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PATENTED SEPT. 12, 1905.

J. W. MILLER.

MACHINE FOR MANUFACTURING HOLLOW CONCRETE BUILDING BLOCKS.

APPLICATION FILED AUG. 22, 1904.

2 SHEETS—SHEET 1.

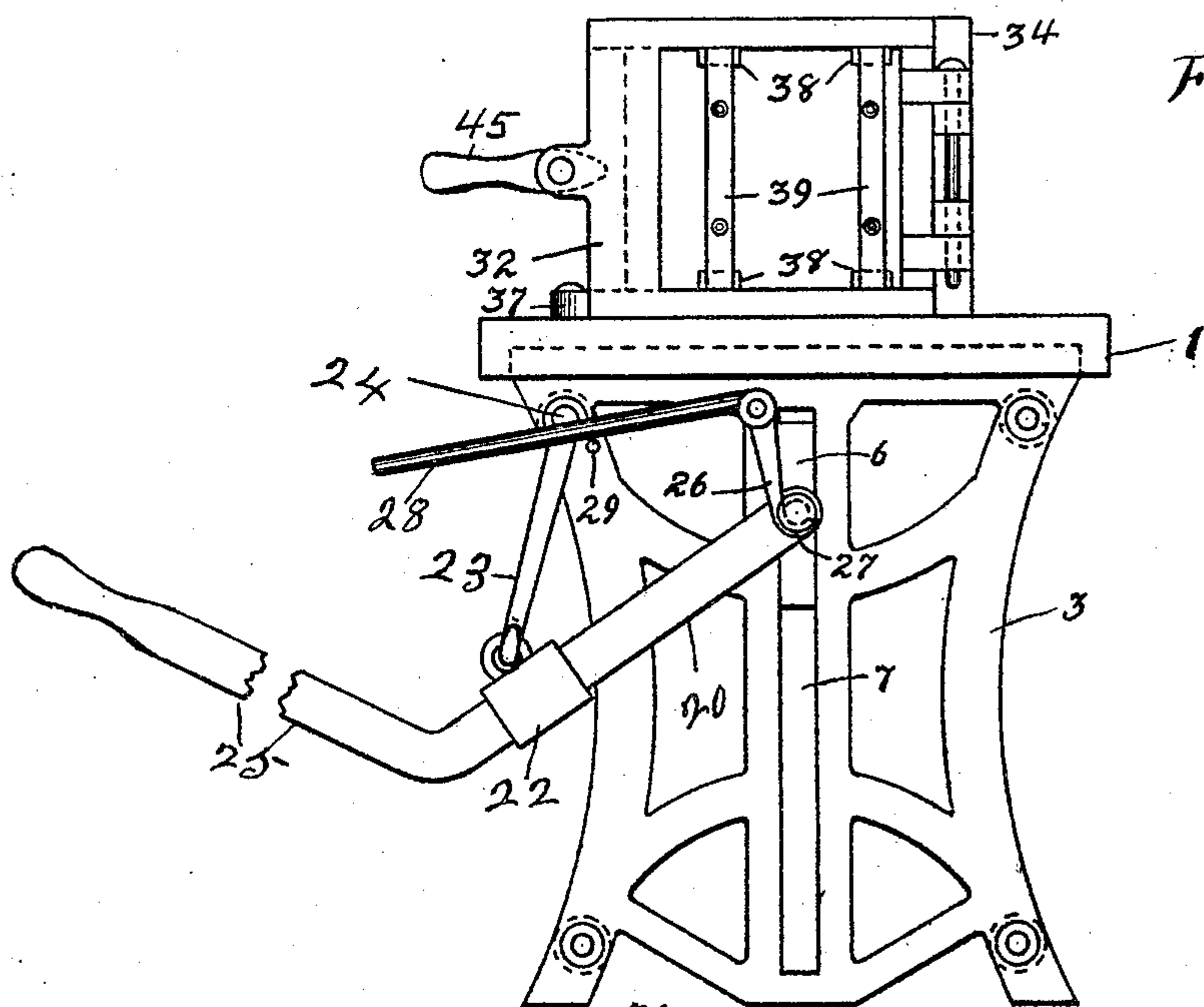


Fig 1

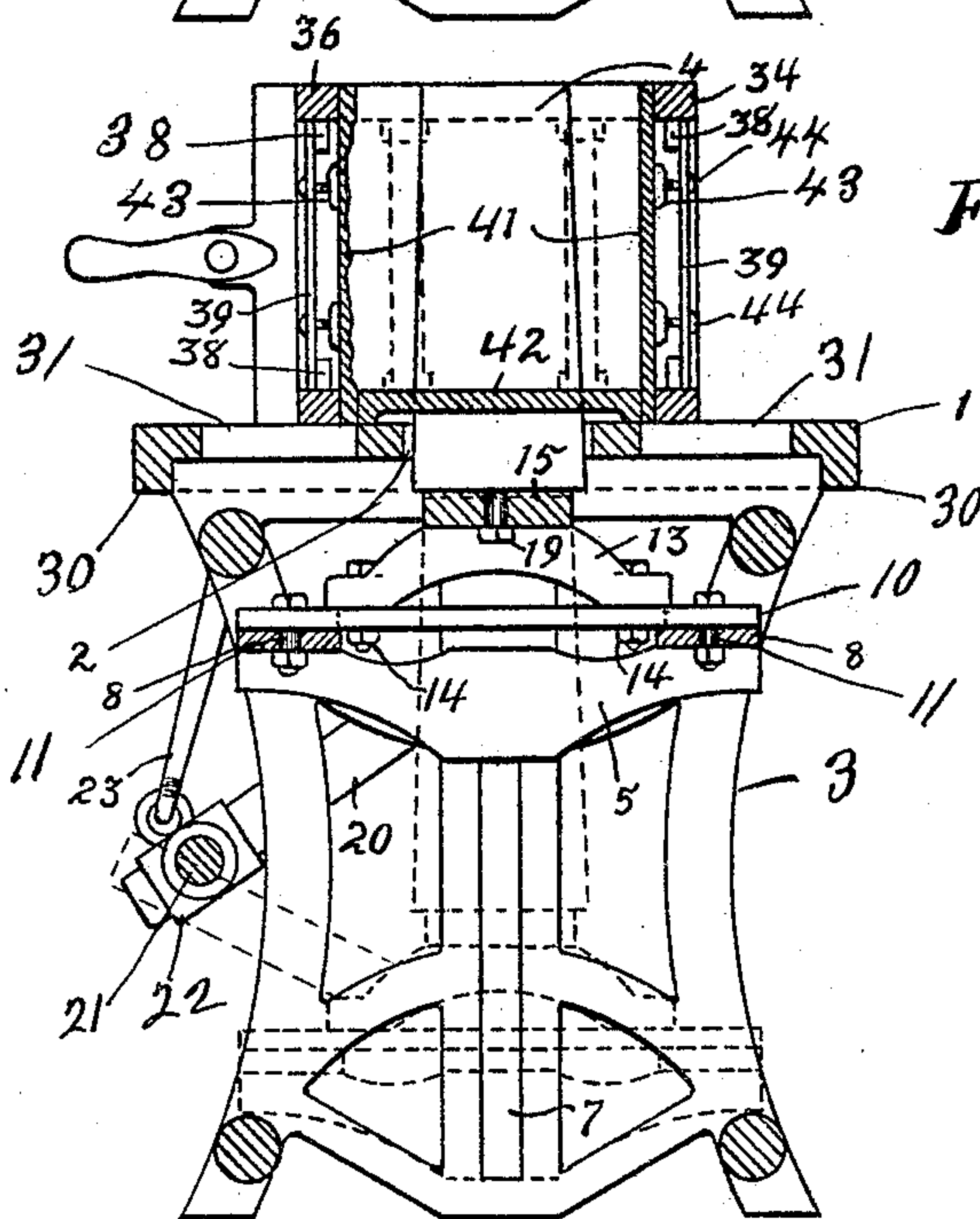


Fig 2

WITNESSES:

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J. D. Dickens

John W. Miller INVENTOR

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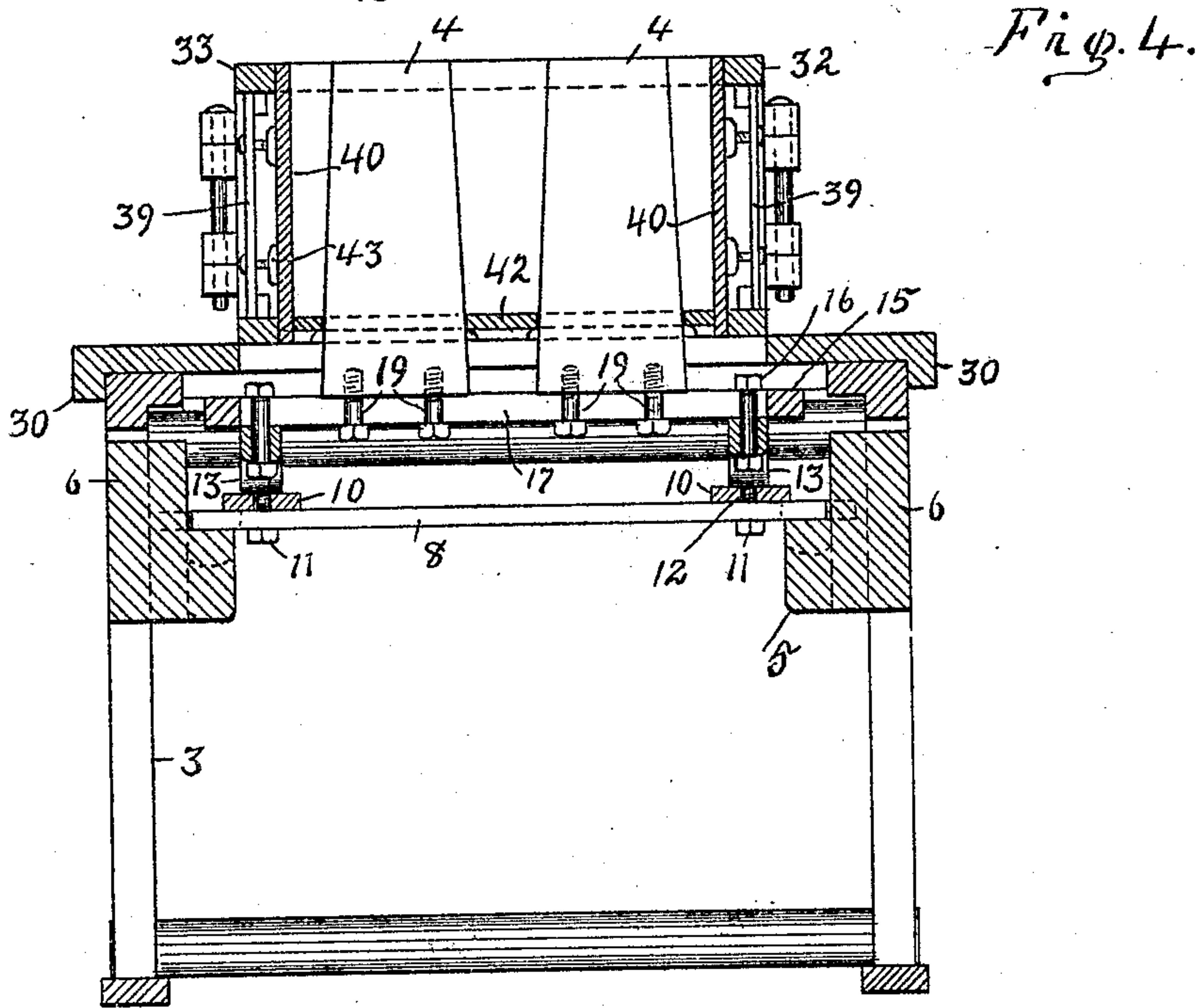
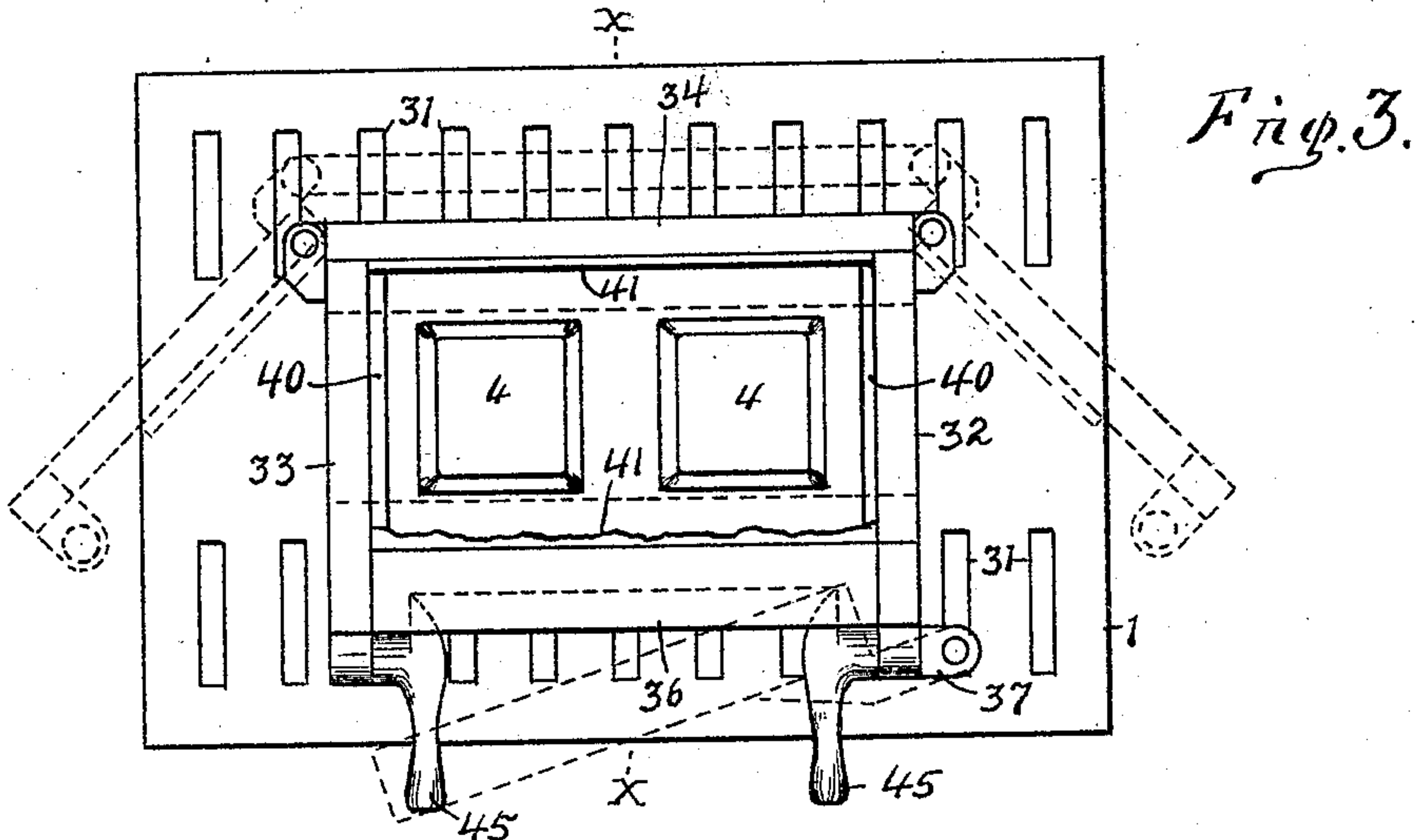
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UNITED STATES PATENT OFFICE.

JOHN W. MILLER, OF AUBURN, INDIANA, ASSIGNOR TO CONCRETE BLOCK MACHINE COMPANY, OF AUBURN, INDIANA.

MACHINE FOR MANUFACTURING HOLLOW CONCRETE BUILDING-BLOCKS.

No. 799,611.

Specification of Letters Patent.

Patented Sept. 12, 1905.

Application filed August 22, 1904. Serial No. 221,601.

To all whom it may concern:

Be it known that I, JOHN W. MILLER, a citizen of the United States, residing at Auburn, in the county of Dekalb, in the State of Indiana, have invented certain new and useful Improvements in Machines for Manufacturing Hollow Concrete Building-Blocks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in machines for manufacturing hollow concrete building-blocks.

The principal object of my present invention is to provide a cheap, simple, and efficient machine for making hollow concrete building-blocks, so constructed that it is adapted for the manufacture of any desired size of building-blocks by simply changing the mold and adjusting the cores.

My invention consists of a table mounted upon a supporting-frame and having core-openings, vertically-movable and adjustable cores, means for imparting to the cores a vertical reciprocation, and a pivoted detachable mold formed of hinged sections so arranged upon said table as to be readily removed therefrom and replaced by a mold of a different size, laterally-adjustable cores for different-sized blocks, and improved means for actuating the cores.

The principal novel features of my invention reside in the construction and relative arrangement of the pivoted detachable hinged mold, whereby the machine is adapted for the employment of different-sized molds for the manufacture of various sizes of blocks, adjustable cores for different sizes of molds, and the means for actuating the cores.

Similar reference-numerals indicate like parts throughout the several views, in which—

Figure 1 is an end elevation of my invention, showing the relative arrangement of the operative parts. Fig. 2 is a cross-section of the same on the line $x x$ of Fig. 3 and also showing in dotted outline its lowermost position of the vertically-adjustable cores. Fig. 3 is a plan view showing in dotted outline the parts of the mold swung open to remove the formed block. Fig. 4 is a longitudinal central section of the invention.

The table 1, of proper dimensions, has a pair of vertical core-openings 2 and is mounted on a suitable supporting-frame 3, on which is operatively mounted the vertically-movable cores 4, and any suitable actuating mechanism therefor, preferably the means shown and consisting of the oppositely-arranged duplicate brackets 5, having a vertical lug 6 midway of its ends loosely arranged in the guiding-slots 7 in the ends of the frame 3 and adapted for a vertical reciprocation therein. The brackets 5 are arranged adjacent to the respective inner faces of the ends of the supporting-frame 3 and are rigidly connected by the parallel plates 8, having a central longitudinal slot 9 therein for purpose hereinafter described. On these plates 8 at or near their opposite ends are mounted the transverse parallel plates 10, adjustably secured thereto by means of the bolts 11 in the slots 9. These transverse plates 10 are also provided with a central longitudinal slot 12 and are surmounted by the respective bridges 13, adjustably secured thereto by the bolts 14 in the slots 12 thereof, whereby they are not only readily detachable, but also have a limited longitudinal adjustment thereon, if desired.

On the bridges 13 is adjustably mounted the longitudinally-slotted plate 15, firmly secured thereto by the bolts 16 in the slot 17. On the plate 15 are firmly but adjustably mounted the vertically-adjustable cores 4, preferably two in number, by means of the screws 19, arranged in the slot 17 thereof. The contour of the cores are immaterial, though they are preferably rectangular in cross-section. The means for imparting to the said cores their vertical reciprocating movement consists of a pair of oblique duplicate parallel levers 20, having their forward ends pivotally connected to the respective outer faces of the lugs 6 and are rigidly connected near their outer ends by means of the horizontal rod 21. The levers 20 preferably have an enlargement 22, in which to properly secure the opposite ends of the rod 21. These levers 20 are fulcrumed near their outer end on the lower end of the pendent arms 23, whose upper ends are pivotally mounted on the adjacent ends of the frame 3, near the top thereof, on the pivots 24. One of these levers 20 has upon its outer end a fixed or integral operating-handle 25.

On the outer face of one end of the frame

3 near its top is pivotally mounted a pendent catch 26, having upon its lower end a hook 27, adapted for a holding engagement with the formed or inner end of the lever 20, having the operating-handle thereon. This catch has a rearwardly-projecting handle 28, which normally rests upon a lug or pin 29. By means of this catch the cores 4 can be firmly secured at the upper limit of their vertical adjustment. When at the lowest limit of their adjustment, the lower end of the lugs 6 rest in the bottom of the slots 7, and thus firmly support the cores.

The table 1 is removably mounted upon the frame 3, being secured thereon against lateral displacement by the pendent flanges 30, and is preferably provided upon both sides of the core-openings 2 with a series of transverse slots 31 of proper dimensions to let the loose or waste material drop through the table out of the way in use. On this table 1 is pivotally mounted the mold formed of the end sections 32 and 33, hinged at their forward ends to the respective ends of the side section 34 and provided upon their other ends with proper latches 45, adapted for a locked engagement with the opposite ends of the other side section 36, having upon one end thereof the extended lug 37, which is pivoted at its outer end to the table 1. The mold-sections above described are rectangular skeleton frames having the lugs 38, against which the ends of the narrow vertical plates 39 rest. In use the end plates 40 and the side plates 41 are set up edgewise within this skeleton mold, and a bottom plate 42 is snugly fitted between them and rests upon the table 1. This bottom plate has suitable core-openings coincident with the core-openings 2 in the table. Each of these end plates 40 and side plates 41 are provided upon their outer face with a plurality of bosses 43, adapted to receive the screws 44, loosely mounted in suitable perforations in the plates 39, whereby the said plates are rigidly held in position. One of the side plates 41, preferably the rear one, may be provided upon its inner face with any desired design as to represent natural stone, as shown in Fig. 2, or other desired design.

The operation of my invention thus described is obviously and briefly stated as follows: The cores being at rest at their lowest limit, as shown in dotted outline in Fig. 2, and the mold-sections being swung open, as shown in dotted lines in Fig. 3, the operator first rigidly secures the end and side mold-plates 40 and 41 in position, then closes the hinged and pivoted sections together and locks them by means of a suitable catch 45 on the free ends of the hinged end sections and

adapted to holdingly engage the ends of the pivoted side section in any proper manner, Fig. 3. He now elevates the cores to their upper limit by means of the hand-lever 25 and locks them in that position by means of the catch 26, as shown in Fig. 1, and then places the plate or pallet 42 in position, it being readily slipped over the cores. When the pallet is in position, it securely squares up the mold. The operator now fills the mold and forms the block in the usual manner. When a veneer face of finer material is desired, he interposes a thin separating-plate between the body of the block and this face while they are being formed, gradually withdrawing it as the tamping and filling proceeds in the usual manner. When the block has been formed, the operator unfastens the latches 45 and swings the mold-section away from the block, as shown in Fig. 3, after which it can be readily removed from the table with the supporting-pallet 42, upon which it remains until properly hardened. When it is desired to change the dimensions of the block, another mold of any desired size can readily be substituted, since the table 1 is adapted to accommodate any ordinary-sized mold. When it is desired to adjust the cores 4 for different-sized molds or other purpose, it can readily be done by loosening the screws 19 and giving them the desired longitudinal adjustment in the slot 17 of their supporting-plate 15.

By this construction my invention is conveniently and efficiently adapted for the manufacture of any desired size or shape of building-blocks, either solid or hollow.

Having thus described my invention and the operation thereof, what I desire to secure by Letters Patent, is—

In a hollow-building-block machine an upright supporting-frame having a removable top plate provided with vertical core-openings; means for adjusting the cores horizontally; means for actuating the said cores consisting of a longitudinally-slotted plate on which the cores are adjustably mounted; a bracket supporting the said plate, and adapted for a vertical guided reciprocation in the frame, levers pivotally connected to the said bracket, and fulcrumed on pendent pivoted arms, and an operating-handle for said levers; and a mold formed of hinged and pivoted sections removably mounted on said table.

Signed by me, at Auburn, Dekalb county, State of Indiana, this 9th day of August, A. D. 1904.

JOHN W. MILLER.

Witnesses:

JOHN W. BAXTER,
WHEELER McDOWELL.