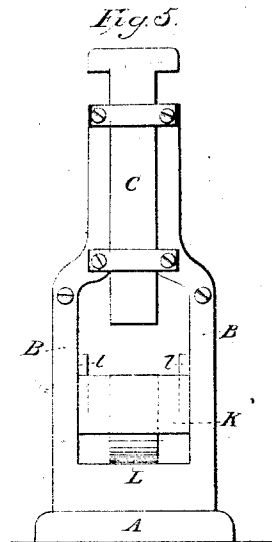
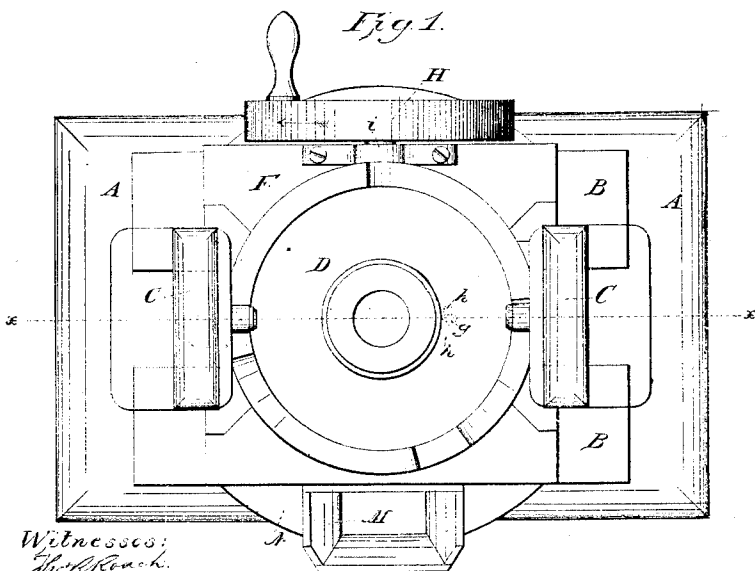
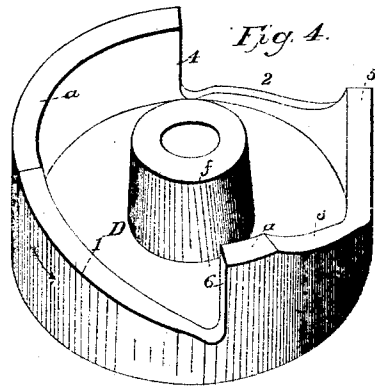
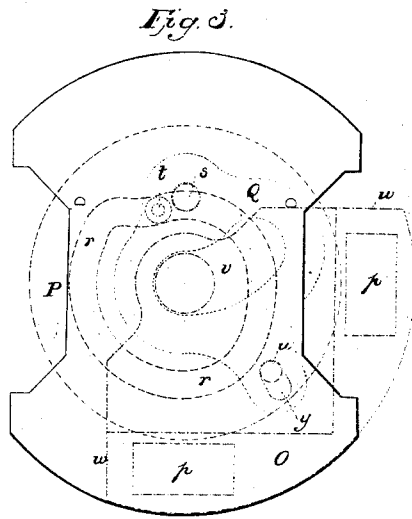
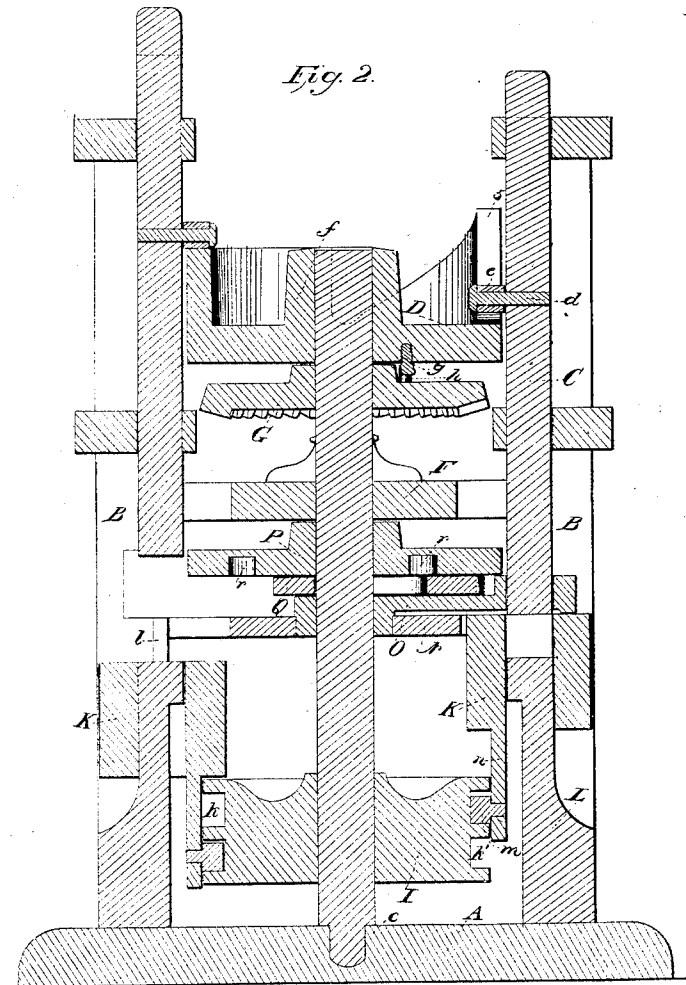


BRICK PRESS.

No. 27,117.

Patented Feb. 14, 1860.



Witnesses:
 John Roach.
 Thos. L. Howe

Inventor:
J. S. Elliott.

UNITED STATES PATENT OFFICE.

JOSIAH S. ELLIOTT, OF WEST NEEDHAM, MASSACHUSETTS.

BRICK-PRESS.

Specification of Letters Patent No. 27,117, dated February 14, 1860.

To all whom it may concern:

Be it known that I, JOSIAH S. ELLIOTT, of West Needham, in the county of Norfolk and State of Massachusetts, have invented an Improved Brick-Press, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

10 Figure 1, is a plan; Fig. 2, a vertical section on the line *x, x* of Fig. 1; Figs. 3, 4 and 5, details to be referred to hereafter.

My present invention relates to an improvement in brick presses for forming 15 bricks from sand and lime or other suitable materials and consists in certain details of construction which will be hereafter more fully described in such a manner that others skilled in the art may understand and use my invention.

20 In the said drawings A, is the bed of the machine from which rises at each end a frame B, (one of which is shown in elevation reduced in Fig. 5) these two frames are connected and braced by a platform F near the middle of their height.

(As this machine is double acting, or having duplicate parts on the two opposite sides, I will describe but one side of it so far as related to those parts which are in duplicate). A heavy ram C, slides up and down in suitable ways in the frame B, and is lifted and dropped at proper intervals by a cam D (shown detached in Fig. 4) which 35 has its edge *a* formed with the proper inclines, 1, 2, 3, and notches or shoulders 4, 5, 6, to raise the ram C, and hold it a sufficient time and then to drop it suddenly to give a blow to the material in the mold.

40 A pin *d*, carrying a roller *e*, projects from the inner side of the ram C and rests on the edge of the cam D. This cam is revolved in the following manner; a stout vertical shaft E, resting in a step *e*, in the bed A, and having bearings in the platform F, carries a beveled gear G, which engages with a pinion (not shown in the drawings) on the shaft *i*, to which is attached the driving pulley H. The shaft *i* 45 has its bearings in suitable blocks rising from the platform F. The cam D, has a hub *f* which fits over the head of the shaft E, but is loose on it, the cam being connected with the back of the gear wheel G, by a pin Z (in section in Fig. 2, and dotted in Fig. 1,) projecting down from the lower

side of the cam, between two pins *h* placed a short distance apart on the wheel G—this allows the cam to have a slight play around the shaft E (for a purpose which 60 will be presently explained) while it is carried forward by the revolutions of the wheel G. To the lower part of the shaft E, is secured a wheel I having in its edge the two parallel grooves *k k'*, which run the 35 one into the other, by two inclines one on each side of the wheel I.

The mold K, is a heavy block which slides up and down on ways *l*, in the frame B, and is raised and lowered at proper 70 intervals by the wheel I; a roll *m*, attached to an arm *n*, which projects down from the inner side of the block, plays in the grooves *k k'* of the wheel I so that as this wheel is revolved, the roll passes from one groove to 75 the other by an incline on each side of the wheel which joins the grooves and the mold K, is raised and lowered as required. The mold K, embraces a plunger L, which is a heavy post rising from the bed A,—it serves 80 to form the bottom of the mold, and to receive the concussion of the ram C when it falls on the brick in the mold.

The material is carried to the mold from the hopper M, in the following manner—A 85 platform or bed N, extends across the machine and is secured to the frames B,—above this and centering on the shaft E is a carrier O, (shown in blue, Figs. 2 and 3) which has two recesses *p*, cut through it to receive 90 the material and carry it to the molds, and is vibrated horizontally about 90 degrees back and forth immediately beneath the hopper M,—so that each recess *p* receives a charge from the hopper M, and carries it 95 to its respective mold K, on the opposite sides of the machine. The platform N, over which the carrier O, slides, serves as a bottom for the recesses *p*, while the plain or solid part of the carrier O, between the recesses *p*, serves as a bottom for the hopper M and cuts off the supply of material when one of the recesses *p* has carried off its charge.

The proper vibratory motion is given to 105 the carrier O, in the following manner: A disk P is secured to the shaft E and has cut in its lower face a cam groove *r*, (in black Fig. 2). Immediately below this is an eccentric arm Q, (in red Figs. 2 and 3,) which 110 is pivoted at *s*, to the platform N; a pin *t*, attached to this arm and carrying a roll,

runs in the groove *r*, a pin *u* on the carrier *o*, plays in a slot *q* in the arm *Q* while a slot *v* near the middle of this arm allows it to vibrate to either side of the shaft *E* which it embraces in this slot.

The following is the operation of this machine: The hopper *M*, being supplied with suitable material, (say lime and sand mixed in the proper proportions) the shaft *i* is revolved in the direction of the arrow on the pulley *H*, this revolves the cam *D*, in the direction of its arrow, this lifts one of the rams *C*, and holds it suspended until the carrier *O*, brings a charge of material over the mold *K*, which is raised, as on the right hand side of Fig. 2 to receive it—then as the cam *D* revolves the roll *e* drops off from the shoulder 4, and the ram descends to give a blow on the material forcing it down into the mold *K*,—the ram is then raised by the incline 2, and again drops as the roll passes the shoulder 5, giving a second blow—then the incline 3 raises the same and holds it suspended for an instant while the carrier *O*, is vibrated out of the way and to receive another charge from the hopper *M*, in the recess *p*. (As the carrier passes off from the mold *K*, a scraper (not shown in the drawings) attached to the edge *w*, of it, takes off any superfluous material from the top of the mold) the roll *e*, then drops off from the shoulder 6, and the ram falls to give a third

blow to the brick, finishing off its upper surface. The roll *m* now passes by one of the inclines into the lower groove *k'* of the wheel *I*, and the mold *K*, is lowered over the plunger *L* on top of which the finished brick rests—and from which it is removed before the operation is repeated. The slight play given to the cam *D*, by means of the pins *g*, *h*, is to allow the roll *e*, when it comes onto the edge of one of the shoulders 4, 5 or 6 to start the cam forward a little (which it does by the weight of the ram *c'*) so that the cam may stand still for an instant while the ram drops, before the cam is overtaken and propelled by the wheel *G*, otherwise the roll *e* would not fall to the bottom of the notch alongside of the shoulder.

I have spoken of this press, as used for making bricks, it may however be employed for molding blocks, suitable for window heads sills, &c.

What I claim as my invention and desire to secure by Letters Patent is

1. I claim the carrier *O*, operated substantially as described.

2. I claim clutching the cam *D* to the wheel *G* in the manner substantially as shown for the purpose specified.

J. S. ELLIOTT.

Witnesses:

WILLIAM FLAGG,
WILLIAM H. FLAGG.