

H. HUGHES.
Brick-Machines.

No. 138,651.

Patented May 6, 1873.

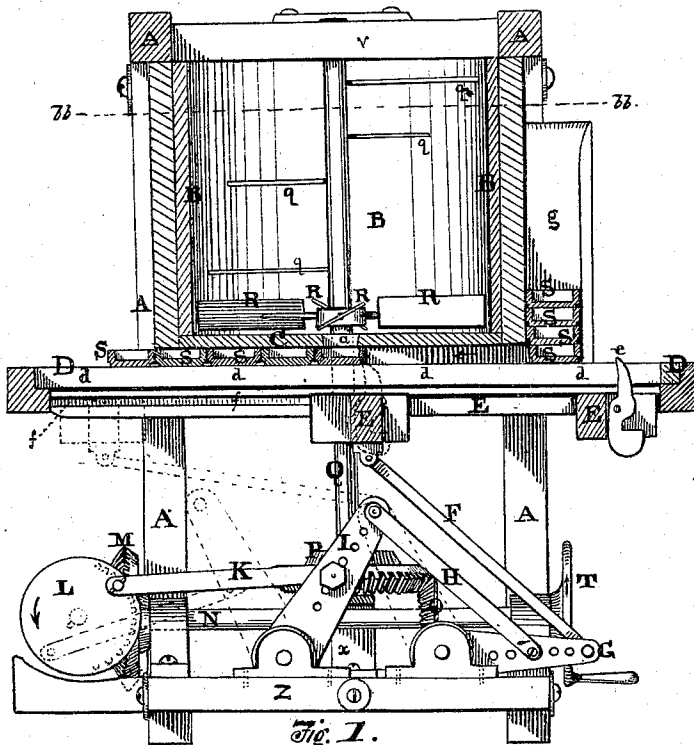


Fig. 1.
(The upper half being a sec. thro' a-a. fig. 2.)

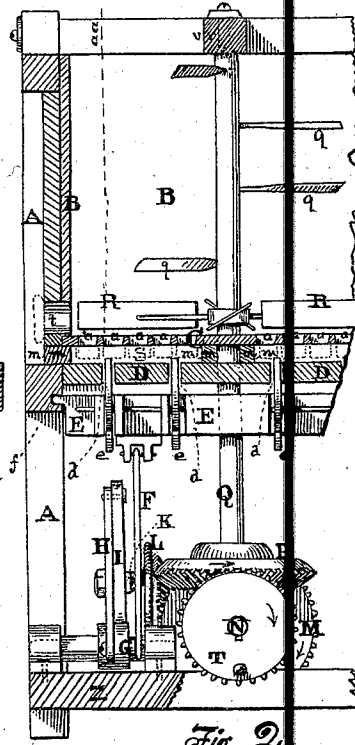


Fig. 2.
Genl. Vertical Section, end view
thro' centre (a-a. fig. 1)

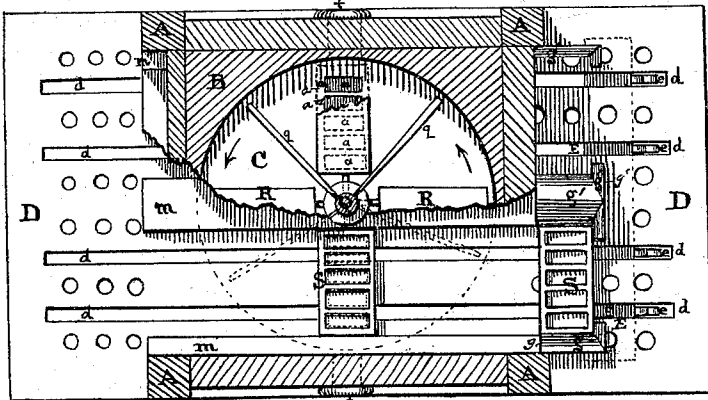


Fig. 3.
(Being a horizontal sec. thro' b-b. fig. 1.
part of "Recess" removed to show Platform D.)

Witnesses
John Carter
Thomas Brown

Henry Hughes, Inventor
by Edmund Harlow
his Atty. in Fact.

UNITED STATES PATENT OFFICE.

HENRY HUGHES, OF PEKIN, ILLINOIS, ASSIGNOR OF ONE-THIRD HIS RIGHT
TO WILLIAM S. KELLOGG, OF SAME PLACE.

IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. **138,651**, dated May 6, 1873; application filed
September 23, 1872.

To all whom it may concern:

Be it known that I, HENRY HUGHES, of Pekin, in the county of Tazewell and in the State of Illinois, have invented an Improvement in Brick-Making Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a sectional elevation of receiver for clay, with view of the working apparatus below; Fig. 2, a vertical end view, partly sectional; Fig. 3, horizontal section of half of the receiver B, the other half being removed to exhibit the platform for the molds.

This invention relates to the reciprocating frame of a brick-machine, having dogs or claws constructed and arranged to feed the molds automatically from two or more chambers to the receiver, in combination with the longitudinal slots of a platform; also, to the operating mechanism for accomplishing the above, as will be hereinafter more fully explained.

One of the forms in which I construct this machine is as follows: A A A A represent a stout square frame, in the upper part of which is the clay-receiver B—a circular receptacle—which rests upon the bottom C, which, in turn, rests upon long blocks *m m m*, which form the sides of the passages along which the brick-molds are propelled. Through this bottom piece C are cut several passages, *a a*, &c., for clay, which lie in a line across the machine on either side of the shaft Q. Below the blocks *m m m*, and on which they rest, is a horizontal platform, D D, on which the molds slide, and which projects for some distance on each side or end of the frame A A A A, there being a space between this platform and the bottom of the receiver B of a little more than the thickness of the brick-molds S S, &c. Four parallel slots, *d d d d*, are cut through the platform, which run from end to end, nearly, of the same, there being two slots on each side of the shaft Q. In these slots pass back and forth claws or dogs *e e e e*, which project a short distance above the surface of the platform, and are pivoted or otherwise attached to the oscillating frame E E, which is supported in a groove, *f*, beneath the platform

in either side of the machine. Vertical slots in the frame E E retain the claws *e*, which are each pivoted above their center of gravity so as to maintain the hook of the claw above the platform-surface when not otherwise depressed. These, or each pair of these, claws on a side of the machine catch the rear end of the lowest of a pile of molds, S S, &c., in the chamber *g*, when the oscillating frame E E passes inward and carries one mold (one on each side of the shaft Q) to a spot directly under the clay-passages *a a*, &c., and then return for another. The oscillating frame E E is actuated by a rod, F, pivoted to the under side of the same, and having the remoter end attached to an arm, G, which is set on a horizontal axle pivoted transversely of the lower platform Z. This arm G is, in turn, connected, by a rod, H, with a second arm, I, which oscillates upon a similarly-pivoted axle, the middle portion of which arm is connected, by a rod, K, with a bevel or miter wheel, L, which engages with a similar cogged wheel, M, fastened upon the outer end of a horizontal shaft, N, running lengthwise of the machine. This shaft carries a second bevel or miter wheel, O, which engages with a similar horizontal wheel, P, on the central vertical stirrer and presser shaft Q, and terminates in a pulley or wheel, T, to which the motive power is attached. Several holes for the pin for adjustment of motion are pierced through the arms G and I. The stirring and pressing shaft Q, in the center of the machine, is pivoted in the step *x* on the lower platform Z, and above in the cross-piece *y* at top of the frame A, carries horizontal radial stirrers or cutters *q q q q* on its upper part, within the receiver B, and below these, very near to the bottom C, four or more radial inclined arms or pressers, R R R R, consisting of iron or other strong material, shaped like a blade, and inclined at an angle which will best press the clay through the passages *a a*, &c., and are so arranged that they pass over and press the clay downward into the molds only at the time a mold is situated thereunder. The shaft terminates below in a bevel or miter wheel, P, which, being engaged with another on the shaft N, receives its rotary motion.

The operation of this machine is as follows:

The clay is thrown into the receiver B, where it is thoroughly sliced and mixed and pressed downward by the inclined blades R revolving with the shaft Q through the passages *a a*, &c., which are made smaller than the superficial area of the intended brick and its mold S S, &c. One mold, containing brick-recesses similar in number to the openings *a a*, &c., lies beneath each set of openings, one on either side of the shaft Q, and are there deposited successively (on being filled) from the supply-chambers *g g*, in which they are piled one upon the other ready for removal by the claws *e e e e*, which move along the slots *d d d d* in the platform D D, and, passing beneath the molds S S toward the outer end of the machine, by bending toward the back part of their inclosing slots, re-erect themselves when the outside edge of the mold is reached. One mold is taken simultaneously from each pile of molds on either chamber *g g* by the claws which are devoted to that chamber and pile of molds, and propelled along the platform D D between the guides *m m m* to the point under the passages *a a*, &c., at the same time that one of the inclined presser blades R R R R reaches said opening and fills the mold; and on the passage of another blade, R, thereover the claws *e e*, &c., propel another mold to the same spot, displacing the first one, each, in turn, being filled and propelled to the other end of the platform, the mold last deposited shoving its predecessors before it until they arrive at the opening of the machine, where they are removed by hand.

The operation of the oscillating frame, or means of actuating it, have been already described under that head, as well as that of the stirrer-shaft Q.

The area of the clay-passages *a a*, &c., are made smaller than that of the brick-mold below in order that the clay may pass at once to the bottom of the mold without removing the coating of sand from the sides of the same, but is afterward, by the continued pressure of the blades R R, &c., expanded horizontally on all sides without disturbing the necessary coating of sand on interior of the mold, so requisite for the proper delivery of the well-shaped brick.

What I claim as my invention is—

1. The reciprocating frame E, provided with the dogs or claws *e*, constructed and arranged to feed the molds S automatically from two or more chambers, *g*, to the receiver B, in combination with the longitudinal slots *d* of the platform D, the whole constructed so as to operate substantially as set forth.

2. The actuating-rod F, crank G, connecting-rod H, arm I, rod K, beveled gear-wheels L M, shaft N, driving-wheel T, and beveled gear-wheels P O, all combined and arranged to operate the stirring-shaft Q and frame E, substantially as shown and set forth.

In testimony that I claim the foregoing improvement in brick-machines I have hereunto set my hand this 7th day of September, 1872.

HENRY HUGHES.

Witnesses:

THOMAS KERR,
LEHHEUR FRAZELLAH.