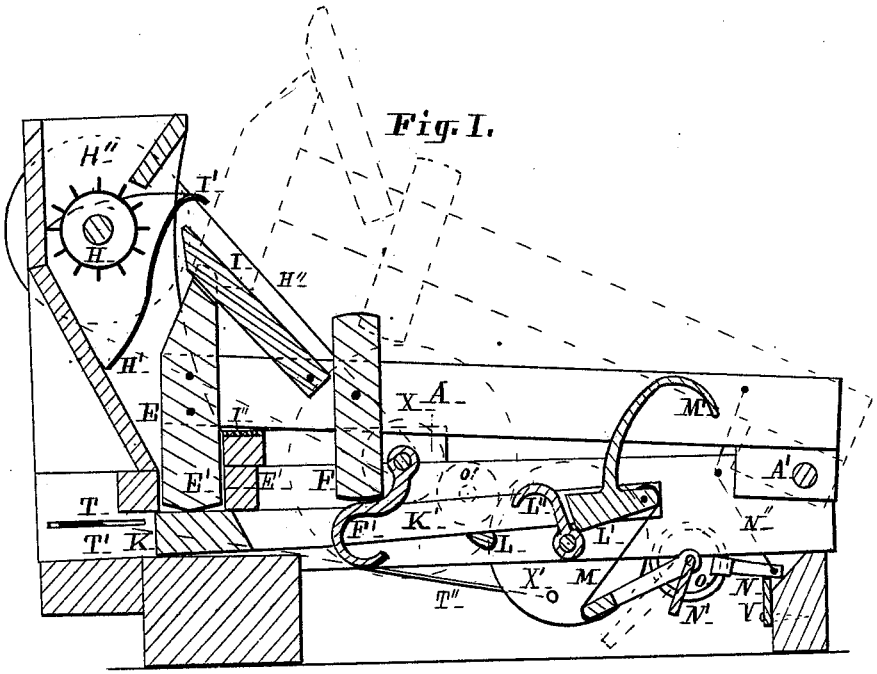
J. G. & H. T. HENDERSON & M. RHODES.
Brick-Machine.

No. 196,118. Patented Oct. 16, 1877.

Fig. 1.

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# UNITED STATES PATENT OFFICE.

JOHN G. HENDERSON, HENRY T. HENDERSON, AND MILTON RHODES, OF KEOKUK, IOWA, ASSIGNORS TO H. T. HENDERSON AND MILTON RHODES.

## IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. **196,118**, dated October 16, 1877; application filed January 23, 1875.

*To all whom it may concern:*

Be it known that we, JOHN G. HENDERSON, HENRY T. HENDERSON, and MILTON RHODES, of Keokuk, Lee county, Iowa, have invented an Improvement in Brick-Machines, of which the following is a specification:

This invention consists in a machine for making brick by the beating process, and it is made substantially as hereinafter set forth, referring to the accompanying drawings, in which—

Figure 1 is a vertical section of the machine.

The beam A is made of two bars. These bear beater E between them at one end, and diverge to the other, where they are pivoted on shaft A′, so that their distance apart may brace it sidewise and guide the fall of beater E to strike the mold E′ exactly. This beam bears an abutting part, F, against which a cam, F′, turns to lift and let it fall to drop the beater into the mold, to compact and beat the clay in it into a solid brick. The clay is fed as dry as will compact and adhere together suitably into a solid brick, so as to hack up at once.

The clay is fed into the hopper over the feed-roller H, which, having ribs on its surface, turns it out gradually by turning into the apron or drop H′ below. This is hung on the shaft of roller H, so that it will tilt the clay into the mold E′. It has a projecting lip, I′, at the top, under which the end of latch-bar I catches to tilt the apron. The bar I is pivoted at its lower end to beam A, and its upper end rests on beater-head E, so as to lift as the lever falls and drop under the lip I′, so when the beam rises it will push up this lip and tilt the box to discharge the clay into the mold. When the mold is full enough the beater does not descend low enough for this latch to catch under the lip I′, and the further discharge into the mold is stopped while the beating is repeated one or several times to complete compacting the bricks; and when the brick is discharged the beater goes low enough into the mold to cause the latch to act again. The roller H is turned by a belt, H″, from the shaft which bears cam F′, so that the beater and it will act together. The beater and feeder act alternately once or several times each, to form and compact the brick, the beater acting alone to finish it solidly.

The bottom of mold E is formed of a sliding part, K, onthe end of the reciprocating bar K′, and this is drawn back for discharging the brick. The bar bears a fixed abutment, L, and a pivoted one, L′, and a cam, L″, turns against them to move the bar back and forth. The shaft that bears this cam turns half as fast as that of cam F′ by means of gearing X X′ O′. When bar K′ is drawn back the brick can be pushed down out of the mold by the descent of beater E, and then cam L″ strikes the abutment L, and pushes the bar with the bottom K forward under the mold. The abutment L′ is pivoted to bar K′, and is turned back out of the way of cam L″ till the brick is finished, when it is turned over into the position shown in the drawings, so that cam L″ will strike its end and push it with the bar and bottom K back to let the brick be discharged.

The abutment L′ is turned back from the position shown in drawings by the cam L″ striking strap M, attached to its end of the abutment and arranged to tilt it backward. The abutment is turned into the position shown again by an arm, N′, from a shaft striking a long curved arm, M′, attached to the abutment, and, as it turns, lifting it till the abutment falls over.

The arm N′ is mounted on and turned by a shaft. This has a wheel, O, on its end, with a rim projecting around its side. The lever N has a clutch at one end engaging with this rim, so that when the lever is raised the wheel is turned, and when the lever is dropped it slides down on the rim without turning the wheel. The other end of the lever is connected by a cord with the beam A, so that it is lifted with that and falls with it. Thus the turning of the wheel goes on at each lift of the beater E till the arm N′ completes a revolution, when it turns the abutment L′ forward to cause discharge of the brick. The distance of turning the wheel at each stroke is regulated by a stop, V, which is pivoted, so it may be raised or lowered. This is arranged so that the number of beats to each brick can be regulated closely. When the bottom K is drawn back the brick is forced down in its place, and then

it is pushed forward onto table T′ under a cutter, T, which shaves it off to uniform thickness and surface. The cutter is mounted on the end of suitable connecting-rods T″ from a moving part, X′, of the machine, so as to be reciprocated to shave; or it may be merely stationary.

Various modifications may be made of the parts and arrangements.

We claim—

1. The combination of the tilting apron H′ or equivalent, with mechanism for operating, and the clay-separating wheel H, acting separately, to form a double drop, substantially as set forth.

2. The combination of the pawl I and the pivoted beater-beam A with the tilting apron H′, substantially as set forth.

3. The combination of wheels X X′, having arms F′ L″ with the beater E and the discharger K, acting together, substantially as set forth.

4. The combination of wheel O, lever N, beam A, and stop V, substantially as and for the purpose set forth.

5. The combination, in a brick-machine, of a clay-separator, the mold E′, the beater E, and the pivoted beam A, substantially as set forth.

6. The combination of the beater E with an automatic brick-discharger, constructed and geared to act with it intermittently, substantially as set forth.

7. The combination of the beater E, an automatic brick-discharger, and a driving mechanism constructed to regulate variously the relative numbers of the strokes of the beater and discharger, so as to give different numbers of strokes of beater to the brick, substantially as set forth.

8. The combination of the hammer E, fixed mold E′, the sliding bottom K, a clay-feed, and a clay-holder, substantially as set forth.

9. The process of forming a brick by feeding clay into a mold at intervals, compressing it therein by repeated blows from a hammer, and passing it under a cutter to remove the surplus clay, substantially as set forth.

10. The combination of a brick-mold, a beater, and a cutter to remove surplus clay from the brick, with mechanism constructed to operate the beater more than once to each brick, substantially as set forth.

11. The combination of a clay-feeder, a brick-mold, and a beater with mechanism constructed to operate the feeder and beater alternately and then the beater alone more than once to finish the brick, substantially as set forth.

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