	173	49	11.33	95,576
7	Electrical apparatus, instruments, and supplies.....	35	52	399	665.19	265,411	373	52	12.89	248,211
8	Electric lights and power.....	4	52	214	744.62	159,348	214	52	14.82	159,348
9	Electroplating.....	9	52	97	506.85	49,165	97	52	9.75	49,165
10	Engraving and diesinking.....	14	51	80	625.33	50,026	79	52	12.19	49,066
11	Engraving, steel, including plate printing. (See also Lithographing and engraving.)	3	52	37	559.65	20,707	36	52	10.79	20,195
12	Engraving, wood.....	14	51	89	576.89	46,151	72	51	11.98	43,916
13	Fancy articles, not elsewhere specified.....	13	52	83	393.73	32,080	59	51	8.83	26,490
14	Fertilizers. (See also Chemicals; Slaughtering and meat packing.)	4	43	95	520.17	49,416	95	49	10.60	49,416
15	Flavoring extracts.....	3	52	11	941.64	10,358	11	52	18.11	10,358
16	Flooring and grist mill products.....	21	45	814	725.52	590,577	814	46	15.67	590,577
17	Food preparations.....	16	38	189	457.79	86,522	189	43	10.65	86,522
18	Foundry and machine shop products. (See also Iron work, architectural and ornamental; Steam fittings and heating apparatus.)	103	49	6,345	611.18	3,877,946	5,485	50	12.10	3,326,985
19	Fruits and vegetables, canning and preserving.....	4	48	209	529.28	110,620	209	45	11.82	110,620
20	Fur goods. (See also Hats and caps.)	4	39	91	452.36	41,165	90	49	9.10	39,373
21	Furniture, cabinet making, repairing and upholstering. (See also Mattresses and spring beds.)	82	51	452	675.31	305,241	414	51	13.78	291,644
22	Furniture, chairs.....	6	51	815	502.68	409,683	637	51	10.81	348,059
23	Furniture, factory products.....	23	51	1,563	578.32	903,908	1,294	51	11.42	752,659
24	Glass.....	5	39	799	521.01	364,709	591	87	11.10	243,448
25	Glass, cutting, staining, and ornamenting.....	9	39	179	412.54	73,844	179	31	13.41	73,844
26	Gloves and mittens. (See also Hosiery and knit goods.)	3	52	53	355.40	18,836	33	52	9.14	15,692
27	Grease and tallow.....	10	52	61	714.72	43,598	61	52	13.74	43,598
28	Hairwork.....	9	51	93	403.12	37,490	93	52	7.82	37,490
29	Hand stamps.....	5	52	27	552.74	16,004	27	52	11.40	16,004
30	Hats and caps, not including wool hats. (See also Fur goods.)	8	48	101	576.61	58,238	40	42	17.01	28,786
31	Hosiery and knit goods.....	7	47	125	275.82	34,477	103	47	6.20	29,702
32	Instruments, professional and scientific.....	8	52	63	592.35	37,318	62	52	11.35	36,318
33	Iron and steel (a).....	6	43	940	590.64	526,998	940	42	13.29	526,998
34	Iron and steel: bolts, nuts, washers, and rivets.....	4	43	175	278.67	48,767	175	33	8.35	48,767
35	Iron work, architectural and ornamental. (See also Foundry and machine shop products.)	23	50	1,015	634.61	644,127	952	50	12.91	603,415
36	Jewelry. (See also Watch, clock, and jewelry repairing.)	10	52	178	788.33	131,422	178	52	14.20	131,422
37	Keolin and other earth grinding.....	3	52	55	550.18	30,260	55	52	10.58	30,260
38	Kindling wood.....	11	52	34	392.65	13,350	34	52	7.55	13,350
39	Labels and tags.....	4	51	17	652.91	11,100	16	51	12.53	10,320
40	Lamps and reflectors.....	4	52	147	362.19	53,242	147	52	6.97	53,242
41	Leather goods.....	3	52	27	616.15	16,636	27	52	11.85	16,636
42	Leather, tanned and curried.....	15	50	323	594.74	192,101	305	51	11.61	181,371
43	Lime and cement.....	4	45	96	419.59	40,281	96	43	9.67	40,281
44	Liquors, malt. (See also Bottling.)	8	42	2,870	793.80	2,278,194	2,870	52	15.32	2,278,194
45	Liquors, vinous.....	7	52	72	896.14	58,042	72	52	15.50	58,042
46	Lithographing and engraving. (See also Engraving, steel, including plate printing; Photolithographing and engraving; Printing and publishing.)	9	52	225	543.84	122,364	222	52	10.44	119,709
47	Lock and gun smithing.....	46	51	91	632.62	57,568	91	52	12.26	57,568
48	Looking glass and picture frames.....	31	49	315	542.46	170,876	269	49	11.29	149,376
49	Lumber and other mill products from logs or bolts.....	7	45	915	396.73	363,004	776	42	9.60	312,354

a Includes the operations of blast furnaces, iron and steel rolling mills, bessemer steel works, and pig and scrap bloomaries.

TABLE 4.—SUMMARY OF LABOR AND WAGES, 1890—CONTINUED.

LABOR EMPLOYED AND WAGES PAID TO MEN, WOMEN, AND CHILDREN, BOTH SKILLED AND UNSKILLED, NOT INCLUDING PIECEWORKERS—continued.													PIECEWORK.	
Males above 16 years.				Females above 15 years.				Children.				Average number of hands employed during year.	Total wages paid.	
Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.	Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.	Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.			
5	52	\$17.19	\$1,470											
12	52	17.03	10,628	94	52	\$6.79	\$32,601					118	\$21,884	1
83	50	13.20	54,671	11	52	9.29	5,312							3
95	50	13.58	64,004	8	46	3.23	1,176	3	52	83.29	\$514	1	200	4
215	36	13.14	100,688	7	52	5.09	1,852	8	52	2.89	1,201			5
125	49	13.36	32,165	42	48	6.20	12,401	6	48	3.49	1,910	10	2,455	6
355	52	13.24	243,345	9	46	8.37	3,480	9	52	2.96	1,386	26	17,299	7
214	52	14.32	159,348											8
93	52	9.97	48,227	2	52	5.77	600	2	52	3.25	328			9
74	52	12.78	49,084	2	52	2.60	270	3	52	3.92	612	1	69	10
80	52	11.70	18,250	3	52	9.10	1,420	3	52	3.87	525	1	512	11
67	51	12.59	43,056	3	48	4.62	600	2	52	1.92	290	8	2,235	12
16	50	18.33	14,776	39	51	5.58	11,072	4	52	3.04	632	24	6,209	13
94	49	10.66	49,182	1	47	5.02	234							14
11	52	18.11	10,358											15
795	46	15.87	585,277	17	41	6.76	4,760	2	47	5.80	540			16
140	41	13.45	76,589	47	49	4.09	9,593	2	52	4.13	430			17
5,404	50	12.20	3,305,073	35	51	7.96	14,151	46	50	3.35	7,761	960	559,961	18
117	46	17.42	93,324	71	46	4.59	14,956	21	35	3.14	2,340			19
33	48	16.24	25,760	56	49	5.07	13,963	1	39	3.55	150	1	1,292	20
389	51	14.26	285,142	18	45	6.91	5,538	7	52	2.65	961	38	13,597	21
616	50	11.02	842,648	8	52	6.58	2,736	13	52	3.96	2,675	178	61,624	22
1,175	51	12.11	724,495	30	52	6.70	10,453	89	51	3.92	17,711	269	151,249	23
541	37	11.75	232,652	1	52	9.62	500	49	42	4.99	10,296	109	121,261	24
174	31	13.50	78,384	5	15	6.24	460							25
22	52	10.82	12,376	10	52	6.18	3,212	1	52	2.00	104	29	3,144	26
61	52	13.74	43,598											27
10	52	20.42	10,620	85	52	6.28	26,870							28
20	52	14.09	14,652	1	52	4.00	208	6	52	3.67	1,144			29
31	52	21.36	26,746	5	49	5.45	1,324	4	48	3.43	668	61	29,592	30
7	47	17.79	5,860	96	47	5.34	23,842					22	4,775	31
61	52	11.38	35,818	1	52	9.62	500					1	1,000	32
939	42	13.80	526,848					1	52	2.88	150			33
148	36	8.88	47,019	1	52	10.00	520	26	19	2.53	1,228			34
940	49	13.01	604,787	3	49	13.68	2,000	9	52	3.51	1,628	63	35,712	35
162	52	15.05	126,812	8	52	7.98	3,320	8	52	3.10	1,290			36
55	52	10.53	30,260											37
31	52	8.06	13,000					3	52	2.24	350			38
11	52	16.39	9,306	5	51	3.97	1,014					1	780	39
132	52	7.55	51,842					15	52	1.79	1,400			40
22	52	13.72	15,700	5	52	3.60	936							41
305	51	11.61	181,371									18	10,790	42
96	43	9.67	40,281											43
2,752	52	15.71	2,241,997	3	52	17.57	2,741	115	51	5.72	33,456			44
69	52	15.86	56,892	3	52	7.37	1,150							45
178	52	11.98	110,209	44	52	4.19	9,500					3	2,655	46
89	52	12.41	57,008	1	52	5.77	300	1	52	5.00	260			47
221	50	12.75	139,850	10	50	5.64	2,810	38	46	3.80	6,716	46	21,500	48
724	41	10.09	301,434	40	51	4.50	9,170	12	51	2.85	1,750	139	59,650	49

TABLE 4.—SUMMARY OF LABOR AND WAGES, 1890—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Number of establishments reporting.	Average annual term of industrial operations per establishment. (Weeks.)	AGGREGATE.			LABOR EMPLOYED AND WAGES PAID TO MEN, WOMEN, AND CHILDREN, BOTH SKILLED AND UNSKILLED, NOT INCLUDING PIECEWORKERS.			
			Average number of hands employed during year.	Average annual earnings per hand.	Total wages paid.	Summary.			
						Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.
1 Lumber, planing mill products, including sash, doors, and blinds. (See also Boxes, wooden, packing; Refrigerators; Wood, turned and carved.)	23	50	1,557	\$615.03	\$976,052	1,541	50	\$12.50	\$954,405
2 Malt. (See also Liquors, malt)	11	33	129	818.19	105,547	129	34	23.75	105,547
3 Mantels, slate, marble, and marbled.	4	51	67	717.21	48,053	67	51	14.11	48,053
4 Marble and stone work. (See also Monuments and tombstones.)	44	41	495	701.22	317,102	457	43	16.17	318,102
5 Masonry, brick and stone.	160	42	4,606	689.85	3,177,469	4,596	45	15.42	3,175,549
6 Mattresses and spring beds. (See also Furniture, cabinet making, repairing and upholstering; Furniture, factory products; Wirework.)	14	50	344	497.62	171,182	242	52	9.39	117,870
7 Millinery and lace goods. (See also Artificial feathers and flowers.)	3	52	57	328.54	18,727	36	52	7.71	14,427
8 Millinery, custom work.	81	47	568	329.53	187,171	528	49	6.87	178,491
9 Mineral and soda waters. (See also Bottling.)	28	46	285	529.30	150,850	278	47	11.40	148,198
10 Models and patterns.	10	48	52	650.23	34,332	52	43	15.44	34,332
11 Monuments and tombstones. (See also Marble and stone work.)	23	50	193	628.33	121,268	193	51	12.34	121,268
12 Musical instruments and materials, not elsewhere specified.	14	47	21	467.52	10,238	21	49	10.01	10,238
13 Musical instruments, organs, and materials.	4	50	30	816.80	24,504	30	51	16.06	24,504
14 Musical instruments, pianos, and materials.	3	52	18	644.78	11,606	18	52	12.40	11,606
15 Oil, linseed.	3	46	156	811.40	131,258	156	46	18.48	131,258
16 Oil, lubricating.	8	44	47	1,059.74	49,808	47	46	23.22	49,808
17 Optical goods.	5	52	14	704.71	9,866	13	52	14.15	9,866
18 Painting and paper hanging.	331	42	2,183	643.04	1,403,759	2,044	45	14.44	1,338,992
19 Paints. (See also Varnish.)	14	47	481	685.26	329,608	481	47	14.47	329,608
20 Paper patterns.	3	52	5	830.00	4,400	5	52	16.92	4,400
21 Patent medicines and compounds. (See also Druggists' preparations.)	58	47	598	634.08	378,200	577	49	12.91	368,320
22 Paving and paving materials.	15	46	239	562.79	134,507	239	47	11.89	134,507
23 Perfumery and cosmetics. (See also Druggists' preparations.)	4	46	60	442.58	26,555	60	38	11.54	26,555
24 Photography.	47	50	252	622.69	156,919	238	51	12.54	152,094
25 Pickles, preserves, and sauces.	9	44	332	443.96	147,894	248	46	10.82	123,434
26 Pipes, tobacco.	5	32	59	393.88	23,239	59	35	11.34	23,239
27 Plastering and stucco work. (See also Masonry, brick and stone.)	64	38	335	731.09	261,665	332	40	19.66	269,715
28 Plumbers' materials.	4	52	491	697.27	342,358	422	52	14.51	318,426
29 Plumbing and gas fitting.	124	50	1,047	669.79	701,265	1,020	51	18.30	688,133
30 Printing and publishing, book and job. (See also Bookbinding and blank-book making.)	105	51	2,693	556.85	1,499,586	2,593	52	10.83	1,458,206
31 Printing and publishing, music.	4	52	18	611.11	11,000	17	52	11.76	10,400
32 Printing and publishing, newspapers and periodicals.	104	51	2,460	777.73	1,913,220	1,967	52	14.61	1,486,692
33 Refrigerators. (See also Lumber, planing mill products.)	3	52	269	563.16	151,490	208	52	10.85	114,400
34 Regalia and society banners and emblems.	4	50	39	429.08	16,734	38	51	8.53	16,634
35 Roofing and roofing materials. (See also Tinsmithing, etc.)	62	49	615	647.39	398,144	615	46	14.16	398,144
36 Saddlery and harness.	110	50	1,212	668.35	810,044	767	49	14.27	530,172
37 Sausage. (See also Slaughtering and meat packing, wholesale.)	13	50	41	596.63	24,462	41	51	11.62	24,462
38 Scales and balances.	4	47	26	643.46	16,730	21	51	14.39	15,400
39 Sewing machines, repairing.	8	52	15	568.13	8,522	15	52	10.93	8,522
40 Shipbuilding.	4	42	352	456.95	160,848	202	41	12.28	100,848
41 Shirts, factory product. (See also Furnishing goods, men's.)	25	50	482	315.84	152,236	218	51	8.82	98,576
42 Show cases.	4	52	67	360.60	24,160	65	52	6.94	23,460
43 Slaughtering, wholesale, not including meat packing.	4	52	14	906.00	12,684	14	52	17.42	12,684
44 Slaughtering and meat packing, wholesale.	56	51	746	701.81	523,553	714	50	14.41	519,453
45 Soap and candles.	10	51	246	554.62	136,437	242	51	10.84	135,094
46 Steam fittings and heating apparatus. (See also Foundry and machine shop products.)	9	51	155	767.06	118,895	154	50	15.35	118,370
47 Stencils and brands.	5	52	12	619.25	7,431	10	52	13.29	6,911
48 Sugar and molasses, refining.	3	52	32	873.25	27,944	32	52	16.79	27,944
49 Surgical appliances. (See also Artificial limbs.)	7	52	19	607.89	11,550	19	52	11.69	11,550

TABLE 4.—SUMMARY OF LABOR AND WAGES, 1890—CONTINUED.

LABOR EMPLOYED AND WAGES PAID TO MEN, WOMEN, AND CHILDREN, BOTH SKILLED AND UNSKILLED, NOT INCLUDING PIECEWORKERS—continued.												PIECEWORK.		
Males above 16 years.				Females above 15 years.				Children.				Average number of hands employed during year.	Total wages paid.	
Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.	Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.	Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.			
1,485	49	\$12.82	\$941,977	5	51	\$13.38	\$3,420	51	52	\$3.42	\$9,068	46	\$21,647	1
129	34	23.75	105,547											2
67	51	14.11	48,053											3
457	43	16.17	318,102											4
4,591	45	15.43	3,173,397	2	52	12.00	1,248	3	52	5.79	904	10	1,920	5
200	52	10.46	108,416	20	52	5.64	5,866	22	52	3.14	3,588	102	53,312	6
12	52	11.65	7,270	21	52	6.20	6,770	3	52	2.48	387	21	4,300	7
63	48	9.58	28,836	449	49	6.66	147,527	16	50	2.66	2,128	40	8,680	8
258	47	11.94	143,913	5	52	7.50	1,935	15	46	3.40	2,350	7	2,652	9
50	42	16.03	33,967					2	52	3.51	365			10
190	51	12.43	120,487	1	52	7.69	400	2	39	4.88	381			11
19	48	10.83	9,952	1	52	3.00	156	1	52	2.50	130			12
27	51	16.87	23,100					3	52	9.00	1,404			13
18	52	12.40	11,606											14
186	46	18.48	131,258											15
45	46	23.49	48,852	2	33	14.71	956							16
11	52	15.92	9,106	1	52	5.00	260	1	52	3.85	200	1	200	17
2,001	45	14.66	1,325,676	8	40	4.37	1,410	35	45	4.37	6,906	139	69,767	18
448	47	15.11	319,363	24	50	7.01	8,405	9	50	4.07	1,840			19
4	52	16.35	3,400	1	52	19.23	1,000							20
359	49	17.48	308,488	196	51	5.65	56,321	22	42	3.80	3,511	21	4,880	21
239	47	11.89	134,507											22
11	50	19.58	10,766	49	36	9.02	15,799							23
180	51	14.19	129,274	54	52	7.95	22,319	4	52	2.41	501	14	4,825	24
209	47	11.81	110,242	39	43	7.94	13,192					84	23,960	25
50	35	12.74	22,309	6	37	8.39	750	3	26	2.31	180			26
331	40	19.73	259,611					1	52	2.00	104	3	1,950	27
421	52	14.52	317,826	1	52	11.54	600					69	23,532	28
978	51	13.70	679,705					42	50	4.01	8,433	27	13,127	29
1,918	52	12.78	1,272,028	592	52	5.58	171,770	83	52	3.37	14,408	100	41,380	30
17	52	11.76	10,400									1	600	31
1,782	52	15.32	1,412,950	166	52	8.24	70,472	19	51	3.33	3,270	493	426,528	32
200	52	10.93	113,710	3	52	5.00	780					66	37,000	33
19	52	12.11	11,960	17	50	5.17	4,434	2	52	2.31	240	1	100	34
603	46	14.27	393,638	8	48	9.97	3,800	4	39	4.56	706			35
725	49	14.77	524,244	10	50	5.15	2,590	22	52	2.92	3,338	455	279,872	36
39	51	11.57	23,162	2	52	12.50	1,300							37
21	51	14.39	15,400									5	1,330	38
18	52	12.16	8,222	2	52	2.88	300							39
202	41	12.23	100,848									150	60,000	40
81	51	14.96	62,210	135	51	5.20	35,935	2	51	4.23	431	264	53,660	41
64	52	6.90	22,960	1	52	9.62	500					2	700	42
13	52	18.39	12,434					1	52	4.81	250			43
696	50	14.63	513,733	17	52	6.19	5,470	1	52	4.81	250	32	4,100	44
202	52	12.46	130,254	8	52	4.53	1,886	32	49	1.82	2,864	4	1,433	45
152	50	15.45	117,530	2	52	8.08	840					1	525	46
8	52	15.95	6,636					2	52	2.64	275	2	520	47
28	52	18.71	27,244	4	52	3.37	700							48
13	52	14.04	9,494	6	52	6.59	2,056							49

TABLE 4.—SUMMARY OF LABOR AND WAGES, 1890—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Number of establishments reporting.	Average annual term of industrial operations per establishment (Weeks.)	AGGREGATE.			LABOR EMPLOYED AND WAGES PAID TO MEN, WOMEN, AND CHILDREN, BOTH SKILLED AND UNSKILLED, NOT INCLUDING PIECEWORKERS.			
			Average number of hands employed during year.	Average annual earnings per hand.	Total wages paid.	Summary.			
						Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.
1 Tinsmithing, coppersmithing, and sheet-iron working. (See also Roofing and roofing materials; Stamped ware.)	132	50	1,166	\$351.66	\$643,236	1,134	50	\$11.08	\$633,862
2 Tobacco, chewing, smoking, and snuff.....	12	51	2,826	478.74	1,352,906	2,162	49	10.98	1,162,410
3 Tobacco, cigars, and cigarettes.....	296	50	1,232	506.20	623,633	715	51	10.32	374,181
4 Tools, not elsewhere specified. (See also Cutlery and edge tools; Hardware.)	9	52	163	608.42	99,173	83	52	18.37	57,576
5 Trunks and valises.....	15	52	236	681.40	160,810	138	52	13.89	99,570
6 Umbrellas and canes.....	9	45	35	591.46	20,701	35	49	12.19	20,701
7 Upholstery materials.....	4	46	110	621.55	68,370	65	51	15.43	51,106
8 Varnish. (See also Paints).....	5	47	24	889.58	21,350	24	50	17.85	21,350
9 Vinegar and cider.....	12	45	111	695.95	77,251	102	49	15.23	75,427
10 Watch, clock, and jewelry repairing.....	124	51	259	514.90	133,359	232	51	10.39	123,314
11 Whips.....	3	42	6	251.33	1,508	4	43	5.82	1,003
12 Window shades.....	6	47	76	590.32	44,864	76	51	11.67	44,864
13 Wire work, including wire rope and cable.....	16	47	288	551.14	158,728	240	51	12.18	149,408
14 Wood, turned and carved. (See also Lumber, planed.)	18	48	167	642.81	107,350	167	51	12.72	107,350
15 All other industries (a).....	106	.....	6,860	.....	3,565,715	5,747	.....	.....	2,985,082

a Embracing ammunition, 2; artificial feathers and flowers, 2; axle grease, 2; bagging, flax, hemp, and jute, 1; bags, other than paper, 2; bells, 2; billiard tables and materials, 2; bone, ivory, and lamp black, 2; boots and shoes, cut stock, 1; boxes, cigar, 2; brass ware, 2; calcium lights, 1; carriage and wagon materials, 2; clocks, 1; cork cutting, 1; cotton goods, 2; cotton ties, 1; dentists' materials, 2; dyestuffs and extracts, 1; engravers' materials, 1; files, 2; fireworks, 1; furnishing goods, men's, 1; galvanizing, 1; gas, manufactured, heating and illuminating, 1; glue, 1; hardware, 2; house furnishing goods, not elsewhere specified, 2; ice, artificial, 1; ink, printing, 1; ink, writing, 1; iron and steel, nails and spikes, cut and wrought, 2; ivory and bone work, 1; japaning, 1; lapidary work, 1; lard, refined, 1; leather, morocco, 1; lightning rods, 2; liquors, distilled, 2; matches, 1; maulage and paste, 2; nets and seines, 2; oil, castor, 2; photographic materials, 2;

TABLE 4.—SUMMARY OF LABOR AND WAGES, 1890—CONTINUED.

LABOR EMPLOYED AND WAGES PAID TO MEN, WOMEN, AND CHILDREN, BOTH SKILLED AND UNSKILLED, NOT INCLUDING PIECEWORKERS—continued.												PIECEWORK.		
Males above 16 years.				Females above 15 years.				Children.				Average number of hands employed during year.	Total wages paid.	
Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.	Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.	Average number of hands employed during year.	Average number of weeks employed during year.	Average weekly wages per hand.	Total wages paid.			
1,038	50	\$11.79	\$615,682	13	51	\$5.91	\$3,920	83	52	\$3.30	\$14,260	32	\$9,374	1
1,268	49	13.65	853,827	892	48	7.13	308,218	2	52	3.51	365	664	190,496	2
614	51	11.36	352,820	49	50	5.44	13,424	52	52	2.94	7,937	517	249,452	3
72	52	14.59	54,462	2	52	12.02	1,250	9	52	3.98	1,864	80	41,597	4
136	52	14.05	99,258					2	52	3.00	312	98	61,240	5
23	47	16.77	18,020	10	52	4.66	2,424	2	52	2.47	257			6
48	52	18.04	44,605	17	49	7.75	6,500					45	17,264	7
23	50	17.79	20,350	1	52	19.23	1,000							8
100	49	15.40	74,947	2	42	5.68	450					9	1,824	9
217	52	10.66	119,172	7	44	9.53	2,933	8	48	3.13	1,209	27	10,045	10
4	43	5.82	1,008									2	500	11
73	51	11.94	44,040	3	52	5.28	824							12
226	51	12.61	146,148	3	52	6.00	936	11	47	4.47	2,324	48	9,320	13
159	50	13.22	106,050					8	52	3.13	1,300			14
4,522			2,699,214	904			227,214	321			58,654	1,113	580,633	15

photolithographing and engraving, 2; plated and britannia ware, 1; pocketbooks, 1; printing materials, 1; pulp, from fiber, other than wood, 1; pumps, not including steam pumps, 2; rubber and other elastic goods, 2; safes and vaults, 1; saws, 1; screws, machine, 1; silk and silk goods, 1; smelting and refining (base scrap metal, not from the ore), 1; sporting goods, 2; springs, steel, car and carriage, 2; stamped ware, 1; stereotyping and electrotyping, 1; tar and turpentine, 1; taxidermy, 2; timber products, not manufactured at mill, 1; tin foil, 1; toys and games, 2; type founding, 2; typewriters and supplies, 2; washing machines and clothes wringers, 2; watch cases, 1; wire, 2; wooden ware, not elsewhere specified, 2; zinc, 1.

TABLE 5.—MATERIALS USED AND GOODS MANUFACTURED, 1890.

MECHANICAL AND MANUFACTURING INDUSTRIES.	MATERIALS USED.					
	Total materials.		Principal materials used.		Fuel.	
	Number of establishments reporting. (a)	Cost.	Number of establishments reporting.	Cost.	Number of establishments reporting.	Cost.
All industries.....	5,938	\$122,010,805	5,831	\$107,157,133	2,261	\$2,407,516
1 Agricultural implements.....	4	447,577	4	385,173	4	6,599
2 Artificial limbs. (See also Surgical appliances).....	3	2,000	3	2,000		
3 Awnings, tents, and sails.....	15	352,459	15	342,549	5	450
4 Babbit metal and solder.....	5	966,349	5	962,555	5	3,044
5 Bags, paper.....	3	306,728	3	304,228		
6 Baking and yeast powders. (See also Chemicals).....	14	201,288	13	185,363	4	1,825
7 Baskets and rattan and willow ware.....	15	49,582	15	47,089	2	238
8 Bellows.....	3	19,375	3	18,850	2	200
9 Bicycles and tricycles, repairing.....	5	2,900	5	2,900		
10 Blacksmithing and wheelwrighting. (See also Carriages and wagons).....	219	224,572	220	204,401	217	13,152
11 Bluing.....	3	6,537	3	6,415	2	110
12 Bookbinding and blank-book making. (See also Printing and publishing, book and job.).....	14	106,149	13	90,591	3	1,468
13 Boot and shoe uppers.....	4	35,128	4	35,128		
14 Boots and shoes, custom work and repairing.....	477	161,205	475	152,185	48	681
15 Boots and shoes, factory product.....	24	2,107,854	21	1,909,878	14	40,031
16 Bottling. (See also Liquors, malt; Mineral and soda waters).....	15	151,853	15	145,665	2	526
17 Boxes, fancy and paper.....	8	368,163	8	359,080	6	1,583
18 Boxes, wooden, packing. (See also Lumber, planing mill products).....	27	594,937	27	577,410	13	4,635
19 Brass castings. (See also Plumbers' materials).....	11	392,588	11	327,791	11	4,187
20 Bread and other bakery products.....	291	2,173,432	291	1,974,253	290	52,969
21 Brick and tile. (See also Clay and pottery products).....	38	380,103	38	281,801	4	16,748
22 Bridges.....	6	500,300	6	442,500	3	7,300
23 Brooms and brushes.....	41	144,985	40	136,986	2	61
24 Carpentering.....	391	5,794,199	391	4,772,417	30	4,519
25 Carpets, rag.....	15	6,490	15	6,490	1	6
26 Carriages and sleds, children's.....	3	61,445	3	50,500	3	945
27 Carriages and wagons. (See also Blacksmithing and wheelwrighting).....	114	1,778,240	113	1,621,943	108	22,222
28 Cars, general shop construction by steam railroad companies.....	4	426,399	4	406,368	3	10,565
29 Cars, general shop construction by street railroad companies.....	14	87,658	14	79,708	14	2,150
30 Cars, steam railroad.....	3	2,327,820	3	2,216,381	3	76,135
31 Cars, street railroad.....	3	472,062	3	318,987	3	6,175
32 Cheese and butter, urban dairies.....	6	66,471	6	65,924	2	200
33 Chemicals. (See also Baking and yeast powders; Fertilizers; Patent medicines and compounds.).....	16	1,559,707	15	1,375,677	11	30,255
34 China decorating. (See also Clay and pottery products).....	3	2,882	3	1,322	3	1,560
35 Clay and pottery products. (c) (See also Brick and tile).....	13	234,438	13	88,918	13	104,230
36 Cleansing and polishing preparations.....	4	34,100	4	33,400	2	400
37 Clothing, men's, wholesale.....	48	3,534,030	48	3,523,790	34	6,811
38 Clothing, men's, custom work and repairing.....	265	1,237,948	254	1,216,122	52	1,233
39 Clothing, women's.....	11	297,752	11	289,000		
40 Clothing, women's, dressmaking.....	320	445,112	283	433,323	57	1,101
41 Coffee and spices, roasting and grinding.....	9	2,076,771	9	2,041,303	9	5,490
42 Coffins and burial cases, trimming and finishing.....	27	94,688	27	92,323	1	15
43 Coffins, burial cases, and undertakers' goods.....	5	171,430	5	126,550	3	1,840
44 Confectionery.....	48	1,361,930	48	1,269,221	44	16,153
45 Cooperage.....	71	1,033,102	71	955,899	18	11,378
46 Cordage and twine.....	7	474,497	7	457,577	2	1,720
47 Cordials and sirups.....	3	17,451	3	17,200	3	121
48 Corsets.....	8	51,625	7	51,245	1	80
49 Cutlery and edge tools. (See also Hardware; Tools).....	9	28,087	9	27,812	5	255
50 Dentistry, mechanical.....	52	28,026	52	26,737	8	192
51 Druggists' preparations, not including prescriptions. (See also Perfumery and cosmetics.).....	138	117,927	138	113,681	51	801
52 Dyeing and cleaning.....	35	25,588	30	20,990	35	3,338
53 Electrical apparatus, instruments, and supplies.....	35	236,689	35	224,925	3	3,744
54 Electric lights and power.....	1	130,153	1	17,430	4	74,775
55 Electroplating.....	9	14,490	9	12,026	4	2,154
56 Engraving and diesinking.....	14	18,427	13	16,532		
57 Engraving, steel, including plate printing. (See also Lithographing and engraving).....	3	11,015	2	9,244	3	380
58 Engraving, wood.....	14	7,340	14	6,673	4	77
59 Fancy articles, not elsewhere specified.....	13	24,095	12	22,975		
60 Fertilizers. (See also Chemicals; Slaughtering and meat packing).....	4	124,823	3	107,464	4	8,859

a This table includes reports of establishments which only use materials furnished by others. In such instances the value of product is simply the amount received for the labor performed and is reported as custom work under the head of "All other products". The establishment furnishing the material reports it under the proper head and the amount paid for such custom work appears in Table 3 under the head of "Sundry miscellaneous expenses".

TABLE 5.—MATERIALS USED AND GOODS MANUFACTURED, 1890.

MATERIALS USED—continued.				GOODS MANUFACTURED.						
Mill supplies.		All other materials.		Actual produced value. (b)	Total products.		Principal products.		All other products, including receipts for custom work and repairing.	
Number of establishments reporting.	Cost.	Number of establishments reporting.	Cost.		Number of establishments reporting.	Value.	Number of establishments reporting.	Value.	Number of establishments reporting.	Value.
347	\$933,721	2,031	\$11,512,435	\$106,621,026	6,148	\$228,714,317	4,886	\$214,079,625	2,807	\$14,634,692
2	31,429	3	74,376	659,877	4	1,107,454	4	1,044,454	2	63,000
1	1,050	8	8,380	8,380	3	10,500	3	10,500	2	1,312
2		2	180	249,009	15	602,330	15	581,629	9	29,791
1		1	2,500	151,301	5	1,120,650	5	1,120,650	1	300
		7	14,600	122,748	3	431,228	3	431,228		
1	120	5	2,135	202,364	14	403,772	14	402,272	1	1,500
1	25	2	300	68,509	15	117,891	15	116,579	5	1,812
		1		27,625	3	47,000	3	45,500	1	1,500
		59	6,852	8,200	5	11,100	5	9,600	2	1,500
4	167			679,605	219	893,177	150	437,022	139	461,155
		1	12	21,863	3	28,400	3	28,400		
		3	14,100	228,199	14	336,227	13	312,627	5	23,600
				28,522	5	63,800	5	63,800		
1	82	175	7,957	514,425	477	675,732	267	257,833	434	417,899
		12	153,245	2,136,944	24	4,250,961	24	3,850,961	1	400,000
1	360	7	5,302	125,153	15	277,006	15	277,006		
		2	7,500	256,357	8	624,520	8	624,520		
10	3,835	8	9,207	576,373	27	1,172,859	27	1,169,543	1	3,316
2	600	1	10	310,498	11	643,436	11	523,136	3	120,300
3	75	132	146,133	1,423,960	291	3,597,322	291	3,503,227	99	94,163
1	5,100	12	126,454	1,311,589	38	1,691,692	38	1,679,692	3	12,000
1	50,000	1	500	519,219	6	1,019,519	6	1,019,519		
1		15	8,023	196,629	41	343,305	41	332,490	7	19,815
		225	1,017,263	4,569,483	407	10,364,922	345	9,455,865	213	909,057
		1	25	9,168	15	15,682	15	15,682		
		1	10,000	99,735	3	161,180	3	155,500	1	5,680
1	16	50	134,059	1,825,015	114	3,056,735	114	3,056,927	102	546,808
3	9,466			483,013	4	909,412	4	630,807	2	278,605
		2	5,800	194,083	14	281,741	14	281,741		
1	2,227	2	33,677	1,058,353	3	3,386,173	3	3,386,173		
		2	145,000	591,864	3	1,063,926	3	1,063,926		
		4	347	24,885	6	90,856	6	90,856		
2	1,075	6	152,700	1,112,732	16	2,672,749	16	2,672,749		
				10,118	3	13,000	3	13,000		
1	500	7	40,790	664,917	13	899,855	13	747,392	2	152,463
		1	300	29,005	4	63,105	4	63,055	1	50
2	315	13	53,114	2,965,862	48	6,554,982	48	6,552,982	1	2,000
		60	20,543	1,836,476	300	3,075,706	197	2,585,128	187	490,578
		5	8,752	243,042	11	541,894	11	541,500	1	394
1	25	83	10,663	730,827	472	1,176,078	72	495,206	425	679,872
1	500	2	29,478	389,621	9	2,466,392	9	2,456,054	2	10,338
		5	2,850	107,519	27	202,207	27	201,557	2	650
3	1,840	3	41,200	265,254	5	436,684	5	436,684		
1	500	17	76,056	1,100,107	48	2,462,037	48	2,454,357	2	7,680
2	5,700	18	60,625	879,677	71	1,912,779	71	1,858,658	22	54,121
		3	11,800	189,808	7	664,305	7	663,705	2	600
1	3,409	2	120	10,229	3	27,680	3	27,680		
		2	300	135,955	8	183,450	8	187,750	1	700
		2	300	149,023	9	177,555	4	165,725	6	11,830
1	20	9	1,097	121,451	52	145,821	51	145,931	4	3,596
		34	3,445	226,986	138	314,913	138	342,643	10	2,270
		21	1,260	142,696	35	163,281	3	4,080	35	164,204
		5	8,020	436,203	35	674,950	35	631,950	5	43,000
4	29,348	1	8,600	293,537	4	423,690	4	423,690		
		3	310	74,178	9	88,783	6	81,888	4	6,900
1	20	5	1,495	77,146	14	96,067	14	91,592	3	4,475
		3	1,771	35,500	3	47,102	3	47,102		
		2	540	67,515	14	74,987	14	73,457	1	1,500
1	50	4	1,120	64,529	13	83,624	12	87,440	2	1,194
3	7,800	2	700	87,893	4	212,716	4	130,474	3	82,242

^b See explanation on page 13 under head "Value of product".
^c Includes drain and sewer pipe, 3 establishments; stone and earthen ware, 7 establishments; terra cotta ware, 2 establishments; white ware and pottery, 1 establishment.

TABLE 5.—MATERIALS USED AND GOODS MANUFACTURED, 1890—CONTINUED.

		MATERIALS USED.					
		Total materials.		Principal materials used.		Fuel.	
		Number of establishments reporting.	Cost.	Number of establishments reporting.	Cost.	Number of establishments reporting.	Cost.
MECHANICAL AND MANUFACTURING INDUSTRIES.							
1	Flavoring extracts.....	3	\$38,239	3	\$37,789		
2	Flouring and grist mill products.....	21	10,998,006	21	10,794,616	21	\$105,490
3	Food preparations.....	16	242,519	16	221,585	6	1,147
4	Foundry and machine shop products. (See also Iron work, architectural and ornamental; Steam fittings and heating apparatus.)	103	5,095,621	102	4,319,138	84	224,621
5	Fruits and vegetables, canning and preserving.....	4	1,038,884	4	952,509	3	1,600
6	Fur goods. (See also Hats and caps).....	4	96,386	4	88,000		
7	Furniture, cabinet making, repairing and upholstering. (See also Mattresses and spring beds.)	82	352,489	81	325,261	6	985
8	Furniture, chairs.....	6	262,540	6	210,915	4	1,450
9	Furniture, factory products.....	33	1,464,809	33	1,428,787	22	10,792
10	Glass.....	5	314,756	5	207,441	5	60,634
11	Glass, cutting, staining, and ornamenting.....	9	76,279	9	74,320	6	1,453
12	Gloves and mittens. (See also Hosiery and knit goods).....	2	28,772	3	26,446	1	26
13	Grease and tallow.....	10	342,522	9	337,410	9	4,697
14	Hairwork.....	9	51,598	9	51,398	2	100
15	Hand stamps.....	5	18,816	5	12,616	1	60
16	Hats and caps, not including wool hats. (See also Fur goods).....	8	58,928	8	58,114	7	464
17	Hosiery and knit goods.....	7	29,840	7	29,750	1	20
18	Instruments, professional and scientific.....	8	9,763	8	8,369	6	608
19	Iron and steel (a).....	6	1,583,648	6	950,116	6	615,022
20	Iron and steel: bolts, nuts, washers, and rivets.....	4	147,823	4	142,330	4	5,143
21	Iron work, architectural and ornamental. (See also Foundry and machine shop products.)	23	880,039	23	852,663	21	18,266
22	Jewelry. (See also Watch, clock, and jewelry repairing).....	10	158,098	10	154,958	3	600
23	Kaolin and other earth grinding.....	3	45,816	3	34,846	3	6,720
24	Kindling wood.....	11	11,090	11	11,090		
25	Labels and tags.....	4	4,706	4	3,583	3	128
26	Lamps and reflectors.....	4	73,916	4	67,416	3	1,300
27	Leather goods.....	3	18,273	3	17,038	3	1,240
28	Leather, tanned and curried.....	15	1,104,567	15	1,087,839	15	8,002
29	Lime and cement.....	4	46,407	4	33,330	4	33,087
30	Liquors, malt. (See also Bottling).....	8	6,289,053	8	2,964,439	8	223,632
31	Liquors, vinous.....	7	68,803	7	63,603	3	2,200
32	Lithographing and engraving. (See also Engraving, steel, including plate printing; Photolithographing and engraving; Printing and publishing.)	9	69,158	9	61,920	4	1,275
33	Lock and gun smithing.....	46	25,882	44	24,306	38	548
34	Looking-glass and picture frames.....	31	209,092	31	194,069	7	1,410
35	Lumber and other mill products from logs or bolts.....	7	876,654	7	850,962		
36	Lumber, planing mill products, including sash, doors, and blinds. (See also Boxes, wooden, packing; Refrigerators; Wood, turned and carved.)	23	1,568,942	23	1,371,932	16	11,146
37	Malt. (See also Liquors, malt).....	11	499,992	9	485,730	11	12,567
38	Mantels, slate, marble, and marbleized.....	4	36,470	4	33,995	2	160
39	Marble and stone work. (See also Monuments and tombstones).....	44	581,769	44	579,999	4	1,420
40	Masonry, brick and stone.....	153	4,558,123	157	4,128,743	21	2,818
41	Mattresses and spring beds. (See also Furniture, cabinet making, repairing and upholstering; Furniture, factory products; Wire-work.)	14	427,270	14	414,841	6	5,240
42	Millinery and lace goods. (See also Artificial feathers and flowers).....	3	60,670	3	60,620		
43	Millinery, custom work.....	81	235,571	81	234,615	3	145
44	Mineral and soda waters. (See also Bottling).....	23	124,242	27	109,668	17	2,394
45	Models and patterns.....	10	5,614	10	5,061	3	85
46	Monuments and tombstones. (See also Marble and stone work).....	23	147,506	23	142,816	2	1,210
47	Musical instruments and materials, not elsewhere specified.....	14	4,359	13	3,768	2	40
48	Musical instruments, organs, and materials.....	4	13,990	4	11,300	1	90
49	Musical instruments, pianos, and materials.....	3	4,848	3	4,298	1	100
50	Oil, linseed.....	3	1,118,707	3	1,070,397	2	10,358
51	Oil, lubricating.....	8	166,006	8	165,306	2	450
52	Optical goods.....	5	5,233	5	4,840		
53	Painting and paper hanging.....	331	872,231	331	841,812	22	355
54	Paints. (See also Varnish).....	14	1,998,404	13	1,814,880	12	17,603
55	Paper patterns.....	3	3,166	3	2,294	1	100
56	Patent medicines and compounds. (See also Druggists' preparations).....	58	678,589	58	601,437	10	1,177
57	Paving and paving materials.....	14	219,708	14	217,928	4	1,480
58	Perfumery and cosmetics. (See also Druggists' preparations).....	4	30,175	4	27,575		
59	Photography.....	47	82,779	47	77,109		
60	Pickles, preserves, and sauces.....	9	603,006	9	578,723	4	2,825

a Includes the operations of blast furnaces, iron and steel rolling mills, bessemer steel works, and pig and scrap bloomaries.

TABLE 5.—MATERIALS USED AND GOODS MANUFACTURED, 1890—CONTINUED.

MATERIALS USED—continued.				GOODS MANUFACTURED.						
Mill supplies.		All other materials.		Actual produced value.	Total products.		Principal products.		All other products, including receipts for custom work and repairing.	
Number of establishments reporting.	Cost.	Number of establishments reporting.	Cost.		Number of establishments reporting.	Value.	Number of establishments reporting.	Value.	Number of establishments reporting.	Value.
9	\$31,732	1	\$500	\$23,560	3	\$61,799	3	\$61,799	1	\$72,072
2	12,800	6	66,168	1,642,994	21	12,541,000	21	12,568,928	1	17,000
24	81,906	8	6,987	233,791	16	477,160	16	460,160	1	761,702
		42	469,956	6,848,712	103	11,945,493	92	11,183,791	40	
1	300	1	84,475	308,667	4	1,347,651	4	1,347,651		
		3	8,386	95,454	4	191,840	4	183,340	2	8,500
8	1,306	23	24,987	513,036	82	805,705	68	783,502	51	82,203
1	1,800	4	48,875	568,897	6	831,437	6	826,437	1	5,000
8	4,820	10	20,410	1,496,185	33	2,961,404	33	2,936,754	6	24,650
		3	46,681	515,674	5	838,930	5	838,930		
1	14	2	492	118,480	9	194,859	9	194,659	1	200
1	300			26,475	3	53,247	3	47,522	2	5,725
1	50	1	365	82,198	10	425,020	10	399,239	6	25,800
		1	100	74,292	9	125,890	9	123,840	2	2,050
1	6,000	1	140	25,584	5	44,400	5	44,400		
		2	350	76,324	8	135,352	4	123,312	5	12,040
		2	70	50,921	7	81,445	7	81,445		
		3	786	62,053	8	72,900	8	71,400	1	1,500
		3	18,440	930,113	6	2,513,761	6	2,502,425	2	11,336
		1	300	101,118	4	246,941	4	246,608	1	2,333
3	5,225	10	3,885	1,143,487	23	2,023,526	22	1,997,901	12	25,625
		4	2,540	226,742	10	385,040	10	367,840	5	17,200
2	1,750	2	2,500	87,584	3	133,400	3	133,400		
				19,650	11	30,140	11	30,140		
1	45	2	950	14,894	4	19,600	4	19,600		
		2	5,200	110,666	4	184,582	4	179,022	2	5,560
				25,522	3	43,800	3	43,800		
		6	8,726	397,943	15	1,502,680	14	1,125,080	4	377,600
				53,754	4	102,321	4	90,321	1	12,000
1	57,692	4	3,043,090	9,896,507	8	16,185,560	8	14,310,656	3	1,874,904
		1	3,000	139,497	7	208,300	7	208,300		
		4	5,963	173,827	9	244,275	9	244,275		
3	35	11	993	89,966	46	115,948	11	44,520	41	71,428
1	100	16	13,513	312,740	31	522,169	30	507,619	12	14,550
4	13,179	3	11,513	814,178	7	1,689,832	6	1,321,141	4	368,691
15	161,606	6	24,258	1,490,036	23	3,061,178	23	3,026,678	4	31,500
		4	1,150	225,932	11	725,924	11	701,230	3	24,694
		3	2,325	63,340	4	99,810	4	98,610	2	1,200
1	350			604,291	44	1,186,060	44	1,182,960	3	3,100
29	184,985	42	241,582	4,564,224	160	9,122,952	144	8,876,667	54	246,285
2	2,200	5	4,989	309,104	14	737,174	14	729,809	5	7,365
		1	50	32,830	3	93,500	3	93,500		
		9	741	313,281	81	553,972	81	533,431	36	20,541
2	70	14	11,900	330,296	28	454,858	28	436,518	4	18,340
4	280	6	418	39,366	10	45,334	9	43,517	4	1,817
1	50									
		8	3,455	207,911	23	355,417	23	349,302	9	6,115
		7	551	24,356	14	23,715	7	14,075	12	14,640
		3	2,600	32,350	4	46,340	4	40,240	3	6,100
		1	200	18,752	3	23,600	2	15,600	2	8,000
1	250	3	32,581	319,014	3	1,438,201	3	987,412	3	450,789
3	5,371									
		2	125	184,064	8	350,170	8	350,170		
		4	948	14,212	5	19,500	5	14,600	3	4,900
		114	20,310	1,968,765	331	2,841,041	267	2,345,131	142	495,910
32	9,754	4	157,375	1,165,414	14	3,163,818	14	3,160,318	1	3,500
6	8,546	2	772	8,284	3	11,450	3	11,450		
		19	20,975	1,519,137	58	2,196,416	58	2,194,066	1	2,350
		2	200	202,253	15	421,961	15	421,961		
		2	2,600	77,105	4	107,400	4	95,400	1	12,000
		16	5,670	301,983	47	384,762	46	372,987	8	11,775
3	1,330	4	20,627	355,514	9	958,519	9	954,519	1	3,900

TABLE 5.—MATERIALS USED AND GOODS MANUFACTURED, 1890—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.		MATERIALS USED.					
		Total materials.		Principal materials used.		Fuel.	
		Number of establishments reporting.	Cost.	Number of establishments reporting.	Cost.	Number of establishments reporting.	Cost.
1	Pipes, tobacco.....	5	\$12,445	5	\$11,740	8	\$495
2	Plastering and stucco work. (See also Masonry, brick and stone).....	64	164,944	64	162,250	1	200
3	Plumbers' materials.....	4	857,800	4	822,128	4	8,672
4	Plumbing and gas fitting.....	124	648,389	123	617,187	120	6,888
5	Printing and publishing, book and job. (See also Bookbinding and blank-book making.).....	104	1,431,578	104	1,360,739	49	14,562
6	Printing and publishing, music.....	4	8,121	4	7,621		
7	Printing and publishing, newspapers and periodicals.....	104	1,188,317	91	938,692	42	20,965
8	Refrigerators. (See also Lumber, planing mill products).....	3	1,110,913	3	1,098,320	3	1,518
9	Regalia and society banners and emblems.....	4	8,580	4	3,470	2	90
10	Roofing and roofing materials. (See also Tinsmithing, etc.).....	62	667,345	62	614,629	32	6,792
11	Saddlery and harness.....	110	1,347,982	110	1,231,180	7	3,084
12	Sausage. (See also Slaughtering and meat packing, wholesale).....	13	44,022	13	41,909	6	1,568
13	Scales and balances.....	4	4,418	4	4,150	3	268
14	Sewing machines, repairing.....	8	5,785	7	4,285	4	70
15	Shipbuilding.....	4	132,946	4	105,346		
16	Shirts, factory product. (See also Furnishing goods, men's).....	25	275,183	25	271,624	4	504
17	Show cases.....	4	81,410	4	78,400	2	610
18	Slaughtering, wholesale, not including meat packing.....	4	102,825	4	102,825		
19	Slaughtering and meat packing, wholesale.....	56	9,758,114	49	7,263,964	43	32,880
20	Soap and candles.....	10	917,150	10	887,038	10	9,912
21	Steam fittings and heating apparatus. (See also Foundry and machine shop products.).....	9	294,868	9	291,253	7	2,565
22	Stencils and brands.....	5	2,540	5	2,490		
23	Sugar and molasses, refining.....	3	340,650	3	337,500	3	1,525
24	Surgical appliances. (See also Artificial limbs).....	7	7,536	7	7,481	2	55
25	Tinsmithing, coppersmithing, and sheet-iron working. (See also Roofing and roofing materials; Stamped ware.).....	132	1,115,173	131	889,090	123	14,151
26	Tobacco, chewing, smoking, and snuff.....	12	7,638,668	12	6,705,879	9	43,048
27	Tobacco, cigars, and cigarettes.....	296	555,834	296	548,926	41	880
28	Tools, not elsewhere specified. (See also Cutlery and edge tools; Hardware.).....	9	130,932	9	118,594	8	5,575
29	Trunks and valises.....	15	195,037	15	188,382	1	300
30	Umbrellas and canes.....	9	48,234	9	47,534		
31	Upholstery materials.....	4	75,825	4	71,025	3	2,000
32	Varnish. (See also Paints).....	5	73,279	5	72,507	5	572
33	Vinegar and cider.....	12	225,982	12	187,567	4	7,290
34	Watch, clock, and jewelry repairing.....	123	49,219	120	35,978	1	20
35	Whips.....	3	1,095	3	970		
36	Window shades.....	6	55,840	6	53,800		
37	Wirework, including wire rope and cable.....	16	254,264	16	240,892	8	2,767
38	Wood, turned and carved. (See also Lumber, planed).....	17	155,469	17	146,500	7	2,185
39	All other industries (a).....	106	11,799,836	106	11,003,112	71	252,535

a Embracing ammunition, 2; artificial feathers and flowers, 2; axle grease, 2; bagging, flax, hemp, and jute, 1; bags, other than paper, 2; bells, 2; billiard tables and materials, 2; bone, ivory, and lamp black, 2; boots and shoes, cut stock, 1; boxes, cigar, 2; brass ware, 2; calcium lights, 1; carriage and wagon materials, 2; clocks, 1; cork cutting, 1; cotton goods, 2; cotton ties, 1; dentists' materials, 2; dyestuffs and extracts, 1; engravers' materials, 1; files, 2; fireworks, 1; furnishing goods, men's, 1; galvanizing, 1; gas, manufactured, heating and illuminating, 1; glue, 1; hardware, 2; house furnishing goods, not elsewhere specified, 2; ice, artificial, 1; ink, printing, 1; ink, writing, 1; iron and steel, nails and spikes, cut and wrought, 2; ivory and bone work, 1; japanning, 1; lapidary work, 1; lard, refined, 1; leather, morocco, 1; lightning rods, 2; liquors, distilled, 2; matches, 1; mucilage and paste, 2; nets and seines, 2; oil, castor, 2; photographic materials, 2;

TABLE 5.—MATERIALS USED AND GOODS MANUFACTURED, 1890—CONTINUED.

MATERIALS USED—continued.				GOODS MANUFACTURED.						
Mill supplies.		All other materials.		Actual produced value.	Total products.		Principal products.		All other products, including receipts for custom work and repairing.	
Number of establishments reporting.	Cost.	Number of establishments reporting.	Cost.		Number of establishments reporting.	Value.	Number of establishments reporting.	Value.	Number of establishments reporting.	Value.
2	\$110	1	\$100	\$36,985	5	\$49,430	5	\$49,430		
1	5	14	2,489	386,793	64	551,737	54	503,012	21	\$18,695
2	3,500	3	23,500	604,371	4	1,465,371	4	1,435,371	2	30,000
4	3,295	31	18,549	1,002,780	124	1,651,163	93	1,249,230	66	491,939
16	1,581	50	54,696	2,454,248	105	3,894,990	60	3,009,780	52	885,210
		1	500	25,979	4	34,100	4	34,100		
		85	178,659	3,482,788	104	4,622,159	104	4,601,152	1	18,007
1	500	8	10,575	265,266	3	1,376,179	3	1,374,679	1	1,500
1	20			22,978	4	26,750	4	26,750		
6	3,468	22	42,456	785,080	62	1,462,875	61	1,268,490	32	184,385
2	125	34	113,593	1,455,014	110	2,803,961	107	2,711,282	74	92,679
		6	545	38,764	13	82,806	13	81,746	2	1,000
				22,582	4	27,000	2	9,000	2	18,000
		5	1,430	16,222	8	22,007	3	11,800	6	10,267
		2	27,600	264,049	4	400,995	4	368,120	3	32,875
		8	3,055	258,847	25	534,895	25	526,695	6	8,200
1	100	1	2,300	57,190	4	138,600	4	135,100	1	3,500
				35,776	4	138,601	4	135,141	3	3,490
5	1,365	24	2,459,805	2,150,401	56	11,908,715	56	11,567,241	21	341,474
1	500	4	19,700	286,256	10	1,203,406	10	1,198,068	1	5,398
1	300	1	750	218,880	9	514,517	9	507,517	2	7,000
		1	50	10,952	5	13,492	5	13,292	1	290
1	25	2	1,690	112,350	3	453,000	3	453,000		
				25,664	7	33,200	6	31,700	1	1,500
7	661	53	211,271	1,253,293	132	2,369,540	119	2,201,740	74	167,800
3	14,613	8	875,128	6,712,497	12	14,351,165	12	13,479,097	1	875,068
9	1,256	46	4,772	1,002,538	296	1,558,401	296	1,558,226	2	175
3	5,980	3	783	156,180	9	287,532	9	277,344	5	10,188
1	600	5	5,755	304,538	15	501,150	13	479,500	6	21,650
		2	700	35,658	9	83,892	6	73,750	6	10,112
1	400	2	2,400	112,675	4	188,500	4	188,500		
		1	200	61,689	5	134,968	5	134,968		
3	550	10	30,575	224,517	12	450,499	12	449,679	1	820
		27	13,221	202,544	124	251,883	28	59,891	112	191,992
		2	125	2,830	3	3,925	3	3,800	1	125
		2	2,040	64,910	6	120,750	6	120,750		
3	3,200	7	7,405	245,443	16	501,235	15	463,785	6	37,459
2	1,260	4	5,524	167,776	18	323,365	16	270,790	4	52,575
25	85,759	44	458,430	9,241,426	106	21,044,344	104	20,144,276	29	990,068

photolithographing and engraving, 2; plated and britannia ware, 1; pocketbooks, 1; printing materials, 1; pulp, from fiber, other than wood, 1; pumps, not including steam pumps, 2; rubber and other elastic goods, 2; safes and vaults, 1; saws, 1; screws, machine, 1; silk and silk goods, 1; smelting and refining (base scrap metal, not from the ore), 1; sporting goods, 2; springs, steel, car and carriage, 2; stamped ware, 1; stereotyping and electrotyping, 1; tar and turpentine, 1; taxidermy, 2; timber products, not manufactured at mill, 1; tin foil, 1; toys and games, 2; type founding, 2; typewriters and supplies, 2; washing machines and clothes wringers, 2; watch cases, 1; wire, 2; wooden ware, not elsewhere specified, 2; zinc, 1.

TABLE 6.—CLASSIFICATION OF LABOR AND WAGES IN 50 PRINCIPAL INDUSTRIES, 1890.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Number of establishments reporting.	SUMMARY.		AVERAGE NUMBER EMPLOYED IN EACH CLASS AND AVERAGE WEEKLY WAGES PAID.							
		Aggregate of hands employed.	Aggregate of wages paid.	Officers or firm members employed in productive labor or its supervision.							
				Males above 16 years.				Females above 15 years.			
				No.	Average number of weeks employed.	Average weekly wages per hand.	Total wages.	No.	Average number of weeks employed.	Average weekly wages per hand.	Total wages.
Total.....	1,379	50,606	\$28,113,660	2,132			\$3,433,190	36			\$26,706
1 Agricultural implements.....	4	570	345,360	11	49	\$51.32	27,500				
2 Awnings, tents, and sails.....	15	326	118,645	22	47	26.48	27,280				
3 Babbit metal and solder.....	5	78	59,328	12	52	28.27	17,610				
4 Baking and yeast powders.....	14	151	78,176	23	46	26.11	27,380	1	52	\$28.85	1,500
5 Bookbinding and blank-book making. (See also Printing and publishing, book and job.)	14	381	169,735	19	52	19.79	19,465				
6 Boots and shoes, factory product.....	24	2,592	1,155,635	53	48	32.26	81,330				
7 Boxes, fancy and paper.....	8	391	165,819	14	51	32.10	22,780	2	47	11.67	1,100
8 Boxes, wooden, packing.....	27	669	330,652	41	50	23.93	49,128	1	48	20.98	1,000
9 Brick and tile. (See also Clay and pottery products.)	38	1,932	877,619	55	39	32.44	69,785				
10 Bridges.....	6	489	297,116	14	52	29.67	21,600				
11 Brooms and brushes.....	41	307	121,279	44	47	15.19	31,290				
12 Carriages and wagons.....	114	2,283	1,279,592	159	49	23.05	180,908	1	48	31.47	1,500
13 Cars, steam railroad (a).....	3	1,406	870,101	4	47	76.75	14,550				
14 Cars, street railroad (b).....	3	556	371,604	10	52	49.62	25,800				
15 Clay and pottery products. (See also Brick and tile.)	13	735	391,204	15	46	48.05	33,470				
16 Clothing, men's, wholesale.....	48	5,003	1,734,979	78	49	41.16	155,800	3	52	8.72	1,360
17 Clothing, women's.....	11	459	151,945	13	52	27.07	18,300	3	52	17.41	2,716
18 Coffee and spices, roasting and grinding.	9	224	143,432	17	49	45.00	37,440				
19 Coffins, burial cases, and undertakers' goods.	5	253	118,352	11	41	25.52	11,610				
20 Cooperage.....	71	1,108	587,105	91	49	20.32	90,302				
21 Cordage and twine.....	7	215	89,457	11	50	31.32	17,200				
22 Fertilizers. (See also Slaughtering and meat packing.)	4	95	49,416	5	43	32.31	7,000				
23 Flouring and grist mill products.....	21	814	590,577	41	44	50.52	92,000				
24 Foundry and machine shop products. (See also Iron work, architectural and ornamental; Steam fittings and heating apparatus.)	103	6,345	3,877,946	193	48	40.12	374,745	1	52	28.85	1,500
25 Fruits and vegetables, canning and preserving.	4	209	110,620	8	43	36.06	12,500				
26 Furniture, chairs.....	6	815	409,683	13	51	42.26	28,020				
27 Furniture, factory products.....	33	1,563	903,908	80	50	28.50	115,038	1	52	9.62	500
28 Glass, cutting, staining, and ornamenting.	9	179	73,344	14	34	36.11	17,214	1	22	9.23	200
29 Iron and steel (c).....	6	940	526,998	9	48	53.13	23,023				
30 Iron work, architectural and ornamental. (See also Foundry and machine shop products.)	23	1,015	644,127	45	50	34.52	77,900	1	49	20.51	1,000
31 Leather, tanned and curried.....	15	323	192,101	9	52	44.02	20,600				
32 Liquors, malt.....	8	2,870	2,278,194	56	51	55.77	271,400				
33 Lumber and other mill products from logs or bolts.	7	915	363,004	11	43	54.05	28,400				
34 Mattresses and spring beds. (See also Furniture, factory products; Wirework.)	14	344	171,182	25	51	26.90	34,160				
35 Mineral and soda waters.....	28	285	150,880	37	46	21.19	35,727	2	51	14.73	1,500
36 Paints.....	14	481	329,698	32	48	46.51	71,900	2	52	10.58	1,100
37 Patent medicines and compounds.....	58	598	373,200	88	48	26.45	112,366	5	52	12.81	3,330
38 Plumbers' materials.....	4	491	242,358	8	52	31.25	18,000				
39 Printing and publishing, book and job. (See also Bookbinding and blank-book making.)	105	2,693	1,459,586	136	52	29.76	208,889				
40 Printing and publishing, newspapers and periodicals. (d)	104	2,460	1,913,220	150	51	35.39	272,071	6	52	14.85	4,600
41 Roofing and roofing materials.....	62	615	398,144	81	48	21.63	83,742	1	52	19.23	1,000
42 Saddlery and harness.....	110	1,212	810,044	136	50	24.04	163,522				
43 Shirts, factory product.....	25	482	152,236	32	51	20.27	32,800	4	46	7.14	1,300
44 Slaughtering and meat packing, wholesale.	56	746	523,553	77	50	33.06	129,360	1	52	28.85	1,500
45 Soap and candles.....	10	246	136,437	20	51	24.25	24,900				
46 Steam fittings and heating apparatus. (See also Foundry and machine shop products.)	9	155	118,895	18	50	24.71	22,220				
47 Tobacco, chewing, smoking, and snuff.	12	2,825	1,352,906	28	50	73.73	104,235				
48 Trunks and valises.....	15	236	160,810	18	52	22.79	21,280				
49 Wirework, including wire rope and cable.	16	283	158,728	23	48	31.11	34,580				
50 Wood, turned and carved.....	18	167	107,350	22	49	18.28	19,740				

a Not including operations of steam railroad companies

TABLE 6.—CLASSIFICATION OF LABOR AND WAGES IN 50 PRINCIPAL INDUSTRIES, 1890.

AVERAGE NUMBER EMPLOYED IN EACH CLASS AND AVERAGE WEEKLY WAGES PAID—continued.															
Clerks or salesmen.								Operatives and skilled labor.							
Males above 16 years.				Females above 15 years.				Males above 16 years.				Females above 15 years.			
No.	Average number of weeks employed.	Average weekly wages per hand.	Total wages.	No.	Average number of weeks employed.	Average weekly wages per hand.	Total wages.	No.	Average number of weeks employed.	Average weekly wages per hand.	Total wages.	No.	Average number of weeks employed.	Average weekly wages per hand.	Total wages.
2,141			\$2,200,576	209			\$97,133	22,150			\$13,028,908	3,860			\$1,101,855
17	48	\$22.83	18,800	5	50	\$9.95	2,480	393	50	\$11.55	227,055				1
26	47	11.95	14,646	2	50	9.93	1,000	50	47	11.70	27,592	92	48	\$4.25	18,784
12	52	30.10	18,780	1	52	13.85	720	47	52	7.77	18,988				3
20	50	15.31	15,264	1	52	9.23	480	31	50	8.79	13,639	27	48	4.61	5,997
9	51	14.76	6,810	2	51	8.05	820	156	51	10.00	79,950	162	51	5.95	48,921
31	50	20.86	32,570	1	26	11.54	300	1,134	49	10.68	595,470	912	49	5.73	256,812
1	52	23.08	1,200					55	52	6.86	19,560	82	52	3.86	16,450
5	52	8.85	2,300					250	48	10.87	130,797	2	9	4.33	75
19	42	23.45	18,800	4	45	13.16	2,352	792	48	12.09	413,053				8
8	52	19.76	8,220					343	52	12.24	218,296				10
9	51	11.67	5,310					118	47	9.67	53,813	24	26	5.00	3,165
53	49	20.31	52,288	12	44	9.55	5,047	1,645	48	10.36	817,218	14	48	7.08	4,800
36	50	14.68	26,287	2	47	17.61	1,660	565	50	14.76	418,425	8	52	6.79	2,825
5	52	20.00	5,200					503	52	12.18	318,530	1	52	8.00	416
24	49	18.71	22,091	1	50	14.45	720	149	48	14.02	100,423				15
155	51	18.35	144,533	7	46	8.75	2,806	801	49	10.84	427,890	1,084	49	5.85	312,661
23	52	18.54	22,170	5	52	9.00	2,340	27	52	10.26	14,405	123	52	7.09	47,262
26	52	17.70	23,928	1	52	14.00	728	44	52	13.58	31,082	6	52	4.68	1,460
18	52	19.81	18,545	1	52	5.77	300	138	52	7.59	54,462	17	52	5.57	4,922
5	52	16.00	4,160	1	52	17.31	900	429	49	10.31	217,077				20
4	52	34.62	7,200	1	52	6.00	312	70	51	9.12	32,776	53	51	5.74	15,429
2	52	17.31	1,800					21	44	14.36	13,300	1	47	5.02	234
71	47	21.94	73,104	5	47	11.69	2,760	375	46	15.12	262,197	12	39	4.27	2,000
280	49	19.05	233,290	14	50	10.11	7,051	3,923	50	11.56	2,276,419	20	51	5.45	5,600
14	51	25.36	18,020	1	52	8.00	416	93	45	14.61	61,804	70	46	4.53	14,540
15	51	15.61	11,904	3	52	9.21	1,436	430	50	10.92	234,672				26
46	51	19.54	45,631	1	52	28.85	1,600	825	51	10.83	457,772	15	52	5.56	4,335
4	27	13.11	1,420					146	31	11.71	82,450	4	13	5.00	260
17	46	21.66	16,985					405	45	16.29	294,694				29
31	49	21.88	33,509	1	49	10.26	500	446	50	14.15	314,956	1	49	10.26	500
8	52	22.79	9,480					221	52	11.48	181,069				31
179	52	29.70	276,431	3	52	17.57	2,741	1,133	52	15.25	885,533				32
17	48	23.88	19,300					389	41	9.61	153,972	40	51	4.50	9,170
14	52	13.04	9,494					115	52	7.94	47,470	12	52	6.07	3,786
42	48	14.24	28,624	3	52	2.79	435	133	47	10.14	63,544				35
47	48	23.26	52,259	9	49	8.88	3,895	194	47	12.82	116,460	7	52	5.08	1,850
99	51	20.37	103,680	16	52	9.21	7,066	115	51	11.80	68,704	122	51	4.98	31,025
30	52	42.28	65,960	1	52	11.54	600	322	52	12.34	206,541				38
102	52	14.04	74,425	36	52	8.20	15,342	1,613	52	11.54	986,410	479	52	5.80	144,456
183	52	17.30	164,437	48	52	8.43	20,930	1,247	52	13.25	854,912	109	51	7.93	44,442
36	48	21.97	37,978	6	47	8.05	2,250	323	45	13.00	187,328				41
103	47	19.50	94,272	1	35	19.04	660	456	49	11.43	255,564	9	52	4.12	1,930
13	52	13.77	9,280	5	52	8.65	2,250	35	52	10.87	19,730	126	51	5.00	32,385
45	51	14.45	33,066	2	52	3.37	350	510	50	12.26	315,699	11	52	5.28	3,020
24	52	14.60	18,219					57	52	12.60	37,177				45
13	52	20.85	13,960	2	52	8.08	840	89	50	14.93	66,400				46
182	50	26.07	237,762	5	51	9.96	2,546	432	51	10.77	235,208	207	51	5.81	61,497
20	52	23.67	24,620					72	52	11.58	43,265				48
25	52	15.55	20,084					169	52	9.88	86,180	3	52	6.00	936
3	51	17.14	2,600					121	51	12.83	78,974				50

...the operations of blast furnaces, iron and steel rolling mills, bessemer steel works, and pig and scrap bloomeries.

TABLE 6.—CLASSIFICATION OF LABOR AND WAGES IN 50 PRINCIPAL INDUSTRIES, 1890—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.		AVERAGE NUMBER EMPLOYED IN EACH CLASS AND AVERAGE WEEKLY WAGES PAID—continued.									
		Operatives and skilled labor—continued.				Unskilled labor.					
		Children.				Males above 16 years.			Females above 15 years.		
		No.	Average number of weeks employed.	Average weekly wages per hand.	Total wages.	No.	Average number of weeks employed.	Average weekly wages per hand.	Total wages.	No.	Average number of weeks employed.
Total.....		659		\$109,833	8,883		\$1,000,150	954			
1	Agricultural implements.....				98	50	\$9.28	45,300			
2	Awnings, tents, and sails.....				18	43	8.73	6,680			
3	Babbitt metal and solder.....	1	52	\$9.85	200	5	11.54	3,000			
4	Baking and yeast powders.....	1	52	3.00	156	5	10.00	2,600	52		
5	Bookbinding and blank-book making. (See also Printing and publishing, book and job.)	3	52	4.37	682	10	51	9.64	4,870		
6	Boots and shoes, factory product.....	25	40	3.62	4,468	29	51	9.58	14,285	17	
7	Boxes, fancy and paper.....	1	52	5.00	260	16	50	5.21	4,209	10	
8	Boxes, wooden, packing.....	9	47	3.70	1,556	175	50	9.68	81,810	4	
9	Brick and tile. (See also Clay and pottery products.)	108	44	4.25	20,060	811	41	8.91	298,341		
10	Bridges.....				124	52	7.60	49,000			
11	Brooms and brushes.....	39	45	2.82	4,920	2	48	9.11	868		
12	Carriages and wagons.....	3	52	3.53	550	145	49	10.34	72,832	2	
13	Cars, steam railroad (a).....				201	48	9.11	127,854			
14	Cars, street railroad (b).....	6	52	5.00	1,560	41	52	9.43	20,098		
15	Clay and pottery products. (See also Brick and tile.)				528	51	8.48	228,885	1		
16	Clothing, men's, wholesale.....	72	47	1.80	6,030	24	47	10.07	11,422		
17	Clothing, women's.....				103	52	8.12	43,296	21		
18	Coffee and spices, roasting and grinding.....	5	52	3.85	1,000	29	52	4.61	6,935		
19	Coffins, burial cases, and undertakers' goods.....	15	47	4.39	3,120	209	50	8.78	92,312		
20	Cooperage.....	63	52	3.39	11,100	11	52	8.81	5,040		
21	Cordage and twine.....				66	51	8.01	27,082			
22	Fertilizers. (See also Slaughtering and meat packing.)				308	47	10.97	157,976			
23	Flouring and grist mill products.....	25	50	3.31	4,137	1,038	50	8.04	420,619		
24	Foundry and machine shop products. (See also Iron work, architectural and ornamental; Steam fittings and heating apparatus.)	21	35	3.14	2,340	2	35	14.42	1,000		
25	Fruits and vegetables, canning and preserving.....	13	52	3.96	2,675	158	52	8.31	68,052	5	
26	Furniture, chairs.....	60	50	4.15	12,511	224	50	9.40	106,154	13	
27	Furniture, factory products.....				10	37	6.24	2,300			
28	Glass, cutting, staining, and ornamenting.....				508	40	9.47	192,146			
29	Iron and steel (c).....	2	52	4.40	458	418	49	8.72	178,422		
30	Iron work, architectural and ornamental. (See also Foundry and machine shop products.)				67	50	6.09	20,222			
31	Leather, tanned and curried.....	5	25	3.51	456	1,384	52	11.12	798,633		
32	Liquors, malt.....	10	51	3.14	1,600	307	41	7.96	99,762		
33	Lumber and other mill products from logs or bolts.....	21	52	3.05	3,323	46	52	7.23	17,292	8	
34	Mattresses and spring beds. (See also Furniture, factory products; Wirework.)	7	51	2.98	1,070	46	45	7.66	16,018		
35	Mineral and soda waters.....	4	52	3.85	800	175	47	9.54	78,744	6	
36	Paints.....	7	52	3.52	1,280	57	44	9.57	23,758	53	
37	Patent medicines and compounds.....				61	52	10.19	32,325			
38	Plumbers' materials.....	65	52	3.45	11,045	67	51	6.47	22,304	77	
39	Printing and publishing, book and job. (See also Bookbinding and blank-book making.)	13	51	3.48	2,286	202	52	11.57	121,530	3	
40	Printing and publishing, newspapers and periodicals. (d)	4	39	4.56	706	163	46	11.17	84,590	1	
41	Roofing and roofing materials.....	21	52	2.95	3,218	30	50	7.27	10,886		
42	Saddlery and harness.....				1	50	8.03	400			
43	Shirts, factory product.....				64	51	11.01	35,698	3		
44	Slaughtering and meat packing, wholesale.....	8	52	3.75	1,560	101	52	9.55	49,958	8	
45	Soap and candles.....				32	50	9.39	14,950			
46	Steam fittings and heating apparatus. (See also Foundry and machine shop products.)	2	52	3.51	365	626	48	9.17	276,622	680	
47	Tobacco, chewing, smoking, and snuff.....	2	52	3.00	312	26	52	7.46	10,090		
48	Trunks and valises.....	10	47	4.54	2,124	9	52	11.33	5,394		
49	Wirework, including wire rope and cable.....	8	52	3.15	1,300	13	49	7.45	4,736		
50	Wood, turned and carved.....										

a Not including operations of steam railroad companies.
b Not including operations of street railroad companies.

TABLE 6.—CLASSIFICATION OF LABOR AND WAGES IN 50 PRINCIPAL INDUSTRIES, 1890—CONTINUED.

AVERAGE NUMBER EMPLOYED IN EACH CLASS AND AVERAGE WEEKLY WAGES PAID—continued.						PIECEWORK.									
Unskilled labor—continued.						Average number employed and total wages paid.									
Females above 15 years—continued.		Children.				Total number.	Total wages.	Males above 16 years.		Females above 15 years.		Children.			
Average weekly wages per hand.	Total wages.	No.	Average number of weeks employed.	Average weekly wages per hand.	Total wages.			No.	Wages.	No.	Wages.	No.	Wages.		
	\$304,327	523			\$92,644	9,059	\$3,718,308	5,240	\$2,937,495	3,762	\$775,266	57	\$5,547		
		24	48	\$5.57	6,375	22	17,550	23	17,550	97	16,744	1	130		
		2	39	5.13	400	114	22,263	16	5,389						
\$5.11	11,160	4	52	2.87	597	16	4,620			16	4,620				
3.42	3,020	98	52	1.07	5,448	292	161,932	275	156,616	17	5,316				
1.92	1,000					210	39,260	10	2,000	194	36,400	6	800		
4.57	930	39	50	3.60	7,018	143	53,018	98	49,118	45	3,900	4	271		
		77	40	4.53	14,072	86	41,156	82	40,885						
						71	21,913	61	20,563	2	300	8	1,050		
6.59	614	1	52	3.00	156	248	143,679	248	143,679						
						500	278,500	500	278,500						
3.85	200	10	50	4.02	2,019	7	3,396	7	3,396						
		9	52	2.55	1,194	2,770	671,273	656	246,840	2,112	424,121	2	312		
		4	52	2.46	512	296	44,300			296	44,300				
3.98	4,342	1	52	3.00	155										
						39	21,538	35	20,253	4	1,300				
						358	179,234	358	179,234						
						2	400	2	400						
		2	47	5.80	540										
		21	51	3.40	3,624	860	550,961	860	550,961						
5.00	1,300					178	61,624	98	45,184	80	16,440				
6.09	4,118	29	52	3.45	5,200	269	151,249	269	151,249						
		1	52	2.88	150										
		7	51	3.25	1,170	63	35,712	63	35,712						
						18	10,730	18	10,730						
		110	52	5.77	33,000										
		2	52	1.44	150	139	50,650	116	44,450	21	6,000	2	200		
5.00	2,080	1	52	5.00	260	102	53,312	98	50,812	4	2,500				
						8	1,280	7	2,652						
5.33	1,560	5	49	4.26	1,040			1	200	20	4,680				
5.39	14,300	15	37	3.99	2,231	21	4,880	69	23,932						
						100	41,389	67	28,830	33	12,550				
2.99	11,972	18	50	3.05	2,763										
3.21	500	6	52	3.15	984	403	426,828	472	414,125	21	12,403				
11.04	550	1	52	2.31	120	455	279,872	454	279,572	1	300				
		2	51	4.23	431	264	53,660			263	53,516	1	144		
3.85	600	1	52	4.81	250	82	4,100	6	1,600	26	2,500				
4.53	1,886	24	48	1.12	1,304	4	1,433	3	1,120	1	313				
						1	525	1	525						
7.53	244,175					664	190,496	162	64,453	469	123,463	33	2,580		
						98	61,240	98	61,240						
		1	52	3.85	200	48	9,820	8	5,720	40	3,600				

c Includes the operations of blast furnaces, iron and steel rolling mills, bessemer steel works, and pig and scrap bloomaries.
 d Includes editorial and other writers.

TABLE 7.—LABOR AND WAGES IN 50 PRINCIPAL INDUSTRIES, 1890.

MECHANICAL AND MANUFACTURING INDUSTRIES.		Number of establishments reporting.	AVERAGE NUMBER OF HOURS IN ORDINARY DAY OF LABOR.		SUMMARY.		WEEKLY RATES OF WAGES PAID, ETC. (a)	
			May to November.	November to May.	Aggregate number of hands employed.	Aggregate amount of wages paid.	Males above 16 years.	
							Total number.	Under \$5.
Total.....		1,379			50,606	\$28,113,660	35,306	1,562
1	Agricultural implements.....	4	10.00	9.75	570	345,360	519	1
2	Awnings, tents, and sails.....	15	9.57	9.12	326	118,645	116	5
3	Babbit metal and solder.....	5	10.00	10.00	78	59,328	76	3
4	Baking and yeast powders.....	14	8.84	9.07	151	78,176	79	11
5	Bookbinding and blank-book making. (See also Printing and publishing, book and job.)	14	9.50	9.50	381	166,735	194	26
6	Boots and shoes, factory product.....	24	9.87	9.83	2,592	1,155,635	1,247	129
7	Boxes, fancy and paper.....	8	9.87	9.37	391	105,819	86	35
8	Boxes, wooden, packing.....	27	9.96	9.83	669	330,652	471	33
9	Brick and tile. (See also Clay and pottery products)	38	9.32	9.30	1,952	877,619	1,677	40
10	Bridges.....	6	10.00	10.00	489	297,116	489	
11	Brooms and brushes.....	41	9.46	9.44	307	121,279	173	14
12	Carriages and wagons.....	114	9.96	9.35	2,283	1,279,592	2,002	70
13	Cars, steam railroad (c).....	3	10.00	9.67	1,406	870,101	896	8
14	Cars, street railroad (d).....	3	10.00	10.00	566	371,604	559	20
15	Clay and pottery products. (e) (See also Brick and tile).....	13	9.85	9.62	735	391,204	716	
16	Clothing, men's, wholesale.....	48	9.69	9.69	5,003	1,734,979	1,058	12
17	Clothing, women's.....	11	9.09	9.27	499	151,945	93	4
18	Coffee and spices, roasting and grinding.....	9	10.11	10.11	224	143,432	190	5
19	Coffins, burial cases, and undertakers' goods.....	5	8.80	8.80	253	118,352	195	78
20	Cooperage.....	71	9.62	9.49	1,108	587,105	734	67
21	Corlage and twine.....	7	9.43	9.43	215	89,457	96	12
22	Fertilizers. (See also Slaughtering and meat packing).....	4	10.50	10.50	95	49,416	94	
23	Flouring and grist mill products.....	21	11.24	11.14	814	590,577	795	6
24	Foundry and machine shop products. (See also Iron work, architectural and ornamental; Steam fittings and heating apparatus.)	103	9.84	9.73	6,345	3,877,946	5,404	159
25	Fruits and vegetables, canning and preserving.....	4	10.00	10.00	209	110,620	117	
26	Furniture, chairs.....	6	10.00	9.50	815	409,683	616	80
27	Furniture, factory products.....	33	9.94	9.65	1,563	963,908	1,175	58
28	Glass, cutting, staining, and ornamenting.....	9	9.50	9.50	179	78,844	174	
29	Iron and steel (f).....	6	10.53	10.67	940	526,998	930	19
30	Iron work, architectural and ornamental. (See also Foundry and machine shop products.)	23	9.96	9.39	1,015	644,127	940	32
31	Leather, tanned and curried.....	15	9.33	9.87	323	192,101	305	18
32	Liquors, malt.....	8	9.75	9.12	2,870	2,278,194	2,752	26
33	Lumber and other mill products from logs or bolts.....	7	9.71	9.71	915	363,004	724	24
34	Mattresses and spring beds. (See also Furniture, factory products; Wirework.)	14	9.78	9.64	344	171,182	200	17
35	Mineral and soda waters.....	28	10.04	9.58	285	150,850	258	28
36	Paints.....	14	9.93	9.71	481	329,608	448	2
37	Patent medicines and compounds.....	58	9.03	8.93	593	373,200	359	22
38	Plumbers' materials.....	4	10.00	9.75	491	312,358	421	29
39	Printing and publishing, book and job. (See also Bookbinding and blank-book making.)	105	9.66	9.59	2,693	1,499,586	1,918	256
40	Printing and publishing, newspapers and periodicals (g).....	104	9.04	9.04	2,460	1,913,220	1,782	64
41	Roofing and roofing materials.....	62	9.77	9.56	615	308,144	603	11
42	Saddlery and harness.....	110	9.83	9.67	1,212	810,044	725	26
43	Shirts, factory product.....	25	9.24	9.25	482	162,236	81	2
44	Slaughtering and meat packing, wholesale.....	56	10.65	10.68	746	523,553	696	2
45	Soap and candles.....	10	9.50	9.80	246	136,437	202	1
46	Steam fittings and heating apparatus. (See also Foundry and machine shop products.)	9	9.11	8.89	135	118,895	152	
47	Tobacco, chewing, smoking, and snuff.....	12	9.33	9.33	2,826	1,352,906	1,268	54
48	Trunks and valises.....	15	9.80	9.73	236	160,810	186	7
49	Wirework, including wire rope and cable.....	16	9.75	9.75	288	153,728	226	41
50	Wood, turned and carved.....	18	10.06	9.67	167	107,350	159	5

a Weekly rates of wages paid and average number of hands employed at each rate, not including those employed on piecework.

b In comparing the table of weekly rates and the number employed at each rate, with the average weekly wages, it must be remembered that it is not practicable to obtain true average weekly wages from the table of weekly rates, because the term of employment varies for hands reported at the respective rates. Table 7 simply shows the distribution of the hands employed at the respective weekly rates of wages. The true average weekly wages are presented in connection therewith in order to prevent erroneous deductions.

c Not including operations of steam railroad companies.

TABLE 7.—LABOR AND WAGES IN 50 PRINCIPAL INDUSTRIES, 1890.

RATES OF WAGES PAID AND AVERAGE NUMBER OF HANDS EMPLOYED AT EACH RATE, NOT INCLUDING THOSE EMPLOYED ON PIECEWORK—continued.

Males above 16 years—continued.

	\$6 and over, but under \$7.	\$7 and over, but under \$8.	\$8 and over, but under \$9.	\$9 and over, but under \$10.	\$10 and over, but under \$12.	\$12 and over, but under \$15.	\$15 and over, but under \$20.	\$20 and over, but under \$25.	\$25 and over.	Average wages per week. (b)
	1,414	2,055	2,475	4,998	5,837	6,383	5,408	1,940	1,994	
1										\$12.32
2	6	13	13	46	301	98	10	18	10	10.84
3	1	2	12	7	59	16	8	11	13	14.17
4		22	12	11	2	2	7		16	14.78
5	5	1		4	12	9	17	3	14	15.27
6	13	3	11	9	27	34	31	18	8	11.17
7										
8	47	57	49	66	219	250	243	53	31	11.80
9		1	10	3	2	9	7	2	7	10.84
10	4	35	15	81	38	130	64	28	16	11.56
11	83	111	186	485	403	120	130	48	46	11.85
12	15	100		64	117	53	117	10	8	11.08
13										
14	5	9	9	13	70	16	26	5	3	11.17
15	77	140	195	240	453	339	240	63	72	11.05
16	25	4	7	301	117	158	34	188	46	13.24
17	9	13	5	48	63	273	98	7	17	12.72
18	27	35	222	248	60	45	35	11	32	10.08
19										
20	103	117	19	39	173	120	87	117	123	14.15
21	1	5		1	1	21	6	10	6	16.75
22	41	1	8	30	21	32	31	11	9	18.85
23	7	9	7	17	14	26	22	4	3	9.09
24	57	64	85	78	102	102	89	17	24	11.13
25										
26	3	1	47	1	9	1	2	3	12	12.64
27	5	4	42	5	14	5	10	2	4	10.66
28	8	15	18	145	212	146	87	89	64	15.87
29	134	346	592	693	669	956	1,010	194	219	12.20
30			8			38	52	12	7	17.42
31										
32	23	10	68	142	22	184	44	15	18	11.02
33	45	63	63	184	228	312	125	10	68	12.11
34	5	26	11	15	24	48	20	11	8	13.50
35	14	17	22	238	246	150	111	46	58	13.80
36	42	38	40	221	109	127	173	58	66	13.01
37										
38	4	5	17	48	117	48	23	2	17	11.61
39	128	188	46	172	250	681	847	201	115	15.71
40	120	53	32	87	145	94	57	21	10	10.09
41	19	26	31	21	15	16	14	3	13	10.46
42										
43	11	12	18	36	20	49	43	18	10	11.94
44										
45	3	9	15	44	185	63	40	31	48	15.11
46	11	10	25	14	42	44	69	46	67	17.48
47	12	25	35	51	62	77	53	39	42	14.52
48	115	91	110	187	192	240	349	192	128	12.78
49										
50	28	32	86	461	128	291	306	137	208	15.92
51										
52	5	8	17	59	129	180	127	39	23	14.27
53	49	35	25	122	103	70	161	46	71	14.77
54	3	8	3	6	15	6	12	9	12	14.96
55	5	9	2	51	145	317	62	38	58	14.63
56	10	20	60	20	20	22	18	16	15	12.46
57										
58	3	7		14	32	16	37	24	14	15.45
59										
60	65	226	150	117	102	214	127	63	98	13.65
61	3	6	14	11	13	19	34	4	16	14.05
62	9	3	3	20	25	60	23	8	13	12.51
63	9	18	3	20	25	60	23	8	8	12.51
64	4	5	17	10	7	41	55	8	3	13.22

Not including operations of street railroad companies, includes drains and sewer pipe, 3 establishments; stone and earthen ware, 7 establishments; terra cotta ware, 2 establishments; white pottery, 1 establishment.
 includes the operations of blast furnaces, iron and steel rolling mills, Bessemer steel works, and pig and scrap bloomeries.
 includes editorial and other writers.

TABLE 7.—LABOR AND WAGES IN 50 PRINCIPAL INDUSTRIES, 1890—CONTINUED.

MECHANICAL AND MANUFACTURING INDUSTRIES.		WEEKLY RATES OF WAGES PAID AND AVERAGE NUMBER OF HANDS EMPLOYED AT EACH RATE, NOT INCLUDING THOSE EMPLOYED ON PIECEWORK—continued.							
		Females above 15 years.							
		Total number.	Under \$5.	\$5 and over, but under \$6.	\$6 and over, but under \$7.	\$7 and over, but under \$8.	\$8 and over, but under \$9.	\$9 and over, but under \$10.	\$10 and over, but under \$12.
Total.....		5,059	1,652	1,009	932	401	472	323	155
1	Agricultural implements.....	5				1		3	
2	Awnings, tents, and sails.....	94	55	11	13	8	2	1	4
3	Babbitt metal and solder.....	1							
4	Baking and yeast powders.....	71	23	25	21			1	
5	Bookbinding and blank-book making. (See also Printing and publishing, book and job.)	164	44	47	31	13	8	9	6
6	Boots and shoes, factory product.....	930	311	205	192	120	61	17	11
7	Boxes, fancy and paper.....	94	67	16	7	2			1
8	Boxes, wooden, packing.....	7	4	2					
9	Brick and tile. (See also Clay and pottery products)	4						1	1
10	Bridges.....								
11	Brooms and brushes.....	24	21	1					
12	Carriages and wagons.....	29		4	2	12	1	8	6
13	Cars, steam railroad (b).....	10			5	3			
14	Cars, street railroad (c).....	1					1		
15	Clay and pottery products. (d) (See also Brick and tile).....	2	1						
16	Clothing, men's, wholesale.....	1,091	396	224	116	104	26	208	16
17	Clothing, women's.....	136	24	45	7		6	2	50
18	Coffee and spices, roasting and grinding.....	28	22	5					
19	Coffins, burial cases, and undertakers' goods.....	18	4	6	4		2	1	1
20	Cooperage.....	1							
21	Cordage and twine.....	54	3	50	1				
22	Fertilizers. (See also Slaughtering and meat packing).....	1		1					
23	Flouring and grist mill products.....	17	12			1			2
24	Foundry and machine shop products. (See also Iron work, architectural and ornamental; Steam fittings and heating apparatus.)	35	16		1	3		3	3
25	Fruits and vegetables, canning and preserving.....	71	44		26		1		
26	Furniture, chairs.....	6		5			1		2
27	Furniture, factory products.....	30	8	8	12			1	
28	Glass, cutting, staining, and ornamenting.....	5		4				1	
29	Iron and steel (e).....								
30	Iron work, architectural and ornamental. (See also Foundry and machine shop products.)	3							2
31	Leather, tanned and curried.....								
32	Liquors, malt.....	3							1
33	Lumber and other mill products from logs or bolts.....	40	20	20					
34	Mattresses and spring beds. (See also Furniture, factory products; Wirework.)	20	3	12	3				2
35	Mineral and soda waters.....	5	3						
36	Paints.....	24	5	8	5	1			3
37	Patent medicines and compounds.....	196	117	23	25	9	1	9	3
38	Plumbers' materials.....	1							1
39	Printing and publishing, book and job. (See also Bookbinding and blank-book making.)	592	234	136	116	28	53	2	10
40	Printing and publishing, newspapers and periodicals (f).....	166	22	33	11	21	17	14	22
41	Roofing and roofing materials.....	8	1	1			1	1	3
42	Saddlery and harness.....	10	4	5					
43	Shirts, factory product.....	135	55	30	32	11	2	1	
44	Slaughtering and meat packing, wholesale.....	17	15						
45	Soap and candles.....	8	2	6					
46	Steam fittings and heating apparatus. (See also Foundry and machine shop products.)	2			1			1	
47	Tobacco, chewing, smoking, and snuff.....	892	116	76	298	64	289	44	5
48	Trunks and valises.....								
49	Wirework, including wire rope and cable.....	3			3				
50	Wood, turned and carved.....								

a In comparing the table of weekly rates and the number employed at each rate, with the average weekly wages, it must be remembered that it is not practicable to obtain true average weekly wages from the table of weekly rates, because the term of employment varies for hands reported at the respective rates. Table 7 simply shows the distribution of the hands employed at the respective weekly rates of wages. The true average weekly wages are presented in connection therewith in order to prevent erroneous deductions.

b Not including operations of steam railroad companies.

TABLE 7.—LABOR AND WAGES IN 50 PRINCIPAL INDUSTRIES, 1890—CONTINUED.

WEEKLY RATES OF WAGES PAID AND AVERAGE NUMBER OF HANDS EMPLOYED AT EACH RATE, NOT INCLUDING THOSE EMPLOYED ON PIECEWORK—continued.											PIECEWORK.		
Females above 15 years—continued.					Children.					Average number.	Total wages.		
\$12 and over, but under \$15.	\$15 and over, but under \$20.	\$20 and over, but under \$25.	\$25 and over.	Average wages per week. (a)	Total number.	Under \$5.	\$5 and over, but under \$6.	\$6 and over, but under \$7.	\$7 and over, but under \$8.			Average wages per week. (a)	
57	40	8	10		1,182	947	206	22	7		9,059	\$3,718,308	
	1			89.95	24		24			5.57	22	17,550	1
				4.38	2		2			5.13	114	22,263	2
1				13.85	1	1				3.85			3
			1	5.33	1	1				3.00			4
6				5.98	7	5	2			3.51	16	4,620	5
7	6			5.69	123	118		5		1.57	262	161,932	6
	1			3.80	1		1			5.00	210	39,260	7
		1		7.42	48	44	3	1		3.62	143	53,018	8
1	1			13.16	185	154	29			4.36	86	41,156	9
													10
2			1	5.00	39	39				2.82	71	21,913	11
				8.88	4	4				3.39	248	143,579	12
1	1			8.79	6	3				5.00	500	278,500	13
				8.00	6	3		3		4.02	7	3,396	14
1				9.03	10	8	2						15
2	1		1	5.88	81	81				1.89	2,770	671,273	16
			1	7.39	4	4				2.46	296	41,390	17
1				4.48	6	6				3.71			18
				5.88	15	11		4		4.39	39	21,558	19
	1			17.31	63	63				3.39	358	179,234	20
				5.75	2	2				5.80	2	460	21
1	1		1	5.02	2	2				3.35	800	550,061	22
7	1			6.76	46	44	1	1					23
				7.96	21	21				3.14			24
				4.59	13	13				3.96	178	61,624	25
			1	6.58	89	68	12	5	4	3.92	399	151,249	26
				6.70	1	1				2.85			27
				6.24	9	9				3.51	63	35,712	28
		1		13.68	115	5	110			5.72	18	10,790	29
				17.57	12	12				2.85	139	50,650	30
				4.50	22	21	1			3.14	102	53,312	31
				5.64	15	15				3.40	7	2,652	32
1	1			7.50	9	9				4.07			33
1	1		1	7.01	22	18	3		1	3.80	21	4,580	34
	7			5.65	83	75	8			3.37	69	23,932	35
				11.54	19	15	4			3.38	160	41,380	36
7	4		2	5.58	4	3		1		4.56	455	279,872	37
				8.24	22	22				2.92	264	53,660	38
				9.97	2	1	1			4.23	32	4,100	39
	1		1	5.15	1	1				4.81	4	1,433	40
4				5.20	32	32				1.82			41
1				6.19	2	2				3.51	664	190,496	42
				4.53	2	2				3.00	98	61,240	43
				8.08	11	9		2		4.47	48	9,320	44
				7.13	8	7	1			5.13			45
				6.00									46
													47
													48
													49
													50

c Not including operations of street railroad companies.

d Includes drain and sewer pipe, 3 establishments; stone and earthen ware, 7 establishments; terra cotta ware, 2 establishments; white ware and pottery, 1 establishment.

e Includes the operations of blast furnaces, iron and steel rolling mills, bessemer steel works, and pig and scrap bloomeries.

f Includes editorial and other writers.

TABLE 8.—ANALYSIS OF 50 PRINCIPAL INDUSTRIES, 1890.

MECHANICAL AND MANUFACTURING INDUSTRIES.	COST OF MANUFACTURING PRODUCT VALUED AT \$100.			
	Total. (a)	Miscellaneous expenses. (b)	Wages.	Materials.
Agricultural implements.....	\$76.65	\$5.05	\$31.19	\$40.41
Awnings, tents, and sails.....	84.66	6.44	19.70	58.52
Babbitt metal and solder.....	92.55	1.03	5.29	86.23
Baking and yeast powders.....	71.93	2.72	19.36	49.85
Bookbinding and blank-book making. (See also Printing and publishing, book and job.)	83.88	2.22	49.59	31.57
Boots and shoes, factory product.....	80.74	3.96	27.19	49.59
Boxes, fancy and paper.....	76.66	0.77	16.94	58.95
Boxes, wooden, packing.....	81.34	2.42	28.19	50.73
Brick and tile. (See also Clay and pottery products).....	79.18	4.83	51.88	22.47
Bridges.....	82.17	3.96	29.14	49.07
Brooms and brushes.....	79.51	1.95	35.33	42.23
Carriages and wagons.....	87.29	2.44	85.51	49.31
Cars, steam railroad (c).....	95.90	1.46	25.70	68.74
Cars, street railroad (d).....	82.42	3.12	34.93	44.37
Clay and pottery products. (e) (See also Brick and tile).....	80.26	10.74	43.47	26.05
Clothing, men's, wholesale.....	84.12	2.97	26.47	54.68
Clothing, women's.....	84.18	1.19	28.04	54.95
Coffee and spices, roasting and grinding.....	91.17	1.15	5.82	84.20
Coffins, burial cases, and undertakers' goods.....	68.68	2.32	27.10	39.26
Cooperage.....	87.19	2.49	30.69	54.01
Cordage and twine.....	86.79	1.89	13.47	71.43
Fertilizers. (See also Slaughtering and meat packing).....	87.29	5.38	23.23	58.68
Flouring and grist mill products.....	93.80	2.13	4.67	87.00
Foundry and machine shop products. (See also Iron work, architectural and ornamental; Steam fittings and heating apparatus.)	81.39	6.27	32.46	42.66
Fruits and vegetables, canning and preserving.....	90.14	4.84	8.21	77.09
Furniture, chairs.....	84.32	3.47	49.27	31.58
Furniture, factory products.....	82.68	2.70	30.52	49.46
Glass, cutting, staining, and ornamenting.....	78.60	1.55	37.90	39.15
Iron and steel (f).....	88.98	5.02	20.98	63.00
Iron work, architectural and ornamental. (See also Foundry and machine shop products.)	78.40	3.08	31.83	43.49
Leather, tanned and curried.....	87.39	1.10	12.78	73.51
Liquors, malt.....	71.06	g18.12	14.08	38.86
Lumber and other mill products from logs or bolts.....	78.68	5.38	21.48	51.82
Mattresses and spring beds. (See also Furniture, factory products; Wirework).....	83.01	1.83	23.22	57.96
Mineral and soda waters.....	65.61	5.14	33.16	27.31
Paints.....	80.96	7.38	10.42	63.16
Patent medicines and compounds.....	63.46	15.67	16.99	30.80
Plumbers' materials.....	88.23	6.38	23.36	58.54
Printing and publishing, book and job. (See also Bookbinding and blank-book making.)	79.04	3.79	38.50	36.75
Printing and publishing, newspapers and periodicals.....	70.23	4.26	41.39	24.63
Roofing and roofing materials.....	77.72	4.39	27.40	45.93
Saddlery and harness.....	79.02	2.06	28.89	48.07
Shirts, factory product.....	81.22	1.31	28.46	51.45
Slaughtering and meat packing, wholesale.....	86.84	0.50	4.40	81.94
Soap and candles.....	90.09	2.54	11.34	76.21
Steam fittings and heating apparatus. (See also Foundry and machine shop products.)	81.76	1.84	23.11	57.31
Tobacco, chewing, smoking, and snuff.....	90.73	g28.08	9.43	53.22
Trunks and valises.....	73.17	2.16	32.09	38.92
Wirework, including wire rope and cable.....	84.45	2.05	31.67	50.73
Wood, turned and carved.....	82.95	1.67	33.20	48.08

a The difference between the cost of manufacturing and the value of product at the place of production does not show the true average profit or earning for capital in the respective industries, because the cost reported does not include cost for depreciation of plant or mercantile risks.

b Does not include cost of rent, interest, depreciation of plant, and commissions or other expenses of selling.

c Not including operations of steam railroad companies.

d Not including operations of street railroad companies.

e Includes drain and sewer pipe, 3 establishments; stone and earthen ware, 7 establishments; terra cotta ware, 2 establishments; white ware and pottery, 1 establishment.

f Includes the operations of blast furnaces, iron and steel rolling mills, bessemer steel works, and pig and scrap bloomeries.

g Includes internal revenue taxes.

TABLE 9.—ANALYSIS OF 50 PRINCIPAL INDUSTRIES, 1890.

MECHANICAL AND MANUFACTURING INDUSTRIES.	Whole number of establishments reported.	Average capital per establishment. (a)	Average number of hands per establishment.	Average capital invested per hand employed. (a)	Average gross value of product per hand employed.	Average net value of product per hand employed.	Average wage earnings per hand employed.
Agricultural implements.....	4	\$201,621.00	142.50	\$1,414.88	\$1,942.90	\$1,059.59	\$605.89
Awnings, tents, and sails.....	15	31,605.00	21.73	1,454.22	1,847.64	647.44	363.94
Babbitt metal and solder.....	5	70,000.00	15.60	4,487.18	14,367.31	1,829.86	769.62
Baking and yeast powders.....	14	33,784.36	10.79	3,132.32	2,673.69	1,268.20	517.72
Bookbinding and blank-book making. (See also Printing and publishing, book and job.)	14	22,279.86	27.21	818.68	882.49	584.27	437.62
Boots and shoes, factory product.....	24	173,751.13	108.00	1,608.81	1,640.03	761.88	445.85
Boxes, fancy and paper.....	8	27,871.88	48.88	570.27	1,578.24	643.32	270.64
Boxes, wooden, packing.....	27	25,653.89	24.78	1,035.36	1,753.15	821.51	494.25
Brick and tile. (See also Clay and pottery products.)	38	72,732.32	51.37	1,415.90	866.65	630.09	449.60
Bridges.....	6	49,322.67	81.50	606.04	2,084.91	979.26	607.60
Brooms and brushes.....	41	7,466.61	7.49	997.17	1,118.26	624.18	395.05
Carriages and wagons.....	114	28,102.27	20.03	1,403.27	1,578.51	761.08	560.49
Cars, steam railroad (b).....	3	337,309.00	468.67	719.72	2,408.37	717.55	618.85
Cars, street railroad (c).....	3	280,394.00	183.67	1,486.19	1,879.73	986.99	656.54
Clay and pottery products. (d) (See also Brick and tile).....	13	85,208.92	56.54	1,507.10	1,224.29	773.84	532.25
Clothing, men's, wholesale.....	48	126,605.02	104.23	1,214.68	1,310.21	554.92	346.79
Clothing, women's.....	11	40,386.36	45.36	890.28	1,055.96	476.32	304.50
Coffee and spices, roasting and grinding.....	9	137,098.67	24.89	5,608.43	11,010.63	1,612.34	649.32
Coffins, burial cases, and undertakers' goods.....	5	109,182.40	50.60	2,157.16	1,726.62	1,008.44	467.79
Cooperage.....	71	15,587.15	15.61	996.89	1,726.33	750.88	529.88
Cordage and twine.....	7	51,053.43	30.71	1,662.29	3,089.79	824.37	416.08
Fertilizers. (See also Slaughtering and meat packing).....	4	82,414.50	23.75	2,266.93	2,239.12	801.64	529.17
Flouring and grist mill products.....	21	217,202.62	38.76	5,693.51	15,529.48	1,687.19	725.52
Foundry and machine shop products. (See also Iron work, architectural and ornamental; Steam fittings and heating apparatus.)	103	107,129.76	61.60	1,739.06	1,882.66	961.60	611.18
Fruits and vegetables, canning and preserving.....	4	109,926.25	52.25	2,103.85	6,418.09	1,165.53	529.28
Furniture, chairs.....	6	146,310.50	135.83	1,077.13	1,020.17	662.61	592.68
Furniture, factory products.....	33	74,233.70	47.36	1,567.31	1,894.69	906.34	578.32
Glass, cutting, staining, and ornamenting.....	9	17,014.00	19.89	855.45	1,088.60	645.58	412.54
Iron and steel (e).....	6	462,509.83	156.67	2,952.19	2,674.21	885.19	560.64
Iron work, architectural and ornamental. (See also Foundry and machine shop products.)	23	79,484.70	44.13	1,801.13	1,993.62	1,065.13	634.61
Leather, tanned and curried.....	15	49,663.53	21.53	2,306.36	4,652.26	1,181.59	594.74
Liquors, malt.....	8	1,990,702.13	358.75	5,549.00	5,639.57	2,426.26	794.90
Lumber and other mill products from logs or bolts.....	7	412,323.14	130.71	3,154.38	1,846.81	790.40	396.73
Mattresses and spring beds. (See also Furniture, factory products; Wirework.)	14	33,954.07	24.57	1,381.85	2,142.95	861.66	497.62
Mineral and soda waters.....	28	16,179.71	10.18	1,589.59	1,565.99	1,077.97	529.30
Paints.....	14	260,252.57	34.36	7,574.92	6,577.58	1,937.32	685.26
Patent medicines and compounds.....	53	32,801.40	10.31	3,181.41	3,072.04	1,966.02	624.08
Plumbers' materials.....	4	340,121.50	122.75	2,770.85	2,984.46	1,046.86	697.27
Printing and publishing, book and job. (See also Bookbinding and blank-book making.)	105	40,053.30	25.65	1,561.68	1,446.34	879.92	556.85
Printing and publishing, newspapers and periodicals.....	104	28,606.44	23.65	1,209.38	1,878.93	1,336.18	777.73
Roofing and roofing materials.....	62	18,197.98	9.92	1,834.59	2,262.40	1,173.48	647.39
Saddlery and harness.....	110	26,363.80	11.02	2,392.75	2,313.50	1,153.72	668.35
Shirts, factory product.....	25	13,430.60	19.28	696.04	1,109.74	624.25	315.84
Slaughtering and meat packing, wholesale.....	56	60,428.41	13.32	4,536.18	15,963.42	2,608.20	701.81
Soap and candles.....	10	83,379.70	24.60	3,389.42	4,591.89	1,039.93	554.62
Steam fittings and heating apparatus. (See also Foundry and machine shop products.)	9	36,501.67	17.22	2,119.45	3,319.46	1,372.72	767.06
Tobacco, chewing, smoking, and snuff.....	12	860,289.17	235.50	1,520.80	5,079.32	950.28	478.74
Trunks and valises.....	15	29,728.67	15.73	1,889.53	2,193.52	1,251.18	681.40
Wirework, including wire rope and cable.....	16	43,134.33	18.00	2,396.35	1,740.40	821.83	551.14
Wood, turned and carved.....	18	10,114.78	9.28	1,090.22	1,936.32	973.06	642.81

a Includes value of property hired.

b Not including operations of steam railroad companies.

c Not including operations of street railroad companies.

d Includes drain and sewer pipe, 3 establishments; stone and earthen ware, 7 establishments; terra cotta ware, 2 establishments; white ware and pottery, 1 establishment.

e Includes the operations of blast furnaces, iron and steel rolling mills, bessemer steel works, and pig and scrap bloomaries.

ANALYSIS OF LABOR AND WAGES FOR 50 PRINCIPAL INDUSTRIES (TABLES 6 AND 7).

The longest daily term of labor (11.24 hours) is reported by the flouring and grist mill industry, and the shortest (8.80 hours) for coffins, burial cases, and undertakers' goods.

The highest average weekly wages (\$17.48) for males above 16 years of age is reported for patent medicines and compounds, and the lowest (\$9.09) for coffins, burial cases, and undertakers' goods. These averages include all classes of labor, but the average rates for the respective classes are stated in Table 6, which presents the number of men, women, and children employed in each class and their average weekly wages.

Considering the 50 industries as a group, the average weekly wages are found to be \$13.04 for males above 16 years, the average number of hours in an ordinary day of labor 9.65, and the average annual term of employment 49 weeks.

ANALYSIS OF 50 PRINCIPAL INDUSTRIES (TABLES 8 AND 9).

Table 8 presents for each of 50 principal industries an analysis showing the relation of the various items which enter into cost of manufacture.

The items of rent and interest are not included under the head of "Miscellaneous expenses", because they are a charge on the capital stated, which includes all hired property and borrowed capital. Expenses of selling are also excluded, because the reported value of product is its net selling value "at the shop or factory". The cost of depreciation of plant in excess of the expense for ordinary repairs is not included, because the information obtained by the inquiry is not sufficient to form a basis for accurate computation for the respective industries.

Excluding those industries in which the items of miscellaneous expense are rendered abnormal by the payment of United States internal revenue taxes, the cost of miscellaneous expense is found to be the highest in the manufacture of patent medicines and compounds and the lowest in slaughtering and meat packing, wholesale. The highest cost of labor, when considered in relation to the gross cost of the product, is found in the manufacture of brick and tile, while the lowest is in slaughtering and meat packing, wholesale.

The nearest approach of cost to the value of product is found in the manufacture of steam railway cars, not including the operations of railway companies, and the lowest cost is found in the manufacture of patent medicines and compounds.

In this connection it must be considered that the difference between cost and value of manufactured product can not be taken as a correct indication of manufacturers' net profits, because many other items of expense enter into the mercantile portion of the business not within the scope of the census inquiry.

The analysis is continued in Table 9, with a view to exhibiting the relative earnings for capital and labor in the respective industries.

The average capital employed per establishment includes value of rented property. In obtaining the "gross value of product per hand" the value taken is the reported value at the works, including cost of materials and miscellaneous expenses. In obtaining the "net value of product per hand" the value is obtained by deducting cost of materials and miscellaneous expenses from the "gross value of product per hand". In obtaining the average wage earnings per hand all classes of labor are included.

MUNICIPAL INDUSTRIAL OPERATIONS.

Reports were obtained for the industrial operations of the municipal government of the city of St. Louis. The data reported for classified industries are presented in the following table and are included in any of the preceding tables:

GENERAL HEADS.	Aggregate.	BLACKSMITHING AND WHEELWRIGHTING.		CARPENTER- ING.	MASONRY, BRICK AND STONE.
		Fire de- partment.	Mounted police.	Public schools.	Sewer de- partment.
Value of plant and materials.....	\$31,460	\$10,000	\$1,460		\$20,000
Average number of hands employed.....	113	15	2	60	36
Average weekly wages.....				\$13.33	\$16.53
Total wages paid.....	\$86,348	\$8,000	\$900	\$51,655	\$25,793
Cost of materials used.....	\$607,313	\$35,000	\$190	\$505,355	\$66,768
Cost of miscellaneous expenses.....	\$70,808	\$32,816	\$120		\$37,812
Value of products.....	\$418,905	\$75,846	\$1,245	\$620,650	\$151,254

In addition to the expenditure of labor and materials presented in the foregoing table under classified industries, the following municipal industrial operations are reported:

DEPARTMENTS.	Average number of hands em- ployed.	Total wages paid.
Total.....	1,340	\$738,522
City water department.....	232	201,320
Harbor and wharf department.....	66	38,486
Department of parks.....	92	41,303
Street department.....	950	457,413

PENAL, REFORMATORY, AND CHARITABLE INSTITUTIONS.

Inquiry was made respecting manufacturing operations of penal, reformatory, and charitable institutions. The data obtained are presented in the following table, embracing reports for Convent of the Good Shepherd, House of Refuge, and City Work House. These data are not included in the preceding general tables.

GENERAL HEADS.	Aggregate.	Black- smithing and wheel- wrighting.	Bread and other bakery products.	Clothing, men's.	Clothing, women's.	Furniture.	Paving and paving materials.
Value of plant and materials.....	\$19,897	\$1,915	\$12,300	\$1,582	\$50	\$550	\$3,500
Average number of hands employed.....	346	2	45	62	6	51	180
Value of products.....	\$109,897	\$1,764	\$35,982	\$10,953	\$800	\$13,392	\$46,976