

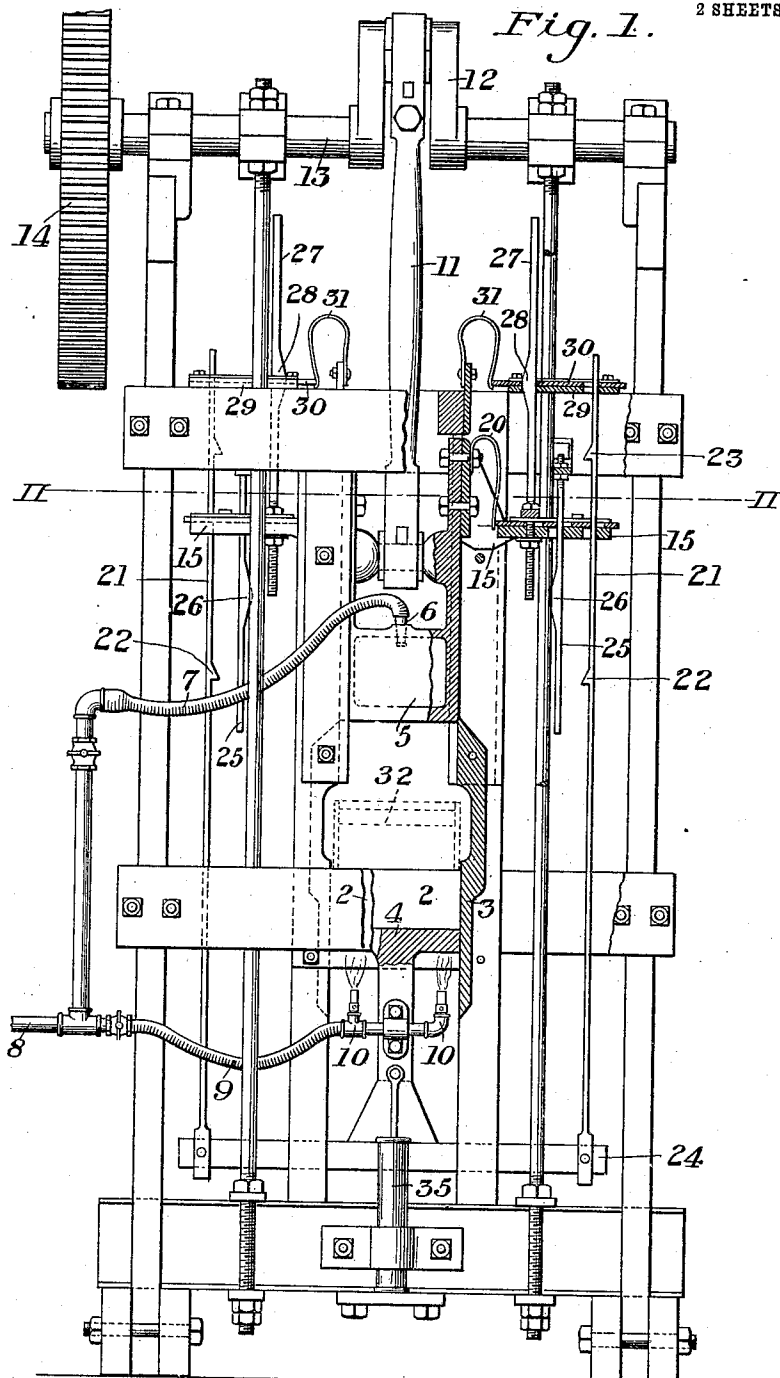
No. 819,517.

PATENTED MAY 1, 1906.

G. H. L. CLARK.
MOLDING PRESS.

APPLICATION FILED SEPT. 26, 1905.

2 SHEETS—SHEET 1.



WITNESSES

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INVENTOR

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2 SHEETS—SHEET 2.

Fig. 2.

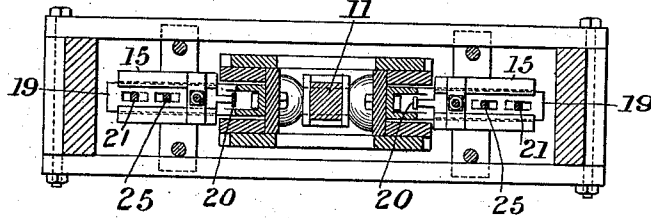


Fig. 3.

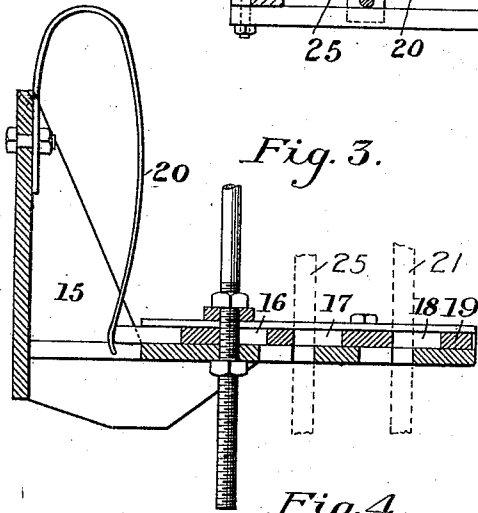


Fig. 4.

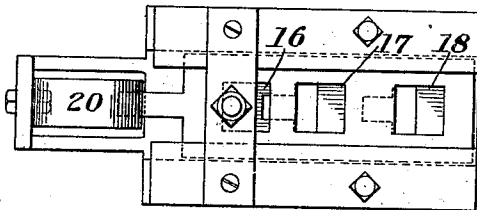
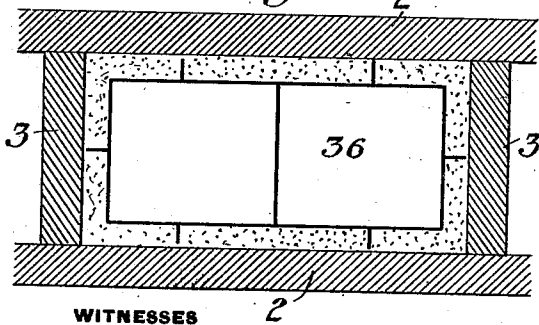


Fig. 7.



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Fig. 5.

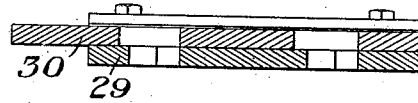


Fig. 6.

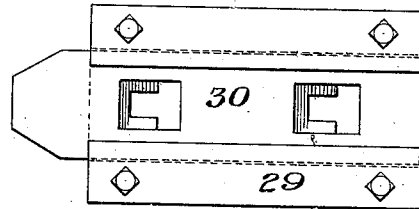


Fig. 9.

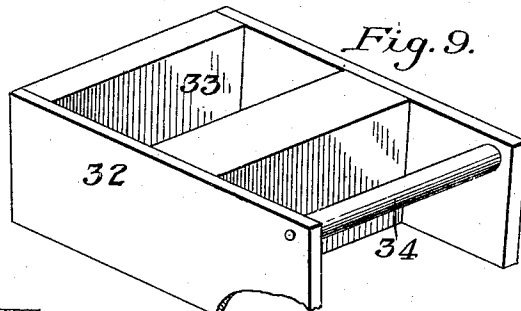
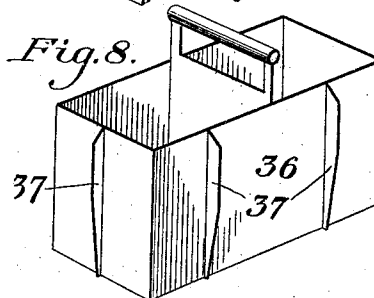


Fig. 8.



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UNITED STATES PATENT OFFICE.

GEORGE H. L. CLARK, OF STERRETT TOWNSHIP, ALLEGHENY COUNTY,
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MOLDING-PRESS.

No. 819,517.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed September 26, 1905. Serial No. 280,131.

To all whom it may concern:

Be it known that I, GEORGE H. L. CLARK, of Sterrett township, Allegheny county, Pennsylvania, have invented a new and useful Molding-Press, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation, partly broken away, of my improved press. Fig. 2 is a cross-section on the line II II of Fig. 1. Figs. 3 and 4 are enlarged detail views of the lower spring-pressed plate. Figs. 5 and 6 are similar views of the upper spring-pressed plate. Fig. 7 is a plan view of the mold arranged for veneered brick. Fig. 8 is a perspective view of the core employed. Fig. 9 is a perspective view of the feeding device for the press.

My invention relates to apparatus for forming and pressing brick, and is designed to provide a machine into which the raw material may be fed and pressed into brick form. The machine may also be used for veneered brick, tiles, and other shapes.

In the drawings I show a mold having stationary sides 2 2 and ends 3 3. The bottom is formed by a plunger 4, and the pressure is applied by a hollow top plunger 5. The plunger 5 may be heated by making it hollow in box form and directing the gas-jet 6 thereinto, which is connected by a flexible pipe 7 with a supply of gas and air entering through pipe 8. A branch 9 also preferably runs to gas-burners 10, secured to the stem of the lower plunger to heat the bottom of the mold. The flames from these burners 10 strike against the lower side of the bottom plate of the mold. The upper plunger is reciprocated positively by a pitman 11 and crank 12 of the driving-shaft 13, having driving-pulley 14.

The bottom plate of the mold is stationary during the pressing operation, is automatically lifted after the pressing operation to raise the brick above the mold, and is then automatically dropped back after the brick has been pushed out. To carry out this operation, I secure to opposite sides of the upper plunger brackets or plates 15, (shown in Figs. 3 and 4,) each of which is provided with three slots 16, 17, and 18. Spring-pressed plates 19 are arranged to slide on the top of the plates 15 and are normally forced outward by the leaf-springs 20. Through the slots 18 extend the lifter-bars 21, having

hook projections 22 and 23. The lower ends of these bars are provided with yokes surrounding a cross-bar 24, secured to the stem of the bottom plate.

Through the slots 17 extends the stationary rod or key-bars 25, having the double cams 26, which act to unlock the sliding locking-plates 19. These bars 25 are secured at their upper ends to any suitable bracket in the frame. Through the third slots of the locking-plates extend other key-bars 27, which are bolted to the plates 15 and have the double cams 28 in their upper portions.

Above the brackets 15 are stationary brackets 29, having slots and sliding locking-plates 30 resting on them, which are forced outward by springs 31. The bars 23 and 27 extend through the slots in these upper locking devices, the locking devices being duplicated on each side of the plunger to make the action symmetrical and balanced.

In order to feed the raw material into the mold, I preferably employ the sliding-gate device 32. (Shown in Fig. 9.) This has a cavity 33, which is open at the top and bottom and is slid along into registry with the mold by a handle 34.

In the operation of the machine the raw material having been fed into the mold the top plunger moves downwardly and compresses the material into brick form. As the plunger moves down the lower locking device moves downwardly until the locking-plate 19 comes below the projection 22. The plate is then pressed under this projection. On the lifting movement of the upper plunger such plunger will lift the mold-bottom through the rods 21, which are now locked to the upper plunger. This lifting of the mold-bottom will continue until it is slightly above the top level of the mold, at which time the double cam 26 will force back the plate 19 and allow the mold-bottom to drop slightly until the upper projections 23 drop on the upper locking-plate. The mold-bottom will then be held on the level of the top of the mold during the part of the further revolution of the crank. During this time the operator having filled the cavity in the feed-box pushes said box forwardly, thereby forcing the brick out of the machine and bringing the cavity into alinement with the mold-bottom. In the further upward movement of the upper plunger the upper locking-plate 30 is withdrawn,

the projection 23 is released, and the mold-bottom drops down to its normal position, the material falling from the feed-box cavity into the mold-cavity. The operator then
5 withdraws the feed-box and the operation is repeated.

The plunger and the mold-bottom may be heated by charcoal, which may be filled into the cavity of the plunger, or by gas-jets, as
10 shown.

The drop of the mold-bottom is preferably cushioned in any suitable manner, such as by a pair of pneumatic cylinders 35, the pistons of which are connected to the stem of the bot-
15 tom. These act as dash-pots to cushion the drop of the mold-bottom.

In molding brick having cheap material for the body with a facing of more expensive material I preferably employ the core 36 of
20 Figs. 7 and 8. This core is of smaller size than the mold-cavity and is preferably provided with projecting fins 37. This is set in the mold-cavity, and the more expensive material is filled in around it. The lids of this hol-
25 low core are then removed and its interior is filled with ordinary cheap material. The core is then withdrawn and the brick is pressed as before. The lids for this hollow core may be pieces of metal or blocks of wood
30 of sufficient size to close the core while the space around it is being filled.

The advantages of my invention result from the cheapness and simplicity of the apparatus and the good quality of the product
35 produced by it. Raw material may be pressed directly into bricks, and the action of lifting and lowering the mold-bottom is carried out automatically. The feeding of the material and the removal of the brick is carried out by hand. The device is compara-
40 tively of light weight and may be easily transported and used on small jobs.

Many changes may be made in the form and arrangement of the parts without depart-
45 ing from my invention.

I claim—

1. In a press, a movable upper plunger, means for reciprocating the same, a movable mold-bottom, lifting-rods for the mold-bot-
50 tom, locking devices arranged to periodically connect the movable bottom and plunger through the said rods to move together to raise the mold-bottom to a point somewhat above the top level of the mold, means for
55 then releasing such connection and allowing the mold-bottom to drop slightly, other locking means for temporarily holding the mold-bottom in such dropped position, and other releasing means for subsequently again re-

leasing the mold-bottom; substantially as de- 60 scribed.

2. In a press, the combination with a reciprocating upper plunger and a movable mold-bottom, of lifter-bars connected to the mold-bottom and normally disconnected from the
65 movable plunger, locking devices arranged to lock the lifter-bars to the plunger, and key-bars arranged to unlock the lifter-bars to allow the mold-bottom to drop; substan-
70 tially as described.

3. In a brick-press, a mold having a movable bottom, upwardly-extending connec-
75 tions for the bottom, spring-pressed locking devices arranged to lock the bars to the reciprocating plunger, and key-bars arranged to unlock the lifter-bars and allow dropping of the mold-bottom; substantially as de-
scribed.

4. In a brick-press, a feeding-box having a cavity with open top and bottom, a movable
80 mold-bottom, a reciprocating plunger, lifting-bars, for the movable bottom, means for periodically connecting the movable bottom and plunger through the lifting-bars to lift
85 the mold-bottom, locking means for holding the movable bottom at the level of the mold while the feeding-box is pushed forward into line with it, and means for then disconnect-
90 ing the movable bottom from the plunger to permit it to fall by gravity; substantially as described.

5. In a brick-press, a reciprocating upper plunger; a movable mold-bottom, upwardly-
95 extending lifting-bars connected to such bottom and normally disconnected from the plunger; lifting devices arranged to engage said bars as the plunger rises, means for holding the bottom stationary at the upper level of the mold; and means for subsequently dropping
100 the bottom; substantially as described.

6. In a brick-press, a movable upper plunger and means for reciprocating the same, a movable mold-bottom, lifting-bars connected to the mold-bottom and normally disconnect-
105 ed from the plunger, locking devices carried by the plunger for connecting it to the lifting-bars, fixed means on the frame for engaging and temporarily supporting the lifting-bars, a movable bottom, and fixed and movable cam means for controlling the op-
110 eration of the locking and holding devices; substantially as described.

In testimony whereof I have hereunto set my hand.

GEORGE H. L. CLARK.

Witnesses:

C. P. BYRNES,
H. M. CORWIN.