

THE PROGRESS OF PHOTOGRAPHY—THE "INSTANTANEOUS PROCESS."

The following process (described in *Humphrey's Journal of Photography*, by L. M. Dornach) is said to be capable of taking the most exciting scenes of life with perfect distinctness:—"It is always desirable that the photographer should have at his command the means to take that limited class of pictures or views in which there are moving objects—such as street views, vessels in motion, &c. For this object, different methods, called 'instantaneous processes,' have been devised. The following is one that has never been published, and gives very good results:—The first thing to be done is to make a very sensitive alcoholic collodion, as follows:—To 4 fluid ounces of sulphuric ether (sp. gr. .720), add 4 fluid ounces of 95 per cent alcohol; in this, dissolve 140 grains of soluble cotton made in rather weak acids, so that it has a short structure, and, when all dissolved, add 12 fluid ounces more of alcohol which finishes the plain collodion. To 20 ounces of this collodion, add 2 fluid drachms of a saturated solution in water of iodide of potash and 30 grains of bromide of cadmium; allow the undissolved particles held in suspension to subside, and the collodion is complete. Use a neutral 45-grain nitrate of silver bath: develop with water, 16 ounces; protosulphate of iron, 1 ounce; acetic acid (No. 8), 1 ounce; alcohol, 1 ounce. Fix the picture, as usually done, with cyanide of potassium. When the picture has been thus far complete, it lacks the required degree of intensity for a negative, and the following method is resorted to for this object:—After it has been fixed and well-washed, pour over the plate a saturated solution of bi-chloride of mercury, after which wash the plate well; then pour over it some water in which 2 or 3 grains of iodide of potassium or iodide of ammonium (which is the best) have been added to the ounce, when the plate is to be again well-washed. If the intensity is not sufficient, this process is repeated until the required intensity is obtained."

\$1,000 REWARD—A FLYING MACHINE WANTED!

The undersigned believes that aerial locomotion is possible for man as well as bird, when substantially the same conditions and arrangements are observed. The above sum is offered for a practical flying machine adapted to individual locomotion, and will be paid on the 1st of September, 1861, to the inventor who, at that time, shall produce the best machine for flying. The undersigned calls the attention of inventors to the fact that all creatures that fly accomplish it by the exertion of mere animal force. Whatever advantages the inhabitants of the air may possess by nature over man may be more than matched by his ingenuity and skill. Let the inventors of the world no longer stumble on the threshold of the grandest fact in the progress of the race by listening to absurd theories. *Flying is possible for man!* This offer is open to the inventors of all nations.

THADDEUS HYATT.

New York, July 25, 1860.

[Mr. Hyatt is a well-known inventor of this city, and having one patent that is paying him a revenue of many thousand dollars a year, is undoubtedly responsible for the prize if the conditions are fulfilled.—Eps.]

Gas-works are increasing rapidly throughout every section of our country. In Natick, Mass., a company has been formed for the erection of gas-works in that place, and they are expected to be in operation by the 1st of November next. In Quincy, Mass., and Ellsworth, Maine, new gas-works are in the course of erection.

IMPROVED QUARTZ-CRUSHER.

Persons who witnessed the feverish excitement that followed the discovery of gold in California find it difficult to realize that the crushing of auriferous quartz is to be hereafter an established and permanent industry—as much so as weaving cloth or grinding grain—that, when the country becomes old and conservative, children will be reared in luxury on the products of their fathers' mines, which they will inherit, and the business will be transmitted from generation to generation for hundreds of years. And yet there can be no doubt that such is to be the case. Improvements, therefore, in quartz-

great power. The quartz, after being thus crushed, falls down between the rollers, *a* and *b*, one of which (*b*) is driven by a large gear wheel upon its shaft which meshes into a smaller driving wheel upon the shaft of the roller, *a*. This, of course, causes one roller to revolve more rapidly than the other, producing a rubbing, in addition to the crushing, operation upon the quartz. The extent of the motion of the jaw, *g*, is limited and regulated by the support, *u*, upon which the lever, *g*, rests; this support being pivoted at *v*, and rigidly fastened to the handle, *w*, so that it may be turned at a greater or less angle, when it is place by the pins, *y*.

In order to make the resistance of the machinery to the power more uniform, it is better to have two pairs of jaws (as represented in Fig. 2), so arranged that one of those which vibrate will be advancing towards its fellow while the other is opening, and vice versa.

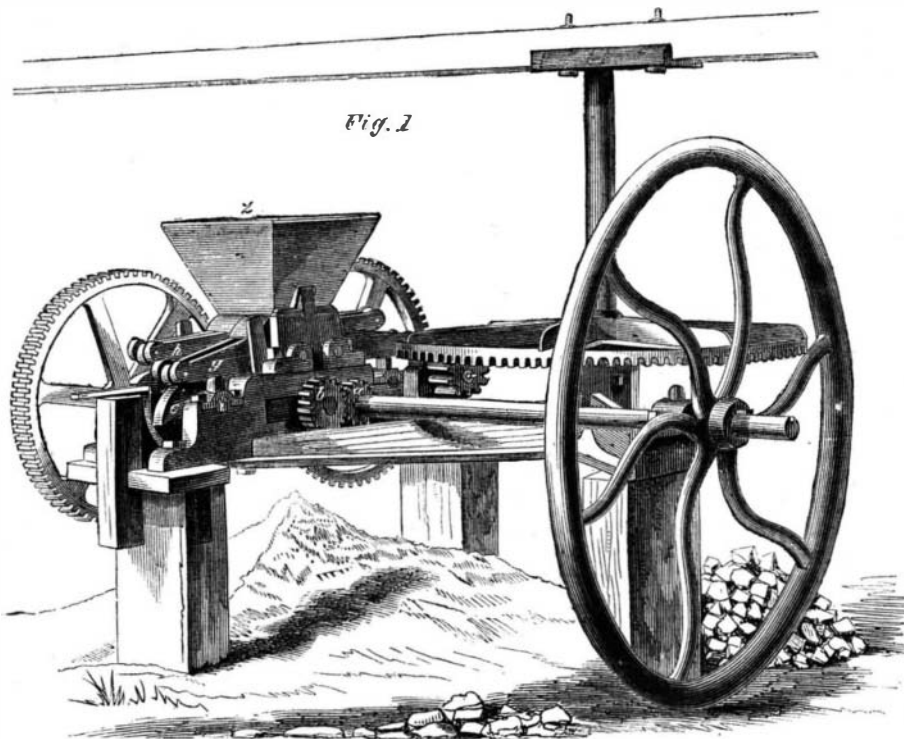
The opening, *s*, in the bottom of the hopper, for the escape of the broken stone, is not directly downward, but is curved backward from a vertical line, as shown in Fig. 2. It is also placed back of the pivot, *o*; and this arrangement, together with its curved form, operates to prevent the escape of large flat pieces of quartz until they are thoroughly broken. This is one of the essential features in this invention.

The stationary jaw, *g*, is arranged in grooved ways in the machine, so that it may be adjusted in a higher or lower position, and thus the size of the opening, *e*, may be regulated at pleasure.

The patent for this invention was procured (through the Scientific American Patent Agency) on June 26, 1860; and further information in relation to it may be obtained by addressing the inventor, F. N. Du Bois, at Chicago, Ill.

AN INGENIOUS PIECE OF WORK.

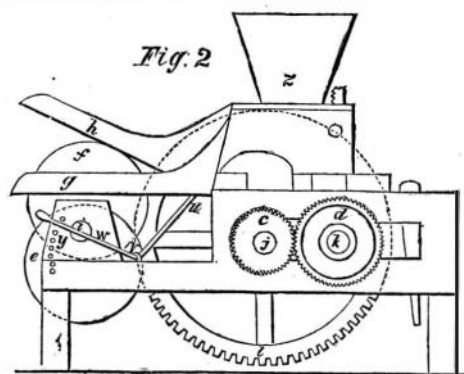
We find the following account of a remarkable instance of patient labor in a recent number of the *Philadelphia Ledger*:—Mr. Nicholson, a journeyman carpenter of this city, has just completed a facsimile in miniature of the National Washington Monument. The miniature contains 6,480 pieces of wood of American trees. It is built on a scale of one-eighth of an inch to a foot, and completed it stands 5 feet 8 $\frac{3}{4}$ inches high. The base is composed of 3,681 pieces, arranged as a tessellated pavement. The wood in this portion of the structure includes white oak, walnut, oak from the frigate *Alliance*, red cedar, and ash. The pantheon is composed of 308 pieces, consisting of live oak, walnut, cherry, red cedar, boxwood (from the Patterson farm at New Jersey), maple, mulberry, buttonwood, Pennsylvania ironwood, white oak, cherry, plum, and wood from the frigate *Alliance*. There are 28 antilcolumns of cherry and walnut, with thin caps of cherry. So on with the other portions of the edifice, the woods used including apple, beech, chesnut, cherry, ash, boxwood, buttonwood, elm, (treaty elm), gum, walnut, hackinck, locust, spruce, plain maple, bird-eye maple, paper mulberry, red cedar, poplar, white pine, yellow pine, white oak, live oak, mulberry, and wood from the charter oak, the treaty elm, wood from the frigate *Alliance*, the ship *Constitution*, wood from Fort Du Quesne. The star at the top of the obelisk is made of a piece of the old Independence bell. The whole is most neatly joined, over three years having been occupied with the work. As the model now stands, it carries out the same design in wood as is proposed to be carried out in marble by the erection of the National Washington Monument. If the SCIENTIFIC AMERICAN'S definition of ingenuity is right, viz., that it is "a very complicated combination of devices to produce a result that is not very useful," Mr. N.'s piece of work is very ingenious.



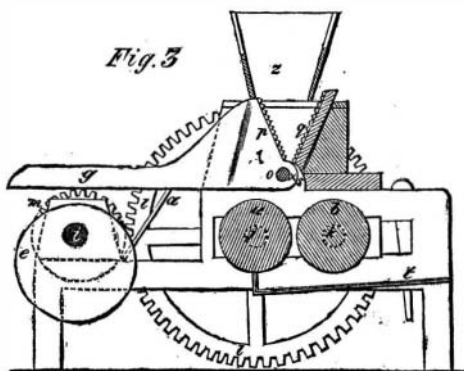
DU BOIS'S PATENT QUARTZ-CRUSHER.

crushing machinery are of as permanent value as those in any department of mechanism.

The invention here illustrated relates to that class of machines in which the rock is first crushed between jaws



and then ground between two rollers. The quartz rock is placed in the hopper, *z*, from which it falls down in suitable quantity between the jaws, *p* and *q*, one of



which (*q*) is stationary, while the other (*p*) has a vibratory motion around its pivot, *o*. This motion is produced by an eccentric, *e*, which revolves under the lever, *g*, raising it up and forcing the jaws together with