

J. HOTCHKISS & P. N. WOLISTON.
Brick-Machines.

No. 138,251.

Patented April 29, 1873.

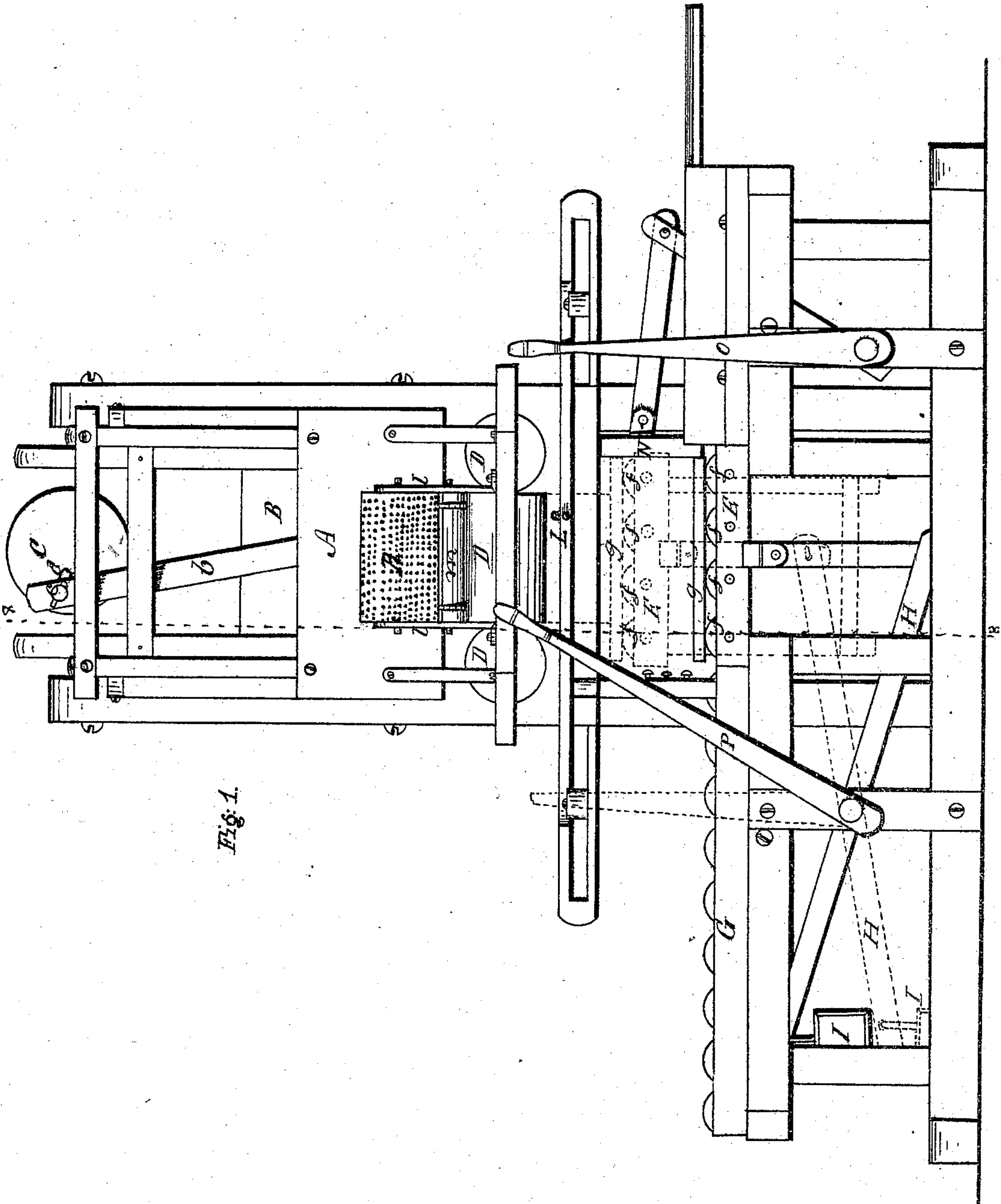


Fig. 1.

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E. M. Gallaher.
S. W. Wood

Inventors:
James Hotchkiss
Philip N. Woliston
By their atty,
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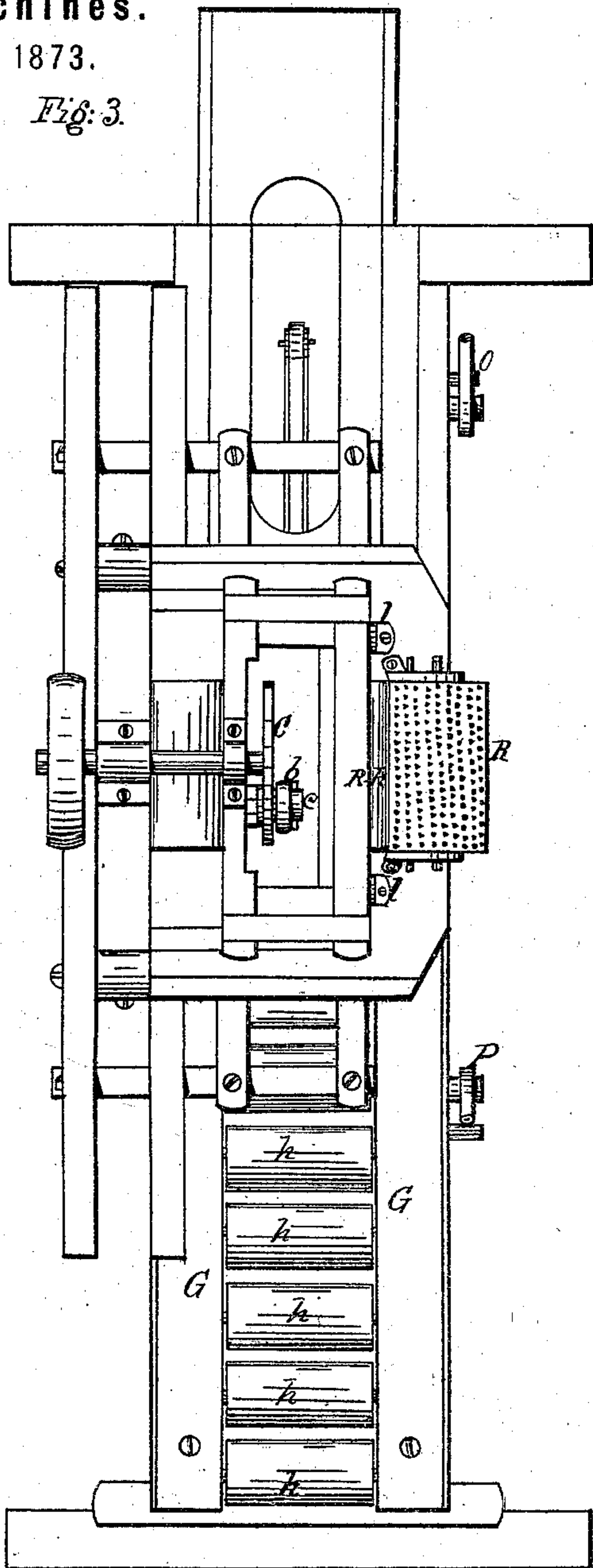
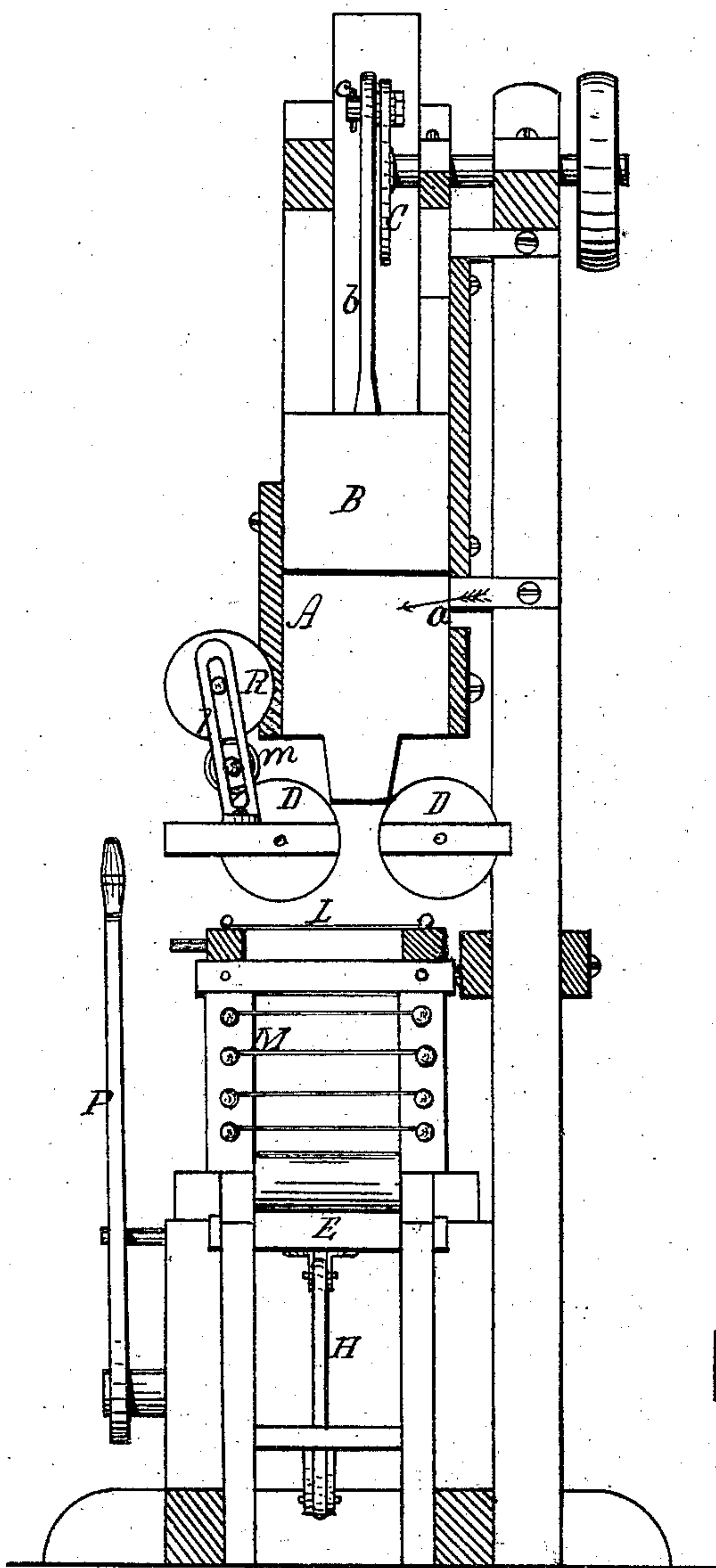
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Fig: 3.

Fig: 2



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UNITED STATES PATENT OFFICE.

JAMES HOTCHKISS AND PHILIP N. WOLISTON, OF SPRINGFIELD, OHIO.

IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. **138,251**, dated April 29, 1873; application filed November 6, 1872.

To all whom it may concern:

Be it known that we, JAMES HOTCHKISS and PHILIP N. WOLISTON, of Springfield, in the county of Clarke and State of Ohio, have invented an Improved Brick and Tile Machine; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing making part of this specification—

Figure 1 being a front elevation of the machine; Fig. 2, a transverse vertical section in a plane indicated by the line *x x*, Fig. 1; Fig. 3, a top view of the machine.

Like letters designate corresponding parts in all of the figures.

Our improved machine is organized for producing a continuous web of clay, from which the bricks are cut by wires. Special features of improvement in this organization are, first, the formation and delivery of the continuous web of clay vertically between the forming-dies; second, cutting off a block of the protruded web sufficient for several bricks by a wire moving horizontally or laterally across the web; and, third, cutting the said block of clay into bricks by forcing it laterally or horizontally through a set of wires stretched in a stationary frame; all substantially as herein specified.

The machine is intended to be located by the side of a pug-mill, (not represented in the drawing,) from which the tempered clay is transferred to the press or die box A of the machine through an aperture, *a*, in the side thereof, as indicated by the arrow in Fig. 2. The clay, however, may be introduced in any other suitable way. The plunger or piston B, which compresses the clay in the press-box, receives a vertical reciprocating movement by means of a revolving crank or crank-wheel, C, with which the plunger is connected by a connecting-rod, *b*, and crank-pin *c*. The crank-wheel shaft may receive its motion from the shaft of the pug-mill by suitable gearing or in any convenient way. The crank-pin *c* is adjustable to different distances from the center of the crank-wheel by a slot, *d*, Fig. 1, and adjusting-nut or equivalent means, so that the stroke of the plunger may be increased or diminished in extent in order to regulate the number of bricks made at each stroke, according to the

quantity of clay prepared in the pug-mill and delivered to the press-box. The continuous web of clay is formed between the roller-dies D at the bottom of the press-box and delivered vertically or directly downward therefrom, so that the weight of the clay itself assists greatly in the formation thereof, and the least expenditure of power is required therefor. Directly under the dies is a receiving frame, platform, or carriage, E, which has a vertical sliding movement in suitable ways underneath the dies down to a position level with a roller carriage-way, G, as shown in Fig. 1, the full lines showing the lowest position of the frame, and the dotted lines showing a raised position thereof in the said figure. The frame is mounted on the end of an arm or lever, H, pivoted to the frame-work of the machine, the other end of which lever has a counter-weight, I, whereby the movements of the frame E are rendered easy. There are friction-rollers *f* in the top of the frame E, on which a receiving-board, *g*, (shown in dotted lines in Fig. 1,) is placed, each time before the frame is raised for the reception of the descending web of clay. Then, as the web is more and more protruded, its lower end rests on the board *g*, and gradually depresses it with the frame until the latter reaches a position level with the carriage-way G. The counter-weight I presses the frame E upward with sufficient force to hold the web of clay in shape and keep it from cracking. As soon as the downward stroke of the plunger is finished and the frame E has been depressed to its lowest position a wire, L, in a movable frame close beneath the dies D is moved laterally across the web of clay, thereby severing the portion below from that above it, the part cut off being of just sufficient depth to make a given number of bricks. At one side of the frame E is a stationary frame, M, of horizontal cutting-wires, through which frame the severed portion of the web of clay is driven by means of a plunger or driver, N, that is pushed forward by the hand of the attendant pressing against a handle, O, connected therewith. The board *g*, on which the web of clay rests, rolls along on the friction-rollers *f* of the frame E, and upon the rollers *h* of the carriage-way G, in continuation thereof, so that but little resistance is

offered to the lateral movement of the clay. After the severing of the clay into bricks the board *g* on which they rest is carried off to the place for drying the bricks, so that the bricks are not handled with the hands, and they may be left on the board to dry. There is a lever, *P*, connected with the balance-lever *H* of the frame *E* for raising or lowering the said frame by hand when necessary. A perforated rotating sanding cylinder or sieve, *R*, is placed over each roller-die *D*, (only one cylinder being shown in the drawing,) for sanding the dies as they revolve, and consequently sanding the bricks—a great advantage, particularly for bricks made from some kinds of clay, which otherwise crack in drying. The journals of each perforated cylinder or sieve turn in upright slotted bearings *l*; and these cylinders rest on intermediate revolving rollers *m*, Fig. 2, whose journals also turn in the same or similar slotted bearings, and which, being on the roller-dies, have a revolving movement imparted to them thereby, and, in turn, transmit it to the sanding-cylinders.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the press-box *A*, dies *D*, and wire *L*, so as to form and deliver a section of the web of clay vertically or nearly vertically downward, for the purpose herein specified.

2. The counter-weighted frame or carriage *E*, for receiving the web of clay, arranged and operating substantially as and for the purpose herein specified.

3. The arrangement and combination of the vertically-moving roller-frame or carriage, *E*, receiving-board *g*, plunger *N*, roller carriage-way *G*, and the stationary wire-frame *M*, substantially as and for the purpose herein specified.

Specification signed by us this 20th day of September, 1872.

JAMES HOTCHKISS.
PHILIP N. WOLISTON.

Witnesses:

REUBEN MILLER,
W. S. GRIM.