No. 837,550. PATENTED DEC. 4, 1906.

E. N. EDWARDS.

BLOCK MOLDING MACHINE.

APPLICATION FILED JAN. 12, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

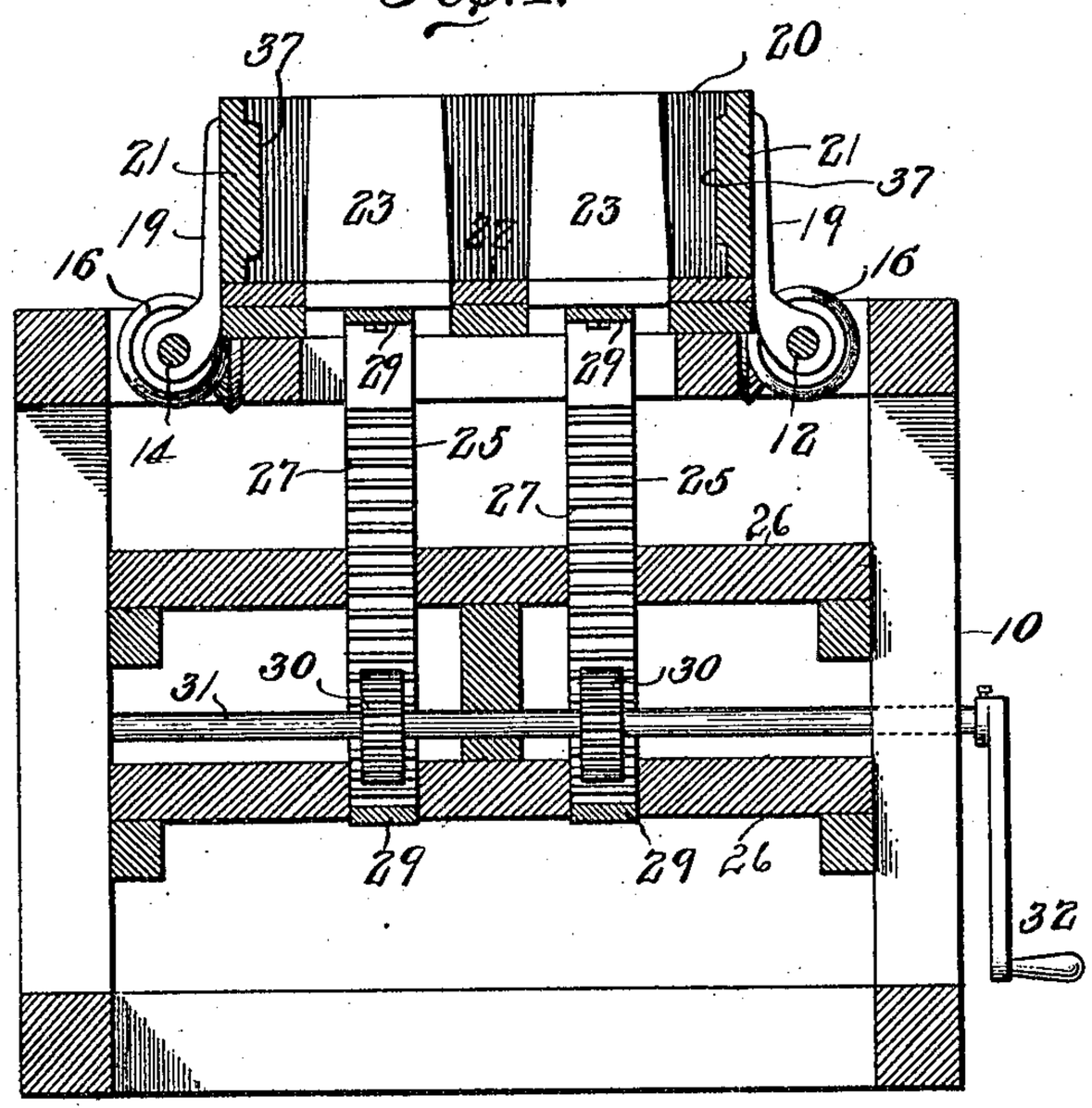
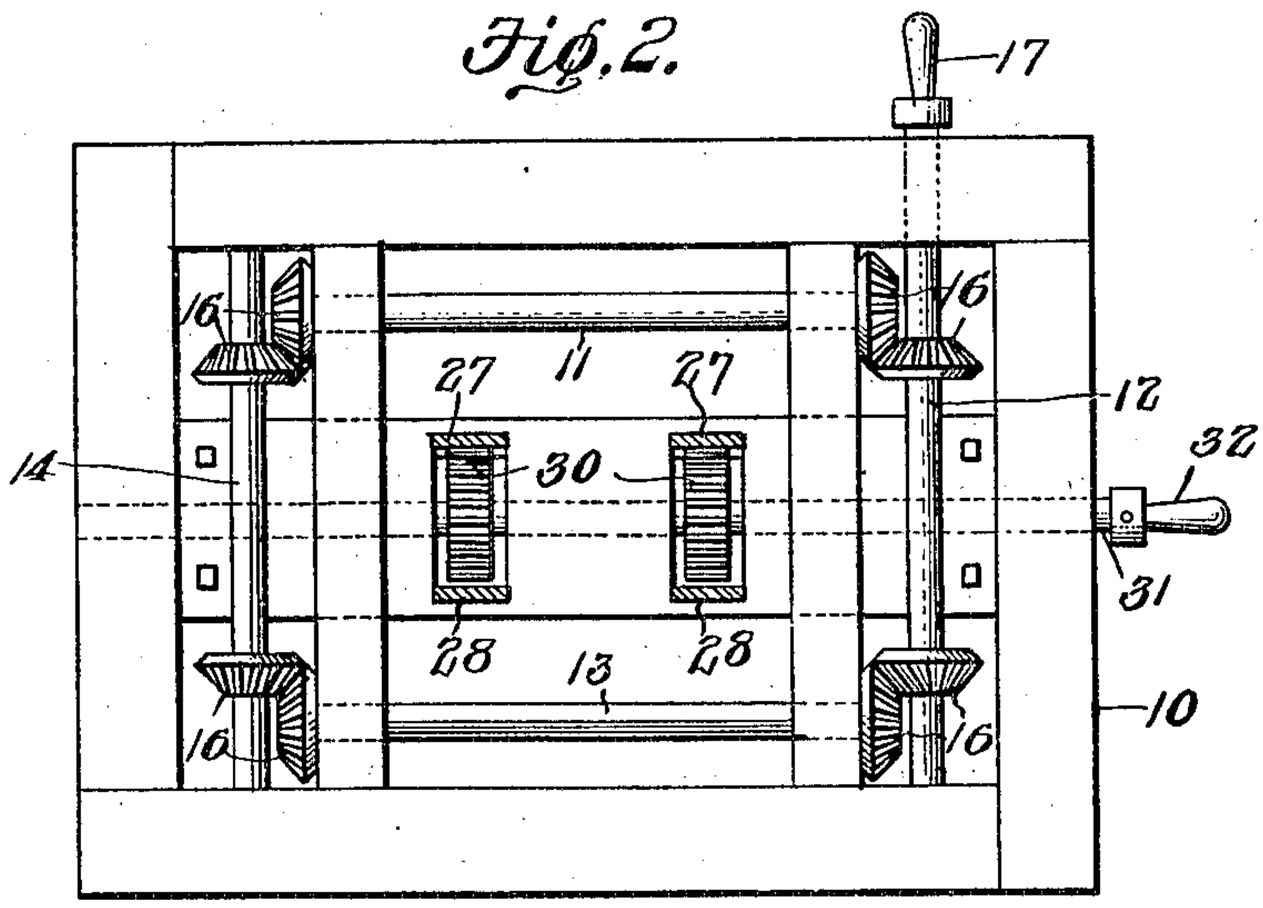


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

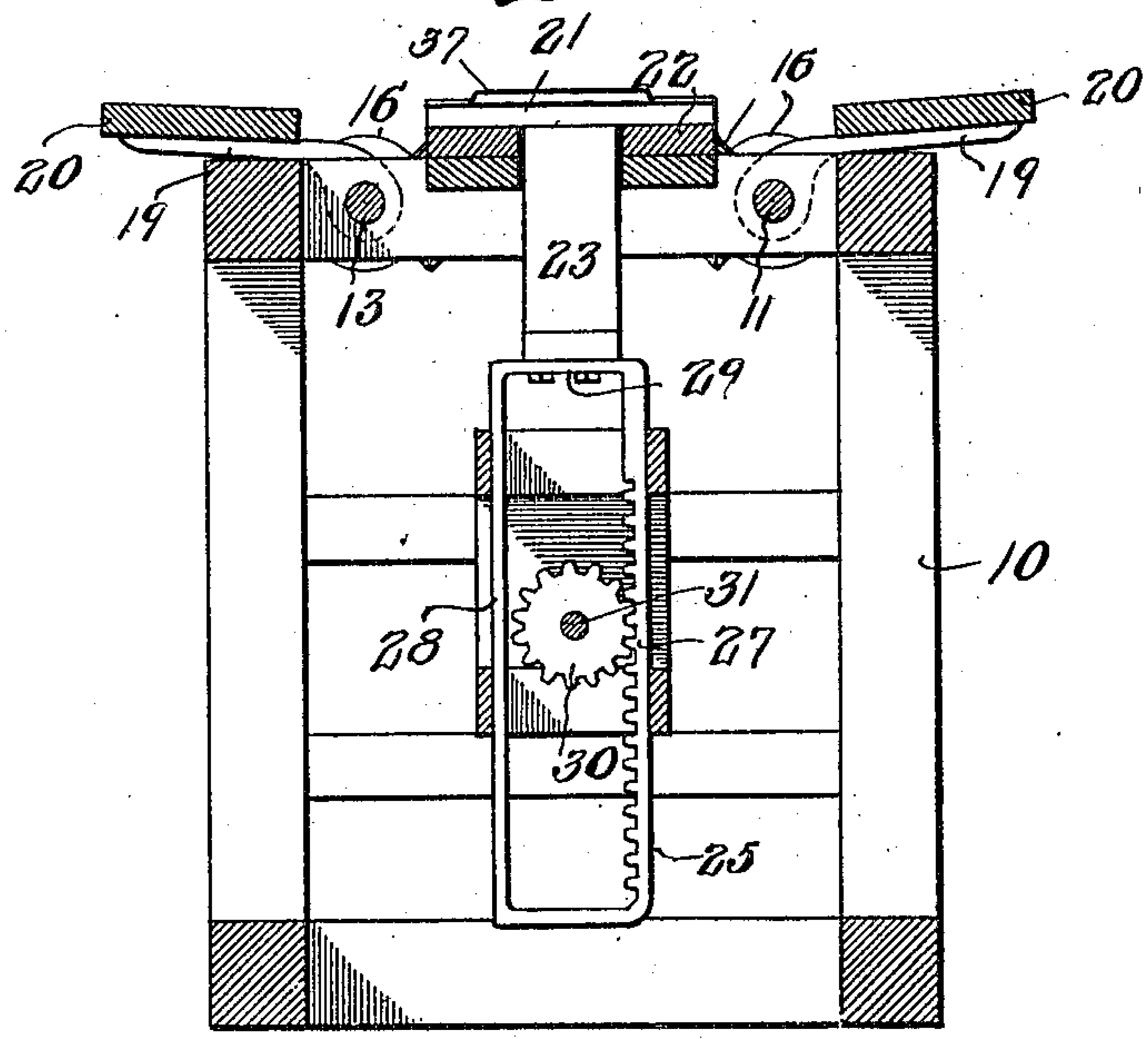
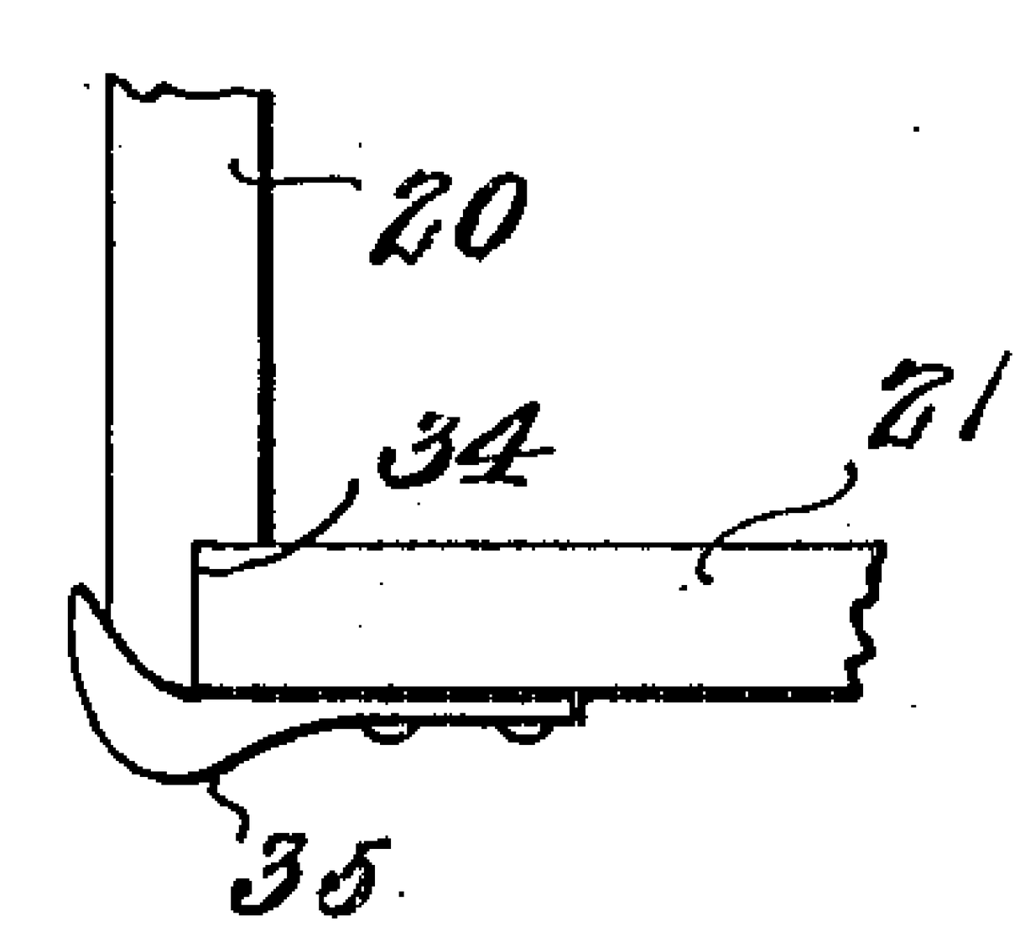


Fig. 4.



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BLOCK-MOLDING MACHINE.

No. 837,550. Specification of Letters Patent. Patented Dec. 4, 1906.

Application filed January 12, 1906. Serial No. 295,827.

To all whom it may concern:

Be it known that I, ELMORE N. EDWARDS, a citizen of the United States, residing at Alva, in the county of Woods, Oklahoma Territory, have invented a new and useful Block-Molding Machine, of which the following is a specification.

This invention relates to machines for molding blocks or bricks from concrete or other plastic material, and has for its principal object to provide a machine of simple construction in which blocks of different shape and size may be rapidly manufactured and in which the several walls of the mold-box may be simultaneously turned down to a horizontal position in order to free the block from all sides and permit its ready removal.

A further object of the invention is to construct a machine of this type in which the vertical side and end walls are pivotally mounted and connected for simultaneous movement to open and closed positions.

A still further object of the invention is to provide a block-molding machine in which the several side and end walls are carried by horizontal shafts, all of which are connected by miter-gearing so that they may be simultaneously operated.

A still further object of the invention is to provide a novel form of locking device which requires no manual manipulation and which serves as an effectual lock against all lateral strain due to tamping of the material in the molds.

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 central longitudinal section of a machine constructed in accordance with the invention. Fig. 2 is a plan view of the same, the view being partly in section and the side and end walls of the mold-box being removed. Fig. 3 is a transverse sectional view of the machine. Fig. 4 is a detail plan view of one corner of the mold-box, showing the automatic locking devices.

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, which may be formed of wood or of metal, the upper portion of said frame being provided with bearings for the support of four shafts 11, 12, 13, and 14, the shafts 11 and 13 being arranged near the opposite sides of the frame and the shafts 12 and 14 near the opposite ends thereof. These shafts each carry two miter-gears 16, said miter-gears being connected in a continuous series and one of the shafts being provided with a suitable operating-crank 17, by turning which all of the shafts may be simultaneously operated at the same speed.

Secured to the shafts are brackets 19, which carry the side plates 20 and the end plates 21, which form the principal members of the mold-box, and these are so arranged as to move from a vertical mold-box-forming position to a horizontal or approximately horizontal discharging position in order to free the molded block from all sides and permit the ready removal of said block to the drying-floor.

The frame serves as a support for a removable pallet-board 22, which forms the bottom of the mold-box during the molding operation and which serves also as a carrier for the removal of the block to the drying-floor. This pallet is provided with openings for the passage of core members 23, which may be of any desired contour and of any number, two being shown in the present instance. The cores have tapered sides in order to permit the ready withdrawal from within the molded block, and the lower end of each core is rigidly secured to a frame 25, that is vertically guided in cross-bars 26, carried by the central lower portion of the main frame. Each frame 25 comprises two vertical bars 27 and 28, that are connected at top and bottom by cross-bars 29. The inner face of each bar 27 is toothed and forms a rack with which engages a pinion 30, that is carried by a core-operating shaft 31, the latter having an operating-crank 32 at one end of the frame for convenience in raising and lowering the cores.

In order to firmly lock the mating corners

of the side and end walls of the mold, the ends of the side walls are provided with recesses 34, into which the opposite edges of the end walls extend, and at the ends near the upper edge of each end wall is a pair of projecting ears 35, that project beyond the edges of the wall and in advance of the molding-face thereon, these ears being slightly tapered and so arranged with respect to the gradually-decreasing angle that is formed during the closing of the mold between the edges of the end walls and the side walls as to firmly engage with and lock the side walls, preventing any movement of said side walls under the strain due to tamping. The end walls may be provided with auxiliary end cores 37 for the purpose of forming air-spaces or bonding-spaces at the ends of the block.

During the operation of the machine a pallet is placed in position and the cores are elevated, after which the operating-crank is turned in order to revolve all of the shafts 11, 12, 13, and 14 and move the side and end walls of the mold-box to closed position. The concrete or other material is then shoveled in and tamped, the surplus material being troweled off in the usual manner. The cores are then lowered by turning the crank 32, after which the main operating-crank is turned in order to revolve the shafts 11, 12, 13, and 14, so that the side and end walls will be simultaneously moved away from the molded block, relieving the strain on all sides at the same time, and the mold-walls being moved down to horizontal position, so that the block and pallet-board are preferably free, and the molded block may be removed from the machine without difficulty.

I claim—

1. In a block-molding machine, a frame, two pairs of shafts supported thereby, the longitudinal axes of one pair being at a right angle to the longitudinal axes of the other pair, bevel-gears connecting all of said shafts for mutual movement, mold-box side and end members rigidly secured to the shafts and arranged to simultaneously swing in vertical planes from approximately vertical mold-box-forming position to horizontal block-discharging position, vertically-movable cores, means for operating the cores, and means for locking the mold-box members in molding position.

2. In a mold-box-forming machine, pivotally-mounted side and end members connected for simultaneous movement to closed and opened positions, one of said members having a laterally and forwardly projecting ear arranged near the upper portion of one of its edges, and adapted to interlock with and hold the edge of an adjacent member as said members move toward mold-box-forming position.

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

ELMORE N. EDWARDS.

Witnesses:

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JESSE C. SCAGGINS.