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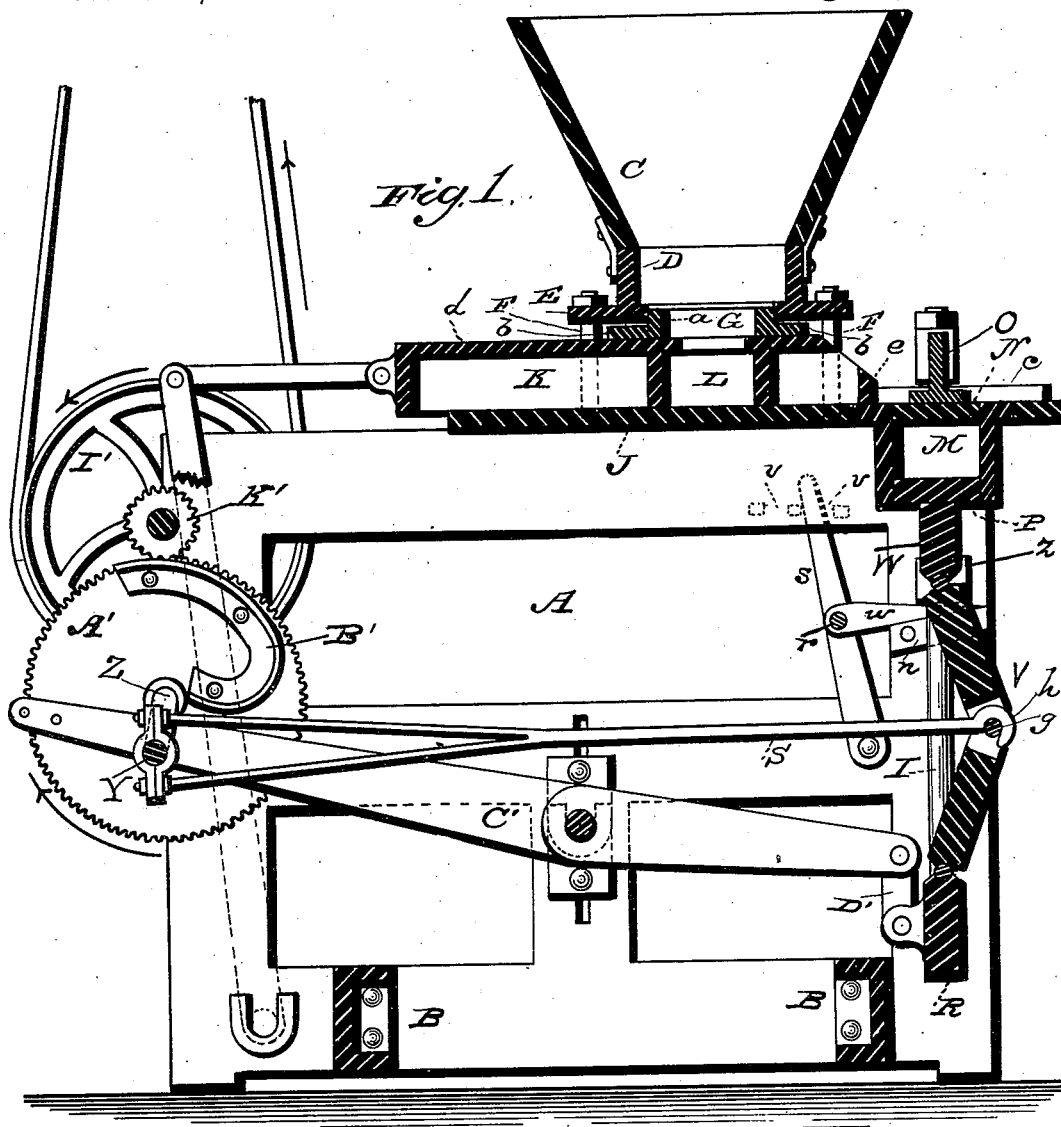
4 Sheets—Sheet 1.

G. E. NOYES.

BRICK MACHINE.

No. 304,230.

Patented Aug. 26, 1884.



WITNESSES
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R. C. Masi.

INVENTOR
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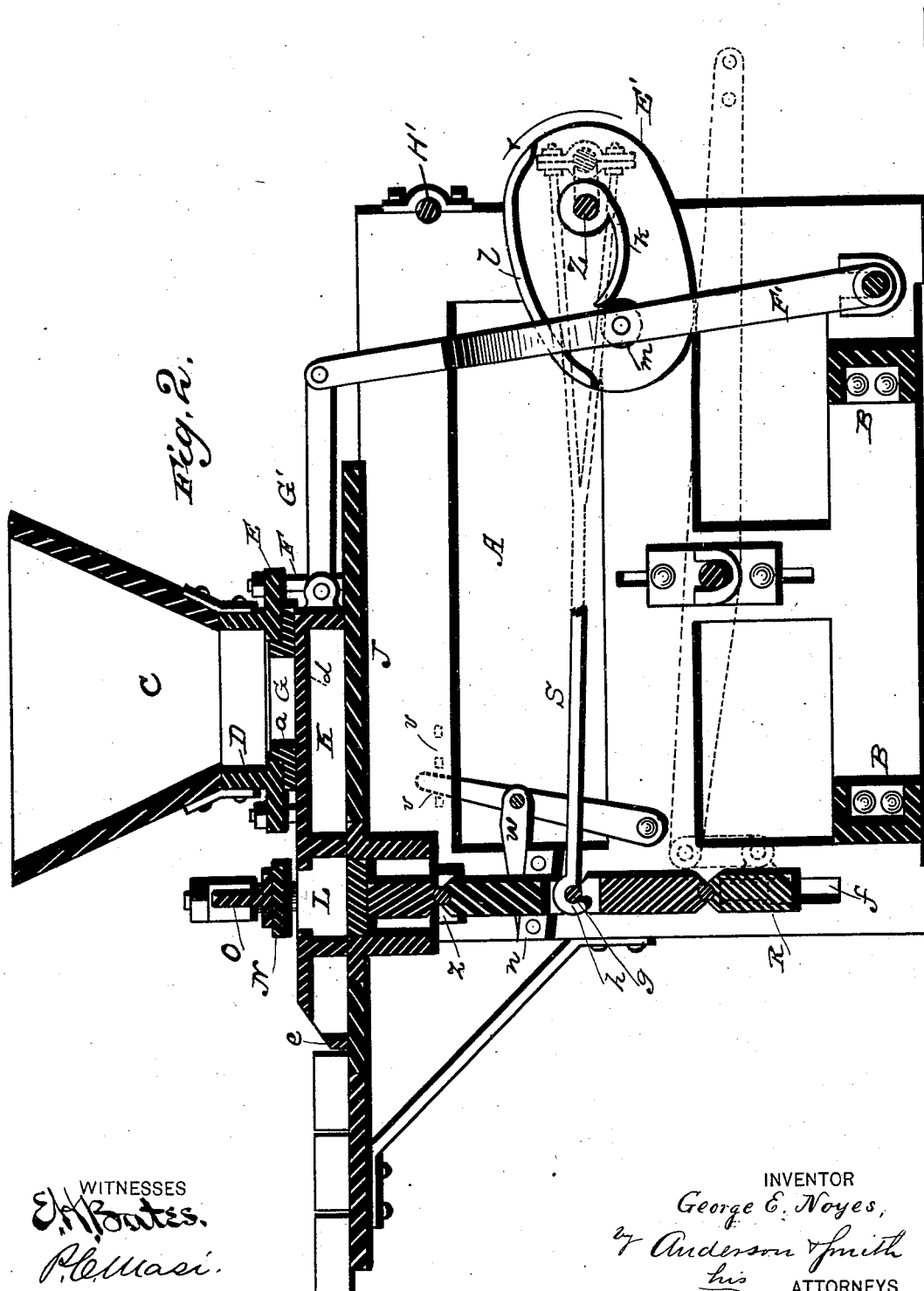
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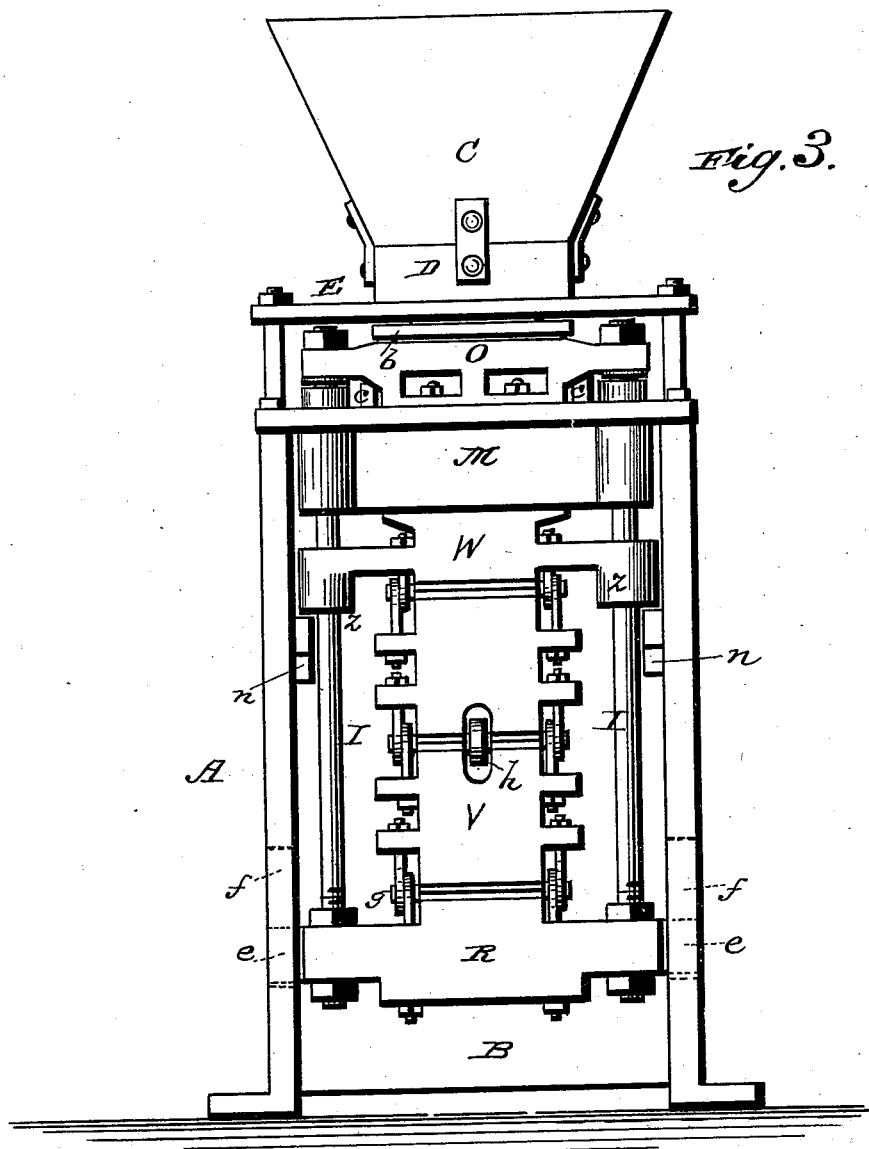
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G. E. NOYES.
BRICK MACHINE.

No. 304,230.

Patented Aug. 26, 1884.



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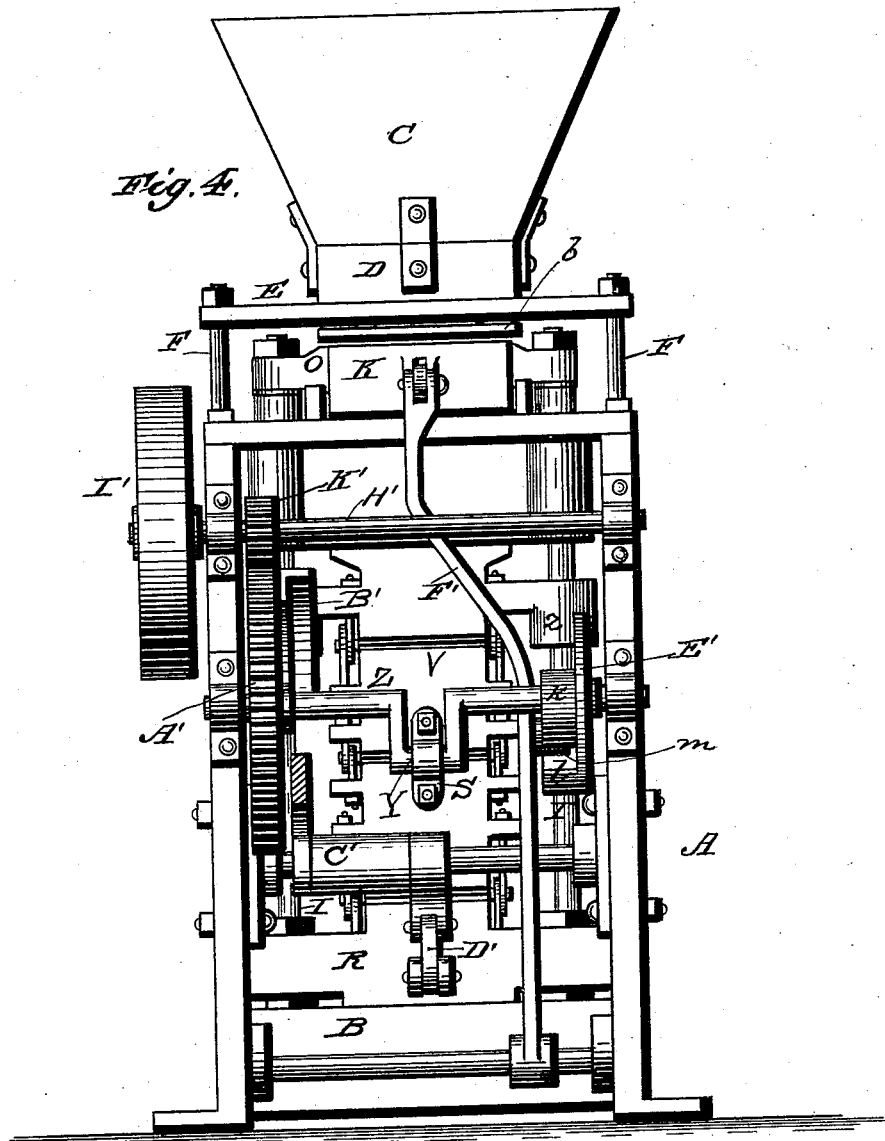
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4 Sheets—Sheet 4.

G. E. NOYES.
BRICK MACHINE.

No. 304,230.

Patented Aug. 26, 1884.



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UNITED STATES PATENT OFFICE.

GEORGE E. NOYES, OF WASHINGTON, DISTRICT OF COLUMBIA.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 304,230, dated August 26, 1884.

Application filed May 31, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. NOYES, a citizen of the United States, residing at West Washington, in the District of Columbia, have
5 invented certain new and useful Improvements in Brick-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to
10 make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a vertical sectional view of my machine. Fig. 2 is also a vertical sectional view taken from the opposite side to that of Fig. 1. Fig. 3 is a front view, and Fig. 4 is a rear view.

This invention has relation to machines for
20 molding bricks by pressure; and it consists in the construction and novel arrangement of devices, as hereinafter set forth, and pointed out in the appended claims.

The object of the invention is to provide an
25 automatic brick-molding press of simple and economical construction, great power, and compact form.

In the accompanying drawings, the letter A designates a strong iron frame, the sides of
30 which are cast in skeleton form and connected at their lower portions by the bars B, which extend transversely, while the upper portions of said sides are connected by the bed-plate J, which is beneath the hopper, being separated therefrom by an interval in which the
35 feed-slide moves.

E represents a transverse plate having an opening, and from the margin of this opening extends upward the flange-wall D, to which the
40 body C of the hopper is secured. The plate E is supported at the proper distance above the bed-plate J by the rods F, which are secured to the sides of the frame. In the opening or throat formed by the plate E is engaged the
45 vertical flange-wall *a* of the loose guide G, the marginal portion *b* of which extends horizontally and is designed to rest on the top of the feed-slide.

Upon the bed-plate J and under the hopper
50 supporting the box-guide G is the feed-slide K, which is formed with side walls which en-

gage the lateral guides *c* of the frame. In this slide is formed the feed-chamber L, which is open at bottom and top. In rear of the chamber L the top of the slide is closed, as
55 shown at *d*. The front end of the slide is formed with a transverse wall, *e*, which is adapted, when the slide is pushed forward, to move the molded brick from the mouth of the mold-box in the bed-plate, after said brick has
60 been raised by the operation of the lower follower.

The mouth of the mold-box M is in advance of the hopper in the bed-plate, and the walls of the mold-box are below the bed-plate, as
65 shown. The mold-box is open above and below for the reception of the upper plunger and the lower follower, both of which are finished to fit neatly in said box and to move easily up or down in contact with the walls
70 thereof.

At each side of the frame, opposite the ends of the mold-box, are the vertical reciprocating rods I, to the upper portions of which is secured the cross-head O, and to the lower ends
75 of which is secured the lower cross-head, R, having lateral projections *e*, which work in bearings *f*, made in the sides of the frame.

To the upper cross-head, O, is attached the
80 plunger N.

Pivoted to the lower cross-head, R, and between the same and the follower P, is the powerful toggle-joint V, the upper and lower branches or links of which are connected by the pivot-bolt *g*, to which is secured the hook
85 end *h* of a pitman, S, the rear end of which is connected to the crank Y of the shaft Z, which is journaled in bearings on each side at the rear end of the frame. The rods I and their upper and lower cross-heads constitute
90 a reciprocating frame which carries the toggle V in its movements. The shaft Z carries a gear-wheel, A', on the inside of which is a spiral-form cam-rib, B', which engages the end of the lever C', which is connected to the
95 lower cross-head of the reciprocating frame by a link, D', or by a slot-joint. On the same shaft, Z, and opposite to the gear-wheel A', is the cam-disk E', which is provided with the inner cam-rib, *k*, and the outer cam-rib, *l*,
100 which are respectively adapted to engage the roller-bearing *m* on the upright lever F',

which is connected by a link, G', to the feed-slide K. The inner and outer cam-ribs, k and l, are turned toward each other, so that their concavities face each other, as shown. When the shaft revolves, the cam k forces the slide K forward from the hopper to the mold M, while the cam l operates in turn to draw the slide back to position under the hopper.

In the operation of these devices, the feed-slide is filled with the clay, which has been previously pulverized, and is then moved forward on the bed-plate, its plane top cutting off the feed, until it reaches the mold. When the feed compartment of the slide is over the mold, the contents of said compartment fall into the mold. At this time the reciprocating frame is raised, the toggle being in bent position, and the upper cross-head and its plunger elevated above the feed-slide. When the slide is drawn back, the reciprocating frame is forced downward by the cam-rib of the wheel A', so that its plunger enters the mouth of the mold. At the same time that said plunger enters the mouth of the mold the toggle comes into action, forcing up the lower follower in the bottom of the mold, and forming the brick with great pressure. On the reverse movement the reciprocating frame rises, lifting the plunger to allow the feed-slide to move forward over the mouth of the mold, pushing before it the brick which has been raised by the lower follower out of the mold. By the bending of the toggle-joint the lower follower is moved downward in the mold, which becomes ready for the reception of the next charge of clay.

H' represents a transverse shaft seated in bearings at the rear end of the main frame, and carrying the belt-pulley I' and the pinion K', which engages the gear-wheel A'. Power may be applied by a belt from a line-shaft to the pulley I'.

On the inside surfaces of the front portions of the sides of the main frame are secured the guide-ledges n, on which move the adjusting-wedges w, which are connected to the transverse rod r, which is operated by the lever-arms. The upper portion of the lever-arm is adapted to engage the notches v of a scale on the side of a frame, said notches being arranged to govern the position of the wedges, which are designed to be more or less advanced, according to the quantity of clay which it is desired that the mold shall hold.

The follower P is carried on the transverse slide-head W, which is provided with lateral eye-bearings z, which work on the vertical rods I of the reciprocating frame. The de-

scant of the slide-head is limited by the wedges w, which form rests for the eye-bearings z, and serve thereby to stop the follower P in its descent at the required point. In this manner the mold can be gaged to suit the condition of the clay to produce bricks of the density desired.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. In a brick-press, a reciprocating frame consisting of vertical rods connected by an upper cross-head carrying the upper plunger, and by a lower cross-head carrying a toggle supporting the lower follower by a slide-head engaging said vertical rods, substantially as specified.

2. In a brick-press, the combination, with the reciprocating frame carrying the upper plunger, and the toggle supporting the lower follower, of a lever connected to the reciprocating frame, and operated by a cam on a crank-shaft connected by a pitman with the toggle-joint, substantially as specified.

3. In a brick-press, the combination, with the main frame, bed-plate, and mold, of the reciprocating frame, its plunger, toggle, slide-head, and follower, the lateral guide-ledges of the main frame, and the adjustable wedges governing the capacity of the mold, substantially as specified.

4. In a brick-press, the combination, with the main frame and bed-plate having the mold, of the reciprocating frame carrying the upper plunger, the toggle supporting the lower follower, the elevated hopper, the feed-slide, and a single crank-shaft carrying cams, operating by intermediate levers and pitman the feed-slide, reciprocating frame, and toggle, substantially as specified.

5. In a brick-press, the combination, with a reciprocating frame carrying the upper plunger, the lower follower, and a toggle supporting the latter and a feed-slide, of the crank-shaft, having a gear-wheel provided with a spiral cam, and a disk provided with two spiral cams facing each other, an upright lever connected to the feed-slide, a pitman connected to the toggle, and a lever connected to the reciprocating frame, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE E. NOYES.

Witnesses:

PHIL C. MASI,
M. P. CALLAN.