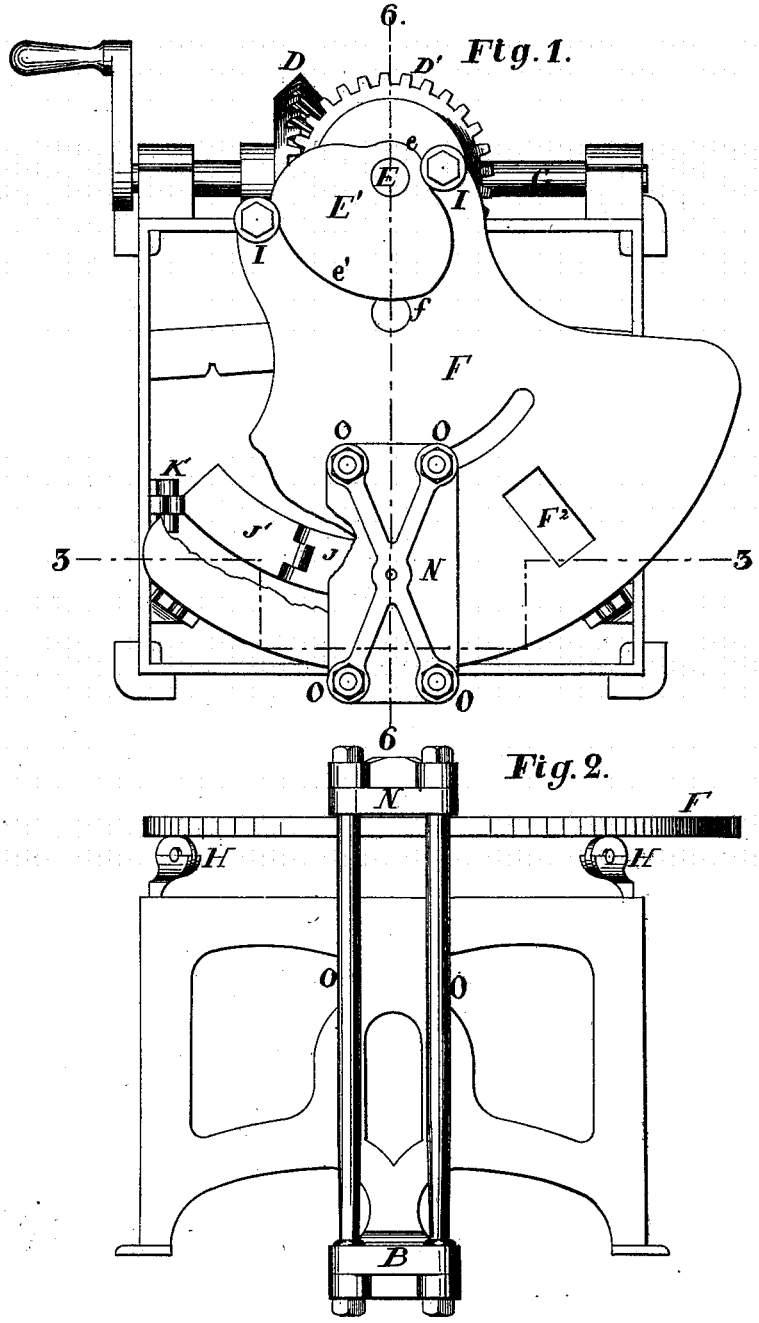
2 Sheets—Sheet 1.

C. W. EASTWOOD.

Brick-Machine.

No. 198,585. Patented Dec. 25, 1877.



WITNESSES

Chas. J. Gooch

A. H. Galt

INVENTOR

Charles W. Eastwood

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2 Sheets—Sheet 2.

C. W. EASTWOOD.

Brick-Machine.

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Fig. 4.

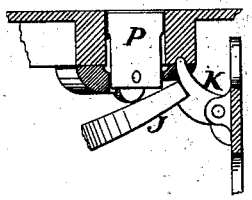


Fig. 3.

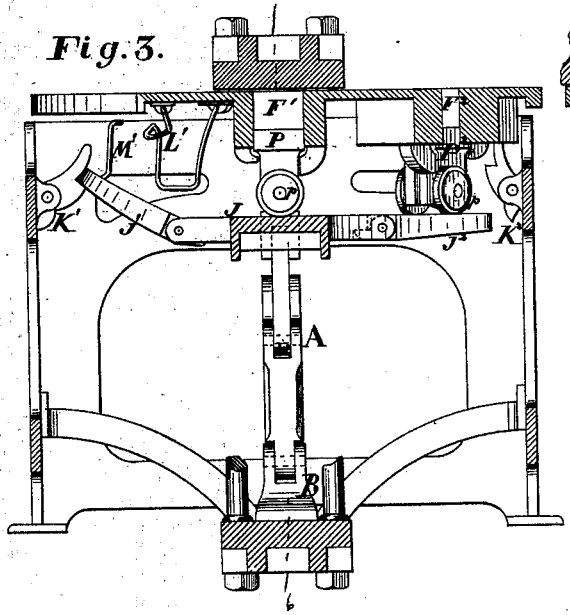


Fig. 5

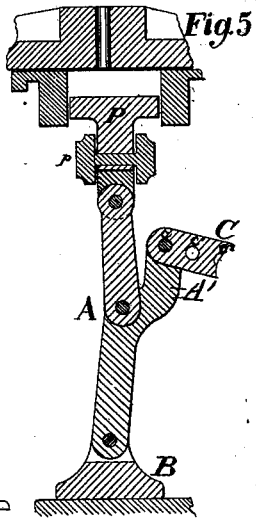


Fig. 6.

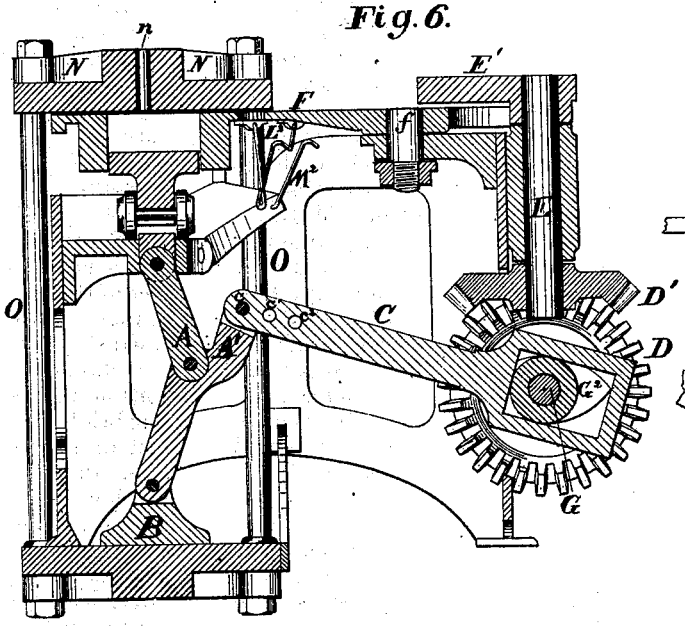


Fig. 7.

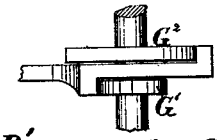
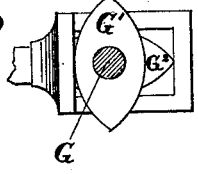


Fig. 8.



WITNESSES

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UNITED STATES PATENT OFFICE.

CHARLES W. EASTWOOD, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. **198,585**, dated December 25, 1877; application filed April 17, 1877.

To all whom it may concern:

Be it known that I, CHARLES W. EASTWOOD, of the city and county of Philadelphia, and State of Pennsylvania, have invented a certain new and Improved Brick-Machine, of which the following is a specification:

My improved machine is constructed with an oscillating mold-table provided with two mold-cavities, which are alternately supplied with clay by attendants on opposite sides, the clay in one mold being pressed while the other mold is being filled.

The improvements further relate to a toggle operated through a connecting-rod by a double crank, so as to impart the necessary pressure to the mold-plunger at each stroke of the machine.

The improvements further relate to attaching the said toggle adjustably to its connecting-rod, in order to vary the position of the plunger within the mold, to adapt the machine for producing pressed or common bricks at will, as hereinafter described.

The improvements further relate to a tramway employed to elevate the plunger, so as to eject the formed brick as each mold reaches the extremity of its movement, said tramway being automatically released to permit the descent of the plunger for the reception of a new charge.

The improvements further relate to the combination of re-pressure plates with their tie-rods and the toggle and plunger for pressing the bricks, as hereinafter described.

In the accompanying drawings, Figure 1 is a plan view of the machine. Fig. 2 is a front elevation of the same. Fig. 3 is a vertical section in the plane indicated by the broken line 3 3 in Fig. 1. Fig. 4 is a detached vertical sectional view of the tripping mechanism of the tramway for elevating the plungers. Fig. 5 is a detached vertical sectional view on the line 6 6, Figs. 1 and 3, of the toggle and one of the brick-molds and plungers, showing the plunger elevated to the extent required in pressing a brick. Fig. 6 is a vertical section on the line 6 6, Fig. 1, showing the plunger at its lowest position and about to be elevated. Fig. 7 is a detached plan view of the operating part of the cam-shaft and the pitman-yoke on which it acts. Fig. 8 is an elevation of the same.

A represents a knee or toggle-joint, pivoted at its lower end to the base or re-pressure plate B, and operated through the medium of a connecting rod or pitman, C, by double cams G^1 G^2 on the main shaft G, said cams being placed at right angles to each other, as shown in Fig. 8. The main shaft G is connected by miter-wheels D D′ with a vertical cam-shaft, E, the cam E′ at the head of which imparts an oscillating motion in a horizontal plane to the mold-table F on the center *f*. H H are stationary rollers, supporting the oscillating mold-table near its margin. I I are anti-friction rollers fitted to suitable vertical studs on the lugs or projections at the rear extremity of the mold-table, for the cam E′ to act against. The two opposite faces *e e′* of the cam E′ form concentric arcs, each of ninety degrees, more or less, so as to cause the mold-table to dwell at each extremity of its stroke for a sufficient period for the pressure of the clay in one mold and the discharge and refilling of the other mold. Within the two mold-cavities F^1 F^2 are fitted plungers P P^2, which, when not under pressure, are carried by wheels or rollers *p* on a tramway, J, or on either of the hinged leaves J^1 J^2 thereof, and are supported, when in their highest position, by hinged catches or triggers K^1 K^2, so as to raise the plunger as the table approaches the termination of its stroke in that direction to eject the brick from the mold. The catch is then tripped or pressed back by the contact of the mold, or any other suitable projection on the mold-table, so as to release the plunger and allow it to fall in readiness for a new charge. At the termination of the stroke in the opposite direction the hinged tramway is again elevated by a tappet, L^1 or L^2, on the mold-table acting against hooked arms M^1 or M^2 on the hinged tramway, serving to elevate it until the catch K^1 or K^2 drops beneath and supports it. N represents the upper re-pressure plate, against which the clay is pressed. Said plate is formed with an orifice, *n*, to permit the escape of surplus clay, or to compensate for the presence of a stone or other incompressible body, and is connected by tie-rods O O O O with the base-plate B. The two re-pressure plates, between which the toggle-joint acts, will thus be seen to constitute, with their tie-rods O, a press-frame of

great strength, which is entirely independent of other parts of the machine.

It will be seen from the construction of parts represented in Figs. 5 and 6 of the drawings that the pressure of the toggle A is received directly on the stem of the plunger P^1 or P^2, leaving the rollers *p* free. At other times the plungers rest on their rollers, and the said rollers prevent any sensible friction against the tramways in the act of throwing up the plungers to eject the molded bricks.

In order to adapt the machine for molding either pressed or common brick, I connect the pitman C adjustably to the projecting knee A^1 of the toggle A, as illustrated, for example, in the plurality of holes *c* c^1 c^2.

It will be observed that by shortening the pitman C, by placing the connecting-pin in either of the holes c^1 c^2, the plunger will not be caused to rise so far. A larger quantity of clay can thus be placed in the mold for the first pressure of the bricks, when pressed bricks are to be made, and the partly-pressed brick, having been removed, is sanded or otherwise treated in the usual way.

When it is desired to re-press a quantity of these bricks the pitman is again lengthened, so as to cause the plunger to be thrown up to a sufficient extent to compress the said bricks.

Having thus described my invention, the following is what I claim as new and desire to secure by Letters Patent:

1. The mold-table F, vibrating in a horizontal plane on the center *f*, as and for the purposes set forth.

2. The combination, with the vibrating mold-table F, of the toggle A, operated by cams G^1 G^2 and pitman C, so as to impart the pressing movement to the plunger at each movement of the mold-table, as explained.

3. The combination of the pressure-plates B N, the tie-rods O O, one or more plungers, P, the toggle A, constructed with a projecting knee, A^1, and the pitman C, connected at one end to a crank or cam movement, and at the other end adjustably to the projecting end A^1 of the toggle, as and for the purposes set forth.

4. The tramways J^1 J^2, operating as described, to lift the plungers, and dropping automatically to permit their descent after the brick is discharged.

5. The press-frame constructed, as described, with plates B N and tie-rods O O O O, in combination with the mold-table F, supported independently on rollers H H, as and for the purpose set forth.

CHARLES W. EASTWOOD.

Witnesses:

OCTAVIUS KNIGHT,

CHAS. J. GOOCH.