

No. 768,150.

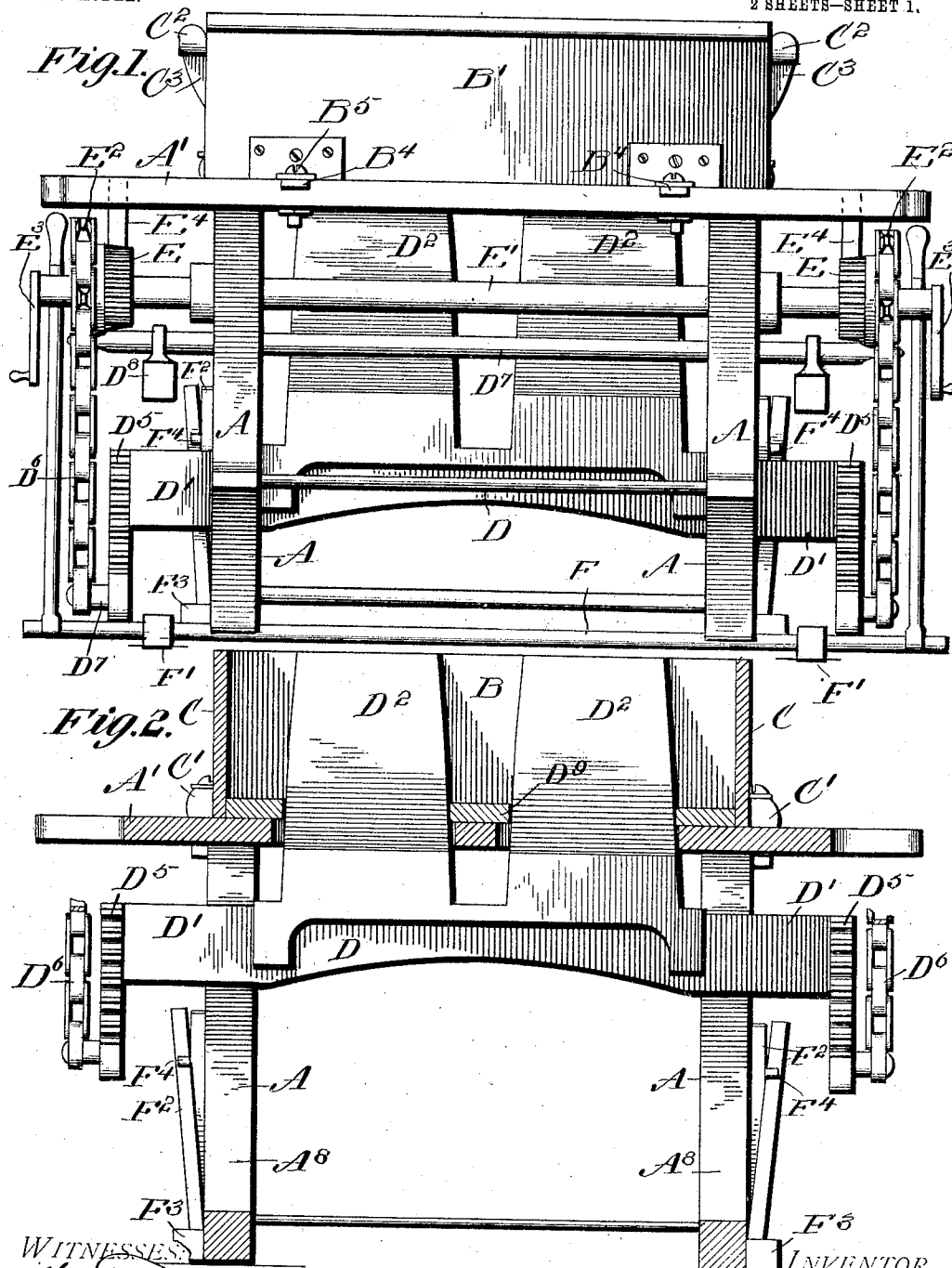
PATENTED AUG. 23, 1904.

J. W. SANDERSON.
BLOCK MOLDING MACHINE.

APPLICATION FILED FEB. 18, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

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Alfred T. Sage

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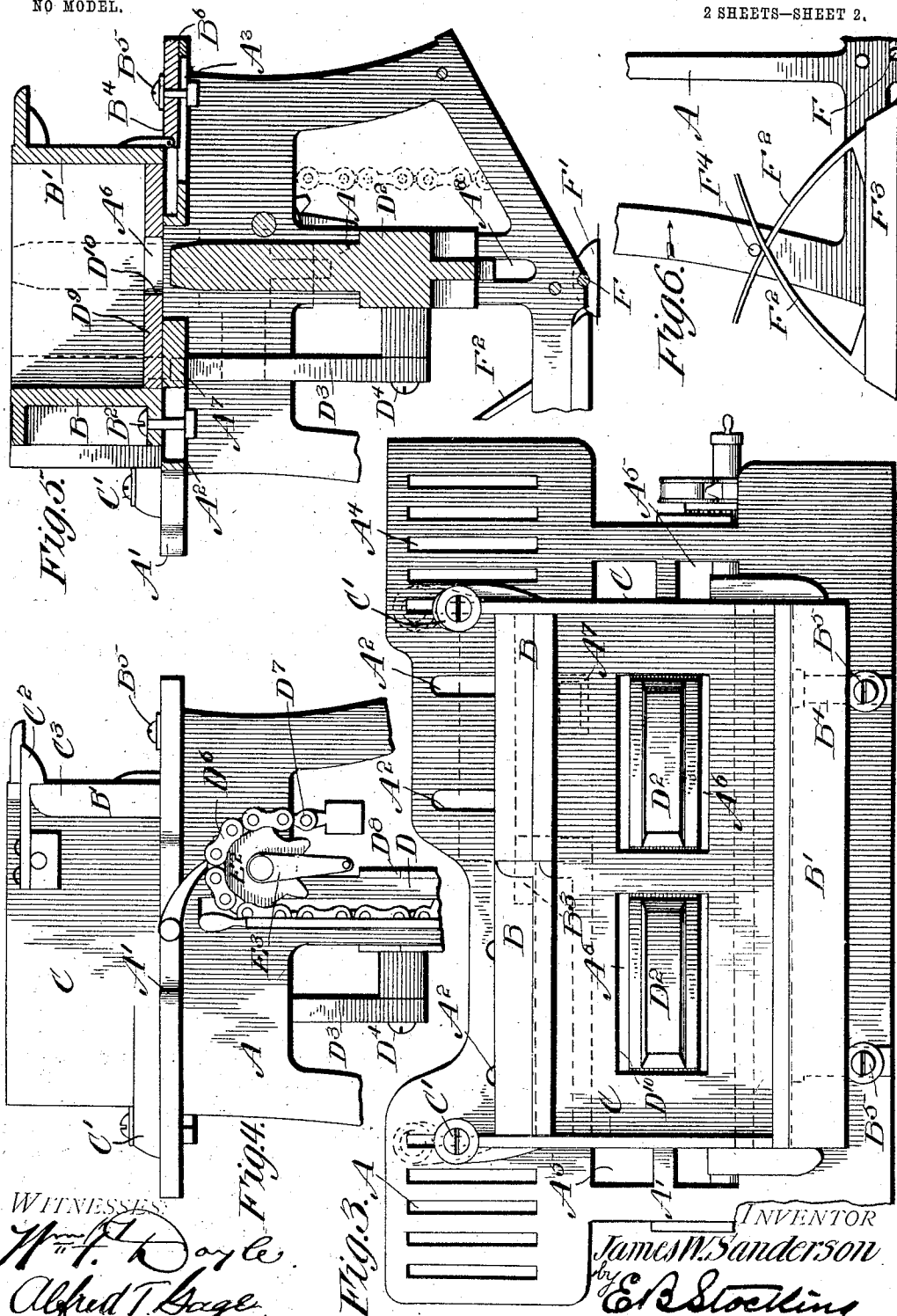
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WITNESSES:
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UNITED STATES PATENT OFFICE.

JAMES W. SANDERSON, OF BURLINGTON, IOWA.

BLOCK-MOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 768,150, dated August 23, 1904.

Application filed February 18, 1904. Serial No. 194,190. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. SANDERSON, a citizen of the United States, residing at Burlington, in the county of Des Moines, State of Iowa, have invented certain new and useful Improvements in Block-Molding Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a block-molding machine, and more particularly to a structure embodying an adjustable mold from which the core may be withdrawn.

The invention has for an object to improve the construction and manner of mounting the walls of the mold whereby they may be adjusted for different sizes and shapes of blocks to be formed therein.

A further object of the invention is to improve the means for inserting and withdrawing the core from the mold, by which a minimum of power is required in operation and a smoothness of action obtained by which any disturbance of the molded material is prevented.

Another object of the invention is to mount the mold in such a manner that it may be tilted at an angle to its normal position to permit the facing of the blocks with a different composition from that used at the back.

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

In the drawings, Figure 1 is a front elevation; Fig. 2, a longitudinal section; Fig. 3, a plan; Fig. 4, a detail end elevation; Fig. 5, a vertical cross-section, and Fig. 6 a detail end elevation showing the spring-support for the machine.

Like letters of reference indicate corresponding parts throughout the several figures of the drawings.

The letter A designates the frame of the machine, which may be of any desired configuration and is provided with a top plate A', provided with slots A² upon one side for the purpose of adjustably supporting the rear wall B of the mold, while similar slots A³ are provided at the opposite side of the table for

the purpose of adjustably supporting the front wall B'. The opposite end walls C are similar in construction and are pivotally mounted at one end, as at C', in one of a series of slots A⁴, provided at the opposite extended ends of the table. The table-top is also provided at each end with openings A⁵, which are adapted to receive hooks or other devices by which the molded block is removed therefrom. (See Fig. 3.) The central portion of the table is also provided with core-openings A⁶, and an auxiliary core-opening A⁷ is also provided on the side for use in the formation of an angle or corner-block. The rear wall B may be formed of one or more sections and adjustably secured in the slots A² by any desired means—for instance, bolts B² extending therethrough—and when this wall is formed in sections one portion thereof may be shifted to the rear of the other, as indicated by dotted lines in Fig. 3, thus providing for the formation of a corner-block by the insertion of any desired filler between the sections of the rear wall, as indicated at B³. The front wall B' is preferably a single piece and is pivotally connected at its lower portion to a slide B⁴, which is secured in position by a bolt B⁵, adjustably mounted in a slot A³. This slide is suitably countersunk in the table by a recess B⁶, so as to present a flush surface. It will thus be observed that the front and rear walls may be adjusted toward and from each other, while the end walls will also be capable of adjustment in a similar manner and at a right angle to the adjustment of the front and rear walls. It will be understood that front and rear walls of different lengths will be used in the longitudinal adjustment of the end walls. The frame A is also provided with the vertical slot or guide A⁸, adapted to cooperate with the bar D, which is extended through said slots at its opposite ends D'. This bar D carries one or more cores D², and if it be desirable to use the supplemental core D³ for corner-blocks the same may be detachably secured at one side of the core D² by any desired means—for instance, as at D⁴. The ends D' of the bar are provided at each end with racks D⁵, which in the upward movement of the bar are adapted to engage gears E, secured upon the ro-

tatable driving-shaft E' at the opposite ends thereof to positively guide and hold the core. These racks are also connected in any desired manner by a flexible device, such as a chain 5 D⁶, extending from the lower portion D⁷ of the rack and over a sprocket E², carried upon the driving-shaft E'. This shaft may also be provided with an operating-handle E³ upon one or both ends. For the purpose of holding 10 the shaft against rotation and maintaining the cores at any desired elevation a pawl E⁴ is pivotally mounted upon the frame to engage the gear E. For the purpose of counterbalancing the weight of the cores, and thus 15 rendering the operation of the machine very easy, a weight-rod D⁷ may be mounted in the free end of the chain, and, if found desirable, any convenient number of additional weights D⁸ may be secured thereon. Within the core-box a suitable block-plate D⁹ may be loosely 20 set and provided with apertures D¹⁰, through which the cores D² are adapted to pass, said plate being capable of removal with the block. The end walls C are each provided with a 25 spring-latch C², adapted to engage a lug C³, carried by the front wall, said latch and lug having beveled abutting faces, so that the parts will be secured together when brought into contact with each other.

30 For the purpose of mounting the machine to permit the oscillation thereof in order to facilitate the facing of the blocks with a different composition from that of which the main portion of the block is constructed the 35 lower portion of the frame is provided with a bearing-rod F, mounted in any suitable manner to permit the rocking of the frame—for instance, by rests F', disposed at suitable points and secured to a foundation—while the 40 return movement of the machine to its initial position is checked and cushioned by means of oppositely-disposed springs F², carried by the base-plate F³, secured to the foundation. A pin or projection F⁴ extends from the machine and rests upon these springs at their 45 point of intersection, so that the weight of the mold and block carried thereby is received and supported in this manner to prevent violent jars or any disturbance of the 50 molded material.

In the operation of the invention the walls of the mold-box are adjusted to the proper size and shape for the block to be formed and the cores raised to their highest position and 55 there retained while the material to be molded is inserted into the box and tamped in the usual manner. When it is desired to face the block with a different composition of material from the back thereof, the machine is 60 swung or tilted at an angle to its normal position and the facing composition placed therein. The back composition is then tamped in place and the machine returned to its normal upright position. It will be observed that 65 the manner of mounting the walls of the

mold-box permit of a varied adjustment thereof, while when the blocks are removed they can be swung entirely clear thereof by an outward movement of the end walls and a downward movement of the hinged front walls, 70 the cores being at the same time withdrawn by means of the operating devices. The construction of these operating devices is such as to counterbalance the weight of the cores and effect an easy operation thereof, while the 75 bar carrying the cores is directly engaged by the gear carried thereon, and thus the slipping of the parts effectually prevented during the tamping operation.

It will be obvious that changes may be made 80 in the details of construction and conformation without departing from the spirit of the invention as defined in the appended claims.

Having described my invention and set forth its merits, what I claim as new, and desire to 85 secure by Letters Patent, is—

1. In a block-molding machine, a mold-box, a reciprocating member provided with a core adapted to enter the box, an operating-shaft 90 disposed adjacent to the box and provided with a gear, a flexible connection extending from the lower portion of said core to engage said gear, means for retaining said core in a raised position, and means carried by the 95 operating-shaft to engage and feed said member conjointly with the flexible connection at the upper portion of its travel.

2. In a block-molding machine, a mold-box, a reciprocating core adapted to enter the same, a bar carrying said core, an operating-shaft 100 provided with a gear, a flexible connection extending from said bar to said gear, a counterbalance carried by the free end of said connection, rack-teeth carried by said bar, and a pinion upon the operating-shaft to engage said 105 teeth when the core is in an elevated position.

3. In a block-molding machine, a mold-box, a reciprocating core adapted to enter the same, a bar carrying said core, an operating-shaft 110 provided with a gear, a flexible connection extending from said bar to said gear, a counterbalance carried by the free end of said connection, rack-teeth carried by said bar, a pinion upon the operating-shaft to engage said 115 teeth when the core is in elevated position, pivotally-mounted end walls to said mold-box, and adjustable front and rear walls thereto.

4. In a block-molding machine, a mold-box, a reciprocating core adapted to enter the same, a bar carrying said core, an operating-shaft 120 provided with a gear, a flexible connection extending from said bar to said gear, a counterbalance carried by the free end of said connection, rack-teeth carried by said bar, a pinion upon said operating-shaft to engage said 125 teeth when the core is in an elevated position, pivotally-mounted end walls to said mold-box, adjustable front and rear walls thereto, a pivotal support at the base of the machine to permit the tilting thereof, and a pawl carried by 130

the frame to engage and hold the pinion upon the core-operating shaft.

5 5. In a block-molding machine, a frame, a top plate provided with transversely-disposed slots at opposite sides of core-openings therein, a mold-box comprising front and rear walls adjustably mounted in said slots, and end walls pivotally mounted at the opposite ends of the box.

10 6. In a block-molding machine, a frame, a top plate provided with transversely-disposed slots at opposite sides of core-openings therein, a mold-box comprising front and rear walls adjustably mounted in said slots, end walls pivotally mounted at the opposite ends of the box, and a pivotal connection between the front wall and the adjusting means in said slot.

20 7. In a block-molding machine, a frame, a top plate provided with transversely-disposed slots at opposite sides of core-openings therein, a mold-box comprising front and rear walls adjustably mounted in said slots, end walls pivotally mounted at the opposite ends of the box, extensions at the opposite ends of the table provided with parallel slots for adjustably supporting the pivots of the end walls.

30 8. In a block-molding machine, a frame, a top plate provided with transversely-disposed slots at opposite sides of core-openings therein, a mold-box comprising front and rear walls adjustably mounted in said slots, end walls pivotally mounted at the opposite ends of the box, extensions at the opposite ends of the table and provided with parallel slots for adjustably supporting the pivots of the end walls, a spring-catch carried by said end walls, and a beveled lug upon the front wall to be engaged thereby.

40 9. In a block-molding machine, a frame having a pivotal support at its lower portion, a mold-box mounted upon the upper portion thereof and a cushioning-spring disposed at one side of the frame-pivot to support said frame at one limit of its travel.

45 10. In a block-molding machine, a top plate provided with central core-openings and hook-receiving openings at the opposite ends thereof, front and rear walls adjustably mounted

upon said plate at the opposite sides of the core-openings, extensions at the opposite ends of the plate provided with parallel slots for adjustably supporting the end walls of the mold-box, and a pivotal support for said end walls disposed in said slots.

11. In a block-molding machine, a top plate provided with central core-openings and hook-receiving openings at the opposite ends thereof, front and rear walls adjustably mounted upon said plate at the opposite sides of the core-openings, extensions at the opposite ends of the plate provided with parallel slots for adjustably supporting the end walls of the mold-box, a pivotal support for said end walls disposed in said slots, slotted standards in said frame, a core-bar having its opposite ends projecting through said standards, and means for raising and lowering the core.

12. In a block-molding machine, a top plate provided with core-openings and transversely-disposed slots at opposite sides thereof, a mold-box comprising front and rear walls adjustably mounted in said slots, one of which walls is composed of independently-movable sections, end walls pivotally mounted at the opposite ends of the box, a reciprocating core, means for operating the same, and a supplemental corner-core detachably secured to the main core.

13. In a block-molding machine, a top plate provided with core-openings, a core-bar provided with a core thereon, means for raising and lowering said bar, independent means carried by the raising and lowering means to engage said bar at the upper portion of its travel, and means for counterbalancing the weight of the core-bar and parts carried thereby.

14. In a block-molding machine, a mold-box, a removable core disposed therein, a bearing-rod secured to the lower portion to form a tilting pivot for said machine, and bearing-blocks for said rod secured to a fixed support independent of the machine.

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

JAMES W. SANDERSON.

Witnesses:

SELVA ENBURG,
CHAS. WILLNER.