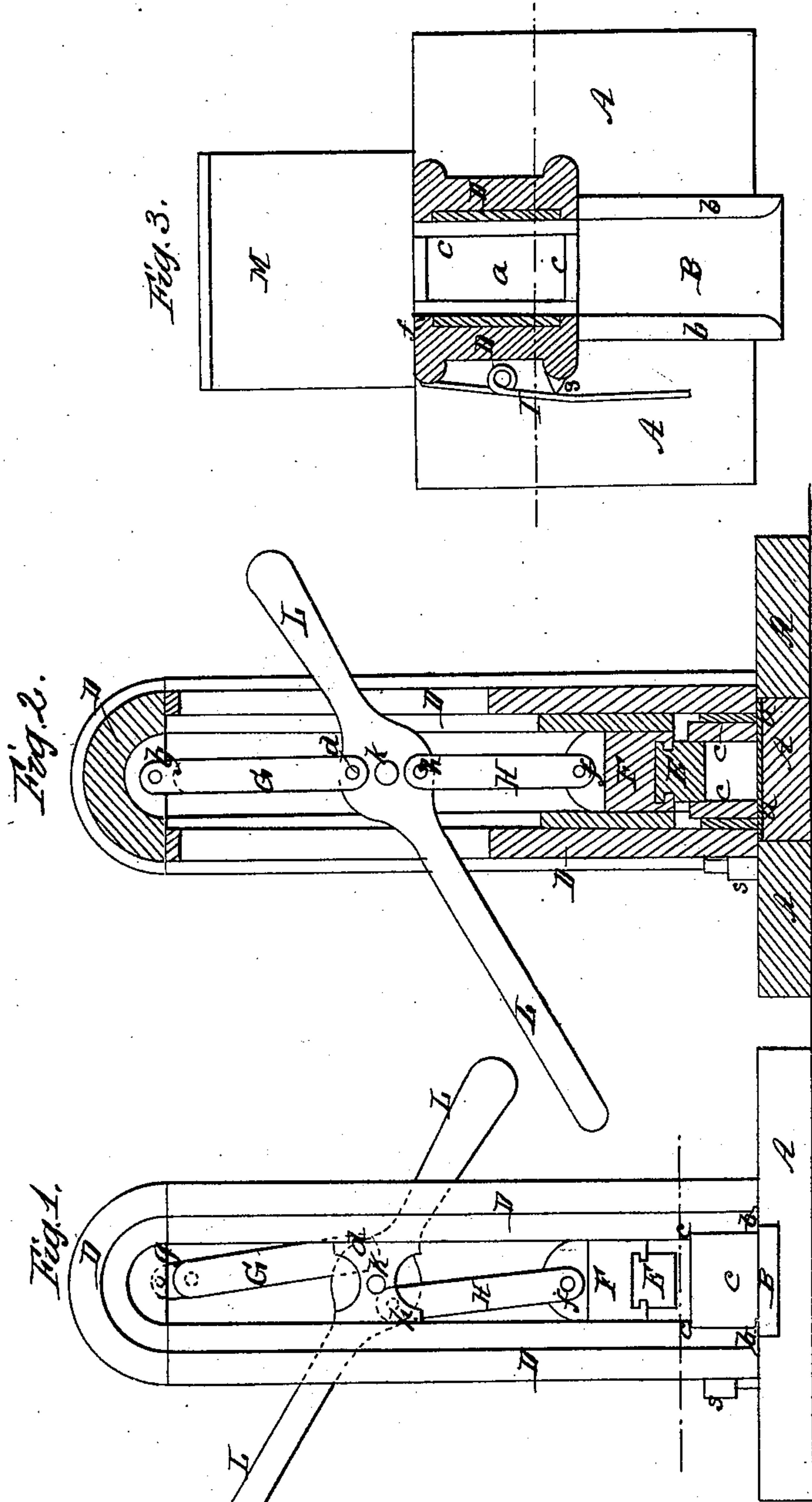


Brick Machine.

N^o 76,613.

Patented Apr. 14, 1868.



Witnesses
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Letters Patent No. 76,613, dated April 14, 1868.

IMPROVED BRICK-PRESS.

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, JOHN M. ENOS, of St. Joseph, in the county of Berrien, and State of Michigan, have invented a new and useful Improvement in Brick-Machines; and I do hereby declare and make known that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and the letters and figures marked thereon, which form part of this specification.

My invention relates more especially to that class of machines or presses which are designed for use in the manufacture of concrete brick, but the same may also be used for manufacturing brick of the ordinary kind and size; and said invention consists in a novel arrangement for applying the pressure, whereby a great amount of pressure can be obtained, which is constantly increasing as the operation progresses, until the brick is compressed to the required dimensions or density, as hereinafter more fully set forth.

To enable those skilled in the art to understand how to construct and use my said invention, I will proceed to describe the same with particularity, making reference, in so doing, to the aforesaid drawings, in which—

Figure 1 represents a side elevation of my invention.

Figure 2 is a vertical sectional view of the same; and

Figure 3 is a cross-section of same, taken just above the mould.

Similar letters of reference in the several figures denote the same parts of my said invention.

A represents the base of the machine. D D are two upright standards, forming ways in which the plunger F moves up and down, being connected at the top, in any suitable manner, by a cross-piece, D. Between the standards D, upon the top of the platform A, may be a steel plate, *a*, forming the bottom of the mould, as hereinafter described. - In the platform A is cut a groove or channel, at one side of the press, which receives a removable slide, B, said slide being provided upon each side with ribs or flanges *b b*, which form ways in which the mould-boxes C are placed preparatory to being arranged in the press, as hereinafter mentioned, the said mould-boxes being without bottom or top, the boxes being arranged in the press in such a manner that the platform or its plate *a* forms the bottom of the mould, and a die, E, secured to the plunger F, which fits accurately into said box C, forms the top of the mould, as herein described. The mould-boxes are held firmly in place in the press by means of a catch, J, upon the rod I, which is held in a socket or recess in one side of the mould-box by means of a spring, *s*, said catch being thrown out when it is desired to remove the box from the press. There are shoulders *c c* formed in the standards D D, as shown in fig. 1, to confine the boxes and hold them down closely upon the base-plate *a* or its equivalent.

M represents an attachment to the main platform, depressed sufficiently, so that a board may be arranged thereon, whose upper surface shall be in the same plane with the plate *a*, so that when the brick is pressed, the mould may be pushed out of the press upon said board, and the same carried away, as desired.

There are designed to be two or more slides B, so that when the moulds are filled they may be placed upon said slides and brought to the press; and when the slide is arranged in the groove in the platform, as shown, the mould can be pushed into the press until the catch J prevents its further movement, and the slide B is removed for another.

It will be observed that the sides of the standards D are flush with the sides of the mould-boxes, as seen in fig. 3, so as to give support to the sides of the moulds, whereby they may be made much lighter or thinner than would otherwise be practicable, the moulds being intended to be of cast iron.

It will be observed that the pressing-die E is made removable from the plunger, so that one die can be taken out and a different one be put in; so that, if it be desired to use the machine to manufacture brick of the common size, moulds and dies of appropriate dimensions may be substituted for those used in the manufacture of concrete brick; and in such case four or more bricks may be made at one operation, the mould-boxes and pressing-dies being constructed with that view.

The pressing-device consists of the plunger F, the arms H G, and the lever L, the arm H being pivoted to the plunger at *f*, and to the lever L at *h*, and the arm G being pivoted to the lever L at *d*, and to the frame D D', at *g*.

K represents guide-blocks moving up and down in suitable ways, a pin, *k*, passing through the same and through the lever L, as shown, to keep the point through which the pin *k* passes in the same vertical line, so as to prevent any longitudinal play of the lever L; or said end-movement of the lever may be prevented in any other suitable manner.

In fig. 1 the parts are shown in the position which they occupy preparatory to applying the pressure.

To apply the pressure, the long arm of the lever is depressed; and it will be observed that the short arm of the lever, represented by the horizontal distance between two vertical lines drawn respectively through the points *d h*, is constantly decreasing as the pressure goes on, so that the relative pressure upon the brick is constantly increasing in the same proportion, while the power remains the same.

The vertical movement of the plunger depreciates in velocity as the operation progresses, so that as the brick becomes more dense, the movement of the pressing-plunger diminishes and the pressure becomes greater, until, when the vertical lines through the points *d h* coincide, the operation is finished, and the lever moved up to its former position, when the mould is pushed out and replaced by another, as aforesaid, preparatory to repeating the operation.

It will be observed that the downward pressure upon the arm H is not the only pressure that acts to press the brick, but the power which is exerted upon the fulcrum-point *d* also reacts and is applied to press the brick, thus doubling the pressure that is ordinarily obtained by the action of presses, irrespective of the effect produced, as aforesaid, by the gradual shortening of the arm of the lever in the operation of the machine.

In manipulating the clay and pressing the brick, one of the moulds is taken upon a slide, B, and filled with clay and placed in the groove in the platform; when the mould is shoved from the slide into the press to the proper position, when the lever is brought down, pressing the brick as desired, and then raised to allow the mould to be pushed out by the operation of pushing the succeeding mould into the press, the pressed mould being removed and the brick taken out, when the mould is returned to be refilled and the operation repeated.

Having described the construction and operation of my invention, I will proceed to specify what I claim and desire to secure by Letters Patent.

I claim the combination of the frame D D', lever L, arms G H, plunger F, platform A, slide B, mould-box C, spring S, and rod I, arranged to operate substantially in the manner and for the purposes set forth.

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Witnesses:

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