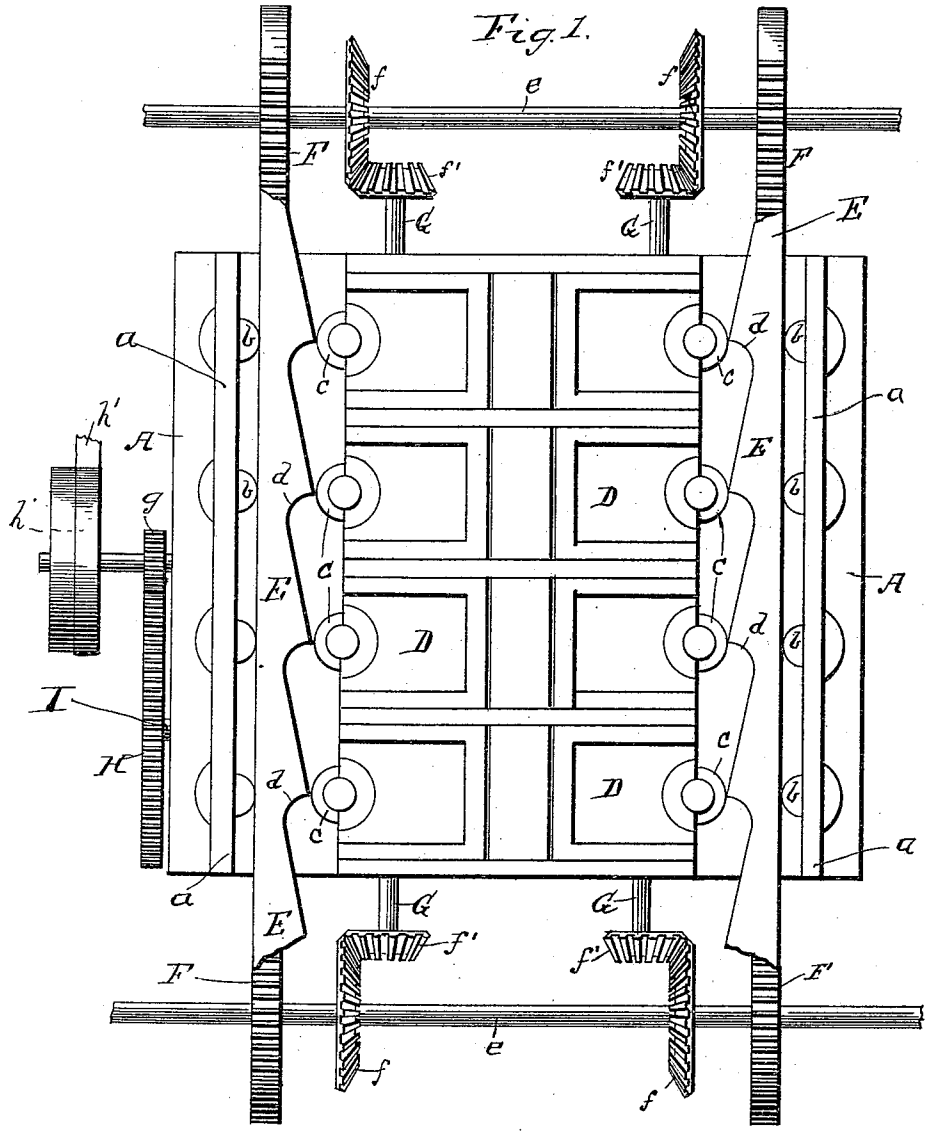
(No Model.) 2 Sheets—Sheet 1.

S. B. FRANK.

BRICK MACHINE.

No. 447,675. Patented Mar. 3, 1891.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

S. B. FRANK.

BRICK MACHINE.

No. 447,675. Patented Mar. 3, 1891.

Fig. 2.

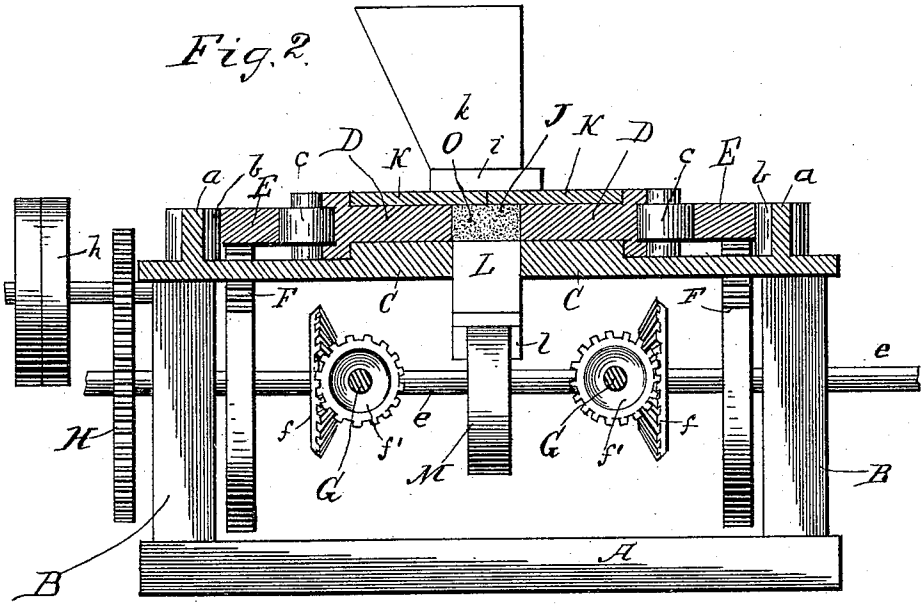


Fig. 5.

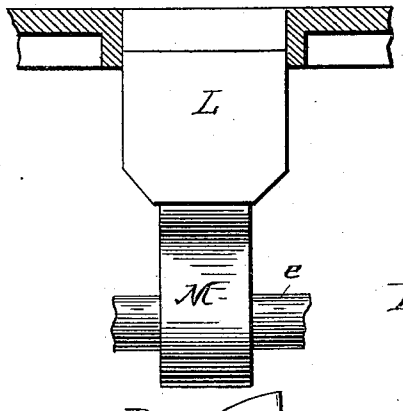


Fig. 4.

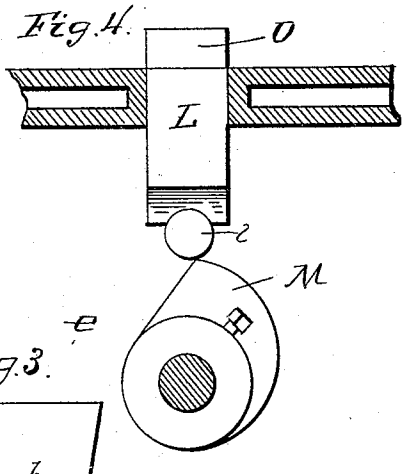
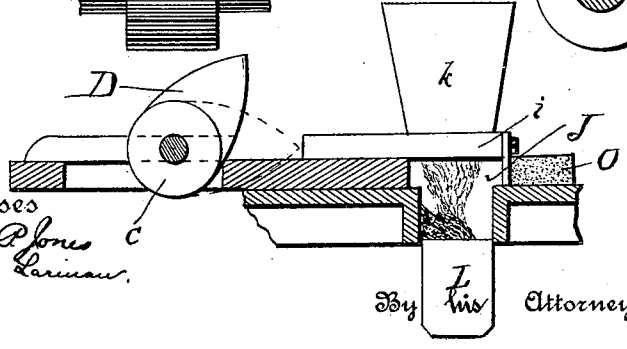


Fig. 3.



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UNITED STATES PATENT OFFICE.

SAMUEL B. FRANK, OF NASHVILLE, TENNESSEE, ASSIGNOR OF ONE-HALF TO EDWARD B. POLK, OF SAME PLACE.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 447,675, dated March 3, 1891.

Application filed June 11, 1890. Serial No. 355,097. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL B. FRANK, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Brick-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to brick-machines, and particularly to the class of reciprocating machines; and the object of the invention is to provide a machine which will be simple and certain in its operation, so as to press a brick on all sides at once and with one operation, requiring but little power and having no lost motion between the different parts.

The invention consists of certain constructions and arrangement of the different parts, as will be hereinafter more fully described, and set forth in the claims.

The construction of my improved machine is shown in the accompanying drawings, of which—

Figure 1 is a top plan view with the hopper removed so as to show other parts more clearly. Fig. 2 is a cross-section thereof, showing the hopper in place. Fig. 3 is a transverse sectional view of my mold in the act of being filled, with the other parts broken away. Fig. 4 is a detached end view of the plunger, cam, and roller; and Fig. 5 is a side elevation thereof, showing the plunger in its down position.

Like letters of reference denote like parts throughout the several figures.

The frame of my machine consists of the bed A and upright sides B, cast all in one piece and provided with a table or top C, having a right-angle projection *a* on either side extending the entire length of the table C. These projections *a* are each provided with a series of friction-rollers *b*.

D are lateral plungers, which rest and slide on the table C so as to press the sides of a brick, and are provided with rollers *c*.

Between the friction-rollers *b* and the rollers *c*, on either side of the machine, is a sliding cam-bar E, having a series of cams *d*, and its under side is provided with rack-teeth, which gear into quadrants F on shafts *e*, actuated by the gear-wheels *f* and pinions *f'* on the shafts G, which are in turn driven by the gear-wheel H and pinion *g* on the main shaft I, which receives its power through the medium of the pulley *h* and belt *h'*, connected to steam or other power, as clearly shown in Fig. 1.

The plungers D are provided with caps K, which extend over the end of the said plungers beneath the base *i* of the hopper *k*, and when the plungers are moved toward each other to form a brick these caps K meet in the center and form a top abutment for the brick under pressure by the plunger L from the bottom.

The plunger L is provided with a roller *l* in its lower end, which engages with the cam M on the shaft *e*, as clearly shown in Figs. 2 and 4 of the drawings.

The central portion of the table is cut out so as to form brick-molds and for the passage therethrough of the plunger L after the mold has been filled.

In operation the hopper is filled with clay or other suitable material, the machine put in action by throwing the driving-belt from the loose pulley to the pulley *h*, and the rack-teeth on the under side of the cam-bars will at once engage the quadrants F, cause the cams *d*, through the bearing-rollers *c*, to force the plungers D toward each other, the caps K to meet, and the cam M, controlling the plunger L, being located on the same shaft *e* as the quadrants forces the said plunger L upward at the same time the plungers D are moving, thus bringing the three plungers in action together and forming an abutment for the top of the brick O being pressed, and also forming the pressure-chamber J, as clearly shown in Fig. 2. The cam-bars, now being disengaged by the quadrants at one end of the machine, are immediately taken up by the quadrants at the other end, so as to draw them back and retract the plungers D, while at the same time the plunger L has dropped out of the mold and such mold being again filled.

It will be observed that the pressure-chamber J is formed by the caps K and the plungers D and L.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a brick-machine, the combination of the cam-bars having rack-teeth, the lateral plungers provided with rollers, and mechanism for operating the same, substantially as shown and described.

2. In a brick-machine, the combination of the pressure-chamber, the lateral plungers, and quadrants with the cam-bars provided with rack-teeth, substantially as and for the purpose set forth.

3. In a brick-machine, the cam-bars having a series of cams formed therein and provided with rack-teeth, substantially as shown and described, and for the purpose set forth.

4. In a brick-machine, the combination of the shaft *e*, the quadrants F, located on said shafts at either end of the machine, with the cam-bars provided at either end with rack-teeth, whereby the said cam-bars are advanced and retracted, for the purpose set forth.

5. In a brick-machine, the combination of the plunger L, the lateral plungers D, the caps K, and the cam-bars, said caps being adapted to advance with the plungers D and form an abutment for a brick under pressure, substantially as described.

6. In a brick-machine, the combination of the frame thereof, the table C, supported on the uprights B, the right-angle projections *a*, provided with friction-rollers, with the plungers D, provided with the rollers *c*, and the cam-bars adapted to move back and forth between the friction-rollers and the rollers *c*, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL B. FRANK.

Witnesses:

WILLIAM A. WILLIAMS,

SAMUEL M. FRANK.