

(No Model.)

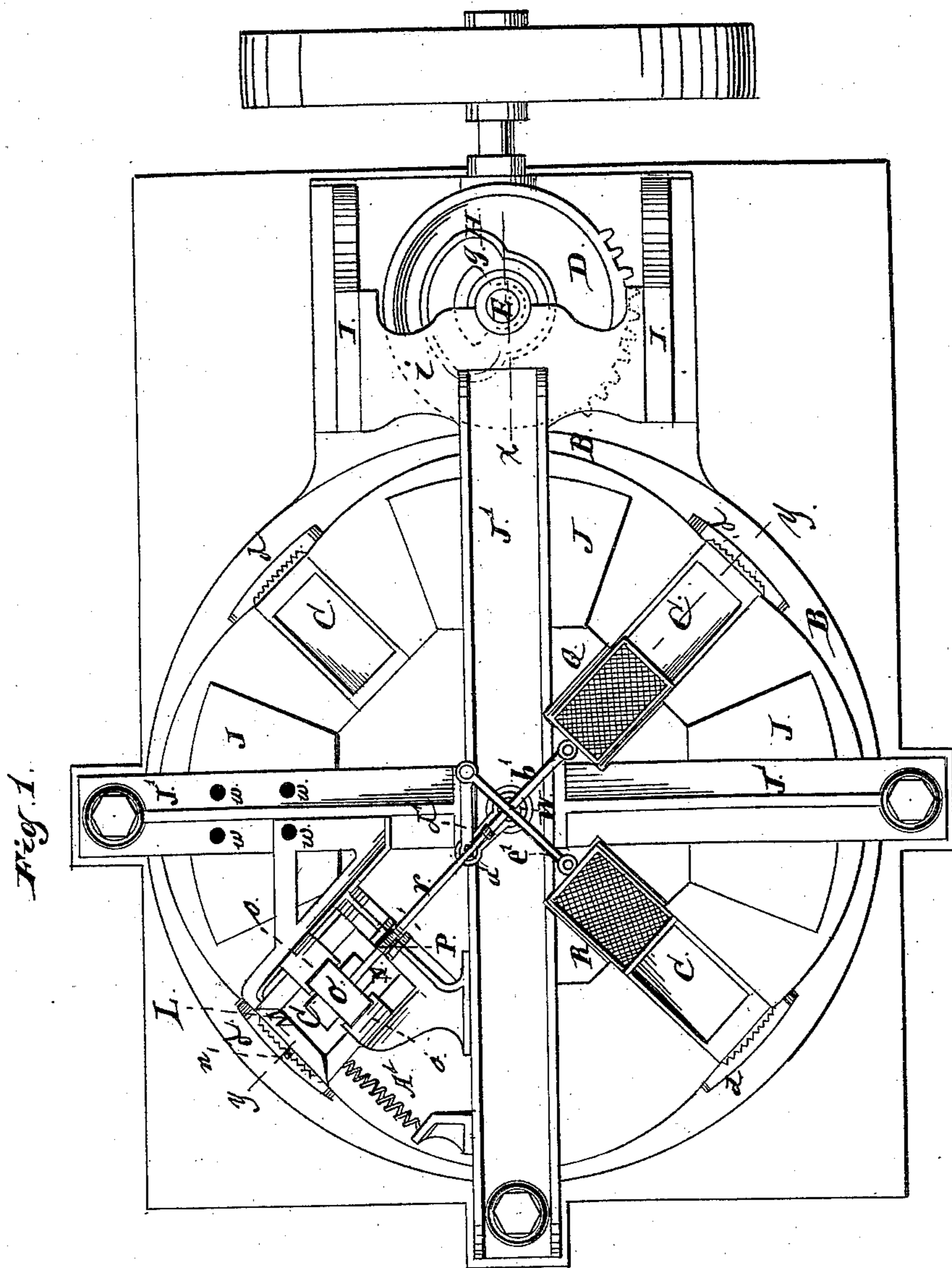
4 Sheets—Sheet 1.

W. L. GREGG.

BRICK MACHINE.

No. 299,067.

Patented May 20, 1884.



Witnesses:
Albert H. Dault.
O. V. Bond.

Inventor:
Wm L. Gregg.
By West & Bond.
Attys.

(No Model.)

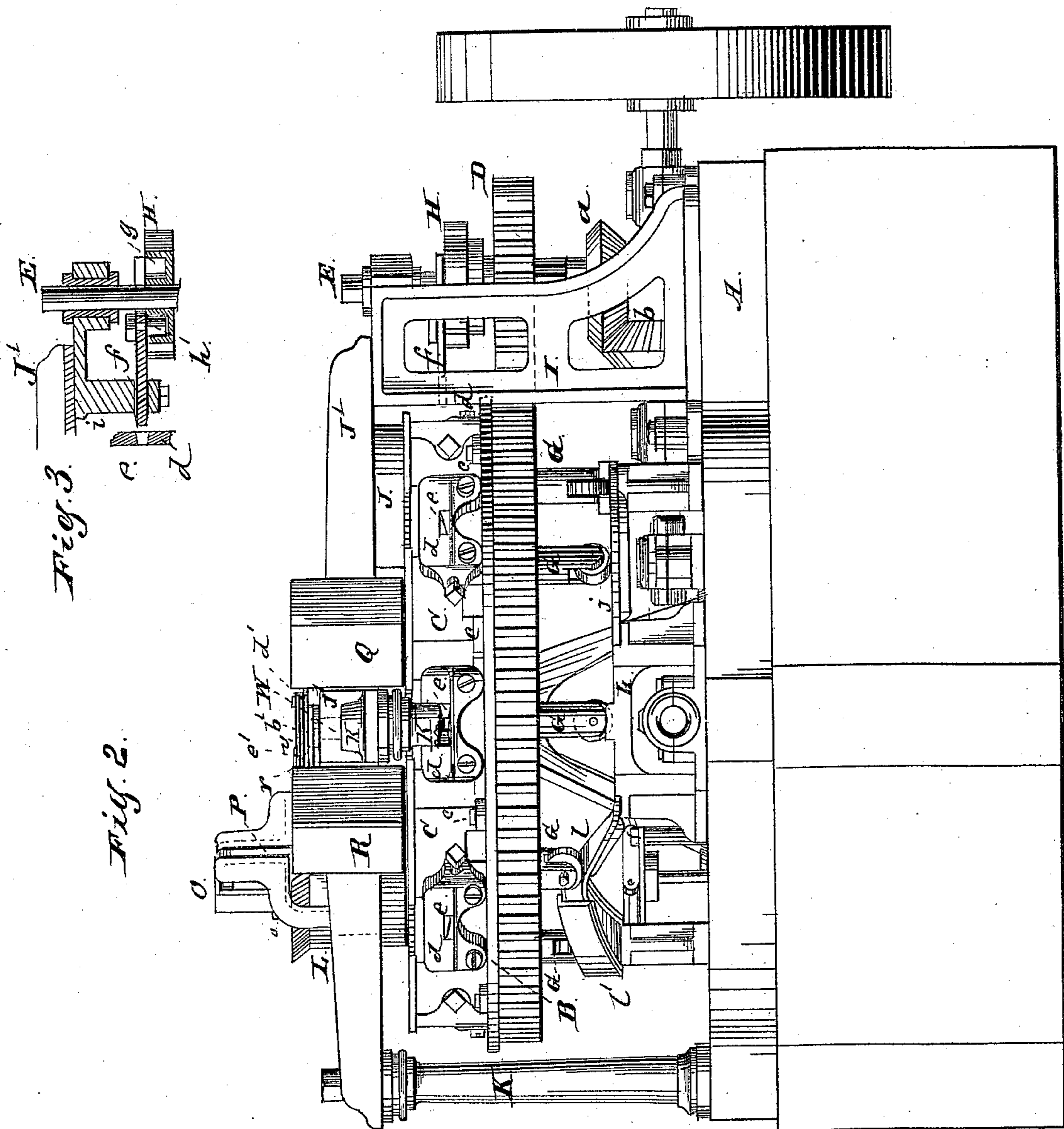
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BRICK MACHINE.

No. 299,067.

Patented May 20, 1884.



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(No Model.)

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Fig. 4.

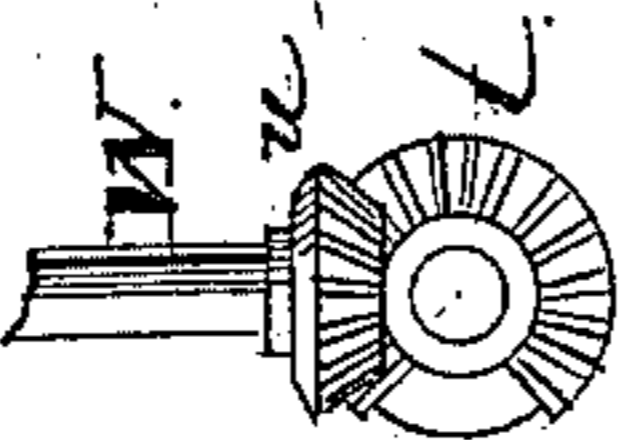
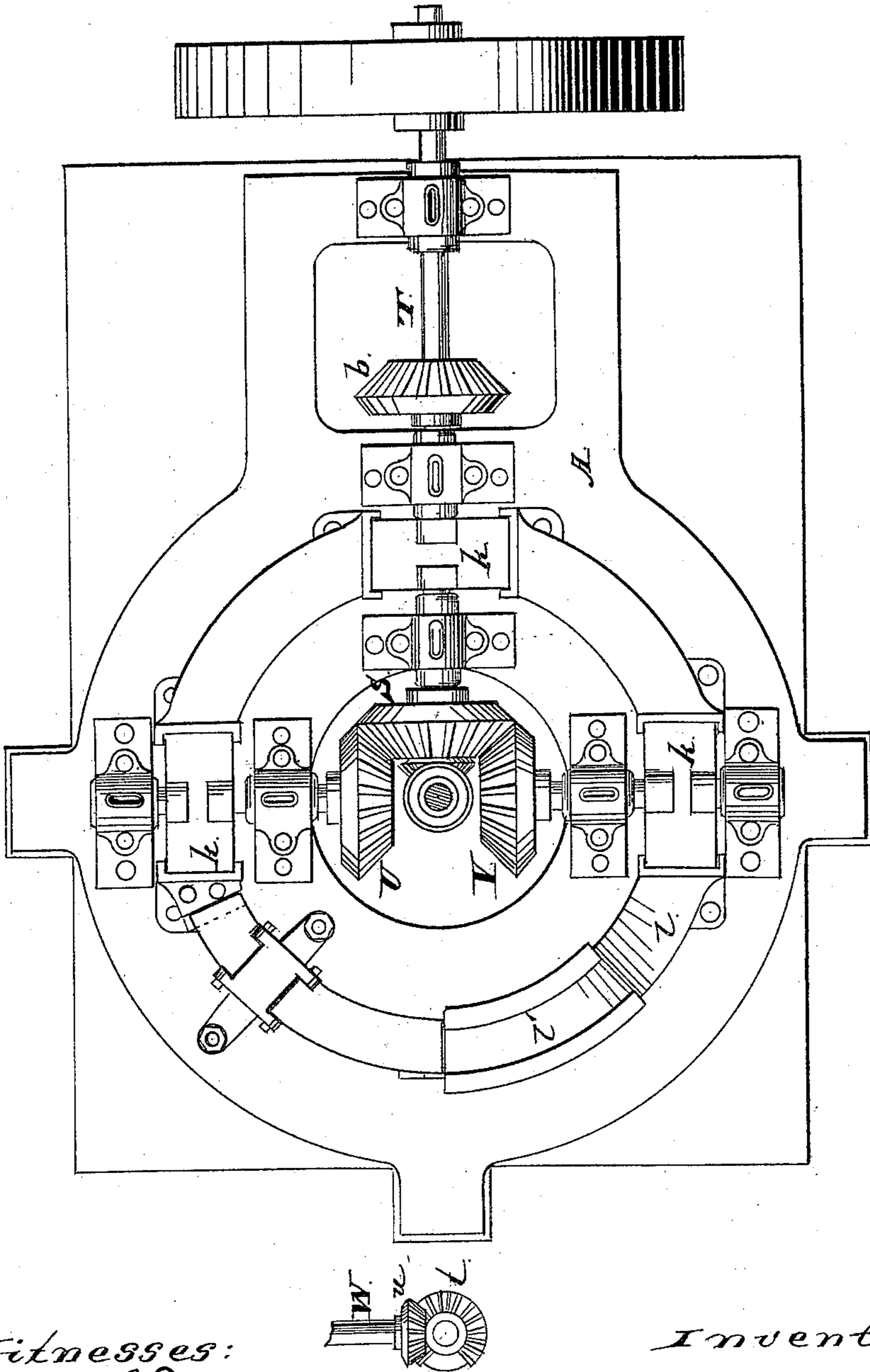


Fig. 5.

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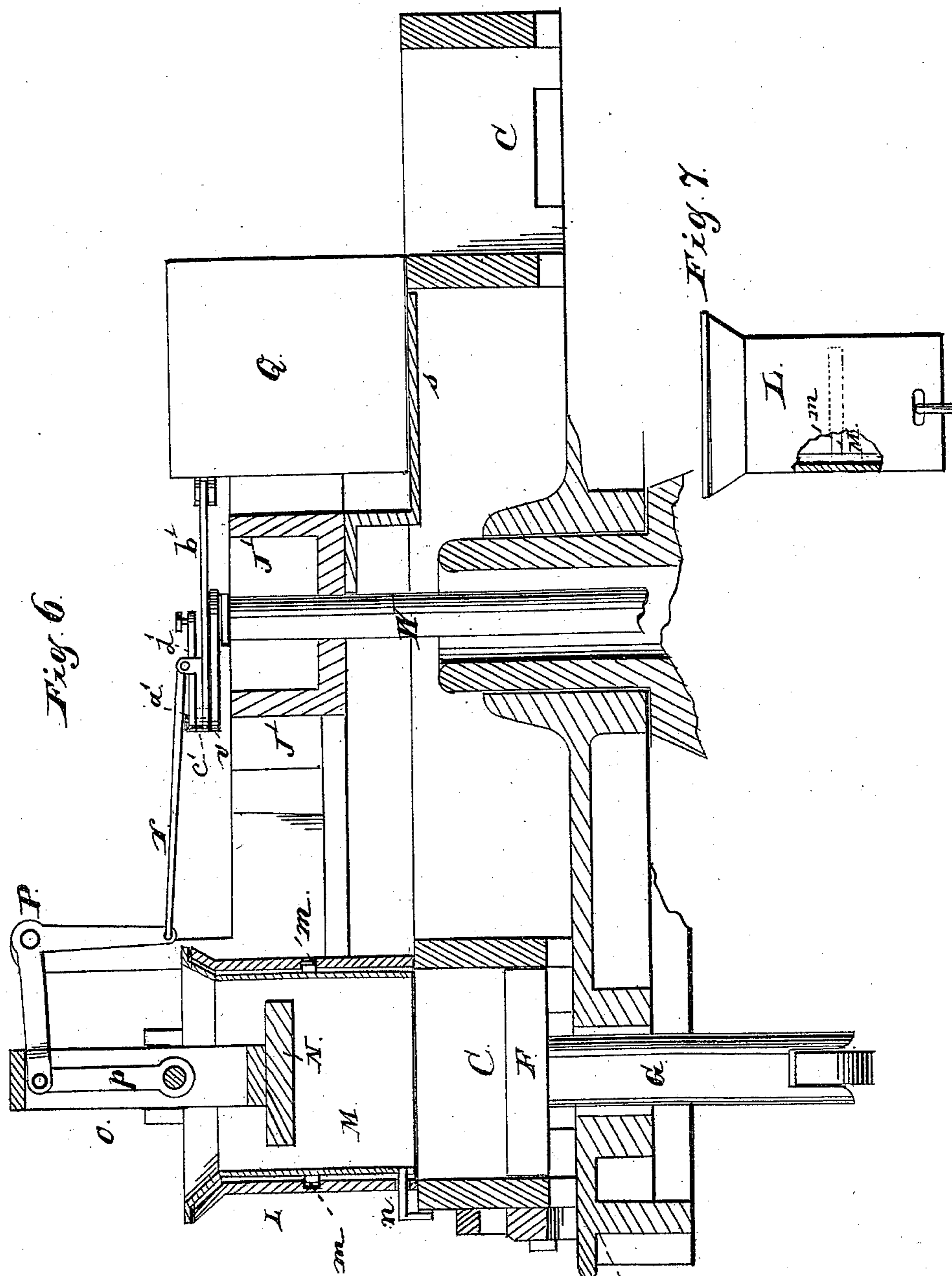
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W. L. GREGG.

BRICK MACHINE.

No. 299,067.

Patented May 20, 1884.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM L. GREGG, OF PHILADELPHIA, PENNSYLVANIA.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 299,067, dated May 20, 1884.

Application filed February 11, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. GREGG, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, and a citizen of the United States, have invented new and useful Improvements in Brick-Machines, of which the following is a full description, reference being had to the accompanying drawings, in which—

10 Figure 1 is a plan; Fig. 2, a side elevation; Fig. 3, a detail, being a vertical section of the parts shown, taken at *x* of Fig. 1. Fig. 4 is a plan of the parts shown, the upper portion of the machine being removed. Fig. 5 is a detail. Fig. 6 is an enlarged view, being a section of the upper part of the machine, taken at line *yy* of Fig. 1. Fig. 7 is a side elevation of the hopper-case.

My improvements are primarily designed 20 to be used in connection with a brick-machine similar to that shown and described in Letters Patent of the United States No. 162,058, dated April 13, 1875, granted to Isaac Gregg, Jr.; and my improvements consist in a hopper automatically agitated to facilitate the passage 25 of the clay under a stamp, the hopper being used in connection with a mold-board and stamp moving intermittently; in providing a stamp automatically operated and working in 30 the hopper for the purpose of feeding the clay to the molds; in providing one or more pressure-plates with holes or vents to permit the escape of air and surplus clay from the molds; in devices for applying coloring-matter or 35 enamel to the upper surface or edge of the brick, and in devices for removing the pressed brick from the machine, and at the same time applying coloring-matter or enamel to the upper surface of each plunger, which presses the 40 brick from below for the purpose of applying coloring-matter to the lower side or edge of the brick. The machine shown in the drawings is constructed upon the general plan of that shown in the said patent to I. Gregg, Jr., 45 with which brick-makers are familiar, and hence a detailed description of many parts of the machine will not be required.

In the drawings, A is the bed-plate of the machine.

50 B is a spur-wheel and mold-table, provided with a series of mold-boxes, C.

D is a mutilated spur-pinion meshing into

the spur-wheel B. D is mounted upon an upright shaft, E, which is driven by miter-gears *a b*.

Each mold-box is provided with a piston or 55 follower, F, each of which is secured to a vertical stem, G, and each stem passed through an opening in the mold-table. These stems G are provided with friction-rollers at their 60 lower ends. The mold-boxes C can be cast, and, as shown, are provided with flanges *c*, by which they are bolted to the mold-table.

d are pieces of metal, bolted one to the outer end of each mold-box, and each piece *d* is provided with a recess, *e*, to receive the detent *f*, 65 and which is operated by means of the cam H upon the shaft E, there being a cam-groove, *g*, in the upper surface of H, into which groove the pin *h* extends out from the detent *f*. 70

i is a casting secured to the uprights I. In one part of this casting *i* there is a bearing for the shaft E, and the detent *f* passes through and is supported in this part *i*, as shown in Fig. 3. 75

J are pressure-plates secured to the cross-pieces J' of the frame, which are secured to the posts K, except that one end of one piece is secured to *i*. As shown, there are eight mold-boxes, three only of which are at the same 80 time covered by the plates J.

w are holes through one of the pressure-plates J, and through the part J' over it.

As the mold-table rotates, the lower ends of the stems G travel over bearing-pieces *j*, cam-yokes *k*, and inclines *l l'*, substantially as shown 85 and described in said Patent No. 162,058, and the pistons or followers are forced up by the action of cams on shafts beneath said yokes *k*, and by the passage of the lower ends of the 90 stems over the incline *l*.

L is a case supported in any suitable manner over the mold-table, so that the mold-boxes may pass directly under the case.

M is a hopper located in the case L, and arranged so that it can have a little lateral movement therein. As shown, the hopper is provided with a projecting piece, *m*, on each end, which pieces enter grooves in the opposite 95 sides of the case L, the hopper being a little narrower than the case. 100

n is a strong pin or projection permanently secured to the hopper M, and passing through a slot in the side of the case L. This pin *n* is

turned down a little at its outer end, and engages with a series of teeth or projections provided upon the outer edge of the mold-table.

A' is a spring adapted to move the hopper in one direction.

N is a stamp or plunger in the hopper M, which is secured to the lower end of a frame, O, which moves up and down in guideways o, as shown in Fig. 1.

p is an arm or lever pivoted in the frame O. To the upper end of p is pivoted one end of one arm of a bell-crank lever, P, which lever is pivoted to a suitable support. To the lower end of the other arm of the bell-crank lever is connected one end of a rod, r. The other end of this rod r is pivoted to an arm, as herein-after more fully set forth.

Q is a box resting on a suitable support, s, on a level with the top of the mold-boxes, and adapted to be moved outward over the mold-boxes and drawn back again. The bottom of this box Q is perforated.

R is another box, similar to Q, having a perforated bottom arranged upon a suitable support on a line with the top of the mold-boxes, and adapted to be moved outward and drawn back again.

S is a beveled gear-wheel at the end of the main shaft T. Each beveled wheel engages with the two miter-wheels U V.

t is a small mutilated bevel-wheel connected with the bevel-wheel S, and engaging with the beveled gear-wheel u upon the lower end of the shaft W. To the upper end of this shaft W is rigidly secured an arm, v, to the outer end of which is secured a pin, a'.

b' is an arm, one end of which is pivoted to the pin a', and the other end is pivoted to the side of the box Q.

c' is another arm, the outer end of which is pivoted upon the pin a'. The other end, as shown, is provided with an upward projection, to which one end of the rod r is pivoted.

d' is another arm, one end of which is pivoted upon the pin a', and the other end is pivoted to one end of an arm or rod, e', the other end of which is pivoted to the box R.

As shown in the drawings, the pinion D is supposed to make eight revolutions, while the revolving table B makes one revolution, and the pinion D being mutilated, the table B moves intermittently. The shaft W also makes eight revolutions while the table B makes one.

The wheels u t are provided with the same number of cogs; but t being mutilated, W stands still a portion of the time. The arrangement and construction of the parts is such that the shaft W stands still while the table B moves, but rotates while the table stands still. The bevel-wheel t may be secured directly to the shaft T.

The metal pieces d on the outer ends of the molds need not be used, and the outer end of each mold may be provided with a recess to receive the detent f.

The operation is as follows: Clay is fed to

the molds through the hopper, which will be agitated by the devices described, which will facilitate the passage of the clay beneath the stamp O, and the stamp being carried downward while the table B stands still, clay will be forced by the stamp into the mold. The stamp N is operated by the rotation of the shaft W, through the arm v, pin a', arm c', rod r, lever P, and arm p. The table will then move until the filled box passes beneath the first pressure-plate, where it will stop, and the piston or follower F will be forced upward in its mold by the yoke and cam-shaft beneath, and the air and any surplus clay in the mold can escape through the openings w. While this is being done an empty mold will be filled. The table B continuing to rotate, the molds will be brought one after another under the next pressure-plate, and additional pressure will be applied by the yoke and the cam-shaft beneath. When each mold is brought in line with the box Q, the table will rest; but the shaft W, rotating, will, through the arm b', cause the box Q to move toward the periphery of the table B, passing over the mold at that point, and the box being supplied with coloring material or enameling material, a portion of it will be distributed through the perforations in the bottom of the box over the surface of the clay in the mold. When each mold reaches the point opposite to the letter B', Fig. 1, the piston in the mold will be forced up, bringing its top on a level with the table, and then, by the rotation of the shaft W, the box R will be forced outward toward the periphery of the table by means of the arms d' e', and this box being supplied with coloring or enameling material, a portion of such material will be deposited upon the surface of the piston or follower F, and such coloring material will be applied to the under surface of the next brick formed in such mold, so that by the means described coloring or enameling material can be applied both to the lower and upper surface of the brick. The rotation of the shaft W operates the stamp O, moving it both down and up, and also at the proper time pushes out and draws back the two boxes Q and R.

If it be desired to apply coloring material or enameling material to the two edges of the brick, instead of the upper and lower surfaces thereof, this can be done by changing the form of the molds, placing them on edge.

I use moist clay of such consistency and condition that the agitation of the hopper will, partially at least, fill the molds, and the stamp forces clay into the molds, partially packing it therein, it being the intention to always supply a small surplus to each mold; hence it becomes essential to provide for the escape of the surplus, so that the proper quantity of clay will remain in each mold.

A traveling belt may be provided to receive the completed brick from the mold-table.

I apply coloring or enameling matter to the upper surface or edge of the brick before the

final pressure is applied, so that such matter may be pressed firmly into or upon the face of the brick.

The wheels U V drive two cam-shafts.

5 There is a cam on the shaft T. The cams operate the yokes *k*.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a brick-machine, a pressure-plate, J, 10 provided with holes or vents for the purpose of permitting the escape of air and surplus clay from the mold when pressure is applied to its contents, in combination with an intermittently-rotating mold-table and an agitated 15 hopper, substantially as and for the purpose specified.

2. In a brick-machine, a movable receptacle, Q, automatically operated for the purpose of distributing coloring material or other material over the upper surface or edge of a brick 20 while being made, substantially as specified.

3. In a brick-machine, a movable box, R, automatically operated for the purpose of pushing the brick from the table, and at the

same time applying coloring material or other 25 material to the surface of the piston or follower, substantially as specified.

4. The combination of the shaft T, mutilated gear-wheel *t*, gear-wheel *u*, shaft W, and arm *v*, for the purpose of operating the stamp and 30 receptacles Q R, substantially as specified.

5. The combination of the shaft T, mutilated gear-wheel *t*, gear-wheel *u*, shaft W, arms *v* and *c*, rod *r*, lever P, arm *p*, and stamp N, substantially as and for the purpose specified. 35

6. The combination of the shaft T, mutilated gear-wheel *t*, gear-wheel *u*, shaft W, arms *v* and *b'*, and receptacle Q, substantially as and for the purpose specified.

7. The combination of the shaft T, mutilated 40 gear-wheel *t*, gear-wheel *u*, shaft W, arms *v* and *c'*, and receptacle R, substantially as and for the purpose specified.

WILLIAM L. GREGG.

Witnesses:

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O. W. BOND.