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E. KEAGY.  
CONCRETE BLOCK MOLD MACHINE.  
APPLICATION FILED MAR. 16, 1904.

3 SHEETS—SHEET 1.

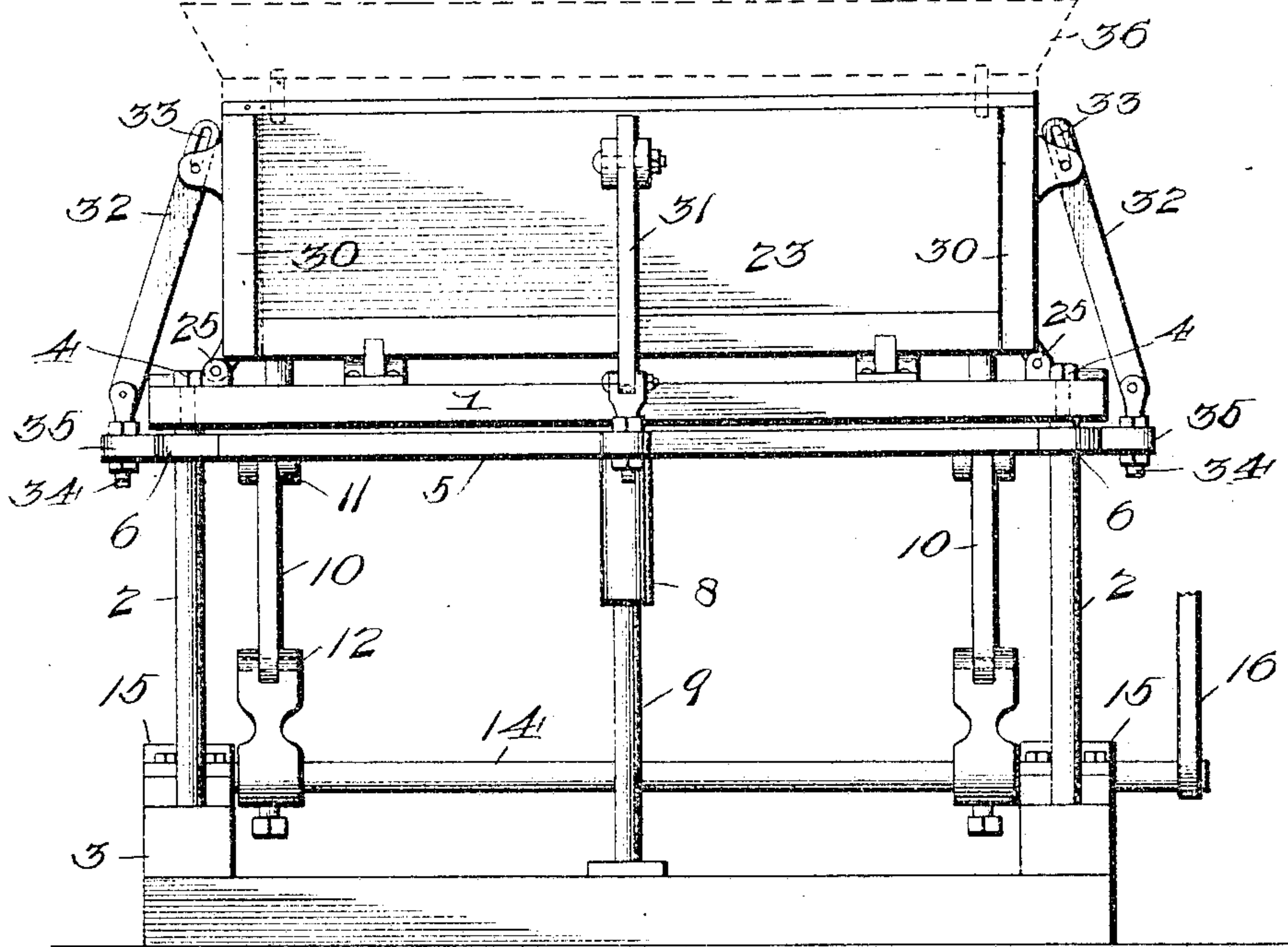


Fig. 1.

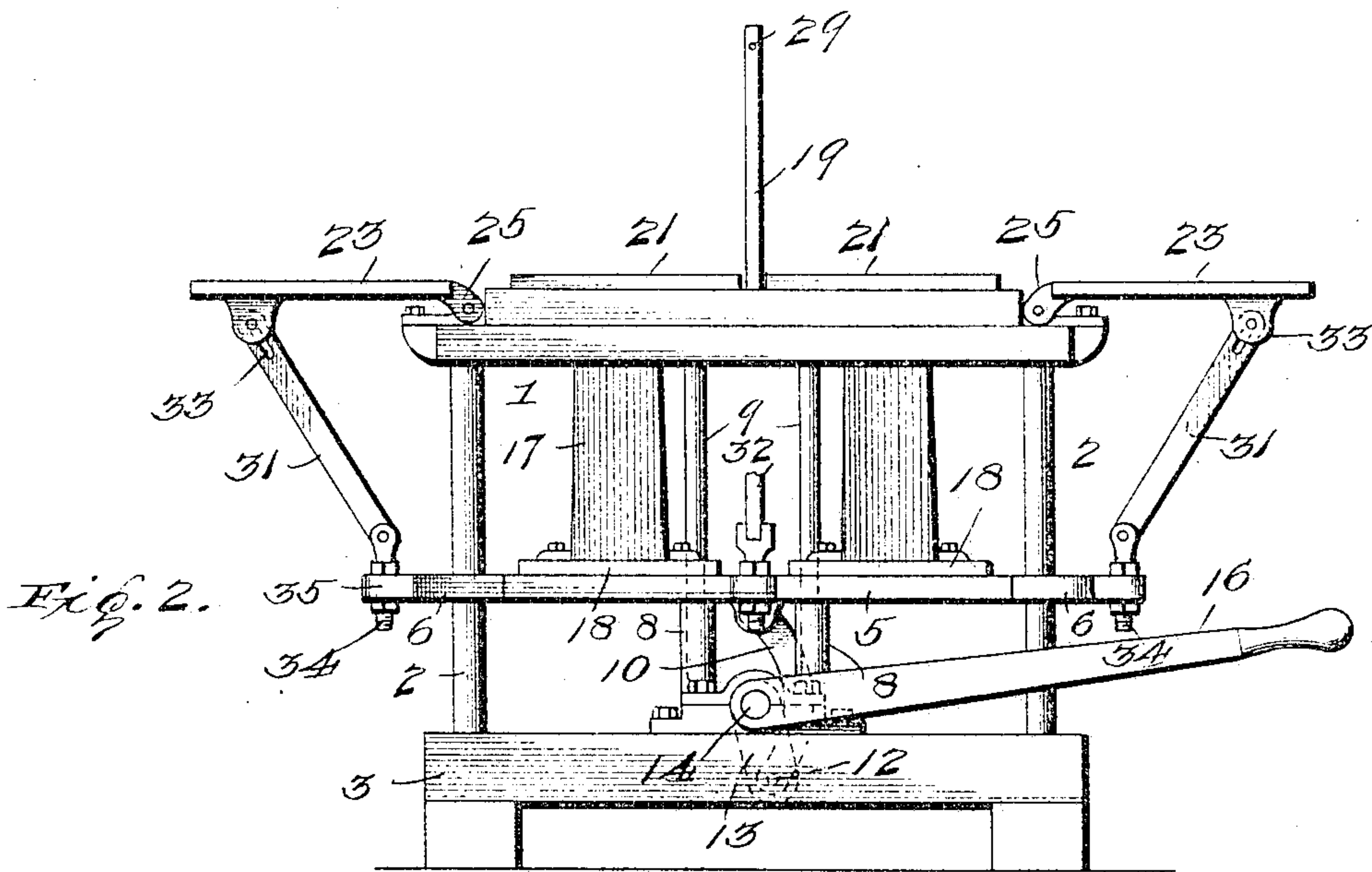


Fig. 2.

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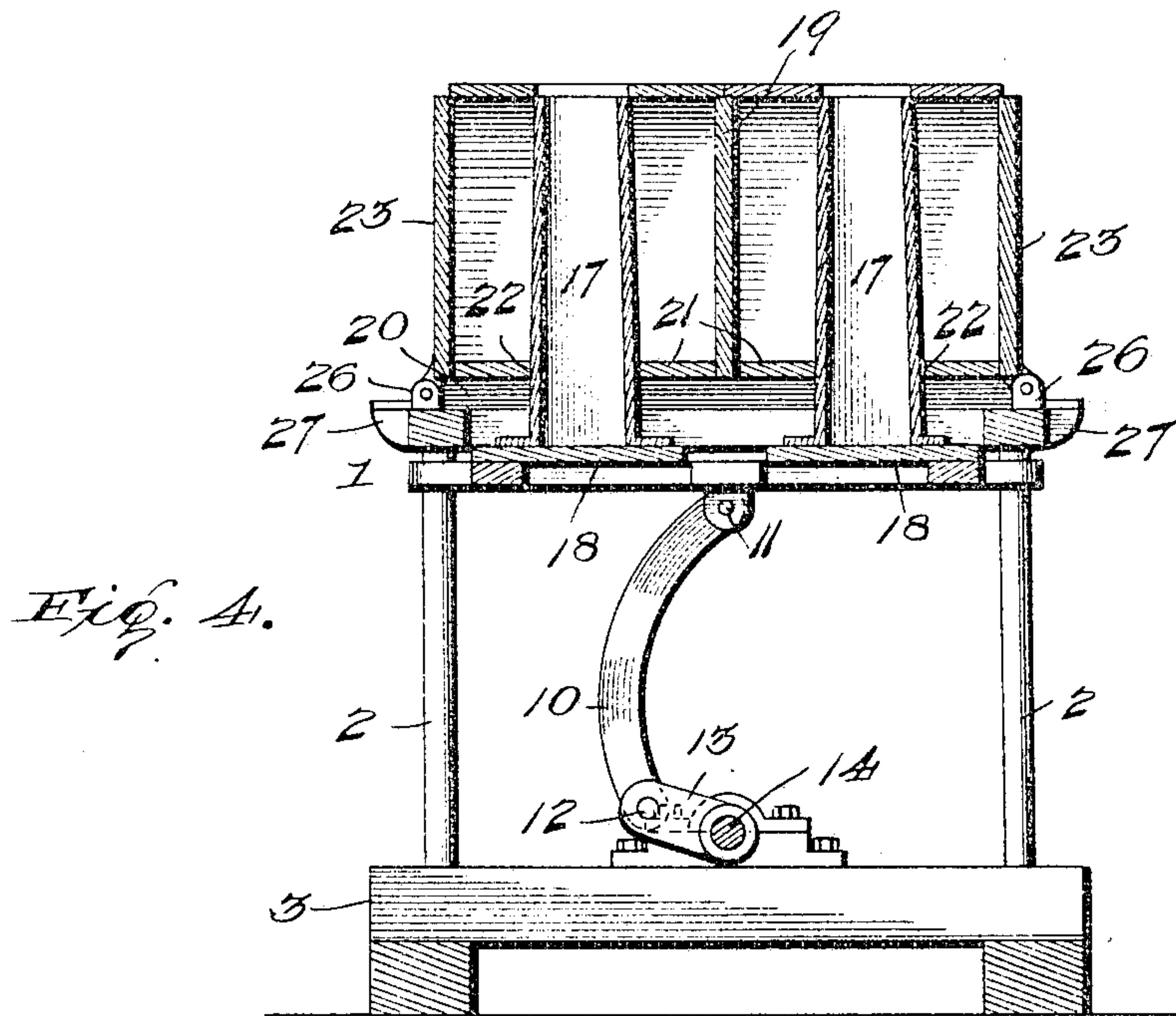
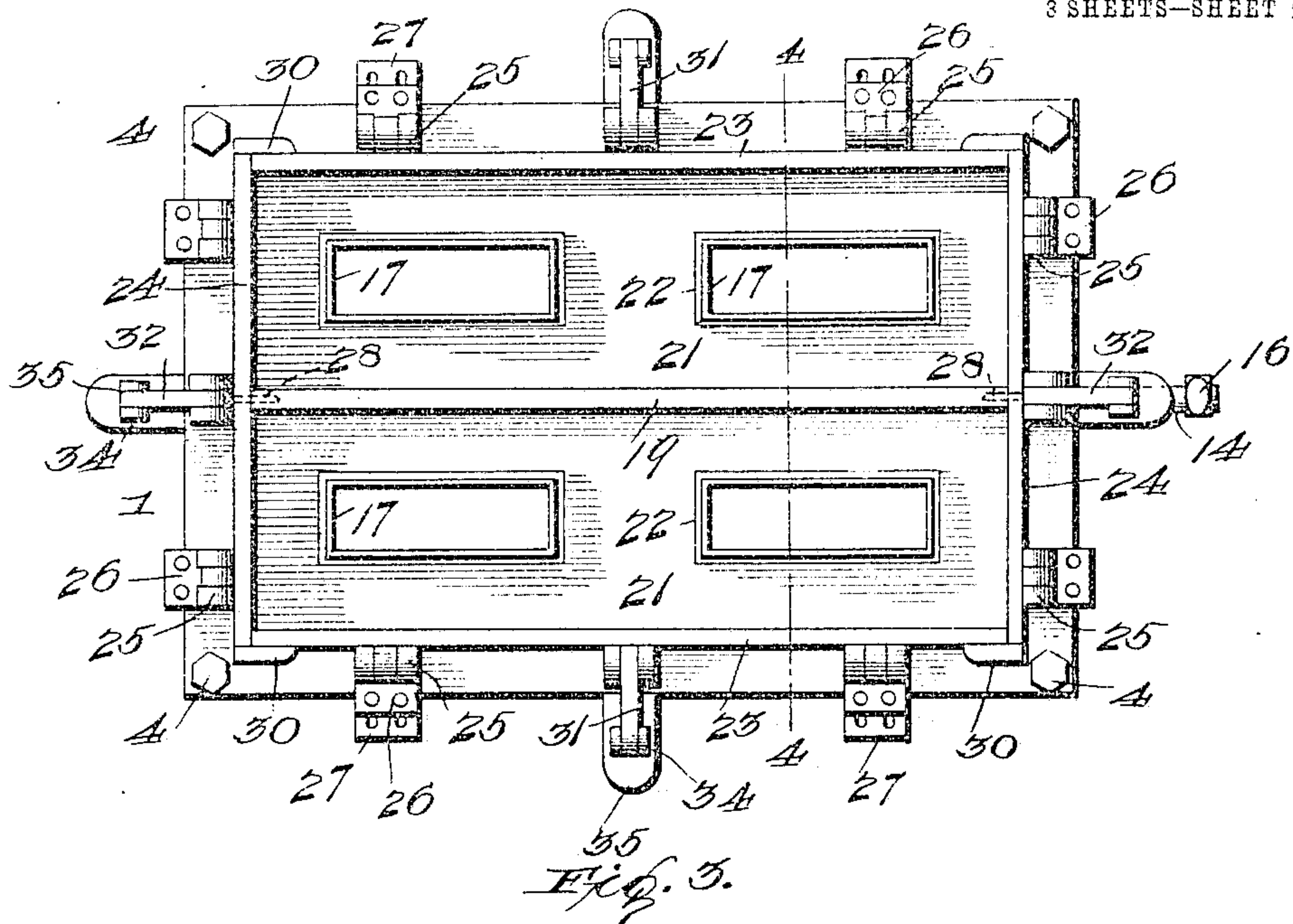
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3 SHEETS—SHEET 3.

Fig. 6.

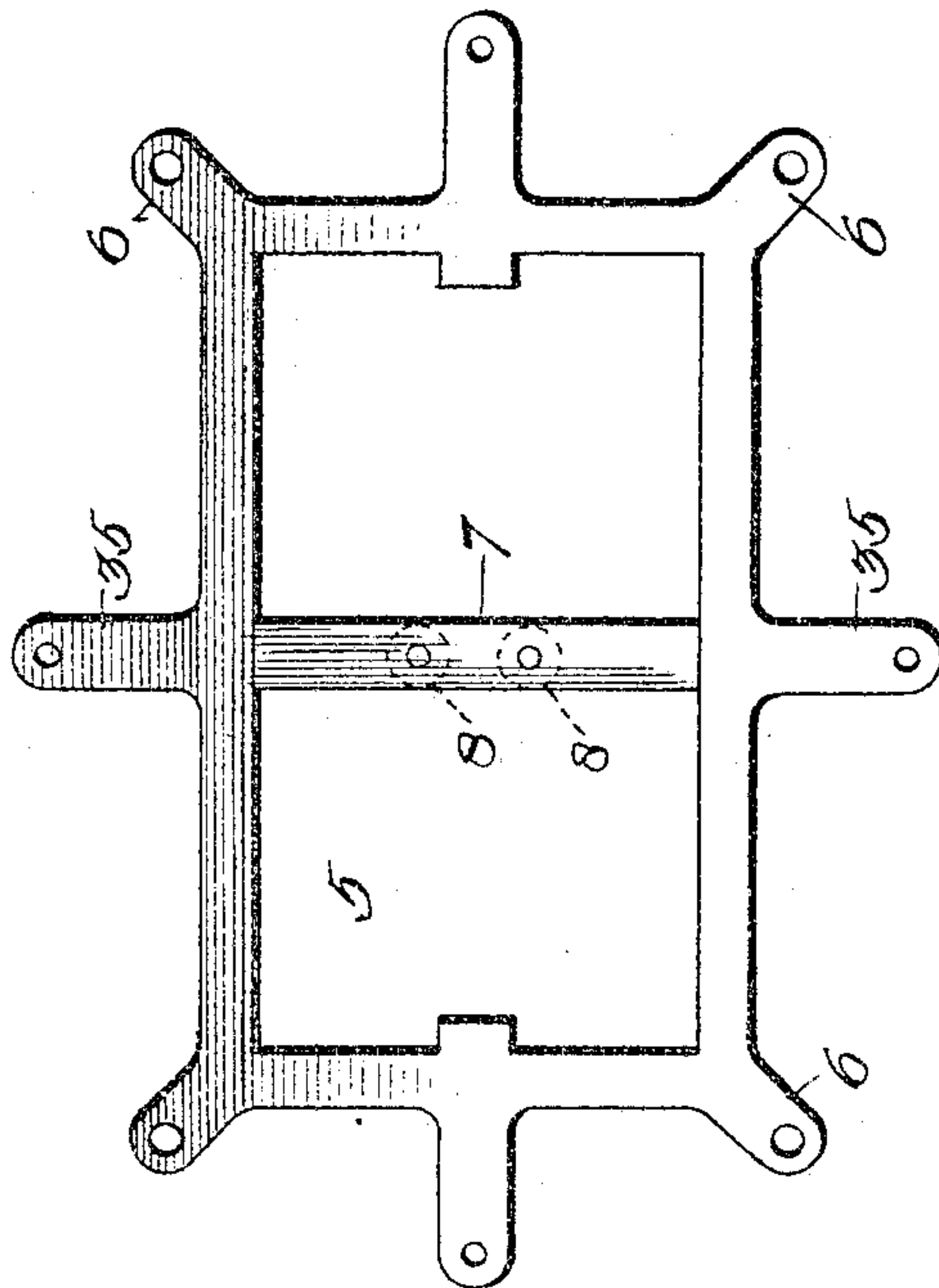


Fig. 7.

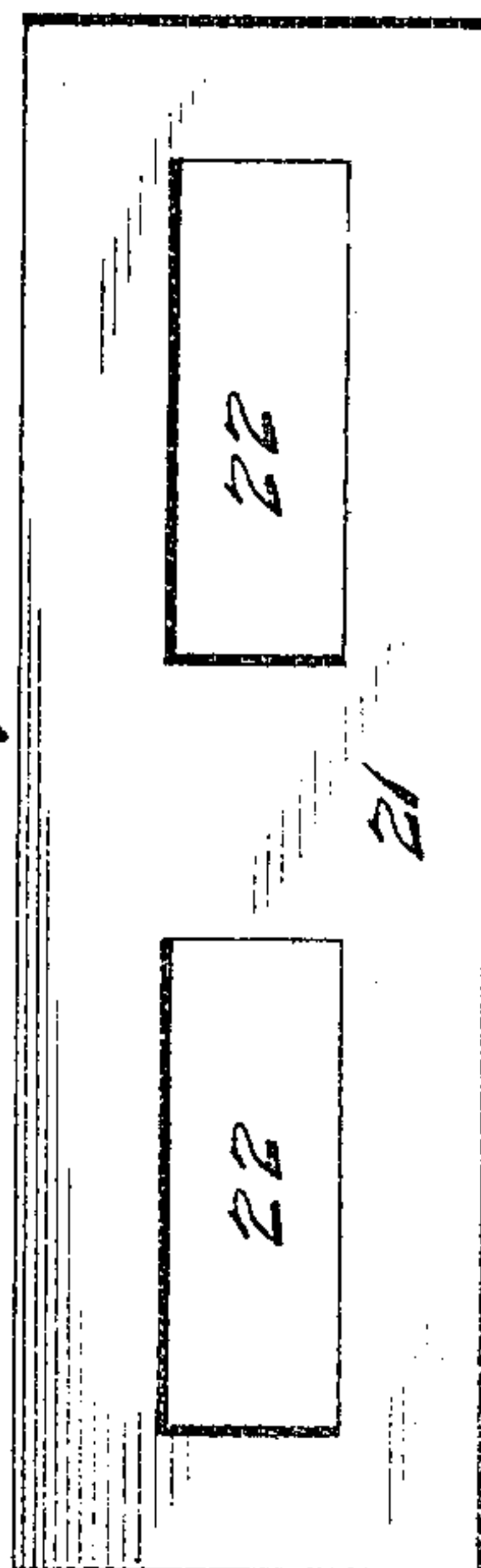


Fig. 5.

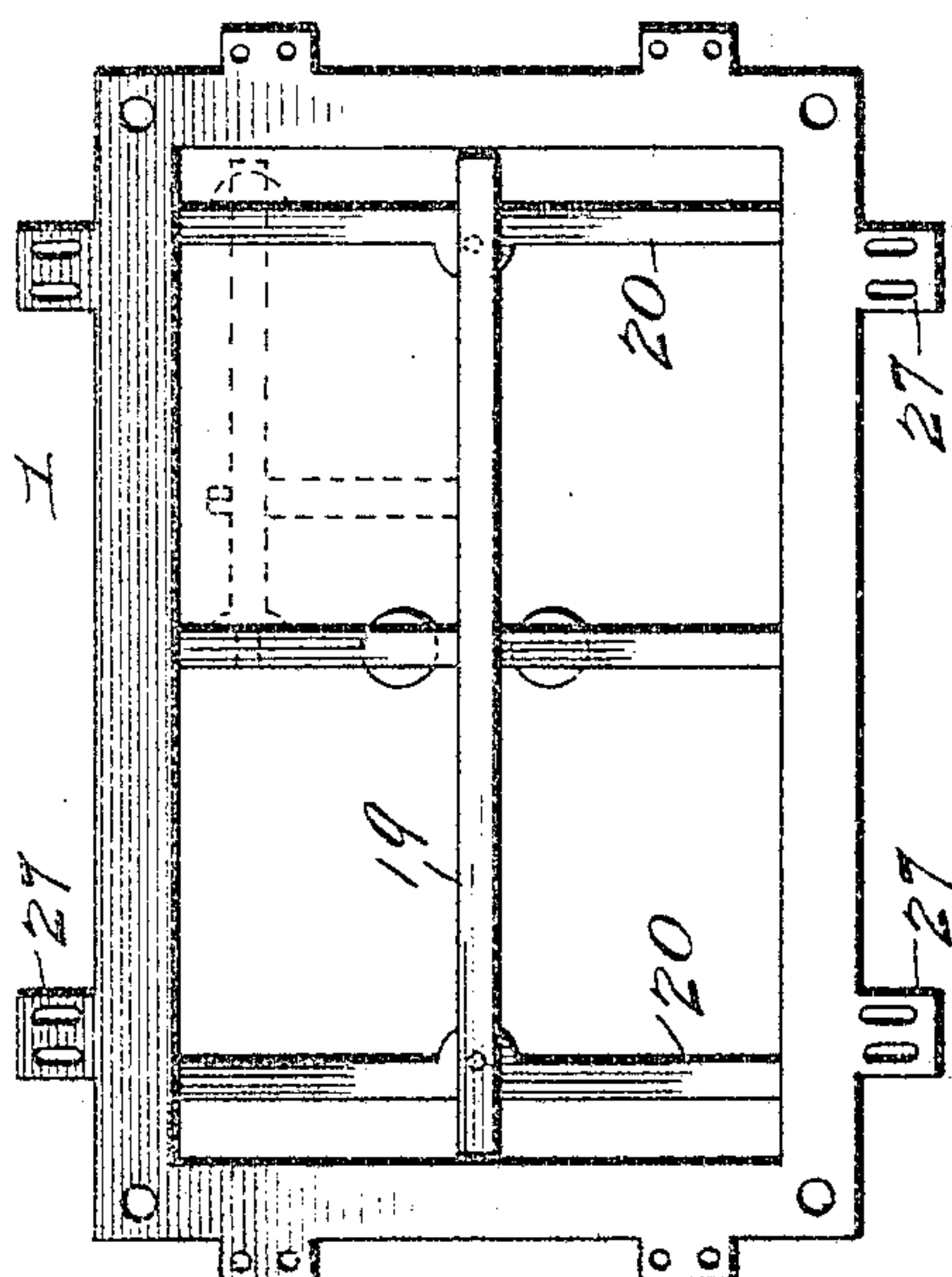
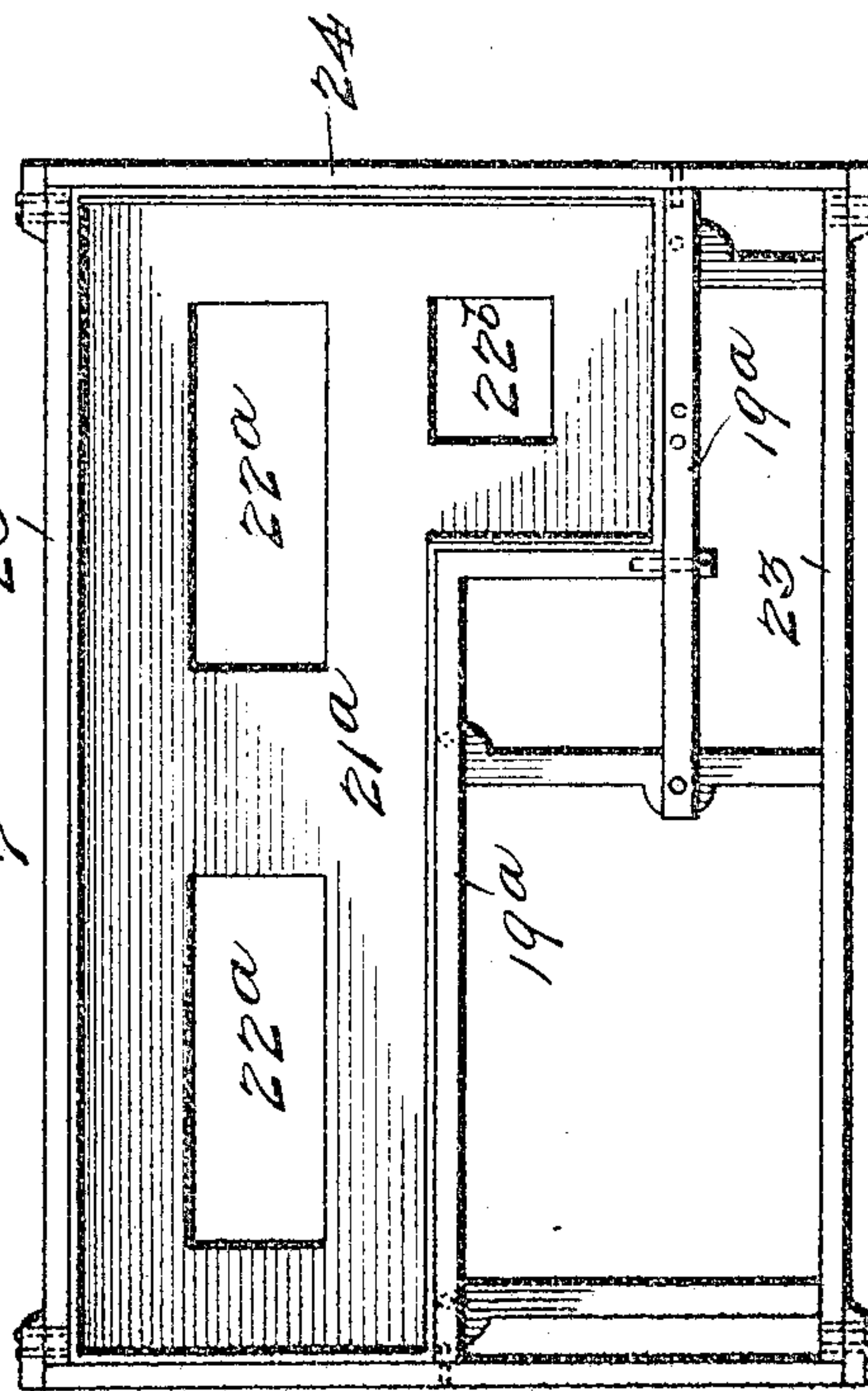


Fig. 8.



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# UNITED STATES PATENT OFFICE.

EDWARD KEAGY, OF NEWARK, OHIO.

## CONCRETE-BLOCK-MOLD MACHINE.

SPECIFICATION forming part of Letters Patent No. 787,099, dated April 11, 1905.

Application filed March 16, 1904. Serial No. 198,423.

*To all whom it may concern:*

Be it known that I, EDWARD KEAGY, a citizen of the United States, residing at Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Concrete-Block-Mold Machines, of which the following is a specification.

This invention relates to machines of that type designed for the formation of building blocks or tiles constructed of concrete or equivalent plastic composition, and has in view the construction of a machine giving an increased capacity and susceptible to an interchange of the mold-box parts, whereby the same may be adapted to shape plain, angular, and other types of blocks or tiles, such as employed for building purposes.

A distinctive object of the invention is to provide a block-molding machine embracing what may be properly termed a "double" mold-box, wherein a single stationary partition constitutes a wall for each mold, while at the same time not interfering with the rearrangement of the mold-box for the formation of angular blocks or tiles or a plurality of blocks of either the plain type or of the rock-face type.

Another object of the invention is to provide a machine wherein the mold box or mold proper is constructed with folding walls adapted to be adjusted synchronously with the core or cores, whereby by the same movement of the operating-lever the cores are removed from the mold-box or body and the walls thereof are brought to a horizontal position, whereby the blocks or tiles can be readily removed.

With these and other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

The essential features of the invention involved in the structural formation of the double interchangeable mold-box and in the means for synchronously adjusting the mold-walls with the cores are necessarily suscepti-

ble to a variety of structural modifications without departing from the scope of the invention; but a preferred embodiment thereof is shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a block-molding machine constructed in accordance with the present invention. Fig. 2 is an end view of the same machine, showing the folding mold-walls opened to a horizontal position and the cores lowered out of the mold-box. Fig. 3 is a top plan view of the machine with the mold-walls set up. Fig. 4 is a vertical transverse sectional view on the line 4-4 of Fig. 3. Fig. 5 is a top plan view of the mold-supporting bed stripped of the mold-walls and mold-bottoms or bottom plates. Fig. 6 is a plan view of the vertically-movable core-carrier. Fig. 7 is a detail view of the plain form of mold-bottom or bottom plate placed upon the supporting-bed at each side of the stationary mold-partition. Fig. 8 is a plan view showing the rearrangement of the parts for molding an angular block or tile, said interchange being effected simply by changing the configuration of the stationary mold-partition and the employment of a mold-bottom or bottom plate of angular form.

Like numerals designate like parts throughout the several figures of the drawings.

In carrying out the invention the mold-box or mold proper is associated with a supporting-bed, designated in its entirety by the reference-numeral 1 and essentially consisting of a rectangular skeleton frame supported in an elevated position upon the upper ends of a plurality of supporting-standards 2, whose lower ends are suitably fitted to a machine-base 3, arranged below and in parallelism to the supporting-bed or bed-frame 1. The upright supporting-standards 2 are bolted or otherwise suitably fastened at their upper ends, as at 4, to the corners of the bed-frame 1, and said standards perform the additional function of guides for the vertically-movable core-carrying frame 5, operating beneath the bed-frame 1 and provided at the corners thereof with the obliquely-disposed offstanding perforated guiding-lugs 6, slidably en-



gaging the standards 2, and thereby providing for holding the core-carrier or carrying-frame 5 to move in a fixed vertical plane.

The vertically-movable core-carrying frame 5, like the bed-frame 1, is of a skeleton formation and in addition to the guiding members 6 is provided with a central transverse brace 7, having pendent therefrom a plurality of guiding-sleeves 8, slidably engaging a pair of centrally-arranged spaced guide-posts 9, which cooperate with the sleeves 8 and positively prevent any tilting or canting thereof sidewise, while tilting or canting in an endwise direction is obviated by associating with the core-carrying frame 5 a pair of adjusting toggle-links 10, arranged, respectively, at opposite sides of the vertical transverse plane of the guide-posts 9 and disposed contiguous to the opposite end portions of the frame 5. These oppositely-arranged toggle-links 10 are of an arcuate form and are pivotally connected at their upper ends, as at 11, to the core-carrying frame 5 and at their lower ends are similarly connected, as at 12, to the swinging extremities of the rocker-arms 13, rigidly fastened to a controlling rock-shaft 14. This shaft is arranged longitudinally of the base and is mounted at its opposite ends in suitable bearings 15, one end of said shaft having fitted thereto a single operating-lever 16, which is manipulated by the operator for not only controlling the position of the core-carrier, but also for swinging the mold-walls to a closed or open position, as will presently appear.

In connection with the mold-box or mold proper, associated with the bed or bed-frame 1, there is necessarily employed one or more cores, and these cores are rigid with and carried by the carrier 5. In the drawings the number 17 designates the cores, which are of a rectangular tubular form and also taper to permit of them being readily withdrawn from the molded material, and it will of course be understood that these cores may be of any desired cross-sectional shape, according to the character of the opening to be formed in the hollow block or tile; but in all embodiments of the invention the cores are designed to be bolted or otherwise suitably fastened to a core-base 18, secured on the core-carrying frame 5, or the cores may be fastened directly to the carrying-frame 5 itself.

In the preferable embodiment of the invention the mold-box or mold proper is of a double form, as plainly shown in Fig. 3 of the drawings, and the cores 17, carried by the carrier 5, are arranged in pairs, located, respectively, at opposite sides of the vertical plane of the stationary mold-partition 19, which is bolted or otherwise rigidly fastened in an upright position upon the cross-bars 20 of the skeleton bed-frame 1, as may be plainly seen from Figs. 2 and 5 of the drawings.

Though the cross-bars 20 may be a part of the frame 1, yet the same may be separate

supporting-bars arranged transversely of said frame to provide not only for the support of the stationary partition 19, but also for the support of the temporary removable mold-bottoms or bottom plates 21, which are placed on top of the said bars or supports 20 at opposite sides of the partition 19. These removable mold-bottoms or bottom plates 21 are provided therein with the core-openings 22 of a sufficient size to permit the cores to be freely projected upward through the same, so as to lie inside of the plane of the mold and out of contact with the walls thereof. One of the distinctive features of the invention in connection with the partition 19 and the mold-bottoms 21 is that by changing the contour of said partition and mold-bottoms building blocks or tiles of different shape may be formed in the same mold. This is exemplified by the illustration of Fig. 8, wherein is shown a mold-bottom or bottom plate 21<sup>a</sup>, of an angular form and having separate large and small core-openings 22<sup>a</sup> and 22<sup>b</sup>, respectively. In the same modification is shown the employment of a stationary partition 19<sup>a</sup> of an offset or angular formation, and which forms a stationary side or wall for the mold-box when making a block or tile of the form suggested. By changing the contour of the partition to other shapes and employing correspondingly-shaped mold-bottoms other forms of blocks or tiles may be produced, as will be readily understood.

In all embodiments of the invention the mold-box or mold proper includes a plurality of folding walls, which may be conveniently designated as the "oppositely-arranged" folding side and end walls 23 and 24, respectively. The oppositely-arranged folding side walls are provided at one edge with hinge-knuckles 25, which are hinged or pivotally connected to the lugged hinge-plates 26, adjustably bolted upon the slotted brackets 27, projecting from the side bars of the bed or bed-frame 1, and this adjustable mounting of the hinge-support for the side walls 23 provides means for varying the width of the mold-box or mold proper to adapt the same to blocks or tiles of slightly-varying sizes, which is an important feature of advantage in a machine of this character.

The oppositely-arranged folding end walls 24 are hinged at one edge, as at 27, to the end bars of the bed-frame 1 and preferably carry continuous to their swinging edges the bracing-dowels 28, adapted to enter the sockets 29, formed in the end edges of the stationary partition 19 to provide for bracing the said partition against lateral strain when the mold-walls are set up to a closed position, as shown in Figs. 3 and 4 of the drawings. In this connection it is to be noted that the folding side walls 23 are provided at their end edges with the projecting stop-cleats 30, adapted to overlap the end edges of the end walls 24 and engage with such edges when the walls



are simultaneously brought up to an upright position.

The synchronous folding of the side and end walls 23 and 24 of the machine is effected through the medium of a plurality of connecting bars or links 31 and 32, respectively. The connecting bars or links 31 provide an operative connection between the folding side walls 23 and the vertically-movable core-carrying frame 5, while the bars or links 32 provide a corresponding connection between the said frame and the end walls 24. Each of the bars or links 31 and 32 has a pivotal slotted connection 33 at its upper end with the outer side of the mold-wall with which it is associated, while at its opposite and lower end the said bar or link has an adjustable bolt connection 34 with a bracket-arm 35, projected outwardly from the body of the core-carrying frame 5. By reason of the adjustable bolt connections 34 for the bars or links 31 and 32 the same make it possible to hold the sides and ends of the mold in position while the block is being tamped up.

From the construction described it will be obvious that after positioning the mold-bottoms it is only necessary to give a half-throw of the operating-lever 16 to provide for simultaneously carrying the cores into position within the mold and also setting up the mold-walls to their closed position. After thus preparing the machine the concrete composition or material is introduced into the two compartments of the mold about the cores in any suitable way, preferably by introducing the same through a suitable hopper 36, such as indicated by dotted lines in Fig. 1 of the drawings. After the composition has been tamped in the mold and the operator is ready to remove the shaped block or tile it is simply necessary to give the operating-lever a half-throw in the opposite direction to provide for simultaneously lowering all of the walls to a horizontal position and withdrawing the cores entirely out of the mold. This can be done before the blocks have been solidified, thus permitting the operator to continuously operate the machine in the manufacture of blocks or tiles.

The dotted lines in Fig. 5 of the drawings indicate the arrangement of the stationary wall or partition, such as shown in full lines in Fig. 8.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described machine will be readily apparent without further description, and it will be understood that various changes in the form, proportion, and the minor details of construction may be resorted to without de-

parting from the principle or sacrificing any of the advantages of this invention.

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

1. In a block-molding machine, a supporting-bed, a stationary partition rigidly secured to the bed, temporary mold-bottoms removably supported on the bed at opposite sides of the partition, a series of folding side walls certain of which have a separable interlocking engagement with the ends of the stationary partition, and an adjusting device operatively connected with the folding walls.

2. In a block-molding machine, a supporting-bed, a stationary partition rigidly mounted upon the bed, temporary mold-bottoms also mounted on the bed, a series of folding mold-walls hinged upon the bed, certain of said folding walls having their hinge-supports adjustable, a vertically-movable core-carrier, links pivotally connected with the carrier and having slotted pivotal connections with the folding walls, and an adjusting device operatively connected with the core-carrier.

3. In a block-molding machine, a supporting-bed, corner-standards sustaining the bed in an elevated position, guide-posts arranged centrally beneath the bed, a vertically-movable core-carrier provided at its corners with guiding members slidably engaging said standards, and at a central point with guiding members slidably engaging said guide-posts, folding mold-walls, operative connections between the carrier and said walls, and an adjusting device having operating connections with the carrier respectively at opposite sides of the vertical plane of the said guide-posts.

4. In a block-molding machine, a supporting-bed, a stationary mold-partition mounted on the bed, temporary removable mold-bottoms having core-openings therein, folding side and end walls hinged upon the bed, a vertically-movable core-carrier operating beneath the bed, cores upon said carrier, connecting-bars having pivotal slotted connections at one end with the mold-walls and provided at their other ends with adjustable bolts connected to the carrier, and an adjusting device comprising a rock-shaft having a single operating-lever and a plurality of rocker-arms and arcuate adjusting-links pivotally connected with the carrier and said rocker-arms.

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

EDWARD KEAGY.

Witnesses:

WINIFRED KEAGY,  
E. S. RANDOLPH.