upon the total value of the same branch in 1850, when it amounted to the sum of $6,842,911. This manufacture amounted in New England to over two and three quarter millions of dollars—an increase of 65.8 per cent. In the Middle States the value was nearly five and a half millions, having increased at the rate of 122.2 per centum. In the Western States, where the increase was most extraordinary, the value of implements produced was augmented from $1,623,627 to $7,955,845. The increment alone in those States was, therefore, only a traction less than the product of the whole northern section of the Union in 1850, and was greater by 313 per cent than their own manufacture in that year. In each of the States of Ohio and Illinois, which are the largest manufacturers in the West, the value of the product exceeded two and a half millions dollars, being an increase in the former of 382, and in the latter of 235 per cent in ten years. Michigan, Indiana and Wisconsin increased their production of agricultural implements 1,259, 386 and 201 per cent respectively. While in some of the Southern States there has been a decrease. In Virginia, Alabama and Louisiana the increase in this branch has been large, and in Texas, which reported none in 1850, agricultural implements of the value of $140,000 were manufactured in 1860. The whole value produced in the Southern States in the latter year (including cotton gins) was $1,592,483, exhibiting an increase of over 101 per cent in the last decade.

IRON.

The quantity of pig iron returned by the census of 1860 was 884,474 tons, valued at $19,487,799, an increase of 44.4 per cent upon the value returned in 1850. Bar and other rolled iron amounted to 406,398 tons, of the value of $22,248,756, an increase of 39.5 per cent over the united products of the rolling mills and forges, which in 1850 were of the value of $15,938,786. This large production of over one and a quarter millions of tons of iron, equivalent to 92 pounds for each inhabitant, speaks volumes for the progress of the nation in all its industrial and material interests. The manufacture holds relations of the most beneficial character to a wide circle of important interests intimately affecting the entire population: the proprietors and miners of ore, coal, and limestone lands; the owners and improvers of woodlands, of railroads, canals, steamboats, ships, and of every other form of transportation; the producers of food, clothing and other supplies, in addition to thousands of workmen, merchants and capitalists and their families, who have directly participated in the benefits resulting from this great industry. It has supplied the material for an immense number of foundries, and for thousands of blacksmiths, machinists, millwrights and manufacturers of nails, hardware, cutlery, edged tools and other workers in metals, whose products are of immense aggregate value and of the first necessity. The production of so large a quantity of iron, and particularly of bar iron, and the demand for additional quantities from abroad, tell of the progress of the country in civil and naval architecture and all the engineering arts of the construction of railroads and bridges, which have spread like a net-work over the whole country; of steam engines and locomotives; of planing, sawing, wood and metal working; milling, mining and other machinery, and of all the multiform instruments of science, agriculture and the arts, both of peace and of war; of the manufacture of every conceivable article of convenience or luxury of the household, the field or the factory. The aggregate statistics of iron exhibit the extent to which the general condition of the people has been improved by this great agent of civilization during the ten years embraced in this retrospect.

The materials for the manufacture of iron—ore, coal and other fuel, water power, &c.—are so diffused, abundant and cheap that entire independence of foreign supplies appears to be alike desirable and attainable at no distant period.

MACHINERY.

Probably no class of statistics possesses more general interest, as illustrating the recent progress of the country in all the operative branches, and in mechanical engineering, than those relating to machinery. Nearly every section of the country, particularly the Atlantic slope, possesses a great affluence of water power, which has been extensively appropriated for various manufacturing purposes. The construction of hydraulic machinery, of stationary and locomotive steam engines, and all the machinery used in mines, mills, furnaces, forges and factories; in the building of roads, bridges, canals, railways, &c.; and for all other purposes of the engineer and manufacturer, has become a pursuit of great magnitude. The annual product of the general machinists' and millwrights' establishments, as returned in the census of 1850, was valued at $27,908,244. The value of the same branch, exclusive of sewing machines, amounted in 1860 to $47,118,550, an increase of over eighteen millions in ten years. The Middle States were the largest producers, having made over forty-eight per cent of the whole, but the Southern and Western States exhibit the largest relative increase. The ratio of increase in the several sections was as follows:—New England, 16.4 per cent; Middle States, 55.2; Southern, 387; and Western, 127 per cent. The Pacific States produced machinery of the value of $1,686,510, of which California made $1,600,510. In Rhode Island the business was slightly diminished; but in Connecticut it had increased 165 per centum. The great facilities possessed by New York and Pennsylvania in iron, coal and transportation made them the largest manufacturers of machinery, which in the former was made to the value of $10,484,863, and in the latter, $7,243,453 (an increase of 24.4 and 75 per cent respectively). New Jersey raised her product to $3,215,070, an increase of 261 per cent, while Delaware and Maryland and the District of Columbia exhibited an increase of 82, 41 and 667 per cent respectively. In all the Southern States the value of the manufacture, though small, was largely increased; the ratio in Virginia, the largest producer, being 236 per cent, while in Mississippi, Alabama and South Carolina, the next in amount of production, it was 1,626, 270 and 525 per centum respectively. This was exclusive of cotton gins, which were included with agricultural machinery. Ohio was the largest producer in the West, and the fourth in the Union, having made to the value of $4,855,005, an increase of 125 per cent on the product of 1850. Kentucky ranked next among the Western States, having produced over one million dollars worth, and increased her product 213 per cent. The ratio of increase in the other Western States was:—In Indiana, 98; in Illinois, 24; Wisconsin, 208; Missouri, 214, and Iowa, 2,910 per cent respectively; but in Michigan there was a small decrease in the amount manufactured.

IRON FOUNDRIES.

Besides a large amount of machinery and other castings included in the returns of machine shops, the value of the production of iron foundries, returned by the census of 1860, reached the sum of $27,970,193; an increase of 42 per cent on the value of that branch in 1850, which was $20,111,517. New York, whose extensive stove foundries swell the amount of production in that State, made to the value of $8,216,124, and Pennsylvania, $4,977,793, an increase of 39 and 50.9 per cent respectively.

COAL MINES.

With the subject of iron and its various manufactures that of fossil fuel naturally associates itself. The unequalled wealth and rapid development of the coal fields of the United States as a dynamic element in our industrial progress affords one of the most striking evidences of our recent advance. The product of all the coal mines of the United States, in 1850, was valued at $7,173,750. The annual value of the anthracite and bituminous coal, according to the eighth census, was over $19,000,000. The increase was over $12,000,000, and was at the rate of 169.9 per cent on the product of 1850. It was chiefly produced in Pennsylvania, Ohio and Virginia. The coal mined in Pennsylvania, in 1850, was valued at $5,268,351. In the year ending June 1, 1860, the State produced 9,397,332 tons of anthracite, worth $11,869,574, and of bituminous coal, 66,994,295 bushels, valued at $2,883,889, making a total value of $14,753,463, or an excess of $7,529,653 over the total product of the Union in 1850. Of bituminous coal, Ohio raised 28,539,900 bushels, the value of which was $1,539,713; and Virginia, 9,542,627 bushels, worth $690,188. The increase in Ohio was $819,587, and in Virginia, $322,780, in the value of mineral fuel, being at the rate of 113 per cent in the former, and 47.6 per cent in the latter. The increase in Pennsylvania was 179 per centum on the yield of 1850.

MINING.

The development of our several valuable mines of coal, iron, lead, copper, zinc, gold, silver, quicksilver, chrome, &c., is a subject of the highest satisfaction, constituting, as they do, the repository and fountainhead of crude materials for an immense and varied industry in the metallurgic and chemical arts. Mining in its several branches employs a very large amount of capital and great numbers of our laborious population, and shows a steady increase in the last ten years. The product of the gold mines in the Atlantic States has, however, fallen off since the discoveries of gold in California.

PRINTING PRESSES.

The increase of printing presses in the book and newspaper manufacture has been great beyond all precedent, and has exerted the most beneficent influence by cheapening and multiplying the vehicles of instruction. Its effects are everywhere apparent. Never did an army before possess so much of cultivated intellect, or demand such contributions for its mental food, as that now marshalled in its country's defence. Many of these reading soldiers ripened their intellectual tastes during the last ten years. In fact, many divisions of our army carry the printing press and type, and the soldiers issue publications, and print the forms for official papers. The press is, indeed, the great prompter of enterprise. It constantly travels with the emigrant to diffuse light and intelligence from our remotest frontiers, where it speedily calls into existence the paper mill and all the accessories which it supports in older communities.

BOOK, JOB AND NEWSPAPER PRINTING.

In New England, the Middle and Western States, the value of book, job and newspaper printing is returned as $38,423,943, of which eleven millions worth consisted of books, the value of the latter being nearly equal to the whole product of the same branch in 1850, which was returned at $11,356,549. The manufacture of paper, especially of printing paper, has increased in an equal ratio, the State of Massachusetts alone producing paper of the value of $5,968,469, being over fifty-eight per cent of the product of the Union in 1850. New York returned paper of the value of $3,516,276; Connecticut, $2,528,758, and Pennsylvania, $1,786,900.

THE SEWING MACHINE

has also been improved and introduced, in the last ten years, to an extent which has made it altogether a revolutionary instrument. It has opened avenues to profitable and healthful industry for thousands of industrious females, to whom the labors of the needle had become wholly unremunerative and injurious in their effects. Like all automatic powers, it has enhanced the comforts of every class, by cheapening the process of manufacture of numerous articles of prime necessity, without permanently substracting from the average means of support of any portion of the community. It has added a positive increment to the permanent wealth of the country, by creating larger and more varied applications of capital and skill in the several branches to which it is an auxiliary. The manufacture of the machines has itself become one of considerable magnitude, and has received a remarkable impulse since 1850. The returns show an aggregate of 118,530 machines made in nine States in 1860, the value of which was $5,606,545. A single establishment in Connecticut manufactured machines to the value of over $2,100,000, or nearly one-half of the whole production in that year. During the year 1861 sewing machines to the value of over $61,000 were exported to foreign countries. It is already employed in a great variety of operations and upon different materials, and is rapidly becoming an indispensable and general appendage to the household.

COOPERAGE.

Among the branches of industry which have been signally promoted by the introduction of the sewing machine is the manufacture of men's and women's clothing for sale, which has heretofore ranked with the cotton manufactures in the number of hands—two thirds of whom it has supplanted, the cost of labor employed. The increase of this manufacture has been general throughout the Union, and in the four cities of New York, Philadelphia, Cincinnati and Boston, amounted in value to nearly forty and one quarter millions of dollars, or over eighty-three per cent of the product of the whole Union in 1850. The manufacture of shirts and collars, of ladies' cloaks and mantillas—a few branch which has received its principal impulse within the last ten years—and of ladies' and gentlemen's furnishing goods generally, form very large items in the general aggregate of this branch. They severally employ extensive and numerous establishments, many of them in our large cities with heavy capital. In Troy, New York, the value of shirt collars alone annually manufactured is nearly $800,000, approximating in value to the product of the numerous and extensive iron founderies which have been a source of wealth to that city.

LUMBER.

The influence of improved machinery is also conspicuously exhibited in the manufacture of sawed and planed lumber, in which the United States stands altogether unrivalled, as well for the extent and perfection of the mechanism employed as the amount of the product. This reached, in 1850, the value of $58,521,976, and, in 1860, $95,912,286, an increase of 64 per cent in the last decade. The Western States alone, in the latter year, produced lumber to the value of $33,274,793, an increase of $18,607,543, or 128 per cent over their manufacture in 1850. The Pacific States and Territories produced to the value of $6,171,451; and the Southern $17,941,162 a respective increase of $3,841,826 and $9,094,686 in those sections, being a ratio of 162.7 and 102.3 per centum.

FLOUR AND GRIST MILLS.

Several branches of manufacture have an intimate relation to agriculture and the landed interests, and by their extension powerfully promote those interests as well as that of commerce. Surpassing all others of this or any other class in the value of products and of the raw material consumed, is the manufacture of flour and meal. The product of flour and grist mills in 1850, reached a value of nearly one hundred and thirty-six millions of dollars, while in 1860 the returns exhibit a value of $223,144,369—an increase of $87,246,563, or 64.2 per cent in the last ten years. The production and increase of the several sections were as follows:—

	Value of flour and meal.	Increase.	Per cent increase.
New England States	$11,155,445	$4,834,959	76.5
Middle states	79,086,411	10,653,232	15.5
Western States	96,038,794	53,384,802	125.0
Southern States	30,767,457	14,185,640	85.5
Pacific States	6,096,262	4,207,930	222.8

The largest mill is in Oswego, New York, which in 1860 produced 300,000 barrels of flour; the next two, in Richmond, Virginia, made 190,000 and 160,000, respectively; and the fourth, in New York city, returned 146,000 barrels. The value of annual production of each ranged from one million and a half to two million dollars.

SPIRITUOUS LIQUORS.

The manufacture of spirituous liquors in the United States employed 1,138 distilleries, independent of a large number of rectifying establishments, the product of the former being over eighty-eight millions of gallons, of the value of $24,253,176. The Middle and Western States were the largest producers, the latter yielding nearly forty-five and the former thirty seven millions of gallons of whiskey, high wines and alcohol, the aggregate value in each section being almost eleven millions of dollars. It is satisfactory to observe that more than ninety-five per cent of all the spirits made was from materials of domestic production, a little over four million gallons of New England rum having been the product of imported molasses.

MALT LIQUORS.

The manufacture of malt liquors, though of less magnitude, and far less pernicious in its effects, shows a still larger increase. It derives its material wholly from agriculture, and its extension promises more substantial benefits to the country than the last.

The Northern States returned 969 breweries, or more than double the number in the Union in 1850. The quantity of all kinds of malt liquors made, including 355,863 barrels of lager beer, was 3,285,545 barrels—an increase of 175 per cent upon the total product of 1850, while its value was returned at $17,977,135, being more than three times the amount produced by breweries in that year. Nearly one-half of the whole quantity was made in New York and Pennsylvania. The former had 175 establishments—45 of them in the city of New York—and the latter State 172, of which Philadelphia contained 63. The manufacture of lager beer was much increased in all the Middle and Western States, about 41 per cent of the whole being the product of the two States last named. Among the Eastern States, Massachusetts, and among the Western States, Ohio, Illinois and Missouri were the largest producers of malt liquors. There were 19 breweries in California and 8 in Oregon, producing together about 7 per cent of the total value of the manufacture.

COTTON GOODS.

Among the great branches of pure manufacture in the United States, that of cotton goods holds the first rank in respect to the value of the product and the amount of capital employed. Aided by the possession of the raw material as a product of our own soil, and by the enterprise and ingenuity of our people, this valuable industry has grown with a rapidly almost unrivalled.

The total value of cotton goods manufactured in New England was $80,301,535, and in the Middle States $26,272,111—an increase of 53.4 per cent in the former, and 77.7 in the latter. The remaining States produced to the value of $8,564,280, making the whole production during that year $115,137,926, against $65,501,687, the value of this branch in 1850, or an increase in the general business of nearly 76 per centum in ten years. In the States of Maine and New Jersey the manufacture increased in the same time 152 per cent; in Pennsylvania, over 102 per cent; in New Hampshire and Connecticut, over 87 per cent; in Massachusetts, nearly 69 per cent, and in Rhode Island 88.7 per cent. The total production in this branch was at the rate per capita of $3 09 for every individual in the Union, equivalent to 46½ yards of cloth for each, at the medium price of 8 cents per yard. The average product per head in 1850 was 32¼ yards. The increase alone has, therefore, been at the rate of 11 yards for each person, or nearly equal to the average annual consumption per capita in 1830, when it was estimated to amount to 12 yards. The number of hands employed in the manufacture in 1860 was 45,315 males, and 73,605 females, an increase in the male operatives of 10,620, and in the female of 10,914 since 1850. The average product of the labor of each operative was $960. The number of spindles was returned at 5,035,798, being an increase of 1,402,105, or 38.5 per cent over the aggregate in 1850, which was estimated at 3,633,693. The New England States possess 3,959,297, or 78.6 per cent of the whole, while Massachusetts alone employs 1,739,700, or 29.8 per cent of the number returned in the Union. The increase of spindles in the last decade was, in New England, 1,268,219, or 50 per cent. In the State of Maine, 185,100, or 163.3 per cent; in the State of New Hampshire, 229,484, or 52.1 per cent; in the State of Massachusetts, 451,600, or 35 per cent; in the State of Rhode Island, 141,862, or 22.7 per cent; in the State of Connecticut, 211,188, or 33.1 per cent; while in Vermont it exhibited a decrease.

The product per spindle varies in the different States, partly accounted for by the fact that many manufacturers purchase yarns which have been spun in other States.

The product of cotton goods per spindle is as follows:—In Maine, $22 12; Massachusetts, $21 12; New Hampshire, $24 87; Vermont, $18 13; Rhode Island, $16; Connecticut, $15 46. The average in the New England States is $20 30; in the Middle States $30 48, and in the whole Union, $22 86.

The quantity of cotton used in the fabrication of the above goods was 364,036,123 pounds, or 910,090 bales of 400 pounds each. Of this amount the New England States consumed 611,738 bales, and Massachusetts alone 316,695. The consumption per spindle in that year in the various states and sections was as follows:—

	No. spindles.	Lbs. cotton.	Lbs. per spindle.
Maine	300,000	23,438,723	78
New Hampshire	609,885	30,212,644	58.5
Vermont	19,712	1,087,250	55
Massachusetts	1,739,700	126,666,089	72.8
Rhode Island	766,000	55,521,608	80.2
Connecticut	464,000	15,790,140	34
In New England	3,959,297	237,844,854	61.8
In the Middle States	861,601	76,055,696	88.26
In the United States	5,035,798	364,036,123	72.2

When we consider the large number of hands, and especially of women and children, who find employment in this business, the quantity of raw material, of machinery and of fuel, exclusively of American production, employed in this branch, and the amount of comfortable clothing and household stuffs supplied at cheap rates, or the amount it contributes to the internal and foreign commerce of the Union—its progressive increase is a subject of the highest satisfaction, and its growth both here and abroad is one of the marvels of the nineteenth century.

WOOLLEN MANUFACTURES.

The returns of woollen manufactures show an increase of over fifty one per cent in ten years. The value of woollen and mixed goods made in 1850 was $45,251,764. In 1860 it amounted to $68,865,963. The establishments numbered 1,909, of which 453 were in New England, 748 in the Middle, 479 in the Western, 2 in the Pacific and 227 in the Southern States. The aggregate capital invested in the business was $35,520,527, and it employed 28,750 male and 20,120 female hands, 639,700 spindles and 16,075 looms, which worked up more than eighty million pounds of wool, the value of which, with other raw materials, was $40,360,300. The foregoing figures include satinets, Kentucky jeans and other fabrics of which the warp is cotton, though usually classed with woollens. In the manufacture of these mixed goods the amount of cotton consumed is 16,008,625 pounds, which, with 364,036,123 pounds used in making cotton goods, as previously stated, amounts to 380,044,748 pounds or 950,112 bales, exclusive of a considerable quantity used annually in household manufactures and for various other purposes.

The largest amount of woollens was made in New England, where the capital was nearly twenty millions of dollars, and the value of the product $38,509,080, but little less than the total value in 1850. More than half the capital, and nearly one half of the product of New England belonged to Massachusetts, which had 131 factories of large size. Rhode Island ranked next, and had increased its manufacture 163 per cent in ten years, that of Massachusetts being 48 per cent. The value of woollens produced in the middle States was $24,100,488, in the Western $3,718,092, and in the Pacific and Southern $2,538,303. The sectional increase was: in New England 52 7, in the Middle States 54, and in the South 107, the last showing the greatest relative increase. Pennsylvania, next to Massachusetts, was the largest producer, having 447 factories, which made $12,744,373 worth of woollen and mixed fabrics, an increase of 120 per cent. A value of $3,919,019 was the product of 222 establishments in the city of Philadelphia.

The State of New York holds the third rank in relation to this industry, its manufactures amounting to more than nine millions of dollars. The woollen manufactures of Maryland exhibit an increase of 86 per cent. In Ohio, which produced in 1850 a greater value of woollens than all the other Western States, there was a decrease on the product of 1850, owing, probably, to the shipments of wool to Europe, which, in 1857, was found to be the most profitable disposition of the rapidly increasing wool crops of that State. In Kentucky, now the largest manufacturer of wool in the West, the product was $1,128,552, and the increase in ten years 40.4 per cent, while in Indiana, which ranks next, it was 31 per cent, and in Missouri 18.8, on the product of 1850.

The extension of this important manufacture is a subject of great interest to the country, inasmuch as our climate renders woollen clothing necessary throughout a large part of the Union during moon of the year; and because it would supply the best market to the wool grower.

The quantity of wool returned for the whole Union in 1850 was upwards of 52,000,000 pounds. Sheep raising has been greatly extended and improved since that date in Ohio, Texas, California and other States, and the clip in 1860 amounted to 60,511,343 pounds; an increase of 15.2 per cent in ten years. The yield still falls far short of the consumption, and large quantities continue to be imported, notwithstanding the amount of territory adapted to sheep husbandry.

LINEN GOODS.

The manufacture of linen goods has made but little progress in this country. A few mills, chiefly in Massachusetts, make crash and other coarse fabrics; the largest two in that State produced six million yards in 1860. Others are extensively engaged in making twines, shoe and other threads. It is to be regretted that the manufacture of flax has not attained greater magnitude in a country where the raw material is so easily and cheaply grown. Farmers throughout the West have raised the crop simply for the seed and thrown out the fibre as valueless.

FLAX COTTON.

The manufacture of fabrics from flax cotton has been commenced, and success in a new branch of industry is confidently expected. The inventive genius of our countrymen has perfected machinery for the preparation of flax for spinning, which can be furnished it is alleged, at as low a rate as the product of Southern cotton fields.

SEWING SILKS.

The manufacture of sewing silks is extensively carried on in this country. Including tram, organzine, &c., the production exceeded five million dollars in the States of Connecticut, New Jersey, Massachusetts, Pennsylvania and New York, their relative values being in the order mentioned. Ribbons are made to a small extent, but the chief manufactures of silk consist of ladies' dress trimmings, coach lace, &c., of which the cities of Philadelphia and New York produce to the value of $1,260,725 and $796,682 respectively.

LEATHER.

The production of leather is also a leading industry of much importance to the agriculturist and stock raiser, as well as to the commercial interest, inasmuch as it consumes all the material supplied by the former, and feeds an active branch of our foreign import trade. The tanning and currying establishments of the United States produced in 1850 leather, exclusive of Morocco and patent leather, to the value of $37,702,333. The product of the same branch in 1860 reached $63,090,751, an increase of nearly 67 per centum. In the New England States it was $16,333,871, in the Middle States, $36,544,548, and in the Western States, $5,986,457; being an increase of 66.6 per cent, 90.7 and 18.3 in these sections, respectively. The Pacific States and Territories (including Utah), which returned no leather in 1850, produced in 1860 to the value of $351,469. The largest producers of leather are New York, $20,758,017; Pennsylvania, $12,491,631; and Massachusetts, $10,354,056; an increase in those States of 111.7, 98.4 and 82.3 per cent, respectively. Including Morocco and patent leather the aggregate value produced in the Union in 1860 exceeded sixty-seven millions of dollars.

If we add to the sum total of this manufacture the aggregate value of all the allied branches into which it enters as a raw material, or take an account of the capital, the number of hands, and the cost of labor and material employed in the creation and distribution of its ultimate products, it is doubtful if any other department of industry is entitled to precedence over that of leather.

BOOTS AND SHOES.

The manufacture of boots and shoes employs a larger number of operatives than any other single branch of American industry. The census of 1850 showed that there were 11,305 establishments, with a capital of nearly thirteen millions of dollars, engaged in making boots and shoes to the value of $53,967,408, and employing 72,305 male and 32,948 female hands. The returns of 1860 show that 2,554 establishments in the New England States employed a capital only $2,516 less than that of the whole Union at the former date; and with 56,039 male and 24,978 female employes produced boots and shoes of the value of $54,767,077, or eight hundred thousand dollars more than the entire value of the business in 1850, and 82.8 per centum in excess of their own production in that year. Massachusetts increased 92.6 per cent, having made boots and shoes of the value of $46,440,209, equal to 86.6 per cent of the general business in 1850. The State of New York returned 2,276 factories, with an aggregate production of $10,878,797; and New England, New York, Pennsylvania and New Jersey together produced $75,674,946 worth of these articles, being 40.4 per cent more than the product of all the States in 1850, and 67.9 per cent more than their own manufacture in that year. The three counties of Essex, Worcester and Plymouth, in Massachusetts, produced boots and shoes to the value severally of about 14¾, 9¼ and 9¼ millions of dollars. The largest production of any one town was that of Philadelphia, in which it amounted to $5,349,887; the next, that of Lynn, Massachusetts, was $4,867,399; the third, Haverhill, $4,130,500; the fourth, New York city, $3,869,065. The largest production of a single establishment was of one in North Brookfield, Massachusetts, and amounted to over $750,000. This establishment was the largest of five the same proprietors had in operation that year, the total production whereof was over one million pairs of boots and shoes, valued at over thirteen hundred thousand dollars. Machinery propelled by steam power is now used in many large manufactories with highly satisfactory results.

INDIA RUBBER GOODS

Were made chiefly in Connecticut, New York, New Jersey and Massachusetts, to the value of $5,723,900—an increase of ninety per cent in the last decade.

CABINET FURNITURE

The value of cabinet furniture made in 1860 in the New England, Middle States and Ohio reached the sum of $19,553,734, an increase of 30.5 per cent over the product of those States in 1850, and exceeding the production of the whole Union in 1850. New York returned in 1860 furniture of the value of $7,175,060 (or 40.6 per cent of the whole amount made in 1850), Massachusetts $3,365,415, and Pennsylvania $2,938,503. The growth of this branch keeps pace with the increase of population and wealth, and serves to swell the amount of our exports. It gives employment at remunerative prices to skilled labor, which it attracts from the crowded labor markets of Europe.

MUSICAL INSTRUMENTS.

Our advance in wealth and refinement is attested by the rapid increase in the manufacture of pianofortes and other musical instruments. New England, New York and Pennsylvania produced musical instruments to the value of $5,791,807—an increase of 150 per cent over their own production in 1850, and 124 over the whole value of that branch in the Union in the same year. New York alone made $3,392,577 worth—being $811,862 more than the whole amount returned in 1850. In this branch our manufacturers have achieved marked success. Without claiming for them superiority over their brethren in France and Germany, it is admitted that church organs and other instruments made in this country are better suited to the climate, and in other respects fully equal to those which come from the most celebrated establishments in Europe.

JEWELRY.

The increased amount of the precious metals and the greater ability of all classes to indulge the promptings of taste or luxury, have added greatly to the manufacture of jewelry, and of all kinds of gold, silver and plated wares. In the New England and Middle States, the production of jewelry and watches reaches nearly eleven millions in value; of silver, silver plated wares, &c., nearly six and one-half millions; making over seventeen and a quarter millions of dollars, exclusive of gold leaf and foil, and the assaying and refining the precious metals, exceeding the product of the whole Union in 1850 by $6,312,500 in value; an increase of over fifty-seven per cent, and of sixty-three per cent on the production of those States in that year. The production of cheap jewelry has been greatly augmented by recent improvements in electro metallurgy.

AMERICAN WATCHES.

The manufacture of American watches, commenced within the last ten years in Boston as an experiment, has proved eminently successful. Unable heretofore to compete with the low priced labor of European workmen, our ingenious countrymen have perfected machinery by the aid of which watch movements are fabricated equal, if not superior, to the hand made. The continued growth of this branch will diminish the importation of foreign watches, and may, at no distant period, earn for our country a reputation in this manufacture equal to that she enjoys in the kindred branch of clock making. Gold and silver watches are now produced to a very large extent, chiefly in the cities of Philadelphia, New York and Newark.

CHEMICAL ARTICLES.

Improvements in technical chemistry have added largely to the number and value of its products. The manufacture of articles strictly classed as chemical, exclusive of white lead, ochres, paints, varnish, glue, perfumes, cements, pot and pearl ashes, &c., amounted, in 1850, to the value of nearly five millions of dollars. The production, in 1860, exhibited a considerable increase. This branch is susceptible of almost unlimited extension and application in the creation of commercial and useful articles from the refuse of every other manufacture, and the diversified products, vegetable, animal and mineral, of our own or other lands. Many of the chemical branches, apart from the money value of their manufactures, are of the highest economical importance to our country, as auxiliaries to almost every other industry of the people. Chemistry has as yet revealed but a tithe of the vast wealth of its resources.

GAS.

The manufacture and consumption of gas, for illumination and other purposes, which is one of the remarkable fruits of chemical science, has been greatly increased, not only in our Northern cities, but in the large towns and villages throughout the Union. The quantity returned is but four thousand million feet of the value of eleven million dollars, but the whole quantity made exceeded 5,000,000,000 cubic feet, the value of which was about thirteen millions of dollars.

SALT.

The making and refining of salt in the United States in 1850 employed 340 establishments, and the value of their production was $2,177,945. The four States of New York, Virginia, Ohio and Pennsylvania, which, in the order named, are the principal salt-producing States, made, according to the eighth census, nearly twelve millions bushels, the cost of which was $2,260,000, an average of about 18¾ cents per bushel. Texas, Kentucky, Massachusetts and California are also self-producing States. About sixty per cent of the whole was made in New York, at an average cost of 17 cents per bushel.

FISHERIES.

In the aggregate product of fisheries there was an increase of 28.5 per cent over their value in 1850. The total value of the lake, river, shore, and deep-sea fisheries, including oysters to the value of $382,119, and $7,321,588 as the product of the whaling business, amounted in 1860 to $12,924,092. Of this amount $6,526,238 in the whale, and $2,774,204 in the cod, mackerel, halibut, and other shore fisheries, belonged to the maritime industry of Massachusetts, and constituted nearly seventy-two per cent of the whole. This favorite occupation of her enterprising sons has made Boston, which has been over two and a quarter centuries engaged in the business, the principal distributing fish market of the Union, and has raised the port of Gloucester to the third rank among New England seaports in the amount of its foreign commerce. The latter has become the largest seat of the domestic fisheries in the United States, if not in the world, and distributes the products to all the large cities of the Union and to foreign countries.

The State of Maine holds the second place in respect to the value of its fishing interests, and returned $1,050,755 as the value of the cod, mackerel, herring, &c., taken by its fishermen. North Carolina had the largest shad fishery, amounting in value to $99,758. New Jersey, New York and Virginia took the largest amount of oysters, and Michigan returned the largest value in white fish, amounting to $250,467.

A slight decline in the value of the whale fishery arose from the increasing scarcity of the whale in its former haunts. The consequent deficiency of bone, teeth and oil, as raw materials, proved embarrassing to some branches of manufacture, particularly those employing whalebone. The scarcity of whale and other fish oils in the arts has been supplied by an increased production of lard oil, and especially by that beneficent law of compensation which pervades the economy of nature, and when one provision fails her children, opens to them another in the exhaustless storehouse of her material resources, or leads out their mental energies upon new paths of discovery for the supply of their own wants. Thus, when mankind was about to emerge from the simplicity of the primitive and pastoral ages, the more soft and fusible metals no longer sufficed for the artificer, and veins of ore revealed their wealth and use in the supply of his more artificial wants, and became potent agents of his future progress. When the elaboration of the metals and other implements arts were fast swooping the forests from the earth, the exhaustless treasures of fossil fuel, stored for his future use, were disclosed to man, and when the artificial sources of oil seemed about to fail, a substitute was discovered flowing in almost perennial fountains from the depths of these same carboniferous strata. A decline of the cod and whale fisheries is, nevertheless, to be regretted, as they have been from the earliest period of our history the nurseries of seamen and of our naval and commercial marine, and therefore contributing to the national defence, to foreign commerce, shipbuilding, agriculture and other important interests.

PETROLEUM.

An important development of the natural resources of the country and a valuable addition to its exports have been made by the discovery, within two or three years, that certain indications, known to the aboriginal and early European inhabitants of the western country, of natural reservoirs of inflammable oil existing upon the head waters of the Allegheny River in New York and Pennsylvania, were but the clue to apparently inexhaustible supplies of native oil, accessible at no great depth throughout an extended belt of country, embracing the bituminous coal measures of several States.

Petroleum, rock or mineral oil, a natural product of the decomposition of organic matter, emitted from the soil in various formations, particularly those of rock salt, was known and employed to some extent by the ancients, having been mentioned by the father of history twenty-three hundred years ago, and by Greek and Roman writers of later date. In its more fluid form, as found on the shores of the Caspian Sea, near the Irawaddy of Burmah, in Italy, and some parts of our country, it has borne the name of naptha, while the more solid elements of the same substance predominated in the articles known as asphaltum and bitumen, found abundantly in the Great Pitch Lake of the island of Trinidad, near the Dead Sea in Judea, and elsewhere. Petroleum is nearly identical in properties with the artificial oils which have been long derived from the destructive distillation of different minerals, as cannel coal and brown coal, or lignite, bituminous shales, sands, clays, peat, &c., which have been the subject of numerous patents in Europe and America, and within the last eight years have been manufactured to a considerable extent in the United States and the neighboring provinces, until the native petroleum springs opened a source of cheaper supply.

As a product of our own country this remarkable substance was brought to the notice of the white population as early as the middle of the last century, by the Seneca Indians, who found it upon Oil creek, a branch of the Alleghany, in Venango county, Pennsylvania, and near the head of the Genesee river, in New York, whence it received the name of "Seneca oil" and "Genesee oil." It was used by the natives in their religious ceremonies, and as medicament for wounds, &c. For the last named purpose it has been long collected and sold in small quantities at a high price. A perennial flow of oil has been known to exist in Oil creek, above referred to, for a century. For the last forty years the spring has been enclosed in a vat or structure of wood and stones, which was daily skimmed by the proprietor, and made the source of considerable revenue. We have seen extensive diggings in this region, made by the French more than a century since, while that nation held the valley of the Mississippi, which were evidently made to ascertain the basis or source of what, no doubt, impressed the French officers as a most interesting and curious development of the bounty of nature. Petroleum, doubtless, formed an article of considerable traffic between the Indians and traders of that region, as we have seen, in some old account books of the last century, "gallons" and "kegs" of Seneca oil credited to the Indians.

OIL MINES OF PENNSYLVANIA.

Its existence in any vast amount appears to have been unknown until 1845, when a spring was "struck," while boring for salt, near Tarentum, thirty-five miles above Pittsburg, on the Alleghany. Experiments having proved its constituents to be nearly the same as those of the artificial carbon oil, a company was organized in New York to attempt its purification by the same process applied to the latter. But little was effected, however, and in 1857 Messrs. Bowditch & Drake, of New Haven, commenced operations at Titusville on Oil creek, where traces of early explorations were found, and in August, 1859, a fountain was reached by boring, at a depth of seventy-one feet, which yielded four hundred gallons daily. Before the close of the year 1860, the number of wells and borings was estimated to be about two thousand, of which seventy-four of the larger ones were producing daily, by the aid of pumps, an aggregate of eleven hundred and sixty-five barrels of crude oil, worth, at twenty cents a gallon, about ten thousand dollars. Wells were soon after sunk to the depth of five or six hundred feet, and the flow of petroleum became so profuse that no less than three thousand barrels were obtained in a day from a single well, the less productive ones yielding from fifteen to twenty barrels per diem. In several instances extraordinary means were found necessary to check and control the flow, which is now regulated in such wells, according to the state of the market, by strong tubing and stop cocks. The quantity sent to market by the Sunbury and Erie Railroad from the Pennsylvania oil region, which has thus far been the principal source, increased from 325 barrels in 1859 to 134,927 barrels in 1861. The whole quantity shipped in the last mentioned year was nearly 500,000 barrels. Since August, 1861, the product has rapidly increased. The present capacity of the wells is estimated at 250,000 to 300,000 barrels per week. So important, however, have the operations in this article become, that a railroad, we understand, has been chartered in Pennsylvania exclusively for the transportation of the oil to market. From a recent number of the *Register*, a newspaper published in Titusville, Pennsylvania, we copy the following statement respecting the production of petroleum in that vicinity:—"We learn that the number of wells now flowing is seventy-five; the number of wells that formerly pumped and flowed is sixty-two; the number of wells sunk and commenced is 358; total, 495. The amount of oil shipped is set down at 1,000,000 barrels; amount on hand to date, 92,450 barrels; present amount of daily flow, 5,717 barrels. The average value of the oil, at $1 per barrel, is $1,092,000; average cost of wells, at $1,000 each, is $495,000; machinery, building, &c., from $500 to $700 each, $500,000. The total number of refiners is twenty-five. The detailed report of the condition of the wells shows that production is on the increase. Holders are firm at fifty cents per barrel at the wells, and don't seem to care about selling any great amount at that price." With increased facilities for getting it to the seaboard at a cheap rate for transportation, the operations will doubtless become much more extended than at present.

The exportation of crude and refined petroleum from the principal Atlantic cities to Europe, South America, and the West Indies, has already become considerable, the larger proportion being shipped to England. Much of it is sent to Europe in this crude state, in which form it is said to be preferred for the sake of the collateral products obtained in the process of refining. It is probable, however, that the highly inflammable character of the unrefined article, owing to the presence of certain gaseous or exceedingly volatile compounds may prove an objection to its shipment in that state. The quantity exported from the cities of Philadelphia, New York, Boston, Baltimore, and San Francisco, from the 1st of January to the 1st of April, 1862, amounted to 2,342,042 gallons, valued at $653,949. The receipts at Cincinnati, during the same period, of carbon and petroleum oils, were 819,960 gallons, or 13,000 barrels, nearly one-half of which was petroleum oil. The exports from the three cities first mentioned, from the 1st of January to the 16th of May of the present year, were 3,651,130 gallons, worth $889,886, and the shipments in the last week of that period from the same places were 255,600 gallons, valued at $42,160.

A large reduction has taken place in the price since the commencement of the trade, and particularly during the last few months. The price of crude petroleum in Philadelphia on the 4th of January, 1862, was from 22½ to 23 cents a gallon, and of refined oil 37½ to 45 cents. On the 29th of March the prices had declined at the same place to 10 and 12 cents for crude, and 25 to 32 cents for refined oil, while the most recent price current lists place it at 9 and 19 cents. Although the capacity of the existing wells already exceeds a profitable demand, there appears to be no assignable limit to the flow, or to the localities which may be found to yield it, whenever an augmented demand shall warrant farther search or increased production. The bituminous co