Mineral Products of the United States in 1884.

The second report on "The Mineral Resources of the United States," by Albert Williams, Jr., Chief of the Division of Mining Statistics and Technology, United States Geological Survey, is now in press, and will be issued shortly. This report is for the calendar years 1883 and 1884, and contains detailed statistics for these periods, and also for preceding years, together with much descriptive and technical matter. The following are the totals of the production of the more important mineral substances in 1884:

	Quantity.	Value.
Pig iron, long tons, spot value	4,097,868	$73,761,624
Silver, troy ounces, coining value	37,744,605	48,800,000
Gold troy ounces, coining value	1,489,949	30,800,000
Copper, pounds, value at New York city (*a*)	145,221,934	17,789,687
Lead, short tons, value at New York city	139,897	10,537,042
Zinc, short tons, value at New York city	38,544	3,422,707
Quicksilver, flasks, value at San Francisco	31,913	936,327
Nickel, pounds, value at Philadelphia (*b*)	64,550	48,412
Aluminum, troy ounces, value at Philadelphia	1,800	1,350
Platinum, troy ounces, value crude at New York city	150	450
Total		186,097,599

a Including copper made from imported pyrites.
b Including nickel in copper nickel alloy.

NON-METALLIC MINERAL PRODUCTS OF THE UNITED STATES IN 1884 (SPOT VALUES).

	Quantity.	Value.
Bituminous coal, brown coal, lignite, and anthracite mined elsewhere than in Pennsylvania ..... long tons (*a*)	73,730,539	$77,417,066
Pennsylvania anthracite ..... do (*b*)	33,175,756	66,351,512
Petroleum ..... barrels	24,089,758	20,476,294
Building stone	.....	19,000,000
Lime ..... barrels	37,000,000	18,500 000
Salt ..... do	6,514,937	4,197,734
Cement ..... do	4,000,000	3,720,000
South Carolina phosphate rock, long tons (*c*)	431,779	2,374,784
Limestone for iron flux ..... do	3,401,930	1,700,965
Mineral waters ..... gallons sold	68,720,936	1,665,490
Natural gas	.....	1,460,000
Zinc white ..... short tons	13,000	910,000
Concentrated borax ..... pounds	7,000,000	490,000
New Jersey marls ..... short tons	875,000	437,500
Mica ..... pounds	147,410	368,525
Pyrites ..... long tons	35,000	175,000
Gold quartz souvenirs, jewelry, etc	.....	140,000
Manganese ore ..... long tons	10,000	120, 000
Crude barytes ..... do	25,000	100,000
Ocher ..... do	7,000	84,000
Precious stones	.....	82,975
Bromine ..... pounds	281,000	67,464
Feldspar ..... long tons	10,900	55,112
Chrome iron ore ..... do	2,000	35,000
Asbestos ..... short tons	1,0	30,000
Slate ground as a pigment ..... long tons	2,000	20,000
Sulphur ..... short tons	500	12,000
Asphaltum ..... do	3,000	10,500
Cobalt oxide ..... pounds	2,000	5,100
Total	.....	$220,007,021

a The commercial product, that is, the amonnt marketed, was only 66,875,772 tons, worth $70,219,561. *b* The commercial product, that is, the amount marketed, was only 30,718,293 tons, worth $61,436,586. *c* Year ending May 31.

RESUME OF THE VALUES OF THE METALLIC AND NON-METALLIC MINERAL SUBSTANCES PRODUCED IN THE UNITED STATES IN 1884.

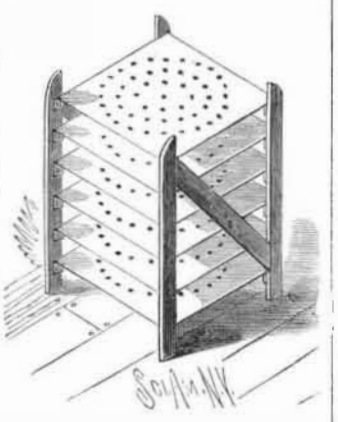
Metals	$186,097,599
Mineral substances named in the foregoing table	220,007,021
	$406,104,620
Fire clay, kaolin, potter's clay, common brick clay, terra cotta, building sand, glass sand, limestone used as flux in lead smelting, limestone in glass making, iron ore used as flux in lead smelting, marls (other than New Jersey), gypsum, tin ore, antimony, iridosmine, millbuhrstone and stone for making grindstones, novaculite, corundum, lithographic stone, talc, and soapstone, quartz, fluorspar, nitrate of soda, carbonate of soda, sulphate of soda, native alum, ozocerite, mineral soap, strontia, infusorial earth and tripoli, pumice stone, sienna, umber, etc., certainly not less than	7,000,000
Grand total	$413,104,620

Asphaltum.

As a building material, says a contemporary, asphaltum is fast growing in popular favor, and is used principally as a prevention against damp cellar walls and mason work under ground, water tight cellar floors, coating for rainwater cisterns, covering for underground vaults, etc. Its efficiency is fairly proved upon the first trial if applied properly. It has no equal for the purpose we have named, and needs only fairly to be introduced to make its own lasting reputation for reliability. The usual method of applying it is as follows: Reduce to a semi-liquid state, in an iron pot as large as can conveniently be obtained, over a good fire, sufficient asphalt to about two-thirds fill it. Use caution that the flame does not rise over the top of the pot to ignite the asphalt. Have the wall as nearly dry as possible and the joints somewhat rough—not smooth pointed—to admit of the asphalt penetrating the pores and securing a hold. Cover the wall with the asphalt, applied with a long handled brush, while the material is hot, and brush it in well. The asphalt will cool readily when applied to the cold surface of the wall. It is all-sufficient if the masonwork is thoroughly covered, for a coating ½ inch thick is as perfect a protection as a thicker one. On the roofs of vaults, tops of cisterns, or the like, where a settlement is likely to occur and produce rupture, mix a little air-slaked lime or clean, fine sand with the sand while hot. This will tend to preserve its proper elasticity, and destroy its brittleness and liability to fracture. For vault coverings, or floors to cellars, basements, etc., the coating should be about ½ inch thick, and thoroughly worked into the joints and smoothed with a trowel. A barrel of asphalt as found in the market, heated and applied to vertical brick walls as we have described, will ordinarily cover about 250 square feet of surface, and in point of cost compare favorably with other methods of damp proofing, and produces better and more lasting results.

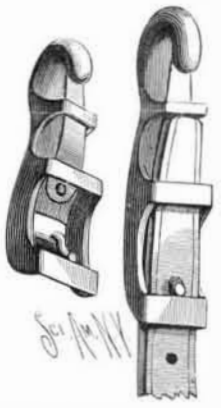
PIE AND CAKE RACK.

The pie and cake rack shown in the engraving consists of shelves made with or without perforations, and supported by a frame of upright and bracing slats. The frame is made of four corner upright wood slats united at three sides of the rack by diagonal braces, leaving one side of the rack open to allow access to the shelves, which are about ten inches square, and made of tin or sheet metal of suitable stiffness to support the pies and cakes. The edges of the metal sheets are doubled against the main bodies of the sheets, thus forming four stiffening lips or flanges; at the corners are formed lugs, by bending the ends of the edges at right angles to the plates, by which the shelves are nailed or screwed to the uprights. This rack will be found very useful to housekeepers and others when baking, as the pies may be transferred at once from the baking plates to the shelves, where they will be held in small space, thus saving much room. This invention has been patented by Mrs. Lydia A. Rowe and Mr. D. S. Rowe; particulars can be obtained by addressing the former, 121 Clifton St., Springfield, Ohio.



IMPROVED SNAP HOOK.

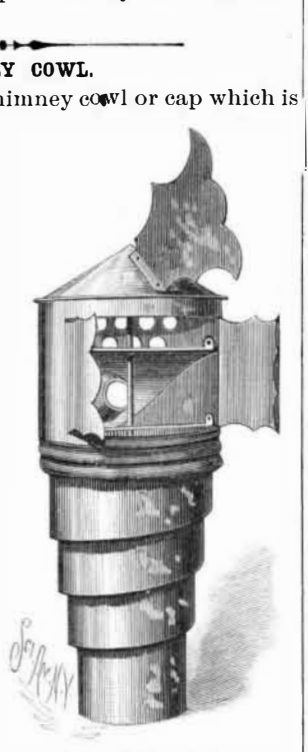
This snap hook may be applied to straps without stitching, thus effecting a saving in leather stock and enabling any person to attach a snap hook to a strap in a very short time. The hook and spring tongue are of the ordinary construction, but the spring is protected by a cross piece, so that it cannot be accidentally pressed down to release the object held in the hook. At the back end of the snap hook is a buckle to receive the strap and in front of the buckle is a loop or keeper to hold the end of the strap. The tongue of the buckle is placed upon a rod held in the frame below and somewhat in front of the cross piece of the buckle. The loop or keeper being in a line with the buckle plate, the strap will be straight and smooth when attached.



This invention has been patented by Mr. Dennis W. Palmer, of Detroit, Maine.

CHIMNEY COWL.

The engraving shows a chimney cowl or cap which is very effective in preventing draughts from blowing down the chimney, and in keeping out rain and snow, while it increases and regulates the draught. The lower part consists of a series of tubes of different diameters formed with inclined edges and secured together one above the other by clips, the smallest being at the bottom to enter the chimney. The tubes are so held by the clips as to form passages to permit any draughts or currents of air that may blow down the cowl to pass out without entering or materially obstructing the draught of the chimney. Held in cross pieces in the center of the tubes is a standard, upon the upper end of which is placed a revolving top, at one side of which is a large opening which is always kept to leeward by a vane secured to the dome, and side wings attached to the casing, one at each side of the opening. Opposite the opening is formed a series of holes through the casing, and below these is secured a funnel, the inner end of which passes through an opening in a curved deflecting plate secured inside of the cap, so that air entering the funnel will be directed through the cap to the large opening, and air entering the holes will be directed, by the upper surface of the curved plate, also to the opening. At the base of the dome is a horizontal plate, and secured in a diagonal position above the opening is a plate which acts to direct the air downward to the opening.



This invention has been patented by Mr. Ira G. Lane, of 207 E. 64th St., New York city.

Color Blindness.

Color blindness, like other defects of vision, affects people in different degrees of intensity, and, like myopia, or short sight, it is frequently hereditary. It often becomes more pronounced in after life, or when the near point of vision begins to recede.

Among the more highly educated of all nationalities the average number of color blind is 4 per cent, an average in excess of that of all other classes A man may have a good eye for form and outline, and yet be partially or wholly color blind. To select an instance from among many is difficult, but one impresses me more than the rest—that of Wyatt, the sculptor, who at the outset of his career was known as a remarkably good draughtsman. He naturally took to painting, but, as his pictures were observed to present curious incongruities of color, that involved him in grievous difficulties, he with much reluctance was obliged to abandon the brush for the chisel. He was altogether unable to comprehend the nature of his defect—indeed, refused to believe that he was color blind. So of men who have attained to eminence in the world of letters, and whose writings unmistakably betray evidences of a meager color vocabulary. A striking example of this occurred in the person of Angus B. Reach.

He was unable to recognize a difference in color between the leaf, the flower, and the fruit of plants and trees. His want of perception of color was wholly unknown to and unrecognized by himself, until we sat together at the table of a Paris restaurant. He, wishing to finish his letter to the "Chronicle" newspaper, requested the waiter to bring him some ink. As it often happens, under similar circumstances, the ink was brought in a wineglass. Reach became absorbed in his subject, while I, seated opposite to him, observed him alternately dipping his pen into his claret glass and into the ink glass. I frequently checked him, but presently to my surprise he took up the ink glass and was about to drink, when I remonstrated, and he then said he could see no difference between the color of the ink and the wine. On subsequently testing him I discovered that he was completely color blind.

Homer certainly labored under a physical defect of vision, and this fully explains the limited use of the terms he employed to express his sense of color, and to which Mr. Gladstone has drawn attention.—*Jour. of Science.*

Cotton and its Machinery.

The fly shuttle, or "picking peg," was invented in 1738, by John Kay, and the drop box by Robert Kay, in 1760. A machine for spinning by rollers was invented by John Wyatt, and patented by Louis Paul, in 1738. In 1769, Arkwright patented his water frame. James Hargreaves invented his spinning jenny in 1770; while a few years after, Samuel Crompton united the principles of Hargreave's jenny and Arkwright's water frame, and gave to the world the mule spinning frame.

It was about 1790 when the improved steam engine of James Watt was successfully applied to cotton machinery. The power loom was invented by Dr. Cartwright in 1785. The headstock was placed in the center of the mule by Wright, while Richard Roberts about 1825 achieved an enormous step in advance by his invention of the self-acting mule. The Jacquard loom was invented by Jacquard, of Lyons, in 1801. The dead spindle was of American origin in 1831. The combing machine for cotton was invented by Heilmann, of Mulhouse, in 1846—adapted from his wool combing machine. The Whitney cotton gin was patented in 1794, which set aside the labor of two hundred and ninety-nine men out of every three hundred, in separating the seeds from cotton.

The first we hear tell of cotton being exported to England from the United States was in 1770, when three bags from New York, four bags from Virginia and Maryland, three barrels from North Carolina, and three bags from Georgia were received in the port of Liverpool. In 1784, eight bags of cotton were imported into Liverpool from the United States, and a blundering custom house official detained them, as he was confident they had not been grown in America. They were consigned to the firm of William Rathbone & Son, who for several months were unable to find buyers; but eventually disposed of them to the Strutts, of Derby. The cotton imported into England from America in 1883 was 3,222,000 bales of four hundred pounds each.—*Wade's Fiber.*

To disguise the odor of iodoform, Mr. P. E. Smith, of Pinckneyville, Ill., states (*Nat. Drug.*) that the best oil of lavender will almost if not entirely disguise the odor of iodoform.