

two cuts at the same time, has been invented by Mr. T. F. Osburn, of Jerseyville, Ill. Two reciprocating saws work in a frame by means of slide rods driven by eccentric gearing. The piece of wood to be sawn is held in position by suitable holding and adjusting rods.

A new Coal Drill has been patented by Messrs. J. J. Rigney and William Hemingray, of Shamokin, Pa. It consists of a tapering and toothed cylinder, which is screwed into the coal by means of a wrench, and which carries the boring auger, the latter working by screw threads in a removable nut.

Mr. Cyrus Hunter, of Stonewall, Va., has invented a Steam Engine, in which the essential feature is a cylinder with closed heads and broken-out middle part, by which in reality two cylinders are formed, in which two separate pistons, with a single connecting rod and cross head, work. The valves are put in motion by the pistons, and are coupled together. The inventor claims a more perfect alignment by this arrangement, and freedom from the leakage and friction of the stuffing box of ordinary engines, none being required by the piston rod, as it does not pass through a cylinder head, partition, or abutment.

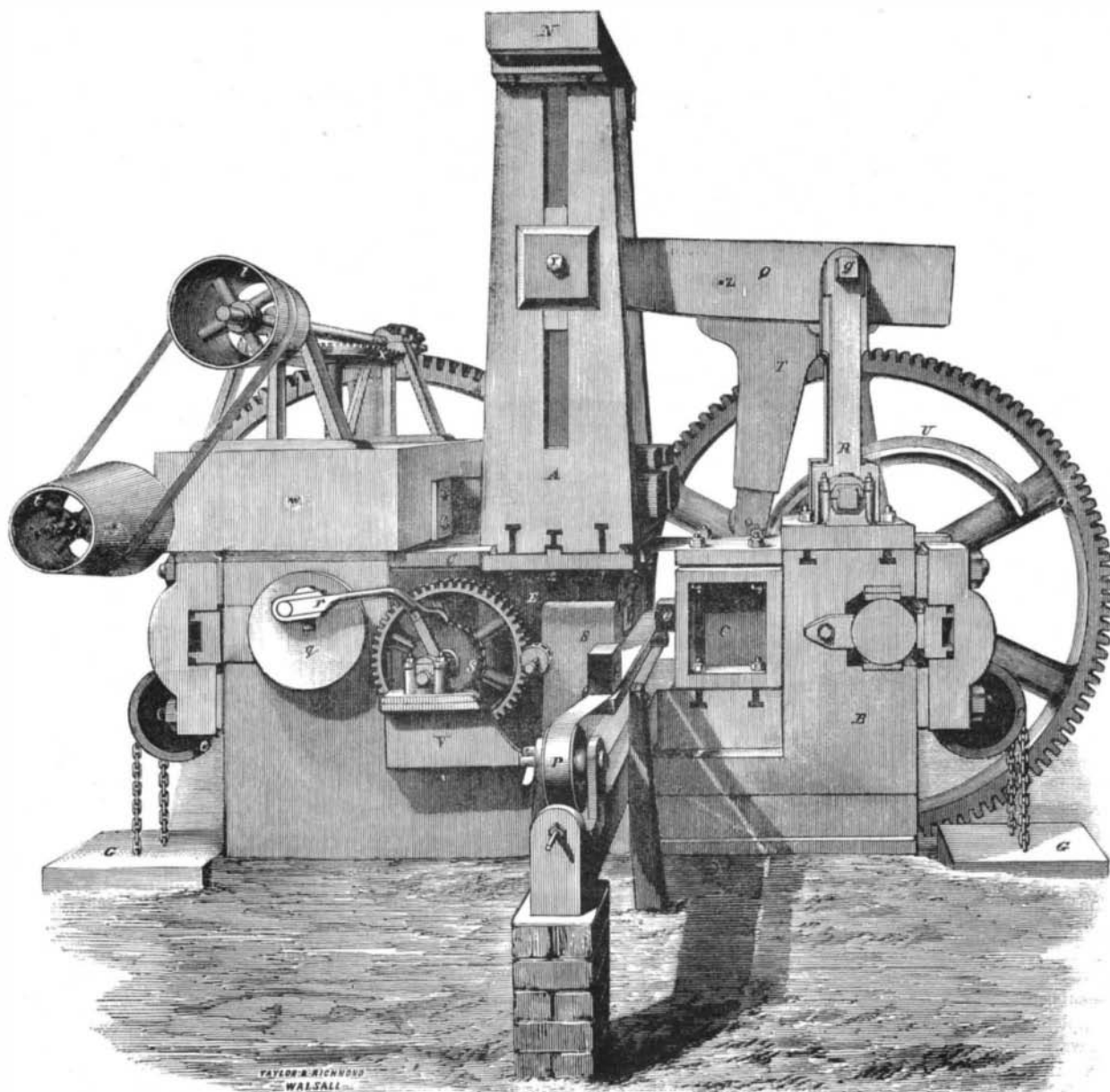
An improved Gas Lighter and Automatic Extinguisher, invented by Mr. G. S. Dunbar, of Pittsfield, Mass., is operated by an ingenious system of clock work, designed to work with regularity and effectiveness.

BROWNHILL'S BRICK MACHINE.

The machine shown in the accompanying illustration is the invention of Mr. R. W. Brownhill, of Walsall, England. Its most striking feature is the large margin of strength allowed in its construction, the dimensions of all working parts being so increased as to provide against great or unusual strain. Having thus provided for strength and durability, the inventor claims that the machine is capable of operating upon all kinds of brick earth in any condition, rough, ground, disintegrated, wet, dry, or semi-dry. Of course the quality of the bricks made ultimately depends upon the character of the material used; but, so far as the machine itself is concerned, the avoidance of the breakages and interruptions, so frequent with machinery of this class, is an essential point gained.

Referring to the engraving, B is a strong cast iron frame, with moulding box, S, cast on it. C C are slide boxes to guide the pistons, e e, which form two sides of the brick. The pistons are fitted with strong friction rollers. The pulleys, C e, and the chains and weights, G G, are to keep the pistons close to the cams cast upon the main shafts during their irregular motion. The hammer to drive the clay into the mould, S, works on the slides, A A, connected at the top by the cap, N; it falls during every revolution, and supplies and consolidates the clay through the hopper, E, into the moulding box, S, and between the piston pallets, e e. The hammer is operated by the helve, Q T, which works upon a reeler, R, turning upon a gudgeon, g. At the lower end of the helve, T, is fitted a friction roller to work upon the spiral, U, which is connected to the largespur wheel. By this means the hammer is raised and then dropped with the force of its own weight. The pallets, e e, deliver the bricks upon the band, P, which is worked by a small band pulley lifted at the moment when each brick comes out of the mould.

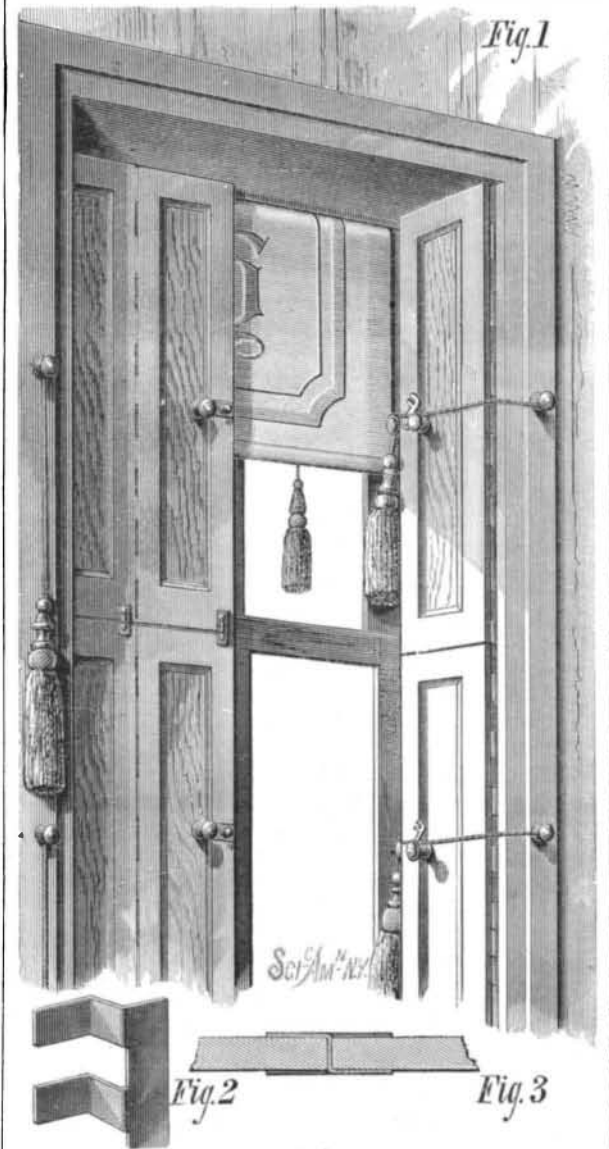
The operation of the machine is as follows: Clay is fed into the hopper, W. The screw revolving at the bottom of this hopper carries an adjustable quantity of clay into the hopper proper, E. Under this hopper the distance is regulated between the pallets for a regular quantity of feed, and it in reality becomes the mould. Just at the moment the pistons are in position the hammer falls, and forces the material into the mould. The motion of the cams causes one piston to retire while the other advances, and presses the brick. The retiring piston then entirely leaves the mould, and the advancing piston forces the brick out of the mould, to be taken away by the band before described, and thus completes one brick. The machine is adjustable in all its motions.



THE BROWNHILL BRICK-MAKING MACHINE.

IMPROVED PAPER SHUTTER FOR WINDOWS.

Our engraving illustrates a new adaptation of paper to building purposes, the same being the manufacture of the



PAPER SHUTTER FOR WINDOWS.

material into inside blinds or shutters for windows. A shutter composed of paper is claimed not to be so liable to be affected by shrinkage and expansion, and therefore is free from the disadvantages of binding or open joints. It is lighter and cheaper than wood, and it may be attached

where wooden shutters cannot be. It admits of every variety of painting or ornamentation in set patterns ready for the trade, renewable at any time in similar manner to wall paper.

The shutter parts are composed of panels or sections united by flexible joint hinges of cloth, as shown in Figs. 2 and 3. The strip of fabric is cut as shown with tongues, two strips being glued one on each side of the same section, and the tongues of each strip lapping on the opposite sides of the adjacent section. These hinge strips extend from top to bottom, as shown in Fig. 1. The panels thus joined are similarly hinged to jamb pieces for attachment to the jambs, which pieces are wide or narrow to suit different styles of windows, and are constructed with reference to the folding of the shutters. At the point of junction of the shutter parts, in the center line of the window, they are provided with rabbets to close the joint and shut out the view, and to prevent the shutter from springing or warping. The jamb pieces can also be applied upon the surface of the architrave, where the jamb is too shallow to receive the wooden shutter now in use. This is claimed to be an important advantage, as it permits of the application of inside shutters to any house without alteration of the windows.

Patented January 15, 1878. For further information address Messrs. Hipkins & Meek, Bellaire, Belmont county, Ohio.

Japanese Textile Fabrics.

Calling attention to a fine display of Japanese woven and embroidered stuffs—the spoils of a temple and palace in the center of Dia-Nippon—exposed for sale in this city, Mr. Frederic Vors gives, in the *Tribune*, an interesting account of this branch of ancient Japanese manufacture. He says:

“Numerous articles have been written about the fictile, metal, and enamel productions of Japan, but little, until now, has been said of the proficiency of the Japanese as weavers and manufacturers of textile fabrics. For years past we have been familiar with Japanese silks, such as were offered for sale in drygoods stores, especially made for the European and American markets; but what has been excessively scarce and almost unknown until now are the woven stuffs, brocaded dresses, and embroideries that were worn by the princes and daimios of a period at which the most remarkable manufactures were made, like Sevres porcelain, only for presentation pieces, or for the use of crowned heads.

“For the artist and the collector the study of such stuffs affords an unusual interest, for it shows even to better advantage that subtle quality of ornamentation which makes Oriental art so interesting. The first impression received on seeing these superb textures is one of exquisite delight at the perfect harmony of design and color, but, as the eye wanders over the stuff, new details appear in every spot.

The color of the ground-work changes, and so does that of the ornamental pattern, but on several yards of stuff the same juxtaposition of color between the ground and the ornament will not be repeated, thus affording great interest to the observer. The robes of the princes were of large dimensions—which seems singular when we think how low in stature the Japanese race is—and cut square, for their artistic sensibility is so acute that they could not have the heart to cut ‘bias’ through a beautiful pattern. This detail is not without interest, for we can take the dresses apart and use the wide bands of stuffs for decorative purposes. The lining used for each dress is always in perfect harmony with the outside hues of the garment, which offer the most striking variety even in one single piece. The dresses of musicians, jesters, priests, and lords, though cut in the same shape, are ornamented with suggestions of the occupations of the wearers. Some are so heavy with gold brocade that their weight is nearly sufficient to bear a man down, but in all cases that most exquisite harmony of color, which is such a relief to us after all the dogmatic art we have suffered under so long, is carried out in the most delightful