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The Recognition of Genius and the Industrial Principle.

There has been a cheering and gradual advancement of sound principles during the past century. In the days of old, what were our forgers of iron and workers of brass, but the mere appendages of the State. The fighting and talking men alone were the recognised parts of it; eloquence and military skill were the true and almost the only passports to honor and distinction. The producing useful classes were good enough to be called *villians*, and their occupations *degrading* and *vile*. Like the fop in Henry IV., the mechanic could not pass by one of your blood and monied nobility but the latter had to use his pouncet-box, lest his patrician sensibilities should be shocked. The trade degraded the man. Some change has been made in the social advancement of the hard handed and brown-browed toilers, though, as a general thing the trade is still held to lower the man. The progress made is definitely marked in political advancement. In France, England, and the continent of Europe, the mechanics and artisans labored under the most unjust and exacting laws for the benefit of the nobility and favored monopolists. In France and England these unjust laws have been swept away, and so they have in many of the German States and Kingdoms. In the United states of America alone among all the nations of the world, the political rights of the mechanical classes are recognized. Here they stand on a level with every other class. It will yet come to this in other lands, and the great exhibition of the industry of all nations is one of "the signs of the times." The monopolies of trades and the mercantile monopolies—those odious enactments of the Stuarts—have crumbled away, and genius, enterprise, and industry, are now found to be the aristocrats which rule the world. Your jousts and tournaments; your royal military camps and gorgeous reviews, all dwindle down into utter insignificance when compared with the "Crystal Palace"—its external and internal triumphs. Men are now becoming something for what they can do and what they have done, not for what their fathers were. The aristocratic principle is the past participle, the industrial is the present. It is true, the great exhibition was designed by a Prince and is under the patronage of royalty, but the designing and patronizing of it, and the broad democracy of its whole management, are evident signs of the times, in the recognition of the aristocracy of genius and the industrial principle. That nation which most encourages and rewards genius and industry, understands its true interests best. The nation which produces most is the most powerful; this is well understood by all enlightened statesmen, hence we have the congress of industry now in London. How is it that the little kingdom of Great Britain, not so large as Virginia, exercises dominion over 200,000,000 of people situated in every quarter of the globe? By her genius and industry. Her Watts, her Arkwrights, her Cartwrights, Bells, Napiers, and Stephensons are the real levers of her power. In America industry has a wide scope—a broad sea and a fair wind. We have no guilds to make such a man as Sir Joshua Reynolds pay large fees, because he has not enrolled himself in the worshipful company of "painters and stainers." No Watt has to take refuge within the walls of a university to free himself from the feudal exactions of his fellow craftsmen. And what can we show for this industrial freedom? Sir H.L. Bulwer has said "no people in the world are so lightly taxed and powerfully protected," and let us add, produce so much of the essentially useful.

Much improvement has yet to be made in recognizing these principles in all their length and breadth. Moral worth is no doubt the first grand principle, but there is certainly a moral in recognising the right. Drones should be assigned their true position in society, and the cloth should not receive more homage than the man who produced it. By a full recognition of the claims of genius and industry, by all nations and all men, we expect yet to behold an era of inventions and discoveries, in comparison with which, the past great as it is shall be as the river Thames to the majestic Mississippi.

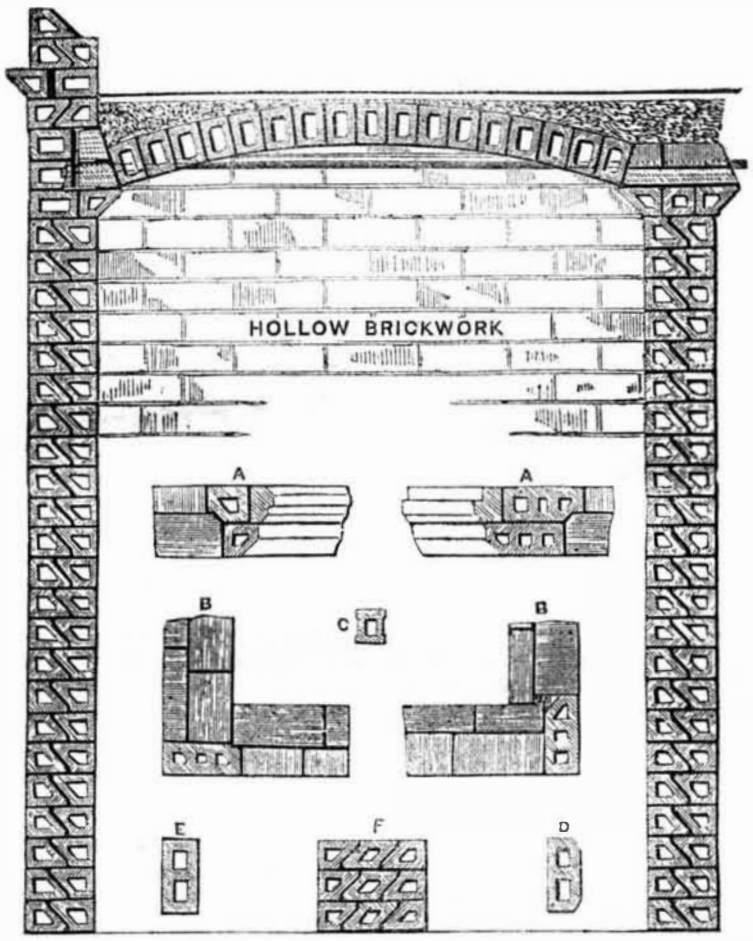
Pennsylvania Chrome Mines.

On the Octorara River, which separates Chester and Lancaster counties, there is Wood's chrome mine, about nine miles from Nottingham, which is about 170 feet deep, 200 feet long, and about 30 feet broad. This is considered to be the largest chrome mine in the world; and the researches and analyses of several chemists both of this country and Europe have ascertained that it ylelds the best ore, being nearly pure bi-chromate of iron, 93·384 is oxide of chrome. The mine has been worked about fifteen years, with a brief interruption.

The site of this mine is represented as offering—what, indeed, the whole region has long been—a rich field of interest to mineralogiets. It abounds in magnesian and chrome minerals, yielding also beautiful specimens of emerald, nickel, pennine, kammererite, marmolite, &c.

The magnesian ore is found in horizontal veins in serpentine, some of which have been followed into the side of the hill nearly 100 yards.

HOLLOW BRICKS FOR HOUSES.



The accompanying engravirg is a section of one of Prince Albert's model lodging houses erected in Hyde Park, London, and the model of which is in the "Great Exhibition."—Always endeavoring to present to our readers that which we consider new and useful, and as these houses had been spoken of in terms of the highest praise by some of our countrymen who had visited them, we thought it would be interesting and at the same time advance art by presenting this view of the building. The hollow brick is the subject of a patent by a Mr. Roberts, as noticed by us in Vol. 4.

A A is a plan of the window and door jambs on alternate courses; C is a partition of brick; E, square jamb and chimney brick; F is a section of a wall; D is a section of chimney brick.

The advantages derivable from the use of hollow bricks are dryness and warmth, as well as economy of construction—considerations which recommend them as a preventive of the evils that result from the absorption of moisture by eommon bricks and other porous material.

They are adapted for houses of moderate height, but are not so strong as the solid brick, but their strength may be adapted to circumstances, and they are much stronger weight for weight.

When used for partitions, or for roof and floor arches, they are fire proof, deaden sound more effectually, and are considerably lighter than solid brickwork.

By the form adopted in the patent hollow brickwork, a perfect bond, running longitudinally through the centre of the wall, is secured; all headers and vertical joints, passing through it, are avoided; internal and external strength is obtained; and every facility given for the fixing of floor-plates, and other timbers; whilst, by the parallel longitudinal cavities, ample security for dryness is afforded, and great facility presented for ventilation, as well as for the conveyance of artificial heat, and for the transmisson of bellwires, and pipes.

Hollow bricks may be made, with any good tile machine, in the same manner as ordinary draining pipes, and at about the same cost in proportion to the quantity of clay contained in them. They are more compressed, require less drying, and with much less fuel are better burned than ordinary bricks, even when waste heat, or that in the upper part of the kiln, only is used.

The saving in brickwork effected by the use of the patent bricks, when made at a fair price, is said to be from 25 to 30 per cent. on their cost, with a reduction of 25 per cent. on the quantity of mortar, and a similar saving on the labor, when done by accustomed workmen. The process of drying is much more rapid than in the common brickwork, and the smoothness of the internal surface of walls built with the patent bonded bricks renders plastering in many instances quite unnecessary, whereby a further saving is effected not only in the first cost, but also in the subsequent maintenance. If glazed on the outer face, as may be done with many clays, a superior finished surface is attainable without plaster.

Errors in Printing.

Some hundred years ago a number of the Professors of the Edinburgh University attempted to publish a work which should be a perfect specimen of typographical accuracy. Every precaution was taken to secure the desired result. Six experienced proof readers were employed, who devoted hours to the reading of each page, and after it was thought to be perfect, it was pasted up in the hall of the University, with a notification that £50 would be paid to any person who could discover an error. Each page was suffered to remain two weeks in the place where it had been pasted, and the Professors thought that they had attained the object for which they had been striving. When the work was issued, it was discovered that several errors had been committed—one of which was in the first line of the first page.

Cast Iron Buildings.---Crystal Palace.

A correspondent of the National Intelligencer claims for our country the original conception and first development of the principles on which the crystal palace has been constructed. He awards the laurel to Mr. James Bogardus, of this city, and says his invention embraces three distinct ideas—"First, the application of cast iron for the purpose; next, the bolting together of the huge pieces composing the frame of the building, so that they will not only withstand any probable strain in any direction, but also, if perchance any one piece should fall, the stability of the rest will not be disturbed; and, lastly, the construction of all the joints much after the fashion of the joints of the ordinary cast-iron ten-plate stove; so that, while allowing for the contraction and expansion of his metal under all possible changes of temperature, whether from the cold of winter or from an accidental fire, his buildings shall not be objectionable on account of exposing their interior to the elements."

He also says, Mr. Bogardus visited Europe in 1836, and went to England in the hope of being able to interest capitalists of that country in his scheme. The subject was urged by him there in vain for a year or two; the British writers on mechanics generally concurring in the belief that he had mistaken the capacities of his metal.

The statement is also made that the scientific principles upon which the construction of cast-iron houses is based were applied for the first time in England in the construction of the Crystal Palace, and that the houses which had previously been built there are all wrought-iron, as are all the iron buildings so far put up on the Continent, as well as those which have been sent from Europe to California. The latter are joined and stayed on the principles applied in the construction of the steam-boiler, and cannot withstand the action of fire, as if made of cast metal; while they cannot be put together in a day, or be taken apart without destroying them.

Mr. Bogardus, no doubt, is one of the most ingenious men, and best mechanics the world has ever produced. We make this assertion unreservedly in all its length and breadth, but then instead of conferring honor upon our country, by undervaluing the claims of the inventors of other nations, it takes away from our honor and lowers our dignity. Mr. Paxton, we believe, is the sole inventor of the Great Exhibition Building, and a man of splendid intellect and ability. Mr. Bogardus erects the best cast-iron houses, we believe, in the world, but neither Mr. Bogardus nor Paxton were the first to use cast-iron in buildings, and the principles of erecting and securing cast-iron structures were known and carried into execution before either of these two eminent men came upon the business stage.

The great principles of cast-iron houses were developed long ago in cast iron bridges. Mr. Frost, of Brooklyn, built a cast iron bridge in England, 30 years ago, and the Southwark Bridge, London, was built about 1815, we believe, and is principally of cast-iron. It is a splendid structure of three arches, and is one fourth of a mile long. As to the material "cast-iron" never having been used in structures in England, before it was applied in the Crystal Palace; this is all nonsense. A small cast-iron lighthouse was erected in the city of Glasgow, by Claud Girdwood, in 1824, and it may be there still. An account of it can be found in the Glasgow Mechanics' Magazine. The Crystal Palace will go down to posterity as a diadem to the genius of Paxton, and the cast-iron houses of the United States will be enduring monuments to the genius of our Bogardus.