(No Model.)

G. H. KUNTZ.

MOLD FOR BRICK AND REPRESSING MACHINES.

No. 301,131. Patented July 1, 1884.

Fig. 1.

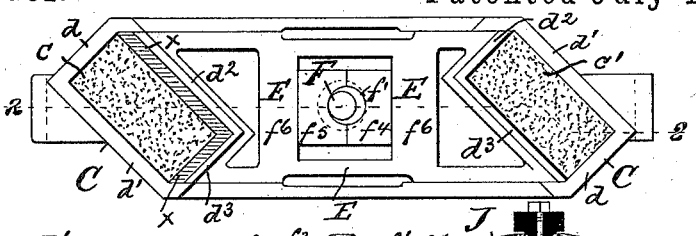


Fig. 2.

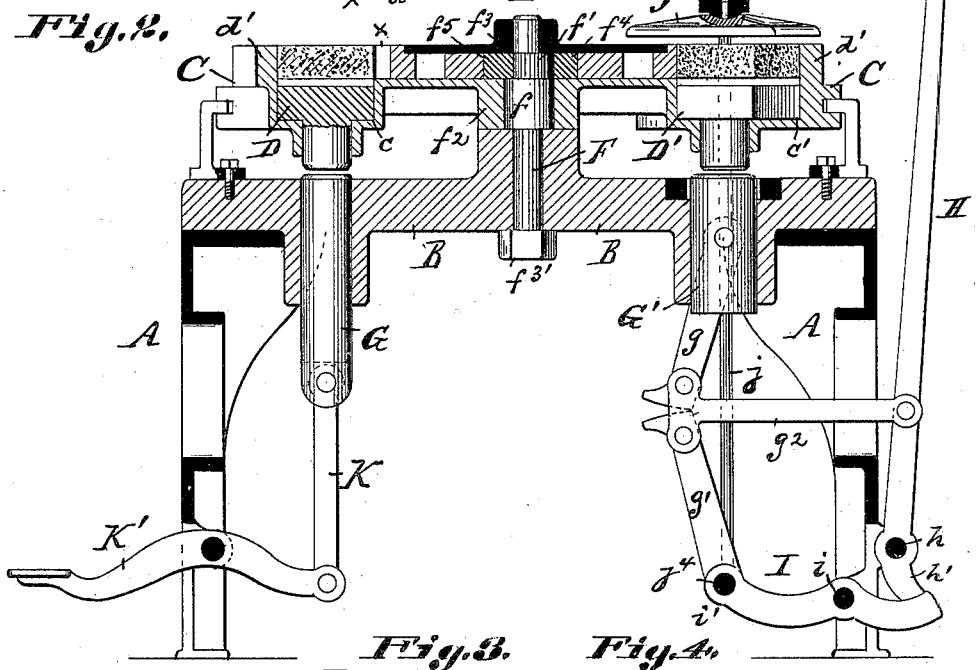


Fig. 3.

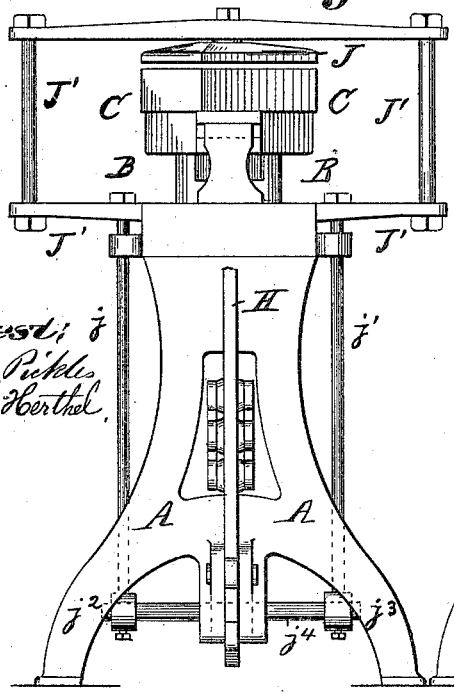
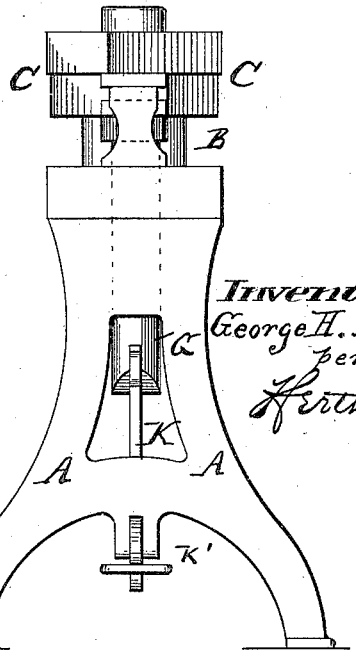


Fig. 4.



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MOLD FOR BRICK AND RE-PRESSING MACHINES.

SPECIFICATION forming part of Letters Patent No. 301,131, dated July 1, 1884.

Application filed December 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. KUNTZ, a citizen of the United States, residing at Belleville, in the county of St. Clair and State of Illinois, have invented a new and useful Improved Mold for Brick and Re-Pressing Machines, of which the following is a specification.

The objects of my improvements are to press or re-press brick uniformly as to size, shape, with well-defined edges, sides, corners, &c.; also be capable of removing the finished brick from the mold without incurring the disadvantages arising from friction, warping, or expansive action, and otherwise to render the operation of the entire mold double-acting, so that while one brick is being acted upon by the re-pressing plunger the releasing-plunger can also be operated to release the finished brick preparatory to receiving a new brick, and changing the position of the molds by a turn motion upon its axis. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view (with the top removed) of the entire mold, to better show the reciprocating inside frame, its eccentric connection to the central axis or shaft, and the consequent enlargement of the one mold-chamber for purposes of releasing the finished brick, while the opposite mold-chamber is closed as to area, size, &c., and contains the brick to be re-pressed. Fig. 2 is a vertical sectional elevation of the entire re-pressing machine, the section being taken on line 2 2 of Fig. 1. Fig. 3 is a front elevation, and Fig. 4 a rear elevation of the entire machine.

A represents the frame of the machine.

B represents the top portion or bed, upon which the entire mold is mounted.

C represents the entire mold, the bottom frame of which is made to form the chambers *c c'*, in which the respective sub-plungers D D' are fitted to operate, as indicated in Figs. 2, 3, 4. In line of action with the sub-plungers D D' (which serve, respectively, as releasing and re-pressing plungers, as will hereinafter appear) the chambers *c c'* constitute also the open mold-chambers proper, in which the respective operations of pressing the brick and releasing the finished brick are done in alternate manner.

These mold-chambers *c c'* are rectangular shaped and oppositely related, one being at each end of the mold C, in manner shown in Figs. 1 and 2. The outer side and end walls (marked *d d'*) of mold-frame C constitute the one half side and end wall of the molds *c c'*. (See Figs. 1, 2, where it will be seen that the line of division is the diagonal through the rectangular shape of each mold-chamber.) The remaining duplicate side and end walls, (marked d^2 d^3,) however, form part of a movable frame, E, which operates within the mold-frame C, as shown, the purpose of so dividing the walls of each mold-chamber being to enlarge the area of the one chamber at the time the re-pressed brick is to be released for removal, &c., also at same time to make smaller the other mold, and adapt to the determined area, size, &c., in which the brick is to be re-pressed.

F is a central bolt or axis having an enlargement at *f* and the eccentric at *f'*. The said axis passes through the central collar, f^2, of the mold C, and by means of the nut-plate at f^3 and screw-nut at $f^{3'}$ the said mold is capable of being turned top of the machine. (See Figs. 1, 2, 3, 4.)

Surrounding the eccentric *f'* are two sliding blocks, f^4 f^5, and these play within the square-shaped frame f^6, which forms part of the inside or reciprocating frame, E. (See Figs. 1, 2.) As apparent, in turning the entire mold C on its axis, this, by its eccentric, imparts a reciprocating slide motion to the inside frame, E, and this movement, by means of the sectional walls d^2 d^3, causes, respectively, the enlargement of the one mold, while decreasing or making smaller the area of the opposite mold-chamber. Also, in so turning the entire mold, it carries with it (in the bottom of each mold-chamber) the sub-plungers D D', and thus in alternate manner each of these plungers, together with each of the mold-chambers *c c'*, can be brought in line of action with the main re-pressing and releasing plungers G G' of the machine. Both the main plungers G G' operate vertically, being reciprocated in the frame of the machine by separate handle and treadle attachments. (See Figs. 2, 3, 4.) The re-pressing plunger G is pivoted to the knee-levers *g g'*, the cam-faced meeting ends of which are pivoted to a T-lever, g^2, that in turn is piv-

oted to the hand-lever H, having its fulcrum at *h*, its short arm *h'* in line of engagement with the outer arm of the foot-lever I, which is fulcrumed at *i*, and whose inner arm, *i'*, is in turn pivoted to the lower extremity of one of the knee-levers, as shown in Figs. 2, 3. A pull outward on the hand-lever draws the knee-jointed levers together in a vertical line, and thrusts the re-pressing plunger G upward, and in so doing also raises the sub-plunger that is in line of action and presses the brick. By releasing the hand-lever the plungers drop and the parts assume their original position. With the same hand and knee-jointed levers the top platen, J, is operated, it being connected by the side rods, *j j'*, having their lower ends pivoted at j^2 j^3 to the lower transverse rod, j^4, while the upper ends of said side rods connect to a yoke-frame, J', that carries the platen J, as shown in Figs. 2, 3. This yoke is sufficiently large to permit the corners of the mold C to turn free, as indicated. In raising the re-pressing plunger, therefore, by the said hand and knee levers, the yoke and its platen J are drawn downward, so that the latter with the same force can close the top of the open mold, in which the brick to be re-pressed is contained. By the same movement of dropping the re-pressing plunger the platen J is raised clear of the mold. (See Fig. 2.)

The releasing-plunger G, by the intermediate arm, K, is pivoted to a foot-treadle, K', which, when operated, can raise or lower the said plunger for purposes of lifting the finished brick.

In dividing the plungers into sub and main plungers the former can be turned with the mold without interference to the remaining part of the machine, and when brought in line of action with the main plungers be readily operated, as just stated.

In the complete operation of the machine the finished brick is shown in the mold having its area enlarged by the clearance indicated by *x* in Figs. 1 and 2; hence it is ready for removal and preparatory to placing a new brick in the same mold. In the opposite mold (see Figs. 1 and 2) the brick to be re-pressed is in line of action with the platen and re-pressing plungers. When this brick has been re-pressed, the mold C is turned upon its axis, so as to bring the fresh brick in line under the platen, and the repressed brick in line of the releasing-plunger. It is this turn movement of the mold that releases the finished brick by enlarging its mold-chamber to the extent of the clearance *x*, and gives the opposite mold-chamber the proper dimension to suit the brick to be re-pressed.

I am aware that brick-machines have been made in which the clay is taken from the bank, passed into molds which can be revolved on an axis, and coacting ascending and descending plungers press the brick, a further ejector or releasing-plunger releasing the finished brick, nor do I claim such.

What I claim is—

1. In a brick-machine, the combination of the mold C, forming part of which are the outer side and end walls *d d'*, that constitute one half of the molds or chambers *c c'*, their opposite and remaining half or side and end walls d^2 d^3 forming part of an inside reciprocating frame, E, by means whereof the revolving of the said mold C reciprocates its inside frame, and this by its walls enlarges or contracts the area of the molds or chambers, substantially as and for the purposes set forth.

2. In a brick-machine, the combination of the mold-frame C, the mold-chambers *c c'*, carrying the sub-plungers D D', said chambers further composed of the diagonally-divided side and end walls, *d d'* d^2 d^3, of which the two former walls or sides form part of the said mold-frame C, while the two latter sides form part of an inside frame, E, having square frame f^6, the sliding blocks f^4 f^5, the central bolt or axis, F, having eccentric *f'*, and the bed B of frame A, carrying a vertical releasing-plunger, G', substantially as and for the purposes set forth.

3. In a brick-machine, the combination of the mold-frame C, the mold-chambers *c c'*, carrying the sub-plungers D D', said chambers further composed of the divided side and end walls, *d d'* d^2 d^3, of which the two former form part of the mold-frame C, while the two latter walls form part of an inside frame, E, having square frame f^6, the sliding blocks f^4 f^5, the central bolt or axis, F, having eccentric *f'*, the bed B of frame A, carrying a vertical coacting re-pressing plunger, G, and platen J, substantially as and for the purposes set forth.

In testimony of said invention I have hereunto set my hand.

GEORGE H. KUNTZ.

Witnesses:
WILLIAM W. HERTHEL,
JULIUS KUNTZ.