

No. 799,610.

PATENTED SEPT. 12, 1905.

H. E. MAYNARD.
ARTIFICIAL BUILDING BLOCK MOLD.

APPLICATION FILED FEB. 8, 1905.

3 SHEETS—SHEET 1.

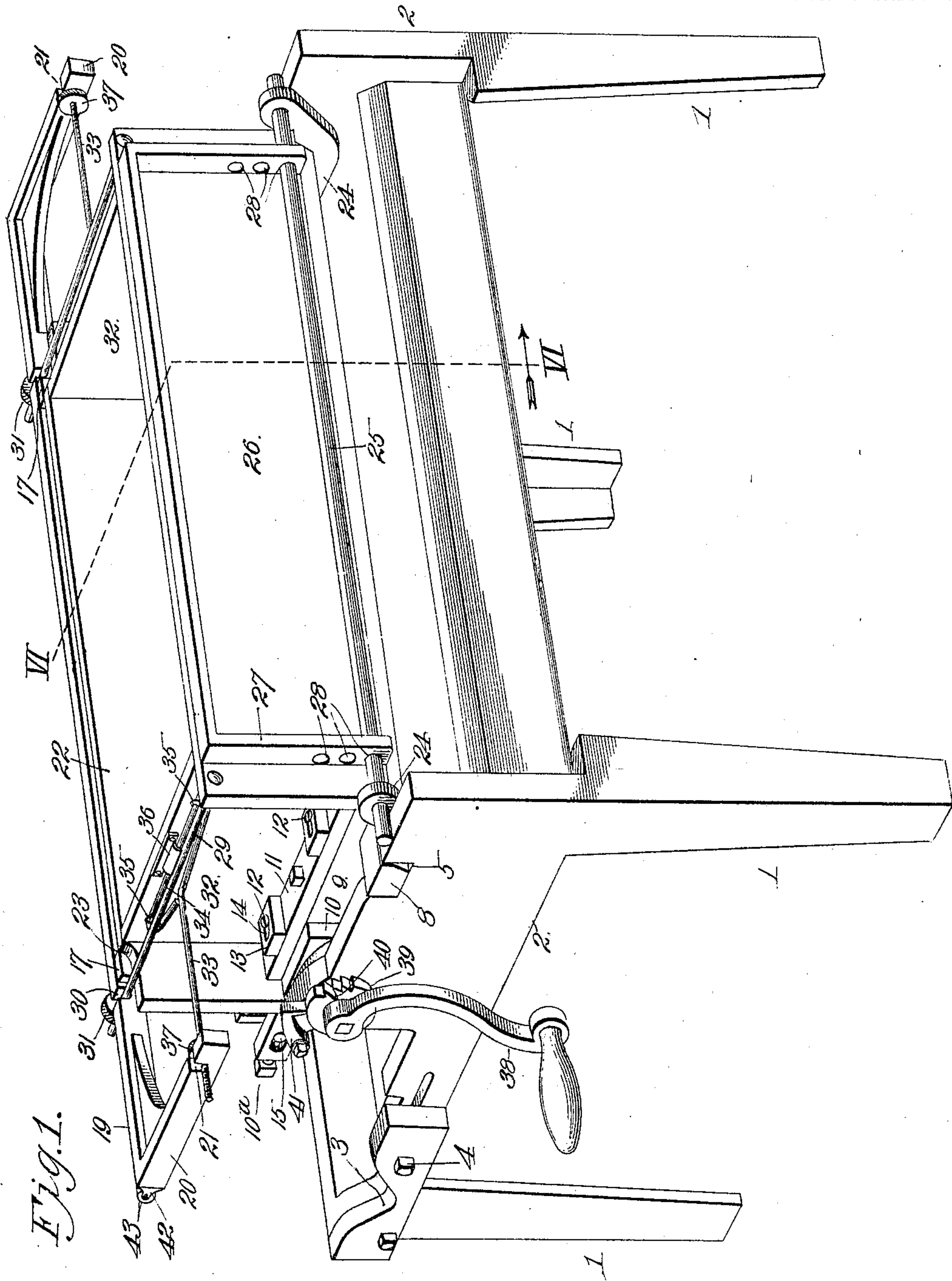


Fig. 1.

Witnesses

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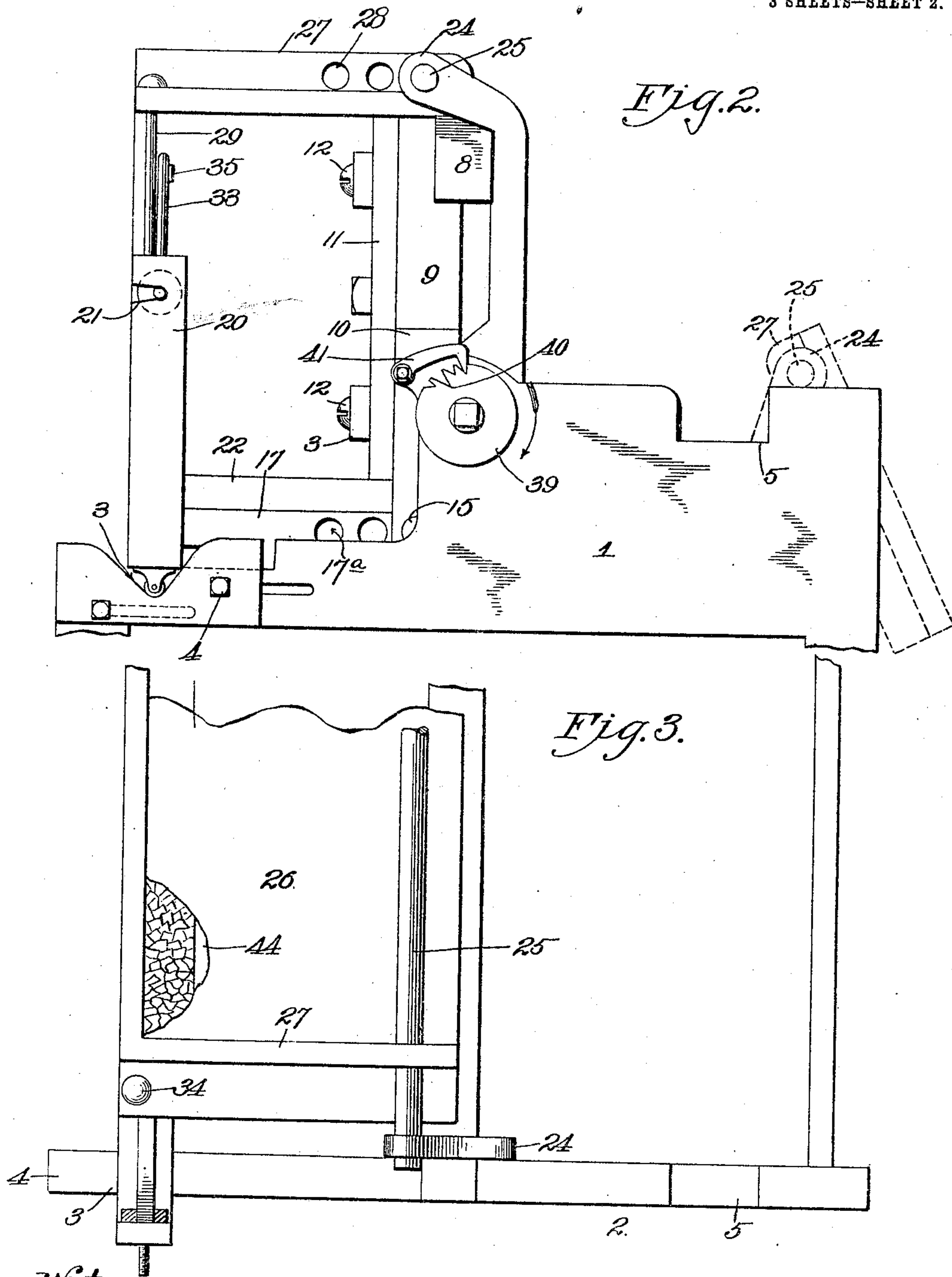
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 5.

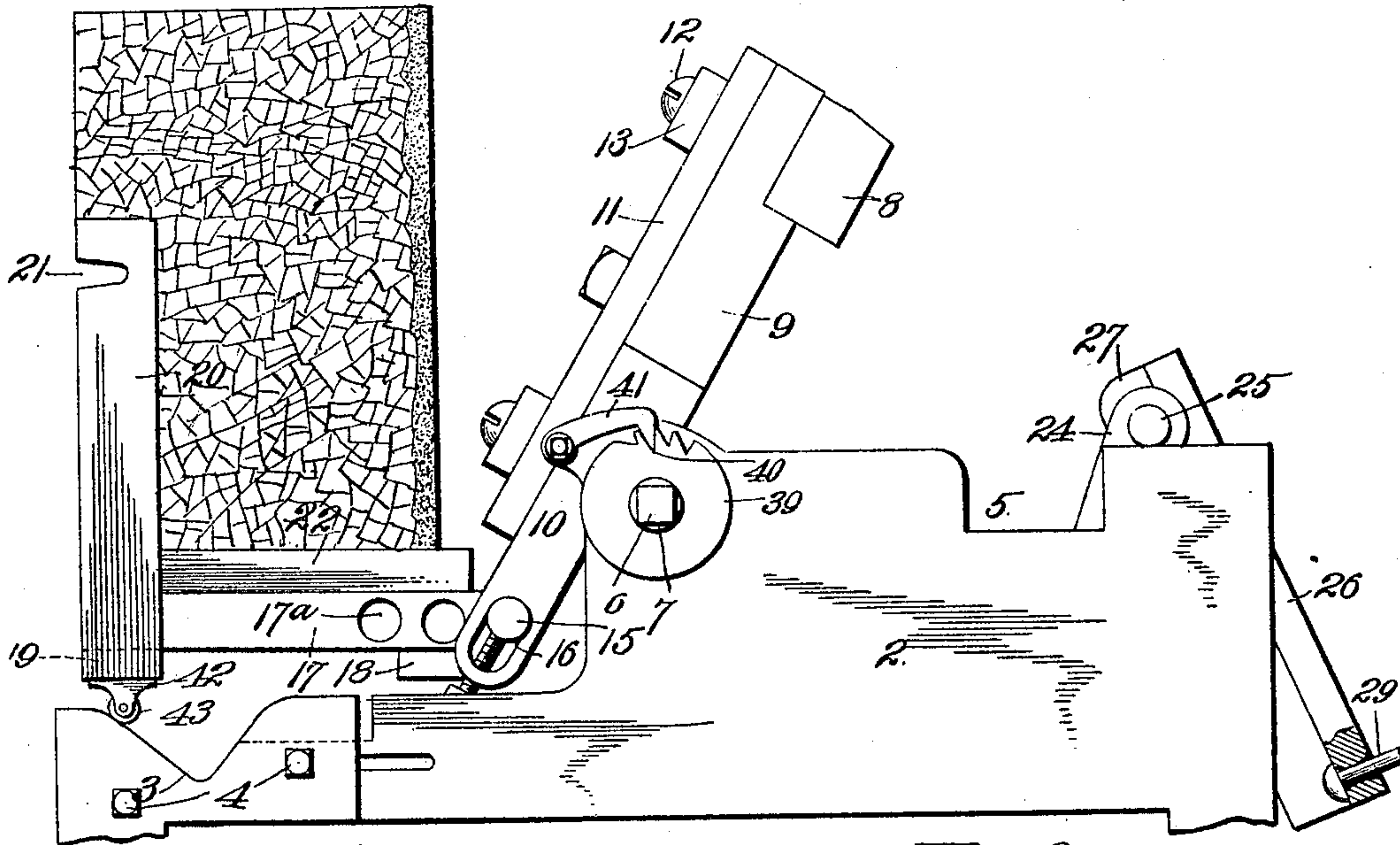


Fig. 4.

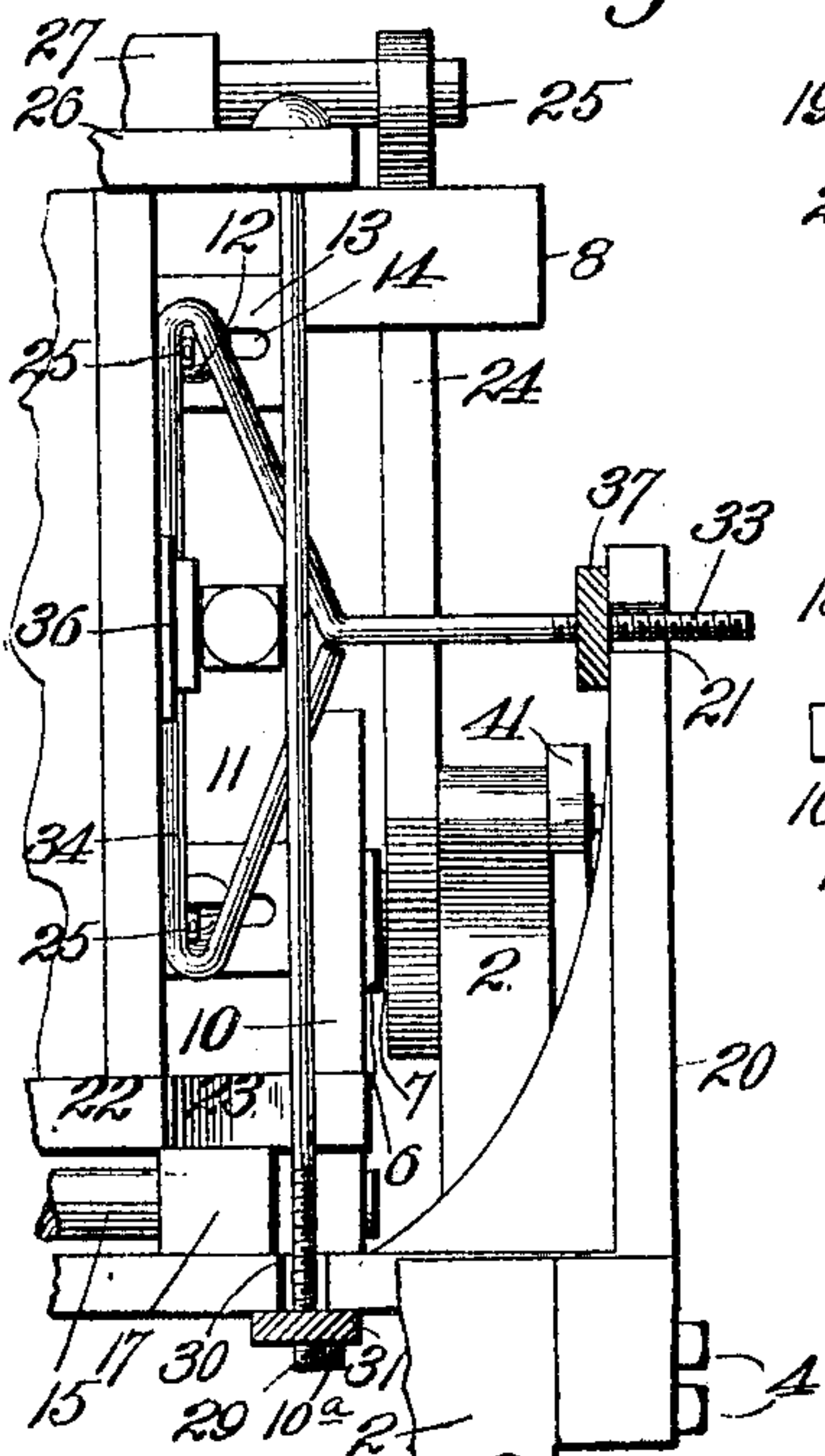
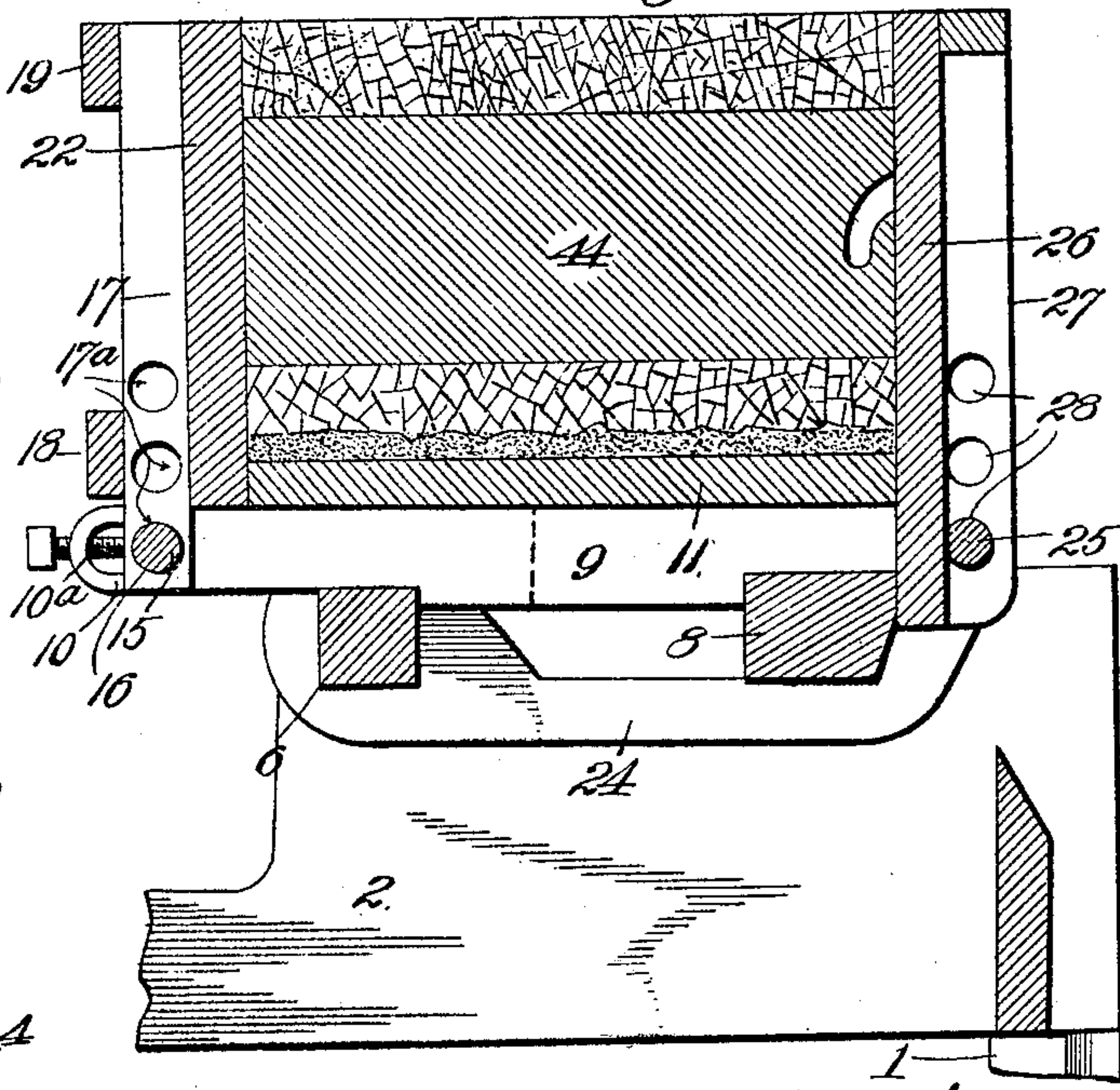


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

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ARTIFICIAL-BUILDING-BLOCK MOLD.

No. 799,610.

Specification of Letters Patent.

Patented Sept. 12, 1905.

Application filed February 8, 1905. Serial No. 244,798.

To all whom it may concern:

Be it known that I, HARRY E. MAYNARD, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Artificial-Building-Block Molds, of which the following is a specification.

My invention relates to artificial-stone molds; and my object is to produce a mold by which the stone can be made rapidly and true and handled safely and easily.

A further object is to produce a mold adjustable to produce stone blocks of varying length, width, thickness, and pattern.

A still further object is to produce a mold of simple, strong, durable, and comparatively inexpensive construction.

With these objects in view the invention consists in certain novel and peculiar features of construction and organization, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a perspective view of a mold embodying my invention. Fig. 2 is an end view with the mold occupying the position to which it is swung after the concrete block is formed and also shows the permanent side swung back in dotted lines to expose and permit the core to be removed. Fig. 3 is a top view with the parts as in Fig. 2. Fig. 4 is a side view with the parts as in Fig. 2. Fig. 5 is an end view with the parts as they are disposed immediately before the block of stone is removed. Fig. 6 is a section on the line VI VI of Fig. 1.

In the said drawings, 1 indicates legs surmounted by horizontally-slotted end bars 2, provided with plates having inclined surfaces 3 and clamp-bolts 4, engaging the slots of the end bars to secure the plates in the required position, said plates also having notches 5 in their upper edges.

6 is a rod preferably square and having cylindrical ends 7, journaled in bars 2, and 8 is a parallel rod normally resting at its ends in notches 5, said rods being rigidly connected by cross-bars 9 and provided with slotted arms 10, disposed in the same horizontal plane as bars 9 and projecting beyond rod 6 at the opposite side of the same from bar 8.

11 is a face-plate secured upon cross-bars 9 and provided with clamp-bolts 12, by which the blocks 13 may be secured upon the face-plate at the desired point of longitudinal ad-

justment, the blocks having longitudinal slots 14 to permit of such adjustment, and hence coöperate with parts hereinafter described in determining the length of the stones to be made, it being also understood that the face-plate is removable in order that it may be replaced by one of a different pattern—i. e., one may produce a smooth face and the other an embossed face on the stone block. For convenience the parts 6 to 11 are hereinafter denominated the "face-plate frame," when referred to collectively.

A skeleton frame pivoted to the face-plate frame consists of rod 15, pivoted at 16 in the slots of arms 10 and adjustable therein by set-screws 10^a, end bars 17, having a series of holes 17^a for engagement with said rod, a longitudinal bar 18, connecting the end bars near the rod, a longitudinal bar 19, connecting the normally upper ends of said end bars and also projecting beyond the same, and arms 20, rigid with and projecting from the ends of bars 17 about parallel with and normally oppositely to arms 10 and provided with longitudinally-alined notches 21 in their upper edges, which notches normally occupy about the same vertical plane as the center of the face-plate.

22 indicates one side of the mold, being preferably of wood for purposes of economy, because in the production of a large number of artificial-stone blocks within a short period a corresponding number of such sides must be employed, as will be hereinafter explained. Said side fits between the skeleton frame and the adjacent edge of the face-plate and normally extends edgewise on the face-plate frame and is preferably recessed in its upper edge and ends, as at 23, for a purpose which hereinafter appears. The sides 22 may be of variable thickness, as they are accommodated simply by adjusting the pivoted frame toward or from the face-plate through the instrumentality of set-screws 10^a.

24 represents links pivoted on the cylindrical ends 7 of rod 6 between arms 10 and end bars 2 and normally underlying rods 8 and projecting beyond and above the same, a pivot-rod 25, journaled in said projecting ends and extending parallel with rods 6 and 8, resting normally upon end bars 2 and carrying the other "side" 26 of the mold. Said side is normally vertical and preferably of metal, as it is the permanent side, and it is provided with ribs 27, having a plurality of alined holes 28, any set of which is adapted

to receive the pivot-rod 25, it being also understood that the vertical adjustment of side 26 and of the skeleton frame or rod 15 for the purpose of producing stone blocks of varying thickness should be accompanied by the substitution of a removable side 22 of width to project to about the same vertical plane as the upper edge of the sides 26.

Clamps to secure the sides vertically and the skeleton frame likewise consist of a pair of rods 29, pivoted to the permanent side near its extreme ends and extending normally through the recesses 23 of sides 22 and through notches 30 in the normally upper edge of the skeleton frame, and collars 31, adjustable on said rods and bearing against the outer side of the skeleton frame, the rods and collars preferably having a threaded relation to permit of a quick and reliable adjustment and also to accommodate lateral adjustment of the skeleton frame for removable sides of varying thickness.

To prevent the sides from inclining inwardly and upwardly and to form the ends of the block of stone, vertical end plates 32 rest upon the face-plate normally and against the inner ends of blocks 13 and are clamped between the sides, tilting movement endwise of the mold being prevented by hinged clamps carried by said end plates. Said clamps consist of rods 33, threaded at their outer ends and resting in aligned notches 21 of arms 20 and formed with the transverse portion 34, pivoted between hooks 35 and 36, and adjustable on the threaded portion of the rods are collars 37 to bear against the inner sides of the arms 20, this adjustability permitting the end plates to be moved toward each other with the blocks 13 to make the blocks of stone of variable length. To make very short blocks of stone, longer blocks 13 and longer clamp-rods 33 will preferably be used, the rods being detachable from the end plates to avoid the necessity of having extra end plates.

Secured detachably to one end of hinge-rod 6 is a crank-handle 38 and a ratchet-wheel 39, one of the notches of the ratchet-wheel being preferably deepened, as at 40, for a purpose which hereinafter appears, and engaging said ratchet-wheel is a gravity-dog 41, pivoted to operate vertically on the contiguous end bar 2.

42 represents brackets secured to bar 20 and carrying small track-rollers 43 for travel at times upon the trackways 3.

In operation with the parts disposed as shown in Fig. 1 the mixed cement and sand is deposited to the required depth in the mold, the lower side of this material being adapted to form the face of the stone. Concrete is then introduced into the mold to the required thickness and tamped, and then the core 44 is fitted in the mold and pressed down upon the concrete, this core being of width to fit snugly against the sides, though it is usually shorter

than the mold and in thickness is several inches less than the depth of the latter. Additional concrete is then deposited in the mold at the ends and above the core until the latter is completely covered to the required depth, which concrete is tamped. When the stone, or rather the compressed composition, has been sufficiently tamped, the attendants (there are preferably two of them) grasp the mold and swing it to the position shown in Fig. 2, rod 6 forming the axis of such movement. In its new position the rollers rest upon trackways 3, which have been disposed by proper adjustment to receive said rollers inward when the mold is narrowed and outward when the depth of the mold is increased. If desired, the mold can be moved to the position described by means of the crank-handle. The operators then disconnect the clamp-rods from the skeleton frame and swing the permanent side to the position shown in dotted lines, Fig. 2, so as to leave exposed the corresponding side of the block of stone and the core, the latter being of such construction that it can be readily grasped and pulled vertically upward out of the stone without injury to the latter. This operation is rendered more feasible because the stone rests upon the removable side, now horizontally disposed, between the end plates, and against the face-plate, now vertically disposed. The operators then withdraw the face-plate by either grasping the upper portion of the same and swinging it rearwardly or, and preferably, by grasping the crank-handle and turning it in the direction indicated by the arrow, Fig. 2. As this operation is a delicate one, in order to avoid the possibility of injuring or marring the face of the stone it is desirable to not only withdraw the face-plate, but to simultaneously push the removable side in the opposite direction, this simultaneous opposite movement effecting the separation without the possibility of any scraping contact between the stone and the face-plate, and in view of the fact that the removable frame has a hinge-support—viz., rod 15, which in turn travels concentrically of rod 6—I have provided means to lift the opposite edge of said frame the same distance that its hinged end rises in such separating movement, said means being the rising trackway, the rollers being employed simply to eliminate friction. When the face-plate frame and the skeleton frame have been moved the distance required, the dog drops into the deep notch 40 of the ratchet-wheel and checks further movement in the same direction, though the operator at the corresponding end of the mold can raise the dog and move said parts a greater distance, if desired. When the dog is engaging notch 40, it not only checks the movement, as stated, but also prevents accidental back movement in case the pressure upon the crank should be accidentally removed, the other teeth of the ratchet-wheel

also serving to guard against any accidental back movement, because such movement at any time would likely be disastrous, as the weight of the stone would bring the two
 5 hinged frames back to their original positions with sufficient force to change the relation between the stone and said frames, and the slightest change would obviously result in defacement of the former—for instance, through
 10 a chipped corner or edge. The operators next remove the end plates and then grasp opposite ends of the removable side and carry the stone where required, leaving it upon said side until thoroughly hardened and capable
 15 of being handled. As soon as one complete stone is laid aside the operators take a new removable side to form a part of the mold for the next block of stone, when the operations above described are repeated. The face-plate
 20 is removable in order that it may be replaced with a different style or pattern of plate—for instance, by a plate to produce a pitched surface or any other style of surface required—and the same is true of the end plates, which
 25 may be replaced by plates which will produce pitched or other effects on the ends of the stone.

From the above description it will be apparent that I have produced a mold for artificial stone which possesses the features of
 30 advantage enumerated as desirable and which obviously may be modified in various particulars without departing from its essential spirit and scope or sacrificing any of the advantages of the invention.

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

1. A mold, comprising a suitable support,
 40 a face-plate carried by and having a hinged relation with said support, a side having a hinged relation with the face-plate, a frame having a hinged relation with the face-plate, a side interposed between said frame and the
 45 face-plate, end plates upon the face-plate and between the sides, and means for securing the sides and end plates reliably together.

2. A mold, comprising a suitable support, a face-plate carried by and having a hinged
 50 relation with said support, a side having a hinged relation with the face-plate, a frame having a hinged relation with the face-plate, a side interposed between said frame and the face-plate, end plates upon the face-plate and
 55 between the sides, means for securing the sides and end plates reliably together, and trackways to receive and support at times the normally upper portion of the hinged frame contiguous to the said interposed side.

3. A mold, comprising a suitable support,
 60 a face-plate carried by and having a hinged relation with said support, a side having a hinged relation with the face-plate, a frame having a hinged relation with the face-plate,
 65 a side interposed between the frame and the

face-plate, end plates upon the face-plate and between the sides, means for securing the side and end plates reliably together, trackways to receive and support at times the
 normally upper portion of the hinged frame
 70 contiguous to the said interposed side, means for checking movement imparted to the frame and to the face-plate by the rotation of the hinge or pivot of the face-plate and for preventing back rotation of said hinge or pivot.
 75

4. A mold, comprising a suitable support, a face-plate carried by and having a hinged relation with said support, a side having a hinged relation with the face-plate, a frame
 80 having a hinged relation with the face-plate, a side interposed between said frame and the face-plate, end plates upon the face-plate and between the sides, means for securing the sides and end plates reliably together, trackways
 85 rising toward their outer ends, rollers carried by the hinged frame contiguous to said interposed side and adapted to roll upon the trackways, and means to secure the parts with
 90 said rollers at the desired point upon the trackways.

5. A mold, comprising a suitable support, a face-plate frame having a hinge-rod journaled in the support and a second rod bearing upon the support, hinged arms, a side hinged
 95 to said arms, a frame having a hinged relation with the face-plate, a side interposed between said frame and the face-plate, end plates upon the face-plate and between the sides, and means for securing the sides and end plates reliably together.
 100

6. A mold, comprising a suitable support, a face-plate carried by and having a hinged relation with said support, a side having a hinged relation with the face-plate, arms projecting rigidly from the hinged face-plate
 105 frame and beyond the contiguous edge or side thereof, a frame hinged to and between said arms, a side interposed between said frame and the face-plate, end plates upon the face-plate and between the sides, and means for
 110 securing the sides and end plates reliably together.

7. A mold, comprising a suitable support, a face-plate carried by and having a hinged relation with said support, a side having a hinged relation with the face-plate, a frame
 115 having a hinged relation with the face-plate, a side interposed between said frame and the face-plate, blocks secured, on the upper side of the face-plate, end plates upon the face-plate
 120 and engaging the inner ends of said blocks and the inner surface of the sides, and means for securing the sides and end plates reliably together.

8. A mold, comprising a suitable support,
 125 a face-plate carried by and having a hinged relation with said support, a side having a hinged relation with the face-plate, a frame having a hinged relation with the face-plate,
 130 a side interposed between said frame and the

face-plate, end plates upon the face-plate and between the sides, pivoted clamp-rods carried by the permanent or hinged side bridging said interposed side and detachably clamping the hinged frame outward of said interposed side and against the latter, and means for securing the end plates against tilting movement, between said sides.

9. A mold, comprising a suitable support, a face-plate carried by and having a hinged relation with said support, a side having a hinged relation with the face-plate, a frame having a hinged relation with the face-plate, a side interposed between said frame and the face-plate, end plates upon the face-plate and between the sides, means for clamping the sides in the vertical position and the frame engaging said interposed side in substantially a vertical position, arms projecting from said last-named frame, hinged rods carried by the end plates and projecting outward therefrom, and adjustable collars mounted on said rods and engaging said arms.

10. A mold, comprising a suitable support, a face-plate carried by and having a movable relation with said support, a side having a movable relation with the face-plate, a frame having a movable relation with the face-plate, a side interposed between said frame and the face-plate, end plates upon the face-plate and between the sides, and means for securing the sides and end plates reliably together.

11. A mold, comprising a suitable support,

a face-plate carried by and having a movable relation with said support, a side having a movable relation with the face-plate, a frame having a movable relation with the face-plate, a side interposed between said frame and the face-plate, end plates upon the face-plate and between the sides, means for securing the sides and end plates reliably together, and trackways to receive and support at times the normally upper portion of the movable frame contiguous to the said interposed side.

12. A mold, comprising a suitable support, a face-plate carried by and having a movable relation with said support, a side having a movable relation with the face-plate, a frame having a movable relation with the face-plate, a side interposed between the frame and the face-plate, end plates upon the face-plate and between the sides means for securing the sides and end plates reliably together, trackways to receive and support at times the normally upper portion of the movable frame contiguous to the said interposed side, means for checking movement imparted to the frame and face-plate, and means for preventing back movement of said parts.

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

HARRY E. MAYNARD.

Witnesses:

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G. Y. THORPE.