

*I. Morley,
Brick Machine.*

N^o 55,146.

Patented May 29, 1866.

Fig. 1.

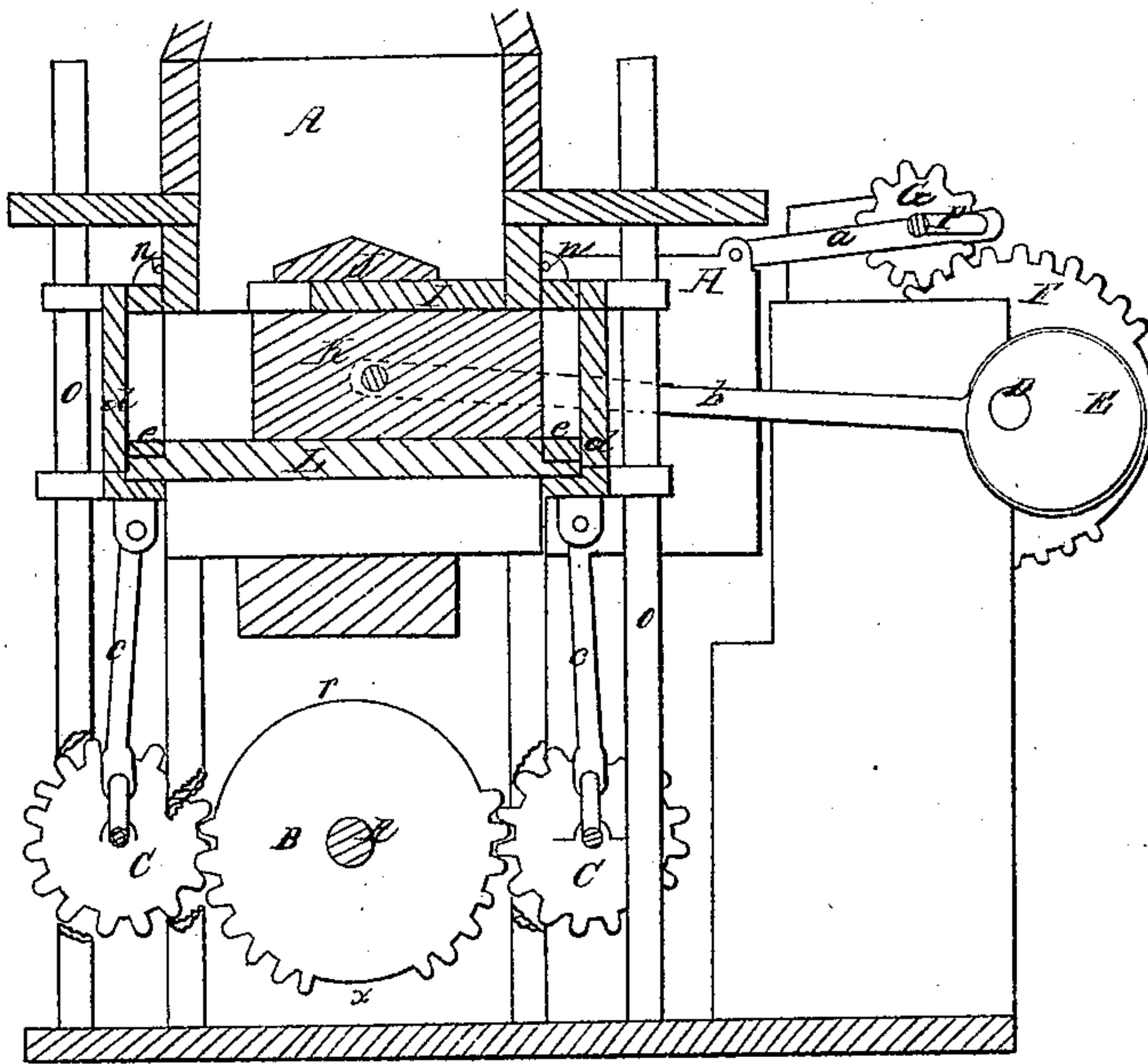
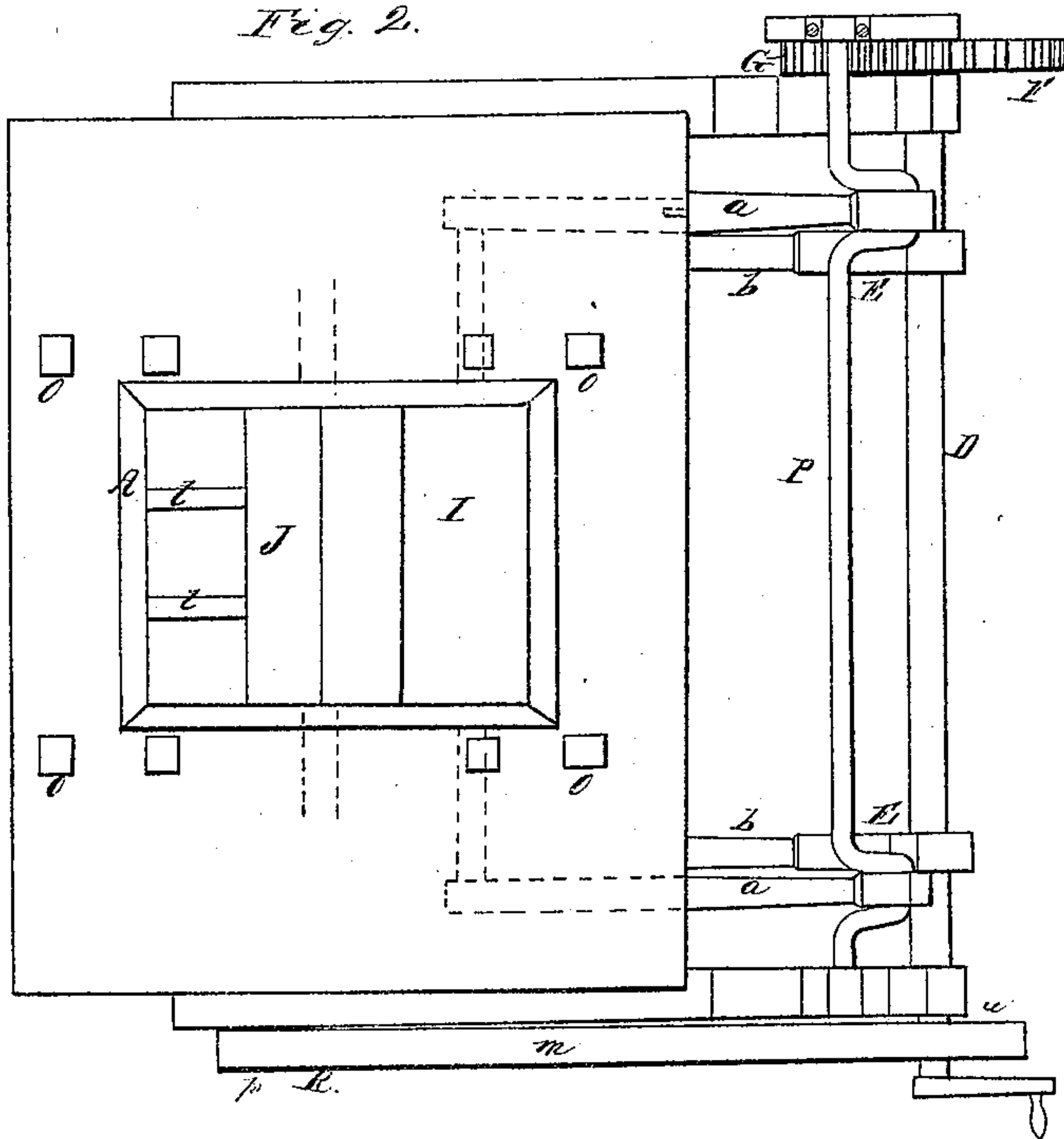


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

ISAAC MORLEY, OF PITTSBURG, PENNSYLVANIA.

IMPROVED BRICK-MACHINE.

Specification forming part of Letters Patent No. 55,146, dated May 29, 1866.

To all whom it may concern:

Be it known that I, ISAAC MORLEY, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Making Brick; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making part of this specification.

Figure 1 is a longitudinal vertical section taken on the line *x x*, Fig. 2, and Fig. 2 is a top-plan view.

The nature of my invention consists in constructing a machine in which the mechanism shall be arranged to operate a series of plungers located in the lower portion of the hopper and moving horizontally, for the purpose of pressing the clay into molds at opposite sides of said hopper, and also in providing movable supports to hold the molds in position while the clay is being pressed into them, which supports shall also be operated by mechanism working at the proper intervals in connection with the other parts.

To enable those skilled in the art to construct and use my invention, I will proceed to describe it.

I provide a suitable frame, which may be of any required form and size to adapt it to the mechanism to be used. Upon the upper portion of this frame is located the hopper A for receiving the clay. In the bottom of this hopper I place a horizontal plunger, K, which may either be made of one solid piece, equal in width to the hopper, or it may consist of several separate plungers or blocks, with division-plates *t* separating them, as shown in Fig. 2.

D represents the main or driving shaft, upon which are mounted two eccentrics, E, which are connected by rods *b* to the plunger K, and by which the plungers are moved back and forth in the hopper.

J represents a stationary plate having its upper surface beveled, as shown, for the purpose of permitting the clay to pass down more readily on each side of it into the hopper below. Under this plate J, and between it and the plunger K, is placed a reciprocating slide, I, operated by the vertical slides H, motion being given to the latter by the pitmen *a*, con-

nected to cranks on shaft P, which latter is provided with a wheel, G, gearing into wheel F on the main shaft D, as shown in Fig. 1 and in plan in Fig. 2. The parts I and K are so arranged as to move in the same direction, the plate I always preceding K in its movement.

Centrally in the lower portion of the frame is located a shaft, R, having a wheel, B, mounted thereon at each end, having teeth on a portion of its periphery only, as shown in Fig. 1. On the end of this shaft R is mounted a pulley, *p*, which is connected by band *m* with a similar pulley, *u*, on the driving-shaft D. On each side of shaft R is located another shaft, having wheels C gearing into wheel B. These latter shafts are also provided with cranks to which vertical rods *c* are attached. To the upper end of the rods *c* are connected sliding frames *d*, which are guided in their up and down movements by the guide rods or posts O, the frames *d* being arranged to come directly opposite the openings in the sides of the hopper A, for the purpose of holding the molds close up in front of said openings while the clay is being pressed into them by the plungers K.

The molds *e* (shown in section) are inserted between the frames *d* and the sides of the hopper, and rest upon the projecting ends of the floor of the hopper, as shown in Fig. 1. To the upper and inner edge of the frames *d* a wire, *n*, is attached transversely in such a position that as the frame *d* descends said wire will pass down between the face of the mold *e* and the hopper, thereby severing the clay in the mold *e* from that in the hopper A.

The operation is as follows: Clay being placed in the hopper, motion is imparted to shaft D, which will move the slide I to the opposite side of the hopper, the frame *d* being elevated by the same motion in consequence of the mechanism that operates both parts being connected by the band *m*. The mold *e*, having been inserted by hand opposite the opening in the hopper, is held in place by frame *d* while the clay is pressed into it by the plunger K, which follows the slide I in its movement, the slide I holding the clay from rising in the hopper while being pressed into the mold by K. At the same time that this is being done the frame *d* at the opposite side is carried down,

the teeth on wheel B operating one of the wheels C, while the other is left stationary, in consequence of there being no teeth on that portion of B which is then next to the other wheel C. The frames *d* thus operate alternately, permitting a mold full of brick to be removed and another mold substituted at one side, while the brick are being formed on the opposite side. A space, *x*, on wheel B is also left without teeth for the purpose of permitting the frames *d* to remain stationary for a short time while down, to afford time to remove and replace the molds. In order to effect these various objects it will be observed that the number of teeth in each series on wheel B are equal in number to one-half of those on wheels C, so that when one series is engaged with C the frame *d* will be elevated, where it remains stationary during the passage of the portion *r* of wheel B on which there is no teeth, and which portion or space *r* is equal to one-half of the circumference of B.

The wheel F, which communicates motion to the slide I, also has two spaces without teeth, as shown in Fig. 1, the object of which is to permit the slide I, after it has been shoved to one side of the hopper, to remain stationary while the plunger K is being forced to the same side of the hopper by eccentrics E, the eccentric being so arranged in relation to wheels F that the teeth on the latter shall engage with wheels G and move the slide I in advance of the plunger K.

By these means I am enabled to construct a machine that is simple in its construction and continuous in its operation, and in which nearly the whole of the labor is performed by the machine with the aid of very little hand-labor.

Having thus fully described the construction and operation of my improved machine, what I claim is—

1. The reciprocating slide I and plunger K, arranged and operating in connection with the hopper A, as and for the purpose set forth.
2. The combination and arrangement of the wheels F and G and the eccentrics E, for the purpose of operating the slide I and plunger K, as shown and described.
3. The frames *d*, for the purpose of holding the molds in position while being filled, and having the wire *n* arranged as described, for cutting off the brick, as set forth.
4. The wheel B, constructed as shown, and arranged to operate in connection with wheels C, as described, for the purpose of elevating and depressing the frames *d* at the required intervals.
5. The combination and arrangement of slide I, plunger K, and frames *d*, to operate in connection and at the proper intervals, substantially as herein shown and described.

ISAAC MORLEY.

Witnesses:

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