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R. TITUS & F. J. MEARING.

MACHINE FOR MAKING ARTIFICIAL STONE BLOCKS AND THE LIKE.

APPLICATION FILED OCT. 18, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

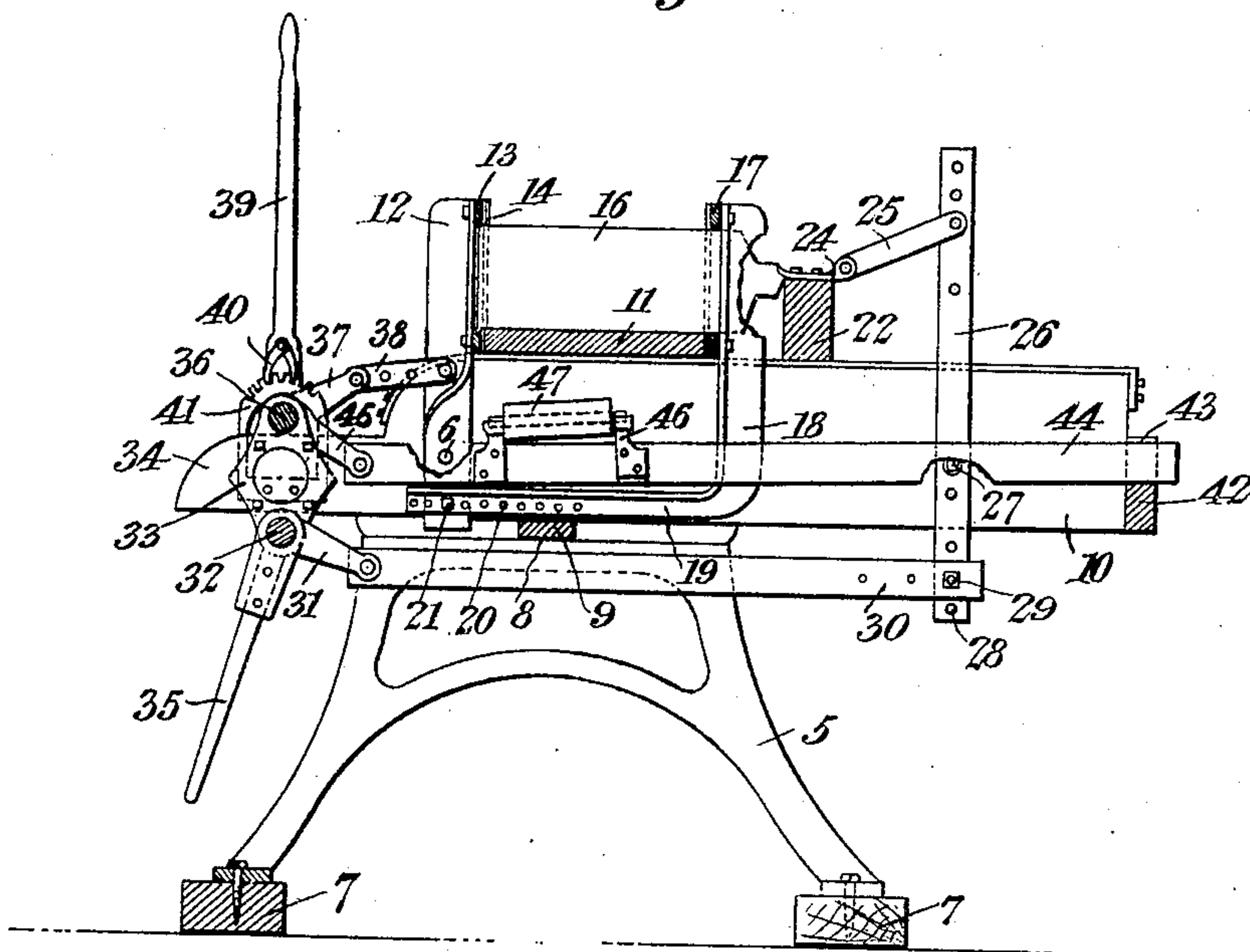
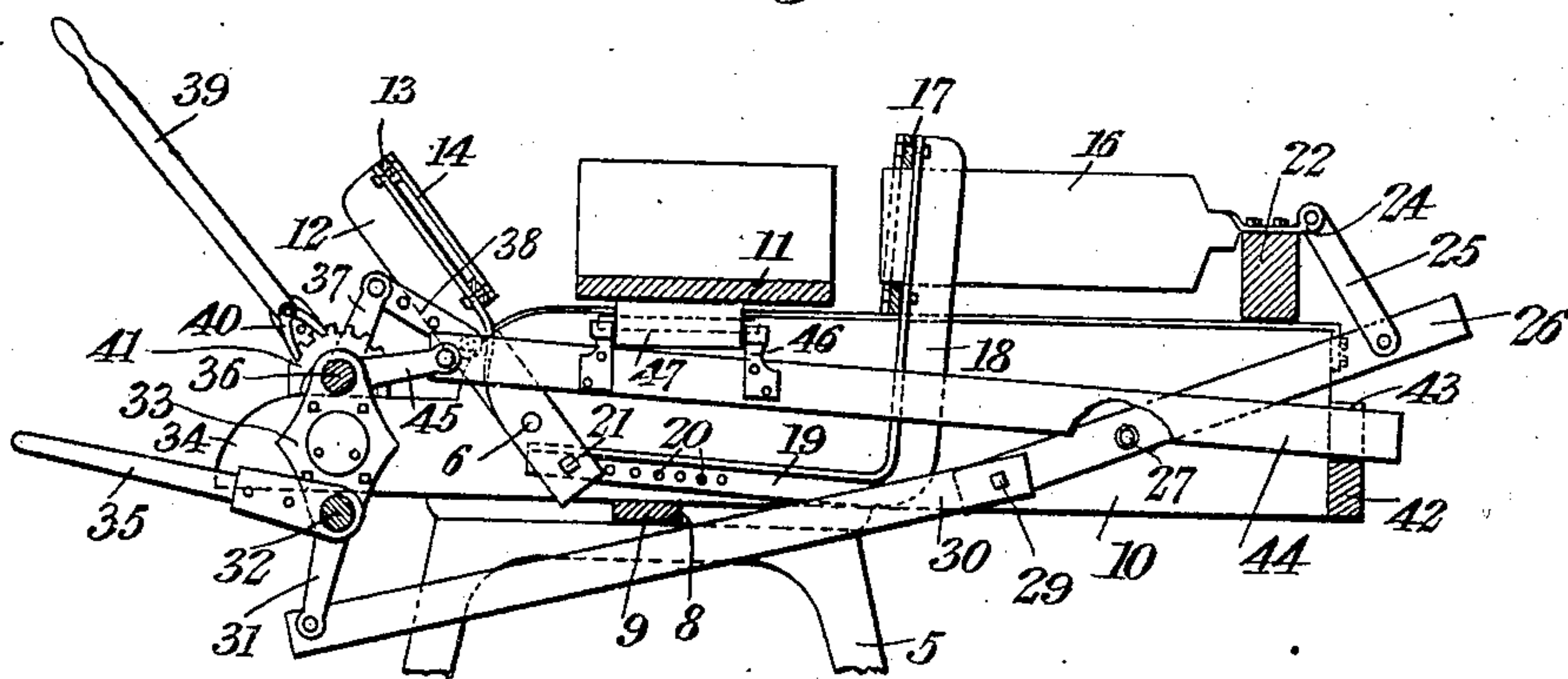


Fig. 2.



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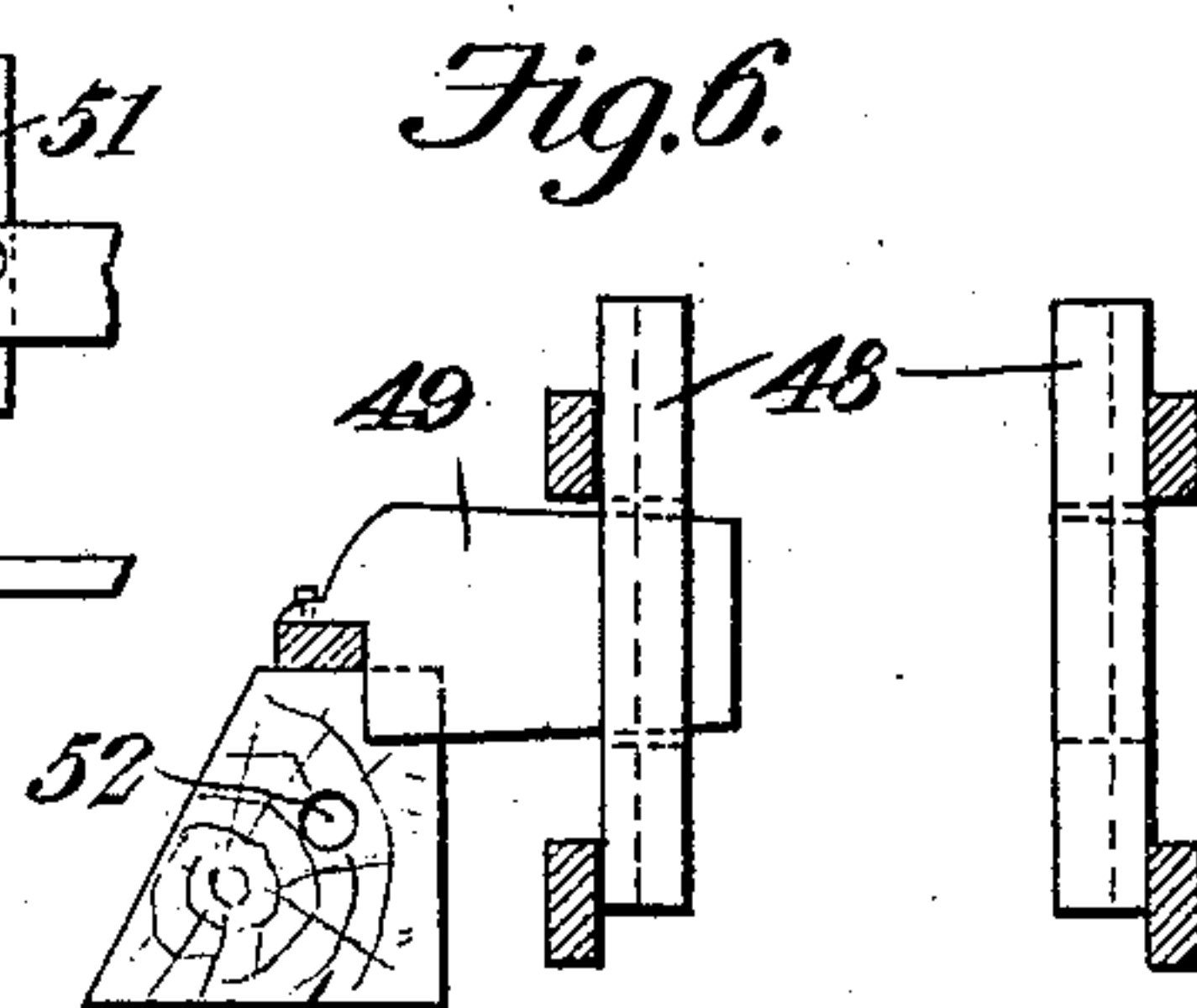
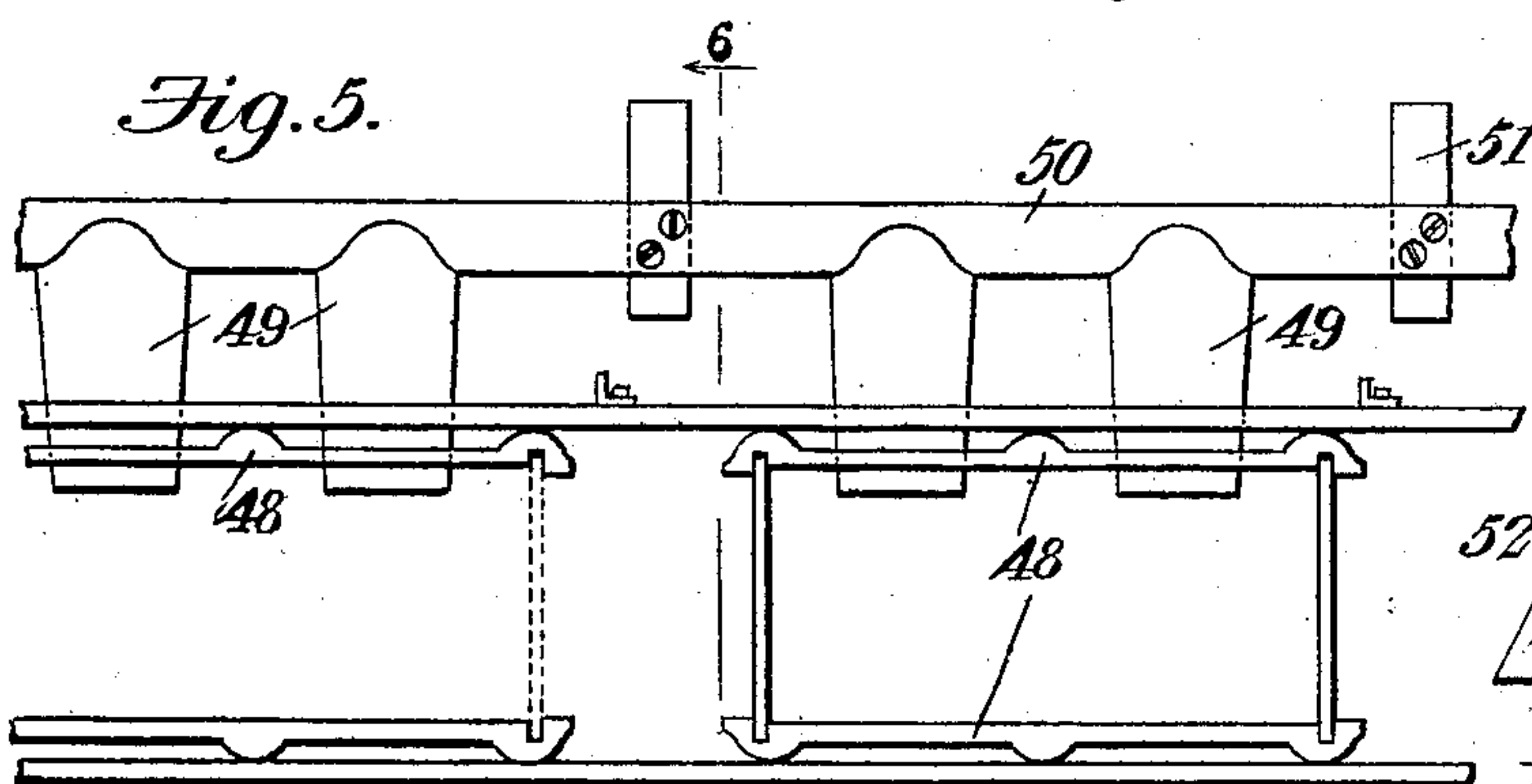
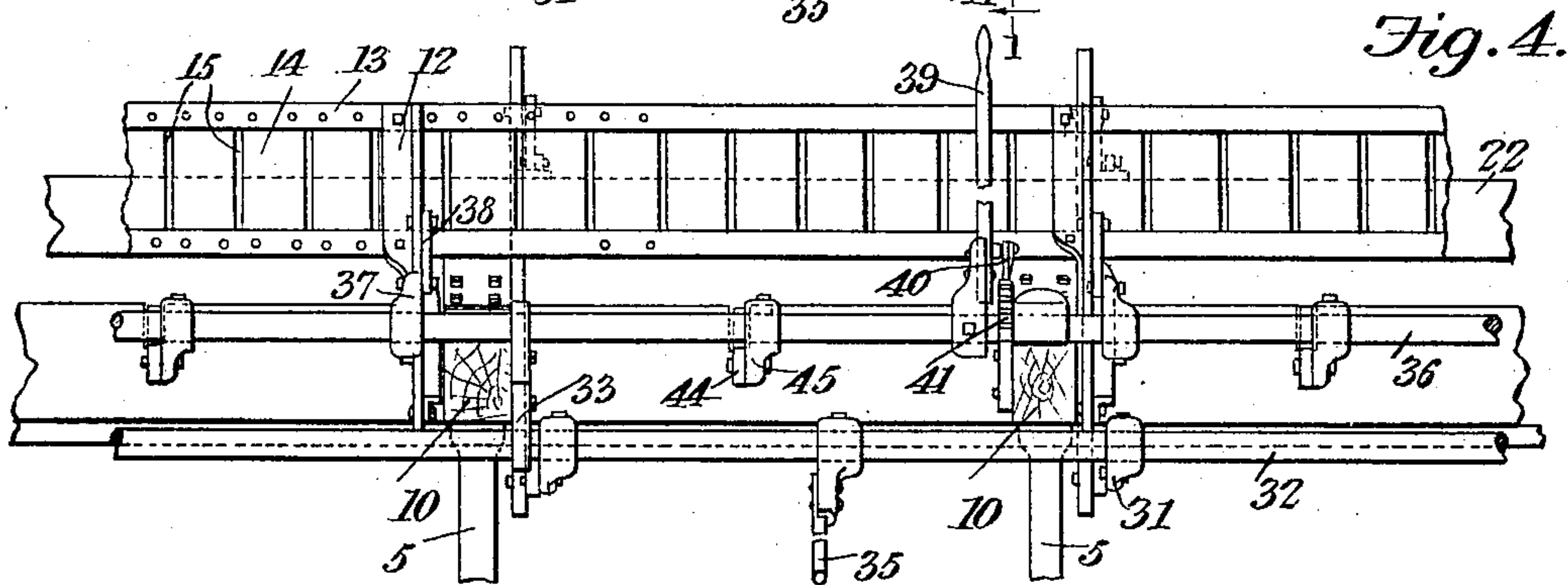
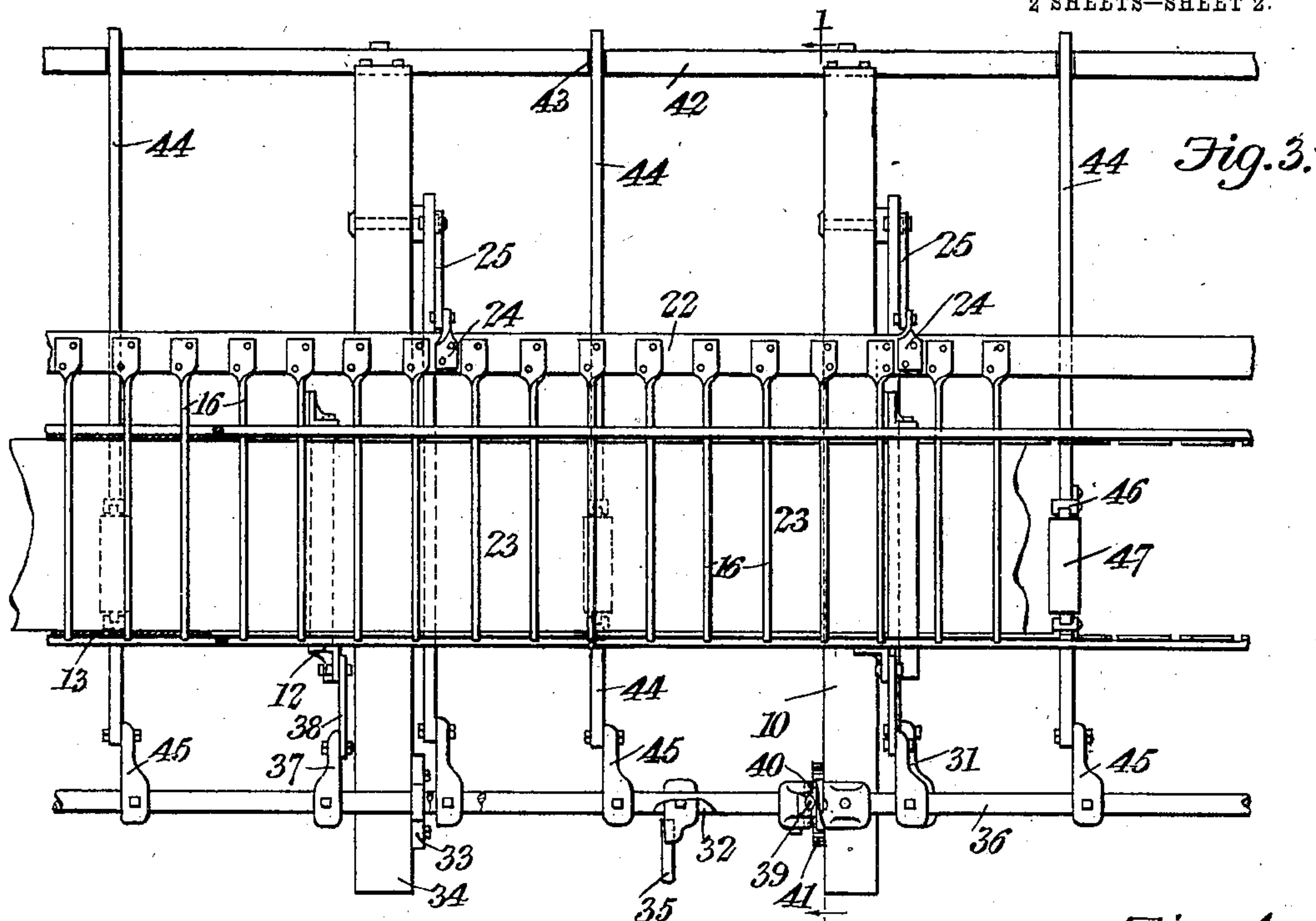
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UNITED STATES PATENT OFFICE.

RICHARD TITUS AND FRANK J. MEARING, OF BOWLING GREEN, OHIO.

MACHINE FOR MAKING ARTIFICIAL-STONE BLOCKS AND THE LIKE.

No. 832,101.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed October 18, 1905. Serial No. 283,294.

To all whom it may concern:

Be it known that we, RICHARD TITUS and FRANK J. MEARING, citizens of the United States, residing at Bowling Green, in the county of Wood and State of Ohio, have invented a new and useful Machine for Making Artificial-Stone Blocks and the Like, of which the following is a specification.

This invention relates to an improved machine for manufacturing artificial-stone building-blocks, bricks, fence-posts, columns, sills, and similar articles from cement, concrete, or other plastic material.

The object of the invention is to provide a strong, durable, and efficient machine of this character by means of which a plurality of bricks or blocks may be conveniently molded at one operation of the machine and which may also be adapted for manufacturing fence-posts, window-sills, door-steps, and similar articles of any desired length, width, and thickness.

A further object of the invention is to provide means for moving the side walls of the mold to open position and means for simultaneously elevating the molded product, so as to permit the latter to be conveniently removed from the mold without danger of breakage.

A still further object is to provide means for withdrawing the brick-forming partitions preparatory to moving the side walls of the mold to open position.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in form, proportions, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

In the following drawings, forming a part of the specification, Figure 1 is a transverse sectional view of the machine, taken on the line 1 1 of Fig. 3, showing the machine in position for molding the bricks or blocks. Fig. 2 is a similar view showing the partitions withdrawn and the side walls of the mold in open position ready to discharge the bricks. Fig. 3 is a top plan view of a portion of the machine. Fig. 4 is a front elevation of Fig. 3. Fig. 5 is a top plan view of the side walls of the mold and the core members used for

making hollow building-blocks; and Fig. 6 is a transverse sectional view taken on the line 6 6, Fig. 5.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The machine consists of a suitable supporting-frame comprising a plurality of spaced uprights or standards 5, the feet of which are preferably secured to longitudinal sills 7, while their upper ends are formed with aligned recesses or sockets 8 for the reception of a connecting-strip 9. Mounted on the upper ends of the standards 5 and secured thereto in any suitable manner are transversely-disposed cross beams or bolsters 10, which form the bed of the machine and upon which the removable bottom board 11 of the mold normally rests. Pivoted to the bolsters, as indicated at 6, are vertical braces 12, preferably formed of angle-iron, as shown, and to which are detachably secured by bolts or similar fastening devices the front wall 13 of the mold, the latter consisting of a plurality of vertical plates 14, spaced apart, as shown at 15, for the reception of the removable blades or partitions 16. The rear wall 17 of the mold is similar in construction to the front wall 13, with the exception that the vertical braces 18 are provided with angular extensions 19, which project beneath the bottom board 11. The extensions 19 are each formed with a series of openings 20, adapted to receive a bolt 21, which forms a pivotal connection between said extensions and the free ends of the vertical braces 12, so that the opening and closing movement of one wall of the mold will cause a corresponding movement of the other. Attention is here called to the fact that by having the openings formed in the extensions of the vertical braces the walls of the molds may be readily adjusted laterally to permit the formation of bricks or blocks of any desired length.

Mounted for sliding movement on the bolsters 10 is a bar or beam 22, which preferably extends the entire length of the machine and to which are bolted or otherwise rigidly secured the movable blades or partitions 16 for forming the several molding-compartments 23. Secured to the bar 22 at spaced intervals are clips 24, to which are connected, through the medium of links 25, vertical levers 26, having their lower ends pivoted, as indicated at 27, to the rear ends of the bolsters 10. Pivoted in one of a series of open-

ings 28 in the lower end of the lever 26, as by bolts 29, are horizontally-disposed bars 30, the free ends of which pass beneath the connecting-strip 9 and are pivotally connected to stub-arms 31, keyed or otherwise rigidly secured to a shaft 32. The shaft 32 is journaled in suitable bearing-brackets 33, secured to the reduced extensions 34 of the bolsters 10, said shaft being arranged at the front of the machine and operable through the medium of a hand-lever 35. It will thus be seen that by elevating the hand-lever 35 to the position shown in Fig. 2 of the drawings the stub-arms 31 will exert a longitudinal pull on the bars 30, thereby causing the latter to tilt the vertical levers 26 and withdraw the partitions from the molding-compartments. As a means for moving the front and rear walls of the mold to open and closed positions there is provided a second shaft 36, also journaled in the brackets 33 and preferably disposed above and parallel with the shaft 32. Rigidly secured to the shaft 36 are stub-arms 37, similar in construction to the arms 31, and to which are connected, through the medium of links 38, the vertical braces 12, there being a hand-operated lever 39, secured to the shaft 36, by means of which the shaft may be rotated to open and close the walls of the mold. The lever 39 is preferably provided with a pawl 40 for engagement with a segmental rack 41, secured to one of the bolsters 10, whereby the front and rear walls of the mold may be locked in either open or closed position.

Arranged at the back of the machine and secured to the rear ends of the bolsters 10 is a longitudinal supporting-bar 42, having its upper edge formed with a series of spaced notches 43, in which are seated horizontally-disposed lifting-bars 44, the opposite ends of which are pivoted to stub-arms 45, mounted on the shaft 36 between the stub-arms 37. Journaled in suitable brackets 46, secured to the intermediate portion of the lifting-bars, are cylindrical rollers 47, which normally lie below the horizontal plane of the bottom board of the mold when the lever is in the upright position, but are elevated to the position shown in Fig. 2 of the drawings when said lever is depressed, so that the bottom board of the mold will be supported on the rollers, and in which position the bottom board carrying the bricks or blocks may be readily removed from the mold.

In operation the lever 39 is moved to the upright position shown in Fig. 1, which locks the walls of the mold in closed position, after which the lever 35 is depressed, which slides the bar longitudinally of the bolsters and causes the partitions to enter the mold. The cement, concrete, terra-cotta, or other suitable material is then shoveled or otherwise introduced within the molding-compartments and tamped or not, as desired, after

which the lever 35 is elevated to withdraw the partitions and the lever 39 depressed to move the side and rear walls of the mold to open position. As the lever 39 is depressed the stub-arms 45 exert an upward pull on the adjacent ends of the lifting-bars 44, forcing the rollers in contact with the bottom board and elevating the latter above the bolsters, thereby permitting the bottom board carrying the molded bricks to be conveniently withdrawn from the machine. When the lever is moved to close the walls of the mold, the lifting-bar is depressed, thus lowering the rollers and allowing the bottom board to rest on the bolsters. When it is desired to make fence-posts, window-sills, door-steps, and similar articles, the front and rear walls of the mold are detached and the bar carrying the partitions likewise removed, suitable side and end walls of the desired shape to make the several articles being substituted for those detached.

In Figs. 5 and 6 of the drawings there is illustrated a modified form of the invention designed for making hollow building-blocks. In this case suitable auxiliary molds 48 are attached in any suitable manner to the front and rear walls of the mold, and said rear wall and the adjacent rear walls of the auxiliary molds are formed with aligned openings for the reception of core members 49, attached to a core-carrying bar 50. Secured to the bar 50 are depending blocks 51, which slide back and forth on the bolsters 10, said blocks being adapted to be pivotally connected at 52 to the links 25 when the bar carrying the partitions is detached, so that said core members may be moved to operative and inoperative positions by the movement of the lever 35 in the manner before stated.

From the foregoing description it is thought that the operation and advantages of the machine will be readily understood by those skilled in the art, and further description thereof is deemed unnecessary.

Having thus described the invention, what is claimed is—

1. In a machine of the class described, a mold having movable walls, a movable bottom plate arranged within the mold, lifting mechanism for elevating the bottom plate to permit the withdrawal of the latter from one end of the machine, and means for moving the walls to open position and simultaneously actuating the lifting mechanism.

2. In a machine of the class described, a mold having movable front and rear walls, a movable bottom plate, horizontally-disposed lifting-bar arranged beneath the bottom plate, and means for moving the walls of the mold to open position and simultaneously actuating the lifting-bar to elevate the bottom plate.

3. In a machine of the class described, a mold having movable walls, a movable bot-

tom plate arranged within the mold, a lifting-bar for elevating the bottom plate and having a roller journaled thereon for engagement with said bottom plate, and means for moving the walls to open position and simultaneously actuating the lifting-bar.

4. In a machine of the class described, a mold having movable walls, a movable bottom plate arranged within the mold, a pivoted lifting-bar one end of which is movable into engagement with the bottom plate for elevating the latter, partitions dividing the mold into a plurality of molding-compartments, means for withdrawing the partitions, and means for moving the walls of the mold to open position and simultaneously actuating the lifting-bar.

5. In a machine of the class described, a supporting-frame, bolsters extending transversely of the frame, a mold supported by the frame and provided with movable walls, a movable bottom plate resting on the bolsters, and means for moving the walls to open position and simultaneously elevating the bottom plate.

6. In a machine of the class described, a supporting-frame, bolsters extending transversely of the frame, a mold supported by the frame and having movable front and rear walls, a movable bottom plate resting on the bolsters, a lifting-bar having a roller journaled thereon for engagement with the bottom plate, and means for moving the front and rear walls of the mold to open position and simultaneously actuating the lifting-bar.

7. In a machine of the class described, a supporting-frame, a mold having movable front and rear walls pivotally connected together, a movable bottom plate arranged within the mold, a shaft journaled longitudinally of the frame and connected to one of the movable walls, a lifting-bar for elevating the bottom plate, and a lever secured to the shaft for rotating the latter to thereby move the walls to open position and simultaneously actuate the lifting-bar.

8. In a machine of the class described, a supporting-frame, a mold having one of its walls pivotally supported on the frame and its opposite walls slidably mounted thereon, a movable bottom plate arranged within the mold, partitions dividing the mold into a plurality of compartments, means for the elevating of the bottom plate, means for moving the walls of the mold to open position and simultaneously actuating the lifting means and means for withdrawing the partitions.

9. In a machine of the class described, a supporting-frame, a mold having one of its walls pivotally supported on the frame and its opposite wall slidably mounted thereon, a movable plate arranged within the mold, a lifting-bar for elevating the bottom plate, partitions piercing the sliding wall of the mold, means for withdrawing the partitions, and

means for moving said walls to open position and simultaneously actuating the lifting-bar.

10. In a machine of the class described, a mold having movable walls, a bottom plate disposed within the mold, a plurality of partitions dividing the mold into a series of molding-compartments, a lifting member for elevating the bottom board, means for adjusting the width of the mold, means for moving the walls of said mold to open position and simultaneously actuating the lifting member and means for withdrawing the partitions.

11. In a machine of the class described, a mold having movable walls, a bottom plate arranged within the mold, a lifting member for elevating the bottom board and having a roller journaled thereon, means for moving the walls to open position and simultaneously elevating the lifting member, and means for locking the lifting member in operative position.

12. In a machine of the class described, a mold having movable walls, a lifting member for elevating the molded product, means for moving the walls of the mold to open position and simultaneously elevating the lifting member, a plurality of molding-compartments, means for withdrawing the partitions and means for locking the walls of the mold in open position, said means also serving to lock the lifting member in elevated position.

13. In a machine of the class described, a supporting-frame, a mold having movable walls one of which is provided with an angular extension for pivotal connection with the other, a shaft journaled on the frame and provided with spaced stub-arms, links connecting the stub-arms and one of the movable walls of the mold, a bottom plate disposed within the mold, a lifting-bar pivotally connected with the shaft for elevating the bottom plate, and a lever for rotating the shaft.

14. In a machine of the class described, a supporting-frame, bolsters extending transversely of the frame, a mold having one of its walls pivoted to the bolsters and its opposite wall mounted for sliding movement thereon, said sliding wall being provided with an angular extension for pivotal connection with the opposite wall and having a series of spaced openings formed in extensions, a movable bottom plate arranged within the mold, a beam secured to the rear ends of the bolsters and provided with a series of spaced recesses, a shaft journaled on the front end of the bolsters, a pivoted connection between the shaft and the pivoted wall of the mold, lifting-bars seated in the recesses in the beam and pivotally connected with the shaft, rollers carried by the lifting-bars for engagement with the bottom plate, and a lever secured to the shaft for rotating the latter.

15. In a machine of the class described, a supporting-frame, bolsters extending trans-

versely of the frame, a mold having movable walls one of which is provided with spaced openings, a movable bottom plate arranged within the mold, a shaft journaled in the
5 frame and having a pivotal connection with the walls of the mold for moving the latter to open position, lifting-bars pivotally connected with the shaft for elevating the bottom plate, a second shaft arranged parallel with
10 the first shaft, a bar slidably mounted on the bolsters and carrying a plurality of partitions adapted to enter the spaced openings in the wall of the mold, levers pivoted to the bolsters, a pivotal connection between the long
15 end of each lever and the sliding bar; a piv-

oted connection between the short end of said levers and the second shaft, means for rotating said shaft to withdraw the partitions, and means for rotating the first shaft to open the walls of the mold and simultaneously elevate 20 the lifting-bars.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

RICHARD TITUS.
FRANK J. MEARING.

Witnesses:

J. E. KELLY,
A. M. ABBOTT.