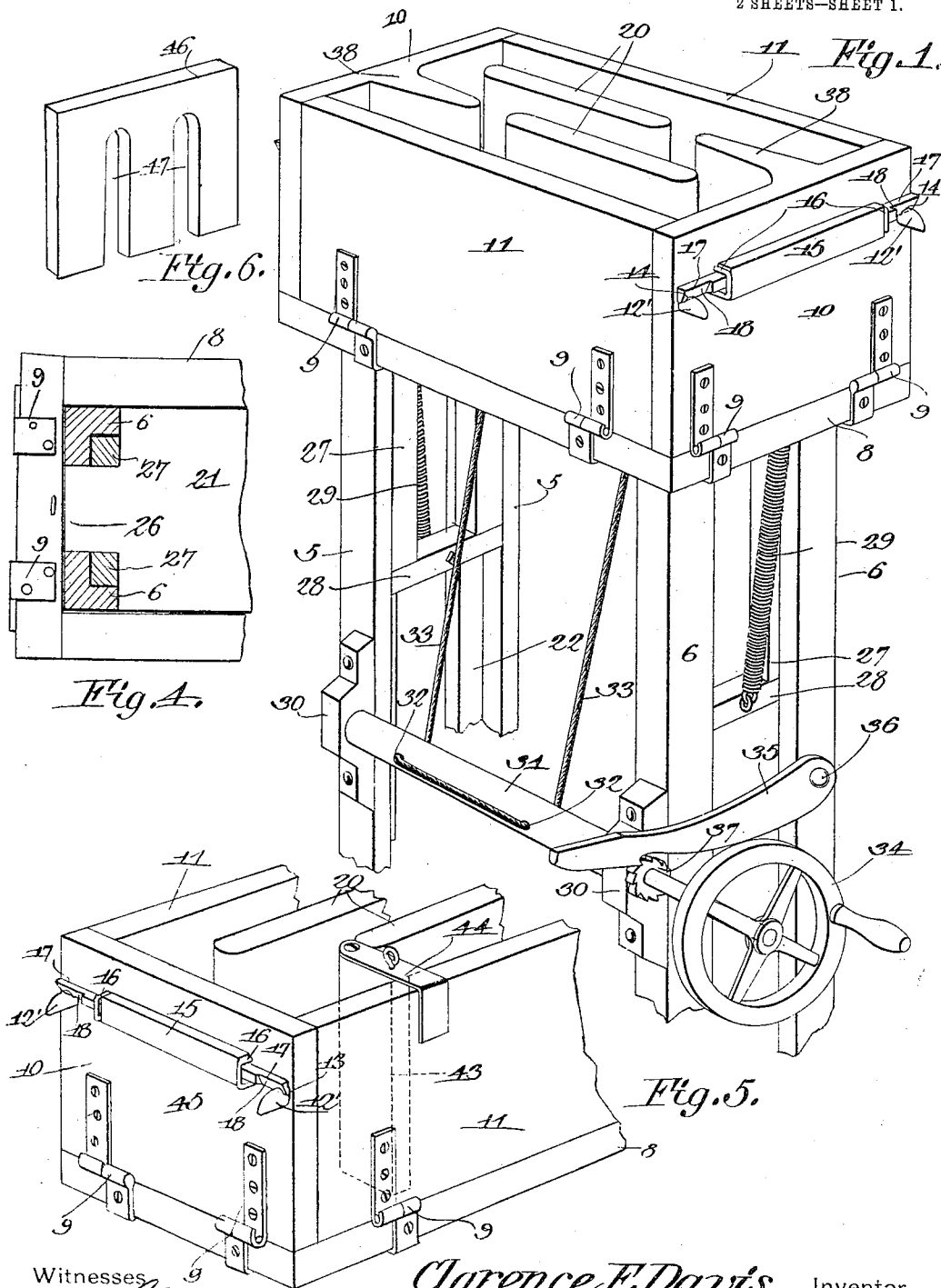


No. 816,438.

PATENTED MAR. 27, 1906.

C. F. DAVIS.
CEMENT BLOCK MACHINE.
APPLICATION FILED MAY 8, 1905.

2 SHEETS—SHEET 1.



Witnesses
E. J. Stewart
L. J. Allen

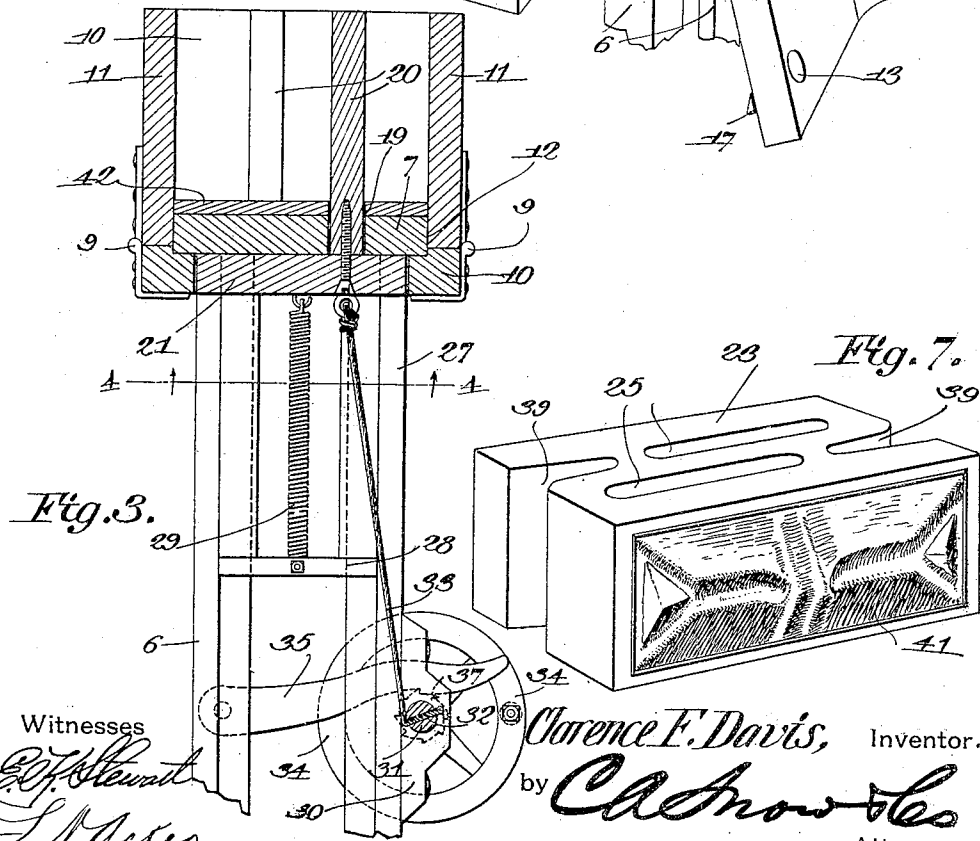
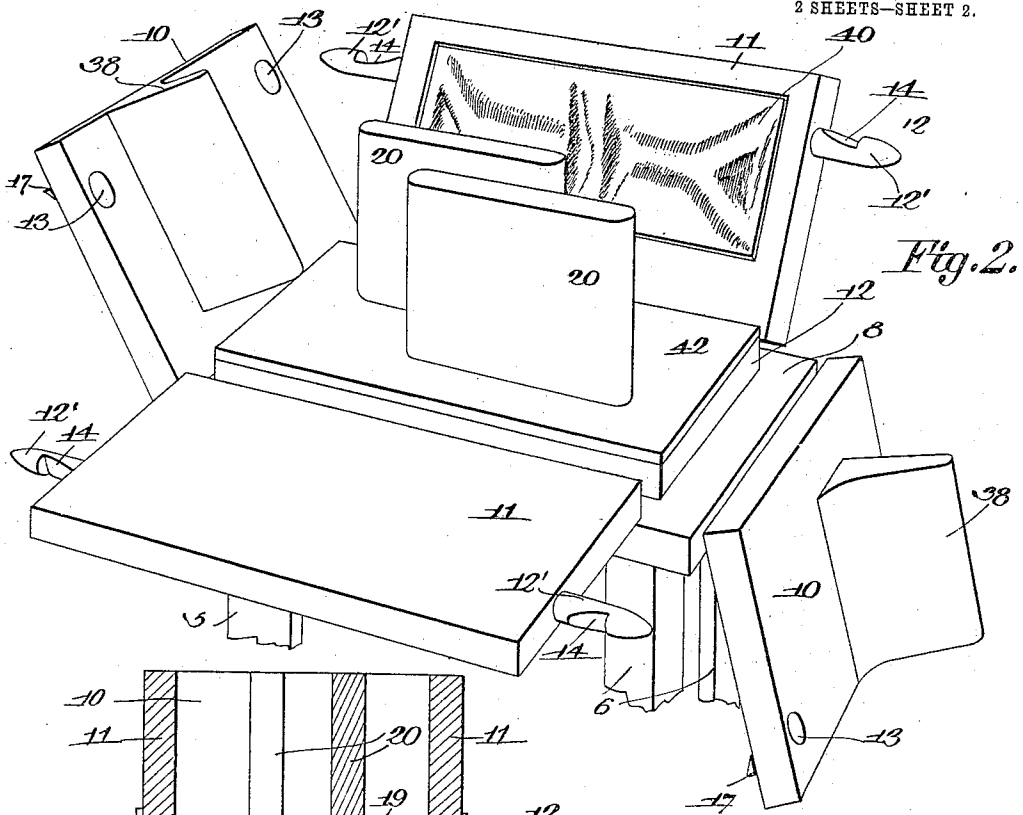
Clarence F. Davis, Inventor.
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Attorneys

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UNITED STATES PATENT OFFICE.

CLARENCE F. DAVIS, OF SHERWOOD, MICHIGAN, ASSIGNOR OF ONE-HALF
TO A. LE ROY LOCKE, OF BRONSON, MICHIGAN.

CEMENT-BLOCK MACHINE.

No. 816,438.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed May 8, 1905. Serial No. 259,457.

To all whom it may concern:

Be it known that I, CLARENCE F. DAVIS, a citizen of the United States, residing at Sherwood, in the county of Branch and State of Michigan, have invented a new and useful Cement-Block Machine, of which the following is a specification.

This invention relates to machines for making artificial-stone building-blocks, and has for its object to provide a simple, durable, and efficient machine of this character especially adapted for manufacturing blocks or bricks having a plurality of vertically-disposed air-flues formed therein, so as to prevent the entrance of frost and moisture to the inner face of the blocks when the latter are laid into a wall.

A further object of the invention is to provide a machine having a plurality of reciprocatory core members arranged in staggered relation and movable to operative and inoperative positions within the mold.

A further object is to form the mold with interchangeable side and end walls and to provide means whereby the machine may be adapted for molding quarter and half length blocks and also for making corner-blocks.

A still further object of the invention is to provide novel means for operating the core members and means for automatically locking the movable walls of the mold in closed position.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in form, proportions, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view of a molding-machine constructed in accordance with my invention, showing the movable walls of the mold in closed position. Fig. 2 is a similar view of the upper portion of the machine, showing the walls in open position. Fig. 3 is a transverse sectional view of Fig. 1. Fig. 4 is a horizontal sectional view taken on the line 4 4 of Fig. 3. Fig. 5 is a perspective view of a

portion of a mold adapted for making corner-blocks. Fig. 6 is a perspective view of a partition-plate used in connection with the machine when making quarter or half length blocks. Fig. 7 is a similar view of a building-block molded in the machine shown in Fig. 1.

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

The machine, which may be constructed of wood, metal, or other suitable material, consists of a supporting-frame comprising the uprights or standards 5 and 6, to which is secured in any suitable manner the bed-plate 7. Secured to or formed integral with the bed-plate 7 is a rectangular frame 8, to which are pivoted, as by hinges 9, the movable end walls 10 and the side walls 11 of the mold. The active face of the bed-plate extends a short distance above the general plane of the frame 8, thereby defining a continuous shoulder 12, adapted to engage the movable walls 10 and 11 when the latter are in closed position. The side walls 11 are provided with oppositely-disposed longitudinal lugs or pins 12', adapted to enter suitable openings 13 in the end walls 10 when the latter are closed, said lugs being provided with terminal locking recesses or notches 14 for engagement with gravity-actuated locking-bars 15. The locking-bars 15 are slidably mounted in guiding-loops 16, fastened to the end walls 10, and are provided with reduced extensions 17, the outer faces of which are inclined or beveled, as indicated at 18, so that when the end walls are closed the initial movement of the latter will cause the beveled edges of the locking-bars to engage the conical heads of the pins or lugs and elevate said bars, a further closing movement thereof causing said bars to drop by gravity into engagement with the locking-recesses, as will be readily understood.

The bed-plate 7 is formed with a plurality of openings 19, adapted to receive the core members 20, the latter being secured in any suitable manner to a reciprocatory follower-plate 21, mounted for vertical movement in suitable guides 22, formed by rabbeting the adjacent faces of the standards 5 and 6. The core members 20 are preferably disposed in staggered relation, as clearly shown in Fig. 2 of the drawings, whereby the molded block 23 will be formed with a series of spaced

overlapping air-flues 25, designed to prevent the entrance of frost or moisture to the inner face of the blocks when the latter are laid into a wall. The follower-plate 21 movably engages the base or bottom of the bed-plate 7 and is preferably formed with oppositely-disposed guiding-lugs 26 for engagement with the uprights or standards. Secured to the guiding-lugs 26 are depending rectangular frames 27, which engage the rabbeted edges of the standards and serve as an additional means for guiding the follower-plate. Fastened in any suitable manner to the lower cross-beams 28 of the frames 27 are coil-springs 29, the opposite ends of which are secured to the rectangular frame 8, said springs serving to retract or return the follower-plate carrying the cores to its normal position after being depressed. Journaled in suitable bearings 30, secured to the standards 5 and 6, is a horizontally-disposed shaft or winding-drum 31, and passing through openings 32, formed in said shaft, is a rope, cable, or other flexible medium 33, which latter is secured in any suitable manner to the bottom of the follower-plate 21. The shaft 31 is extended beyond the side of the machine and is provided with a hand-wheel 34, by means of which said shaft may be rotated to wind the rope or cable, and thereby withdraw the core members from the mold preparatory to removing the molded block. As a means for locking the core members in elevated or depressed positions there is provided a locking-pawl 35, one end of which is pivoted, as indicated at 36, to the upright 6, while the free end thereof engages the teeth on a ratchet-wheel 37, keyed or otherwise rigidly secured to the extended end of the shaft or winding-drum 31.

The pivoted end walls of the mold are provided with stationary end cores 38 for forming the end recesses 39 in the building-block, while the inner face of one of the side walls 11 is preferably stamped, cut, embossed, or otherwise formed in representation of chipped rock, as indicated at 40, so as to impart a similar ornamental design to the exposed face 41 of the block. The side and end walls of the mold are made detachable and preferably interchangeable, so that the wall having the ornamental design stamped thereon may be quickly detached and replaced by another having a different design. If desired, however, instead of stamping or otherwise forming the design on the walls of the mold proper suitable pattern-plates having the desired design stamped thereon may be inserted in the mold preparatory to introducing the cement, concrete, or other plastic material.

In making the blocks the walls are first moved to closed position and the core members elevated, as shown in Fig. 1 of the drawings. The cement, concrete, or other plastic material is then shoveled or otherwise introduced into the mold and thoroughly tamped

in any well-known manner, after which the walls are moved to open position and the core members withdrawn from the mold by rotating the hand-wheel 34. As the hand-wheel 34 is rotated it winds the rope or cable 33 on the drum 31, the pawl automatically engaging the teeth on the pawl and serving to lock said cores in adjusted position. The block may now be removed from the mold and carried to the drying-racks on the pallet 42, the latter being adapted to rest on the bed-plate and provided with suitable openings to permit the passage of the cores.

In Fig. 5 of the drawings there is illustrated a modified form of the invention particularly designed for making corner-blocks. In this case a detachable partition-block 43 is placed within the mold in contact with one of the core members, said block being retained in position by a strap 44, one end of which is fastened to said block, while the opposite end thereof is bent downwardly for engagement with the adjacent side wall of the mold. In forming the corner-blocks one of the end walls of the mold having the stationary core secured thereto is detached and the end wall 45 substituted, the latter having its inner face stamped or embossed in imitation of cut stone for imparting the design to the end wall of the molded block.

In Fig. 6 there is illustrated a plate or partition 46, adapted to be inserted in the mold when manufacturing half or quarter length blocks, said partition being provided with suitable recesses 47, adapted to receive the core members.

It will be noted that a number of the pallets 42 are used in connection with the molding-machine in order to enable each block as soon as it is molded to be removed from the machine and allowed to harden, as the blocks cannot at once be taken from the bottom plate or pallet without risk of injuring or destroying them.

Having thus described the invention, what is claimed is—

1. In a machine of the class described, a mold having movable side walls provided with terminal locking-lugs, movable end walls provided with openings adapted to receive said lugs, and gravity-actuated locking-bars carried by the end walls for engagement with said locking-lugs.

2. In a machine of the class described, a mold having pivoted side walls provided with terminal recessed locking-lugs, pivoted end walls provided with openings adapted to receive said lugs, and locking-bars slidably mounted on the end walls and movable by gravity into engagement with the recesses in the locking-lugs.

3. In a machine of the class described, a mold having pivoted side walls provided with terminal recessed locking-lugs, pivoted end walls provided with openings adapted to

receive said lugs, and gravity-actuated locking-bars having their opposite ends inclined or beveled for engagement with the recesses in the locking-lugs.

5 4. In a machine of the class described, the combination with a frame, of a mold, a bed-plate secured to the frame and provided with a plurality of openings, side and end walls pivoted to the frame and adapted to engage
10 the bed-plate when in closed position, terminal locking-lugs secured to the side walls, a plurality of core members engaging the openings in the bed-plate and movable to operative and inoperative positions with-
15 in the mold, a winding-drum for operating said core members, means for locking the cores in inoperative position, means for returning said cores to operative position and gravity-actuated locking-bars carried by the
20 end walls and adapted to engage the terminal lugs, for locking the side and end walls in closed position.

5 5. In a machine of the class described, the combination with the legs or standards, of a
25 mold, a bed-plate provided with a plurality

of openings, a frame surrounding the bed-plate, side and end walls pivoted to the frame and adapted to engage the bed-plate when in closed position, a plurality of core mem- 30
bers engaging the openings in the bed-plate and movable to operative and inoperative positions within the mold, a winding-drum journaled in said standards for operating the core members, said drum being provided with a plurality of spaced openings, a flexible 35
medium passing through the openings in the winding and having its opposite ends secured to said core members, a pawl-and-ratchet mechanism for locking said mem-
bers in inoperative position, and means for 40
returning said core members to operative position.

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

CLARENCE F. DAVIS.

Witnesses:

RICHARD COWARD,
B. P. TAGGART.