No. 841,880. PATENTED JAN. 22, 1907.

F. F. MARTIN.

MOLDING MACHINE.

APPLICATION FILED AUG. 6, 1906.

3 SHEETS—SHEET 1.

Fig. 1.

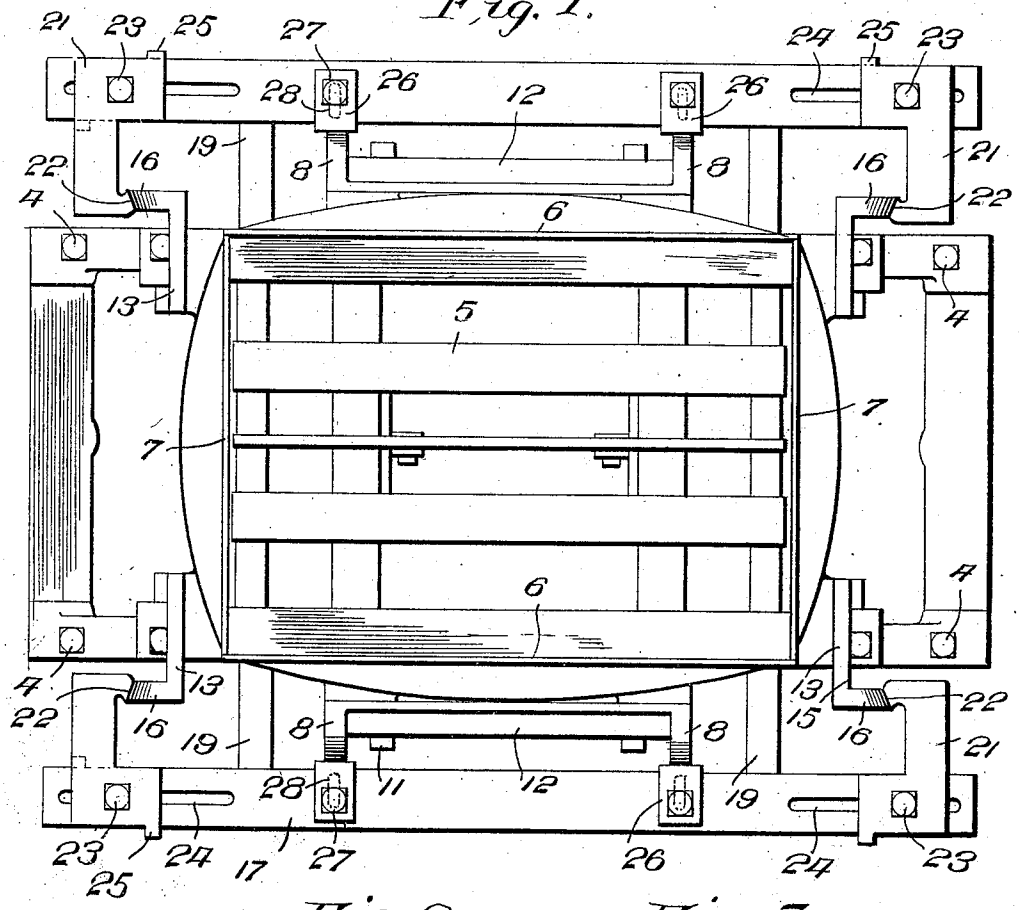


Fig. 6.

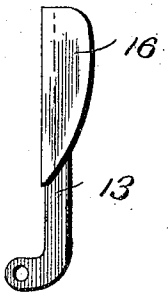
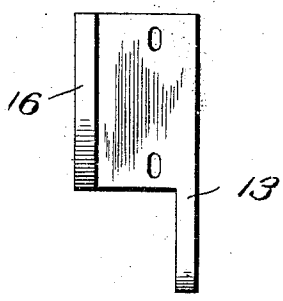


Fig. 7.



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3 SHEETS—SHEET 2.

Fig. 2

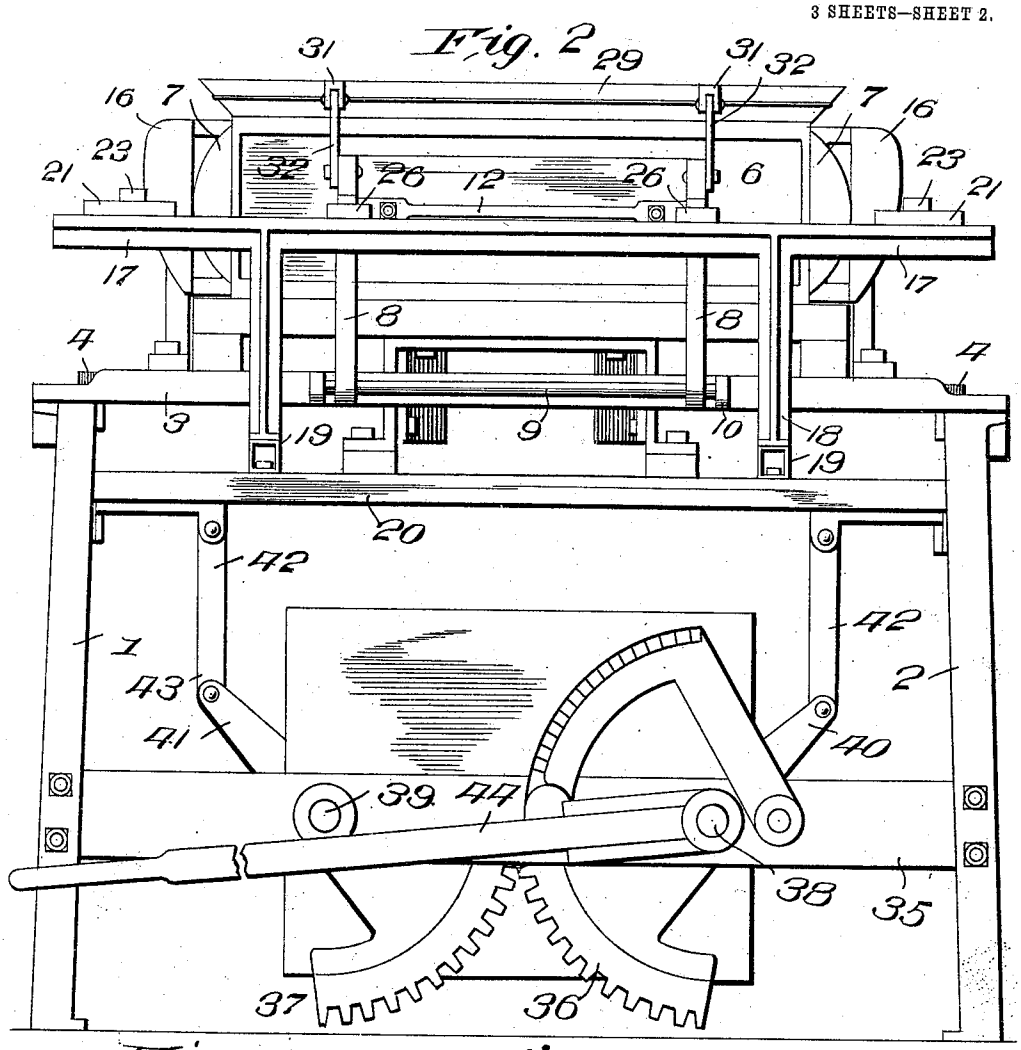


Fig. 4.

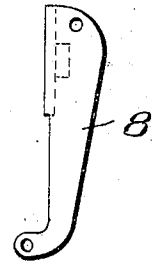
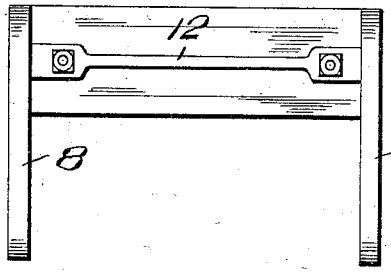


Fig. 5



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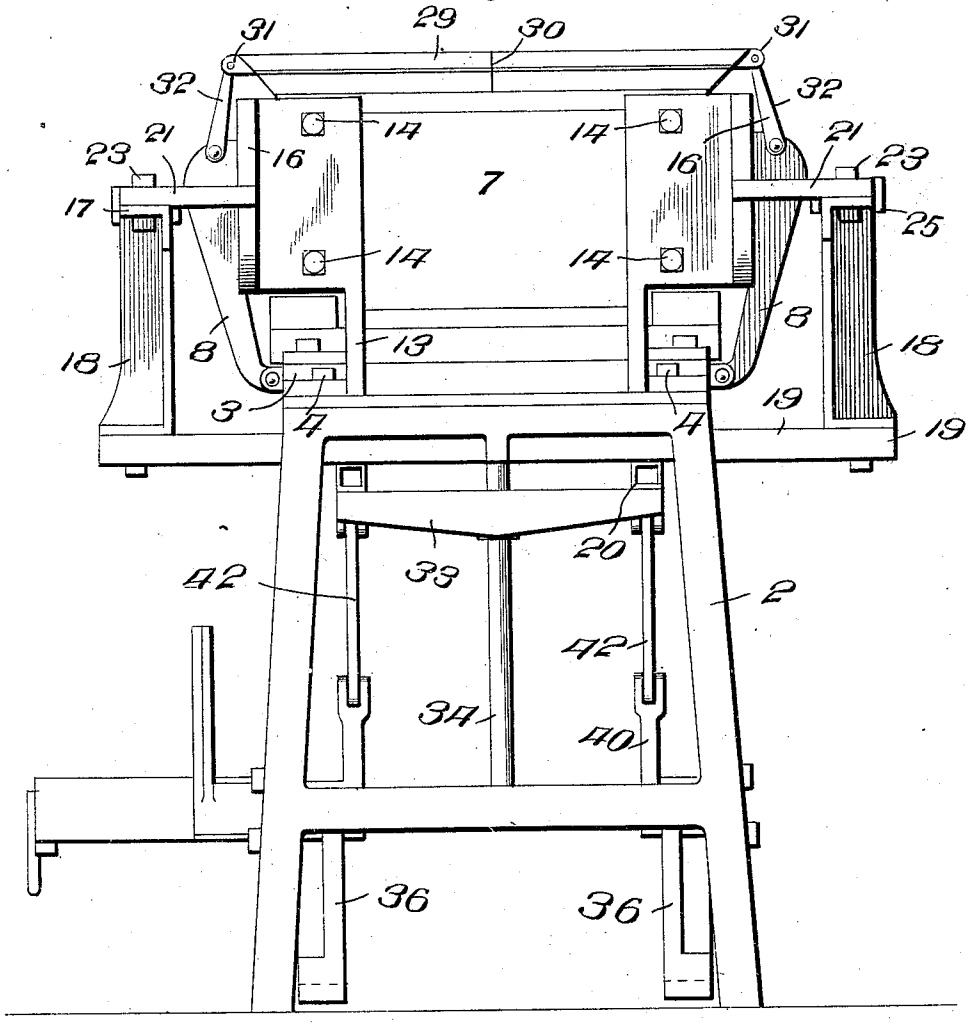
3 SHEETS—SHEET 3.

Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK F. MARTIN, OF BELOIT, WISCONSIN.

MOLDING-MACHINE.

No. 841,880. Specification of Letters Patent. Patented Jan. 22, 1907.

Application filed August 6, 1906. Serial No. 329,481.

To all whom it may concern:

Be it known that I, FRANK F. MARTIN, a citizen of the United States, residing at Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Molding-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to molding-machines, and is designed more especially as an improvement over my former patent granted March 27, 1906, and No. 816,488; and my object is to provide means for readily disposing the side and end walls of the mold into or out of engagement with each other.

A further object is to provide means for securely locking the walls in coöperation with each other when it is desired to mold a block.

A still further object is to provide means for readily disposing the hopper portion of the device from off the side and end sections.

Other objects and advantages will hereinafter be referred to, and more particularly pointed out in the claims.

In the accompanying drawings, which are made a part of this application, Figure 1 is a top plan view of my improved mold, showing the hopper removed therefrom. Fig. 2 is a side elevation of my improved mold complete. Fig. 3 is an end elevation thereof. Figs. 4 and 5 are end and side elevations, respectively, of wedging devices for the side sections of the mold; and Figs. 6 and 7 are end and side elevations, respectively, of the locking mechanism for the end sections of the mold.

Referring to the drawings, in which similar reference-numerals designate corresponding parts throughout the several views, 1 and 2 indicate supporting-brackets, to the upper ends of which are secured connecting-rails 3, the rails being held rigid with the supporting-brackets by means of bolts or the like 4.

A platform 5 is mounted upon the rails 3, said platform being constructed in any preferred manner, as by a plurality of slats secured together, as best shown in Fig. 1 of the drawings. Disposed around the platform 5 are side and end walls 6 and 7, respectively, the side walls being secured to the connecting-rails 3 by means of arms 8 engaging a rod 9, disposed through ears 10, carried by the connecting-rails 3, the arms 8 being secured to the side walls in any preferred manner, as by bolts 11 extending through a connecting-bar 12 and into the side walls 6. The end walls 7 are pivotally mounted upon the connecting-rails 3 by means of arms 13, the lower end of said arms being secured to the inner face of said rails, while the body portion thereof is secured to the end walls by means of bolts 14, each of said arms having formed integral therewith and at right angles thereto a locking-bar 16, one edge of said bars being tapered from top to bottom, while the surface thereof is pitched laterally from one side to the other.

A plate 17 is disposed along each side of the walls 6, said plates being supported by means of standards 18, which are in turn mounted upon laterally-disposed beams 19, which are carried by a movable table 20. The plates 17 are provided at each end with laterally-extending arms 21, each of said arms having an extension 22, one face of which is beveled to conform to the edge of the locking-bar 16.

The laterally-extending arms 21 are adjustably mounted upon the plates 17 by means of bolts 23, extending through the arms 21 and through elongated slots 24 in the plates 17. The arms 21 are held at right angles to the plate 17 by means of downwardly-extending lugs 25, one or more of which are disposed on each side of the plate 17, and by which construction it will be seen that it will be impossible for the extension 22 to move away from the face of the locking-bar 16. It will further be seen that by adjustably mounting the arms 21 upon the plates 17 as the meeting faces of the extension 22 and locking-bars become worn the arms 21 may be adjusted inwardly to compensate for such wear.

The object in providing the locking-bars 16 and the laterally-extending arms 21 is to control the movement of the end walls 7, it being understood that when the plates 17 are lowered the arms 21 will travel toward the tapered end of the locking-bars 16, thereby allowing the end walls 7 to swing upon the arms 13 and dispose the end walls out of engagement with the molded article. It will also be seen that when the plates 17 are again elevated the extension 22 will engage the faces of the locking-bars 16 and swing the end walls upwardly and inwardly until they assume a vertical position.

The outer edges of the arms 8 are also tapered from top to bottom and are adapted to coöperate with blocks 26, secured to the plates 17 and in the path of the arms 8, the

blocks being adjustably secured to the plates by means of bolts 27, extending through the blocks and through slots 28 in the plates 17, the object in having the slots being to allow the blocks to be adjusted inwardly to compensate for the wear between the face of the arms 8 and the blocks. In like manner it will be seen that when the plates 17 are lowered the side walls will swing upon their pivot-points and be directed downwardly and away from the molded article, the side and end walls being so arranged that they will move away from the molded article simultaneously, and they will also be elevated and directed together at one and the same time.

The hopper 29 is loosely disposed upon the upper edges of the assembled side and end walls, said hopper being constructed in two sections, the dividing-line being preferably at the center of the end walls, as best shown at 30 in Fig. 3 of the drawings, each section of the hopper having ears 31, to which are pivotally secured links 32, the opposite ends of said links being pivotally secured to the arms 8, so that when it is desired to dispose the hopper from off the side and end walls the sections thereof are disposed laterally and caused to swing upon the links 32, which action will direct the sections onto the plates 17, where they will be supported until such time as it is desired to again dispose them into position over the side and end walls.

The movable table 20 is supported at each end by means of a cross-head 33, said cross-head being secured to the table-sections in any preferred manner, and is provided at its central portion with an opening through which is disposed a shaft 34, rigidly secured in the supporting-brackets 1 and 2, the shafts 34 serving as guides for the cross-heads 33, which are vertically movable on the shafts.

The supporting-brackets 1 and 2 are connected near their lower ends by means of parallel brace-bars 35, between which are mounted a pair of coöperating toothed sectors 36 and 37, which are rigidly mounted upon supporting-shafts 38 and 39, respectively. Each of the sectors is provided with an extension or arms 40 and 41, respectively, to the free ends of which are pivotally secured links 42 and 43, respectively, the upper ends of said links being pivotally secured to the movable table 20. The supporting-shaft 38 has rigidly secured to one end thereof an operating-lever 44, by which means the sectors are caused to coact with each other and be rotated with their respective shafts.

In operation the lever 44 is disposed downwardly, which action causes the table 20 to be elevated, thereby disposing the arms 21 and blocks 26 into engagement with the locking-bars 16 and arms 8, respectively, and by the continuous upward movement of the table and parts carried thereby the end and side walls will be directed together and form a mold. The sections of the hopper 29 are then directed together, after which material may be disposed into the mold formed by the end and side walls. After the article has been properly molded the lever 44 is elevated, thereby lowering the table 20 and parts carried thereby and allowing the end and side walls to swing downwardly and outwardly from the molded article, the hopper-sections having previously been disposed out of the way by swinging the same on the links 32. The molded article is then removed from off the platform and the above-described operation repeated.

It will thus be seen that I have provided a cheap and economical device for molding blocks of plastic material and one that can be readily and rapidly operated, the parts thereof being so constructed that any wear caused by use may be readily compensated for, so that the molded article will be made perfectly true at all times.

What I claim is—

1. The combination with connecting-rails and supporting-brackets therefor; of a platform, side and end walls disposed around said platform, arms rigid with the side walls and pivoted to the said rails, said arms having tapered faces, arms rigid with the end walls and pivotally secured to said rails, locking-bars on said arms; plates paralleling the side walls, means on said plates to engage said first-mentioned arms and the locking-bars, and means to raise and lower said plates whereby the end and side walls will be raised or lowered.

2. The combination with connecting-rails and supports therefor; of a table slidably mounted on said supports, a platform on said rails, side and end walls around and above said platform, arms secured to said side walls and pivotally mounted upon the connecting-rails, said arms having tapered faces, arms secured to said end walls, locking-bars at right angles to said arms, plates carried by said table and means adjustably secured to said plates adapted to engage the tapered faces of said arms and locking-bars, and means to raise and lower said table whereby the end and side walls may be raised or lowered.

3. The combination with connecting-rails having end supports therefor; of plates, a platform, walls surrounding said platform, arms secured to said walls, said arms having tapered faces, means adjustably mounted upon said plates adapted to engage the tapered faces of said arms, a hopper disposed in sections, links disposed between said arms and the sections of the hopper whereby said hopper may be disposed from off said walls and means to raise and lower said plates whereby said walls will be operated.

4. The combination with a supporting-

frame; of a table slidably mounted on said frame, a platform rigid with said frame, end and side walls disposed around said platform to form a mold, arms pivotally secured to said supporting-frame and rigid with the side walls, said arms having tapered faces, additional arms pivoted to said supporting-frame, lateral extensions on said arms, locking-bars at right angles to said extensions, the face of said locking-bars being tapered and laterally inclined, plates carried by said table blocks adjustably secured to said plates and adapted to engage the first-mentioned arms whereby the movement of the side walls will be controlled, laterally-extending arms adjustably secured to said plates, extensions upon each of said arms having beveled faces adapted to engage the tapered faces of the locking-bars and means to hold said laterally-extending arms rigid with said plates and means to raise and lower said plates whereby the side and end wall will be actuated.

5. A mold of the class described comprising a supporting-frame, walls pivotally secured to said supporting-frame, a table slidably mounted on said supporting-frame, plates on said table, means on said plates adapted to engage said walls to actuate the same and means to raise and lower said plates whereby said walls will be assembled or separated.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK F. MARTIN.

Witnesses:
E. D. BULLOCK,
CHRISTINE NELSON.