

H. H. PIERCE.
BLOCK MAKING MACHINE.
APPLICATION FILED JAN. 10, 1911.

1,038,646.

Patented Sept. 17, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

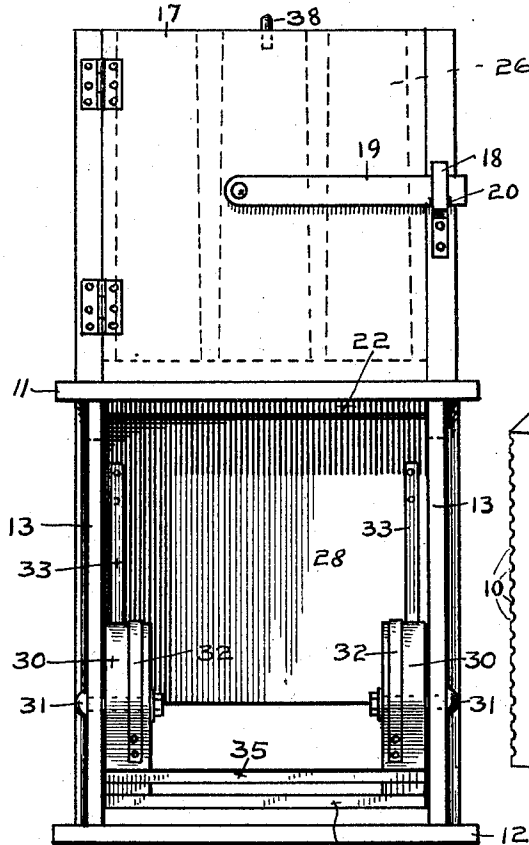


Fig. 3.

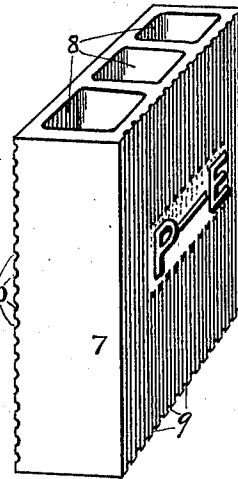
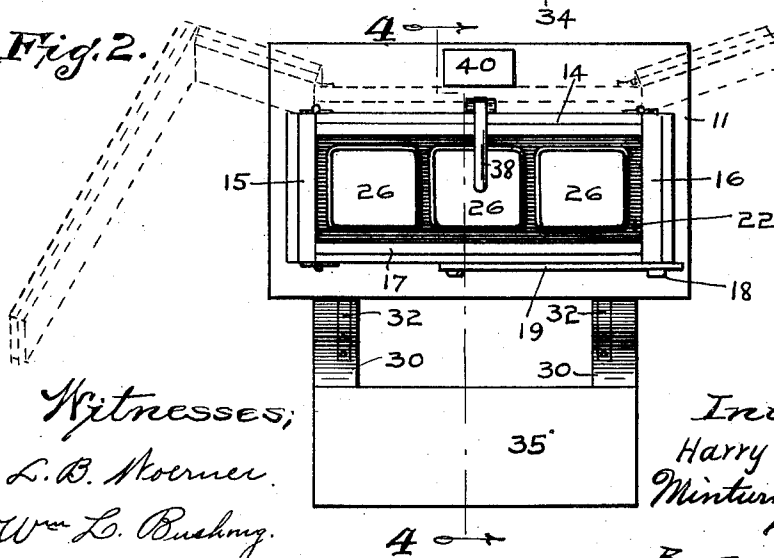


Fig. 2.



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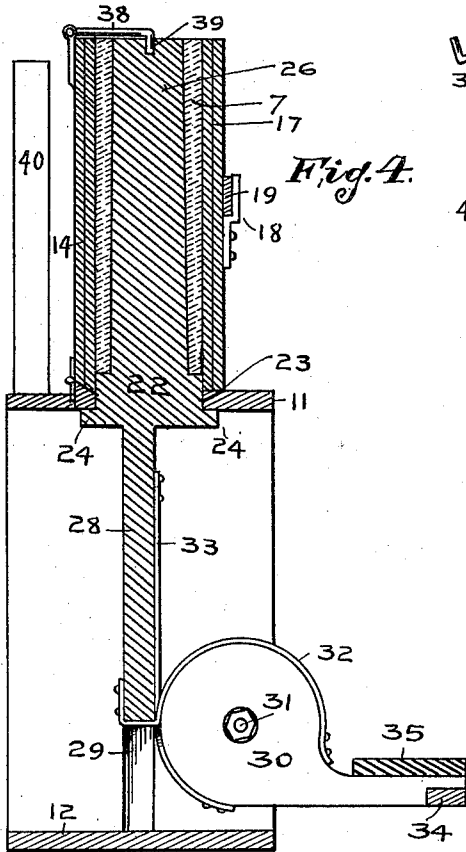


Fig. 4.

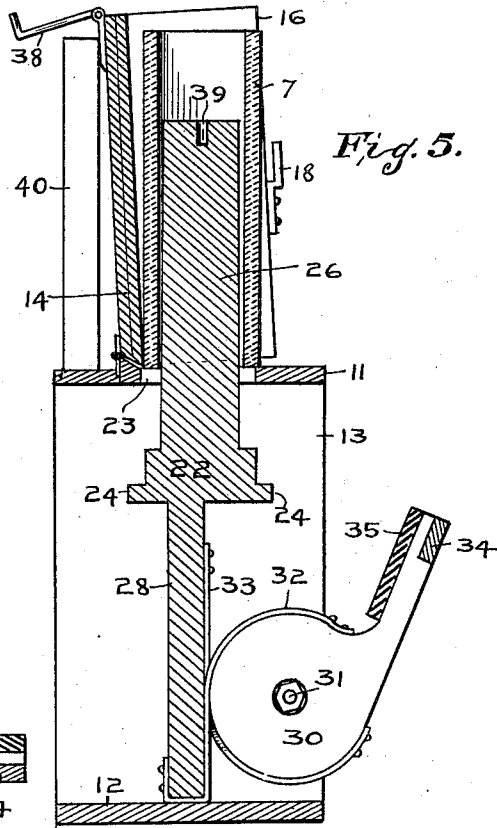
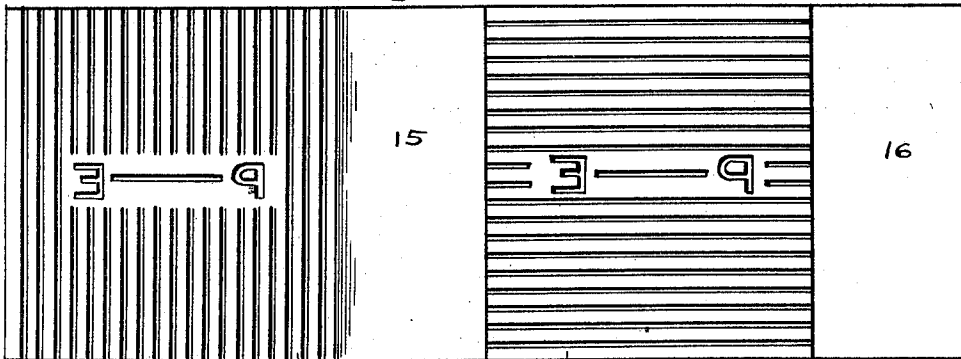


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

HARRY H. PIERCE, OF INDIANAPOLIS, INDIANA.

BLOCK-MAKING MACHINE.

1,038,646.

Specification of Letters Patent.

Patented Sept. 17, 1912.

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To all whom it may concern:

Be it known that I, HARRY H. PIERCE, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Block-Making Machines, of which the following is a specification.

This invention relates to a machine for making gypsite-tile, wet process, such as are commonly used in the construction of interior partitions, walls and floors in office and other buildings; and the object of the invention is to provide an inexpensive and portable press or machine which will be simple and efficient, and capable of such operative speed as to be of great commercial value. I accomplish this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1, is a view in front elevation of my machine in closed position. Fig. 2, is a top plan view of same, showing a molding-box closed in full lines and open in dotted lines. Fig. 3, is a perspective view of a finished block. Fig. 4, is a vertical section on the line 4—4 of Fig. 2. Fig. 5, is a view similar to Fig. 4, except that the molding-box is open and the core-mold is shown in its lowered position, and Fig. 6, is an interior view, in elevation, of the walls of the molding-box in open position.

Like characters of reference indicate like parts throughout the several views of the drawings.

7 represents the finished block-product of my machine. It has the vertical interior openings 8 and the external channeled sides 9 and 10. The shape, thickness, and general size of the block may be varied to suit the requirements of the wall for which the block is to be used, and with my machine the directions of the channels on the sides of the block may be varied from horizontal to vertical, or this roughening, which is to increase the adhesion of a finishing coat of plaster applied after the blocks are all laid, may be in different designs or patterns.

11 is a table upon which the hinged sides of the molding-box are mounted. 12 is a base board adapted to rest upon the ground or floor where the molding is being done, and 13 are vertical standards which support the table 11 from said base.

The molding-box comprises a rear member 14, having an inwardly oblique lower

end hinged to the table 11, ends 15 and 16 hinged at their rear vertical edges to the corresponding adjacent edges of the back 14, and a front member 17, having its adjacent vertical edge hinged to the front vertical edge of the end member 15. The front edge of the end 16 has a hook 18, to engage a latch-bar 19, which is pivotally secured to the front member 17. The latch-bar 19 has a notch 20 (see Fig. 1) in its lower edge to receive the hook 18 and hold the end 16 from movement longitudinally of the bar 19.

The space inclosed by the four members 14, 15, 16 and 17, when the latter are together, as shown in Figs. 1, 2, and 4, is where the blocks 7 are formed. The said four parts comprise the sides of a mold which is open at the top for the introduction of the block-forming material, and is closed below by a removable bottom 22, which is introduced through a suitable opening 23, provided for that purpose through the table 11. The bottom 22 extends up into the space inclosed by said sides and ends, a suitable distance to insure a good closure, as shown in Fig. 4, and as regulated by the flanges 24, which form stops by contact against the lower sides of the table 11.

Supported by the removable bottom 22, are the cores 26, here shown as three in number, and as rectangular and substantially square in cross section, but the number, size, and shape may be varied without departing from the spirit of this invention. Each of the said cores has a sufficient taper from bottom to top to cause it to loosen and withdraw readily when the bottom 22 is lowered, as shown in Fig. 5.

A proper vertical movement of the block which forms the bottom or closure 22 of the molding-box, is insured by a guide-board 28, upon the upper end of which the bottom 22 is mounted in a fixed manner, and the vertical edges of which board 28 enter vertical channels 29, formed in the standards 13.

The vertical movement of bottom 22 to close the lower end of the molding-box and place the cores 26, or to lower the cores, is accomplished by a pair of cam-levers 30, pivoted at 31 to the standards 13, each cam-head having a pair of metal straps 32 and 33 wrapped in opposite directions upon the peripheries of said heads and fastened at

opposite ends to the cam-head and guide-board 28, respectively. The upper strap 32 has one end fastened to its cam-head and the other end to the lower end of the board 28. The lower strap 33 has one of its ends fastened to its cam-head and the other end fastened to the near side of board 28 near the top of the latter. By rocking the cam-heads the connection of the straps with the board 28 will cause the latter to be correspondingly raised and lowered. A uniform movement of the cam-levers is insured by joining their outer ends by means of a transverse bar 34 and upper bar 35. The latter will preferably be of iron to weight the outer ends of the levers and counter-balance the board 28, block 22 and cores 26. It also forms a bearing for the operator's foot in holding the cores up in right position while a block is being molded.

In order to steady the upper ends of the cores 26, which are supported by the block 22 forming the bottom of the molding-box, and to insure a uniform and proper spacing all around between the cores and molding-box walls, I provide a rod 38, one end of which is hinged to the member 14 of the molding-box, and the other end of which is bent to form a downward hook which is inserted in a suitable socket 39, formed in the upper end of one of the cores. This hooked bar can be thrown back out of the way when not in use and can be brought over into engagement with the core when needed. In practice I have found that the holding of the middle core in the manner just described is sufficient.

The members 14, 15, 16, and 17, will preferably be formed or built up out of a plurality of thinner wooden boards with the grain of the wood crossed to prevent warping and to strengthen the structure, and this material is thoroughly saturated with oil to resist the absorption of moisture.

Instead of channels 10 in the sides of the block to receive and hold the finishing coat of plaster on a wall, ribs or projections may be formed, which would answer the same purpose. My machine lends itself well to a change in direction of these, by making the desired change in the inner faces of the molding-box, as shown in Fig. 6. The advantage in having these channels horizontal on one side and vertical on the other is that by reversing the sides of the blocks in laying a wall with them, the resulting surface to plaster against is correspondingly varied as to the direction of its channels and this insures a more tenacious adherence or bind between the plaster coat and the block wall.

The height of the molding-box will depend upon the length of block to be made; the drawing shows a machine for making blocks of medium length.

40 is a post extending up from the table

11 back of the molding-box to provide a support for the molding-box when it is opened out and turned back to release a newly formed block.

The operation of my block molding machine is as follows: The cam-levers are lowered to the position shown in Fig. 4, and then the molding-box sides and ends are brought together or closed, in the manner shown in Figs. 1, 2 and 4, and are locked by the engagement of hook 18 by latch-bar 19, and the engagement of socket 39 of the middle core by the hooked end of rod 38. The material from which the block is to be formed is then introduced through the open top of the mold into the spaces around the cores. When the green block has sufficiently solidified to become self sustaining, the cam-levers will then be moved to the position shown in Fig. 5, which will loosen the cores and partially withdraw them downwardly, and lower the bottom-forming block 22. The members 14, 15, 16, and 17 will next be unfastened by disengaging the latch-bar from hook 18, and thereupon the vertical members of the molding-box will be opened or separated and the members thrown back, as shown in dotted lines in Fig. 2, with the back member leaning against the post 40. This will cause the inner lower edge of the back 14 to project slightly over the opening through the table 11, and the block 7, (see Fig. 5), which has been supported up to this time by engagement with the ribbed walls of the molding-box, drops by gravity against the oblique adjacent face of the member 14 and is moved slightly forward of the machine, out of alignment with the hole through the table, with the result that the front edge or corner of the block will be arrested by contact with the table immediately in front of said hole, and the block will be supported by the table instead of dropping through the opening in the latter. The block is then lifted up clear of the cores and dried in the usual manner. As soon as the block is removed from the machine the latter is ready to be closed and the above operations are repeated to form a new block.

Having thus fully described my invention, what I claim as new and wish to secure by Letters Patent, is—

1. A molding table having an opening, a removable closure making a working fit in said opening, core pieces carried by said closure, cam-levers, means by the operation of said cams for raising and lowering the closure, a molding-box in folding hinged sections surrounding the hole in the table and cores and adapted to be opened to release the product of the machine and holding means from the box to the core adapted by the lowering of said closure and core to release the core.

2. A molding table, a vertically removable

block, core pieces carried by said block, a guide board depending from said block, cam-levers, a pair of oppositely wrapped straps on each cam connecting it with said guide board above and below the cam whereby the guide board may be raised or lowered by correspondingly rocking the cam, a molding-box in hinged-together sections surrounding the core pieces and adapted to be opened to release the product of the machine, means to hold the top of a core-piece in position and to automatically release the core by the lowering of the core.

3. In a machine for molding building blocks, a molding-box in a plurality of hinged-together sections adapted to be opened out to release the product of the machine, the oppositely disposed sides of said box having formations in opposite directions for the two sides to produce irregularities in the sides of the block product and means on the back-section to move the block forward when said back-section is swung to the rear.

4. A molding table, a vertically removable block, core pieces carried by said block, one of said core pieces having a socket, a molding-box surrounding the core pieces and a centering and holding means comprising a rod hinged at one end to the box and having a hook at its other end to engage the socket of a core piece.

5. A molding machine having an opening, a removable closure making a working fit in said opening, core pieces carried by said closure, means for raising and lowering said closure and cores, and a molding-box in folding hinged sections surrounding the hole in the table and the cores adapted to be opened to release the product, the rear member being also hinged at its lower end to the table and inwardly oblique at that end to cause its inner edge to project over the opening when the member is swung back.

6. A molding table having an opening, a removable closure making a working fit in said opening, core pieces carried by said closure, means for raising and lowering said closure and cores, and a molding-box in folding hinged sections surrounding the hole in the table and the cores adapted to be opened to release the product, and means to move the lower end of the block forward to rest on the table when the box is opened.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this, 5th day of January, A. D. one thousand nine hundred and eleven.

HARRY H. PIERCE. [L. s.]

Witnesses:

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F. W. WOERNER.