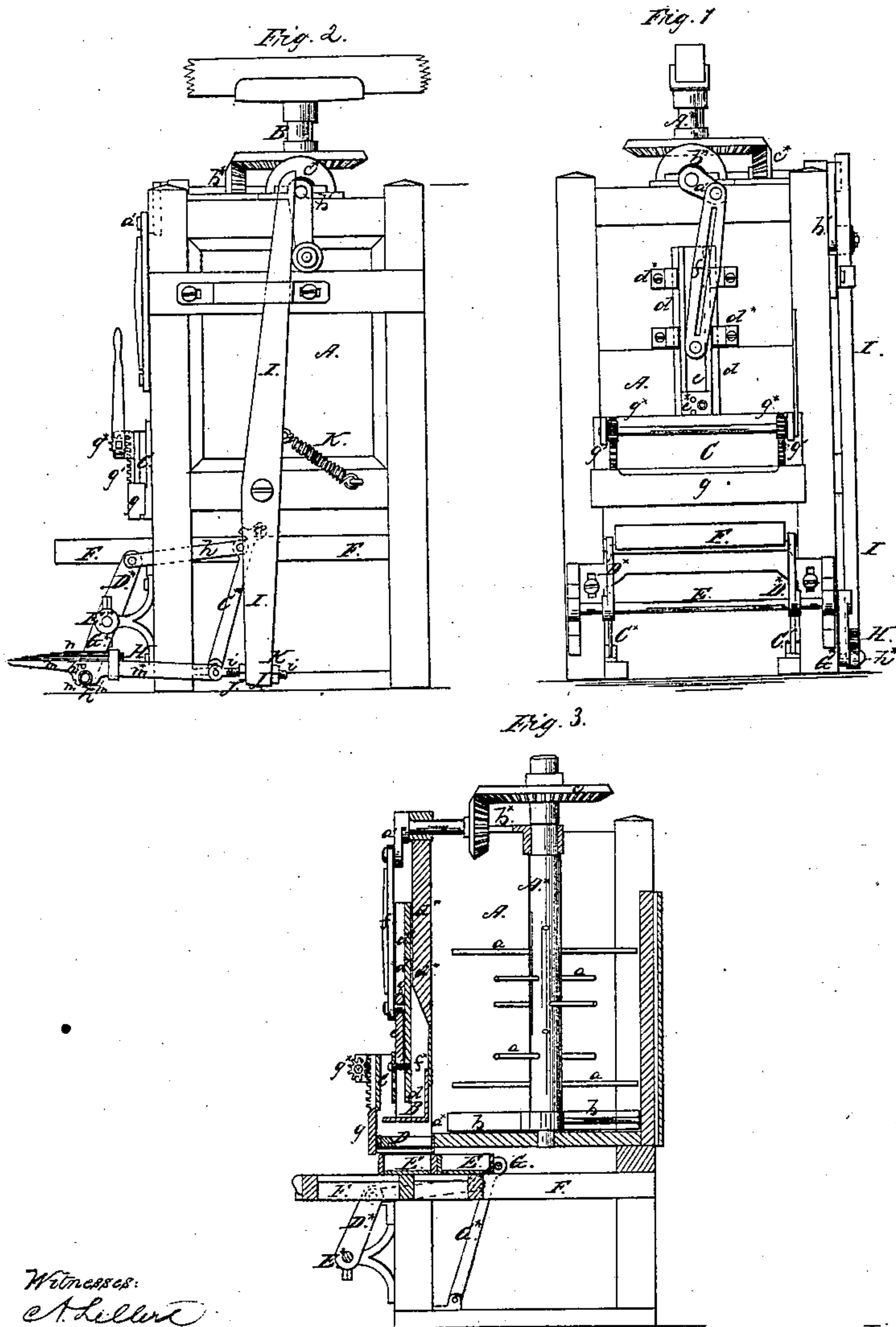


*J. Martin,  
Brick Machine.*

*N<sup>o</sup> 83,191.*

*Patented Oct. 20, 1868.*



*Witnesses:  
C. Heller  
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# United States Patent Office.

JAMES MARTIN, OF JERSEY CITY, ASSIGNOR TO HENRY MARTIN,  
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Letters Patent No. 83,191, dated October 20, 1868.

## IMPROVED BRICK-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JAMES MARTIN, of Jersey City, in the county of Hudson, and State of New Jersey, have invented certain new and useful Improvements in Brick-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a portion of this specification, in which—

Figure 1 is a front elevation of a brick-machine constructed according to my invention.

Figure 2 is a side elevation of the same.

Figure 3 is a central vertical section of the same.

Similar letters of reference indicate corresponding parts in all the figures.

This invention consists in so combining a slide-bar with an operating-crank and pitman, and with suitable stops provided upon the sliding standard of the pressure-platen of a brick-machine, that the said platen may be operated to force the clay into the moulds with any desired degree of pressure, without that liability to breakage which exists when a rack and pinion is employed to give motion to the aforesaid platen. The invention further consists in a novel construction of a pawl or hook, which communicates motion from a vibrating lever to the mechanism which feeds the moulds to the pressure-platen, whereby the said pawl is enabled to yield in case the movement of the aforesaid feeding-mechanism is stopped by any obstruction, thus preventing any breakage of the parts just mentioned; and whereby, furthermore, the feeding-mechanism may be readily thrown out of gear when desired. The invention further consists in making the hereinbefore-mentioned pawl or hook adjustable in such manner that the mechanism which moves the moulds may be regulated to move the said moulds to any extent required in the operation of the machine.

To enable others to understand the construction and operation of my invention, I will proceed to describe it with reference to the drawings.

The curb A should have centrally within it a vertical shaft, A\*, furnished with suitable stirring-arms, a, and at its lower end with curved blades, b, which, when rotated, operate to force the clay from the curb out through an opening, a', at the front thereof. The shaft A\*, rotated by any suitable means, is furnished at its upper end with a horizontal bevel-wheel, c, which gears into the two upright bevel-wheels, b\* c\*, the shafts of which are placed at right angles to each other; one, that of b\*, extending to the front of the machine, and the other to one side thereof, and each furnished at its outer end with a crank, the said cranks being marked, respectively, a' b', and the functions of which will be hereinafter fully set forth. B represents the pressure-platen situated at the front of the curb, and shown more clearly in fig. 3. This platen is secured upon the

lower end of a standard, d, which slides in vertical dovetail guides d\*, secured to the front of the curb, and has formed in its outer side a deep rectangular groove, d', the lowermost portion of which is covered by a plate, e\*

Placed in the aforesaid groove, d', and partially underneath the plate, e\*, is a slide-bar, e, to the upper end of which is pivoted one end of a pitman, f, the other extremity of which is attached to the crank a', of the shaft of the bevel-wheel b\*

The slide-bar e has a sliding movement within the groove of the standard, the upward movement of the said slide-bar being limited by a pin or stop, e', projecting laterally into the said groove, and the downward movement being limited in like manner by a pin or stop, f, projecting into the groove through the plate e\*, the plate being provided with any desired number of holes, in order that the pin or stop f\* may be placed higher or lower, according as a greater or less movement of the slide-bar is desired. The platen aforesaid works within a casing, C, the front plate, g, of which may be raised and lowered through the agency of pinions g', and racks g, placed in the lower part of the casing just mentioned, and below the level of the bottom of the curb, is a series of hoppers, D, through which the clay passes to the moulds E, the compartments of which, in size and shape, correspond to the desired shape of the bricks. These moulds E are placed upon the horizontal frame F, and are moved forward, to bring them underneath the hoppers D, by a roller, G, situated transversely above the frame aforesaid, and carried by pivoted vibrating bars, C\*, connected, by rods h, with the upper ends of arms D\*, provided upon a rock-shaft, E\*, situated transversely at the front of the machine, and furnished at one end with a downwardly-extending crank-arm, G, upon the wrist or pin h\* of which catches the pawl H, pivoted by a joint, h, to the lower end of a lever, I, pivoted at one side of the curb, with its upper extremity in such relation with the crank, a', upon the shaft of the bevel-wheel b\*, that the said crank in rotating will move forward the aforesaid upper arm of the lever, to operate the roller G, to move forward the moulds as hereinbefore mentioned; the said lever, after being thus moved, being retracted or drawn back by a spiral spring, K, connected therewith, as shown in fig. 2. The bolt i, to which the pawl H is pivoted, is formed with a screw-thread, and furnished with two nuts, j k, whereby it may be longitudinally adjusted in the lower end of the lever I. The aforesaid pawl is formed in two parts, m m\*, each of which is provided with a downwardly-projecting spur, m', between which is placed the pin or wrist of the crank-arm G, the two parts of the pawl being kept in line with each other, when the machine is in operation, by a stiff spring, n, secured upon the part m, and pressing



upon the upper side of the part  $m^*$ , as shown in fig. 1. In the operation of the machine, the clay is forced outward from the curb, through the opening  $a^*$ , by the rotation of the curved blades  $b$  of the shaft  $A$ , and is thus brought underneath the platen  $B$ , whereupon the operation of the crank  $a'$  and pitman  $f$  forces downward the said platen, and drives the clay, through the hoppers  $D$ , into the compartments of the mould  $E$ , previously brought underneath the same, which being done, the continued movement of the aforesaid crank  $a'$  lifts the platen, whereupon the crank  $b$ , acting to force forward the upper end of the lever  $I$ , causes the pawl  $H$  to be drawn back, and thus work the rock-shaft  $E$ , with its bars  $C^*$ , to force forward the roller  $G$ , which, acting upon the mould placed behind the one filled, as just mentioned, forces the latter forward from underneath the hoppers  $D$ , and brings the empty or rearmost mould into the place thereof, underneath the hoppers, preparatory to being filled in the manner just hereinbefore set forth. The surplus clay is scraped from the top of the filled mould, as it is moved forward, by the lower edge of the front plate  $g$ , so that the bricks are thus formed or moulded within the moulds. After having forced the moulds forward, as just set forth, the crank  $b'$ , passing away from the lever  $I$ , permits the spring  $K$  to reverse the movements of the same, thus operating the bars  $C^*$ , to bring back the roller  $G$  to its first position, whereupon another mould is placed in front thereof, in rear of the one underneath the hoppers  $D$ , and the clay is pressed into the mould last mentioned, in the same manner as just hereinbefore described.

By adjusting the length of the movement allowed to the sliding bar  $e$ , as hereinbefore described, the extent to which the crank  $a'$  acts to operate the platen, and consequently the force exerted thereby to press the clay into the moulds, may be adjusted at will. Furthermore, in case the mechanism employed to move the moulds, as hereinbefore set forth, should be clogged or obstructed from any cause, the spring  $n$  will yield sufficiently to allow the part  $m$ , of the pawl  $H$ , to tilt upward, and allow its spur,  $m'$ , to slip from the pin  $h^*$ , of the crank-arm  $G^*$ , thus preventing all liability of any portion of the apparatus being broken by such obstruction.

The bolt  $i$  being provided with the nuts  $j$   $k$ , as hereinbefore described, the said bolt may play longitudinally through the end of the lever to any desired degree, so that by these means the movements of the mechanism which moves the mould, corresponding to the greater or less extent to which the said pawl is moved by the lever, may be adjusted to any desired degree.

What I claim as my invention, and desire to secure by Letters Patent, is—

The arrangement and combination of the rock-shaft  $E^*$ , spring-pawl  $H$ , lever  $D^*$ , and  $G$ , and rods or connections  $h$   $C^*$ , with the lever  $I$ , substantially as shown and described for the purpose set forth.

JAMES MARTIN.

Witnesses:

PETER EDSALL,  
W. E. EDSALL.