

MOLDING MACHINE.

APPLICATION FILED JUNE 11, 1909.

Patented Oct. 12, 1909.

2 SHEETS—SHEET 1.

936,569.

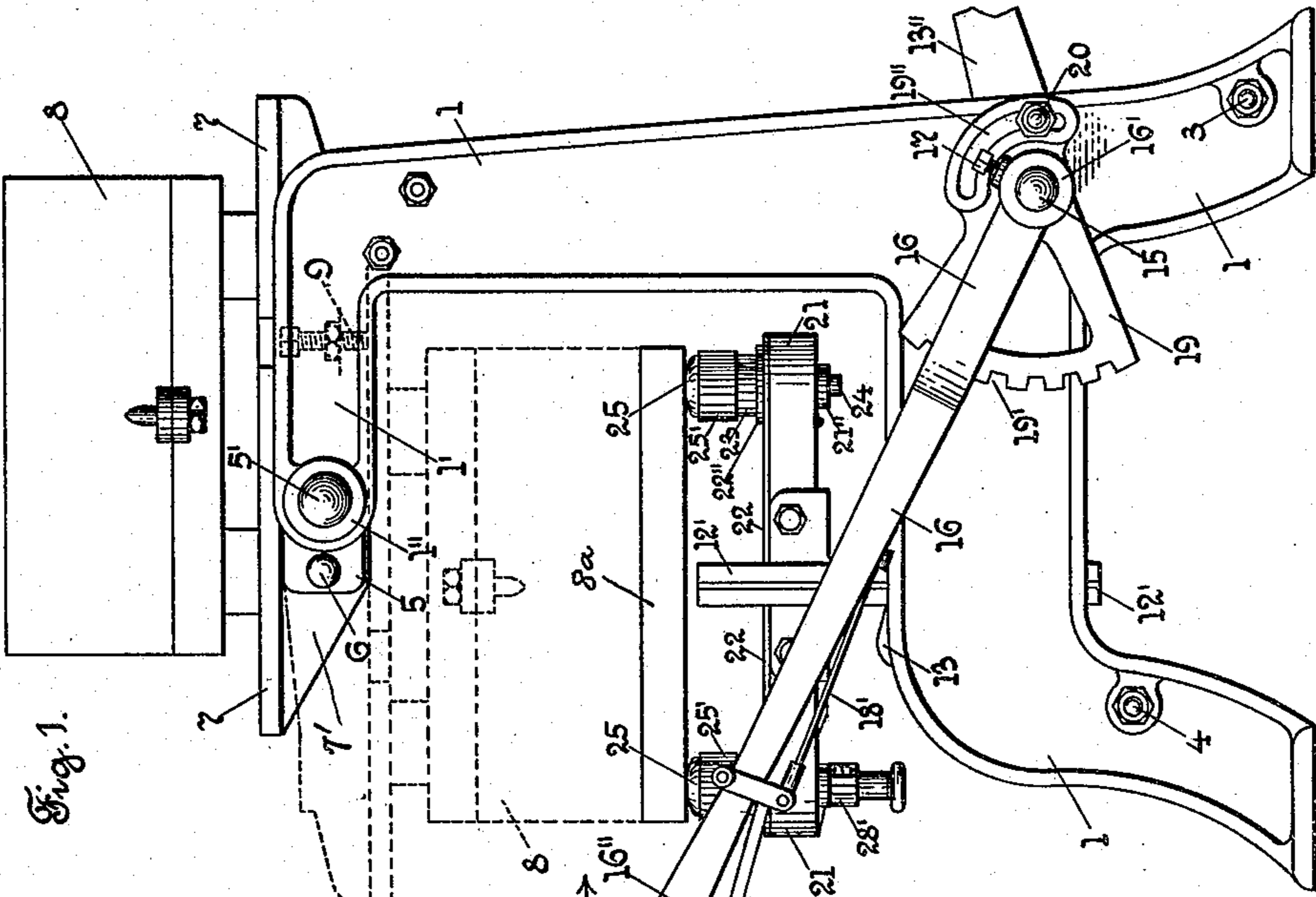
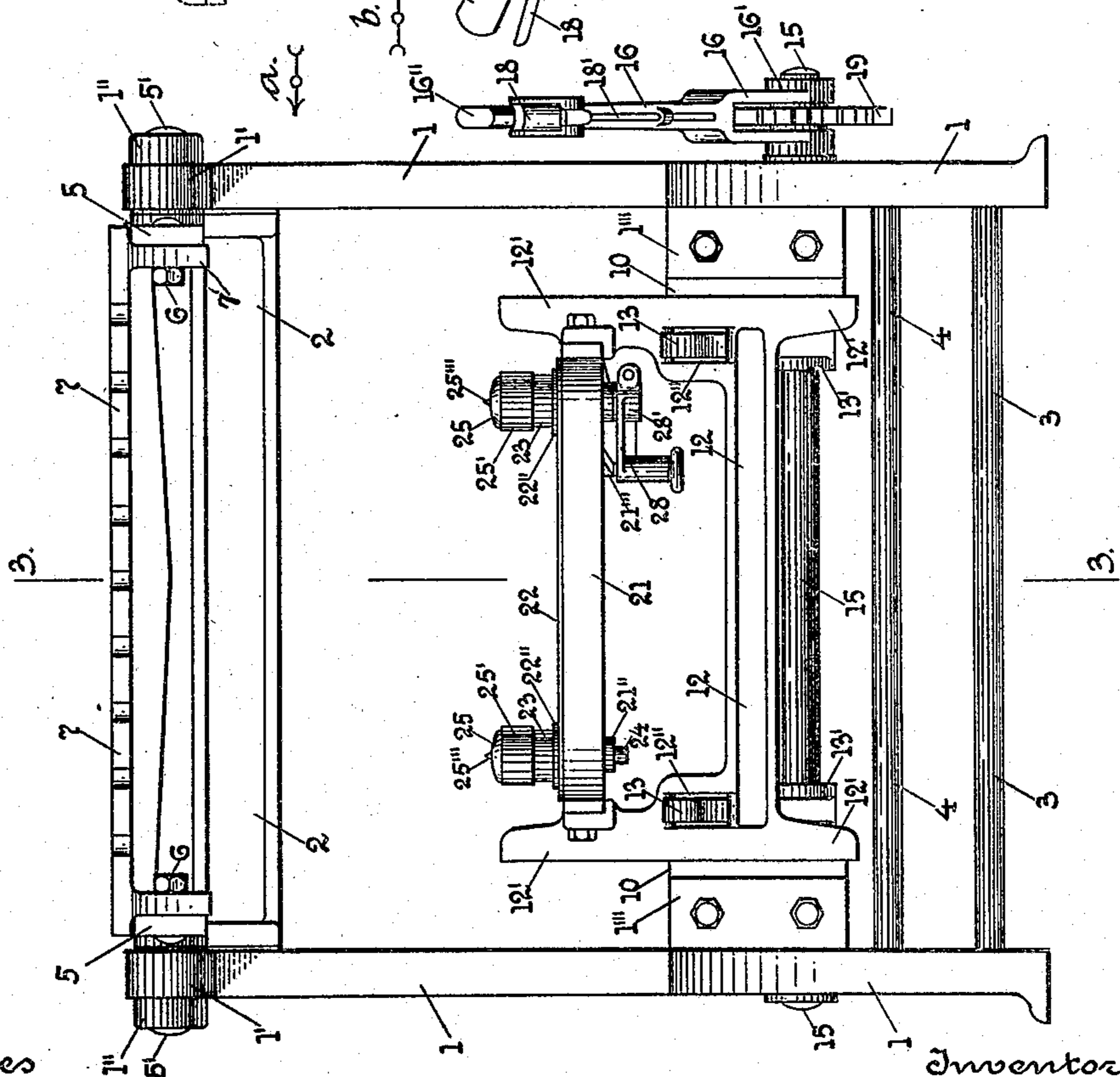


Fig. 1.



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Witnesses
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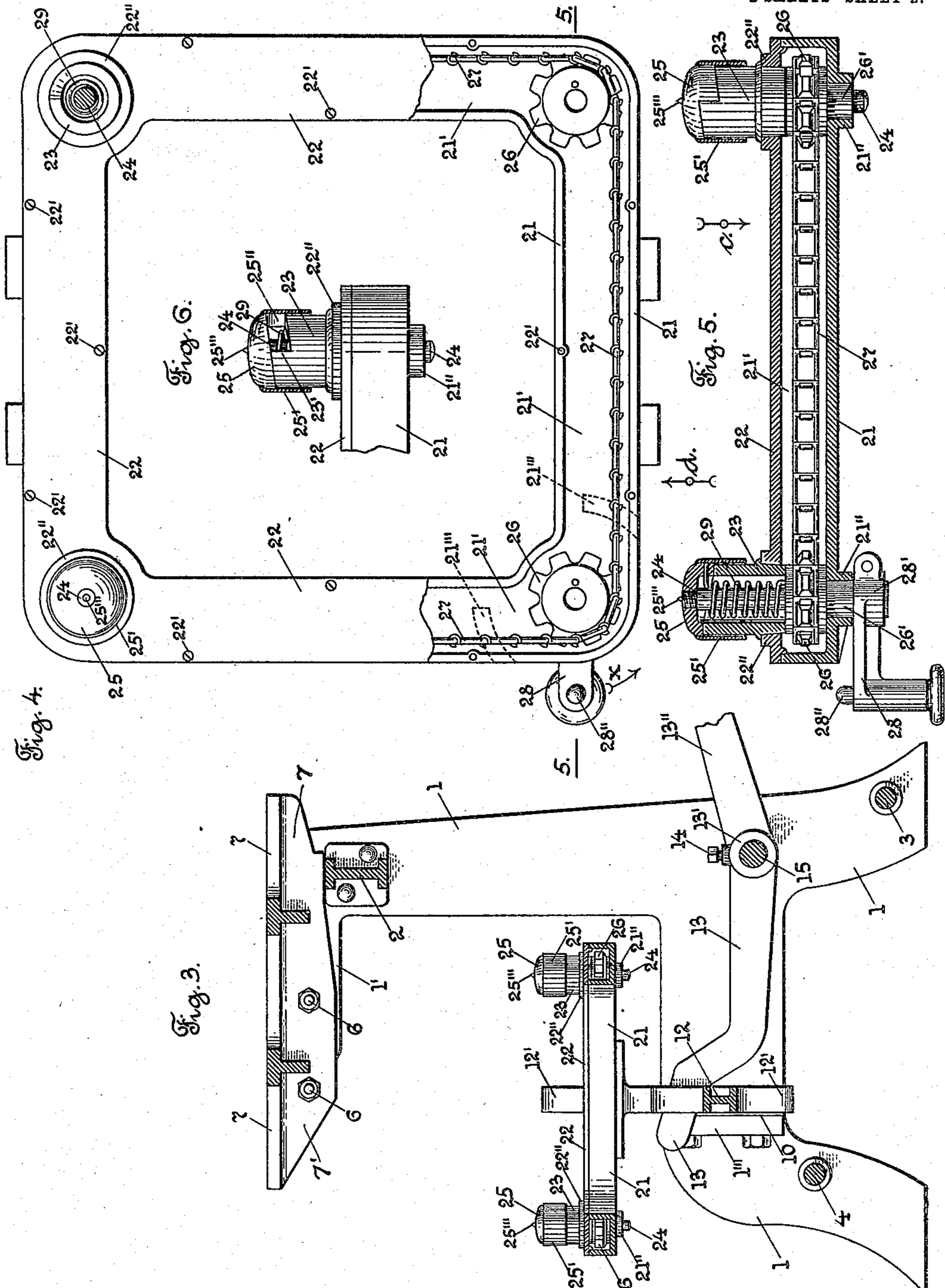
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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MOLDING-MACHINE.

936,569.

Specification of Letters Patent.

Patented Oct. 12, 1909.

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To all whom it may concern:

Be it known that I, EPPA H. RYON, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, 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 improvements in a "rock-over" molding machine.

The object of my invention is to improve upon the construction of a molding machine of the class referred to, and more particularly to provide a leveling or evening mechanism for the mold, which mechanism is of simple construction and operation, and by means of which the mold board will have a solid and even seat.

My invention consists in certain novel features of construction of my improvements as will be hereinafter fully described.

I have only shown in the drawings parts of a rock-over molding machine with my improvements applied thereto, sufficient to enable those skilled in the art to understand the construction and operation.

Referring to the drawings:—Figure 1 is a side view of a molding machine with my improvements applied thereto, looking in the direction of arrow *a*, Fig. 2. On the upper table is shown a mold or flask, and the broken lines show the table with the flask in its rock-over position. Fig. 2 is a front view of the machine shown in Fig. 1, looking in the direction of arrow *b*, same figure. The mold shown in Fig. 1 is not shown in this figure. Fig. 3 is a central cross section, on line 3, 3, Fig. 2, looking in the direction of arrow *a*, same figure. Fig. 4 is, on an enlarged scale, the leveling mechanism, detached, looking in the direction of arrow *c*, Fig. 5; some of the parts are broken away or left out in this figure. Fig. 5 is a cross section, on line 5, 5, Fig. 4, looking in the direction of arrow *d*, same figure, and shows some parts which are left off in said Fig. 4, and, Fig. 6 shows an end post detached, with an adjustable head or cap in a different position.

In the accompanying drawings, 1 are the side or end frames, 2 is an upper cross girt, and 3 and 4 are two transverse rods, see Fig. 2.

The upper portion of the end frames 1

have the overhanging arms 1', provided with bearings 1'', see Fig. 1, to loosely receive the gudgeons or journals 5' on the plates 5, which are rigidly secured by bolts 6 to the extensions 7' on the upper table 7, see Fig. 3. The table 7 in its normal position is adapted to rest on the cross bar 2, see Fig. 3, to receive the mold 8 which is secured to the table 7. When the upper table 7 is rocked over to the position shown by broken lines in Fig. 1, an adjusting screw or bolt 9, shown by broken lines in Fig. 1, acts to hold said table in position. The upper table 7 is pivotally supported near its center on the over-hanging arms 1' on the frame 1, and is therefore easily rocked over, after the mold is secured thereto.

The side frames 1 have brackets 1''', see Figs. 2, and 3, for guide blocks 10, which are adapted to receive the vertically extending flanges 12' on the supports 12, to act as guides for said supports. Each flange 12' has an opening 12'' therein, through which extends an arm or lever 13, having its hub 13', see Fig. 3, secured by a set screw 14 on a transverse shaft 15, which is loosely mounted in bearings on the side frames 1. Extending rearwardly from the hub 13' is an arm 13'', to receive weights, not shown, to counterbalance the lower mold table.

A handle or lever 16, see Fig. 1, has its attached end forked, and its hub 16' on said end secured on the shaft 15 by a set screw 17. The other end of the lever 16 has a handle 16'', and also a releasing handle 18 attached thereto, to lock the handle 16 in its desired position, by causing a spring-actuated lock rod 18', of usual construction, to enter one of the notches 19' in a segment 19, which is pivotally mounted on the shaft 15, and adjustably secured in the desired position by a nut on a screw or bolt 20, which passes through an elongated cam-shaped slot 19'' in the plate 19 and is secured in the side frame 1.

The leveling or evening device for the mold consists in this instance of the frame 21, which is preferably made open through its central part, as shown in Fig. 4, and is grooved or channeled to furnish a chamber 21', see Figs. 4 and 5. A cover or plate 22 extends over the channeled frame 21, and is secured thereto preferably by screws 22', to form a top or cover for the chamber 21'. The frame 21 is supported upon and at-

attached to the upright supports 12, see Fig. 2, to move with said supports. On the plate 22 forming the cover for the chambered frame 21, at each corner thereof, in this instance is a boss 22'', see Fig. 5, which boss is preferably made tapering. Into each boss 22'' extends and is secured the tapered end of a cylindrical post 23. The frame 21 has the bosses 21'' to loosely receive the vertically extending spindle 24, see Fig. 5, which has secured thereon, on its upper end, the top piece or cap 25. A cylindrical sleeve 25' extends down from the cap 25, and is secured thereon, and fits over the upper end of the cylindrical post 23, for the purpose of preventing sand or other material getting within the cylindrical posts. The caps 25, attached to the spindle 24, form laterally spaced non-depressible and rotatable members for supporting the mold board 8^a, see Fig. 1.

A sprocket wheel 26 is loosely mounted on each spindle 24, one at each corner of the frame 21, and said sprocket wheels are connected by a sprocket chain 27. One of the sprocket wheels 26 has its hub 26' extending downwardly, see Fig. 5, to receive the hub 28' on an operating handle 28, which in this instance is provided with a spring actuated pin 28'', which is adapted to engage the inclined projection 21''', shown by broken lines in Fig. 4, on the underside of the frame 21, when the handle 28 is moved by hand, to hold and lock said handle in either position.

A helically coiled torsion spring 29 encircles the spindle 24, see Fig. 5, and the lower end of said spring is connected to the hub of the sprocket wheel 26, and its upper end is connected to the cap 25. The upper end of the post 23 is made inclined, and has a notch 23' therein, see Fig. 6. The lower end of the cap 25 is also made inclined, and has an extension 25'' thereon, to enter the notch 23' in the cylinder 23.

By reason of the inclined contiguous surfaces of the post 23 and the cap 25, when the handle 28 is turned in the direction indicated by arrow *x*, Fig. 4, the torsion spring 29 acts to move the cap 25 along the upwardly inclined edge on the upper end of the post 23, and raise the cap 25, as shown in Fig. 6, until said cap, which preferably has a pointed extension 25''' thereon, engages the mold board 8^a. Through the sprocket

chain 27 all of the caps 25 are turned in one direction, or the other, and act to level the mold board, and after the mold board is leveled, the locking of the operating handle 28, acts to hold all of the caps 25 in their adjusted position and form a rigid support for the mold board. The frame 21 is raised or lowered under the mold board, through the operation of the handle 16.

It will be understood that the details of construction of my improvements may be varied if desired.

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

1. In a molding machine, laterally spaced non-depressible members for supporting the mold board, and means for raising and lowering said members in a vertical plane, to engage with and be disengaged from the mold board.

2. In a molding machine, laterally spaced non-depressible members for supporting the mold board, and means for simultaneously raising and lowering all of said members, to engage with, and be disengaged from the mold board.

3. In a molding machine, laterally spaced rotatable members for supporting the mold board, and means for raising said members to engage the mold board.

4. In a molding machine, laterally spaced rotatable members for supporting the mold board, and means for rotating said members.

5. In a molding machine, laterally spaced rotatable members for supporting the mold board, and a spring connected with each member, through which spring said member is rotated.

6. In a molding machine, a supporting frame carrying laterally spaced non-depressible members, and having an up and down movement in a vertical plane, and means for raising and lowering said supporting frame.

7. In a molding machine, a frame having rigid over-hanging arms, a rock over table pivotally supported near its center on said arms, a vertically moving table, and means for moving said last mentioned table in a vertical plane.

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Witnesses:

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