Hotchkiss & Buss,

Brick Machine.

No. 51,050. Patented Nov. 21, 1865.

Fig. 1.

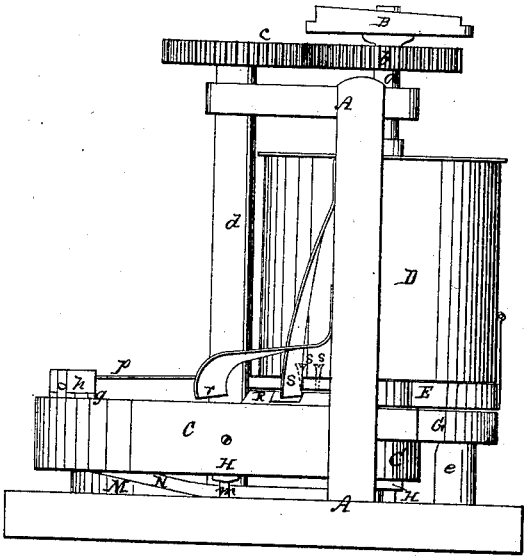


Fig. 2.

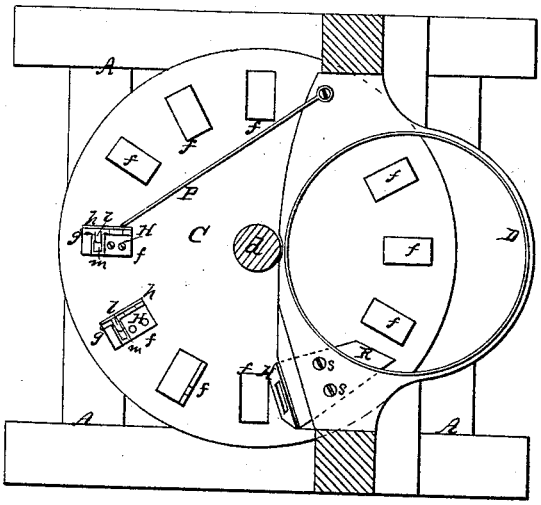


Fig. 3.

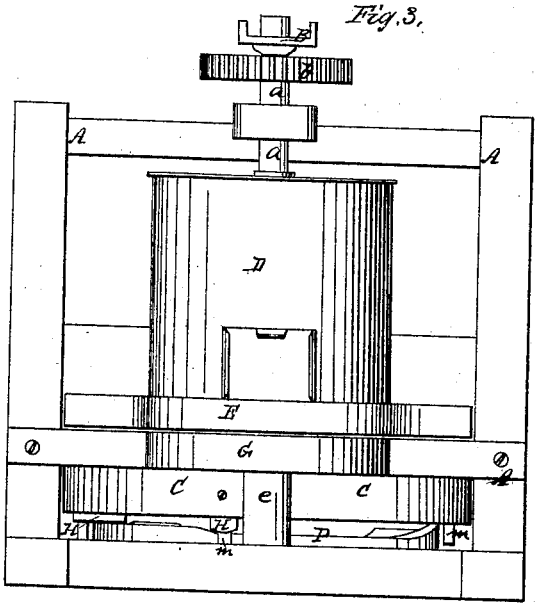


Fig. 4.

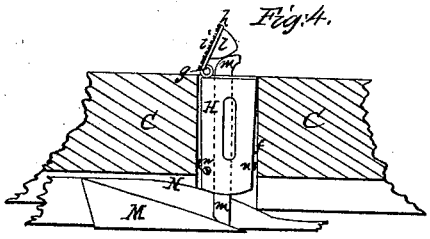
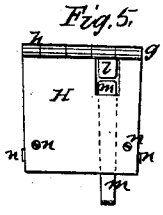


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES HOTCHKISS AND EZRA BUSS, OF SPRINGFIELD, OHIO.

IMPROVED BRICK-MACHINE.

Specification forming part of Letters Patent No. **51,050**, dated November 21, 1865.

To all whom it may concern:

Be it known that we, JAMES HOTCHKISS and EZRA BUSS, of Springfield, in the county of Clarke and State of Ohio, have invented a new and Improved Brick-Machine; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a side elevation of our improved brick-machine; Fig. 2, a plan thereof, the pug-mill being removed; Fig. 3, a rear elevation thereof; Fig. 4, a transverse vertical section of one of the molds and followers of the mold-wheel; Fig. 5, a side elevation of one of the mold-followers.

Like letters designate corresponding parts in all of the figures.

We employ a horizontal mold-wheel, C, revolving in a suitable frame, A, on a vertical shaft, *d*, which receives its motion by two gear-wheels, *b c*, from a power-lever, B, attached to the upper end of the shaft *a* of the screw of a mud or pug mill, D.

The molds *f f* of the mold-wheel C are arranged concentrically in the wheel, near its periphery, substantially as indicated in Fig. 2, each in turn passing under the pug-mill, where it is filled with the clay, which is tempered and forced down into the molds by screw or spiral wings or arms on the pug-shaft *a*. The thickness of the bricks is regulated by a follower, H, in each mold, having a free up-and-down movement therein within the necessary limits, which are controlled by stationary concentric cams under the mold-wheel, over which cams the lower projecting ends of the followers move.

The first feature of our improvements consists in lowering the followers H H in the molds while passing under the pug-mill, so as to admit more clay than sufficient to fill the molds to the proper thickness for the bricks, and then raising the followers again to the proper height to make the right thickness of bricks just before passing out from under the pug-mill. The depressed cam P, Fig. 3, shows where and how this lowering and raising of the followers may be effected. The object of this lowering of the followers under the pug-mill is to introduce a surplus of clay, and then forcing it out again by raising the followers while under the powerful pressure of the weight of the clay in the pug-mill and of the downward course of the pug-screw, thus to fill every part of the molds compact and solid, thereby making very superior bricks. The surplus clay is also thereby kept in the pug-mill and none wasted nor carried out of the machine. We can also use much stiffer clay in making bricks than we otherwise could, so that the bricks can be immediately handled without danger of injury.

The second feature of our improvements consists in the employment of an adjustable yielding and removable plate, R, (generally and preferably made of steel,) situated over the molds just as they leave the pug-mill, as most clearly shown in Fig. 2. This plate projects a little into the pug-mill, where its edge is sharp, and cleaves off the surplus clay from the molds, and flattens, smooths, and presses the upper surface of the bricks in the molds. It is situated in a stationary part of the machine, and is adjustable down upon the mold-wheel by set-screws *s s* or their equivalent. It is readily drawn out backward; and this is done at the close of every day's work, so that the plate can be cleaned and oiled, ready for use the next day; otherwise the clay would dry on it, causing much inconvenience and making rough bricks at first starting the machine each day. The plate would also become injured by rust. The plate is held into its place by a strong spring, S, Fig. 1, which ordinarily keeps it immovable; but should a stone or other obstruction strike the plate, the spring would yield, and no harm would result therefrom.

The third feature of improvement consists in the employment of a spring or elastic scraper, *r*, situated over the molds in the position just after they pass from under the striking-plate R. This scraper serves the double purpose of taking off the swell or bulge of the bricks after they are relieved of the pressure of the pug-mill and striking-plate; and to keep the face of the mold-wheel clear of any surplus clay that may collect upon it, it is so situated as to cast the surplus clay off from the periphery of the mold-wheel. As soon as the molds pass from under the scraper *r* the followers are

raised by the cam N underneath, so as to lift the bricks entirely out of the molds.

Our next improvement consists in the employment of set-screws *n n*, Figs. 4 and 5, or their equivalent, in the several sides of the followers, near the bottom thereof, whereby not only are the followers made to fit accurately in the molds, but their angular position therein, whether varying from the horizontal or not, is properly adjusted. This is of especial value when the followers or molds become worn more or less, and it enables us in all cases to make the faces of the bricks precisely at right angles to their sides. The lower ends of the followers are made a little tapering, or smaller than the molds, so as to secure the full benefit of these adjustments. There may be a vertical slot in the outer side of each follower, in which the end of a screw may enter from the periphery of the mold-wheel, to keep the followers from ever accidentally coming out of their molds.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. After lowering the followers while the molds are passing under the pug-mill, so as to receive a surplus of clay in the molds, the raising of the followers so as to expel the surplus clay while still under the pug-mill, substantially as and for the purpose herein specified.

2. The adjustable yielding and removable striking and pressure plate R, arranged and operating substantially in the manner herein set forth.

3. The spring-scraper *r*, as described, and for the purposes herein set forth.

4. The set-screws *n n*, or their equivalent, in the sides of the followers or molds, substantially as and for the purposes herein specified.

The above specification of our improved brick-machine signed by us this 17th day of June, 1865.

JAMES HOTCHKISS.
EZRA BUSS.

Witnesses:
HENRY SMITH,
AARON HINNEY.