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L. B. (1880)  
DEPARTMENT OF AGRICULTURE



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# PRELIMINARY RESULTS.

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# LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., December 8, 1892.

SIR:

To enable the public to realize the benefits of the compilation of census statistics at an earlier date than would be possible with the publication of the complete reports of the Eleventh Census, bulletins, touching nearly every subject authorized by law, have been published from time to time. The bulletins printed to date number 327, exclusive of 28 Extra Census Bulletins, and a sufficient portion of each edition has been retained for use of members of Congress.

Herewith is presented the tenth volume of the series. The present volume contains 50 bulletins, bound for ready reference, with a table of contents by subjects.

ROBERT P. PORTER,

*Superintendent of Census.*

The SECRETARY OF THE INTERIOR.

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# CENSUS BULLETIN.

No. 251.

WASHINGTON, D. C.

October 17, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF WILMINGTON, DELAWARE.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,  
WASHINGTON, D. C., October 14, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Wilmington 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 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 promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry 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. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars, and general shop construction and repairs by steam railroad companies; illuminating gas.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported .....	3
Capital invested.....	\$1,258,575
Number of hands employed .....	899
Wages paid.....	\$517,596
Cost of materials used .....	\$789,375
Miscellaneous expenses.....	\$23,289
Value of product at works .....	\$1,446,719

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.	
Number of establishments reported.....	43.80
Capital invested.....	33.96
Number of hands employed.....	18.91
Wages paid .....	57.48
Cost of materials used.....	21.71
Value of product at works.....	33.37
Population of city.....	44.62
Assessed valuation of city.....	44.40

Decrease of municipal debt less sinking fund, 6.74 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$404 in 1880 to \$535 in 1890, or 32.43 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children; that the percentage of increase in the number of women employed has been less in many industries than in the number of adult males; and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employés. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

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

*Robert T. Forster*

*Superintendent of Census.*

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF WILMINGTON, DELAWARE.

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. 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.

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.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.
All industries.....	1880	60	\$10,744,389	7,852	\$3,174,821	\$7,884,847
	1890	62	15,652,246	10,236	5,547,408	10,386,064

  

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....	1880	\$13,205,370	42,478	\$23,200,000	\$1,372,450
	1890	\$320,589	61,431	33,500,000	1,280,000

<sup>a</sup>The value of hired property is not included for 1890, because it was not reported in 1880.

<sup>b</sup>No inquiry in 1880 relating to "Miscellaneous expenses".

<sup>c</sup>The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 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, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

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 present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

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, 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 reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Carriages and wagons. (20 establish-ments.)	Cars. (5 establish-ments.)	Foundry and machine shop products. (16 establish-ments.)	Leather—morocco. (16 establish-ments.)	Shipbuilding. (4 establish-ments.)
CAPITAL EMPLOYED—Aggregate.....	\$730,932	\$3,603,308	\$2,342,618	\$1,970,323	\$156,063
HIRED PROPERTY—Total.....	82,750		8,200	238,650	8,400
PLANT—Total.....	309,159	1,146,409	1,327,988	475,800	68,000
Land.....	122,500	330,456	353,595	75,000	31,000
Buildings.....	141,750	476,453	388,460	139,000	13,000
Machinery, tools, and implements.....	44,909	339,500	585,933	211,800	24,000
LIVE ASSETS—Total.....	339,023	2,456,899	1,006,430	1,255,872	79,663
Raw materials.....	91,437	728,207	163,036	350,740	23,815
Stock in process and finished product.....	148,623	603,776	210,816	576,401	46,700
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	98,963	1,122,917	632,678	329,731	9,148
WAGES PAID—Aggregate.....	\$251,636	\$1,901,994	\$663,070	\$706,999	\$147,915
Average number of hands employed during the year.....	461	3,192	1,159	1,407	237
Males above 16 years.....	356	2,548	1,018	1,137	236
Females above 15 years.....	2	105	1	63	
Children.....	9	33	5	117	1
Pieceworkers.....	94	506	185	90	
MATERIALS USED—Aggregate cost.....	\$335,376	\$2,275,084	\$984,176	\$2,712,240	\$183,208
Principal materials.....	319,057	2,131,934	830,308	2,646,206	174,422
Fuel.....	2,269	32,298	44,067	13,629	46
Mill supplies.....		8,473	7,508		
All other materials.....	14,050	102,379	102,293	52,405	8,740
MISCELLANEOUS EXPENSES—Aggregate.....	\$34,856	\$87,677	\$91,473	\$114,382	\$3,821
Amount paid for contract work.....					
Rent.....	7,408		725	16,590	744
Power and heat.....	710		985		
Taxes.....	3,986	10,324	6,560	9,443	253
Insurance.....	4,338	13,912	2,872	7,098	87
Repairs, ordinary, of buildings and machinery.....	1,194	17,500	35,796	20,946	1,737
Interest on cash used in the business.....	7,032	20,000	26,293	15,899	
All sundries not elsewhere reported.....	10,188	25,941	18,242	44,406	1,000
GOODS MANUFACTURED—Aggregate value.....	\$705,880	\$1,566,702	\$2,050,034	\$3,945,294	\$378,291
Principal product.....	650,265	3,883,445	2,023,831	3,731,294	304,196
All other products, including receipts from custom work and repairing.....	55,615	683,257	26,203	164,000	74,095

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

# CENSUS BULLETIN.

No. 252.

WASHINGTON, D. C.

October 17, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF WHEELING, WEST VIRGINIA.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 14, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Wheeling 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 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 promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry 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. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: druggists' preparations, not including prescriptions; illuminating gas; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	72
Capital invested .....	\$695,099
Number of hands employed.....	278
Wages paid .....	\$100,161
Cost of materials used.....	\$247,132
Miscellaneous expenses.....	\$18,760
Value of product at works.....	\$464,311

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.	
Number of establishments reported .....	34.36
Capital invested .....	34.09
Wages paid .....	6.79
Cost of materials used.....	19.16
Value of product at works.....	16.80
Population of city .....	12.31
Assessed valuation of city .....	25.88
Municipal debt less sinking fund .....	13.17

Decrease in number of hands employed, 6.37 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$398 in 1880 to \$454 in 1890, or 14.07 per cent.

That the percentage of increase in average wages is not greater is due, in a measure, to the fact that in many industries relatively more women were employed in 1890 and less men than in 1880. After making allowance for these changes we have a decided relative increase in the amount paid in wages between 1880 and 1890.

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

*Robert P. Tolson*  
 Superintendent of Census.

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 present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

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#### LABOR EMPLOYED AND WAGES PAID.

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, 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 amounts of wages paid to each number.

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In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Coffee and spice—roast- ing and grind- ing. (3 establish- ments.)	Confection- ery. (6 establish- ments.)	Foundry and machine shop products. (5 establish- ments.)	Iron and steel forgings. (6 establish- ments.)	Lumber— planing mill products. (b) (6 establish- ments.)	Tobacco. (b) (38 establish- ments.)	Liquors— malt. (5 establish- ments.)
<b>CAPITAL EMPLOYED—Aggregate</b> -----	\$69,066	\$82,185	\$274,709	\$3,117,421	\$270,178	\$554,366	\$838,503
<b>HIREB PROPERTY—Total</b> -----	19,780	50,460	31,290		17,950	97,380	13,910
<b>PLANT—Total</b> -----	9,460	9,000	150,900	1,727,943	91,678	133,301	463,093
Land-----			46,000	208,000	27,000	49,000	66,503
Buildings-----			32,500	470,000	27,400	64,300	168,000
Machinery, tools, and implements-----	9,460	9,000	72,400	1,049,943	37,278	20,001	230,500
<b>LIVE ASSETS—Total</b> -----	39,826	22,725	92,519	1,389,478	160,550	323,685	361,500
Raw materials-----	28,410	4,950	30,745	353,889	59,236	162,789	93,400
Stock in process and finished product-----	8,116	3,275	25,556	226,382	18,763	26,415	113,600
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	3,300	14,500	36,218	809,207	82,551	134,481	154,500
<b>WAGES PAID—Aggregate</b> -----	\$7,835	\$28,734	\$119,407	\$916,873	\$103,210	\$289,571	\$116,912
<b>Average number of hands employed during the year.</b>	13	59	198	2,008	207	864	177
Males above 16 years-----	8	28	186	1,872	193	110	173
Femal above 15 years-----	1	11		1	6	61	1
Children-----		2	1	130	8	9	
Pieceworkers-----	4	18	11			684	3
<b>MATERIALS USED—Aggregate cost</b> -----	\$475,801	\$82,683	\$81,054	\$3,341,073	\$240,463	\$481,630	\$318,659
Principal materials-----	474,880	74,554	69,688	2,802,840	229,752	385,776	271,684
Fuel-----	921	479	6,764	368,139	2,021	1,657	11,425
Mill supplies-----			725		640		
All other materials-----		7,650	3,877	170,094	8,050	94,197	35,550
<b>MISCELLANEOUS EXPENSES—Aggregate</b> -----	\$7,136	\$5,115	\$20,478	\$87,864	\$11,052	\$645,480	\$249,411
Amount paid for contract work-----							
Rent-----	1,500	3,800	2,800		1,645	7,802	1,100
Power and heat-----		140	300			1,250	
Taxes-----	153	220	2,068	18,201	1,360	462,497	c125,876
Insurance-----	183	100	1,358	3,915	2,243	1,204	1,795
Repairs, ordinary, of buildings and machinery-----	100	150	1,860	16,017	2,000	291	12,056
Interest on cash used in the business-----			2,564	31,731	2,455	1,191	150
All sundries not elsewhere reported-----	5,200	705	9,528	18,000	1,349	171,245	108,434
<b>GOODS MANUFACTURED—Aggregate value</b> -----	\$513,435	\$169,947	\$248,574	\$4,624,794	\$389,696	\$1,601,914	\$735,402
Principal product-----	513,435	166,947	238,580	4,585,731	389,196	1,601,468	735,402
All other products, including receipts from custom work and repairing.		3,000	9,994	39,063	500	446	

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.  
b Includes several branches of this industry, which will be specifically stated in final reports.  
c Includes internal revenue taxes.

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF WHEELING, WEST VIRGINIA.

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. 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.

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.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

**TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.**

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.
{ 1880	61	377	7,223,027	5,439	2,441,223	6,448,253
{ 1890						

  

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries	\$9,259,844	\$9,259,844	30,737	\$14,173,600	\$531,862
{ 1880	\$1,184,569	11,279,541	34,522	17,842,218	601,927
{ 1890					

*a* The value of hired property is not included for 1890, because it was not reported in 1880.

*b* No inquiry in 1880 relating to "Miscellaneous expenses".

*c* The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 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, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

# CENSUS BULLETIN.

No. 253.

WASHINGTON, D. C.

October 17, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF NORFOLK, VIRGINIA.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,

WASHINGTON, D. C., October 14, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Norfolk for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. 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 promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry 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. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: illuminating gas; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	31
Capital invested.....	\$346,646
Number of hands employed.....	162
Wages paid.....	\$47,837
Cost of materials used.....	\$50,998
Miscellaneous expenses.....	\$17,142
Value of product at works.....	\$169,178

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.	
Number of establishments reported.....	219.05
Capital invested.....	386.46
Number of hands employed.....	249.60
Wages paid.....	292.02
Cost of materials used.....	159.87
Value of product at works.....	206.67
Population of city.....	58.75
Assessed valuation of city.....	88.93
Municipal debt less sinking fund.....	13.19

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$422 in 1880 to \$473 in 1890, or 12.09 per cent.

That the percentage of increase in average wages is not as large as in other cities is due to the fact that the relative increase in the number of women employed has been greater in many industries than in the number of adult males. The increase in the number of adult males employed is 239.37 per cent and in the number of adult females 495.08 per cent.

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

*Robert P. Tolein*

*Superintendent of Census.*

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF NORFOLK, VIRGINIA.

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. 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.

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.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.		Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.

  

INDUSTRIES.		Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
				Population.	Assessed valuation.	Municipal debt. (c)
All industries	{ 1880 1890	\$235,138	\$1,455,987 4,634,263	21,966 34,871	\$11,087,249 20,890,620	\$2,187,371 2,475,895

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amounts stated represent the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 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, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

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 present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

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, 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 amounts 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 reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Agricultural implements.	Confectionery.	Flouring and grist mill prod- ucts.	Foundry and machineshop products.
	(3 establish- ments.)	(13 establish- ments.)	(3 establish- ments.)	(6 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$303,585	\$132,237	\$68,160	\$144,271
HIRED PROPERTY—Total.....	72,000	79,050	13,200	34,290
PLANT—Total.....	99,000	15,600	34,000	61,300
Land.....	33,000	2,700	20,000	12,000
Buildings.....	34,000	2,900	2,000	16,500
Machinery, tools, and implements.....	32,000	10,000	12,000	32,800
LIVE ASSETS—Total.....	132,585	37,587	20,960	48,681
Raw materials.....	21,200	3,182	1,860	5,900
Stock in process and finished product.....	47,350	3,991	1,100	4,130
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	64,035	30,414	18,000	38,651
WAGES PAID—Aggregate.....	\$98,929	\$20,106	\$10,220	\$69,079
Average number of hands employed during the year.....	159	61	23	120
Males above 16 years.....	130	55	22	120
Females above 15 years.....		6		
Children.....			1	
Pieceworkers.....	29			
MATERIALS USED—Aggregate cost.....	\$133,096	\$67,323	\$190,692	\$25,511
Principal materials.....	110,100	65,255	178,475	22,635
Fuel.....	5,498	858	4,067	2,536
Mill supplies.....			100	300
All other materials.....	17,500	1,210	8,050	40
MISCELLANEOUS EXPENSES—Aggregate.....	\$15,050	\$7,781	\$2,225	\$7,092
Amount paid for contract work.....				
Rent.....	5,400	5,531	1,060	2,760
Power and heat.....				
Taxes.....	1,500	305	275	908
Insurance.....	1,350	172	290	451
Repairs, ordinary, of buildings and machinery.....	3,800	120	540	1,600
Interest on cash used in the business.....	2,000			750
All sundries not elsewhere reported.....	1,000	1,653	60	623
GOODS MANUFACTURED—Aggregate value.....	\$281,750	\$107,895	\$221,182	\$146,389
Principal product.....	244,750	103,895	221,182	117,626
All other products, including receipts from custom work and repairing.....	37,000	4,000		28,763

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Furnishing goods—men's. (4 establish-ments.)	Lumber and other mill prod-ucts from logs or bolts. (6 establish-ments.)	Lumber—planing mill products. (a) (3 establish-ments.)	Printing and publishing. (a) (18 establish-ments.)
CAPITAL EMPLOYED—Aggregate	\$73,166	\$776,202	\$48,500	\$208,369
Hired property—Total	17,058	23,287		81,120
Plant—Total	14,210	530,908	24,600	71,529
Land	1,200	242,553	15,000	20,075
Buildings	800	16,900	1,400	10,125
Machinery, tools, and implements	12,210	271,455	8,200	41,329
Live assets—Total	41,898	222,007	23,900	55,720
Raw materials	5,710	32,913	6,500	4,231
Stock in process and finished product	16,400	75,267	3,000	2,557
Cash, bills and accounts receivable, and all sundries not elsewhere reported	19,788	112,827	14,400	48,932
WAGES PAID—Aggregate	\$28,045	\$109,259	\$24,054	\$82,160
Average number of hands employed during the year	152	251	53	145
Males above 16 years	19	250	53	110
Females above 15 years	89			5
Children				13
Pieceworkers	44	1		17
MATERIALS USED—Aggregate cost	\$107,051	\$368,141	\$100,625	\$28,250
Principal materials	106,686	355,741	100,000	26,014
Fuel	165			1,100
Mill supplies	200	11,400	625	
All other materials		1,000		1,142
MISCELLANEOUS EXPENSES—Aggregate	\$1,998	\$58,516	\$2,630	\$17,193
Amount paid for contract work				
Rent	1,194	2,096		6,084
Power and heat				
Taxes	217	1,392	1,250	588
Insurance	322	8,855	780	727
Repairs, ordinary, of buildings and machinery		5,150	500	2,260
Interest on cash used in the business	50	10,209		303
All sundries not elsewhere reported	215	30,814	160	7,231
GOODS MANUFACTURED—Aggregate value	\$168,600	\$704,953	\$143,000	\$140,633
Principal product	168,600	704,803	143,000	140,633
All other products, including receipts from custom work and repairing		150		

a Includes several branches of this industry, which will be specifically stated in final reports.

# CENSUS BULLETIN.

No. 254.

WASHINGTON, D. C.

October 17, 1892.

## STATISTICS OF MANUFACTURES: 1890.

SALT LAKE CITY, UTAH.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,  
WASHINGTON, D. C., October 14, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of Salt Lake city 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 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 promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry 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. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	14
Capital invested.....	\$22,180
Number of hands employed.....	71
Wages paid.....	\$20,629
Cost of materials used.....	\$33,415
Miscellaneous expenses.....	\$10,996
Value of product at works.....	\$110,866

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.	
Capital invested .....	206.42
Number of hands employed .....	107.54
Wages paid .....	195.06
Cost of materials used.....	100.86
Value of product at works.....	133.12
Population of city.....	115.92
Assessed valuation of city .....	638.29
Municipal debt less sinking fund.....	646.27

Decrease in number of establishments reported, 18.67 per cent.

A striking feature of these returns is the satisfactory increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$459 in 1880 to \$652 in 1890, or 42.05 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children; that the percentage of increase in the number of women employed has been less in many industries than in the number of adult males; and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employés. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

The decrease in number of establishments is caused by the fact that hand trades, such as custom boot and shoe making, the manufacture of bread and other bakery products, and carpentering, do not appear to have been as fully reported as in 1880.

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

*Robert T. Porter*

Superintendent of Census.

# STATISTICS OF MANUFACTURES: 1890.

## SALT LAKE CITY, UTAH.

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. 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.

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.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.
All industries .....	1880	52	\$860,415	928	\$425,587	\$812,786
	1890	45	2,658,676	1,997	1,276,219	1,665,877

  

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries .....	1880	\$1,610,138	20,768	\$7,304,325	\$67,000
	1890	\$263,470	44,843	53,926,924	500,000

<sup>a</sup> The value of hired property is not included for 1890, because it was not reported in 1880.

<sup>b</sup> No inquiry in 1890 relating to "Miscellaneous expenses".

<sup>c</sup> The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 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, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

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 present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

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, 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 reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Confectionery.	Foundry and machine shop products.	Lumber— planing mill products. (b)	Printing and publishing— book and job.	Printing and publishing— newspapers and periodicals.
	(4 establish- ments.)	(7 establish- ments.)	(8 establish- ments.)	6 establish- ments.	(8 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$113,689	\$208,688	\$476,746	\$159,056	\$572,408
HIRED PROPERTY—Total.....	44,500	34,000	20,800	52,700	150,000
PLANT—Total.....	18,500	124,335	87,000	69,000	166,868
Land.....	4,000	40,000	26,000	5,000	50,000
Buildings.....	2,000	16,000	19,000	17,000	22,000
Machinery, tools, and implements.....	12,500	68,335	42,000	47,000	94,868
LIVE ASSETS—Total.....	50,689	\$50,353	\$368,946	37,356	255,535
Raw materials.....	7,500	19,872	172,300	20,400	98,087
Stock in process and finished product.....	21,200	9,350	6,550	1,850	38,400
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	21,989	21,131	190,096	15,106	119,048
WAGES PAID—Aggregate.....	\$40,245	\$108,016	\$154,840	\$52,624	\$177,576
Average number of hands employed during the year.....	78	143	195	76	244
Males above 16 years.....	44	143	193	51	158
Females above 15 years.....	25			13	35
Children.....	7		2	12	22
Pieceworkers.....	2				29
MATERIALS USED—Aggregate cost.....	\$99,346	\$89,897	\$213,491	\$22,779	\$88,614
Principal materials.....	89,376	81,891	198,750	20,679	83,934
Fuel.....	2,370	6,931	406	150	2,235
Mill supplies.....	300	575	1,725	100	
All other materials.....	7,300	500	12,610	1,850	2,445
MISCELLANEOUS EXPENSES—Aggregate.....	\$7,189	\$9,662	\$9,895	\$3,281	\$87,159
Amount paid for contract work.....					
Rent.....	3,540	3,080	1,975	4,745	13,460
Power and heat.....			1,200	1,560	1,110
Taxes.....	275	1,531	2,190	673	2,611
Insurance.....	774	1,305	3,795	573	1,123
Repairs, ordinary, of buildings and machinery.....	1,250	750	685	250	2,945
Interest on cash used in the business.....	1,150	1,796		180	4,410
All sundries not elsewhere reported.....	200	1,200	50	300	62,100
GOODS MANUFACTURED—Aggregate value.....	\$220,790	\$227,647	\$493,100	\$98,900	\$431,805
Principal product.....	220,790	217,537	493,100	98,900	429,805
All other products, including receipts from custom work and repairing.		10,110			2,000

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

b Includes several branches of this industry, which will be specifically stated in final reports.

# CENSUS BULLETIN.

No. 255.

WASHINGTON, D. C.

October 17, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF LANCASTER, PENNSYLVANIA.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 14, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Lancaster 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 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 promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry 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. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry, were omitted in the census reports of 1880: illuminating gas; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	120
Capital invested.....	\$257,573
Number of hands employed.....	286
Wages paid.....	\$68,246
Cost of materials used.....	\$186,886
Miscellaneous expenses.....	\$31,170
Value of product at works.....	\$350,292

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.	
Number of establishments reported .....	23.96
Capital invested.....	79.53
Number of hands employed .....	66.96
Wages paid .....	94.91
Cost of materials used .....	91.31
Value of product at works.....	83.97
Population of city.....	24.22
Assessed valuation of city.....	43.72

Decrease of municipal debt less sinking fund, 65.56 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$277 in 1880 to \$323 in 1890, or 16.61 per cent.

That the percentage of increase in average wages is not greater is due in a measure to the fact that in some industries relatively more women were employed in 1890 and less men than in 1880. After making proper allowance for these changes we have a decided relative increase in the amount paid in wages between 1880 and 1890.

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

*Robert P. Tolson*  
Superintendent of Census.

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF LANCASTER, PENNSYLVANIA.

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. 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.

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.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.

  

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....		\$5,404,937 10,293,638	25,769 32,011	\$12,449,480 17,891,859	\$464,142 159,842

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 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, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

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 present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

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, 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 amounts 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 reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Carriages and wagons.	Confectionery.	Cork-cutting.	Cotton goods.	Foundry and machine shop products.
	(11 establish- ments.)	(13 establish- ments.)	(3 establish- ments.)	(4 establish- ments.)	(16 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$268,835	\$231,535	\$192,450	\$1,953,109	\$430,733
HIRED PROPERTY—Total.....	37,500	95,800		3,200	62,250
PLANT—Total.....	72,850	68,400	102,450	1,087,400	185,203
Land.....	25,800	13,900	31,500	57,000	30,500
Buildings.....	23,400	16,600	47,000	225,000	30,000
Machinery, tools, and implements.....	18,650	37,900	23,950	805,400	124,703
LIVE ASSETS—Total.....	158,485	67,335	90,000	862,509	183,280
Raw materials.....	31,150	20,925	34,000	190,380	37,571
Stock in process and finished product.....	34,035	8,850	12,500	171,761	49,456
Cash, bills and accounts receivable, and all sundries not else- where reported.....	93,300	37,500	43,500	500,368	96,253
WAGES PAID—Aggregate.....	\$88,015	\$119,322	\$56,104	\$322,572	\$176,345
Average number of hands employed during the year.....	203	430	251	1,155	371
Males above 16 years.....	183	100	91	364	357
Females above 15 years.....		38	81	541	3
Children.....	20	2	79	250	2
Pieceworkers.....		290			9
MATERIALS USED—Aggregate cost.....	\$76,204	\$266,241	\$333,935	\$743,288	\$195,746
Principal materials.....	72,385	251,384	330,635	671,485	171,931
Fuel.....	2,534	3,825	1,850	26,944	6,195
Mill supplies.....			100	44,850	309
All other materials.....	1,285	11,032	1,360		17,311
MISCELLANEOUS EXPENSES—Aggregate.....	\$7,167	\$13,039	\$7,445	\$96,534	\$20,593
Amount paid for contract work.....					
Rent.....	3,390	7,164		250	5,585
Power and heat.....					
Taxes.....	597	500	405	6,714	834
Insurance.....	1,095	470	1,640	8,537	1,569
Repairs, ordinary, of buildings and machinery.....	475	1,600	1,200	16,615	4,250
Interest on cash used in the business.....	520		600	64,000	2,379
All sundries not elsewhere reported.....	1,090	3,305	3,600	418	5,976
GOODS MANUFACTURED—Aggregate value.....	\$202,130	\$469,935	\$492,250	\$1,336,254	\$483,357
Principal product.....	175,430	469,935	488,250	1,329,384	442,220
All other products, including receipts from custom work and repairing.....	26,700		4,000	6,870	41,137

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Leather— tanned and curried. (3 establish- ments.)	Liquors—malt. (4 establish- ments.)	Lumber— planing mill products. (a) (3 establish- ments.)	Printing and publishing. (a) (14 establish- ments.)	Tobacco—cigars and cigarettes. (a) (109 establish- ments.)
CAPITAL EMPLOYED—Aggregate	\$193,901	\$279,000	\$74,450	\$392,767	\$1,740,098
Hired property—Total	28,400		8,250	64,350	465,400
PLANT—Total	41,915	205,000	36,900	218,700	153,684
Land	6,600	45,000	7,990	26,500	36,365
Buildings	20,300	70,000	10,000	27,200	76,685
Machinery, tools, and implements	15,115	90,000	19,000	165,000	40,634
LIVE ASSETS—Total <sup>1</sup>	123,586	74,000	29,300	109,717	1,121,014
Raw materials	13,950	21,000	11,500	13,700	220,735
Stock in process and finished product	79,600	36,000	5,300	14,640	374,043
Cash, bills and accounts receivable, and all sundries not else- where reported.	30,036	17,000	12,500	81,317	526,236
WAGES PAID—Aggregate	\$36,685	\$43,405	\$31,367	\$120,866	\$530,340
Average number of hands employed during the year	85	70	68	280	2,049
Males above 16 years	85	70	68	229	1,260
Females above 15 years				18	288
Children				16	32
Pieceworkers				17	469
MATERIALS USED—Aggregate cost	\$326,434	\$101,228	\$73,260	\$56,735	\$1,906,650
Principal materials	325,111	94,328	69,260	49,193	1,789,731
Fuel	910	6,900	2,300	2,314	1,823
Mill supplies			400	100	
All other materials	413		1,300	5,128	115,086
MISCELLANEOUS EXPENSES—Aggregate	\$6,673	\$51,130	\$2,425	\$38,645	\$228,111
Amount paid for contract work					
Rent	2,234		700	4,810	37,082
Power and heat				100	
Taxes	648	64,400	300	1,068	6135,331
Insurance	731	1,550	650	1,507	19,046
Repairs, ordinary, of buildings and machinery	1,685	2,400	700	1,400	655
Interest on cash used in the business	1,200			1,843	19,987
All sundries not elsewhere reported	75	2,780	75	27,927	15,408
GOODS MANUFACTURED—Aggregate value	\$441,426	\$256,000	\$119,000	\$259,171	\$3,022,728
Principal product	440,026	256,000	118,000	259,171	3,021,728
All other products, including receipts from custom work and repairing	1,400		1,000		1,000

<sup>a</sup> Includes several branches of this industry, which will be specifically stated in final reports.  
<sup>b</sup> Includes internal revenue taxes.

# CENSUS BULLETIN.

No. 256.

WASHINGTON, D. C.

October 17, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF MOBILE, ALABAMA.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 14, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Mobile for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. 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 promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry 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. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	12
Capital invested .....	\$26,027
Number of hands employed.....	51
Wages paid.....	\$15,729
Cost of materials used.....	\$36,378
Miscellaneous expenses.....	\$4,804
Value of product at works .....	\$66,129

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.

Number of establishments reported.....	138.46
Capital invested.....	170.94
Number of hands employed.....	223.86
Wages paid.....	221.79
Cost of materials used.....	68.09
Value of product at works.....	110.09
Population of city.....	6.67
Assessed valuation of city.....	28.98

Decrease of municipal debt less sinking fund, 12.25 per cent.

Decrease in average wages per hand, 1.08 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid.

The fact that the average wages per hand are slightly decreased from the average for 1880 is explained by the increase in number of industries employing adult females and children; also by the large increase in the number of hands reported for the lumber industry and employed within the municipal limits but a portion of the year.

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

*Robert D. Torles*  
 Superintendent of Census.

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF MOBILE, ALABAMA.

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. 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.

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.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.

  

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....		\$1,335,579 2,372,017	29,132 31,076	\$12,991,795 16,756,904	\$2,609,250 2,289,691
	\$158,919				

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 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, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

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 present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

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, 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 amounts 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 reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Flouring and grist mill products. (4 establish- ments.)	Foundry and machine shop products. (5 establish- ments.)	Lumber. (b) (9 establish- ments.)	Printing and publishing. (b) (12 establish- ments.)	Saddlery and harness. (3 establish- ments.)	Shipbuilding. (5 establish- ments.)	Tobacco— cigars and cigarettes. (12 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$83,510	\$95,605	\$564,910	\$103,488	\$92,720	\$42,660	\$69,790
Hired property—Total.....	28,210	17,645	47,070	35,920	28,920	4,910	31,835
PLANT—Total.....	27,500	35,600	375,340	51,606	3,950	33,500	675
Land.....	1,020	4,000	90,600	1,000	600	500	
Buildings.....	10,000	8,000	102,850	1,750	1,000	5,700	
Machinery, tools, and implements.....	16,500	23,600	181,890	48,856	2,350	27,300	675
LIVE ASSETS—Total.....	27,800	42,360	142,570	15,962	59,850	4,250	37,280
Raw materials.....	5,700	8,660	44,200	6,200	7,250	1,600	11,209
Stock in process and finished product.....	2,100	5,700	53,800	2,327	19,250	450	15,668
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	20,000	28,000	44,500	7,435	33,850	2,200	10,403
WAGES PAID—Aggregate.....	\$11,080	\$61,350	\$220,594	\$33,151	\$13,520	\$25,074	\$24,621
Average number of hands employed during the year.....	41	111	703	82	27	85	74
Males above 16 years.....	41	106	677	69	27	77	11
Females above 15 years.....			1	3			1
Children.....		5	25	4			
Pieceworkers.....				6		8	62
MATERIALS USED—Aggregate cost.....	\$153,415	\$28,291	\$513,376	\$26,166	\$64,290	\$9,493	\$23,747
Principal materials.....	147,000	22,389	496,623	25,167	44,040	7,304	21,201
Fuel.....	2,025	1,597		96	100	250	
Mill supplies.....	255	680	12,800				
All other materials.....	4,135	3,625	3,950	903	20,150	1,839	2,546
MISCELLANEOUS EXPENSES—Aggregate.....	\$4,440	\$5,303	\$43,905	\$9,152	\$5,127	\$1,085	\$3,986
Amount paid for contract work.....							
Rent.....	2,520	1,560	6,207	2,845	2,300	395	2,524
Power and heat.....			100	485			
Taxes.....	585	390	3,666	619	450	130	5,593
Insurance.....	560	663	6,672	472	327		339
Repairs, ordinary, of buildings and machinery.....	315	1,815	17,964	957	25	300	
Interest on cash used in the business.....	100	135	350	420			30
All sundries not elsewhere reported.....	300	740	8,946	3,354	2,025	260	500
GOODS MANUFACTURED—Aggregate value.....	\$198,400	\$112,950	\$937,499	\$83,377	\$107,880	\$38,701	\$63,882
Principal product.....	132,500	33,250	776,449	83,377	96,080	38,701	63,882
All other products, including receipts from custom work and repairing.....	65,900	79,700	161,050		11,800		

a To avoid disclosures of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.  
b Includes several branches of this industry, which will be specifically stated in final reports.  
c Includes internal revenue tax.

# CENSUS BULLETIN.

No. 257.

WASHINGTON, D. C.

October 18, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF TOPEKA, KANSAS.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,

WASHINGTON, D. C., October 15, 1892.

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. 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.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Topeka 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 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 promptly publish bulletins in a form similar to this for principal cities not separately reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Topeka were included in the totals published for Shawnee county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows:

### SHAWNEE COUNTY: 1880.

Number of establishments reported.....	113
Capital invested.....	\$745,560
Number of hands employed.....	841
Wages paid.....	\$306,507
Value of materials used.....	\$1,154,149
Value of product.....	\$1,720,891

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

INDUSTRIES.	Number industries reported.	Number establishments reporting	Capital.	Hands employed.	Wages paid.	Cost of materials used.	
All industries (a).....	{ 1880 1890	63	333	\$2,391,546	2,430	\$1,320,829	\$2,930,504

  

INDUSTRIES.	Miscellaneous expenses.	Value of product.	MUNICIPAL DATA.			
			Population.	Assessed valuation.	Municipal debt. (b)	
All industries (a).....	{ 1880 1890	\$268,522	\$5,297,752	15,452 31,007	\$2,341,480 10,077,059	\$333,240 1,293,046

<sup>a</sup>Statistics of manufactures for 1880 were included in totals published for Shawnee county.  
<sup>b</sup>The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries. To avoid disclosure of the operations of individual establishments, only such important or characteristic industries as have 3 or more establishments engaged therein are included in this table.

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, 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.

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 in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

CLASSIFICATION OF INQUIRIES.	Carriages and wagons.	Confectionery.	Flouring and grist mill products.	Foundry and machine shop products.	Iron work— architectural and orna- mental.
	(4 establish- ments.)	(4 establish- ments.)	(8 establish- ments.)	(5 establish- ments.)	(3 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$31,655	\$15,450	\$602,950	\$160,475	\$51,365
HIRED PROPERTY—Total.....	3,750	5,000	126,650	4,450	9,325
PLANT—Total.....	20,400	8,050	286,200	117,850	28,000
Land.....	11,000	1,100	32,100	46,000	16,000
Buildings.....	7,500	950	67,600	22,200	7,000
Machinery, tools, and implements.....	1,900	6,000	186,500	49,650	5,000
LIVE ASSETS—Total.....	7,505	2,400	190,100	38,175	14,040
Raw materials.....	1,775	700	66,200	11,525	3,000
Stock in process and finished product.....	2,530	200	32,200	11,500	3,150
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	3,200	1,500	91,700	15,150	7,890
WAGES PAID—Aggregate.....	\$16,773	\$10,207	\$86,424	\$48,794	\$15,693
Average number of hands employed during the year.....	27	30	124	80	24
Males above 16 years.....	26	30	123	80	24
Females above 15 years.....			1		
Children.....	1				
Pieceworkers.....					
MATERIALS USED—Aggregate cost.....	\$13,310	\$29,653	\$1,237,235	\$51,526	\$37,960
Principal materials.....	12,900	27,542	1,150,695	46,335	25,230
Fuel.....	410	215	18,100	1,906	611
Mill supplies.....			4,295	1,210	
All other materials.....		1,896	64,145	2,075	12,119
MISCELLANEOUS EXPENSES—Aggregate.....	\$1,384	\$1,780	\$61,261	\$6,438	\$1,614
Amount paid for contract work.....					
Rent.....	360	420	11,415	460	960
Power and heat.....		360			
Taxes.....	481	76	5,205	1,012	311
Insurance.....	86	24	10,800	680	83
Repairs, ordinary, of buildings and machinery.....	140	175	12,400	1,030	100
Interest on cash used in the business.....	255		5,575	1,506	
All sundries not elsewhere reported.....	62	725	15,866	1,750	160
GOODS MANUFACTURED—Aggregate value.....	\$37,125	\$47,600	\$1,529,121	\$118,676	\$64,300
Principal product.....	21,400	47,600	1,469,665	112,175	64,300
All other products, including receipts from custom work and repairing.....	15,725		59,456	6,501	

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Lumber— planing mill products. (a) (3 establish- ments.)	Marble and stone work. (a) (5 establish- ments.)	Printing and publishing. (a) (21 establish- ments.)	Saddlery and harness. (5 establish- ments.)	Tobacco— cigars and cigarettes. (11 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$119,742	\$36,525	\$696,939	\$50,150	\$54,445
HIRED PROPERTY—Total.....		6,000	198,500	4,500	32,170
PLANT—Total.....	73,600	13,625	232,035	29,250	1,405
Land.....	21,800	4,000	10,500	17,500	
Buildings.....	15,800	1,450	11,500	10,000	
Machinery, tools, and implements.....	36,000	8,175	210,035	1,750	1,405
LIVE ASSETS—Total.....	46,142	16,900	266,404	16,400	20,870
Raw materials.....	11,892	1,700	40,463	3,675	9,250
Stock in process and finished product.....	15,500	4,200	24,900	8,300	4,970
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	18,750	11,000	201,041	4,425	6,650
WAGES PAID—Aggregate.....	\$49,950	\$27,140	\$264,806	\$13,360	\$23,396
Average number of hands employed during the year.....	75	46	397	24	49
Males above 16 years.....	75	46	264	22	22
Females above 15 years.....			43		
Children.....			50		1
Pieceworkers.....			40	2	26
MATERIALS USED—Aggregate cost.....	\$74,245	\$30,343	\$214,416	\$24,068	\$23,194
Principal materials.....	67,045	28,031	150,603	23,400	20,814
Fuel.....	2,200	2,101	1,630	68	
Mill supplies.....		50			
All other materials.....	5,000	161	62,183	600	2,380
MISCELLANEOUS EXPENSES—Aggregate.....	\$3,705	\$1,807	\$80,241	\$1,917	\$8,561
Amount paid for contract work.....					
Rent.....		474	16,005	380	2,734
Power and heat.....			5,250		
Taxes.....	575	188	3,313	551	65,269
Insurance.....	980	71	2,807	221	173
Repairs, ordinary, of buildings and machinery.....	1,350	155	1,948	265	
Interest on cash used in the business.....	800	360	8,268	176	25
All sundries not elsewhere reported.....		559	42,650	324	360
GOODS MANUFACTURED—Aggregate value.....	\$166,851	\$69,606	\$638,039	\$49,212	\$61,665
Principal product.....	166,851	69,106	499,614	44,300	61,665
All other products, including receipts from custom work and repairing.....		500	138,425	4,912	

<sup>a</sup> Includes several branches of this industry, which will be specifically stated in final reports.

<sup>b</sup> Includes internal revenue taxes.

ROBERT P. PORTER,  
Superintendent of Census.

# CENSUS BULLETIN.

No. 258.

WASHINGTON, D. C.

October 18, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF BINGHAMTON, NEW YORK.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 15, 1892.

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. 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.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Binghamton for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. 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 promptly publish bulletins in a form similar to this for principal cities not separately reported in 1880, to be followed by final reports containing data in detail respecting all industries for each city. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A statement is presented for 1890 in Table 1, showing the totals under general heads of the inquiry. The statements presented therewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

In 1880 the data relating to the manufactures of Binghamton were included in the totals published for Broome county, therefore it is not practicable to present a comparative statement indicating the growth of manufacturing industry in the city during the decade, but the totals for the entire county at that date were as follows :

### BROOME COUNTY: 1880.

Number of establishments reported.....	403
Capital invested.....	\$3,978,824
Number of hands employèd.....	3,657
Wages paid.....	\$1,289,588
Value of materials used.....	\$4,894,316
Value of product.....	\$7,536,513

TABLE 1.—STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital.	Hands employed.	Wages paid.	Cost of materials used.	
All industries (a).....	{ 1880 1890	93	702	\$9,022,851	10,077	\$1,306,862	\$7,583,413

  

INDUSTRIES.	Miscellaneous expenses.	Value of product.	MUNICIPAL DATA.			
			Population.	Assessed valuation.	Municipal debt. (b)	
All industries (a).....	{ 1880 1890	\$826,468	\$14,932,001	17,317 35,005	\$6,764,989 18,146,244	\$299,500 333,500

<sup>a</sup> Statistics of manufactures for 1880 were included in totals published for Broome county.

<sup>b</sup> The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

Among other important industries, in which less than 3 establishments are reported, may be mentioned chemicals, 2 establishments; leather, tanned and curried, 2 establishments; scales and balances, 2 establishments. The 6 establishments referred to report invested capital, \$903,643; hands employed, 373, and value of products, \$1,184,773.

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, 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.

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 in each class, exclusive of those reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES.

CLASSIFICATION OF INQUIRIES.	Boots and shoes—factory products. (4 establishments.)	Carriages and wagons. (7 establishments.)	Clothing—men's, wholesale. (8 establishments.)	Flour and grist mill products. (5 establishments.)	Foundry and machine shop products. (15 establishments.)
CAPITAL EMPLOYED—Aggregate.....	\$773,474	\$281,744	\$671,679	\$256,282	\$811,225
HIRED PROPERTY—Total.....	58,425	4,250	162,260	25,840	37,915
PLANT—Total.....	120,500	119,297	59,050	108,350	152,250
Land.....	2,000	26,500	6,600	21,750	30,300
Buildings.....	35,000	68,400	22,650	27,000	34,950
Machinery, tools, and implements.....	83,500	24,397	29,800	59,600	87,000
LIVE ASSETS—Total.....	594,549	158,197	450,369	122,092	121,060
Raw materials.....	72,854	33,850	145,400	38,992	24,749
Stock in process and finished product.....	101,917	88,175	175,740	10,400	30,083
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	419,778	36,172	129,229	72,700	66,228
WAGES PAID—Aggregate.....	\$325,798	\$128,654	\$213,004	\$81,628	\$118,043
Average number of hands employed during the year.....	696	267	717	53	188
Males above 16 years.....	379	247	107	52	184
Females above 15 years.....	211	20	128	1	1
Children.....					3
Pieceworkers.....	106		482		
MATERIALS USED—Aggregate cost.....	\$916,402	\$152,703	\$414,885	\$919,046	\$85,582
Principal materials.....	904,832	149,692	388,000	898,920	78,146
Fuel.....	2,340	2,011	1,885	6,922	3,568
Mill supplies.....		50		180	158
All other materials.....	9,230	950	25,000	13,024	3,710
MISCELLANEOUS EXPENSES—Aggregate.....	\$29,169	\$12,183	\$28,240	\$50,389	\$11,444
Amount paid for contract work.....					
Rent.....	4,360	365	11,218	2,316	3,365
Power and heat.....	960		500		1,125
Taxes.....	309	895	1,830	1,254	1,107
Insurance.....	3,800	4,750	3,017	2,802	1,347
Repairs, ordinary, of buildings and machinery.....	950	2,850	1,007	725	2,300
Interest on cash used in the business.....	13,940	2,983	6,790	10,192	1,990
All sundries not elsewhere reported.....	4,850	340	3,878	33,100	210
GOODS MANUFACTURED—Aggregate value.....	\$1,330,386	\$425,105	\$814,500	\$1,147,612	\$301,440
Principal product.....	1,280,386	395,680	600,500	1,095,084	286,780
All other products, including receipts from custom work and repairing.....	50,000	29,425	214,000	52,528	14,660

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Furniture. (a)	Lumber and other mill products from logs or bolts.	Lumber—planing mill products. (a)	Printing and publishing. (a)	Tobacco—cigars and cigarettes.
	(6 establishments.)	(7 establishments.)	(5 establishments.)	(16 establishments.)	(57 establishments.)
CAPITAL EMPLOYED—Aggregate.....	\$463,480	\$425,449	\$349,810	\$298,167	\$1,815,302
Hired property—Total.....	87,480	.....	6,410	85,720	263,550
PLANT—Total.....	99,300	218,585	148,100	128,400	200,214
Land.....	25,000	121,850	64,800	10,000	29,810
Buildings.....	32,000	41,700	27,800	16,000	70,715
Machinery, tools, and implements.....	42,300	54,985	55,500	102,400	99,689
LIVE ASSETS—Total.....	276,700	206,914	195,300	79,047	1,351,538
Raw materials.....	69,500	84,955	77,500	9,975	702,266
Stock in process and finished product.....	76,500	89,150	25,450	3,250	135,018
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	130,700	32,809	92,350	65,822	514,254
WAGES PAID—Aggregate.....	\$209,809	\$82,792	\$105,882	\$106,466	\$920,128
Average number of hands employed during the year.....	403	135	212	239	2,674
Males above 16 years.....	324	119	212	161	981
Females above 15 years.....	57	.....	.....	13	696
Children.....	.....	4	.....	27	81
Pieceworkers.....	22	12	.....	38	916
MATERIALS USED—Aggregate cost.....	\$198,950	\$203,130	\$208,992	\$58,081	\$1,053,380
Principal materials.....	160,550	191,495	199,775	52,188	913,329
Fuel.....	6,300	.....	217	1,848	5,920
Mill supplies.....	800	4,100	7,000	680	200
All other materials.....	31,300	7,535	2,000	3,365	133,931
MISCELLANEOUS EXPENSES—Aggregate.....	\$18,265	\$10,091	\$10,486	\$42,717	\$376,484
Amount paid for contract work.....	.....	.....	.....	.....	.....
Rent.....	7,800	.....	570	6,399	18,324
Power and heat.....	.....	.....	.....	470	2,100
Taxes.....	650	2,432	1,770	1,080	6282,739
Insurance.....	2,685	2,676	2,586	1,178	11,090
Repairs, ordinary, of buildings and machinery.....	1,800	3,283	2,280	3,105	1,812
Interest on cash used in the business.....	3,530	1,200	12,120	60	21,697
All sundries not elsewhere reported.....	1,800	500	160	30,425	38,722
GOODS MANUFACTURED—Aggregate value.....	\$548,000	\$346,888	\$357,100	\$255,120	\$2,733,160
Principal product.....	540,000	333,105	356,100	255,120	2,733,160
All other products, including receipts from custom work and repairing.....	3,000	13,783	1,000	.....	.....

<sup>a</sup> Includes several branches of this industry, which will be specifically stated in final reports.

<sup>b</sup> Includes internal revenue taxes.

ROBERT P. PORTER,  
Superintendent of Census.

# CENSUS BULLETIN.

No. 259.

WASHINGTON, D. C.

October 18, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF NEW BEDFORD, MASSACHUSETTS.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,

WASHINGTON, D. C., October 15, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of New Bedford 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 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 promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry 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. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: illuminating gas; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	43
Capital invested .....	\$434,897
Number of hands employed.....	202
Wages paid .....	\$76,172
Cost of materials used.....	\$38,400
Miscellaneous expenses.....	\$26,021
Value of product at works .....	\$186,488

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.

Capital invested .....	149.54
Number of hands employed .....	81.14
Wages paid .....	121.01
Cost of materials used .....	34.12
Value of product at works .....	59.62
Population of city .....	51.73
Assessed valuation of city .....	40.32
Municipal debt less sinking fund .....	17.64

Decrease in number of establishments reporting, 6.67 per cent.

A striking feature of these returns is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$354 in 1880 to \$432 in 1890, or 22.03 per cent.

The decrease in the number of establishments reporting is found principally in the building and other local trades.

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

*Robert P. Forster*

*Superintendent of Census.*

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF NEW BEDFORD, MASSACHUSETTS.

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. 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.

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.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.		Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.

  

INDUSTRIES.		Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
				Population.	Assessed valuation.	Municipal debt. (c)
All industries.....	{ 1880 1890	\$972,989	\$9,835,955 15,886,288	26,845 40,733	\$26,275,919 36,869,754	\$1,086,000 1,277,545

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 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, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

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 present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

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, 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 amounts 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 reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Boots and shoes—factory products. (4 establishments.)	Carriages and wagons. (10 establishments.)	Cotton goods. (9 establishments.)	Foundry and machine shop products. (11 establishments.)	Looking glass and picture frames. (4 establishments.)	Oil—lubricating. (4 establishments.)
CAPITAL EMPLOYED—Aggregate	\$174,975	\$258,143	\$14,036,446	\$116,887	\$192,470	\$349,509
HIRED PROPERTY—Total	20,300	42,000		33,425	50,200	55,000
PLANT—Total	52,675	74,700	9,825,711	53,100	11,400	50,380
Land	6,000	20,800	533,404	8,000	600	13,000
Buildings	25,000	46,000	2,946,434	12,000	2,500	13,000
Machinery, tools, and implements	21,675	7,900	6,345,873	33,100	8,300	24,380
LIVE ASSETS—Total	102,000	141,443	4,210,735	80,362	130,870	244,129
Raw materials	35,050	32,533	1,822,191	3,675	26,406	64,750
Stock in process and finished product	51,150	73,770	1,297,250	1,795	50,170	84,379
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	15,800	35,140	1,091,294	24,892	54,300	95,000
WAGES PAID—Aggregate	\$197,656	\$108,589	\$2,312,693	\$62,170	\$119,396	\$52,912
Average number of hands employed during the year.	348	157	6,379	99	263	87
Males above 16 years	87	154	3,140	90	218	75
Females above 16 years	39	2	2,846	7	50	12
Children			340			
Pieceworkers	222	1	53	2		
MATERIALS USED—Aggregate cost	\$427,483	\$82,914	\$4,020,914	\$46,457	\$129,614	\$492,147
Principal materials	425,971	72,255	3,609,912	38,172	129,130	466,913
Fuel	1,512	2,130	178,007	2,645	494	2,596
Mill supplies			232,995	300		500
All other materials		8,529		5,340		22,139
MISCELLANEOUS EXPENSES—Aggregate	\$11,709	\$10,804	\$528,662	\$13,070	\$6,244	\$14,591
Amount paid for contract work						
Rent	1,220	3,100		2,507	3,508	4,500
Power and heat			10,619	910	320	
Taxes	486	965	137,618	757	350	2,109
Insurance	1,423	1,191	33,535	659	1,171	3,212
Repairs, ordinary, of buildings and machinery	2,380	1,180	35,363	550	895	1,800
Interest on cash used in the business		1,368	127,015	609		2,570
All sundries not elsewhere reported	6,209	3,000	184,512	7,078		400
GOODS MANUFACTURED—Aggregate value	\$758,652	\$227,427	\$8,185,286	\$142,315	\$312,000	\$599,153
Principal product	757,532	160,297	8,185,286	96,465	311,000	599,153
All other products, including receipts from custom work and repairing.	1,120	67,130		45,850	1,000	

<sup>a</sup> To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

# CENSUS BULLETIN.

No. 260.

WASHINGTON, D. C.

October 18, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF MINNEAPOLIS, MINNESOTA.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,

WASHINGTON, D. C., October 15, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Minneapolis 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 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 promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry 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. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars, and general shop construction and repairs by steam railroad companies; china and pottery, decorating; druggists' preparations, not including prescriptions; illuminating gas; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	655
Capital invested.....	\$1,739,626
Number of hands employed.....	2,159
Wages paid.....	\$877,781
Cost of materials used.....	\$1,689,784
Miscellaneous expenses.....	\$100,778
Value of product at works.....	\$3,258,353

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.

Number of establishments reported .....	397.26
Capital invested .....	333.47
Number of hands employed.....	354.60
Wages paid .....	425.17
Cost of materials used.....	99.49
Value of product at works.....	146.51
Population of city .....	251.35
Assessed valuation of city.....	485.51
Municipal debt less sinking fund.....	464.48

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$483 in 1880 to \$558 in 1890, or 15.53 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children, and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employés. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

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

*Robert S. Porter*

Superintendent of Census.

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF MINNEAPOLIS, MINNESOTA.

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. 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.

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.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number		Capital. (b)	Hands employed.	Wages paid.	Cost of materials used.
	industries reported.	establishments reporting.				
All industries (a).....	1880 1890	76 162	\$9,002,650 40,763,718	5,344 26,453	\$2,582,253 14,439,005	\$24,274,623 50,116,362

  

INDUSTRIES.	Miscellaneous expenses. (c)	Value of product	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (d)
All industries.....	1880 1890	\$29,973,476 77,146,451	46,887 164,738	\$23,415,738 137,102,176	\$1,137,467 6,420,767

a The totals stated for 1890 do not include returns from those manufacturers of "timber products not made in mill" having offices in Minneapolis. This industry is reported as of the place where the office of the establishment is located, because it is not practicable to exactly locate its operations within the limits of a county or municipality. The totals of such reports obtained in Minneapolis are as follows:

Number of establishments reported.....	53
Capital invested.....	\$9,382,046
Number of hands employed.....	4,523
Wages paid.....	\$1,053,698
Cost of materials used.....	\$1,251,376
Miscellaneous expenses.....	\$327,172
Value of product at works.....	\$3,227,100

b The value of hired property is not included for 1880, because it was not reported in 1880.

c No inquiry in 1880 relating to "Miscellaneous expenses".

d The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 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, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

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 present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

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, 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 reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Agricultural implements.	Coffee and spices—roast- ing and grind- ing.	Confection- ery.	Cooperage.	Flouring and grist mill products.
	(7 establish- ments.)	(5 establish- ments.)	(15 establish- ments.)	(16 establish- ments.)	(18 establish- ments.)
CAPITAL EMPLOYED—Aggregate .....	\$2,382,318	\$156,960	\$419,618	\$301,636	\$9,960,997
HIRED PROPERTY—Total.....	17,020	52,960	177,000	6,200	8,000
PLANT—Total.....	712,463	13,200	87,513	190,546	4,516,939
Land.....	231,500			90,950	665,000
Buildings.....	189,708			56,333	1,164,300
Machinery, tools, and implements.....	291,255	13,200	87,513	43,263	2,685,639
LIVE ASSETS—Total.....	1,652,835	90,800	155,105	104,890	5,436,058
Raw materials.....	107,854	18,950	46,611	55,265	3,371,616
Stock in process and finished product.....	227,133	25,800	40,617	31,525	1,022,242
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	1,317,848	46,050	67,847	18,100	1,042,200
WAGES PAID—Aggregate.....	\$173,370	\$31,332	\$115,323	\$330,318	\$946,958
Average number of hands employed during the year.....	281	44	231	648	1,455
Males above 16 years.....	276	37	188	199	1,452
Females above 15 years.....	3	7	69		3
Children.....			1	5	
Pieceworkers.....	2		3	444	
MATERIALS USED—Aggregate cost.....	\$205,573	\$337,575	\$302,689	\$629,329	\$24,703,708
Principal materials.....	139,007	329,560	281,540	622,371	23,040,947
Fuel.....	14,271	1,565	5,314	6,018	158,332
Mill supplies.....		25	10		19,145
All other materials.....	52,295	6,425	15,825	940	1,485,279
MISCELLANEOUS EXPENSES—Aggregate.....	\$91,386	\$10,211	\$39,035	\$18,112	\$862,239
Amount paid for contract work.....					
Rent.....	2,040	6,370	17,794	1,525	800
Power and heat.....		100	306		137,854
Taxes.....	6,148	365	534	3,129	44,293
Insurance.....	6,945	571	1,128	5,337	141,043
Repairs, ordinary, of buildings and machinery.....	3,600	1,590	5,832	2,328	187,486
Interest on cash used in the business.....	16,347		1,985	5,532	230,465
All sundries not elsewhere reported.....	56,306	1,215	11,456	261	120,298
GOODS MANUFACTURED—Aggregate value.....	\$848,466	\$400,783	\$520,309	\$1,209,338	\$27,758,790
Principal product.....	742,052	390,083	517,859	1,205,848	27,757,790
All other products, including receipts from custom work and repairing.....	106,414	10,700	2,450	3,490	1,000

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Foundry and machine shop products. (36 establishments.)	Furniture—factory products. (9 establishments.)	Iron work—architectural and ornamental. (7 establishments.)	Lumber—planing mill products. (a)	Lumber—saved. (b)
	(36 establishments.)	(9 establishments.)	(7 establishments.)	(22 establishments.)	(17 establishments.)
CAPITAL EMPLOYED—Aggregate.....	\$1,374,924	\$680,893	\$335,419	\$2,188,093	\$8,577,304
Hired property—Total.....	206,910	23,590	38,560	110,500	195,000
PLANT—Total.....	581,210	304,317	128,850	1,005,729	3,709,842
Land.....	184,300	109,228	43,250	530,000	2,161,924
Buildings.....	124,300	113,662	41,500	221,525	279,900
Machinery, tools, and implements.....	272,610	81,427	44,100	254,204	1,268,018
LIVE ASSETS—Total.....	586,804	352,986	168,009	1,071,864	4,672,462
Raw materials.....	81,642	80,783	32,600	349,598	2,277,500
Stock in process and finished product.....	104,823	103,681	26,300	197,908	1,217,000
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	400,339	168,522	109,109	524,358	1,177,962
WAGES PAID—Aggregate.....	\$509,280	\$244,151	\$154,464	\$803,243	\$1,002,949
Average number of hands employed during the year.....	733	503	243	1,446	2,475
Males above 16 years.....	700	455	243	1,445	2,414
Females above 15 years.....	3	10		1	3
Children.....	2				6
Pieceworkers.....	28	38			52
MATERIALS USED—Aggregate cost.....	\$413,785	\$240,251	\$602,080	\$1,231,398	\$4,894,257
Principal materials.....	353,591	212,498	581,640	1,155,157	4,833,011
Fuel.....	19,994	3,750	8,433	19,016	
Mill supplies.....	3,783	800	5,000	11,050	61,246
All other materials.....	36,417	23,203	7,007	46,175	
MISCELLANEOUS EXPENSES—Aggregate.....	\$77,118	\$55,883	\$6,933	\$111,421	\$472,454
Amount paid for contract work.....					
Rent.....	18,810	2,830	3,130	11,100	19,608
Power and heat.....	2,040			2,106	
Taxes.....	6,925	4,007	971	11,713	33,688
Insurance.....	5,818	8,568	704	22,260	102,288
Repairs, ordinary, of buildings and machinery.....	7,221	4,575	250	19,560	77,422
Interest on cash used in the business.....	9,123	14,787	1,315	29,377	121,015
All sundries not elsewhere reported.....	27,181	21,116	563	15,305	118,433
GOODS MANUFACTURED—Aggregate value.....	\$1,411,721	\$807,166	\$887,780	\$2,411,682	\$7,215,293
Principal product.....	1,171,475	777,065	886,780	2,366,382	6,760,374
All other products, including receipts from custom work and repairing.....	240,246	30,100	1,000	45,300	454,919

*a* Includes several branches of this industry, which will be specifically stated in final reports.

*b* Includes the manufacture of lumber and all other mill products from logs or bolts.

# CENSUS BULLETIN.

No. 261.

WASHINGTON, D. C.

October 19, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF TRENTON, NEW JERSEY.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,

WASHINGTON, D. C., October 17, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Trenton 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 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 promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry 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. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: china, decorating; druggists' preparations, not including prescriptions; illuminating gas; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported .....	186
Capital invested .....	\$712,245
Number of hands employed .....	690
Wages paid.....	\$274,480
Cost of materials used .....	\$580,544
Miscellaneous expenses.....	\$68,844
Value of product at works.....	\$1,170,999

2

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows :

PERCENTAGES OF INCREASE.	
Number of establishments reported.....	46.29
Capital invested.....	103.93
Number of hands employed.....	30.24
Wages paid.....	97.22
Cost of materials used.....	9.96
Value of product at works.....	44.95
Population of city.....	92.10
Assessed valuation of city.....	78.90
Municipal debt less sinking fund.....	43.50

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$354 in 1880 to \$536 in 1890, or 51.41 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children, and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

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

*Robert P. Forster*

*Superintendent of Census.*

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF TRENTON, NEW JERSEY.

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. 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.

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 operations 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.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.

  

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....		\$12,712,762 19,597,601	29,910 57,458	\$15,670,017 28,033,218	\$364,501 953,528

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 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, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

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 present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed or hired. The value of hired property is not included in the amount stated for 1890 in Table 1 because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

In the form of inquiry used in the Eleventh Census respecting labor and wages the classification of 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, 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 amounts 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 reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

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

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Belting and hose—rubber. (4 establish- ments.)	Carriages and wagons. (8 establish- ments.)	China—deco- rating. (5 establish- ments.)	Clay and pot- tery products. (31 establish- ments.)	Confectionery. (16 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$1,283,574	\$152,078	\$194,042	\$4,756,172	\$145,766
HIRED PROPERTY—Total .....		23,015	35,280	28,165	80,320
PLANT—Total .....	550,920	56,900	33,301	2,628,913	40,207
Land.....	139,500	20,700	6,000	621,413	6,800
Buildings.....	117,058	23,500	15,000	1,323,253	19,800
Machinery, tools, and implements.....	294,362	7,700	12,301	684,247	13,607
LIVE ASSETS—Total .....	732,654	72,163	125,461	2,099,094	25,239
Raw materials.....	169,266	16,820	23,069	239,579	4,919
Stock in process and finished product.....	196,234	43,193	49,066	1,035,519	7,315
Cash, bills and accounts receivable, and all sundries not else- where reported.....	367,154	12,150	53,326	823,996	12,975
WAGES PAID—Aggregate.....	\$193,053	\$50,829	\$71,234	\$2,270,701	\$37,000
Average number of hands employed during the year .....	343	86	140	3,948	59
Males above 16 years.....	313	86	72	2,535	38
Females above 15 years.....	19		63	568	18
Children.....	3			93	
Pieceworkers.....	8		5	762	3
MATERIALS USED—Aggregate cost.....	\$786,245	\$55,322	\$179,841	\$1,185,000	\$51,631
Principal materials.....	768,604	53,108	174,867	878,367	50,126
Fuel.....	14,389	2,014	3,330	243,600	1,127
Mill supplies.....	3,162		750	5,096	
All other materials.....		200	894	58,037	378
MISCELLANEOUS EXPENSES—Aggregate.....	\$67,235	\$3,275	\$8,990	\$430,254	6,873
Amount paid for contract work.....					
Rent.....		1,860	2,329	1,800	5,208
Power and heat.....					
Taxes.....	2,229	441	566	25,071	497
Insurance.....	3,056	494	1,368	17,916	438
Repairs, ordinary, of buildings and machinery.....	6,854		376	47,971	406
Interest on cash used in the business.....	32,180	480	1,570	74,015	50
All sundries not elsewhere reported.....	22,916		2,781	262,881	274
GOODS MANUFACTURED—Aggregate value.....	\$1,162,709	\$142,479	\$321,072	\$4,531,202	\$130,305
Principal product.....	1,162,709	107,779	321,072	4,531,202	130,305
All other products, including receipts from custom work and repairing.....		34,700			

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Flouring and grist mill products.	Foundry and machine shop products.	Lamps and reflectors.	Printing and publishing. (a)	Woolen goods.
	(4 establish- ments.)	(16 establish- ments.)	(3 establish- ments.)	(13 establish- ments.)	(3 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$167,160	\$1,545,370	\$234,491	\$462,483	\$1,115,561
HIRED PROPERTY—Total.....	33,460	29,985	9,340	64,060	-----
PLANT—Total.....	80,000	\$10,950	100,000	333,813	710,000
Land.....	20,000	240,630	41,500	91,700	270,000
Buildings.....	24,000	216,250	36,000	47,800	200,000
Machinery, tools, and implements.....	36,000	354,070	22,500	194,313	240,000
LIVE ASSETS—Total.....	53,700	704,435	125,151	64,610	405,561
Raw materials.....	26,000	59,391	33,927	18,510	62,286
Stock in process and finished product.....	6,700	422,933	45,380	16,220	125,275
Cash, bills and accounts receivable, and all sundries not else- where reported.....	21,000	222,111	45,844	29,880	218,000
WAGES PAID—Aggregate.....	\$22,568	\$576,612	\$85,886	\$108,949	\$529,004
Average number of hands employed during the year.....	35	1,111	190	178	1,664
Males above 16 years.....	35	1,104	113	153	560
Females above 15 years.....	-----	3	53	12	1,104
Children.....	-----	-----	3	5	-----
Pieceworkers.....	-----	4	21	8	-----
MATERIALS USED—Aggregate cost.....	\$565,556	\$835,792	\$284,202	\$52,670	\$693,220
Principal materials.....	551,680	633,774	272,502	49,831	656,400
Fuel.....	2,426	81,474	4,100	1,809	10,720
Mill supplies.....	5,950	32,264	-----	-----	-----
All other materials.....	5,500	28,280	7,600	1,030	26,100
MISCELLANEOUS EXPENSES—Aggregate.....	\$11,925	\$73,827	\$12,694	\$25,114	\$48,835
Amount paid for contract work.....	-----	-----	-----	-----	-----
Rent.....	2,500	2,560	670	4,504	-----
Power and heat.....	-----	700	-----	-----	-----
Taxes.....	678	6,041	991	1,496	1,385
Insurance.....	1,147	4,835	866	1,254	2,650
Repairs, ordinary, of buildings and machinery.....	6,700	8,400	1,500	2,430	14,000
Interest on cash used in the business.....	600	48,551	2,667	3,404	3,000
All sundries not elsewhere reported.....	300	2,650	6,000	12,026	27,800
GOODS MANUFACTURED—Aggregate value.....	\$675,890	\$1,618,874	\$482,300	\$210,586	\$1,342,400
Principal product.....	652,000	1,502,843	482,300	206,886	1,342,400
All other products, including receipts from custom work and repairing.....	23,890	116,031	-----	3,700	-----

a Includes several branches of this industry, which will be specifically stated in final reports.

# CENSUS BULLETIN.

No. 262.

WASHINGTON, D. C.

October 19, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF ALLEGHENY, PENNSYLVANIA.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,

WASHINGTON, D. C., October 17, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Allegheny 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 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 promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry 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. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars, and general shop construction and repairs by steam railroad companies; druggists' preparations, not including prescriptions; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	30
Capital invested.....	\$1,197,557
Number of hands employed.....	905
Wages paid.....	\$548,582
Cost of materials used.....	\$562,512
Miscellaneous expenses.....	79,885
Value of product at works.....	\$1,214,931

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.	
Number of establishments reported .....	38.21
Capital invested .....	56.72
Number of hands employed.....	28.34
Wages paid.....	68.56
Cost of materials used.....	8.11
Value of product at works.....	31.68
Population of city .....	33.81
Assessed valuation of city.....	70.51

Decrease of municipal debt less sinking fund, 4.32 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$410 in 1880 to \$538 in 1890, or 31.22 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children, and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

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

  
 Superintendent of Census.

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF ALLEGHENY, PENNSYLVANIA.

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. 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.

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.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.

  

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....	\$1,477,287	\$13,731,792 19,297,003	78,682 105,287	\$34,173,676 58,270,479	\$1,596,429 1,527,487

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 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, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

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All industries.....	1880 1890	55 98	424 616	\$8,451,050 14,441,916	6,471 9,210	\$2,652,774 5,020,188
INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.			
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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 amounts 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 reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Carriages and wagons.	Foundry and machine shop products.	Ironwork— architectural and ornamental.	Leather— tanned and carried.	Liquors—malt.
	(21 establish- ments.)	(19 establish- ments.)	(8 establish- ments.)	(9 establish- ments.)	(4 establish- ments.)
<b>CAPITAL EMPLOYED—Aggregate</b> .....	\$204,053	\$214,322	\$126,629	\$2,015,776	\$1,092,663
<b>HIRED PROPERTY—Total</b> .....	54,087	93,555	36,950	2,500	.....
<b>PLANT—Total</b> .....	82,850	409,675	43,679	666,676	798,586
Land.....	23,900	155,900	8,000	182,900	131,640
Buildings.....	37,600	90,400	12,000	245,633	358,676
Machinery, tools, and implements.....	21,350	223,375	23,679	137,743	311,276
<b>LIVE ASSETS—Total</b> .....	67,116	351,092	46,000	1,346,600	294,077
Raw materials.....	13,610	48,368	7,885	224,555	108,128
Stock in process and finished product.....	14,410	78,991	5,391	626,305	88,462
Cash, bills and accounts receivable, and all sundries not else- where reported.....	39,096	223,733	32,724	495,740	97,487
<b>WAGES PAID—Aggregate</b> .....	\$85,821	\$300,861	\$60,815	\$294,717	\$160,241
Average number of hands employed during the year.....	140	643	101	543	183
Males above 16 years.....	140	524	101	527	180
Females above 15 years.....	.....	2	.....	.....	.....
Children.....	.....	.....	.....	.....	.....
Pieceworkers.....	.....	117	.....	16	3
<b>MATERIALS USED—Aggregate cost</b> .....	\$68,262	\$311,377	\$80,320	\$2,693,748	\$307,634
Principal materials.....	64,167	273,665	78,665	2,687,623	281,153
Fuel.....	3,311	14,190	1,370	810	13,377
Mill supplies.....	.....	2,600	30	.....	3,004
All other materials.....	754	20,922	255	5,315	10,000
<b>MISCELLANEOUS EXPENSES—Aggregate</b> .....	\$8,155	\$63,064	\$5,443	\$80,835	\$437,115
Amount paid for contract work.....	.....	.....	.....	.....	.....
Rent.....	4,327	8,420	2,956	200	.....
Power and heat.....	.....	712	.....	.....	.....
Taxes.....	1,447	5,571	1,189	6,460	6,153,412
Insurance.....	880	3,901	367	12,460	6,873
Repairs, ordinary, of buildings and machinery.....	939	3,527	755	7,600	9,768
Interest on cash used in the business.....	387	8,715	30	33,228	4,739
All sundries not elsewhere reported.....	175	20,213	146	20,897	260,323
<b>GOODS MANUFACTURED—Aggregate value</b> .....	\$181,005	\$915,878	\$164,154	\$3,418,578	\$1,179,664
Principal product.....	71,623	871,881	163,434	3,308,136	1,170,664
All other products, including receipts from custom work and repairing.....	109,382	43,997	720	110,442	.....

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.  
b Includes internal revenue taxes.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Lumber— planing mill products. (a)	Lumber, and other mill prod- ucts from logs or bolts.	Paints.	Soap and candles.	Tobacco— cigars and cigarettes.
	(13 establish- ments.)	(5 establish- ments.)	(8 establish- ments.)	(4 establish- ments.)	(70 establish- ments.)
CAPITAL EMPLOYED—Aggregate	\$553, 285	\$183, 250	\$2, 038, 664	\$744, 254	\$127, 138
Hired property—Total	84, 900	32, 250	10, 700	7, 525	181, 750
PLANT—Total	234, 200	48, 500	1, 160, 351	238, 224	113, 181
Land	98, 000	13, 000	427, 400	46, 000	28, 060
Buildings	43, 200	5, 500	473, 000	109, 176	56, 900
Machinery, tools, and implements	93, 000	30, 000	259, 951	83, 048	28, 221
LIVE ASSETS—Total	234, 185	102, 500	867, 613	498, 505	132, 207
Raw materials	92, 046	23, 500	64, 512	102, 863	41, 388
Stock in process and finished product	37, 577	33, 500	340, 730	61, 727	28, 641
Cash, bills and accounts receivable, and all sundries not else- where reported.	104, 562	45, 500	462, 371	333, 915	62, 178
WAGES PAID—Aggregate	\$225, 893	\$39, 982	\$186, 791	\$83, 812	\$252, 470
Average number of hands employed during the year	349	81	293	171	853
Males above 16 years	337	58	289	120	135
Females above 15 years	1		4	18	87
Children	3			33	10
Pieceworkers	8	23			621
MATERIALS USED—Aggregate cost	\$427, 906	\$88, 161	\$842, 503	\$575, 063	\$190, 914
Principal materials	413, 936	86, 101	788, 430	482, 066	163, 935
Fuel	5, 640		11, 956	4, 019	1, 315
Mill supplies	3, 055	2, 060	3, 608		
All other materials	5, 275		38, 509	89, 978	25, 664
MISCELLANEOUS EXPENSES—Aggregate	\$23, 191	\$6, 855	\$73, 345	\$56, 626	\$247, 290
Amount paid for contract work			5, 200		
Rent	6, 792	2, 580	800	602	14, 540
Power and heat		500			
Taxes	2, 814	1, 025	5, 186	2, 294	6 227, 938
Insurance	4, 630	500	7, 043	1, 662	1, 486
Repairs, ordinary, of buildings and machinery	4, 815	1, 250	5, 839	20, 458	962
Interest on cash used in the business	2, 640	500	13, 347	3, 741	197
All sundries not elsewhere reported	1, 500	500	35, 930	27, 869	2, 167
GOODS MANUFACTURED—Aggregate value	\$786, 899	\$147, 445	\$1, 382, 070	\$817, 743	\$737, 619
Principal product	779, 471	144, 600	1, 375, 169	817, 743	737, 503
All other products, including receipts from custom work and repairing	7, 428	2, 845	6, 901		116

a Includes several branches of this industry, which will be specifically stated in final reports.  
b Includes internal revenue taxes.

# CENSUS BULLETIN.

No. 263.

WASHINGTON, D. C.

October 19, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF QUINCY, ILLINOIS.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,

WASHINGTON, D. C., October 17, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Quincy 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 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 promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid" "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry 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. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported .....	12
Capital invested .....	\$62,350
Number of hands employed .....	91
Wages paid.....	\$28,404
Cost of materials used.....	\$56,405
Miscellaneous expenses.....	\$6,191
Value of product at works.....	\$102,740

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.	
Number of establishments reported .....	13.84
Capital invested .....	50.20
Number of hands employed.....	49.34
Wages paid .....	85.16
Cost of materials used.....	8.87
Value of product at works.....	24.12
Population of city .....	15.50

Decrease in assessed valuation of city, 24.78 per cent.

Decrease of municipal debt less sinking fund, 15.76 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$382 in 1880 to \$474 in 1890, or 24.08 per cent.

Part of this increase is undoubtedly due to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

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

*Robert P. Porter*  
 Superintendent of Census.

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF QUINCY, ILLINOIS.

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. 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.

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.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.	
							All industries.....

  

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....	{ 1880 1890	\$8,103,277 10,160,492	27,268 31,494	\$6,487,997 4,879,956	\$1,917,888 1,615,700

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 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, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

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 present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

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, 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 amounts 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 reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Agricultural implements. (5 establishments.)	Carriages and wagons. (10 establishments.)	Confectionery. (4 establishments.)	Flouring and grist mill products. (5 establishments.)	Foundry and machine shop products. (16 establishments.)
CAPITAL EMPLOYED—Aggregate	\$263,945	\$544,094	\$147,145	\$384,678	\$1,420,765
Hired property—Total	9,485	38,690	108,670	100,175	43,815
Plant—Total	90,700	118,789	12,500	176,500	616,073
Land	24,000	26,400		27,500	132,600
Buildings	37,000	62,987	12,500	32,000	224,850
Machinery, tools, and implements	29,700	29,402		117,000	258,623
LIVE ASSETS—Total	163,760	386,615	25,975	108,003	760,877
Raw materials	27,322	74,887	3,600	41,473	100,600
Stock in process and finished product	55,995	115,718	9,050	11,280	264,777
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	80,443	196,010	13,325	55,250	395,500
WAGES PAID—Aggregate	\$81,499	\$185,945	\$39,532	\$65,380	\$494,561
Average number of hands employed during the year	168	389	108	105	786
Males above 16 years	148	304	55	104	517
Females above 15 years	1	6	50	1	2
Children		4	3		12
Pieceworkers	24	15			255
MATERIALS USED—Aggregate cost	\$125,915	\$313,399	\$93,990	\$1,576,885	\$409,724
Principal materials	87,073	302,346	89,790	1,460,533	363,264
Fuel	2,329	5,075	1,200	9,695	25,516
Mill supplies				1,000	
All other materials	36,513	5,978	3,000	105,657	20,944
MISCELLANEOUS EXPENSES—Aggregate	\$17,701	\$26,597	\$19,519	\$35,444	\$70,979
Amount paid for contract work					3,825
Rent	780	3,236	7,290	7,890	
Power and heat	120				8,447
Taxes	1,868	2,419	355	2,721	6,277
Insurance	2,463	2,858	324	5,317	7,821
Repairs, ordinary, of buildings and machinery	3,250	3,100	300	6,216	14,207
Interest on cash used in the business	1,054	7,665	700	4,062	30,402
All sundries not elsewhere reported	8,156	7,319	10,050	9,238	
GOODS MANUFACTURED—Aggregate value	\$282,725	\$600,762	\$177,500	\$1,768,501	\$1,157,817
Principal product	282,225	569,391	177,500	1,745,951	1,132,261
All other products, including receipts from custom work and repairing	500	31,371		22,550	25,556

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Liquors—malt. (5 establish- ments.)	Lumber— planing mill products. (a) (3 establish- ments.)	Printing and publishing. (a) (19 establish- ments.)	Slaughtering and meat pack- ing, whole- sale. (a) (3 establish- ments.)	Tobacco— chewing, smok- ing, and snuff. (3 establish- ments.)
CAPITAL EMPLOYED—Aggregate	\$580,504	\$271,770	\$282,620	\$162,040	\$278,215
Hired property—Total		8,770	103,225	54,190	42,315
PLANT—Total	380,603	73,500	136,225	8,550	46,500
Land	58,000	20,000	7,500	1,000	7,000
Buildings	236,438	21,000	15,000	3,000	6,500
Machinery, tools, and implements	86,165	32,500	113,725	4,550	33,000
LIVE ASSETS—Total	199,901	189,500	43,170	99,300	189,400
Raw materials	27,949	144,000	9,487	10,000	120,500
Stock in process and finished product	56,243	14,000	4,280	21,000	20,750
Cash, bills and accounts receivable, and all sundries not else- where reported.	115,709	31,500	29,403	68,300	48,150
WAGES PAID—Aggregate	\$78,060	\$47,509	\$112,709	\$29,854	\$56,181
Average number of hands employed during the year	126	93	218	93	211
Males above 16 years	125	90	123	88	72
Females above 15 years			21	3	69
Children	1		47		70
Pieceworkers		3	27	2	
MATERIALS USED—Aggregate cost	\$140,679	\$207,785	\$50,231	\$581,369	\$221,975
Principal materials	127,392	206,960	46,585	452,450	216,200
Fuel	13,287	625	1,756	1,919	2,725
Mill supplies		75			
All other materials		125	2,890	127,000	3,050
MISCELLANEOUS EXPENSES—Aggregate	\$106,859	\$10,146	\$35,822	\$20,288	\$136,825
Amount paid for contract work		750	7,538	3,900	3,120
Rent			1,800		
Power and heat			861	335	b 126,345
Taxes	b 68,417	994			2,035
Insurance	3,182	1,701	1,125	1,213	1,250
Repairs, ordinary, of buildings and machinery	3,475	2,180	1,611	950	3,000
Interest on cash used in the business	2,800	2,671	456	5,230	1,075
All sundries not elsewhere reported	28,985	1,850	22,400	8,600	
GOODS MANUFACTURED—Aggregate value	\$398,140	\$293,700	\$247,535	\$656,321	\$578,500
Principal product	398,140	293,700	246,935	656,321	578,500
All other products, including receipts from custom work and repairing			600		

a Includes several branches of this industry, which will be specifically stated in final reports.  
b Includes internal revenue taxes.

# CENSUS BULLETIN.

No. 264.

WASHINGTON, D. C.

October 19, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF RICHMOND, VIRGINIA.

DEPARTMENT OF THE INTERIOR,

CENSUS OFFICE,

WASHINGTON, D. C., October 17, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Richmond 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 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 promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry 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. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars, and general shop construction and repairs by steam railroad companies; china and pottery decorating; druggists' preparations, not including prescriptions; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	93
Capital invested.....	\$390,346
Number of hands employed.....	1,527
Wages paid.....	\$661,151
Cost of materials used.....	\$529,685
Miscellaneous expenses.....	\$17,481
Value of product at works.....	\$1,241,221

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.	
Number of establishments reported.....	43.31
Capital invested.....	122.37
Number of hands employed.....	18.35
Wages paid.....	110.16
Value of product at works.....	18.57
Population of city.....	27.97
Assessed valuation of city.....	35.29
Municipal debt less sinking fund.....	37.63

Decrease in cost of materials used, 0.20 per cent.

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$274 in 1880 to \$380 in 1890, or 77.57 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children, and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employes. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

The apparent decrease in the cost of materials used is not actual and is explained by the fact that such cost, as reported in 1880, probably included the amount paid for internal revenue taxes by manufacturers of tobacco and distilled and malt liquors. In the report for 1890 this amount is included in the item of "taxes" under the head of "Miscellaneous expenses", and the cost of materials used is therefore correspondingly reduced.

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

  
 Superintendent of Census.

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF RICHMOND, VIRGINIA.

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. 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.

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.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.

  

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....	\$3,098,755	\$20,790,106 25,891,569	63,600 81,388	\$39,522,356 53,471,343	\$4,399,021 6,054,558

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 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, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

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 present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

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, 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 amounts 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 reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Agricultural implements. (4 establishments.)	Bookbinding and blank-book making. (3 establishments.)	Boots and shoes—factory product. (3 establishments.)	Flouring and grist mill products. (3 establishments.)	Foundry and machine shop products. (16 establishments.)
CAPITAL EMPLOYED—Aggregate	\$267,200	\$162,720	\$390,461	\$404,156	\$2,389,155
Hired property—Total	64,700	40,500	13,000		92,700
PLANT—Total	63,000	32,000	53,838	244,000	1,395,700
Land	3,000		600	63,000	95,200
Buildings	7,000		2,500	90,000	149,000
Machinery, tools, and implements	53,000	32,000	50,738	91,000	1,161,500
LIVE ASSETS—Total	139,500	90,220	323,623	160,156	900,755
Raw materials	11,500	33,200	70,032	50,737	125,565
Stock in process and finished product	35,000	23,500	40,542	34,419	204,473
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	93,000	33,520	213,049	75,000	570,717
WAGES PAID—Aggregate	\$89,712	\$46,363	\$108,606	\$48,250	\$513,778
Average number of hands employed during the year	159	78	606	81	969
Males above 16 years	155	53	48	78	925
Females above 15 years	1	22	15		
Children		3	7	3	
Pieceworkers	3		536		44
MATERIALS USED—Aggregate cost	\$81,450	\$30,518	\$705,003	\$1,079,050	\$595,609
Principal materials	66,975	22,669	679,600	1,004,250	443,194
Fuel	3,475	565	2,693	100	22,245
Mill supplies			19	2,300	1,662
All other materials	11,000	7,284	22,700	72,400	128,608
MISCELLANEOUS EXPENSES—Aggregate	\$14,290	\$12,911	\$12,004	\$88,010	\$93,923
Amount paid for contract work					
Rent	5,500	3,238	1,020		8,345
Power and heat		192		2,910	1,590
Taxes	3,100	745	727	4,800	7,675
Insurance	1,800	1,025	2,112	8,700	2,078
Repairs, ordinary, of buildings and machinery	1,250	440	4,900	2,600	35,434
Interest on cash used in the business	190	3,600	2,200	8,600	26,299
All sundries not elsewhere reported	2,450	3,671	1,045	40,500	12,502
GOODS MANUFACTURED—Aggregate value	\$222,670	\$106,880	\$1,071,680	\$1,282,500	\$1,260,226
Principal product	160,670	96,780	1,071,200	1,282,500	985,134
All other products, including receipts from custom work and repairing	62,000	10,100	480		275,092

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Furnishing goods—men's. (4 establishments.)	Lumber—planed. (a) (16 establishments.)	Tobacco—chewing, smoking, and snuff. (23 establishments.)	Tobacco—cigars and cigarettes. (44 establishments.)	Tobacco—stemming and rehanding. (12 establishments.)
CAPITAL EMPLOYED—Aggregate	\$138,370	\$562,049	\$2,845,375	\$1,744,573	\$756,889
Hired property—Total	31,000	45,700	395,000	105,500	150,000
PLANT—Total	38,240	196,678	416,197	114,945	76,560
Land	3,000	51,300	22,000	8,100	17,000
Buildings	13,000	61,712	72,000	21,600	35,000
Machinery, tools, and implements	22,240	83,666	322,197	85,245	24,550
LIVE ASSETS—Total	69,130	319,671	2,034,178	1,524,128	530,339
Raw materials	12,600	122,027	525,110	528,229	416,891
Stock in process and finished product	25,530	45,623	511,039	121,492	66,000
Cash, bills and accounts receivable, and all sundries not elsewhere reported.	31,000	152,021	998,029	874,407	47,448
WAGES PAID—Aggregate	\$57,118	\$185,074	\$333,952	\$657,559	\$191,688
Average number of hands employed during the year	232	355	3,436	2,059	827
Males above 16 years	17	301	1,117	436	262
Females above 15 years	20		488	93	210
Children		7	94	63	28
Pieceworkers	195	44	1,737	1,467	327
MATERIALS USED—Aggregate cost	\$129,152	\$375,757	\$1,833,844	\$1,339,005	\$1,383,816
Principal materials	125,500	354,376	1,609,632	808,982	1,373,611
Fuel	1,052	2,460	32,329	4,378	6,709
Mill supplies		2,656	5,088	3,000	100
All other materials	2,600	16,265	186,795	522,645	3,396
MISCELLANEOUS EXPENSES—Aggregate	\$8,527	\$43,026	\$1,271,833	\$904,834	\$51,015
Amount paid for contract work					
Rent	2,420	5,392	31,556	9,508	12,074
Power and heat	140	800	120		
Taxes	1,307	5,111	1,052,002	432,632	6,731
Insurance	945	6,909	27,522	8,507	10,730
Repairs, ordinary, of buildings and machinery	1,125	5,701	30,513	3,909	3,283
Interest on cash used in the business	50	3,943	67,863	10,318	4,500
All sundries not elsewhere reported	2,540	15,170	62,257	529,960	13,697
GOODS MANUFACTURED—Aggregate value	\$214,660	\$701,539	\$4,598,269	\$3,372,162	\$1,725,771
Principal product	129,660	655,396	4,598,147	3,372,162	1,725,771
All other products, including receipts from custom work and repairing	85,000	46,143	122		

a Includes several branches of this industry, which will be specifically stated in final reports.  
b Includes internal revenue taxes.

# CENSUS BULLETIN.

No. 265.

WASHINGTON, D. C.

October 19, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF TOLEDO, OHIO.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,

WASHINGTON, D. C., October 17, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Toledo 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 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 promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry 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. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: cars, and general shop construction and repairs by steam railroad companies; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported.....	96
Capital invested .....	\$63,344
Number of hands employed.....	399
Wages paid.....	\$141,724
Cost of materials used .....	\$127,225
Miscellaneous expenses.....	\$16,352
Value of product at works .....	\$322,026

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows:

PERCENTAGES OF INCREASE.

Number of establishments reported .....	24.77
Capital invested .....	80.94
Number of hands employed .....	13.15
Wages paid.....	73.48
Cost of materials used.....	21.71
Value of product at works .....	38.14
Population of city .....	62.42
Assessed valuation of city.....	84.20
Municipal debt less sinking fund .....	8.41

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid; the wages have increased not only actually but relatively, the average wages per hand increasing from \$335 in 1880 to \$514 in 1890, or 53.43 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children; that the percentage of increase in the number of women employed has been less in many industries than in the number of adult males; and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employés. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

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

*Robert D. Porter*

Superintendent of Census.

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF TOLEDO, OHIO.

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. 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.

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.

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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.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.

  

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....	\$1,043,038	\$10,600,074 14,964,654	50,137 81,434	\$18,687,955 34,422,600	\$3,224,660 3,495,809

a The value of hired property is not included for 1890, because it was not reported in 1880.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 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, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

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 present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

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, 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 amounts 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 reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Awnings, tents, and sails.  (3 establish- ments.)	Brick and tile.  (3 establish- ments.)	Carriage and wagon materials.  (3 establish- ments.)	Carriages and wagons.  (9 establish- ments.)	Flouring and grist mill products.  (8 establish- ments.)
CAPITAL EMPLOYED—Aggregate.....	\$86,100	\$104,150	\$154,592	\$1,768,999	\$453,590
HIRED PROPERTY—Total.....	17,900	75,950	900	8,650	61,610
PLANT—Total.....	21,100	64,700	81,875	481,005	180,966
Land.....	8,700	21,200	38,500	85,600	15,000
Buildings.....	10,000	14,000	23,695	291,060	48,151
Machinery, tools, and implements.....	2,400	29,500	19,680	102,345	117,815
LIVE ASSETS—Total.....	27,160	23,500	71,817	1,279,344	211,014
Raw materials.....	6,500		20,564	409,145	112,868
Stock in process and finished product.....	1,600	16,500	15,200	279,198	42,996
Cash, bills and accounts receivable, and all sundries not else- where reported.....	19,060	7,000	36,053	591,001	55,150
WAGES PAID—Aggregate.....	\$23,599	\$62,139	\$51,748	\$297,608	\$79,515
Average number of hands employed during the year.....	61	206	98	603	152
Males above 16 years.....	28	61	92	524	146
Females above 15 years.....	33	1		3	3
Children.....		3			
Pieceworkers.....		141	6	76	3
MATERIALS USED—Aggregate cost.....	\$51,666	\$12,554	\$70,298	\$536,811	\$1,322,701
Principal materials.....	47,621		68,404	514,408	1,240,321
Fuel.....	45	11,554	1,194	5,975	7,074
Mill supplies.....			200		275
All other materials.....	4,000	1,000	500	16,428	75,031
MISCELLANEOUS EXPENSES—Aggregate.....	\$2,198	\$17,711	\$10,389	\$90,203	\$28,816
Rent.....	1,253	6,836	72	692	5,545
Power and heat.....	96				600
Taxes.....	239	1,348	1,061	4,580	2,431
Insurance.....	159	175	2,342	4,619	7,277
Repairs, ordinary, of buildings and machinery.....		3,562	1,000	6,048	3,236
Interest on cash used in the business.....	300	1,327	2,914	37,334	3,093
All sundries not elsewhere reported.....	151	4,463	3,000	36,930	6,634
GOODS MANUFACTURED—Aggregate value.....	\$100,000	\$127,900	\$149,730	\$1,067,540	\$1,481,447
Principal product.....	99,000	127,900	149,730	1,010,435	1,246,947
All other products, including receipts from custom work and repairing.....	1,000			57,105	234,500

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Hosiery and knit goods. (3 establishments.)	Liquors—malt. (4 establishments.)	Looking glass and picture frames. (5 establishments.)	Lumber sawed, and lumber planed. (a) (13 establishments.)	Shipbuilding. (4 establishments.)
CAPITAL EMPLOYED—Aggregate.....	\$214,500	\$1,717,757	\$201,265	\$1,006,000	\$227,060
HIRED PROPERTY—Total.....	51,000	10,000	22,500	66,600	10,710
PLANT—Total.....	43,000	985,700	73,475	535,000	181,400
Land.....	4,000	290,000	8,000	308,500	69,500
Buildings.....	6,000	420,000	35,000	65,750	76,000
Machinery, tools, and implements.....	33,000	275,700	30,475	160,750	55,900
LIVE ASSETS—Total.....	120,500	722,057	105,290	404,400	34,950
Raw materials.....	31,500	102,500	26,400	117,500	5,650
Stock in process and finished product.....	74,000	165,076	40,850	112,600	17,300
Cash, bills and accounts receivable, and all sundries not elsewhere reported.....	15,000	454,481	38,040	174,300	12,000
WAGES PAID—Aggregate.....	\$105,600	\$100,934	\$75,184	\$247,876	\$196,590
Average number of hands employed during the year.....	430	214	204	549	362
Males above 16 years.....	22	214	126	531	352
Females above 15 years.....	328		42	1	
Children.....			1	17	
Pieceworkers.....	80		35		10
MATERIALS USED—Aggregate cost.....	\$134,428	\$500,230	\$76,590	\$737,672	\$182,225
Principal materials.....	124,249	462,155	54,320	721,704	135,050
Fuel.....	600	18,075	1,020	225	2,175
Mill supplies.....	1,779	5,000	200	6,265	
All other materials.....	7,800	15,000	21,050	9,478	45,000
MISCELLANEOUS EXPENSES—Aggregate.....	\$21,880	\$245,607	\$7,220	\$39,210	\$5,390
Rent.....	4,080	600	1,350	5,000	750
Power and heat.....					
Taxes.....	410	5 202,731	922	7,745	290
Insurance.....	1,740	8,771	2,248	10,445	745
Repairs, ordinary, of buildings and machinery.....	600	13,760		4,600	560
Interest on cash used in the business.....	1,500	2,655	2,700	2,820	520
All sundries not elsewhere reported.....	13,550	17,100		8,600	2,525
GOODS MANUFACTURED—Aggregate value.....	\$237,445	\$1,115,859	\$185,070	\$1,101,453	\$408,100
Principal product.....	237,445	1,115,859	184,870	1,082,953	366,500
All other products, including receipts from custom work and repairing.....			200	18,500	41,600

<sup>a</sup> Includes several branches of this industry, which will be specifically stated in final reports.  
<sup>b</sup> Includes internal revenue taxes.

# CENSUS BULLETIN.

No. 266.

WASHINGTON, D. C.

October 19, 1892.

## STATISTICS OF MANUFACTURES: 1890.

CITY OF LOUISVILLE, KENTUCKY.

DEPARTMENT OF THE INTERIOR,  
CENSUS OFFICE,

WASHINGTON, D. C., October 17, 1892.

Herewith is presented a preliminary report on the mechanical and manufacturing industries of the city of Louisville for the year ended May 31, 1890, prepared under direction of Mr. FRANK R. WILLIAMS, special agent in charge of statistics of manufactures. 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 promptly publish bulletins for all principal cities in a form similar to this, to be followed by final reports containing data in detail respecting all industries for each city at the earliest date practicable. The totals presented in the complete reports will not, however, be less, and may, in a number of cases, be considerably increased. A comparative statement is presented for 1880 and 1890 in Table 1, showing the totals under such general heads of the inquiry as are common to both census periods. Table 2 exhibits for important industries, under the general heads of "Capital employed", "Miscellaneous expenses", "Wages paid", "Materials used", and "Goods manufactured", all essential details of the inquiry for 1890, excepting wage statistics for the various classes of labor employed in the respective industries.

In comparing results of the current inquiry 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. Differences in method of inquiry, as explained in this report, and the inclusion in the Eleventh Census of certain industries omitted in the Tenth Census account in part for the increases shown.

The following classes of industry were omitted in the census reports of 1880: china and pottery, decorating; millinery, custom work; women's dressmaking, custom work.

The totals stated for 1890, in Table 1, are increased as follows by the inclusion of the industries referred to:

### TOTALS FOR INDUSTRIES OMITTED IN 1880, BUT INCLUDED IN 1890.

Number of establishments reported .....	215
Capital invested .....	\$317,975
Number of hands employed .....	1,223
Wages paid .....	\$332,700
Cost of materials used .....	\$446,160
Miscellaneous expenses .....	\$60,788
Value of product at works .....	\$1,008,469

To ascertain the amounts for comparison with the totals for 1880, the foregoing figures should be subtracted from the totals stated in Table 1 for 1890, and the percentages of increase would then appear as follows :

## PERCENTAGES OF INCREASE.

Number of establishments reported.....	26.99
Capital invested.....	38.86
Number of hands employed.....	35.17
Wages paid.....	83.38
Cost of materials used.....	5.78
Value of product at works.....	25.47
Population of city.....	30.20
Assessed valuation of city.....	23.55
Municipal debt less sinking fund.....	33.81

A striking feature of these returns is the satisfactory increase in the number of establishments reported. Still more gratifying is the increase during the decade in the number of hands employed and the amount of wages paid ; the wages have increased not only actually but relatively, the average wages per hand increasing from \$334 in 1880 to \$454 in 1890, or 35.93 per cent.

Part of this increase is undoubtedly due to the fact that in many industries relatively more men were employed in 1890 and less children, and also to the fact that in 10 years many branches of industry have improved the grades of their products, and for this reason require more skilled and higher paid employés. After making all possible allowance for these changes, for the more thorough enumeration of 1890, and for the advance in quantity of manufactured product, we have a decided relative increase in the amount paid in wages between 1880 and 1890.

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

*Robert P. Porter*

*Superintendent of Census.*

# STATISTICS OF MANUFACTURES: 1890.

## CITY OF LOUISVILLE, KENTUCKY.

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. 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.

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.

The tabulated statements presented herewith include only establishments which reported a product of \$500 or more in value during the census year, and, so far as practicable, only those establishments operating works located within the corporate limits of the city.

TABLE 1.—COMPARATIVE STATEMENT OF TOTALS UNDER GENERAL HEADS OF INQUIRY: 1880 AND 1890.

INDUSTRIES.	Number industries reported.	Number establishments reporting.	Capital. (a)	Hands employed.	Wages paid.	Cost of materials used.

  

INDUSTRIES.	Miscellaneous expenses. (b)	Value of product.	MUNICIPAL DATA.		
			Population.	Assessed valuation.	Municipal debt. (c)
All industries.....	\$4,725,329	\$35,423,203 45,452,209	123,758 161,129	\$65,809,000 81,306,916	\$4,849,935 6,465,647

a The value of hired property is not included for 1890, because it was not reported in 1890.

b No inquiry in 1880 relating to "Miscellaneous expenses".

c The amount stated represents the "net debt", or the total amount of municipal debt less sinking fund.

For the purpose of ready comparison, Table 1 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, as stated by the Superintendent of Census, that radical changes have been made in 1890 as well in the form and scope of inquiry as in the method of presentation.

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 present census inquiry respecting capital is intended to comprehend all the property or assets strictly pertaining to a manufacturing business, whether such property is owned, borrowed, or hired. The value of hired property is not included in the amount stated for 1890 in Table 1, because it was not reported in 1880, and its inclusion would therefore render the comparison misleading. It will, however, be specifically stated for each industry in final reports.

#### TABULAR STATEMENTS FOR 1890.

The various subheads into which the inquiry of 1890 is divided, excepting wage statistics by classes, will be found in Table 2 for important industries. The statements for each industry are intended to present the true amount of capital employed, the amount paid in wages, and the number of hands employed in the respective industries, the cost of materials used, miscellaneous expenses, and the value at the works of goods manufactured, as compiled from individual reports of manufacturers.

#### LABOR EMPLOYED AND WAGES PAID.

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, 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 amounts 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 reported as employed on piecework, and the actual term of operation for the establishment reporting. The wage statistics compiled from the reports obtained will be stated in detail for each class in the final reports to be published for each city. In this bulletin only the aggregate wages paid is given.

#### MATERIALS USED AND GOODS MANUFACTURED.

Against the caption "Materials used" is presented the reported cost at the place of consumption of all materials used, and against "Goods manufactured" is the reported market value at the factory of the total product, not including any allowance for commissions or expenses of selling.

In this connection it must be considered that the difference between apparent cost and value of manufactured product as presented 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.

Expenses of selling are excluded, because the reported value of product is its 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.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES. (a)

CLASSIFICATION OF INQUIRIES.	Agricultural implements. (3 establish- ments.)	Clothing— men's, whole- sale. (14 establish- ments.)	Flouring and grist mill products. (7 establish- ments.)	Foundry and machine shop products. (31 establish- ments.)	Furniture—fac- tory product. (12 establish- ments.)
<b>CAPITAL EMPLOYED—Aggregate</b> .....	\$1,256,275	\$1,202,772	\$316,288	\$4,209,789	\$642,234
<b>HIRED PROPERTY—Total</b> .....	33,110	278,725	12,000	140,860	33,090
<b>PLANT—Total</b> .....	451,225	35,421	168,936	1,793,833	189,956
Land.....	140,000	7,000	47,000	420,600	38,727
Buildings.....	151,200	5,000	36,900	675,611	91,950
Machinery, tools, and implements.....	160,025	23,421	85,036	697,622	59,279
<b>LIVE ASSETS—Total</b> .....	771,940	908,626	135,352	2,275,046	419,188
Raw materials.....	146,542	147,671	13,432	580,464	153,694
Stock in process and finished product.....	310,156	303,978	14,209	421,048	119,130
Cash, bills and accounts receivable, and all sundries not else- where reported.....	315,242	456,977	107,711	1,273,534	146,364
<b>WAGES PAID—Aggregate</b> .....	\$316,582	\$368,323	\$70,766	\$1,318,897	\$272,126
Average number of hands employed during the year.....	648	1,432	113	2,282	621
Males above 16 years.....	515	114	113	1,672	503
Females above 15 years.....		14		18	3
Children.....		33		46	63
Pieceworkers.....	133	1,271		546	52
<b>MATERIALS USED—Aggregate cost</b> .....	\$435,200	\$1,176,692	\$857,332	\$1,824,026	\$246,237
Principal materials.....	312,600	1,084,270	787,406	1,612,778	237,531
Fuel.....	12,700	922	7,858	85,310	3,719
Mill supplies.....			3,760	23,323	722
All other materials.....	110,500	91,500	58,308	100,615	4,266
<b>MISCELLANEOUS EXPENSES—Aggregate</b> .....	\$107,266	\$42,367	\$32,595	\$210,235	\$36,835
Rent.....	3,000	18,148	1,010	12,712	3,000
Power and heat.....		30		200	
Taxes.....	6,180	1,247	1,094	16,295	2,968
Insurance.....	6,026	4,345	4,977	15,171	10,781
Repairs, ordinary, of buildings and machinery.....	7,100	1,475	775	30,474	5,415
Interest on cash used in the business.....	19,200	1,742	2,700	50,766	7,624
All sundries not elsewhere reported.....	68,760	15,380	22,039	84,617	7,047
<b>GOODS MANUFACTURED—Aggregate value</b> .....	\$1,053,399	\$1,920,250	\$1,026,105	\$4,042,641	\$707,352
Principal product.....	772,399	1,760,250	1,018,885	3,712,898	671,193
All other products, including receipts from custom work and repairing.....	281,000	160,000	7,280	329,743	36,159

a To avoid disclosure of operations of individual establishments, only such industries as have 3 or more establishments engaged therein are included.

TABLE 2.—DETAILED STATEMENT FOR 1890 BY IMPORTANT INDUSTRIES—Continued.

CLASSIFICATION OF INQUIRIES.	Leather— tanned and curried.	Liquors (a)	Lumber. (a)	Saddlery and harness.	Tobacco. (a)
	(5 establish- ments.)	(28 establish- ments.)	(19 establish- ments.)	(41 establish- ments.)	(67 establish- ments.)
<b>CAPITAL EMPLOYED—Aggregate</b> .....	\$1,245,849	\$3,729,098	\$1,792,924	\$1,236,164	\$1,982,785
<b>Hired property—Total</b> .....	12,000	61,120	104,190	247,070	184,410
<b>PLANT—Total</b> .....	821,147	2,176,225	603,151	113,081	418,179
Land.....	110,000	421,630	126,648	26,759	84,888
Buildings.....	145,047	989,300	187,360	31,450	151,700
Machinery, tools, and implements.....	65,500	765,295	291,143	54,872	182,591
<b>LIVE ASSETS—Total</b> .....	912,702	1,491,753	1,083,583	\$76,013	1,380,196
Raw materials.....	107,809	56,542	350,466	182,135	497,376
Stock in process and finished product.....	614,236	680,535	279,775	285,463	190,629
Cash, bills and accounts receivable, and all sundries not else- where reported.....	190,657	754,676	462,342	408,415	692,191
<b>WAGES PAID—Aggregate</b> .....	\$111,552	\$363,382	\$654,806	\$349,500	\$742,650
Average number of hands employed during the year.....	196	534	1,319	704	2,117
Males above 16 years.....	145	532	1,173	486	894
Females above 15 years.....	1	1	1	13	87
Children.....	51	1	14	16	147
Pieceworkers.....			131	189	1,019
<b>MATERIALS USED—Aggregate cost</b> .....	\$762,350	\$1,279,126	\$1,046,276	\$886,246	\$2,456,992
Principal materials.....	758,636	970,182	990,124	863,393	2,115,546
Fuel.....	792	84,216	5,524	2,733	19,883
Mill supplies.....		4,527	32,728	700	
All other materials.....	2,922	220,201	17,900	19,420	321,564
<b>MISCELLANEOUS EXPENSES—Aggregate</b> .....	\$40,226	\$606,967	\$185,153	\$52,729	\$1,956,223
Rent.....	1,000	4,936	9,432	20,348	13,872
Power and heat.....					150
Taxes.....	6,014	621,178	6,931	2,442	61,295,569
Insurance.....	8,136	22,498	21,625	4,011	15,962
Repairs, ordinary, of buildings and machinery.....	7,483	65,387	12,535	1,840	8,971
Interest on cash used in the business.....	11,796	46,021	24,404	8,643	12,835
All sundries not elsewhere reported.....	5,797	252,947	110,226	15,436	608,874
<b>GOODS MANUFACTURED—Aggregate value</b> .....	\$1,096,000	\$2,845,154	\$2,110,069	\$1,473,658	\$5,779,896
Principal product.....	1,096,000	2,831,488	2,084,699	1,426,252	5,778,558
All other products, including receipts from custom work and repairing.....		13,666	25,400	47,406	1,338

a Includes several branches of this industry, which will be specifically stated in final reports.  
b Includes internal revenue taxes.