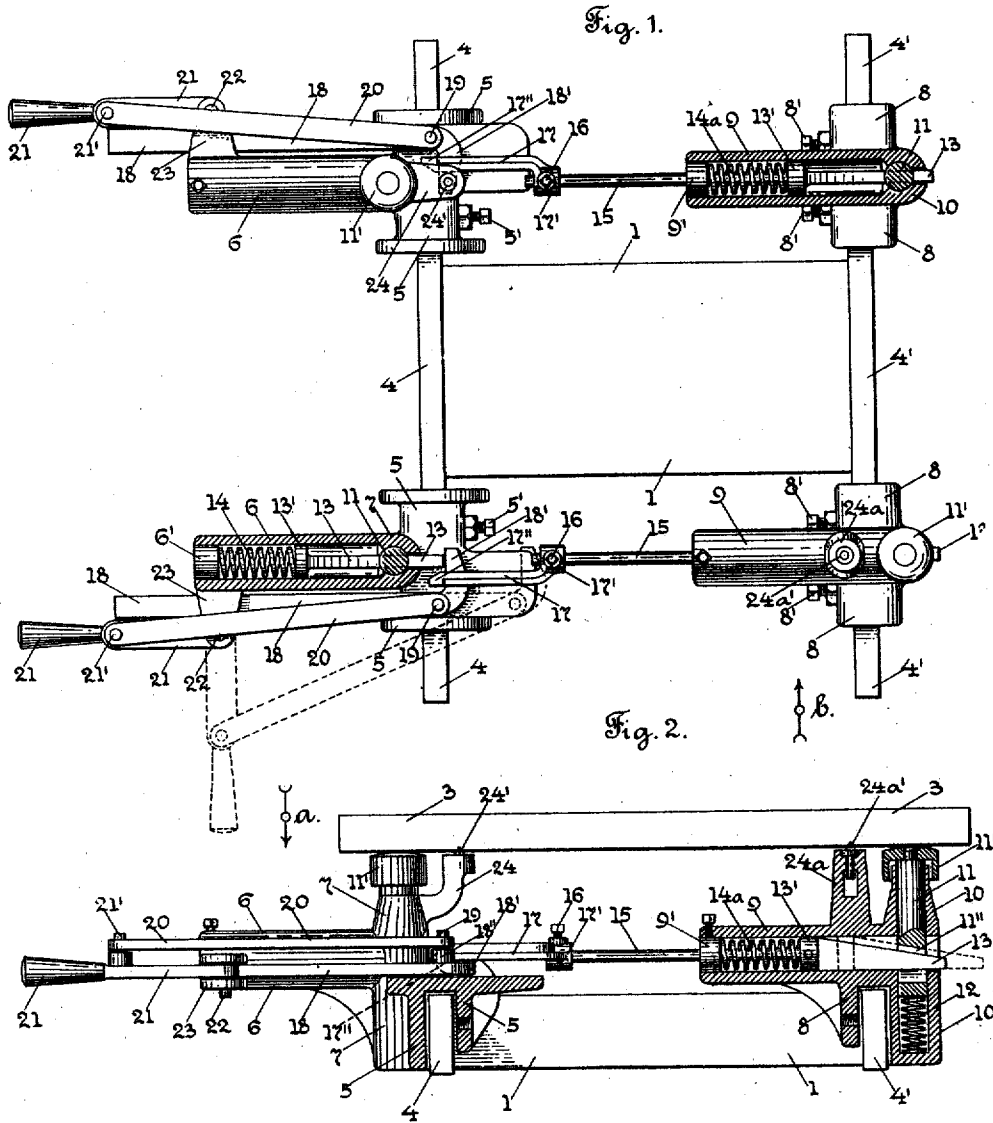


W. E. McCLEARY.
MOLDING MACHINE.
APPLICATION FILED JUNE 18, 1908.

933,485.

Patented Sept. 7, 1909.



Witnesses
m. b. r. d.
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UNITED STATES PATENT OFFICE.

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MOLDING-MACHINE.

933,485.

Specification of Letters Patent.

Patented Sept. 7, 1909.

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To all whom it may concern:

Be it known that I, WILLIAM E. McCLEARY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful improvements in Molding-Machines, of which the following is a specification.

My invention relates to molding machines, and particularly to a leveling and holding mechanism for the mold board.

The object of my invention is to provide a leveling and holding mechanism for the mold board, by means of which the mold board will have a fixed and firm seat, and more particularly to provide a plurality of movable supports for the mold board, and means for automatically moving each support independently, and means for positively holding said supports in position to support the mold board.

I have only shown in the drawing a detached portion of a molding machine, with my improvements in leveling and holding mechanism combined therewith, sufficient to enable those skilled in the art to understand the construction and operation thereof.

Referring to the drawing:—Figure 1 is a plan view of a mold table, with my improvements applied thereto, looking in the direction of arrow *a*, Fig. 2; some of the parts are shown in section, and the mold board shown in Fig. 2 is not shown, and, Fig. 2 is a side view of the parts shown in Fig. 1, looking in the direction of arrow *b*, same figure; showing the mold board; some parts are shown in section.

In the accompanying drawing, 1 is the table of a molding machine, which is suitably supported in any usual and well known way.

3 is the bottom or mold board of the mold or flask, not shown.

Rigidly secured to the table 1 are two bars 4, and 4', preferably of wrought iron, which bars are of sufficient length to take any length of flask that can be used on the molding machine. On the bar 4 are adjustably secured, by set screws 5', Fig. 1, the two supporting parts 5, of one pair of leveling and holding mechanisms, which consists in this instance of the two horizontally extending cylinders 6, and the two vertically extending cylinders 7, in this in-

stance made integral, at the front of the machine.

To the bar 4' are adjustably secured, by set screws 8', the two supporting parts 8, of a second pair of leveling and holding mechanisms, which consists in this instance of the two horizontally extending cylinders 9, and the two vertically extending cylinders 10, in this instance made integral, at the rear of the machine. Each of the vertically extending cylinders 7, and 10, is provided with a vertically moving plunger or piston 11, which is loosely mounted within the vertically extending cylinders. Upon the top of each plunger or piston 11 is in this instance secured, to move therewith, a cap 11', which extends down over the upper reduced end of the cylinder, to prevent the sand from getting into the joints, to interfere with the free working of the plungers.

A helically coiled expansion spring 12, see Fig. 2, is located within the lower part of each cylinder 7, and 10, and acts to automatically move up the plungers 11 independently. An opening 11'', see Fig. 2, is made through each plunger, to receive a wedge shaped bar 13, said wedge shaped bars 13 extend within the horizontally extending cylinders 6, and 9, and are adapted to move loosely therein.

Within the horizontally extending cylinder 6 is a helically coiled expansion spring 14, see Fig. 1, which is adapted to bear at one end against the rounded end 13' on the wedge shaped bar 13, and at its other end against a head or block 6' within the outer end of the cylinders 6, see Fig. 1, to move the bars 13 into the openings 11'' in the plunger 11. In each of the horizontally extending cylinders 9 is also a helically coiled expansion spring 14', see Fig. 2, which is adapted to bear at one end against the rounded end 13' of the wedge shaped bar 13, and at its other end against a block or end 9', secured in the end of the cylinders 9, to move the bars 13 into the openings 11'' in the plungers 11. The springs 14, and 14' act to yieldingly move the wedge shaped bars 13, and cause them to enter the holes 11'' in the plungers 11, to positively hold said plungers in their raised position.

Attached to each, of one pair of wedge shaped bars 13, and extending out therefrom through the ends 9' of the cylinders 9, is a

rod 15. To the end of each rod 15 is secured, in this instance by a set screw 16, the hub 17' on a bar 17. Each bar 17, (there are two bars,) has a hooked shaped end 17'', which is adapted to be engaged by an extension 18' on a slide 18, which is suitably mounted to have a longitudinal movement. Each slide 18, (there are two slides,) has a boss 18'' thereon, see Fig. 2, which carries a stud 19, and on the stud 19 is pivotally mounted one end of a link or connector 20; the other end of said link or connector 20 is pivotally mounted on a stud 21' on a hand lever 21. The hand lever 21 is pivotally mounted on a stud 22, secured in ears 23 on the cylinder 6. The extensions 18' on the two slides 18, are also adapted to engage the ends of the wedge shaped bars 13 in the two cylinders 6, to move them outwardly, or out of operative position.

By means of the mechanism above described, connected with the bars 13, said bars are positively withdrawn from the plungers 11 and held in their inoperative position, against the action of the springs 14, and 14^a.

On one of the vertically extending cylinders 7 is a side extension or stand 24, which I term a finder post, the upper end of this post has a sharpened pin or spur 24'. Extending upwardly in this instance from one of the two cylinders 9 is a second finder post 24^a, having at its upper end a sharpened pin or spur 24^a'. The two finder posts 24, and 24^a, and the pins 24', and 24^a' are so located that they will come under the diagonal cross piece of the mold board.

From the above description in connection with the drawings, the operation of my improvements will be readily understood by those skilled in the art.

When the mold or flask is rolled or moved over upon the mold table, the two hand levers 21 at the front of the machine, are in the position shown by full lines, in which position the wedge shaped plates 13 will be moved away from the vertically moving plungers 11, leaving said plungers yieldingly supported independently by their actuating springs 12. The table 1 of the molding machine will be moved up by the ordinary adjusting or raising mechanism, until the finder posts 24, and 24^a, are brought up against the mold board 3, and the pins 24' and 24^a' extend into the mold board 3, as shown in Fig. 2, and serve to securely hold the mold board 3, and prevent any lateral movement thereof. The hand

levers 21 are then moved by the operator, in this instance sidewise, until they take the position shown by broken lines in Fig. 1. The movement of the hand levers 21, through connectors 20, will move the slides 18 inwardly, as shown by broken lines in the lower part of Fig. 1, to release the wedge shaped bars 13, at the left in Figs. 1, and 2, and also to release the bars 17 and rods 15, and allow the springs 14, and 14^a to act, to move the wedge shaped bars 13, and cause them to enter the openings in the plungers 11 to rigidly hold said plungers in their raised position, and form a firm and rigid support for said plungers 11, and the mold board 3 thereon. The pins 24', and 24^a' on the finder posts 24, and 24^a, hold the mold board 3 so that it will not be moved laterally by the evening device, and after the pattern is removed from the mold, and the mold is dusted, the pattern can be placed back in the mold precisely as it came out.

It will be understood that the details of construction of my improvements in leveling and holding mechanism may be varied if desired, and my improvements may be attached to any kind of a molding machine.

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

1. In a molding machine, a plurality of movable supports for the mold board, means for automatically moving each support independently, and means for positively holding said supports in position to support the mold board, and finder posts, having extensions or spurs thereon to enter the lower side of the mold board and hold it in place.

2. In a molding machine, the combination with vertically extending cylinders, and spring actuated vertically moving plungers within said cylinders, to yieldingly support the mold board, of means for positively holding said plungers in their raised position, said means comprising wedge shaped bars within horizontally extending cylinders, and means for yieldingly moving said bars into the openings in the plungers, to rigidly support the plungers, and positive means for withdrawing said bars from the plungers, and holding said bars in inoperative position.

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Witnesses:

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