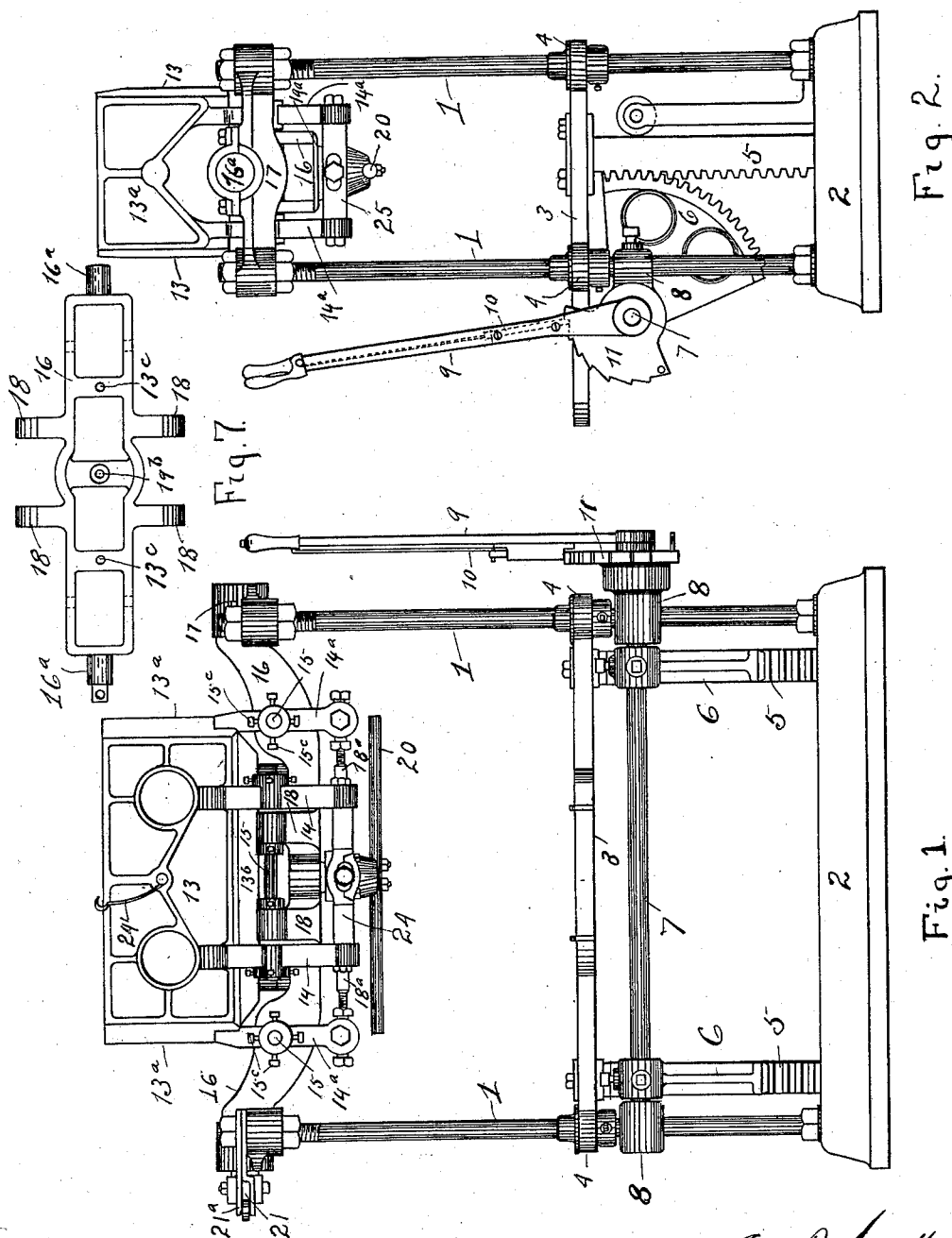


J. B. COTTOM.
MACHINE FOR MOLDING BUILDING BLOCKS.

APPLICATION FILED OCT. 29, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses

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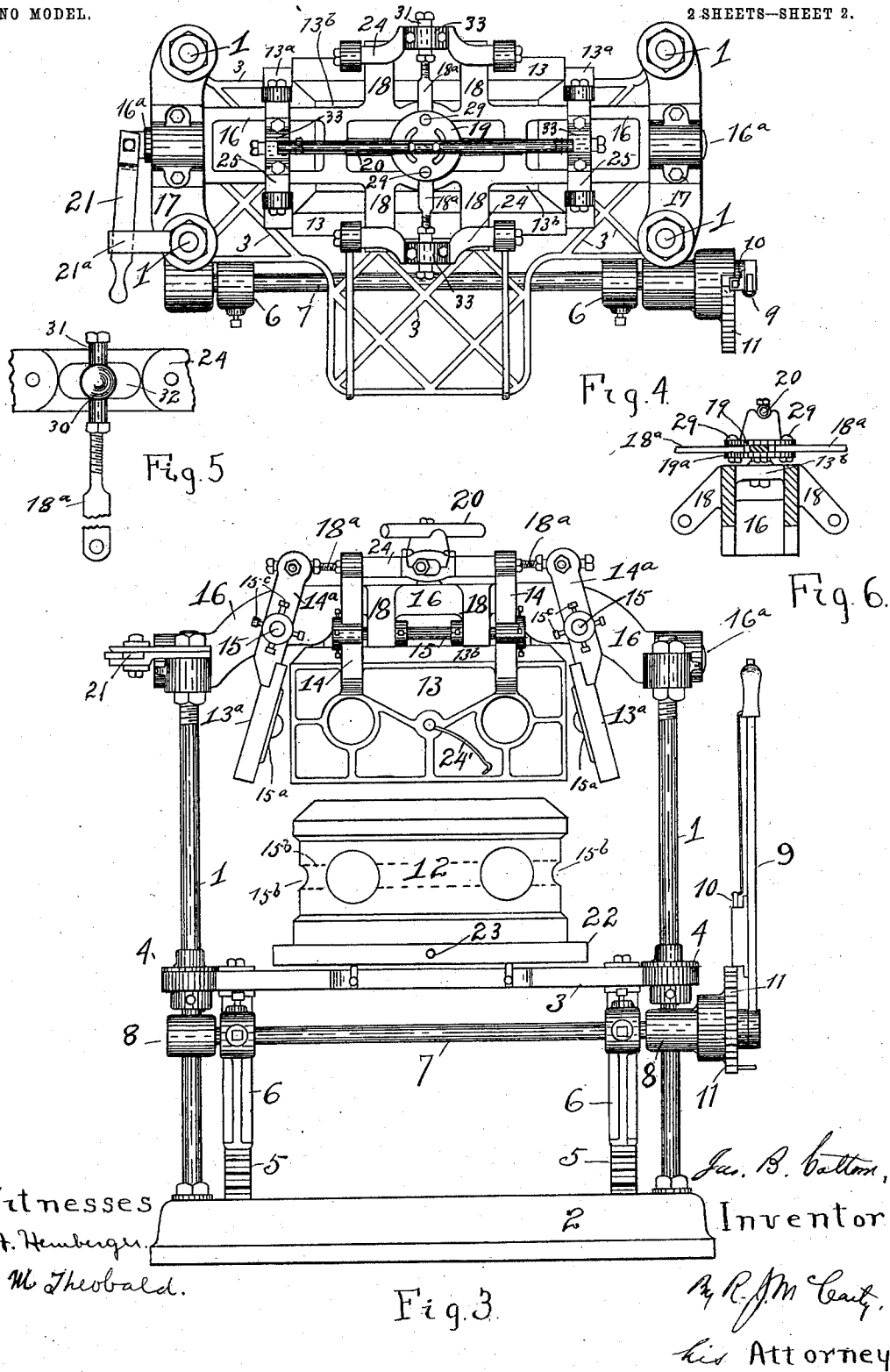
By R. J. McCarty,
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2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

JAMES B. COTTOM, OF DAYTON, OHIO.

MACHINE FOR MOLDING BUILDING-BLOCKS.

SPECIFICATION forming part of Letters Patent No. 748,049, dated December 29, 1903.

Application filed October 29, 1903. Serial No. 178,961. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. COTTOM, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Machines for Molding Building-Blocks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in machines for molding concrete or cement building-blocks and possesses the new and useful features hereinafter described and claimed.

Preceding a detail description of the invention reference is made to the accompanying drawings, of which—

Figure 1 is a front elevation of the machine, showing the flask elevated to a position to receive the material from which the block is constructed. Fig. 2 is an end elevation of Fig. 1. Fig. 3 is an elevation similar to Fig. 1, showing the flask lowered or reversed from the position in which it is shown in Fig. 1 and the molded block discharged therefrom. Fig. 4 is a top plan view showing the flask reversed from the position shown in Fig. 1. Fig. 5 is a detail of one of the ball-and-socket joints by means of which the sides and ends of the flask are opened, as shown in Fig. 3, to discharge the block. Fig. 6 is a cross-section of the swinging frame on one side of the turn-table. Fig. 7 is a detached plan view of the swinging frame.

In a detail description of the invention similar reference characters indicate corresponding parts.

1 designates the four posts, which are rigidly attached to a base 2 and provide guides for the vertically-movable table 3, the said table having its corners 4 provided with openings through which the said posts pass.

5 designates two perpendicular racks which are rigidly secured at their upper ends to said table. These racks are engaged by two segment-gears 6 6, fast on a shaft 7, that is suitably journaled in bearings 8, secured to the

front posts 1. One end of the shaft 7 has a hand-lever 9 fulcrumed thereon which carries a ratchet 10, that is adapted to engage a ratchet-wheel 11, made fast on said shaft. It will therefore be seen that by operating the lever 9 the table 3 may be raised or lowered to receive the molded blocks 12 from the flask, as shown in Fig. 3. The flask consists of a bottom plate 13^b and side and end plates 13 and 13^a, which are strengthened on their exterior sides by suitable ribs and the inner faces of which are smooth where the building-block is to possess a smooth surface, or the interior surfaces of said sides and ends, as well as the bottom, may be provided with any suitable design, for example, to represent a rock-face or other ornamental surfaces. The bottom 13^b of the flask is fastened to the lower side of the swinging frame 16 by bolts which pass through openings 13^c in said frame. (See Fig. 7.) The sides and ends 13 and 13^a may be provided with a raised panel 15^a to provide depressions 15^b in the block 12 for the reception of liquid cement or plastic material to be poured in the openings 15^b from the top. The block 12 (shown in Fig. 3) shows its ends to have these semicircular recesses 15^b, which form a dowel for the reception of the liquid or plastic cement. The longitudinal dotted lines represent the dowel extending lengthwise of the block on both sides, while the recesses 15^b show it on the ends. The said sides and ends of the flask have arms 14 and 14^a extending therefrom which are hinged on shafts 15. The said shafts are mounted in the swinging frame 16, the ends of which terminate in trunnions 16^a, which are journaled in boxes on the cross-heads 17, through which the upper ends of the posts 1 project. The arms 14^a are provided each with four set-screws 15^c, which engage the shafts 15 to allow for adjustment of the side and end plates 13 and 13^a from any point. The holes in which the shafts 15 fit are large enough to allow adjustment by the set-screws. It will be understood that the adjustment spoken of is to allow the flask to be squared and trued up properly. The shafts 15 of the side plates 13 provide hinges for the arms 14, and these shafts 15 are journaled in arms 18, which project from opposite sides of the swinging frame 16 and are parts of said

frame. The shafts 15 of the end plates 13^a project from the frame 16 at right angles to the shafts 15 of the side plates. The upper ends of the arms 14 and 14^a are connected with cross-heads 24 and 25, to which cross-heads there are connected a series of connecting-rods 18^a. The inner ends of these connecting-rods are pivoted to a turn-table consisting of two disks 19 and 19^a, the pivots being indicated at 29. Said turn-table is pivoted to the swinging frame 16 at 19^b. (See Figs. 6 and 7.) The outer ends of each of the connecting-rods 18^a has a ball-and-socket connection with the cross-heads. (See Fig. 5.) The ball 30 is on a sleeve 31, which is adjustably connected to the outer ends of said connecting-rods, each ball resting within an oblong recess 32 in the lower surface of the cross-head and having its upper side inclosed by a plate 33, said plate having its inner surface provided with a similar oblong recess to receive the upper side of said ball. The plates 33 are bolted to the cross-heads, and thus the ball-and-socket joints are formed. The turn-table is operated by means of a hand-bar 20, which is secured thereto. In the operation of this hand-bar in one direction the connecting-rods 18^a are so actuated as to be drawn inwardly, and thereby the side and end plates 13 and 13^a of the flask are spread apart or opened on their hinges 15, as in Fig. 3, to deliver the block 12 upon the table 3. The opposite movement of the handle 20 will cause said plates to close.

21 designates a hand-lever which is pivoted to one of the trunnions 16^a of the swinging frame. This hand-lever engages an arm 21^a, projecting from one of the posts, and is locked thereby to prevent the swinging frame from moving out of either positions, as shown in Figs. 1 and 3. The hand-lever 21 is utilized to reverse the positions of the flask by drawing said lever outwardly from engagement with the arm 21^a and in then using it as a handle to tilt the frame 16 and therewith the flask from the upper to the lower position, and vice versa. As the flask is shown in Figs. 1 and 2 it occupies the upper position, or, in other words, the mouth of the flask is turned upward to receive the material from which the block 12 is formed. This material is composed of a suitable quantity of sand and cement, which is first placed within the flask against the sides, ends, and bottom thereof to form the face of the block. The rest of the flask is then filled with grouting to form the body of the block. This material is rammed or tamped in the flask until all the interior surfaces have been properly filled. This being done, the follow-board 22 is drawn across the mouth of the flask to level the material therein, and said board 22 is then used as a cover for the mouth of the flask and is secured in position by means of hooks 24'. One of these hooks is attached to each of the side plates 13, and the said hooks engage with pins 23 on opposite edges of the

board, and thus hold it. When the material is thus secured within the flask, it is swung to the position shown in Figs. 3 and 4 or is reversed in position by means of the hand-lever 21. One-half of the circle of movement of the tilting frame 16 moves said flask from one position to the other. When the flask is in the lower position, as shown in Figs. 3 and 4, the handle 20 is turned to open the side and end plates 13 and 13^a on their hinges 15. The table 3 is first elevated to a position to bring it in contact with the board 22. When the handle 20 is thus operated to open the flask, it will be readily seen that the finished block 12 is delivered to the board 22, which is lowered to a position to clear the flask by means of the hand-lever 9, which, as before stated, is instrumental in raising and lowering the table 3 by means of the gears 5 and 6.

Having described my invention, I claim—

1. In a machine of the character specified, a flask consisting of a rigid bottom, disconnected side and end plates each of which terminates in an upward extension, a swinging frame upon which said bottom is fixed and to which said plates are hinged, a turn-table pivoted on said swinging frame, ball-and-socket connections between said turn-table and the extensions of said side and end plates, and means for moving said turn-table in opposite directions to open and close the side and end plates of the flask, substantially as set forth.

2. In a machine of the character specified, a swinging frame, means for swinging said frame to its reversed positions, a flask, the bottom of which is fixed to said frame, and the sides and ends of which are hinged to said swinging frame, a turn-table on said frame, connecting-rods pivoted to said turn-table, ball-and-socket connections between the outer ends of said connecting-rods and the upper portions of the sides and ends of the flask, a handle for moving said turn-table in opposite directions to open or close the flask, substantially as set forth.

3. In a machine of the character specified, the combination with an upright frame, a table mounted on said frame, means for moving said table vertically, of a swinging frame mounted on the upper end of said upright frame, a flask consisting of a rigid bottom on said frame and disconnected side and end plates having extensions, hinged connections between said extensions and the swinging frame, a turn-table, connecting-rods pivoted to said turn-table, adjustable ball-and-socket connections between the outer ends of said connecting-rods and the upper ends of the flask-plate extensions, a handle connected to said turn-table by means of which it is movable in opposite directions to open or close the flasks, and means for reversing the positions of the swinging frame to bring the flask in a position to receive the material and to then bring it in a position to discharge the block upon the table, substantially as set forth.

4. In a machine for making concrete build-
ing-blocks, the combination of a reversible
frame, a flask having its sides and ends hinged
to said frame, and its bottom stationary on
5 said frame, a turn-table on said frame, con-
nections between said turn-table and the
sides and ends of the flask, means for actu-
ating said turn-table to open and close the
flask, and means for reversing the position of
10 the frame, substantially as set forth.

5. In a machine of the class specified, the
combination with a stationary frame, and a
vertically-movable table, of a swinging frame

on said stationary frame, a flask mounted on
said swinging frame, a turn-table on said 15
swinging frame, and connections between
said turn-table and the sides and ends of the
flask and whereby in the movements of the
turn-table, the flask is opened and closed,
substantially as set forth. 20

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

JAMES B. COTTOM.

Witnesses:

R. J. McCARTY,
CAROLYN M. THEOBALD.