

No. 786,272.

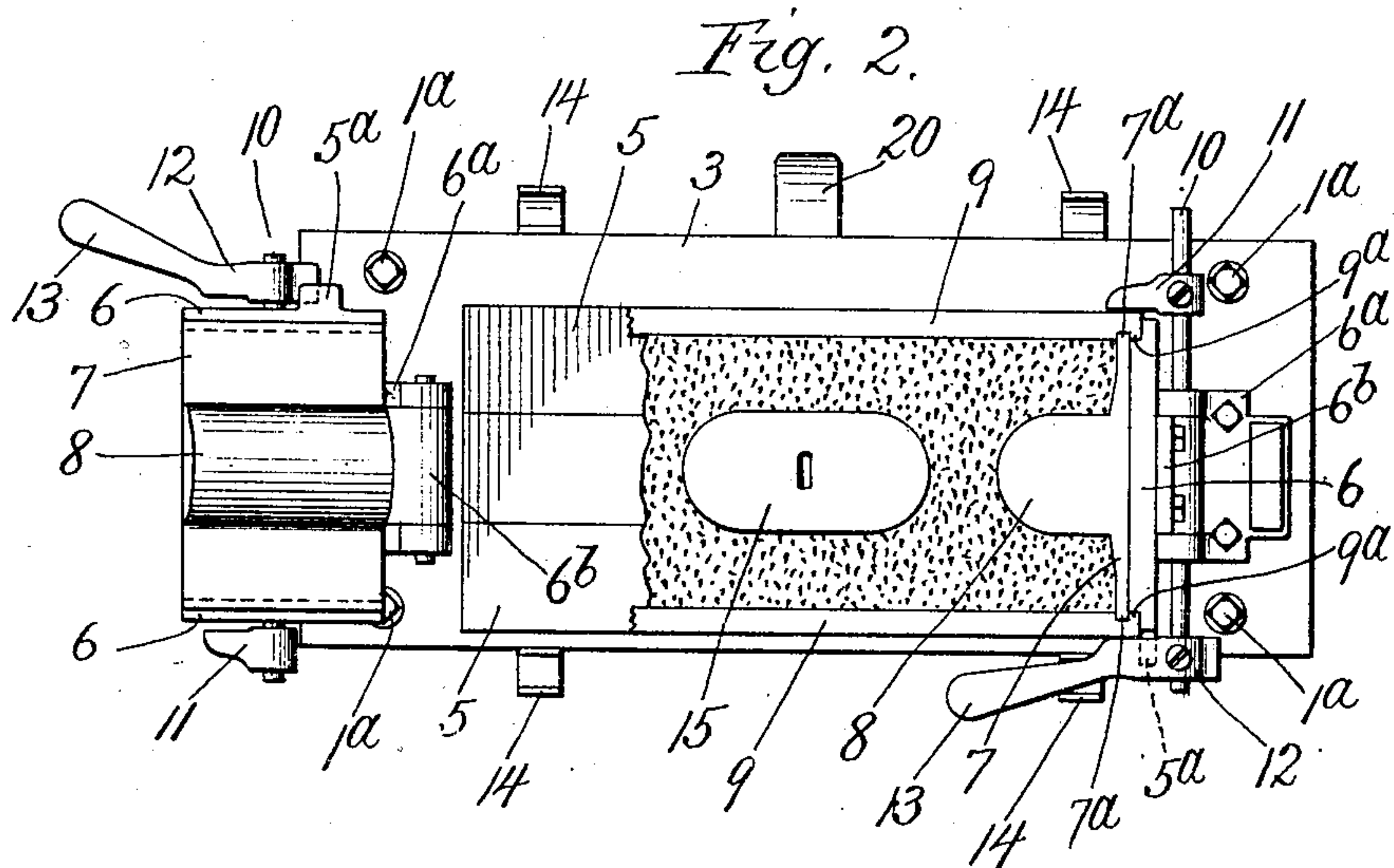
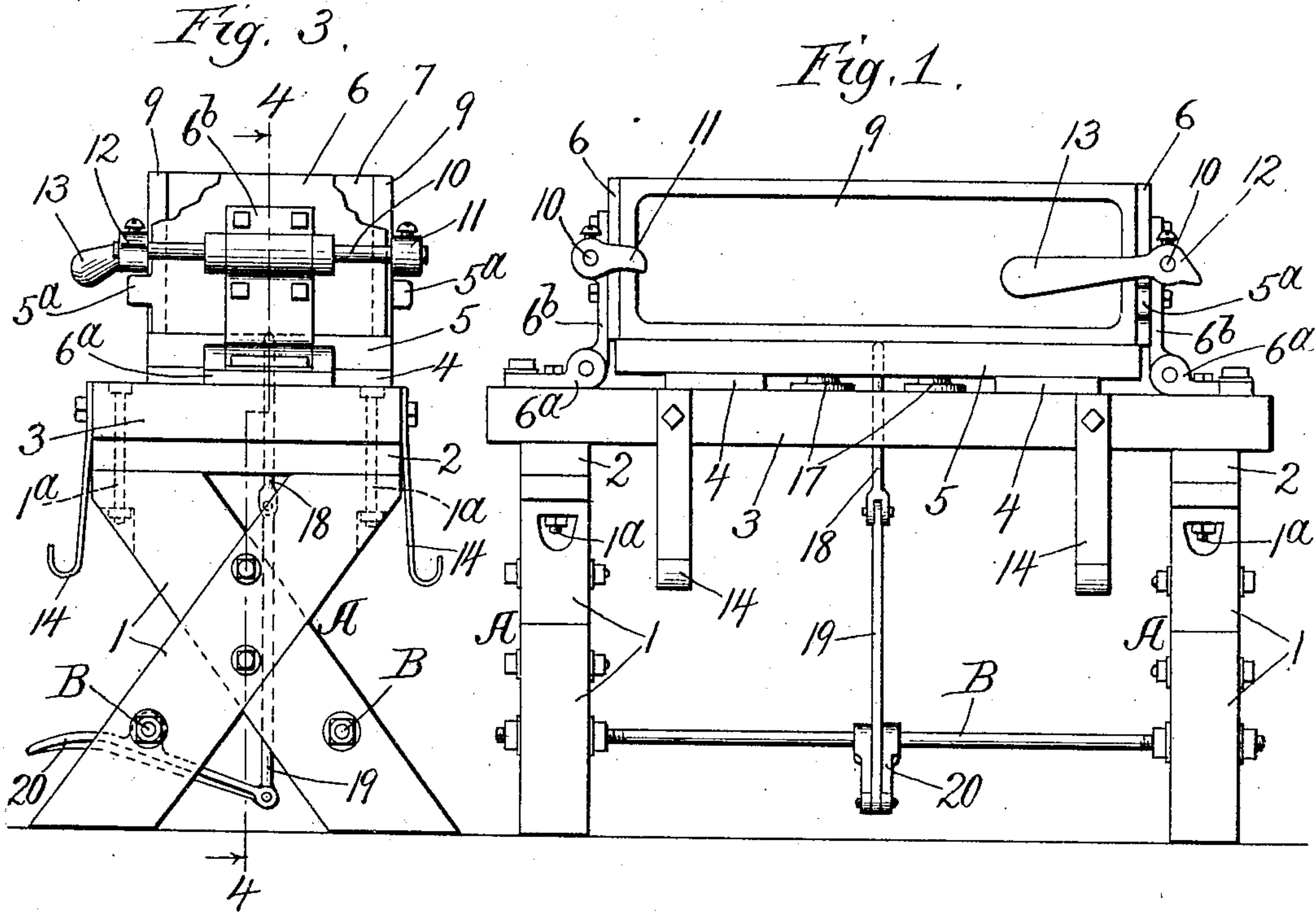
PATENTED APR. 4, 1905.

W. L. DOW.

MACHINE FOR MOLDING CONCRETE BUILDING BLOCKS.

APPLICATION FILED JUNE 6, 1904.

2 SHEETS—SHEET 1.



Witnesses.
Edward T. Wray.
Fred G. Fischer

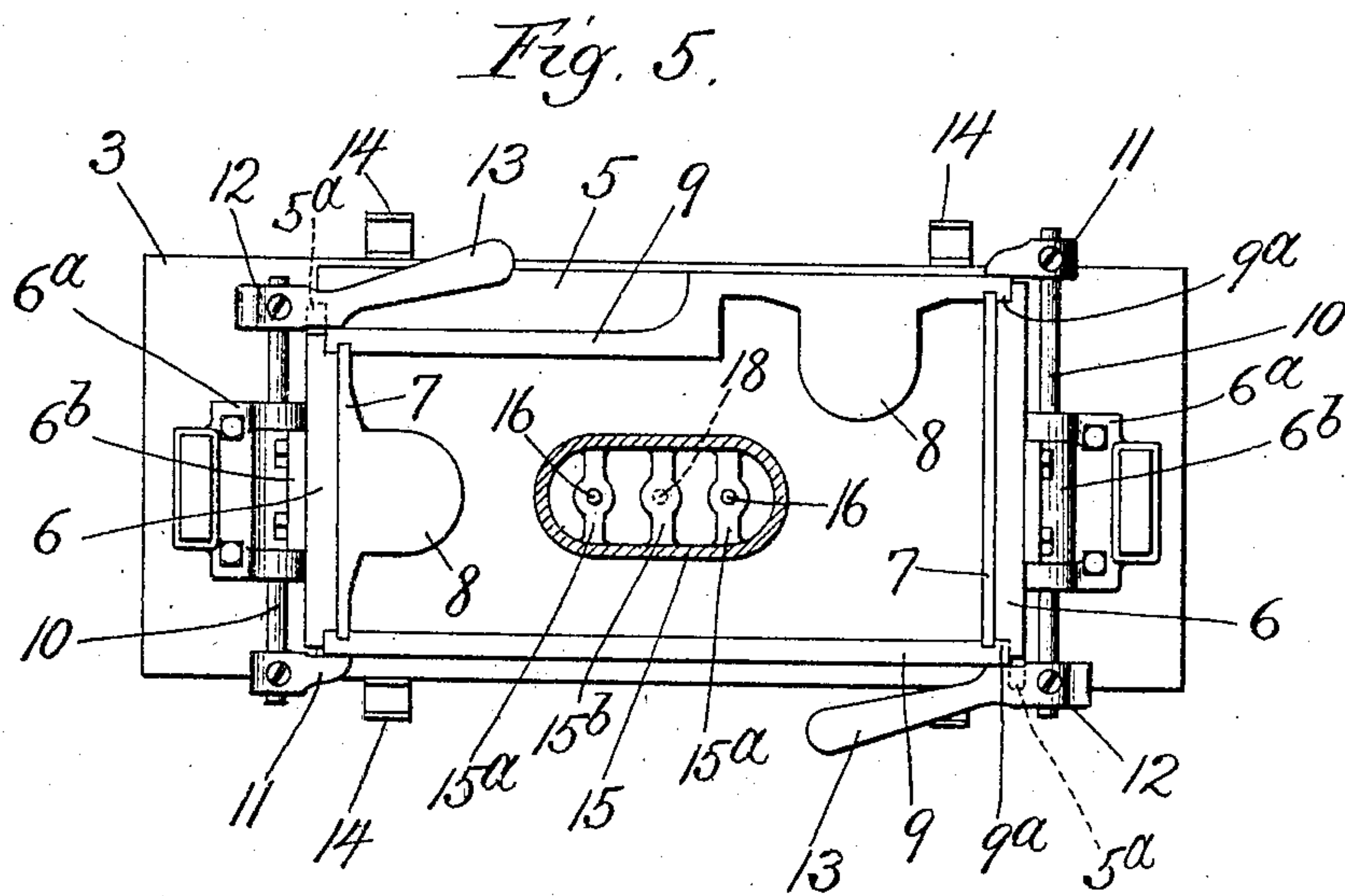
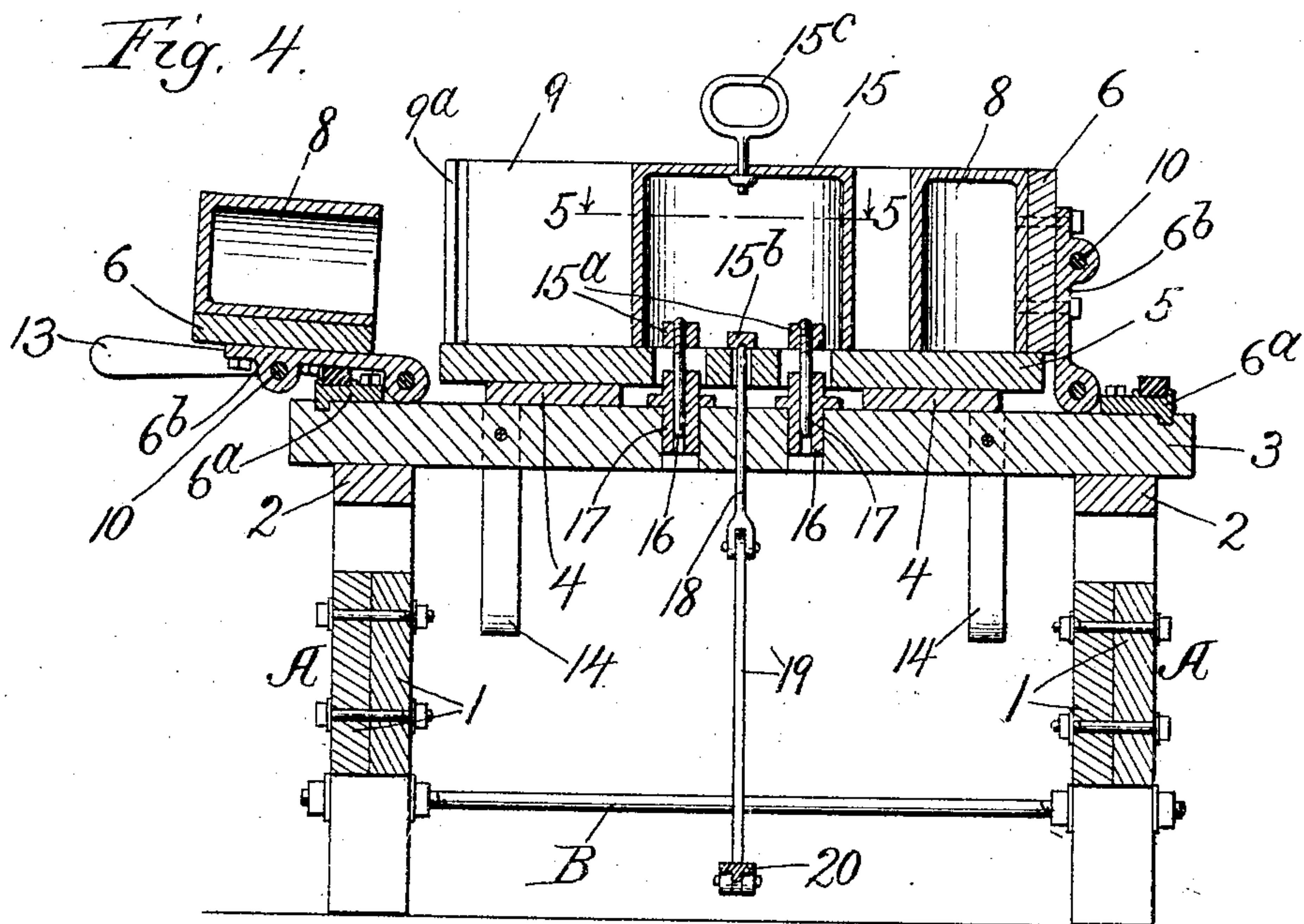
Inventor.
Wallace L. Dow
by Buntin & Buntin
his Attys.

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Edward T. Wray.
Fred S. Fischer

Inventor,
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by Burton Burton
His Atty's.

UNITED STATES PATENT OFFICE.

WALLACE L. DOW, OF SIOUX FALLS, SOUTH DAKOTA.

MACHINE FOR MOLDING CONCRETE BUILDING-BLOCKS.

SPECIFICATION forming part of Letters Patent No. 786,272, dated April 4, 1905.

Application filed June 6, 1904. Serial No. 211,305.

To all whom it may concern:

Be it known that I, WALLACE L. DOW, a citizen of the United States, residing at Sioux Falls, in the county of Minnehaha and State of South Dakota, have invented new and useful Improvements in Machines for Molding Concrete Building-Blocks, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide an improved structure of the nature of a mold in which to form when properly compact concrete block or artificial stone.

It consists of the features of construction set out in the claims.

In the drawings, Figure 1 is a side elevation of my improved apparatus. Fig. 2 is a top plan of the same, showing part of the side plates broken away and one end gate opened. Fig. 3 is an end elevation of the same. Fig. 4 is a longitudinal vertical section at the line 4 4 on Fig. 3, showing one end gate open, as in Fig. 2. Fig. 5 is a partly-sectional top plan view of a mold for making a special corner-block, section being made across the core at the line 5 5 on Fig. 4.

For my machine I make end standards A A, formed, preferably, of two crossed and interlocked planks 1 1 and a head-bar 2, lodged upon and secured to the upper ends of the crossed planks 1 1. Two standards A A are connected at the lower part by longitudinal bars B B and at the top by the platform 3, lodged upon the head-bars 2 2 and bolted to the standards by the same bolts 1^a which secure the head-bars to the crossed planks 1 1. This construction in detail is only preferential and not material to my invention. The parts of the mold are mounted upon and in part secured to the platform 3. The bottom plate 5, which may be a wooden plank, is reinforced across the grain and crosswise of the narrow strips of which it is preferably made, as shown, by the cleats 4 4, which also serve to space the plank up a little from the platform 3.

The end gates 6 6 are hinged to the platform 3, the hinge-plates 6^a and 6^b being bolted, respectively, to the platform 3 and to the

respective end gates, the pintles of the hinges being a little below the upper surface of the bottom plate 5. Each end gate comprises a face-plate 7, which in proper instances is formed integrally with the half-core piece 8 for making the half-cavity in the end of the block. This half-core piece will be omitted at one end in making corner-blocks, as seen in Fig. 5, and in that case it may be applied, as shown in that figure, on one of the side plates to form the half-cavity at the proper point at the side instead of at the end of the block. The face-plate 7 overhangs at the lateral edges the corresponding edges of the inner surface of the body of the end gate, so so as to constitute a laterally-projecting tongue 7^a.

The side plates 9 9 are removable and are formed with inwardly-facing flanges 9^a along the end edges of their inner face in position to engage back of or be engaged by the tongue 7^a, formed by the projecting edges of the face-plate 7 of the end gates. Preferably the flanges 9^a are produced by merely grooving the side plates on their inner face parallel with their end edges; but for the function to be performed only the outer guard-wall of the groove, which constitutes the flange 9^a, need be considered.

The hinge-plates 6^b are extended to afford bearings for a rock-shaft 10, extending across the outer side of each end gate and having at opposite ends the locking abutments or buttons 11 and 12, which are in position to shut outside of the side plates when the latter are in position shown in the plan views having their end flanges 9^a engaged by the tongues 7^a of the end gates, and when the rock-shaft is turned in position to cause said buttons to thus jut over the ends of the side plates the entire mold is locked ready to receive the concrete. The abutment or button 12 is extended to form a handle 13 for rocking the shaft, and the end gate may have a lug 5^a projecting from the edge over which the stop 12 swings, which will limit the rocking of the shaft to about ninety degrees, so that the handle 13 can only swing from a position approximately horizontal, as seen in Fig. 1, which is the locking position, to a position at which it

extends approximately in the plane of the end gate, which would be vertical when the gate is closed or approximately horizontal when it is rocked to open position, as seen in Fig. 4.

5 This adapts the handle 13 to serve as a lever-arm for swinging the end gate open, as well as for rocking the shaft 10. The side plates being unattached to the platform or other parts of the mold, except when they are engaged, as described, in locked position, are designed to be lifted bodily off from the mold bottom and platform, and supporting hangers or stirrups 14 14 are provided depending from opposite sides of the platform to receive the plates when the mold is opened, keeping them in convenient position to be picked up and applied for closing up the mold.

The middle core 15 is a hollow shell of metal having its top closed by a web and having across the bottom three bars 15^a, 15^a, and 15^b. The bars 15^a are to afford rooting for guide-stems 16 16, which are screwed into said bars and project downward vertically from the bottom of the core, entering sockets 17 17, which are mounted in the platform 3, the bottom of the plate 5 being apertured above said sockets, so that the pins 16 will pass down into the sockets. The bar 15^b is designed to receive the thrust of a plunger 18, connected by a link 19 with a pedal 20, fulcrumed on the cross-bar B, said plunger 18 being guided vertically in the platform 3, which it penetrates, and thereby directed upward against the under side of said bar 15^b, so that by depressing the pedal 20 the operator may start the core 15 upward. Said core is provided with a handle 15^c, adapted to be engaged in the top web for lifting the core out after it has been relieved from the molded body by the upward movement given by the pedal.

The mode of operation of this mold will be understood from the description of the structure, but may be further stated briefly. The core being set in place above the bottom by entering the stems 16 in the sockets 17, the mold is closed by first swinging up the end gates to erect position, the handles 13 being outward, so that the abutments 11 and 12 are out of locking position. The side plates may then be lodged in position having their grooves engaged with tongues 7^a and the handles 13 being thrown over inward to horizontal position, the abutments 11 and 12, jutting outside the side plates, lock them securely, and the engagement of the tongue 7^a within the flanges 9^a—that is to say, in the grooves of the side plates—causes the end gates to be retained against any pressure which might move them outward. All four sides of the mold are thus so locked as to resist the pressure from within when the concrete is tamped or otherwise manipulated for giving it proper density to form the desired block. After the molding of the block is completed the operator depressing the pedal 20 starts the core up-

ward, relieving it from the block, (the core having usually sufficient taper, to draw too slight to be visible in the drawings,) and being thus relieved before the mold is opened the core may be lifted out by means of the handle. The lever-arms 13 being swung over to unlock the side plates they may be readily removed and lodged in the stirrups 14, and the end gates will then be swung down to prostrate position, leaving the molded body resting upon the bottom plate 5, which being spaced up from the platform 3 may be readily engaged by any proper lifting device and carried to a place where it may be deposited for drying or baking, as the character of the substance molded may require.

It will be understood that the bottom plates 5, properly reinforced by the cleats 4, are provided in quantities, so that each bottom plate may be carried away with the block which is molded upon it, a fresh one being substituted for the next block.

I claim—

1. In a concrete-block-molding apparatus, in combination with a platform, a mold-bottom supported thereon; end gates hinged to the platform and removable side plates, the inner faces of the side plates and the vertical edges of the end gates having tongue-and-groove engagement with each other, and stops carried by the end gates which extend past the ends of the side plates and are movable to position at which they project over the outer face of the side plates opposite the ends of the end gates for locking said plates at their tongue-and-groove engagement with the end gates.

2. In a concrete-block-molding apparatus, in combination with a platform, a mold-bottom supported thereon; end gates hinged to the platform; removable side plates having tongue-and-groove engagement at their ends with the vertical edges of the end gates; a rock-shaft mounted on the end gates, and abutments at the ends of the rock-shaft adapted, at one position of the rocking movement of the shaft, to jut outside the ends of the side plates, and a lever-arm for rocking the shaft.

3. In a concrete-block-molding apparatus, in combination with a platform, a mold-bottom supported thereon; mold sides adapted to be closed up around the bottom; a core having downwardly-projecting guide-stems; sockets mounted on the platform to receive said guide-stems, the mold-bottom being apertured above the sockets to admit the stems, and a plunger operating through the platform and mold-bottom against the core for starting the latter upward, and a pedal for operating the plunger.

4. In a concrete-block-molding apparatus, in combination with a platform, a mold-bottom supported thereon; mold sides adapted to be closed up around the bottom, the two opposite sides having tongue-and-groove en-

gagements at the corners of the mold with the other two opposite sides respectively; stops permanently mounted on the intermediate sides extending past the ends of the exteriorly-lapped sides and movable at their mounting on the intermediate sides to position at which they project over the outer face of said exteriorly-lapped sides opposite the ends of the intermediate sides for locking said outer-lapped sides at their tongue-and-groove engagement with the intermediate sides.

5. In a concrete-block-molding apparatus, in combination with a platform, a mold-bottom supported thereon; end gates hinged to the platform at a pivot-line relatively remote below the plane of the block-supporting surface of the mold-bottom; end cores mounted on the inside of the end gates adapted to be carried with the latter in the opening movement about the hinge, and side plates adapted to be closed up embracing the end gates and means for locking them together.

6. In a concrete-block-molding apparatus, in combination with a platform or horizontal support for the mold, the mold mounted there-

on; a core supported on the mold-bottom and extending upright at molding position within the mold-cavity, the platform and the bottom of the mold being apertured, and a plunger disconnected from the core operating through such apertures for encountering the core by upward movement to start the latter upward, and means for actuating such plunger.

7. In a concrete-block-molding apparatus, in combination with a horizontal support for the same, the mold mounted thereon; a core having a guide-stem projecting from its lower end; sockets on the mold-support to receive the guide-stems; a plunger operating through the mold-support to thrust up the core, and means for actuating such plunger.

In testimony whereof I have hereunto set my hand, at Sioux Falls, South Dakota, in the presence of two witnesses, this 16th day of May, 1904.

WALLACE L. DOW.

In presence of—

E. W. Dow,

F. C. WHITEHOUSE.