No. 785,272. PATENTED MAR. 21, 1905.

H. A. ROBBINS.

MACHINE FOR MOLDING HOLLOW CEMENT BLOCKS.

APPLICATION FILED MAY 19, 1904.

Fig. 1.

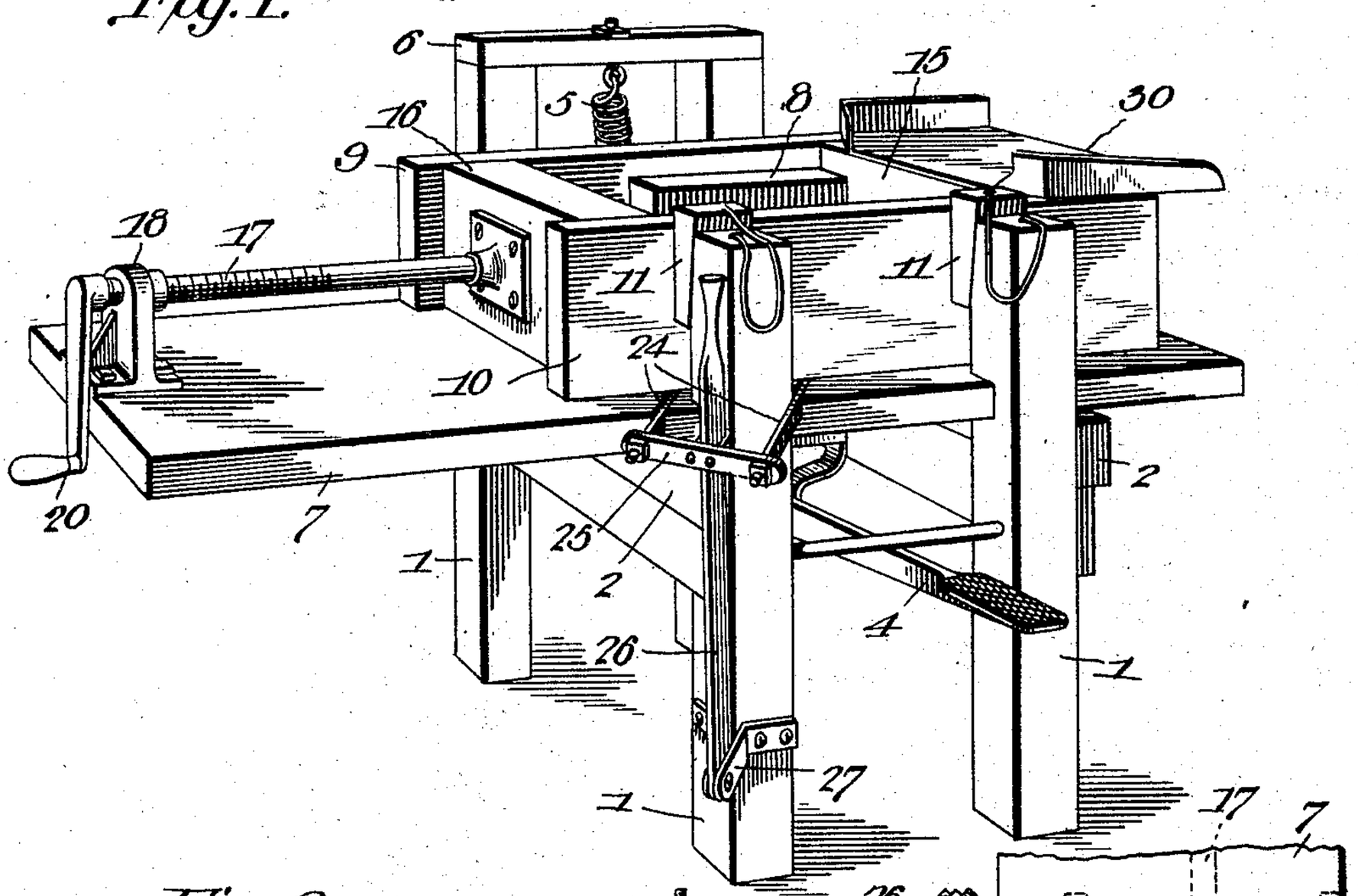

Fig. 2.

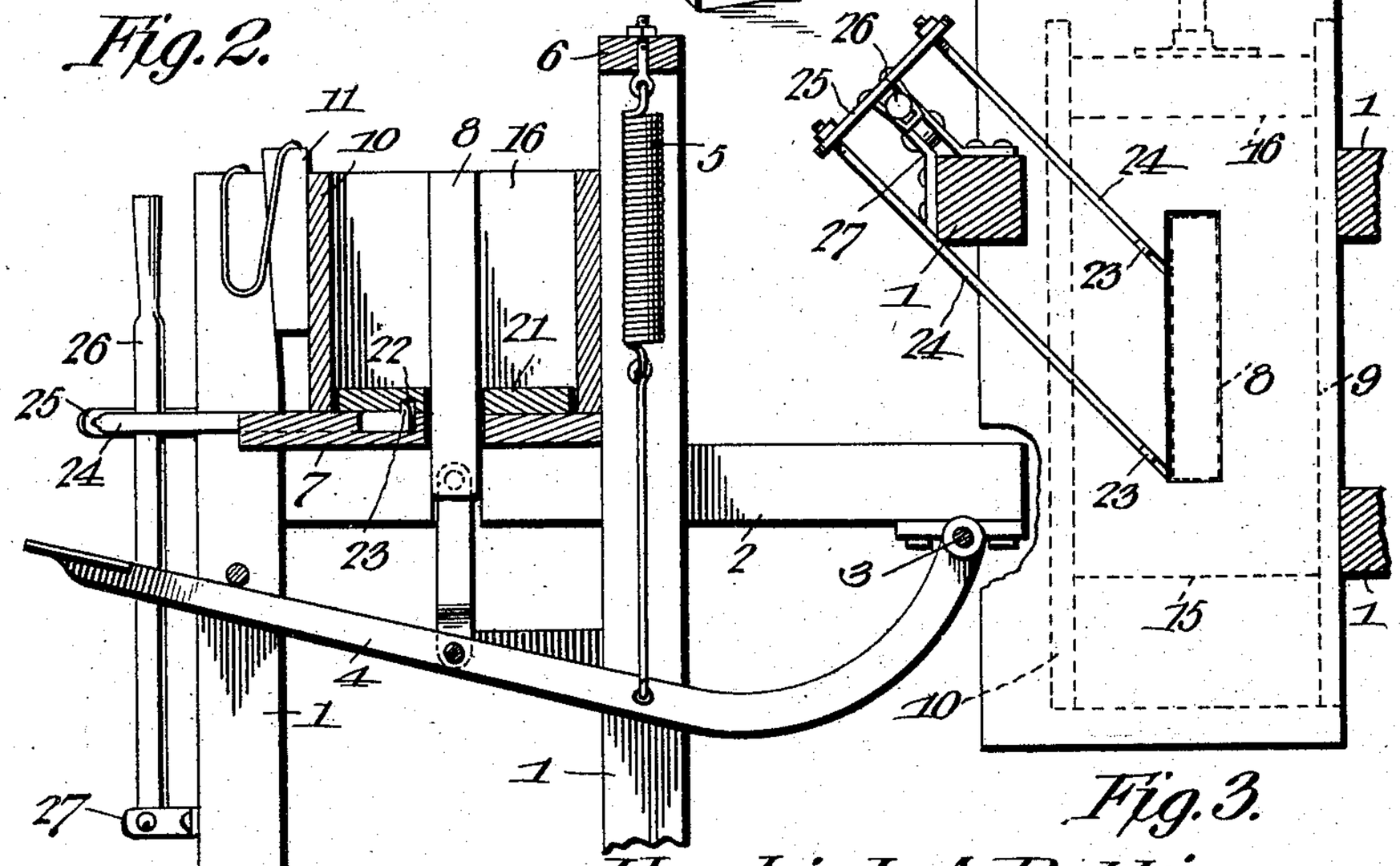

Fig. 3.

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UNITED STATES PATENT OFFICE.

HEZEKIAH A. ROBBINS, OF BEDFORD, IOWA.

MACHINE FOR MOLDING HOLLOW CEMENT BLOCKS.

SPECIFICATION forming part of Letters Patent No. 785,272, dated March 21, 1905.

Application filed May 19, 1904. Serial No. 208,738.

To all whom it may concern:

Be it known that I, HEZEKIAH A. ROBBINS, a citizen of the United States, residing at Bedford, in the county of Taylor and State of Iowa, have invented a new and useful Machine for Molding Hollow Cement Blocks, of which the following is a specification.

This invention relates to improvements in machines for molding hollow concrete building-blocks, and has for its principal object to provide a novel form of mold which may be readily adjusted to permit the formation of blocks of any desired size and shape.

A further object is to provide a novel form of core-support in order to permit the ready insertion and removal of the core, and a further object is to provide a novel means for removing the bottom plate from the mold-box after the completion of the molding operation.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in the novel construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a perspective view of a machine for molding concrete building-blocks constructed in accordance with the invention. Fig. 2 is a transverse sectional elevation of the same. Fig. 3 is a sectional plan view taken on the plane of the upper surface of the mold-bottom.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The mechanism is mounted on a suitable frame, including a plurality of standards 1, that are connected by horizontally-disposed bars 2, that are extended rearward to form supports for a treadle-shaft 3, to which is connected a treadle 4, projecting to the front portion of the frame and normally held in elevated position by means of a coiled tension-spring 5, that is supported by a cross-bar 6 at the upper end of a pair of the frame-standards 1.

On the horizontal cross-bar 2 is mounted a table 7, which forms the bottom of the mold-box, and said table is provided with an opening for the passage of a core 8, which may be of any suitable size and shape and is supported by the treadle 4.

One side of the mold-box is formed of a plate 9, that is secured to the rear uprights 1 by suitable bolts or screws and which may be removed and a thinner or thicker plate substituted when it is desired to alter the size of the block. The opposite side of the mold-box is formed by a removable plate 10, that is clamped firmly in place during the molding operation by means of a pair of wedge-blocks 11, that are inserted between the outer surface of the plate and the adjacent inclined faces of the front uprights or standards 1. One of the ends of the mold-box is formed by a block 15, secured in place by bolts or screws, so as to permit of its ready removal and the substitution of a block of different size or shape when the character of the block to be made is altered. The opposite end of the mold is formed by a block 16, slidably mounted on the table, and to the rear of this block is swiveled a screw 17, extending through a threaded opening formed in a bracket 18, that is rigidly secured to the table. The outer end of this screw is provided with a cranked handle 20, by which the screw may be turned in order to adjust the position of the block 16, and said block may be removed and one of different size or shape substituted for it when necessary.

During the molding operation a removable bottom plate 21 is placed in the bottom of the mold-box, and this bottom plate is of the exact shape of the block to be made and is provided with a suitable opening for the passage of the core 8. In the lower surface of the bottom plate are formed two openings 22, into which project pins 23, carried by a pair of bars or rods 24, that are guided in an oblique line or diagonal with respect to the mold in suitable slots formed in the upper surface of the table. The outer ends of the

bars or rods are connected to a cross-bar 25, carried by a pivotally-mounted lever 26,that is supported in a bracket 27 near the lower end of one of the front standards 1, and outward movement of this lever will exert a pulling strain on the rod and serve to move the bottom plate outward from the mold.

At one end of the mold, preferably carried by the end block 15, is a chute or table 30, into which the mixed material, such as gravel and crushed stones mixed with cement, is placed, and from thence it may be pushed over into the mold and tamped by hand, or it may be subjected to pressure in a hydraulic or steam press.

In the operation of the device the parts are adjusted until the mold is in readiness to form a block of the desired size, the treadle being meantime held out with the core out of the mold. The pressure on the treadle is then released and the core allowed to rise through an opening in the table and the corresponding opening in the bottom plate 21. The material is then pushed or shoveled in the mold and tamped or pressed, after which the upper surface is troweled off. The block is then ready for removal, and the end block 16 is moved outward by means of a screw, while the front plate of the mold is also removed. The lever 24 is then pulled outward, and the bars or rods 23 will pull the bottom plate and the molded block outward from the mold and in a direction diagonal to said mold, so that the side and end of the block will be clear, after which the block may be removed and set away in a suitable place to dry.

Having thus described the invention,what is claimed is—

1. In a machine for molding hollow concrete blocks, a mold having a rigid side wall and a rigid end wall and provided with movable side and end walls, a movable bottom plate, means for moving the bottom plate outwardly from the mold, and devices for guiding such means in a direction diagonal of said mold.

2. In a machine for molding hollow concrete blocks, the combination with a mold having a movable side and a movable end member, of a diagonally-movable bottom plate having bottom openings, an operating-lever, and a pair of rods connected to said lever and having pins or lugs extending into said openings.

3. In a machine for molding hollow concrete blocks, the combination with a mold having movable side and end members, of a diagonally-movable bottom plate having bottom openings, a mold-supporting table having obliquely-arranged slots, bars guided in said slots and provided at their inner ends with pins or lugs for engaging the openings in the bottom plate, and a lever connected to said bars or rods.

4. In a machine for forming hollow concrete blocks, the combination with a supporting table or frame, of a mold including a stationary side member and stationary end member, a movable end member, and a detachable side member, a screw for operating the movable end member, wedges for the support of the detachable side member, a treadle and a core carried by the treadle and extending upward through an opening in the table to a position within the mold.

5. In a machine for forming hollow concrete blocks, the combination with a frame including a pair of rear uprights, and a pair of front uprights, the latter being provided with inclined or beveled inner faces, a stationary table having a core-receiving opening, a core, a treadle connected to the core, a spring tending normally to elevate the treadle, a back plate detachably secured to the rear pair of uprights, a detachable front plate, wedges for insertion between said plate and the inclined walls of the front pair of uprights, a stationary end block detachably secured to the table, a movable end block, a screw having swiveled connection with said movable end block, and a bracket having a threaded opening for the passage of said screw.

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

HEZEKIAH A. ROBBINS.

Witnesses:
J. H. HUMPHREY,
PAUL S. HADDOCK.