No. 817,139. PATENTED APR. 10. 1906.

E. H. REED.

CONVERTIBLE MOLDING MACHINE.

APPLICATION FILED JULY 12, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

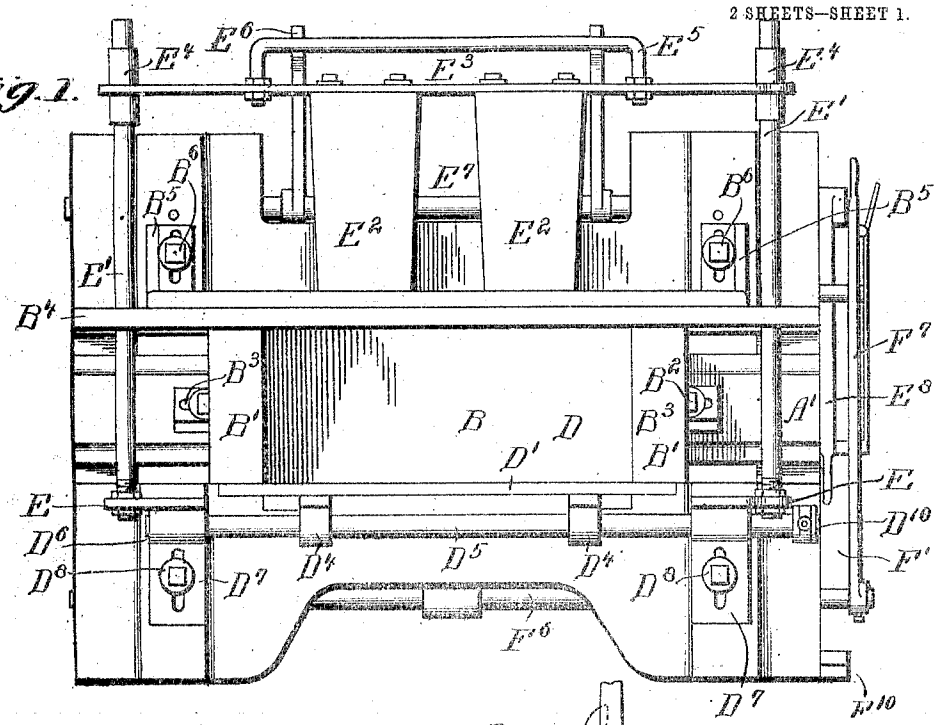
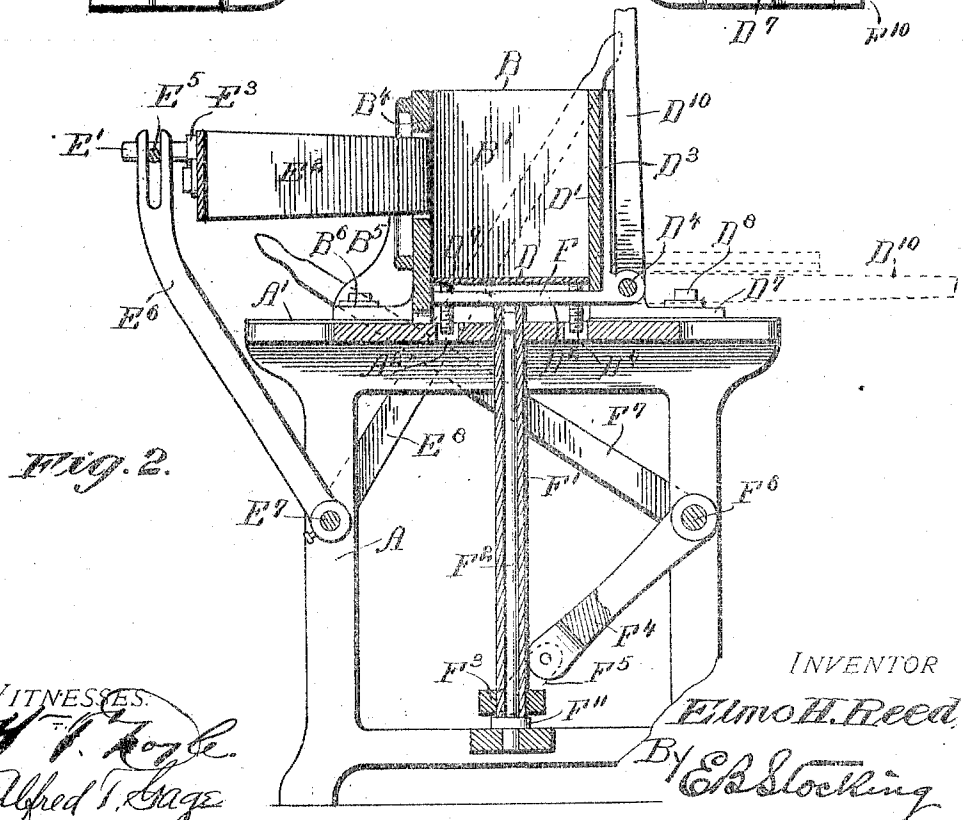


Fig. 2.



WITNESSES.

H. L. Boyle.

Alfred T. Gage.

INVENTOR

Elmo H. Reed,

By E. B. Stocking

Attorney

NORRIS PETERS, INC., LITHO., WASHIN

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2 SHEETS—SHEET 2.

Fig. 3.

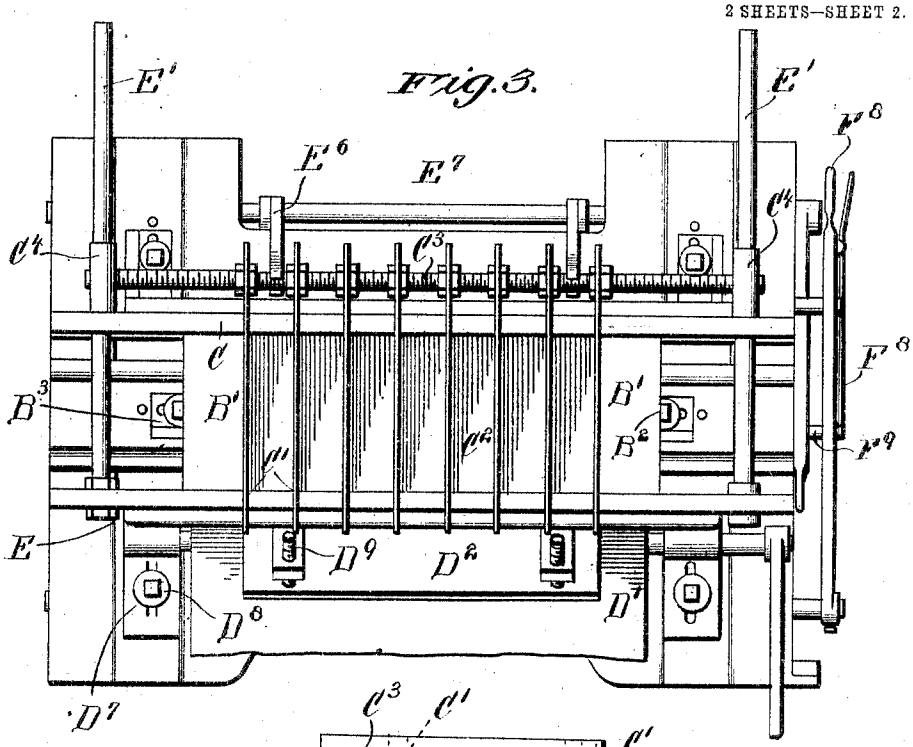


Fig. 4.

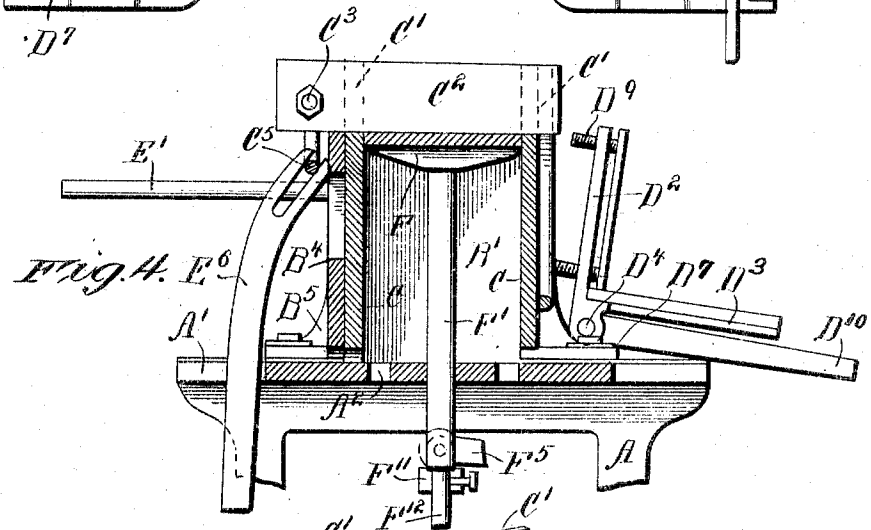
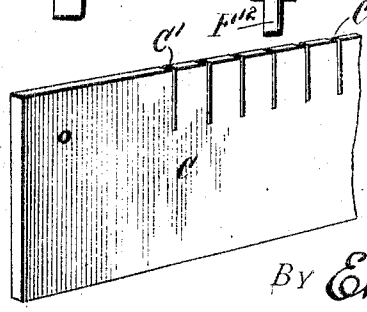


Fig. 5.



WITNESSES:

W. F. Kopk.

Alfred T. Gage.

INVENTOR

Elmo H. Reed,

BY E. B. Stocking

Attorney

NORRIS PETERS, INC., LITHO., WASHINGTON, D. C

UNITED STATES PATENT OFFICE.

ELMO H. REED, OF WICHITA, KANSAS.

CONVERTIBLE MOLDING-MACHINE.

No. 817,189. Specification of Letters Patent. Patented April 10, 1906.

Application filed July 12, 1905. Serial No. 269,398.

To all whom it may concern:

Be it known that I, ELMO H. REED, a citizen of the United States, residing at Wichita, in the county of Sedgwick, State of Kansas, have invented certain new and useful Improvements in Convertible Molding-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to convertible molding-machines, and particularly to a structure whereby the mold-box may be used as a bottom face-mold, a side-face mold, or for brick-molding purposes.

The invention has for an object to provide an improved construction and arrangement of parts by which the side walls of a mold-box used for a bottom-face mold may be adjusted to permit the insertion of other side walls for use as a side-face mold or for brick-molding purposes, thereby embodying in a single machine a structure capable of performing several different molding operations by a simple adjustment of the parts.

A further object of the invention is to provide an improved construction and arrangement of the side wall of the mold in connection with the bottom thereof whereby these parts are pivotally mounted to swing laterally of the mold, and thus remove the block therefrom without the necessity of releasing or adjusting the remaining walls of the mold.

Another object of the invention is to provide an improved construction and arrangement of division-plates adapted to be attached to the ordinary operating-arms for the cores, whereby the mold may be used for brick-making purposes.

Other and further objects and advantages of the invention will be hereinafter set forth, and the novel features thereof defined in the appended claims.

In the drawings, Figure 1 is a plan of the mold provided with the side core-blocks. Fig. 2 is a central vertical cross-section thereof. Fig. 3 is a plan of the machine with the brick-forming partitions or plates applied thereto. Fig. 4 is a vertical section of the mold-box shown in Fig. 3. Fig. 5 is a detail perspective view of the side wall used in brick-molding.

Like letters of reference refer to like parts in the several figures of the drawings.

The letter A designates a frame or table of any desired construction having upon its upper surface A′ the mold-box B. This box is composed of the opposite end walls B′, adjustably mounted upon the table-top by means of the bolts B^2, extended through the slotted lugs B^3, carried by the end walls. At one side of the mold-box an adjustable side wall B^4 is mounted and adapted for movement laterally toward and from the end walls, so as to permit the insertion between it and the end walls of a supplemental wall C, such as shown in Figs. 4 and 5, when used for brick-molding. This adjustment may be accomplished in any desired manner—for instance, by means of the lug B^5, resting on the table-top and secured by the bolt B^6, extending through a slot therein, as shown in Fig. 1.

In the construction and arrangement of parts shown in Figs. 1 and 2 the mold is adapted to form the face of the block upon the bottom thereof, and this bottom D is mounted in any desired manner at a right angle to the removable side wall D′. These parts D and D′ are carried by angle-arms D^2 and D^3, respectively, these arms being pivotally mounted at D^4 upon rock-shaft D^5, extending longitudinally of the mold-box. This shaft is carried by bearings D^6, adjustably mounted on the top of the machine by means of lugs D^7 and bolts D^8, so as to permit a lateral movement of these arms, thus shifting both the bottom and side wall supported thereby. This bottom D is supported from the arm D^2 by means of the adjusting-screws D^9, by which it may be elevated and the depth of the mold-box determined, these screws being extended into apertures A^2, formed in the top plate A′ of the table. The rock-shaft D^5 is provided at one end with the operating-handle D^{10} of any desired construction, and it will be seen that the shifting of this handle carries the bottom and one side wall of the mold-box into planes at right angles to their normal positions, thus completely removing the molded article from the box, so that it is readily accessible for removal from the machine by lifting the pallet or board carrying the same from the arm D^3.

The bearings at each end of the rock-shaft D^5 are provided with vertically-extending plates E, to which the supporting-rods E′ at opposite ends of the machine are secured, as shown in Fig. 1, these rods also passing through apertures in the relatively fixed side wall of the mold-box and are adapted to support the cores or division-plates coöperating with the mold. In Fig. 1 the cores E^2 are adapted to pass through apertures in the side

wall B^4 of the box and are carried by a cross-bar E^3, provided at its opposite end with a collar or sleeve E^4, mounted upon the rods E'. This cross-bar is also provided with a yoke E^5, adapted to fit in the slotted free ends of the operating-levers E^6, which are carried upon rock-shaft E^7, mounted in suitable bearings in the frame A and provided at one end with an operating-handle E^8.

Under some conditions of use it is desirable to elevate the bottom of the mold-box either for the purpose of assisting in ejecting the block therefrom, as shown in Fig. 1, or for bodily lifting the block, or diminishing the capacity of the mold, as shown in Fig. 4. For this purpose the follow-board or head F is mounted upon a tubular shaft F', telescoping upon a rod F^2, supported by the frame A beneath the mold-box thereon. This tubular shaft is provided with a collar F^3, secured thereto and connected with a lifting-lever F^4 by means of a pivoted link F^5, as shown in Fig. 2. The lifting-lever is mounted upon a rock-shaft F^6, mounted in the frame of the machine and provided with an operating-handle F^7. The follow-board may be supported in its elevated position by means of a spring-latch F^8, carried by this handle and provided with a laterally-extended end F^9, adapted to engage a stop projection F^{10}, carried by the frame. When it is desired to permanently support this follow-board in its elevated position—for instance, as shown in Fig. 4—the collar F^{11}, carried by the rod F^2, is adapted to be adjusted thereon and secured at the desired elevation.

When it is desired to convert the machine from a bottom-face mold, as shown in Figs. 1 and 2, into a side-face mold, and one adapted for brick-molding purposes, as shown in Figs. 3 and 4, the bottom wall D and side wall D' are thrown outward, as in position to deliver the material from the box, and adjusted away from the end walls B', so that the side wall C may be inserted in contact with the end walls. The opposite side wall B^4 is likewise shifted laterally and a wall C introduced next the mold-box. These walls C are mounted upon the rods E' and are provided with a series of slots or kerfs C' C' therein above the walls B' and D', adapted to receive the division-plates C^2, by which the mold is divided into proper spaces for the formation of bricks from cement or similar material. These plates C^2 are mounted upon a cross-rod C^3, provided with sleeves or collars C^4, slidingly mounted upon the supporting-rods E' at each end of the machine, and the cross-rod C^5, extending to the slotted free end of the lever E^6, so as to shift the plates laterally of the mold-box by means of the handle E^8, which is also adapted for the shifting of the cores when the latter are connected thereto. With the arrangement of parts shown in Fig. 4 the cores are removed by simply releasing the same from the levers and withdrawing them from the supporting-rods. For molding bricks it is desirable to considerably reduce the depth of the box, and for this purpose the follower F is raised and secured in position, as shown in Fig. 4.

In the operation of the machine it will be seen that with the parts arranged as in Figs. 1 and 2 the molding of blocks may be performed with the usual core-spaces therein and the face of the block upon the bottom of the mold-box, and after the withdrawal of the cores the block is immediately removed by swinging outward the pivotally-mounted side wall and bottom, so as to permit the ready and convenient lifting of the block from the supporting-arms of the pallet or board which forms the side wall of the mold. When it is desirable to convert the machine into one for molding a block with its face upon one side, this outwardly-swinging side wall and bottom may be thrown into the position shown in Fig. 4 and shifted away from the end wall, so as to permit the introduction of a fixed side wall, as shown at C, while for brick-molding purposes the follower at the bottom of the mold is raised, so as to support the pallet or board carrying the material adjacent to the slots C', into which the division-plates C^2 are introduced, forming the bricks of the desired size. After the material has been properly tamped and become set to the desired extent these plates are removed by the lever connected therewith and the board bearing the completed bricks lifted from the mold-box.

It will be obvious that the construction herein disclosed produces a single machine in which several molding operations frequently requiring the use of different machines may be successfully, conveniently, and economically effected.

Having now described my invention, what I claim, and desire to cover by Letters Patent, is—

1. In a block-molding machine, the combination with a fixed frame, of a core, a mold having sides and a bottom plate, the bottom plate and one of the sides being tiltable together and away from the remaining side, means for adjusting the tiltable bottom and side laterally relative to said core, means for laterally adjusting the remaining side relative to said core, end plates for the mold, and means for adjusting said end plates toward and from said core, whereby the relative position of the core to the walls of the mold may be maintained in molding blocks of different sizes.

2. In a block-molding machine, the combination with a fixed frame, of a mold having a tilting side and bottom plate, a relatively fixed side, a sliding core adapted to pass through an aperture in the non-tiltable side wall and to extend to the opposite side, means

for shifting said core toward and from said tiltable side wall, means for adjusting the tiltable bottom and side laterally relative to said core, means for adjusting the remaining side wall laterally relative to said core, end plates for the mold, and means for adjusting said plates toward and from said core, whereby the relative position of the core to the walls of the mold may be maintained in blocks of different sizes.

3. In a device of the class described, a mold-box having an apertured side wall and insertible members adapted to enter said apertures, supporting-rods for said members at opposite ends of the machine, a bar carrying said members and slidably mounted upon said rods, a rock-shaft and operating-handle, a slotted arm carried by said rock-shaft to engage a member carried by said bar, an outwardly-swinging bottom and side wall to said mold, a rock-shaft for said swinging walls, an operating-handle carried by said rock-shaft, means for adjusting said side walls toward and from each other, and insertible slotted molding-walls extending above said side and end walls of the mold.

4. In a device of the class described, a mold-box comprising side walls adjustable toward and from each other, insertible molding-walls extending above the top of said side walls and there provided with a series of slots, division-plates connected together and disposed in said slots, and a vertically-adjustable follow-board disposed in said mold.

5. In a device of the character described, a mold-box comprising side walls adjustable toward and from each other, insertible molding-walls extending above the top of said side walls and there provided with a series of slots, division-plates connected together and disposed in said slots, a vertically-adjustable follow-board disposed in said mold, a depending stem from said follow-board, a rock-shaft provided with an arm, a pivoted link extending between said arm and stem, and an operating-lever carried by said rock-shaft.

6. In a device of the class described, a mold-box comprising side walls adjustable toward and from each other, insertible molding-walls extending above the top of said side walls and there provided with a series of slots, division-plates connected together and disposed in said slots, a vertically-adjustable follow-board disposed in said mold, a depending stem from said follow-board, a rock-shaft provided with an arm, a pivoted link extending between said arm and stem, an operating-lever carried by said rock-shaft, a telescoping rod extending within said stem, and an adjustable set-collar carried by said rod for retaining the stem in adjusted position.

7. In a device of the class described, a mold-box comprising side walls adjustable toward and from each other, insertible molding-walls extending above the top of said side walls and there provided with a series of slots, division-plates connected together and disposed in said slots, a vertically-adjustable follow-board disposed in said mold, a depending stem from said follow-board, a rock-shaft provided with an arm, a pivoted link extending between said arm and stem, an operating-lever carried by said rock-shaft, a latch carried by said operating-lever and engaging projections extending from the end of the machine to coöperate with said lever.

8. In a device of the class described, a mold-box comprising opposite end walls, a rock-shaft extending at one side thereof, a bottom and side wall pivotally mounted upon said rock-shaft, bearings for said rock-shaft provided with upwardly-extending standards, supporting-rods beyond the ends of the box and mounted in said standards, an insertible member carried by said rods, and an opposite side wall of the box.

9. In a device of the class described, a mold-box comprising opposite end walls, a rock-shaft extending at one side thereof, a bottom and side wall pivotally mounted upon said rock-shaft, bearings for said rock-shaft provided with upwardly-extending standards, supporting-rods beyond the ends of the box and mounted in said standards, an opposite side wall of the box having apertures through which said rods extend, and a carrier-bar slidably mounted upon said rods and carrying insertible members adapted to pass within the mold-box.

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

ELMO H. REED.

Witnesses:
ALFRED T. GAGE,
LEWIS HODGES.