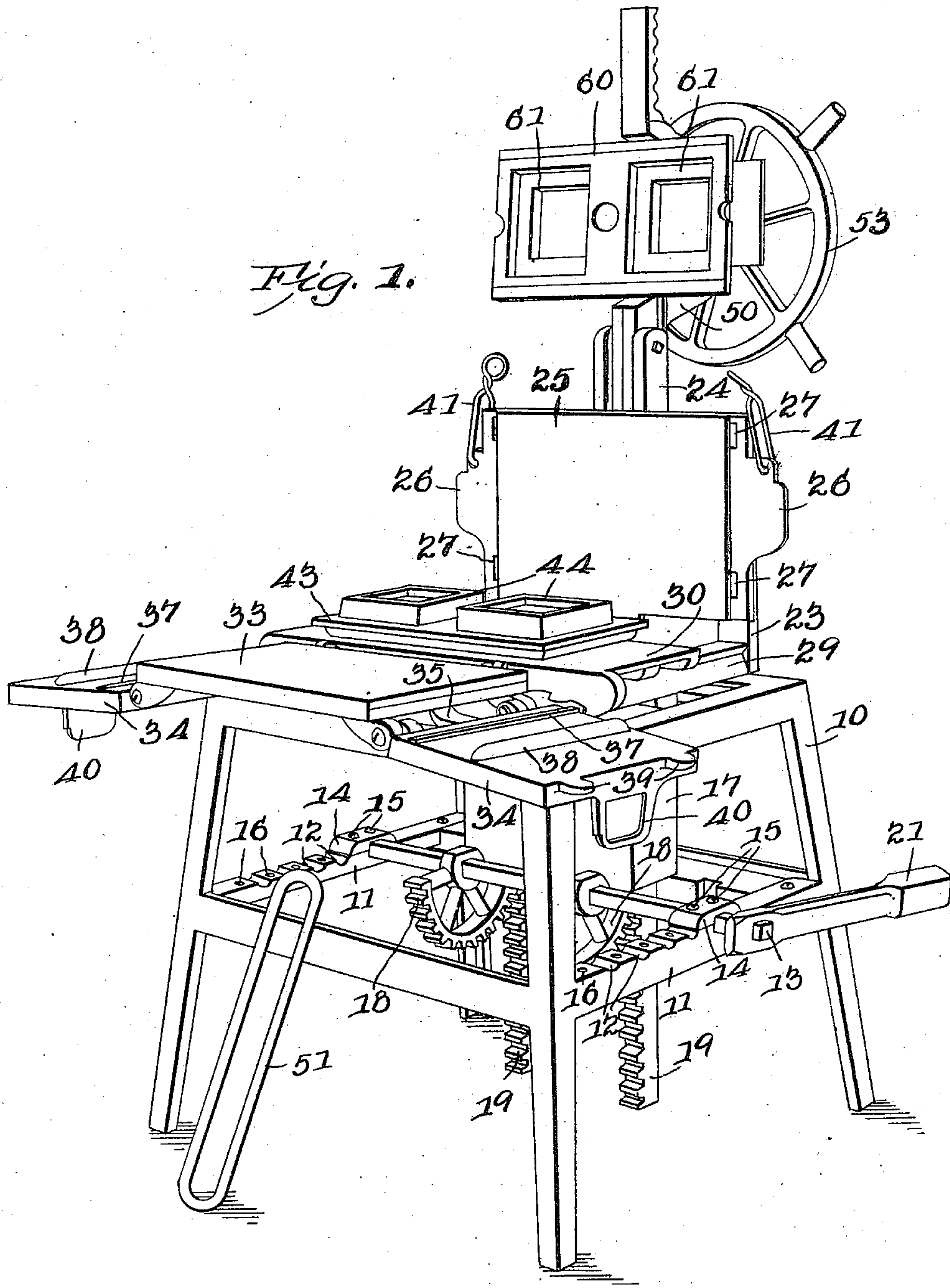


No. 844,457.

PATENTED FEB. 19, 1907.

J. H. MILLER.
CEMENT BLOCK MACHINE.
APPLICATION FILED APR. 20, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

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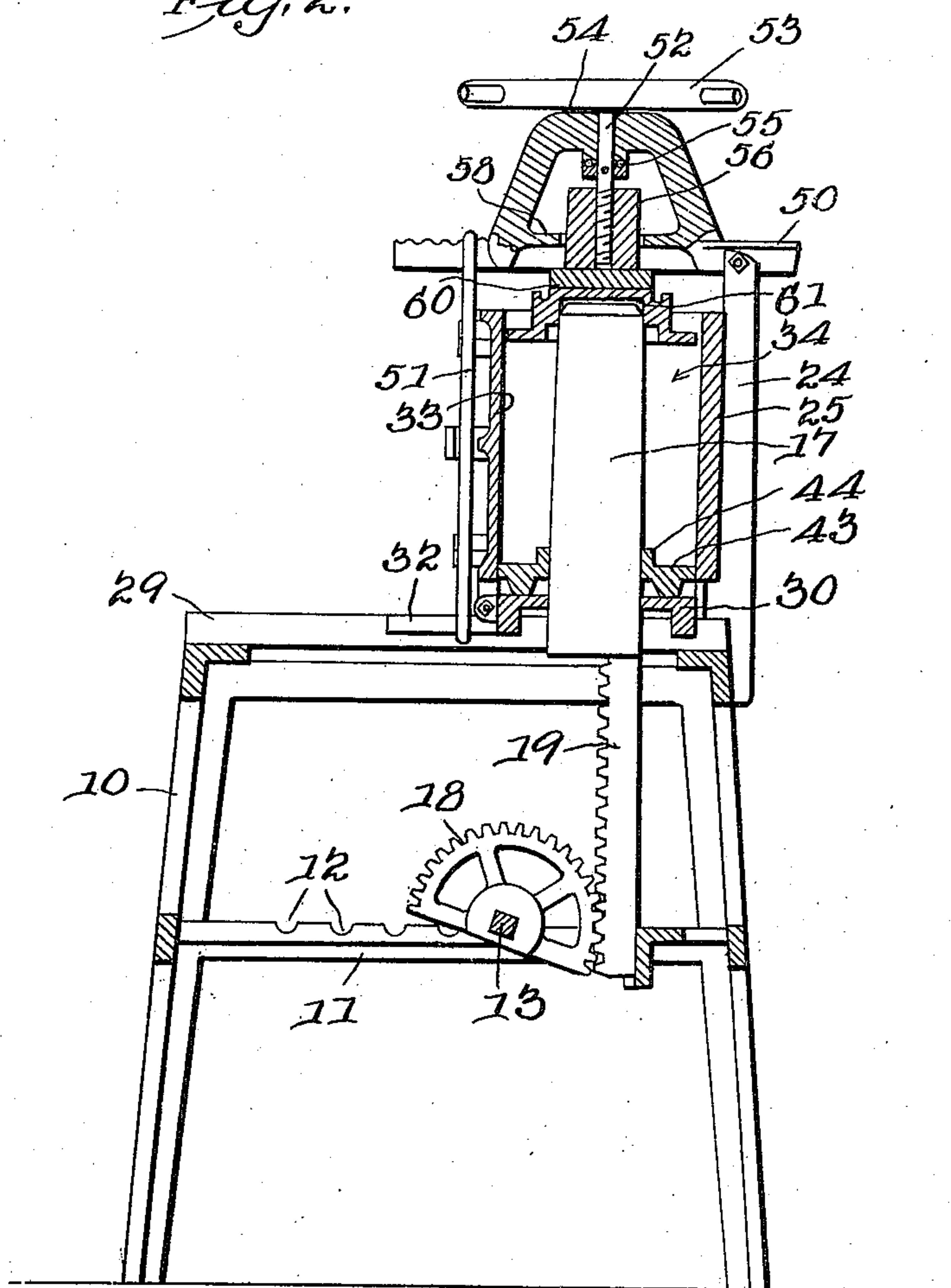
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN HENRY MILLER, OF RISINGSUN, OHIO.

CEMENT-BLOCK MACHINE.

No. 844,457.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed April 20, 1906. Serial No. 312,828.

To all whom it may concern:

Be it known that I, JOHN HENRY MILLER, a citizen of the United States, residing at Risingsun, in the county of Wood and State of Ohio, have invented a new and useful Cement-Block Machine, of which the following is a specification.

This invention relates to machines of that class employed in the manufacture of blocks or bricks from concrete, cement, and other plastic material.

The principal object of the invention is to provide a machine in which a mechanically-actuated tamping or pressing member is employed to solidify the plastic material and to secure a block or brick of substantially uniform density throughout.

A further object of the invention is to provide a machine of this type in which the mold-box may be quickly moved to open and closed positions without danger of injuring the block.

A still further object of the invention is to provide a machine of this type in which the mold-box includes a number of members that are bodily movable away from a back plate, the latter being permanently secured in place and being arranged to form the ornamental face of the block, while the remaining vertical walls of the mold are pivotally connected in such manner as to permit adjustment to open position by a single movement.

A still further object of the invention is to provide a machine that may be readily adjusted for the manufacture of blocks of different size.

Further objects of the invention are to improve, simplify, and cheapen the construction of machines of this type and to provide a machine by which blocks may be made expeditiously at low cost.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims; it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is

a perspective view of a block-molding machine constructed in accordance with the invention. Fig. 2 is a vertical sectional view of the same.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The working parts of the machine are supported on a suitable frame 10, said frame including a pair of parallel cross-bars 11, the upper faces of which are provided with a plurality of grooves 12 for the reception of the rounded end portions of a shaft 13, which may be held in place by adjustable caps 14, these being held in place by bolts 15, which may be adjusted in order to enter into any of the openings 16 formed in the bars 11, this construction permitting the adjustment of the position of the shaft 13 in accordance with the width of the blocks to be made.

The shaft 13 is the power-shaft employed for transmitting vertical movement to the cores 17, and for this purpose said shaft carries segments 18, which intermesh with racks 19, that are secured to the lower ends of said cores, and the outer end of the shaft carries a lever 21, by which said shaft may be turned to raise or lower the cores.

The frame is provided with vertical standards 23 and 24, which form supports for a back plate 25, the latter being of any desired design or configuration in order to produce an ornamental front face on the block. The opposite ends of the plate 25 or the standards 23 are provided with projecting wings or lugs 26, and in the plate or standard are formed openings 27, which are utilized in securing the end plates of the mold-box in molding position. The frame is further provided with a pair of horizontally-disposed dovetailed guide-bars 29, which are adapted for the reception and support of a bottom plate 30, the latter being provided with grooves or notches, which fit over the dovetailed bar in order to permit free sliding of the bottom plate toward and from the back plate 25. This bottom plate carries a forwardly-projecting bar 32, which is employed to hold the tamping mechanism in place and which also acts as a support for limiting the downward movement of the front plate 33 of the mold-box, said front plate being pivotally connected to the front edge of the bottom plate 30.

The opposite ends of the front plate 33 are provided with lugs, to which are pivoted the end plates 34 of the mold-box, and said end plates carry projecting pinions 35, which engage with the front or lower face of the front plate for the purpose of limiting downward movement of the end plates, as will be seen on reference to Fig. 1. Each of the end plates is shown as provided with ribs 37 and 38 to form recesses for the ends of the block to receive mortar or cement or for the purpose of forming air-passages through the blocks. Projecting from each of the end plates is a pair of lugs 39, that are arranged to enter the openings 27 and prevent outward movement of the end walls when the parts are assembled in molding position. The edges of the end plates are further provided with projecting members 40, that form handles for manipulating the members of the mold-box during the movement of the latter to and from the molding position, and when the mold-box is closed these members 40 fit against the wings or ears 26, and a loop 41, carried by each wing or ear, is then moved down over the mating handle member for the purpose of firmly locking the mold at this point and preventing outward movement of the front plate.

The bottom plate 30 is arranged for the reception of a removable pallet 43, which may be provided with suitable ribs or flanges 44, around its core-receiving openings when it is desired to form a block having recesses at this point, and after the mold has been filled and tamped and the cores withdrawn the opening of the mold leaves the pallet free to be removed, together with the molded block, without the necessity of turning the block over to discharging position.

Pivoted between the standards 24 is the lower rear end of a yoke 50, the forward or upper end of which is arranged to project beyond the front of the mold-box when the latter is in the closed position (shown in Fig. 2,) and the forward end of the yoke is then connected to the projecting bar 32 by means of a removable link 51, which serves to hold the yoke down during the subsequent tamping operation. The central portion of the yoke has an opening for the passage of the unthreaded portion of a screw-shaft 52, at the outer end of which is an operating-handle 53. This screw-shaft carries a collar 54, between which and the adjacent portion of the yoke a ball-race is formed for the reception of anti-friction-balls 55. The inner threaded end of this screw extends into a female screw formed in a nut 56. This latter is guided in a non-circular opening formed in a cross-bar or plate 58, that is carried by the lower portion of the yoke. To the inner end of the nut is secured a tamping or compression plate 60 of a shape corresponding to the contour of the upper portion of the block to be made

and provided with core-receiving openings 61, into which the upper ends of the cores extend.

In the operation of the machine, the parts being in the position shown in Fig. 2, with the exception of the yoke and tamping member, which are thrust back, the mold is filled with cement or other plastic material, and then the yoke and upper tamping-plate are turned down to the position shown in Fig. 2 and locked by the link 51. The screw is then turned and the nut 56 is forced down, so that the tamping-plate is moved under pressure against the material within the mold-box, solidifying the cement or other material, and thus dispensing with the usual hand-tamping operation. After the tamping is complete the screw is relaxed and link 51 is removed, and then the yoke and tamping-plate are thrust back to the position shown in Fig. 1. The handle 21 is now turned and the cores are withdrawn to a position below the bottom of the bottom plate 30. The operator then releases the holding-links 41 and draws the bottom, front, and end members of the mold outward bodily from the plate 25, so that the plastic material is freed from the ornamental front plate without danger of mutilating the molded face of the block. The outward movement is continuous for a short distance and then the operator pulls outward on the handles 40, and then pulls downward on the front plate 33 until the parts rest in the position shown in Fig. 1, leaving the finished block resting on the pallet in readiness to be moved to the drying-floor.

It will be seen that the opening movement of the mold will be accomplished by a single continuous movement, thus reducing the time and labor of opening and closing the mold-box.

I claim—

1. In a block-molding machine, a stationary back plate, a slidably-mounted bottom plate movable toward and from the back plate, a front plate pivoted to said bottom plate, and end plates pivoted to the front plate.

2. In a block-molding machine, a stationary back plate, a bottom plate mounted to slide toward and from said back plate, a front plate pivoted to the bottom plate, end plates pivoted to the front plate, and means for limiting opening movement of the front and end plates.

3. In a block-molding machine, a stationary back plate, a bottom plate, guides on which said bottom plate is mounted, a front plate pivoted to the bottom plate, means for limiting movement of the front plate, a pair of end plates pivoted to the front plate, and tongues projecting from said end plates and arranged to engage with the front plate to limit opening movement of said end plates.

4. In a block-molding machine, a stationary back plate, bottom, front and end plates movable bodily toward and from the back plate, the bottom, front and end plates being
5 pivotally connected to each other to permit free opening movement.

5. In a block-molding machine, a stationary back plate, a slidable bottom plate, front and end plates mounted pivotally with
10 respect to the bottom plate, and interlocking means between the end plates and the stationary back plate.

6. In a block-molding machine, a stationary back plate, a slidable bottom plate, a
15 front plate pivoted to said bottom plate, end plates pivoted to the front plate, wings projecting from the back plate, and end plates, and links arranged to fit over said wings and lock the mold-box in closed position.

20 7. In a block-molding machine, a stationary back plate having openings adjacent its opposite ends, a slidable bottom plate, pivotally-mounted front and end plates, lugs projecting from the end plates, and arranged to
25 extend into said openings, and interlocking means between the back plate and the end plates.

8. In a block-molding machine, a stationary back plate, a frame carrying the same,
30 dovetailed guides in said frame, a bottom plate slidably mounted on said guides, a front plate pivoted to the bottom plate, means for limiting opening movement of the front plate, end plates pivoted to said front plate, means
35 for limiting opening movement of the end

plates, and interlocking means between the end plates and the back plate to hold the mold-box in closed position.

9. In a block-molding machine, the combination with a frame including shaft-sup-
40 porting bars having a plurality of shaft-receiving recesses, a shaft adjustable into any one set of recesses, caps for holding the shaft in place, movable cores, core-operating
45 means carried by the shaft, and a mold-box having openings for the reception of the cores.

10. In a block-molding machine, the combination with a mold-box having a stationary rear wall and movable bottom, side and
50 end walls, of standards forming a support for the back wall and projecting above the top of the same, a yoke pivoted between the standards and arranged to swing over the
55 top of the mold-box, means for securing the free end of the yoke in operative position, the central portion of said yoke having a non-circular opening, a nut vertically adjustable
60 through said opening, a tamping-plate secured to the lower end of the nut, and a handled screw extending through the yoke and entering said nut.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN HENRY MILLER.

Witnesses:

DAVID KIRK MORRISON,
EDWARD BRUCE BERNARD.