Jan. 8, 1924. 1,480,098

L. F. MULQUEEN ET AL

MOLDING MACHINE

Filed July 17, 1922. 2 Sheets-Sheet 1

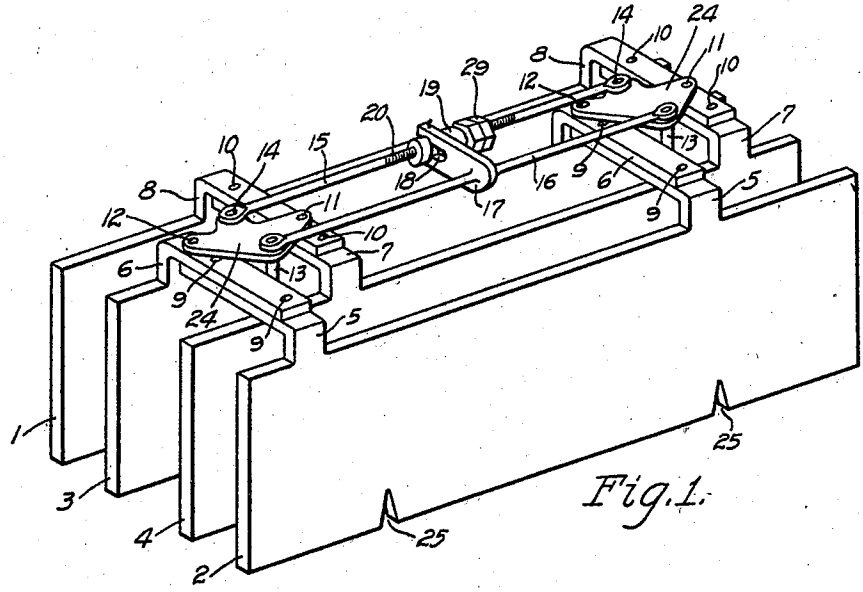

Fig. 1.

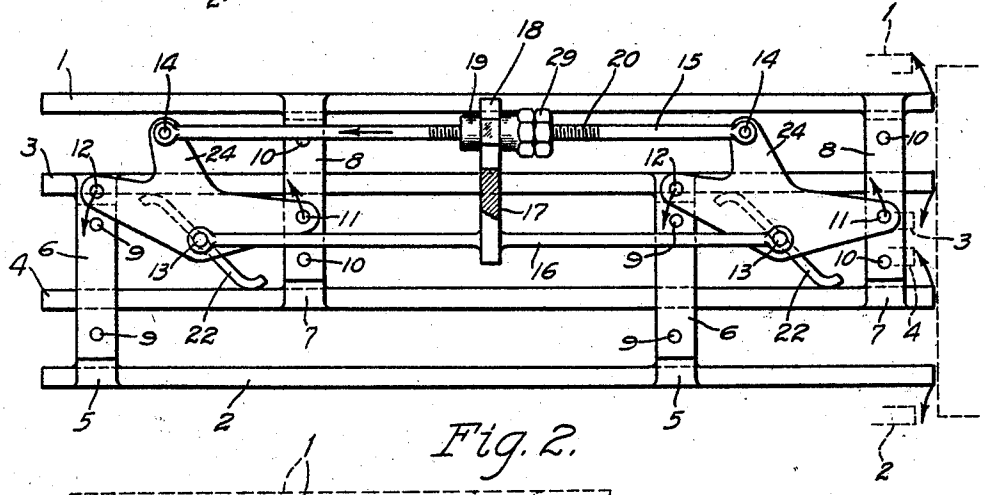

Fig. 2.

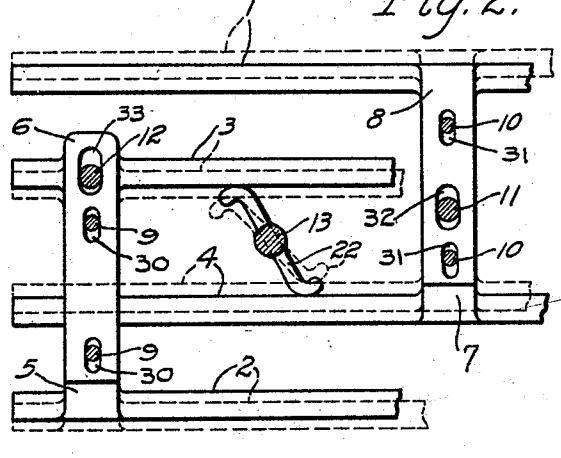

Fig. 3.

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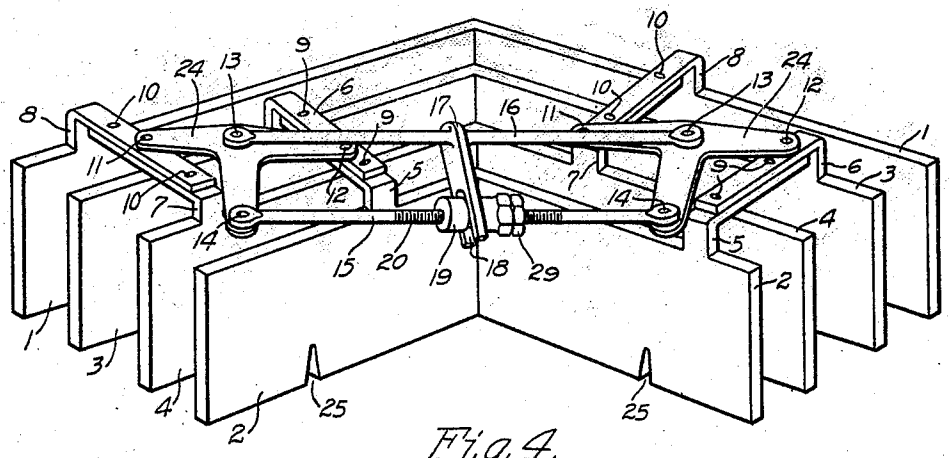

Fig. 4.

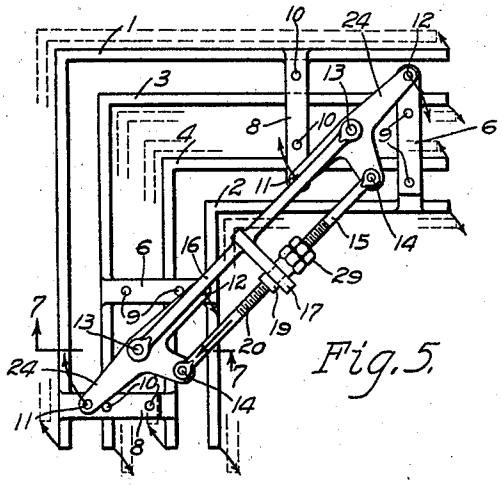

Fig. 5.

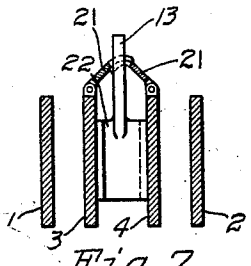

Fig. 7.

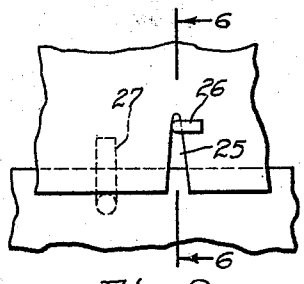

Fig. 8.

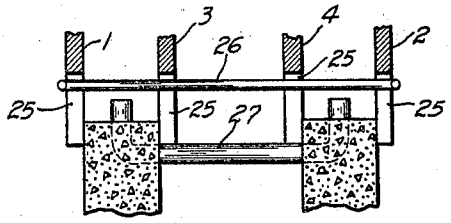

Fig. 6.

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UNITED STATES PATENT OFFICE.

LEO F. MULQUEEN AND PATRICK WALSH, OF LOS ANGELES, CALIFORNIA.

MOLDING MACHINE.

Application filed July 17, 1922. Serial No. 575,487.

To all whom it may concern:

Be it known that we, LEO F. MULQUEEN and PATRICK WALSH, citizens of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Molding Machines, of which the following is a specification.

This invention relates to molding machines and more particularly to the type employed for molding concrete or similar plastic material.

It has for an object to provide a construction which may be utilized for directly building solid or hollow walls from concrete.

To these and other ends the invention consists of certain parts and combination of parts to be hereinafter more particularly described, the novel features thereof being pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a straight wall molding machine.

Figure 2 is a conventional plan view of Figure 1, in a closed position, and partly in profile to illustrate the same in an open position.

Figure 3 is a part plan view of the same machine, set for one size double-wall and air space therebetween, and also in profile for another adjustment for another size double-wall and air space.

Figure 4 is a perspective view of an angular double-wall molding machine.

Figure 5 is a conventional plan view of Figure 4.

Figure 6 is a sectional view on line 6—6 of Figure 8.

Figure 7 is a sectional view on line 7—7 of Figure 5.

Figure 8 is a part side view of Figures 1 and 4, disclosing an arrangement for holding the outer plates in a closed position.

In the embodiment of the invention herein illustrated, the molding machine comprises two pairs of plates 1 and 2, and 3 and 4 respectively, to form the outer and inner walls thereof, the bars 8—7 and 6—5 are made integral with the ends of the top portions of the said plates 2—3 and 4—1 respectively, and the joining portions positioned between the said bars 5—6 and 7—8 are in turn bent together, the slots 30 and 31 pass thru the bars 5—6 and 7—8 respectively, and the pins 9—10 in turn pass thru the said slots 30—31 respectively, as shown in Figure 3. The clamps 22 are secured to the shafts 13, and are operatively positioned between the said plates 3 and 4 in the two ends thereof, the cranks 24 are in turn adjustably secured to the top portions of the said shafts 13, and allow the said clamps 22 to stand at any desired angle, depending upon the distance lying between the said plates 3 and 4, the said cranks 24 extend operatively over the top faces of the said bars 6 and 8, and the pins 11 and 12 are in turn connected to the two arms of the cranks 24, and to the bars 8 and 6 respectively, the joints 14 are in turn positioned in another arm on the said cranks 24 at a point lying opposite the said shafts 13, on a line drawn between the said pins 11 and 12, the links 15 and 16 are operatively connected to the said joints 14 and shafts 13 respectively, and are positioned between the said cranks 24, the arm 17 is made integral with the central portion of the said link 16 and extends to the link 15. A slot 18 passes into the end portion of the arm 17, and the nut 19 is in turn slidably shouldered into the said slot 18, the threads 20 are cut in the central portion of the link 15, and carries the said nut 19, the lock nut 29 is also carried on the threads 20 at a point lying adjacent to the said nut 19.

The plates 21 are operatively connected to the top edges of the plates 3 and 4, as shown in Figure 7, and extend the full length of the said plates 3 and 4, the said plates 21 also lie operatively beneath the bars 5 and 7, and the cranks 24 respectively, and pass operatively around the shafts 13, and operatively overlap one another at their joining edges, as also shown in Figure 7.

The molding machine is positioned upon the wall, as shown in Figure 6, by employing bars 27 to lie under the plates 3 and 4 for a support, in successive tiers as the wall is being built, and as the said molding machine is raised to its next higher elevation and the wires 26 are also employed to secure the plates 1 and 2 in their closed positions as hereinafter described. Several sets of slots 25 pass up thru the bottom edges of the plates 1, 3, 4 and 2 respectively, in straight lines with one another, as shown in Figures 6 and 8, the said slots 25 are tapered to points at the inner end portions thereof, the said wires 26 are in turn forced into the pointed portions of the said slots 25, and extend thru the plates 1, 3, 4 and 2, as shown in Figure 6, and the end portions of

the said wires 26 are in turn bent around the outer faces of the plates 1 and 2 for a clamping effect against the supporting walls.

To adjust the plates 1, 3, 4 and 2 into any desired spaces between one another, to build any required thickness of a double wall, and air space therebetween, the pins 9, 10, 11 and 12 are first released within their respective slots 30, 31, 32 and 33, the bar 6 may then be moved over the bar 5 to obtain the required space between the plates 4 and 2, and the bar 8 may in turn be moved over the bar 7 to obtain the required space between the plates 1 and 3, the bars 6—5 and 8—7 are then secured together by clamping the said pins 9 and 10 in their respective slots 30 and 31, the required width of air space between the plates 3 and 4 is in turn derived by shifting the plates 3—2 and their supporting bars 6—5 as a unit, and also the plates 1—4 and their supporting bars 8—7 as a unit, the pins 11 and 12 are then clamped in their respective slots 32 and 33 to hold the cranks 24, shafts 13 and clamps 22 in position in relation to the said air space.

To operate the molding machine after the same has been adjusted as hereinbefore described, the bars 27 are first placed on, or into, the foundation walls upon which the double wall is to be built, the molding machine is then set into an open position as hereinafter described, and is placed over the said walls to allow the plates 3 and 4 to rest on the bars 27, or on a flat foundation, the molding machine is then closed to bring the plates 1, 3, 4 and 2 flush with the respective faces of the said supporting double wall, and the wires 26 are then driven into the several sets of slots 25, and are bent over the outer faces of the said plates 1 and 2 to prevent the lower edges thereof from spreading apart when concrete, or other plastic materials are tamped therebetween, or between the plates 1—3, or 4—2 respectively.

To open the molding machine as shown in Figures 2 and 5, it will be seen that the link 16 remains in a stationary position, and the link 15 is moved in the direction shown by the arrow point thereon, by turning the nut 19 slidably in the slot 18, on the threads 20, and to close the same, the link 15 is again moved in the opposite direction as hereinbefore described, and the lock nut 29 is screwed on the thread 20 to be tightened against the nut 19, to hold the cranks 24 in closed positions, and also to hold the clamps 22 securely against the adjoining walls of the plates 3 and 4 respectively.

With the movement of the plates 3 and 4 when opening and closing the molding machine the plates 21 will mesh together at their top ends to suit the width of the space lying between the said plates 3 and 4.

The plates 21 may be used to close the air space lying between the plates 3 and 4, to prevent the concrete or other plastic materials from falling into the same when being poured into the spaces lying between the plates 1—3, and 4—2.

The cranks 24 may be formed to project the pins 11 and 12 at angular positions from the shafts 13, so as to throw the said pins 11 and 12 around the shafts 13, as the molding machine is opened, to allow the plates 1—4 and 3—2 to move away from an end obstruction, as shown in profile and arrow points in Figure 2.

Having thus decribed our invention what we claim is:

1. In a machine of the class described, comprising 2 sets of molding plates, the second set of molding plates thereof being alternately meshed between the first set of molding plates, in combination with a supporting means for each set of molding plates, adapted to regulate the spaces lying between the said respective sets of plates and individual plates, a pair of crank means operatively positioned between the said holding means for the two sets of plates, adapted to open and close the said sets of plates, crank arms integral with the said crank means, a separating means, adapted to control the space between the said pair of crank means, a supporting arm integral with the central portion of the said separating means, as set forth.

2. In a molding machine comprising two pair of plates, the said two pair of plates are adapted to be alternately positioned between one another, in combination with a holding means for the one pair of plates, and a holding means for the other pair of plates, a pair of crank means operatively positioned between the said holding means for the two pair of plates, adapted to open and close the said pair of plates, crank arms integral with the said crank means, a separating means, adapted to control the space between the said pair of crank means, a supporting arm integral with the central portion of the said separating means, a regulating means, adapted to adjust the spaces lying between the said two pair of plates, as set forth.

3. In a molding machine of the class described, in combination with two sets of plates, adapted to open and close in unison with one another, a supporting means, adapted to hold the said plates in their respective sets, a pair of crank means operatively positioned between the said holding means for the two pair of plates, adapted to open and close the said sets of plates, crank arms integral with the said crank means, a separating means, adapted to control the space between the said pair of crank means, a supporting arm integral with the central portion of the said separating means, an adjustment means, adapted to

be connected to the said crank arms and supporting arm, an operating means, and a clamping means, adapted to hold the said molding machine in a closed position.

4. In a molding machine of the class described, in combination with several sets of plates, adapted to open and close in unison with one another, a supporting means for each set of plates, adapted to regulate the spacing thereof, a clamping means, adapted to hold the said supporting means in their respective regulated spaces, an operating means, adapted to open and close the said sets of plates, a clamping means, adapted to hold the bottom portions of the said plates in their closed positions, a guard means, adapted to prevent materials from falling into the air spaces between the several walls, as set forth.

5. A molding machine of the class described, the combination of several sets of intermeshed plates, an adjustable supporting means for each set of plates, a set of crank arms operatively positioned between the said adjustable supporting means, adapted to open and close the said sets of plates radially in relation to their centers, an adjustable operating means positioned between the said crank arms, a spacer means connected to the center portion of the said crank arms, a supporting arm secured to the said spacer means, adapted to receive the said adjustable operating means, a clamping means, adapted to hold the said sets of plates in their stationary positions, as set forth.

6. A molding machine of the class described, the combination of two sets of intermeshed plates, a supporting means secured to the end portions of each set of plates, adapted to adjust the spaces therebetween, crank arms operatively positioned between the said supporting means, adapted to shift the said sets of plates radially in relation to their centers, auxiliary crank arms secured to the said crank arms, an operating means positioned between the said auxiliary crank arms, adapted to open and close the said sets of intermeshed plates, a spacer means connected to the center portion of the said crank arms, a supporting arm secured to the said spacer means, adapted to receive the said operating means, a clamping means, adapted to hold the said sets of intermeshed plates in their stationary positions, a holding means secured to the lower-center portion of the said crank arms, adapted to extend operatively between the two central plates on the said sets of intermeshed plates, as set forth.

7. A molding machine of the class described, the combination of two sets of intermeshed plates, a supporting means secured to the end portions of each set of plates, adapted to adjust the spaces therebetween, crank arms operatively positioned between the said supporting means, adapted to shift the said sets of plates radially in relation to their centers, auxiliary crank arms secured to the said crank arms, an operating means positioned between the said auxiliary crank arms, adapted to open and close the said sets of intermeshed plates, a spacer means connected to the center portion of the said crank arms, a supporting arm secured to the said spacer means, adapted to receive the said operating means, a clamping means, adapted to hold the said sets of intermeshed plates in their stationary positions, a holding means secured to the lower center portion of the said crank arms, adapted to extend operatively between the two central plates on the said sets of intermeshed plates self releasing support wires, adapted to hold the lower portion of the said plates in a locked position, a set of bars, adapted to support the said molding machine, as set forth.

In testimony whereof we affix our signatures.

LEO F. MULQUEEN.
PATRICK WALSH.