

Sheet No. 1.
Ephraim R. Greene & Henry D. Phillips Jr.
Brick Machine.

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 2 sheets
 Fig. 1.

PATENTED
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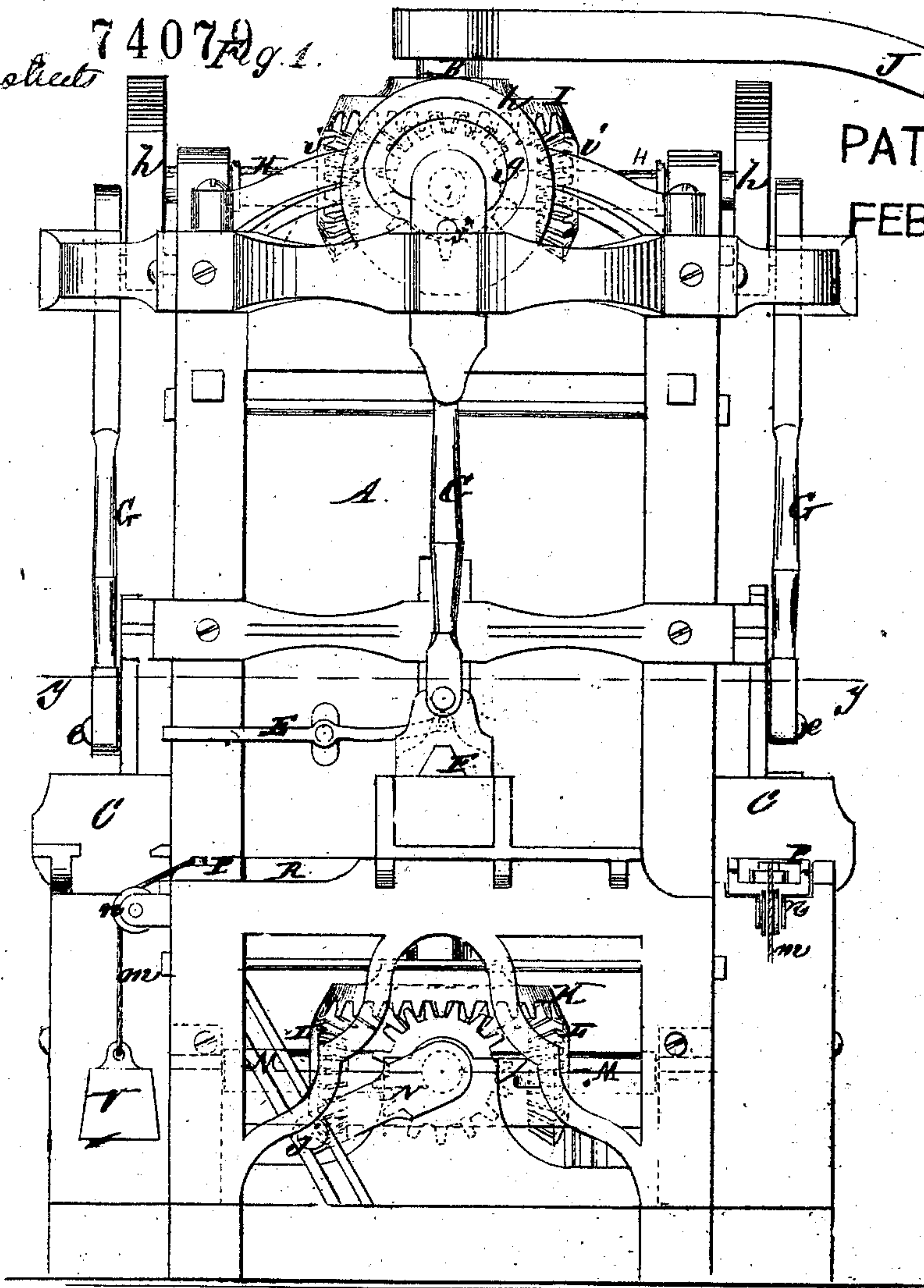
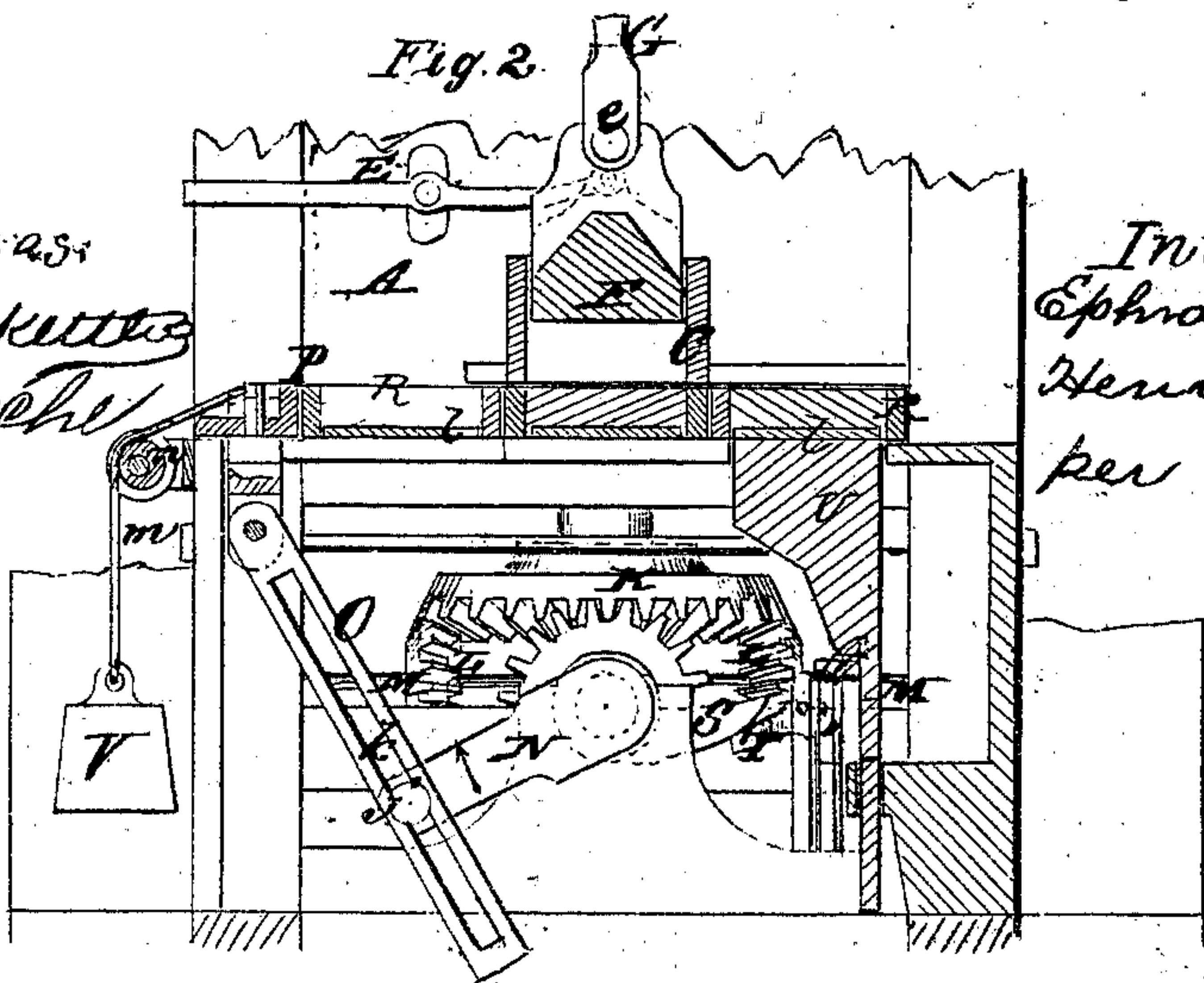


Fig. 2.



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Sheet No. 2

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Fig. 3.

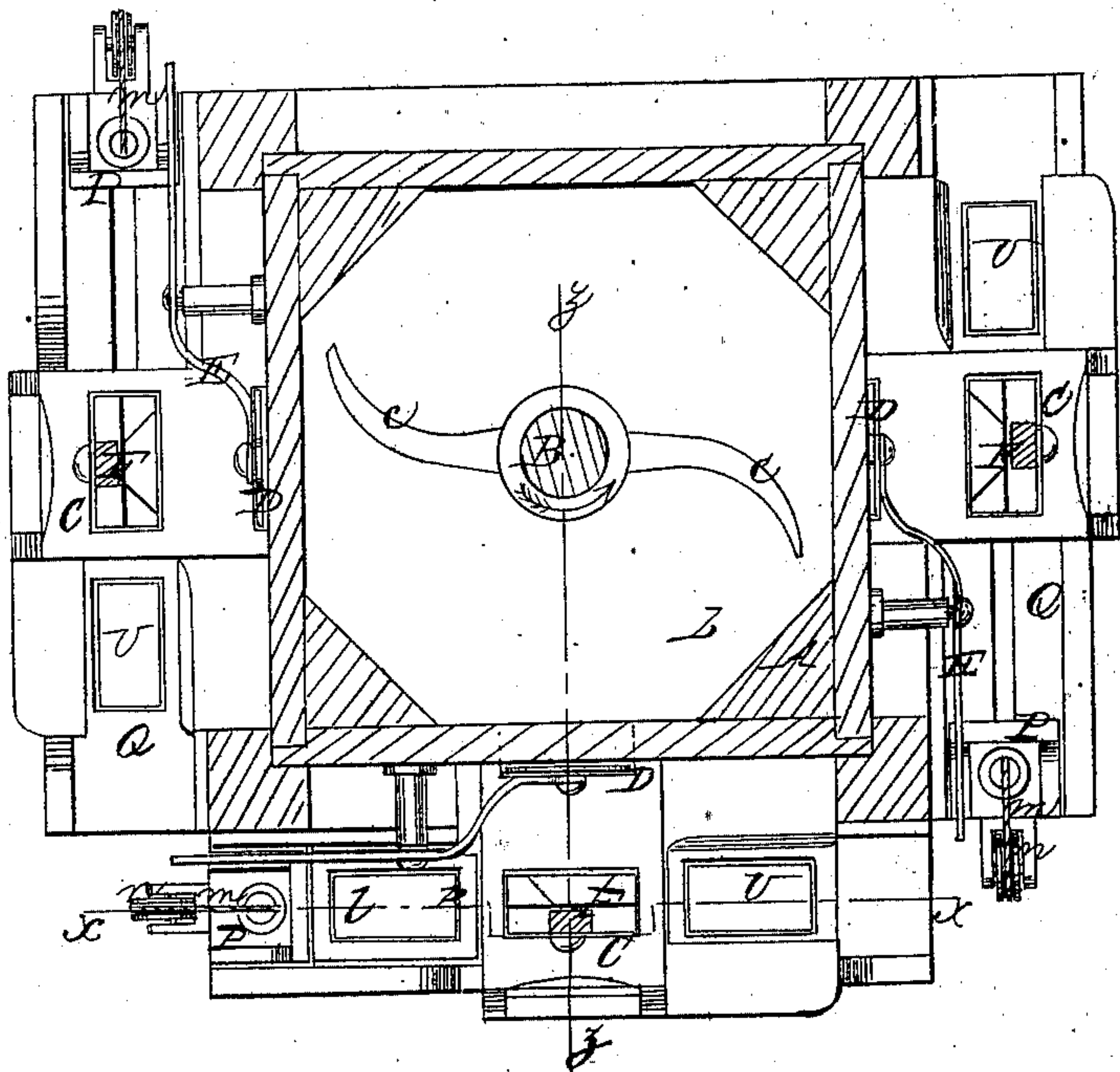
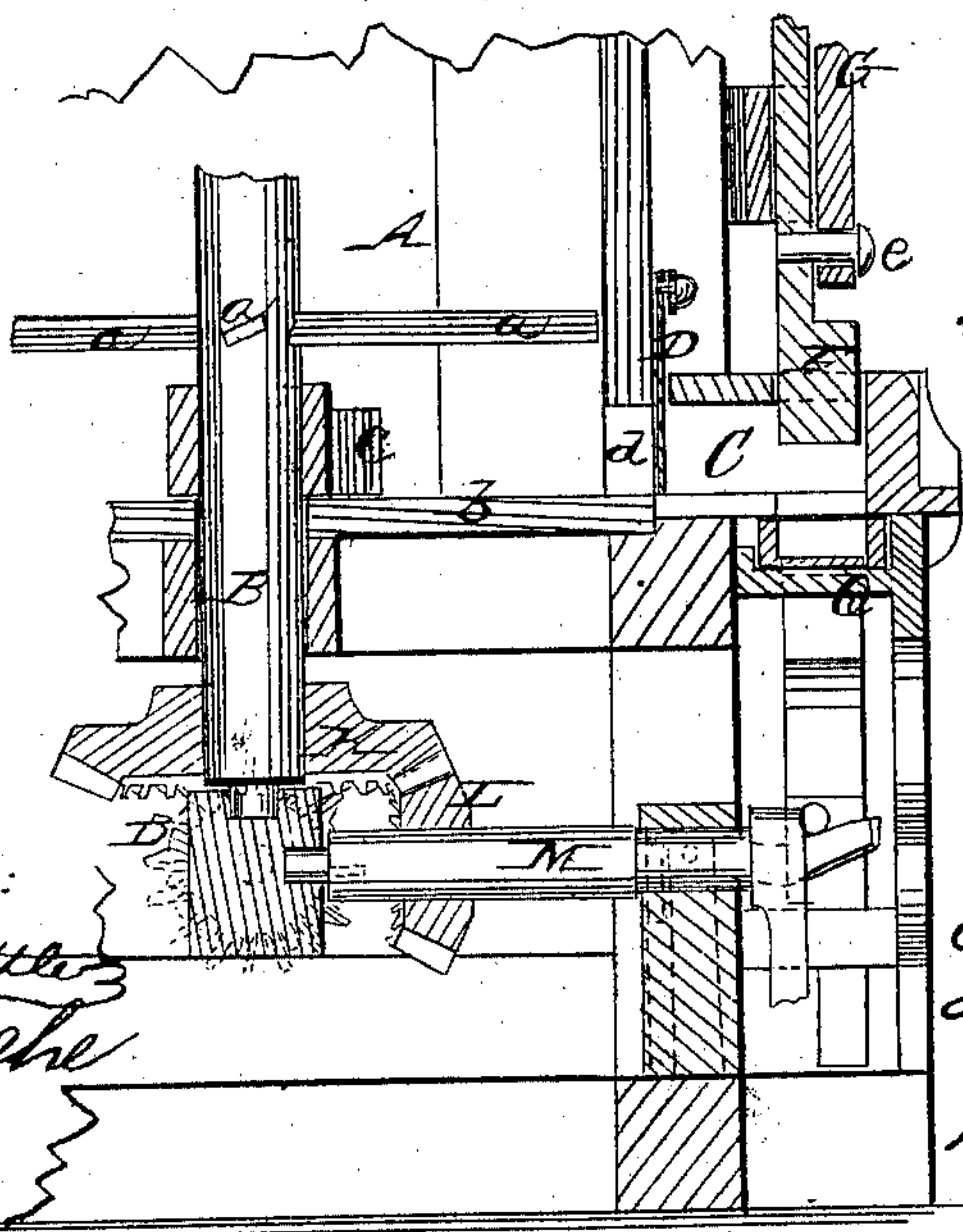


Fig. 4.



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United States Patent Office.

EPHRAIM R. GREEN AND HENRY D. PHILLIPS, JR., OF TRENTON, NEW JERSEY.

Letters Patent No. 74,079, dated February 4, 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 we, EPHRAIM R. GREEN and HENRY D. PHILLIPS, Jr., of Trenton, in the county of Mercer, and State of New Jersey, have invented a new and improved Brick-Machine; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved machine for pressing and moulding brick, and it consists in a novel manner of operating the plungers by which the clay is forced into the moulds, and in a novel manner of operating the moulds, feeding them underneath the press-boxes, as hereinafter fully shown and described, whereby several advantages are obtained, as will be hereinafter fully set forth. In the accompanying sheet of drawings—

Figure 1, Sheet No. 1, is an elevation of our invention.

Figure 2, a vertical section of the same, taken in the line *x x*, fig. 3.

Figure 3, Sheet No. 2, a horizontal section of the same, taken in the line *y y*, fig. 1.

Figure 4, a vertical section of the same, taken in the line *z z*, fig. 3.

Similar letters of reference indicate corresponding parts.

A represents a quadrilateral box, in which a vertical shaft, B, is fitted centrally, and provided with lateral arms, *a*, which, as the shaft B is rotated, temper or thoroughly mix the moistened clay in box A. This part of the machine, which is in common use and well known, is commonly termed the "mud-mill." To the shaft B, just above the bottom *b* of the mud-mill, there are secured two scrapers, *c*, which, as shaft B rotates, force out the tempered clay through apertures *d*, in the lower parts of the sides of box A into press-boxes C, there being one at each side of A. Each of these apertures is provided with a gate, D, to the upper ends of which levers E are attached, one to each, for the purpose of raising and lowering the gates to regulate the admission of clay into the press-boxes according to the amount required to suit the size of the moulds. In each press-box there is fitted a plunger, F, to which rods G are connected by pivots *e*. The upper ends of these rods G have pins, *f*, projecting laterally from them, and these pins fit in heart-shaped grooves, *g*, in the outer sides of wheels *h*, which are on the outer ends of shafts H, the inner ends having pinions, *i*, on them, which gear into a wheel, I, on the shaft B. On the upper end of the shaft B there is fitted a sweep, J, to which the horse is attached for rotating the shaft and operating all the parts of the machine. On the lower part of the shaft B, below the bottom of the mud-mill, there is secured a wheel, K, into which the pinions L of four shafts, M, gear, which coincide in position with the shafts H above the mud-mill. On the outer end of each shaft M there is a crank, N, and these cranks have each a pin, *j*, on their lower ends, said pins passing through oblong slots, *k*, in arms O, the upper ends of which are pivoted to slides P, which work on the upper surfaces of beds Q, the moulds R being placed on the latter. These beds extend the whole width of the box A, underneath the press-boxes C, as shown clearly in figs. 1 and 2. The moulds R are of the usual rectangular form, but are not provided with any permanent or fixed bottoms, but have loose ones, *l*, which may be raised within the moulds. On the shafts M there are placed "wipers," S, one on each shaft, and these "wipers," as the shafts M rotate, strike against levers T, which throw upward, through openings in the beds Q, vertical bars U, the upper surfaces of which are equal, or nearly equal, in area to the bottoms *l* of the moulds. The slides P have each a weight, V, attached by a cord, *m*, and these cords pass over pulleys *n*. The moulds are placed on the beds Q, in front of the slides P, and the empty moulds R are placed on the beds in front of the slides, the loose bottoms *l* being fitted in the moulds. The tempered clay is forced through the openings *d* into the press-boxes C, by the rotation of the scrapers *c*, and the plungers F are forced down by the cams *h*, and press the clay into the moulds R, and when the plungers F are fully down, the empty moulds R are shoved underneath the press-boxes C, and the filled moulds shoved out from underneath them by the slides P, which are operated at the proper time by the pins *f* of the cranks N, acting against the ends of the slots *k* in the arms O, the weights V drawing the slides P back as soon as the cranks N arrive at the point in their revolutions which admits of it. The filled moulds R are forced from underneath the press-boxes directly over the bars U, and the latter are raised each time a filled

mould is moved over them by the action of the wipers S, on the levers T, the bars U, as they rise, forcing the pressed clay or brick out from the mould R with the bottom I, and the brick is carried on the bottom to the place where it is to be stacked to be dried for the kiln, the bottoms admitting of the bricks being carried without danger of being disfigured or injured in any way.

The device is extremely simple, and will operate well, four plungers being operated simultaneously, and the necessary movement of the several parts being obtained with a continuous rotary motion of the shaft B.

We claim as new, and desire to secure by Letters Patent—

1. Operating the moulds R, that is to say, feeding the empty ones underneath the press-boxes C, and shoving the filled ones out from underneath the same by means of the slides P, having weights V attached, and connected to the cranks N of the shafts M by means of the crank-pins j and slotted arms O, all arranged substantially as shown and described.

2. The bars U, for discharging the bricks from the moulds, operated by the levers T and wipers S, from the shafts M, all arranged substantially as and for the purpose set forth.

3. The application of a press-box, C, to each side of the box A of the mud-mill, in combination with the four shafts H, operated from the mud-mill shaft B, and the cams k for operating the plungers F, all arranged substantially as shown and described.

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Witnesses:

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