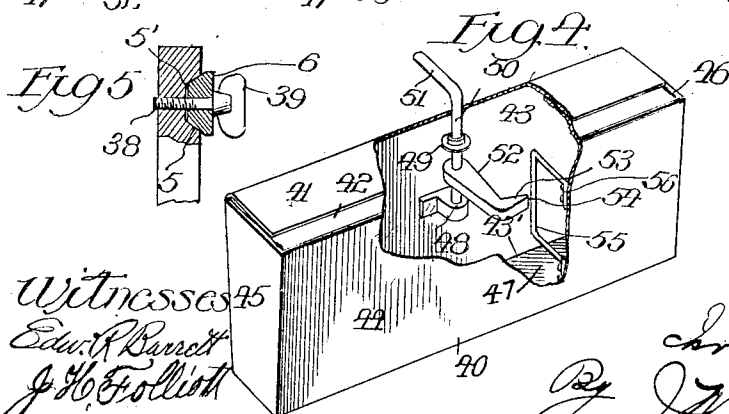
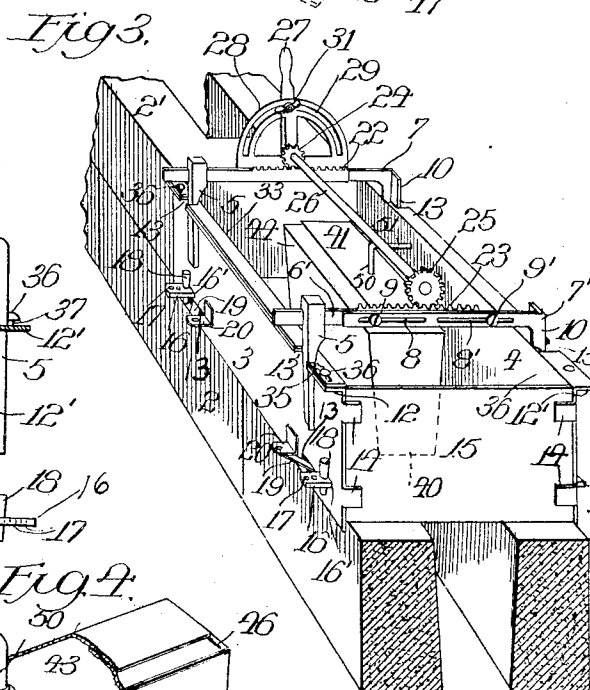
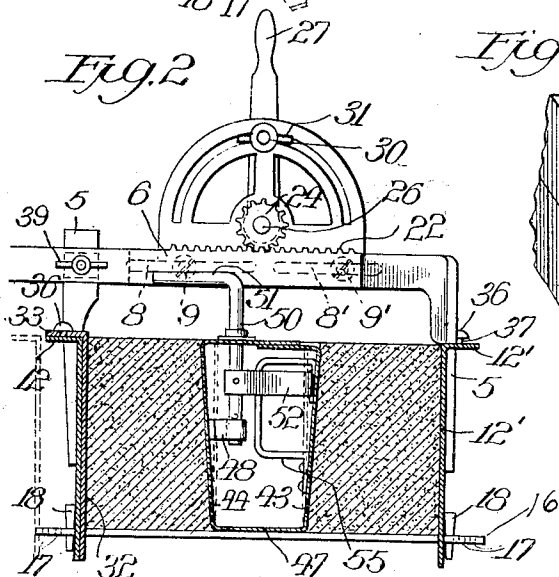
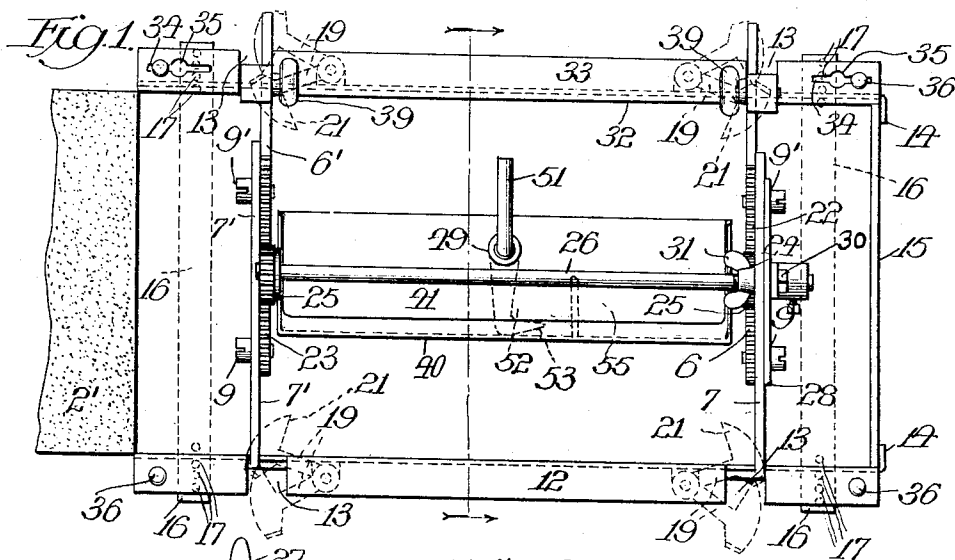


No. 784,690.

PATENTED MAR. 14, 1905.

I. L. LANDIS.
ADJUSTABLE MOLDING MACHINE.

APPLICATION FILED DEC. 19, 1904.



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ISRAEL L. LANDIS, OF CHICAGO, ILLINOIS.

ADJUSTABLE MOLDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 784,690, dated March 14, 1905.

Application filed December 19, 1904. Serial No. 237,484.

To all whom it may concern:

Be it known that I, ISRAEL L. LANDIS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Adjustable Molding-Machines, of which the following is a specification.

My invention relates to improvements in wall-molding machines, and has particular reference to machines of the type in which the mold-boards are simultaneously movable in parallel planes.

The object of the invention is to provide certain improvements to the end of securing greater rigidity in the joints between mold-boards and their supporting-arms, to provide means for supporting the lower or free edges of mold-boards against being spread apart under the pressure of material when it is tamped or packed between said boards, to provide means whereby each individual mold-board may be adjusted and when so adjusted firmly held or clamped upon a mold-board supporting or actuating member, and to provide certain improvements in said members themselves.

The invention further contemplates an improved core for a molding-machine that may be contracted or expanded and readily removed from the plastic material or newly-formed building-block.

Other minor objects and advantages of my invention will appear in the detail description; and the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the drawings, and pointed out in the claims.

In the drawings, Figure 1 is a top plan view of a machine embodying my invention. Fig. 2 is a vertical section taken substantially on the line of the arrow in Fig. 1. Fig. 3 is a perspective view showing a partially-constructed wall with my machine in its working position. Fig. 4 is a perspective view, partly broken away, of my improved core and its operating mechanism. Fig. 5 is a detail view of one of the joints between the mold-boards and the members upon which they are mounted.

Referring to the drawings, 2 2' represent, respectively, a portion of a previously-con-

structed wall layer and a superposed layer in course of construction, against which the molding-machine has been placed. Said machine has sides or mold-boards 3 and 4, the former having a pair of arms 5 5. The arms 5 are mounted for adjustment along yokes 6 6', slidably mounted against complemental yokes 7 7', respectively. The yoke members 6 and 7 form one pair of oppositely-movable mold-board supports, and the members 6' and 7' form another similar pair of supports. The members 6 6' and 7 7' are rectangular bars. The latter are slotted at 8 8', and in the slots move studs or screws 9 9', secured to the members 6 6'. The members 7 7' are held against lateral movement with respect to members 6 6' between the heads of screws 9 9' and bars 6 6', as shown in the same view. Members 7 7' have downwardly-bent portions 10 10, secured to mold-board 4 in any suitable manner. The mold-boards 3 and 4 are formed with horizontal flanges or edges 12 12', respectively, in which notches 13 are cut to permit members 5 and 10 to lie closely against the vertical sides of the mold-boards. Said mold-boards are formed with ears 14, adapted to hold an end gate against outward movement. The lower or free edges of mold-boards 3 and 4 as heretofore commonly constructed have been without lateral support, with the result that when concrete or cement is packed in the lower edges or portions of mold-boards are forced out or away from each other sufficiently to give an uneven appearance to the surface of the completed wall. To obviate this difficulty, I have provided cross-bars 16 16, in the ends of which are holes 17 17 for pins 18 18, which hold the molding-bars together against spreading movement no matter how tightly the material is tamped. The molding-boards are supported against the sides of the wall by a series of flat members 19, pivoted on lugs 20 20. When members 19 are swung inwardly, their projections or rests 21 are within the plane of the wall or the plane between mold-boards 3 and 4, thus providing rests which support the machine upon the wall. The members 19 are constructed out of sheet metal, which lies flat upon the top of the previously-

constructed wall layer. The small openings made by these rests are almost imperceptible and are readily closed by a single stroke of the trowel. The moldboards are moved toward and from each other in parallel relation by gear-racks 22 and 23 upon the arms 6 6' engaging pinions 24 and 25 upon a shaft 26, journaled in bearings on members 7 and 7'. The shaft is rotated by means of a lever 27, supported by an arch 28, in which is a semi-circular slot 29 for a screw or bolt 30, provided with a "butterfly-head" 31. The bolt or screw 30 has threaded engagement with the lever 27. A rock-surface plate 32 is mounted upon the ledge or horizontal flange 12, for which purpose the plate 32 is provided with a similar flange 33, in which are slots 34, having enlarged or widened portions 35 35, adapted to receive the heads 36 36 of short studs 37 37, projecting from the upper surfaces of flanges 12 and 12'.

Each of the members 5 is provided with a groove 5', the sides of which are inclined approximately V-shaped, and the portions of members 6 6' slidable in said slots have beveled edges to correspond with sides of grooves 5', as shown in Fig. 5. A bolt 38 passes through each member 5 and members 6 6'. On said bolts are "butterfly-nuts" 39 39. By means of said bolts and nuts and the inclined sides of grooves 5' and members 6 and 6' the latter may be so firmly clamped against the members 5 as to prevent the slightest relative movement of the parts. It is important that this joint should be firm, so that the members 6 6' 7 7' will be held rigidly to their respective mold-boards, and this is accomplished in a very effective manner by the wedge engagement of members 5 5 and 6 6'.

Referring to the core 40, this is preferably constructed out of a single piece of sheet metal bent, as shown in Fig. 4, to provide top portions 41 42, side portions 43 44, ends 45 46, and bottom 47. To the inner wall of the side 43 and the top portion 41 is journaled in bearings 48 and 49, respectively, a shaft 50, which has a crank-handle portion 51. Secured to shaft 50 between bearings 48 and 49 is a cam-arm 52, having hook portion 53, provided with a curved cam-surface 54, the latter adapted to engage the inner wall of side 44 and force same away from the side 43 and the hook 53 adapted to draw wall 44 toward wall 43 by means of a loop 55, secured by screws 56 to the wall 44. When the hook 53 is rotated toward the wall 43 while in engagement with loop 55, said wall 44 and the ends 45 and 46 and top portion 42 are moved angularly with respect to bottom 47 and top 41, and when rotation of hook 53 is reversed the inclined surface 54 engages the inner wall of side 44 to force the same outward and into its normal position, carrying with it the top portion 42 and ends 45 46. In Fig. 2 is shown a cast of concrete, and the dotted lines show how wall

44 is moved toward wall 43, leaving a space between one of the inner walls of the cast and the wall 44.

The operation of my invention is as follows: The mold-board 3 is adjusted upon the members 6 6' by loosening nut 39 and moving the board 3 toward or from molding-board 4, according to the desired thickness of the wall to be constructed. The members 5 are then firmly clamped to the members 6 6' by tightening the nuts 39, which wedge the inclined sides of members 6 6' down the inclined sides of slides or grooves 5'. The mold is then placed in a position upon the wall 2 and supported upon the rests 21. Cross-bars 16 are then inserted in their openings 16' in mold-boards 3 and 4 and pins 18 inserted on opposite sides of said boards. The core 40 is next placed midway between the ends and sides of the mold-boards and the concrete placed in the intervening spaces. When the cast has been formed, the shaft 26 is rotated to slide the pairs of members 6 7 and 6' 7' in relatively opposite directions, which will move the mold-boards 3 away from the side of the cast. The mold-boards and their actuating mechanism may then be lifted from the newly-formed wall-section, cast, or building-block, leaving only the core in position. By rotating the handle 51 of the core to move the hook 53 toward side 43 the core will be partly collapsed or contracted, as shown in Fig. 2 by dotted lines. As the core is now smaller than the core-opening it has formed, it is easily removable from said opening. It is obvious that the core 40 may be made of any other material than an elastic sheet of metal. If made of rigid material, the sides 43 and 44, ends 45 and 46, and bottom 47 would be hinged to the lower edge 43' of side 43.

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

1. In a molding-machine, two series of mold-board supports, one series movable relatively to the other series, spaced-apart mold-boards normally secured at their upper edges to said supports, means for adjusting said mold-boards toward and from each other and relatively to said supports, means for moving one series of supports relatively and parallel to the other series of supports, and means for yoking together the lower portions of said mold-boards against angular spreading movement.

2. In a molding-machine, two series of mold-board supports, one series movable relatively to the other series, mold-boards normally secured at their upper edges to said supports, said mold-boards being spaced apart to provide an intervening mold-space, means for adjusting said mold-boards toward and from each other along said supports, rests for supporting said mold-boards in a plane passing therebetween, said rests adjustable into and out of said plane, and means for moving one

of said series of supports relatively and parallel to the other said series of supports.

3. In a molding-machine, two series of mold-board supports, one series movable parallel to the other series, mold-boards normally secured to said supports and spaced apart to provide an intervening mold-space, means for adjusting said mold-boards, on said supports, toward and from each other in parallel relation, movable rests adapted to support said mold-boards upon a wall between the planes of said mold-boards, said rests adjustable into and out of engagement with said wall, means independently of said supports for preventing angular spreading movement of said mold-boards, and means for simultaneously moving said series of supports and mold-boards.

4. In a molding-machine, two series of members arranged in pairs, the members of each pair mounted for sliding movement longitudinally of each other, mold-boards secured to said members, means upon said members for moving said mold-boards toward and from each other in parallel relation, means, independently of said members, for adjusting said mold-boards toward and from each other, means for supporting said mold-boards upon a wall in planes lateral to the vertical plane of said wall, said last-mentioned means being adjustable in and out of supporting position.

5. In a molding-machine, two series of members arranged in pairs, the members of each pair upon and longitudinally of each other, mold-boards secured at their upper edges to said members, yokes connecting the lower edges of said members, means upon the latter for moving said mold-boards toward and from each other in parallel relation, with said members, means for moving said mold-boards relatively to said members, and adjustable means for supporting said mold-boards upon the wall laterally to the vertical plane of the wall.

6. In a molding-machine, having a pair of mold-boards arranged parallel, a plurality of pairs of members supporting the upper edges of said mold-boards, cross-bars supporting their lower edges, the individual member of

each said pair of members arranged to slide longitudinally of its companion member, a rotary shaft journaled in bearings upon one member of each said pair of members, gear-racks upon the other of each said pair of members, pinions keyed upon said shaft in mesh with said racks, a lever for rotating said shaft, means for locking said shaft against rotation and thereby preventing relative movement of said members, and means for adjusting said mold-boards relatively to each other while said shaft and members are held against movement.

7. In a molding-machine, a pair of mold-boards arranged parallel, relatively movable pairs of bars supporting the upper edges of said mold-boards, cross-bars, having pins therein, for supporting the lower edges of said mold-boards, rests upon the lower edges of said mold-boards, said rests rotatable and out of engagement with a wall when the machine is in operative position thereon, a rotary shaft journaled on one set of bars, gear-racks mounted on a companion set of bars, pinions keyed upon said shaft in position to mesh with said racks, a lever-arm for rotating said shaft, a slotted arch against which said arm is movable and a clamp for securing said arm immovably to said arms, and means for adjusting and securely clamping one of said mold-boards along and to one set of said bars.

8. The combination of a mold, with a hollow core having an immovable and a movable side, of a shaft projecting into the interior of said core, and secured to said immovable side, a rotary member mounted upon said shaft within said core, said member comprising a combination cam and hook, a loop on the movable member adapted to engage said hook whereby the latter may move said movable side toward said immovable side.

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

ISRAEL L. LANDIS.

Witnesses:

J. H. FOLLIOTT,
MILTON JOHNSON.