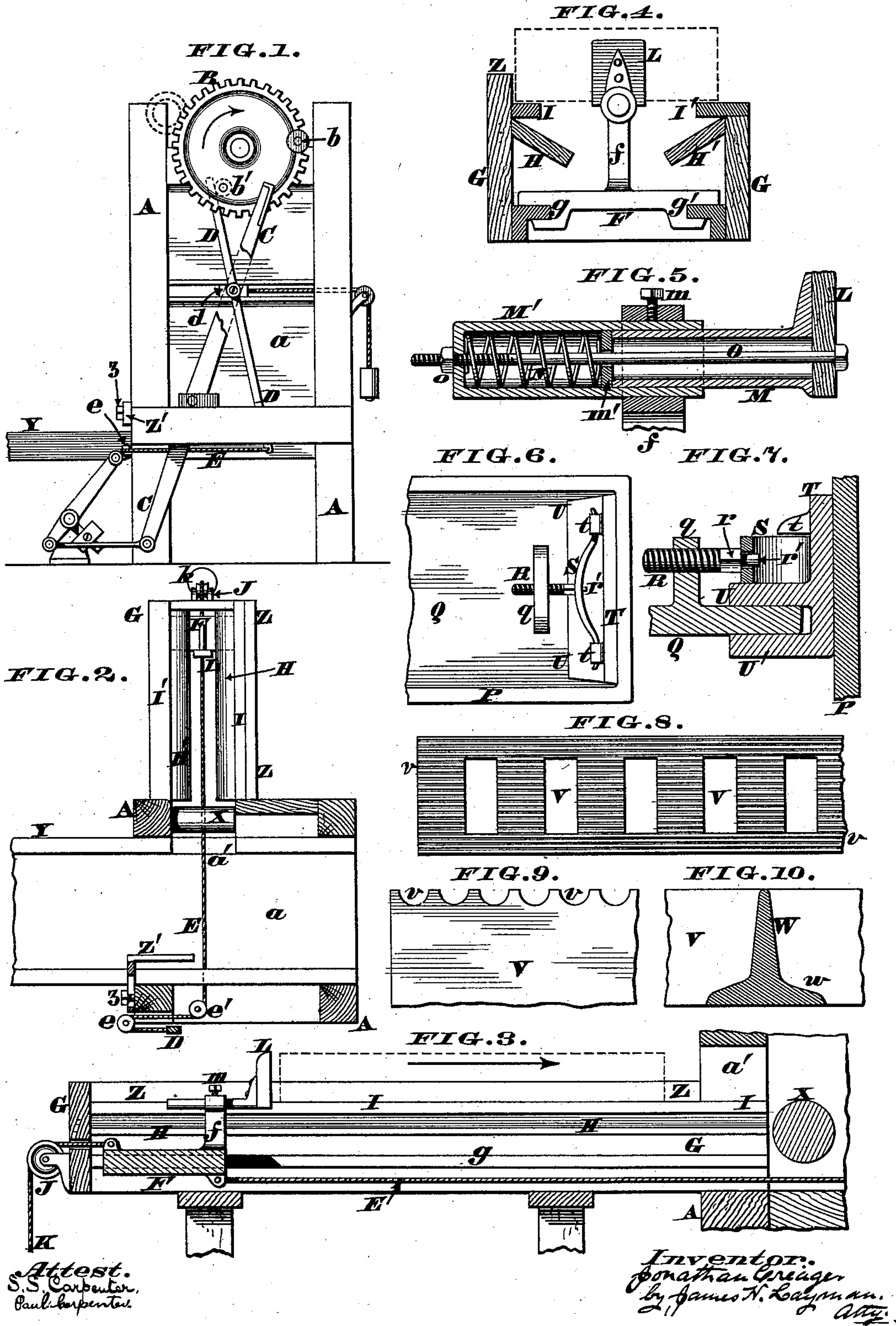


(No Model.)

J. CREAGER.
BRICK MACHINE.

No. 364,907.

Patented June 14, 1887.



UNITED STATES PATENT OFFICE.

JONATHAN CREAGER, OF CINCINNATI, OHIO.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 364,907, dated June 14, 1887.

Application filed April 13, 1886. Serial No. 198,692. (No model.)

To all whom it may concern:

Be it known that I, JONATHAN CREAGER, a citizen of the United States, residing at Cincinnati, in the county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Brick-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My present invention comprises various improvements on the peculiar form of brick-machine seen in the patent granted to me September 11, 1883, the details of said improvements being hereinafter more fully described, and pointed out in the claims.

In the annexed drawings, Figure 1 is a side elevation of a brick-machine embodying my improvements, the master-wheel of the same being seen in the act of operating the secondary lever. Fig. 2 is a horizontal section of the machine, taken in the plane of the lower end of said lever, the mold-feeder being seen in plan. Fig. 3 is an enlarged longitudinal section through said mold-feeder. Fig. 4 is a transverse section thereof. Fig. 5 is an enlarged axial section of the buffer of said mold-feeder. Fig. 6 is a plan of a portion of the press-box with its plunger and adjustable packing-plate. Fig. 7 is an enlarged vertical section through said plate. Fig. 8 is a plan of the corrugated die of the machine. Fig. 9 is an enlarged elevation of a portion of one end of said die. Fig. 10 is an enlarged vertical section through one of the partitions of the same.

A represents the main frame, *a* the pug-mill, and B the master-wheel, of a brick-machine of the class seen in my patent previously alluded to. Wheel B has upon its outer face a roller, *b*, that operates the main lever C, which lever vibrates on an automatically-shiftable fulcrum-bearing, and withdraws the charged brick-molds from the press-box, in the manner described in said patent. Furthermore, the inner face of said wheel has a roller, (indicated by the dotted circular line *b'*), which roller is adapted at the proper moment to come in contact with the upper end of the secondary lever D, the latter being hung upon the stud of an automatically-shiftable fulcrum-bearing, *d*. The lower extremity of this secondary lever

has attached to it one end of a chain or wire rope or other suitable flexible appliance, E, which rope, after being passed around sheaves *e e'* of the frame, has its other end fastened to a slide or carriage, F, that travels along the tracks *g g'* of a frame, G. This frame projects horizontally and at a right angle from the main frame A, being in line with an opening, *a'*, in the latter, through which the empty molds are fed into the press-box of the machine.

H H' are inclined guards placed above the tracks *g g'* to prevent clay accumulating on the latter.

I I' represent a pair of upper tracks for the support of the empty molds, the position of one of the molds being indicated by dotted lines in Figs. 3 and 4.

Frame G has secured to its end a sheave, J, over which is passed a rope, K, attached at one end to the slide or carriage F, and having a weight, *k*, (seen in Fig. 2,) secured to the other end of said rope, which weight must be sufficiently heavy to retract said slide the instant the secondary lever D escapes from contact with the roller *b'*, a pit being usually made in the ground to permit the descent of said weight.

The slide F has a vertical standard, *f*, to which a rigid adjustable pusher, L, may be applied, as seen in Fig. 3; but I prefer to furnish this standard with a spring-buffer, as represented in Fig. 5. In this illustration the pusher L consists of a block fastened to the advancing end of a tube, M, which telescopes within another tube, M', the latter being adjustably secured to the standard *f* by a set-screw, *m*.

m' is a washer that may be applied to the inner end of tube M for a spiral spring, N, to bear against.

O is an axial tie-rod for the buffer, said rod being screw-threaded at one end to receive a nut, *o*, wherewith any desired tension may be imparted to the spring N.

P, in Figs. 6 and 7, represents one end of the press-box, and Q a portion of the piston or plunger of the same, said plunger being provided with a rib or flange, *q*, on top, which rib has a screw, R, engaged therewith. This screw has a square head, *r*, and a shank, *r'*,

which shank passes through a hole at the mid-length of a plate-spring, S, the ends of the latter being engaged under lugs *t t'* of a packing-plate or follower, T, that bears snugly against the inner side of the press-box. Furthermore, this packing-plate T has flanges U U', that grasp the margin of the plunger Q. In Fig. 8 is seen the die V, that is applied to the bottom of the press-box for the clay to pass through before it is compressed into the molds. The under side of this die is corrugated or fluted longitudinally, as at *v*, the partitions W between each opening in said die being comparatively thin at top, but gradually increasing in thickness as they descend, and terminating with an extended base, *w*, as seen in Fig. 10.

X is a roller that supports the empty mold when it is fed in under this die.

Y is a portion of the frame, upon which travels the follower that draws the charged molds out of the press-box.

Z is a ledge, against which rests the rear side of the empty molds.

Z' is an angular plate or bar suitably slotted to receive a bolt, *z*, wherewith said bar is adjustably attached to one of the posts of the main frame. This bar serves as a stop that limits the entrance of the empty molds into the machine, the slot and bolt enabling said stop to be set for the purpose of arresting molds of various lengths.

As the operation of the main lever C in withdrawing the charged molds from the press-box is precisely the same as described in my old patent previously alluded to, further explanation of the same is unnecessary in this specification, although the relative movements of the main and secondary levers must be understood. The rollers *b b'* are accordingly arranged in such a manner as to cause the lower end of secondary lever D to swing away from the main lever C when the latter is in the position seen in Fig. 1, or, in other words, when the follower is retracted to permit insertion of an empty mold, which is set upon the tracks I I', immediately before the roller *b'* comes in contact with said secondary lever, the ledge Z serving to confine the mold to a proper path as it advances. Consequently this swing of the secondary lever D causes the slide F to advance along the tracks *g g'*, and thereby drive the mold through the opening *a'* at the side of the machine, as indicated by the arrow in Fig. 3, the mold being subsequently charged with clay in the usual manner after it has been arrested by the "stop" Z'; but the instant the roller *b'* escapes from contact with the secondary lever the weight *k* retracts the slide F to its normal position, and thus leaves the tracks I I' free to receive another empty mold. When the pusher L first comes in contact with the mold, the spring N yields so as to allow the tube M to telescope within the other tube, M', and thereby prevent any injurious jar or

concussion, the set-screw *m* allowing the buffer to be adjusted for any length of mold.

If there should be any escape of clay at the end of plunger Q, the screw R can be readily tightened, so as to cause the packing-plate T to bear snugly against the interior of the press-box P, the spring S serving as a yielding bearing that compensates for any irregularities in the side of said box or otherwise. In the drawings this packing-plate is seen applied only at the end of the plunger; but a similar device may be fastened to the opposite end of the same, and also to the sides thereof.

The flutes or corrugations *v*, running longitudinally of the under side of the die V, which is usually of metal, prevent clay being dragged out of the mold when the latter is expelled from the press-box. Consequently the bricks have a smooth and finished appearance that is unobtainable with the ordinary form of dies. Finally, the peculiar shape of the partitions W *w* requires less metal for the die and affords more room for the clay to pack into the molds, thereby insuring a perfectly solid and homogeneous brick when the clay is subsequently burned in a kiln.

I claim as my invention—

1. A brick-machine having a main vibrating lever operating the devices that withdraw the charged molds, in combination with a secondary vibrating lever having a rope or chain attached thereto, which rope or chain advances a slide, and thereby conducts an empty mold in at the side of the machine, the retraction of said slide being effected by a weight or equivalent, substantially as herein described.

2. The combination, in a brick-machine, of master-wheel B, roller *b'*, vibrating lever D, rope E, sheaves *e e'*, slide F, rope K, and weight *k*, said slide being adapted to reciprocate along tracks at the side of the machine for the purpose of conducting the empty molds therein, as herein described.

3. In combination with a brick-machine having a reciprocating slide or mold-feeder operated by the devices herein described, the adjustable pusher L, applied to said slide, for the purpose specified.

4. In combination with a brick-machine having a reciprocating slide or mold-feeder operated by the devices herein described, the adjustable pusher L, applied to a tube, M, that telescopes within another tube, M', a spring, N, being interposed between said tubes, and a screw-threaded rod, O, and nut *o* being employed for imparting the desired tension to said spring, for the purpose specified.

5. The combination, in a brick-machine, of the frame G, provided with tracks *g g'* I I' and inwardly-sloping deflectors H H', a reciprocating slide, F, being adapted to travel along the lower tracks, *g g'*, for the purpose described.

6. The combination, in a brick-machine, of

press-box P, plunger Q *q*, set-screw R *r r'*, spring S, and packing-plate T, which plate is provided with lateral lugs *t t'* and flanges U U', for the purpose specified.

5 7. The combination, in a brick-machine, of master-wheel B *b b'*, main lever C, secondary lever D, rope or chain E, sheaves *e e'*, and reciprocating slide F, which latter travels along

the tracks *g g'* at the side of said machine, for the purpose described.

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

JONATHAN CREAGER.

Witnesses:

JAMES H. LAYMAN,
SAML. S. CARPENTER.

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