

E. N. EDWARDS.
BLOCK MOLDING MACHINE.
APPLICATION FILED APR. 22, 1907.

899,517.

Patented Sept. 29, 1908.
2 SHEETS—SHEET 1.

Fig. 1.

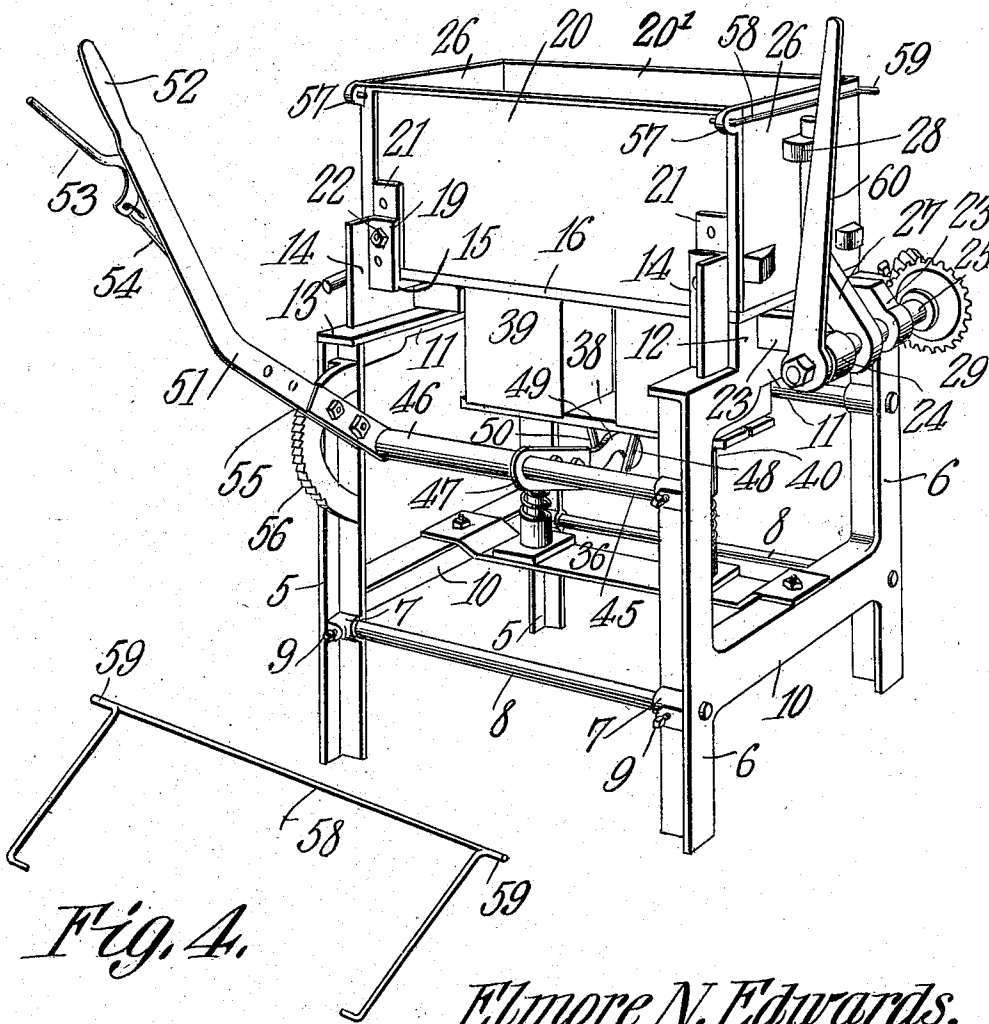


Fig. 4.

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2 SHEETS—SHEET 2.

Fig. 2.

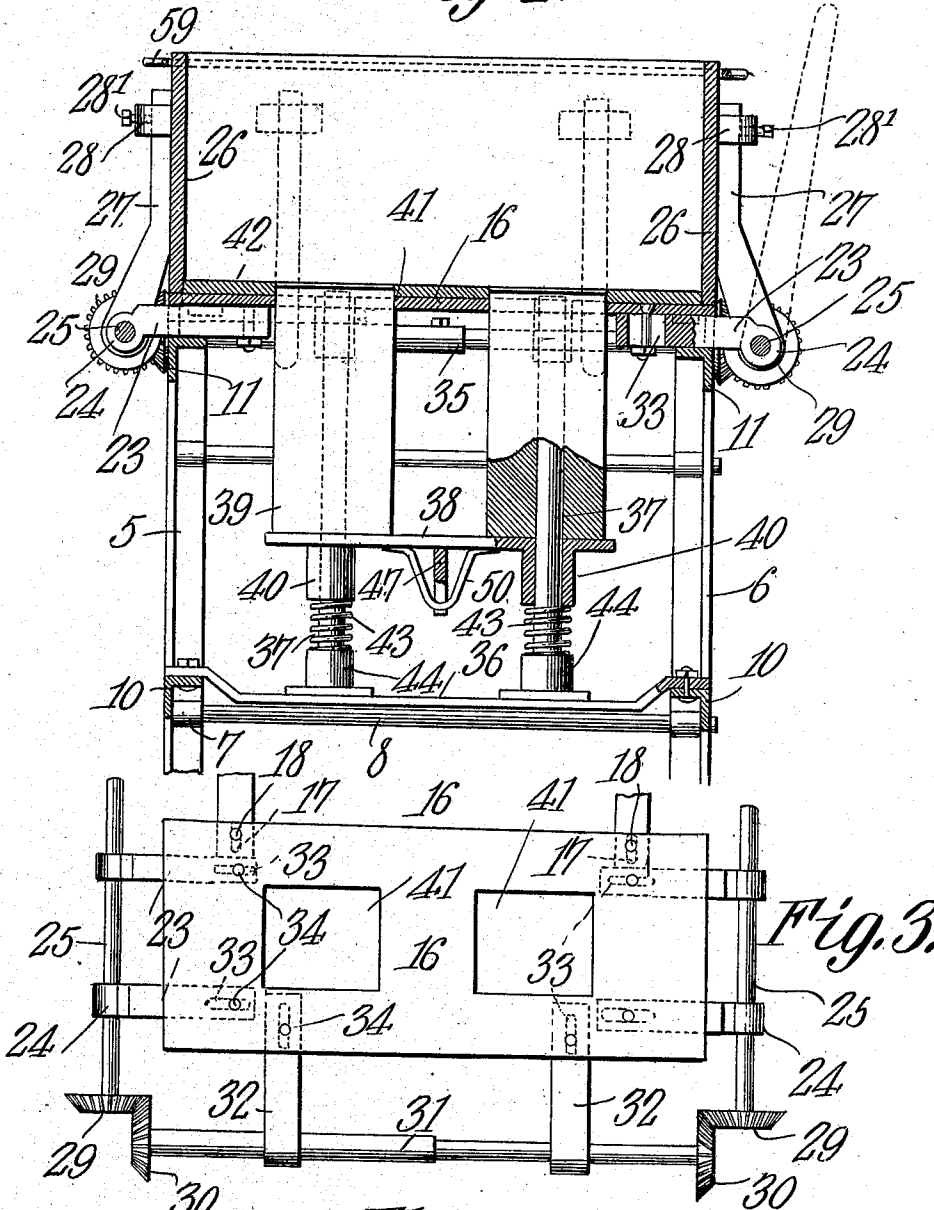


Fig. 3.

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UNITED STATES PATENT OFFICE.

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BLOCK-MOLDING MACHINE.

No. 899,517.

Specification of Letters Patent.

Patented Sept. 29, 1908.

Application filed April 22, 1907. Serial No. 369,643.

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 and State of Oklahoma, 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 cement, concrete or other plastic material and has for its object to provide a strong, durable and thoroughly efficient machine of this character by means of which artificial stone building blocks may be rapidly manufactured.

A further object of the invention is to provide a machine in which the walls of the mold box may be adjusted to permit the formation of bricks or blocks of different height and thickness and further to provide means for moving the walls laterally to open position thereby to present the molded product for removal from the machine.

A further object is to provide improved means for elevating the core members, and means for receiving the impact or jar of said members when the latter are moved to lowered position.

A still further object of the invention is generally to improve this class of machines so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings forming a part of this specification: Figure 1 is a perspective view of a block making machine constructed in accordance with my invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a top plan view of the bed plate and its associated parts showing the manner of supporting the rotary shafts. Fig. 4 is a perspective view of the locking bail detached.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved machine forming the subject matter of the present invention includes a supporting frame preferably formed of angle iron and consisting of spaced side members 5 and 6 having laterally extending sockets 7 for the reception of connecting rods 8,

the latter being extended through the side members 5 and 6 and locked against accidental displacement by screws or similar fastening devices 9.

The uprights of the side members 5 and 6 are spaced apart by integral beams 10 and 11 the upper ones of which are extended vertically to form central supports 12 for the mold box. Mounted on the lateral flanges 13 of the side members are end plates 14 which bear against the extensions 12 of the side members and are provided with flanges 15 which project beneath the mold box and are connected with the bed plate 16. The inner ends of the flanges 15 are provided with elongated slots 17 for the reception of bolts 18 so that the end plates 14 may be adjusted laterally of the side members to permit the formation of the blocks of different width.

Bearing against the vertical extensions 19 of the reinforcing flanges 15 is the relatively stationary side wall 20 of the mold box, the latter being provided with suitable perforated wear plates 21 through which extend clamping bolts 22 so that the stationary wall 20 may be adjusted vertically of the machine to vary the height of the block.

Secured to the opposite ends of the bed plate 16 are laterally extending brackets 23 having their outer ends provided with terminal bearings 24 in which are journaled rotary shafts 25. The shafts 25 are operatively connected with the movable end walls 26 of the mold through the medium of vertically disposed arms 27 having their lower ends keyed or otherwise rigidly secured to the shafts 25 and their upper ends extended through perforated lugs 28 secured to or formed integral with the end walls 26, as shown, there being suitable clamping screws 28' extending through the lugs 28 and engaging the arms 27 so that the end walls may be adjusted vertically of the frame. The shafts 25 are provided with beveled gears 29 which mesh with correspondingly beveled gears 30 carried by the longitudinal shaft 31, the latter being journaled in brackets 32 secured to the bed plate and similar in construction to the brackets 23. The inner ends of the brackets 23 and 32 are formed with elongated slots 33 so that the shafts 25 and 31 may be adjusted longitudinally and laterally when it is desired to vary the length or thickness of the block, there being screws or similar fastening devices 34 extending through the slots and

bearing against the bed plate for locking the brackets in adjusted position. The shaft 31 is preferably formed in two sections the inner ends of which are telescoped at 35 so as to permit the beveled gears 30 to mesh with the gears 29 when the several shafts are adjusted.

Extending longitudinally of the frame and connecting the transverse beams 10 is a longitudinal bar 36 having its central portion depressed or off-set to form a drop frame on which are mounted vertically disposed rods or standards 37. Slidably mounted on the rods 37 is a core carrying member consisting of a plate 38 carrying the cores 39 and provided with depending collars 40, said cores being movable to operative position within the mold box so that the blocks may be formed with interior air spaces or chambers. The cores 39 pass through correspondingly shaped openings 41 formed in the bed plate 16 and also through similar openings formed in a removable pallet 42, there being coiled springs 43 interposed between the depending collars 40 and similar collars 44 secured to the rods 37 for receiving the impact or jar of the core members when the latter are moved to lowered position.

As a means for operating the core members there is provided a longitudinal shaft 45 on which is mounted for rotation a sleeve or collar 46 having one end thereof provided with an angularly disposed arm 47 to which is bolted or otherwise rigidly secured a tappet 48 provided with a cam face 49 which bears against the bottom of the core supporting plate 38 and serves to elevate the core members when the sleeve is rotated. Depending from the plate 38 is a loop or keeper 50 which embraces the tappet 48 and serves to maintain the latter in operative engagement with the core supporting plate.

The sleeve or collar 46 is provided with a laterally extending lever 51 terminating in an operating handle 52 and on which is pivotally mounted an auxiliary lever 53. The lever 53 is connected by a rod 54 to a pawl 55, which latter engages the teeth on a segmental rack 56 extending laterally from the side bars 5 of the frame, as shown, whereby the cores may be locked in raised or lowered position.

The pallet 42 is slightly longer than the bed plate 16 and is supported in position on the frame by engagement with the extensions 12 of the latter.

The stationary or side wall 20 of the mold box is formed with laterally extending lugs 57 in which is mounted for pivotal movement a locking bail 58 which engages the opposite side and end walls of the mold box and serves to support the several walls in assembled position during the formation of the block. The locking bail 58 is provided with longitudinal extensions or finger pieces 59 so as

to permit the locking bail to be readily moved to operative and inoperative position.

In operation the core members are moved to operative position within the mold box by depressing the operating handle 52 after which the cement, concrete or other material is introduced in the mold box and tamped in the usual manner. The core members are then moved to lowered position and the locking bail 58 released from engagement with the adjacent walls of the mold after which the lever 60 is swung downwardly in the direction of the arrow indicated in Fig. 1 of the drawings which rotates the several beveled gears and through the medium of the arms 27 moves the side wall 20' and end walls 26 of the mold to open position so as to present the molded product and permit its ready removal from the machine. In order to assemble the mold box it is merely necessary to move the lever 60 in the opposite direction which will close the walls of the mold box so that the same may be locked in assembled position by means of the bail 58. The height of the block may be regulated by varying the thickness of the pallet 42 and by adjusting the side and end walls of the mold box in the manner before stated, while the thickness of the block may be varied by adjusting the brackets 23 and 32 and substituting a pallet of sufficient size to fit between the walls of the mold box after the latter has been adjusted.

Attention is here called to the fact that the coiled springs 44 serve to receive and absorb the jar or impact incident to the downward movement of the core member while the tappet 48 is guided in its upward movement and retained in operative position by means of the depending yoke or loop.

If desired an ornamental die plate may be inserted in the mold prior to the introduction of the cement, or other plastic material so as to form the block with an ornamental face in imitation of cut or chipped rock.

From the foregoing description it is thought that the construction and operation of the device will be readily understood by those skilled in the art and further description thereof is deemed unnecessary.

Having thus described the invention what is claimed is:

1. A block molding machine including a supporting frame, a mold box supported on the frame and having stationary and movable walls, a bed plate, adjustable longitudinal and transverse brackets slidably mounted on the bed plate beneath the mold, operating shafts journaled in said brackets and disposed parallel with the walls of the mold, said shafts being provided with intermeshing beveled gears, arms connecting the shafts and movable walls, a lever operatively connected with one of the shafts for opening and closing the movable walls of the mold, and

means for locking the brackets in adjusted position.

2. A block molding machine including a frame, a mold box supported on the frame and provided with stationary and movable walls, a bed plate, longitudinal and transverse brackets adjustably secured to the bed plate and having elongated slots formed therein, operating shafts journaled in the brackets and provided with intermeshing beveled gears, arms carried by the shafts and adjustably connected with the adjacent walls of the mold, an operating lever for rotating one of the shafts thereby to open and close the movable walls, fastening devices extending through the slots in the brackets, and engaging the bed plate for locking the brackets in adjusted position, and a locking bail pivotally mounted on the stationary wall and engaging the movable walls for locking said walls in assembled position.

3. A block molding machine including a frame, a bed plate having core receiving openings formed therein, a mold supported on the frame above the plate and having stationary and movable walls, a plurality of operating shafts having interengaging beveled gears, adjustable longitudinal and transverse brackets slidably mounted on the bed plate and having elongated slots formed therein, said brackets forming bearings for the shafts, a lever for rotating one of the shafts thereby to open and close the movable walls of the mold, fastening devices extending through the slots in the brackets for locking said brackets in adjusted position, a bail pivotally mounted on the stationary wall of the mold and adapted to engage the movable walls for locking said walls in assembled position, finger pieces formed on the bail, core members slidably mounted on the frame and movable through the openings in the bed plate to operative position within the mold, and means for locking the core members in operative position.

4. A block molding machine including a frame provided with vertical extensions and having laterally projecting flanges, a bed plate, end plates slidably mounted on the

flanges of the frame and adjustably connected with the bed plate, a mold box supported by the frame above the bed plate and having stationary and movable walls, a pallet forming the bottom of the mold box and resting on the vertical extensions of the frame, longitudinal and transverse brackets having slotted connections with the bed plate and provided with terminal bearings, a shaft journaled in said bearings and provided with intermeshing beveled gears, arms secured to the shafts and operatively connected with the adjacent walls of the mold, a lever for operating one of the shafts thereby to open and close the movable walls of the mold, core members movable through the bed plate to operative position within the mold box, means for raising and lowering the core members, and means for locking the walls of the mold in assembled position.

5. A block molding machine including a supporting frame comprising spaced side members having their upper ends bent inwardly to form laterally extending flanges, a bed plate having core receiving openings formed therein, transverse and longitudinal brackets secured to the bed plate and having a pin and slot connection therewith and provided with terminal bearings, shafts journaled in said bearings and provided with intermeshing beveled gears, one of said shafts being formed of telescopic sections, a mold mounted on the bed plate and operatively connected with the brackets, one of the walls of the mold being stationary and the remaining walls movable laterally to open position, core members movable through the openings in the bed plate to operative position within the mold, and end pieces slidably mounted on the flanges of the frame and having their terminal portions bent upwardly and rigidly secured to the stationary wall of the mold.

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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H. L. NOAH.