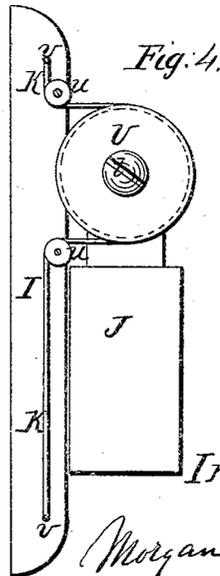
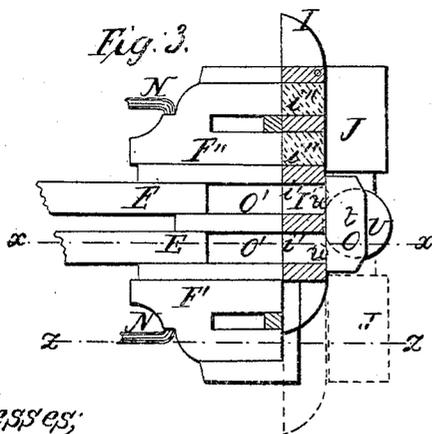
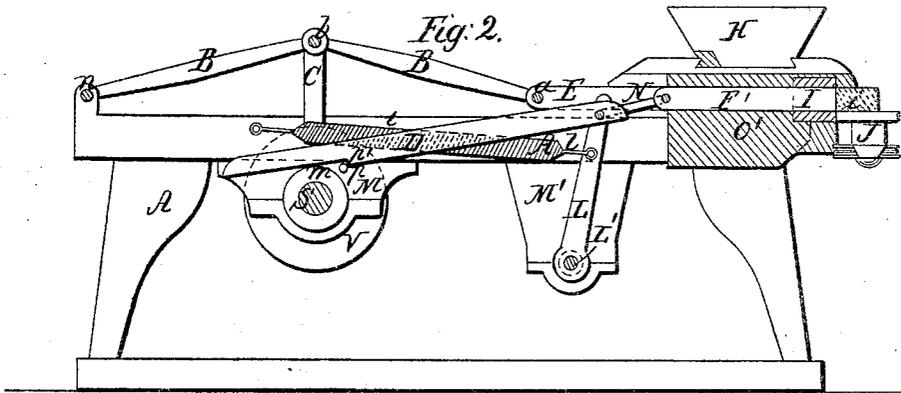
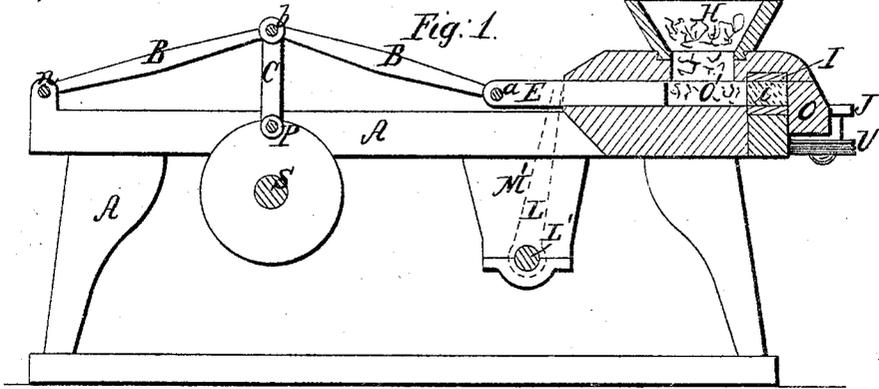


M. Chittenden,

Brick Machine.

No. 50,333.

Patented Oct. 10, 1865.



Witnesses;
J. W. Coombs
G. W. Reed

Inventor;
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UNITED STATES PATENT OFFICE.

MORGAN CHITTENDEN, OF DANBURY, CONNECTICUT.

IMPROVED MACHINE FOR PRESSING BRICK.

Specification forming part of Letters Patent No. 50,333, dated October 10, 1865; antedated September 25, 1865.

To all whom it may concern:

Be it known that I, MORGAN CHITTENDEN, of Danbury, in the county of Fairfield and State of Connecticut, have invented a new and Improved Machine for Pressing Brick; and I do hereby declare the following to be a full, clear, and accurate description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal vertical section of the machine in the plane indicated by the line *x* in Fig. 3. Fig. 2 is a similar section in the plane indicated by the line *x* in Fig. 3. Fig. 3 exhibits a horizontal section of the mold-box, the pressers, the brick-dischargers, and a plan of the semi-rotating receiving-table upon which the bricks are delivered. Fig. 4 is a plan of the semi-rotating receiving-table and the mold-box.

Similar letters of reference indicate like parts in the various figures.

This machine is provided at one end of a horizontal frame with a transversely-sliding mold-box containing two distinct sets of molds, into which the clay is pressed and formed alternately into bricks by the operation of a single set of horizontally-reciprocating pressing-plungers actuated by a toggle which is sustained by a fixed bearing at the opposite end of the frame of the machine to that at which the sliding mold-box is arranged, and which is operated by a crank on a shaft arranged near the middle of the length of the machine. Operating in combination with the sliding mold-box there are two sets of horizontally-reciprocating discharging-plungers, arranged one set on each side of the pressing-plungers, and actuated by means of a tripping-cam on the crank-shaft and retracting-springs in such manner as to discharge the bricks from the two sets of molds alternately onto a semi-rotating receiving-table, which is brought to positions to receive the bricks alternately from one and the other set of molds.

To enable others skilled in the art to make and use my invention, I will proceed to describe it, referring to the drawings.

A is the horizontal frame, by or upon which the several working parts of the machine are supported, having arranged upon it at one end

the transversely-sliding mold-box I, containing the molds *i' i'* and *i'' i''*. These molds may be considered as consisting of two sets, each set corresponding in number with the horizontally-reciprocating pressing-plungers E E, by which the clay is pressed into each set in turn to form the bricks, the said plungers working lengthwise of the machine and at right angles to the mold-box.

There may be any number of molds in each set and a corresponding number of pressing-plungers; but in the machine represented there are only two in each set and two pressing-plungers.

In front of the mold-box there is a stationary abutment, O, against which the bricks are pressed by the advance of the pressing-plungers from the rear of the box. The pressing-plungers work in separate receiving-boxes, O' O', in rear of the mold-box, and in these receiving-boxes there are openings for the reception of the clay from a hopper, H, above. This hopper is fitted to slide parallel with the mold-box, that after the clay has been thrown into it while over the receiving-boxes it may, by being moved aside, remove all the surplus clay beyond what is necessary to fill the molds. The abutment O is of a width very little greater than that of one set of molds, so that while the sliding mold-box is in such position that one set of molds is behind the abutment the other set is open in front to permit the bricks to be discharged therefrom onto the semi-rotating receiving-table J by one of the two sets of discharging-plungers F' F'', which work parallel with the pressing-plungers in suitable guides, one set on one side and the other set on the other side of the pressing-plungers. This is illustrated in Fig. 3, in which the set of molds *i' i'* is opposite the abutment, and the set *i'' i''* open in front to permit the discharge of the bricks therefrom by the discharging-plungers F' F'' onto the receiving-table.

B B are the two arms of the toggle, by which the pressing-plungers are operated. The forward arm is connected at *a*, Figs. 1 and 2, with the said plungers, and the rear arm with a fixed fulcrum or bearing, *n*, at the rear end of the machine, the said bearing being at the most distant practicable point from the mold-box,

in order to get the greatest practicable length of toggle and obtain the most direct possible pressure therefrom. The joint *b* of the toggle is connected by a pitman, *C*, with a crank or eccentric wrist, *P*, carried by the horizontal main shaft of the machine, which is arranged in suitable bearings under the frame *A*, and which is turned by hand or driven by any suitable motive power. The rotary motion of this shaft produces the necessary movement of the toggle to give the pressing-plungers the necessary reciprocating motion by which the clay is forced into the molds and compressed therein against the abutment *O*.

The discharging-plungers *F'* and *F''* are connected together, so as to operate simultaneously, by means of a link, *N*, and the two arms *L L* of a rock-shaft, *L'*, which is arranged in bearings *M'* under the frame *A*; and the operation is produced by means of a tripping-cam, *V p m*, on the shaft *S*, and a retracting-spring, *l*, connecting one of the said arms with the frame *A*.

The cam consists of a disk, *V*, in which is secured an eccentric-pin, *p*, and which has a hub, *m*. The pin *p* acts in a notch, *p'*, in a rod, *D*, which is connected with the yoke, *N*, and so pushes the discharging-plungers forward until the said pin permits the rod *D* to drop upon the hub *m*, when the further descent of the pin withdraws it from the said notch and permits the plungers to be drawn back by the retracting-spring *l*.

The semi-rotating receiving-table *J* is arranged to work on a fixed pin, *t*, secured in the center of the abutment *O*, and is intended to be moved by hand or by some mechanical contrivance back and forth between the two positions in which it is shown in full and dotted lines in Fig. 3, to receive the bricks from one and the other set of molds as they are discharged therefrom by the discharging plungers *E E*. Attached to the said table, concentric with the pin *t*, there is a pulley, *U*, around which passes a band or chain, *K*, which also passes around two guide-pulleys, *uu*, secured to the abutment, and the ends of which are secured at *vv* to the mold-box. This band is caused by the movement of the pulley *U* with the receiving-table to produce the necessary movement of the mold-box to bring the two sets of molds alternately opposite the plungers and discharging-table.

Having described the construction and functions of these several parts of the machine, I will briefly explain the operation of making bricks by it.

Rotary motion being communicated to the shaft *S*, the pressing and discharging-plungers

are set in operation. The clay is thrown in through the hopper, and the hopper moved aside to carry off the superfluous quantity by an attendant, and while the pressing-plungers are drawn back the clay drops or is deposited in the receiving-boxes *O O*. The advance of the pressing-plungers presses the bricks in the molds. After the pressing-plungers have retired from the molds the semi-rotating receiving-table is moved to one side or the other, and by its movement the set of molds containing the bricks are brought opposite to the said table, and the other set brought between the pressing-plungers and the abutment. When the latter plungers advance again to press the clay in the set of molds just brought opposite to them the discharging-plungers advance to force out the pressed bricks from the other set and deposit them on the receiving-table. An attendant in front of the machine turns the receiving-table from one side to the other every time the pressing and discharging plungers retire, and so brings the molds alternately into positions for pressing and discharging.

Having thus described my invention, I will proceed to state what I claim and desire to secure by Letters Patent.

1. In combination with the transversely-sliding mold-box and horizontally-reciprocating pressing-plungers arranged at one end of the machine, the toggle *B B*, connected with the said plungers and with a fixed bearing or fulcrum at the other end of the machine, and operated by a crank or eccentric wrist, substantially as herein described.

2. The combination of the transversely sliding mold-box containing two sets of molds, the single set of reciprocating pressing-plungers, and the two sets of discharging-plungers, substantially as and for the purpose herein specified.

3. The semi-rotating receiving-table *J*, in combination with the transversely-sliding mold-box containing two sets of molds, and the two sets of discharging-plungers, substantially as and for the purpose herein specified.

4. So combining the semi-rotating receiving-table *J* with the transversely-sliding mold-box that the movement of the said box is obtained through the movement of the said table, substantially as herein specified.

5. Operating the discharging-plungers by means of the tripping-cam *V p m*, the notched rod *D*, and the springs *l l*, the whole combined and operating substantially as herein set forth.

MORGAN CHITTENDEN.

Witnesses:

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