

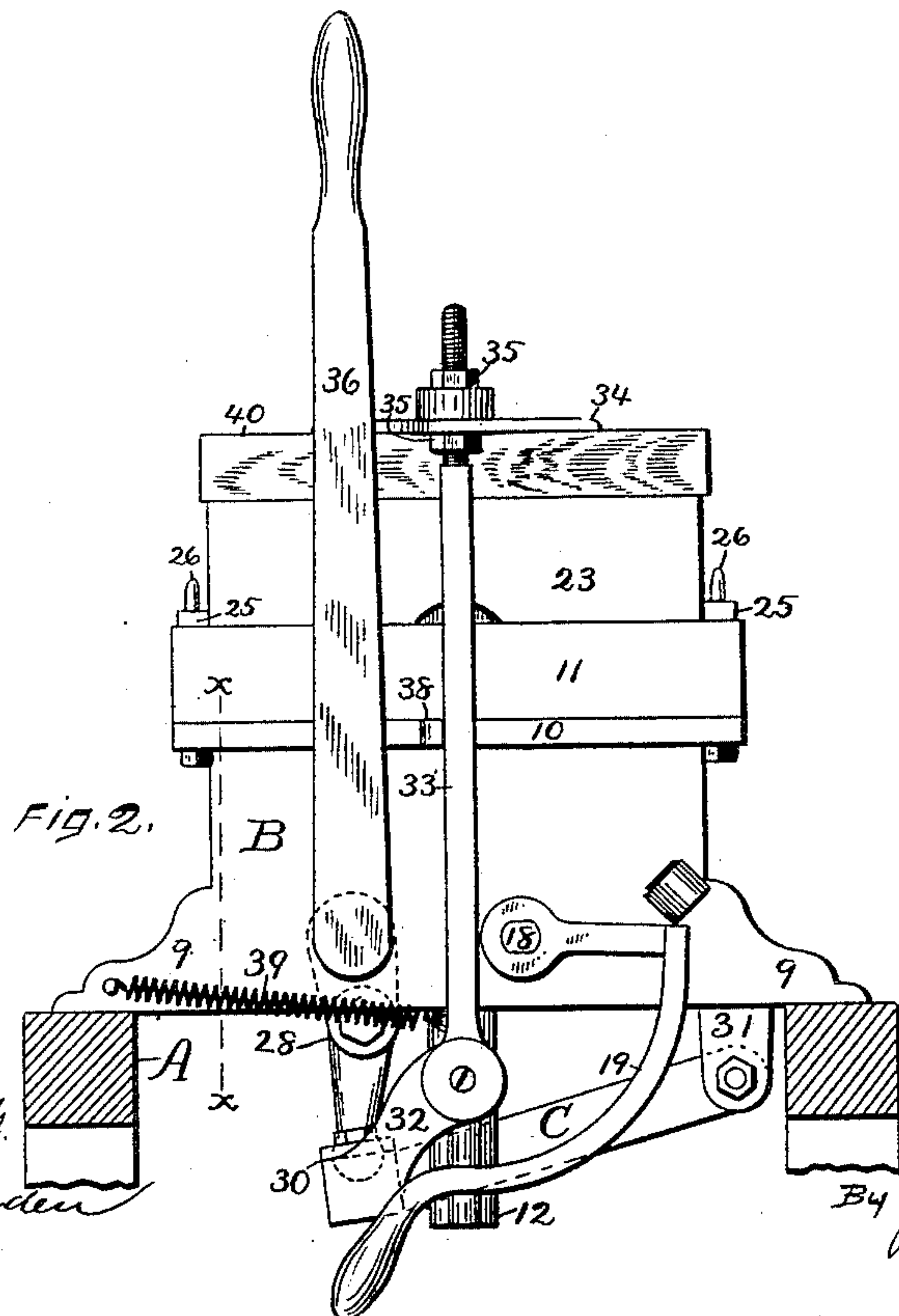
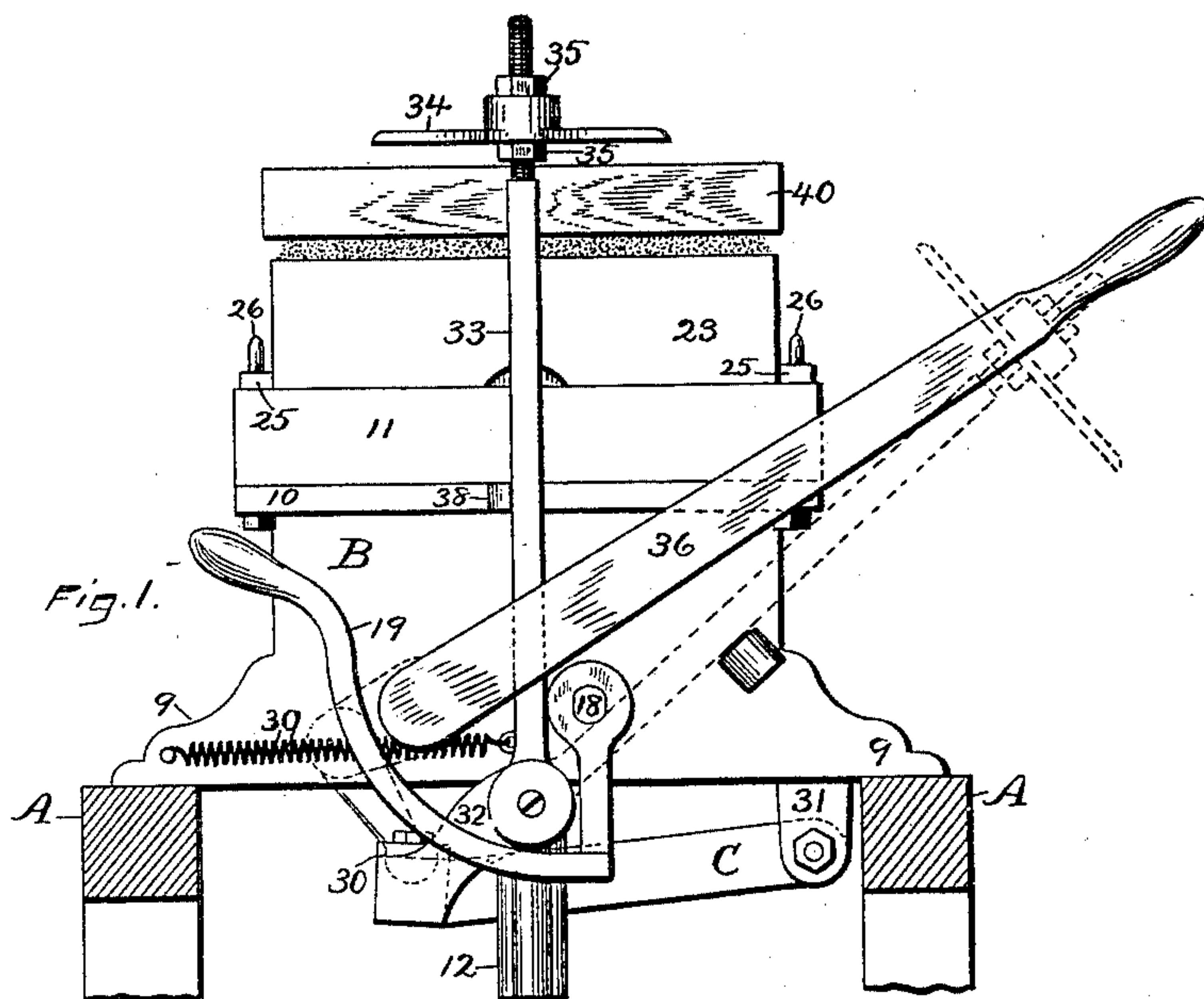
(No Model.)

4 Sheets—Sheet 1.

P. O'CONNOR.  
MOLDING MACHINE.

No. 462,276.

Patented Nov. 3, 1891.



*Witnesses.*

John Edwards Jr.

Thos Corcoran

*Inventor.*

Patrick O'Connor.

By James Shepard.

Atty.

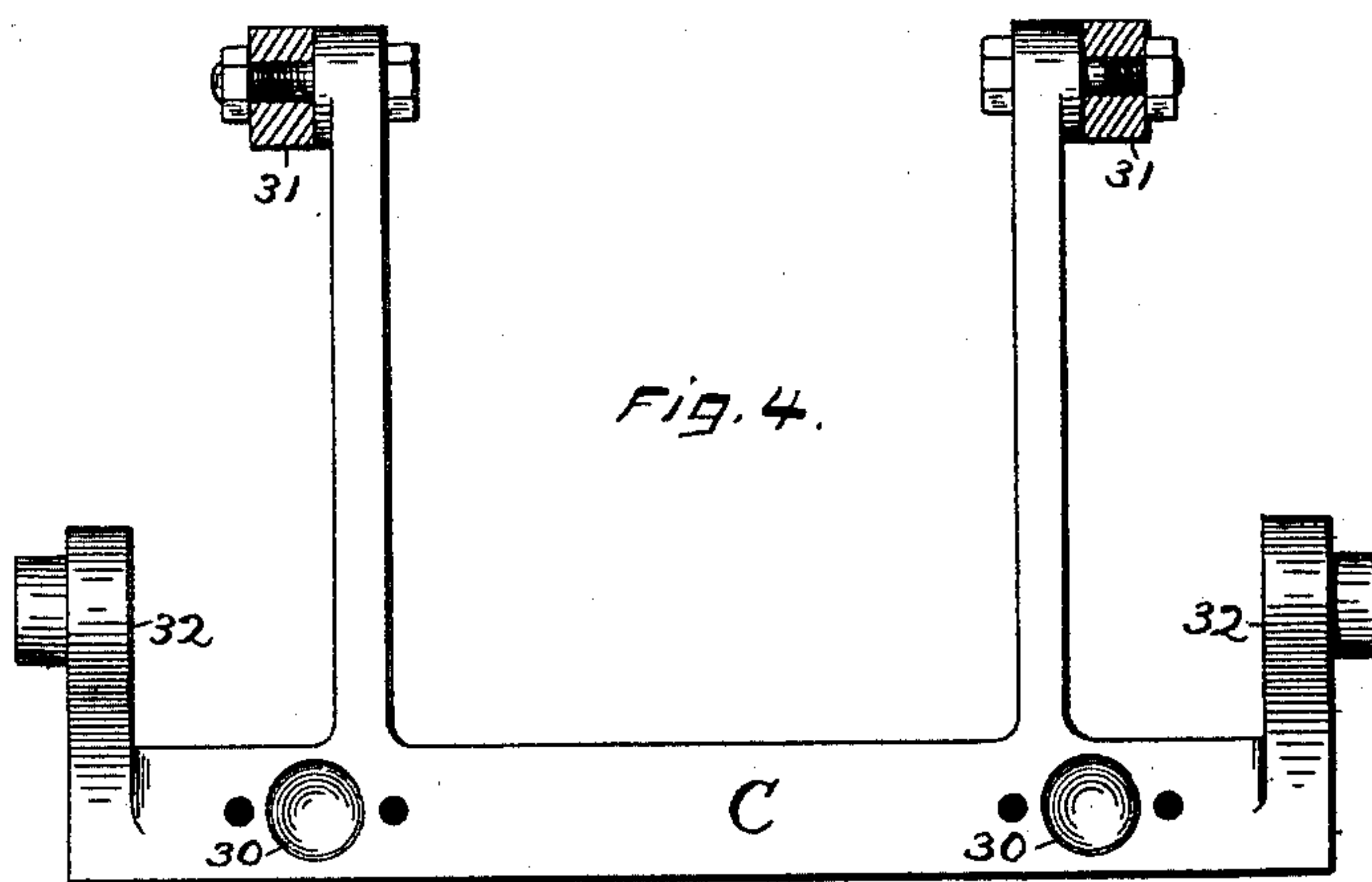
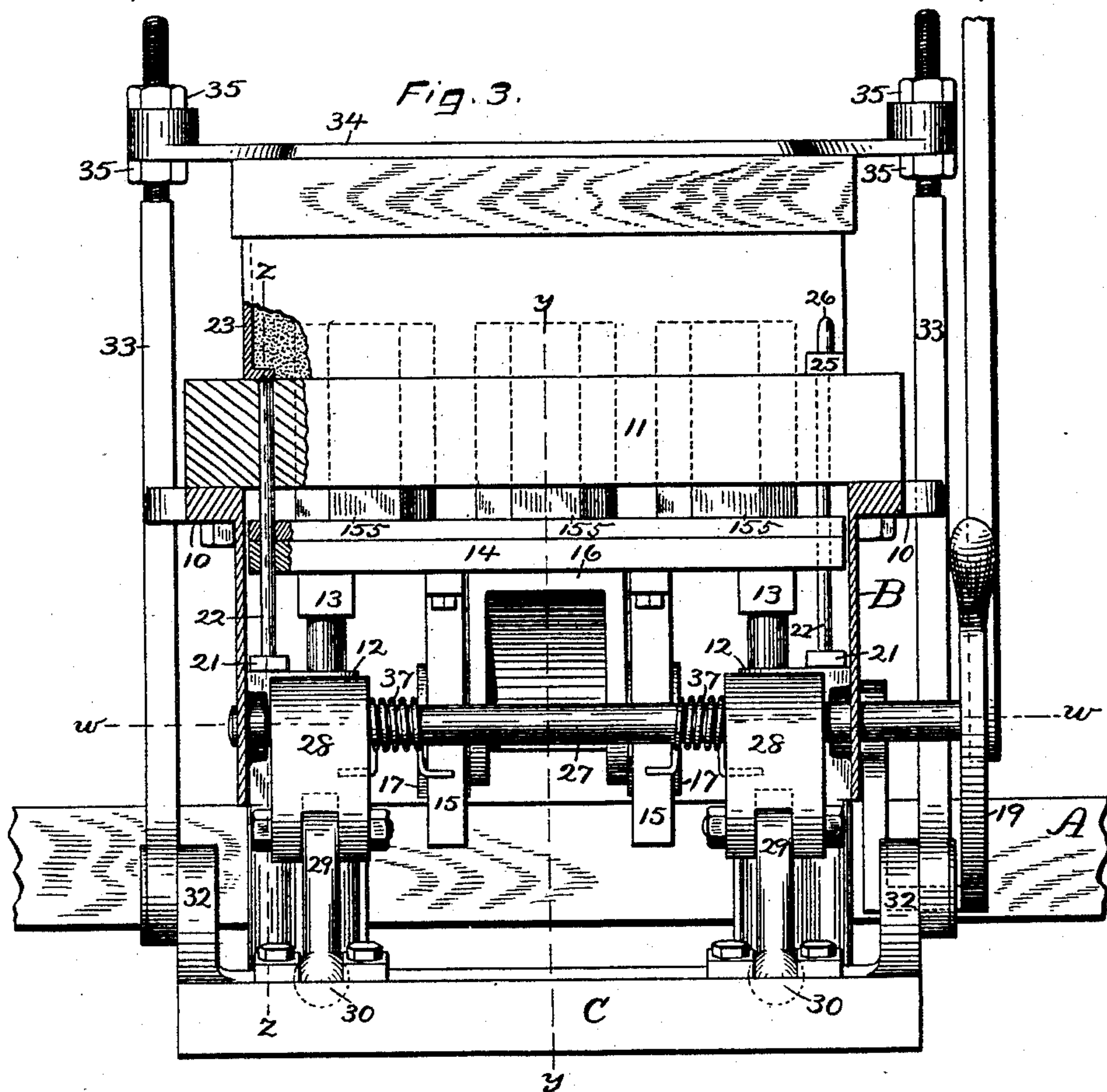
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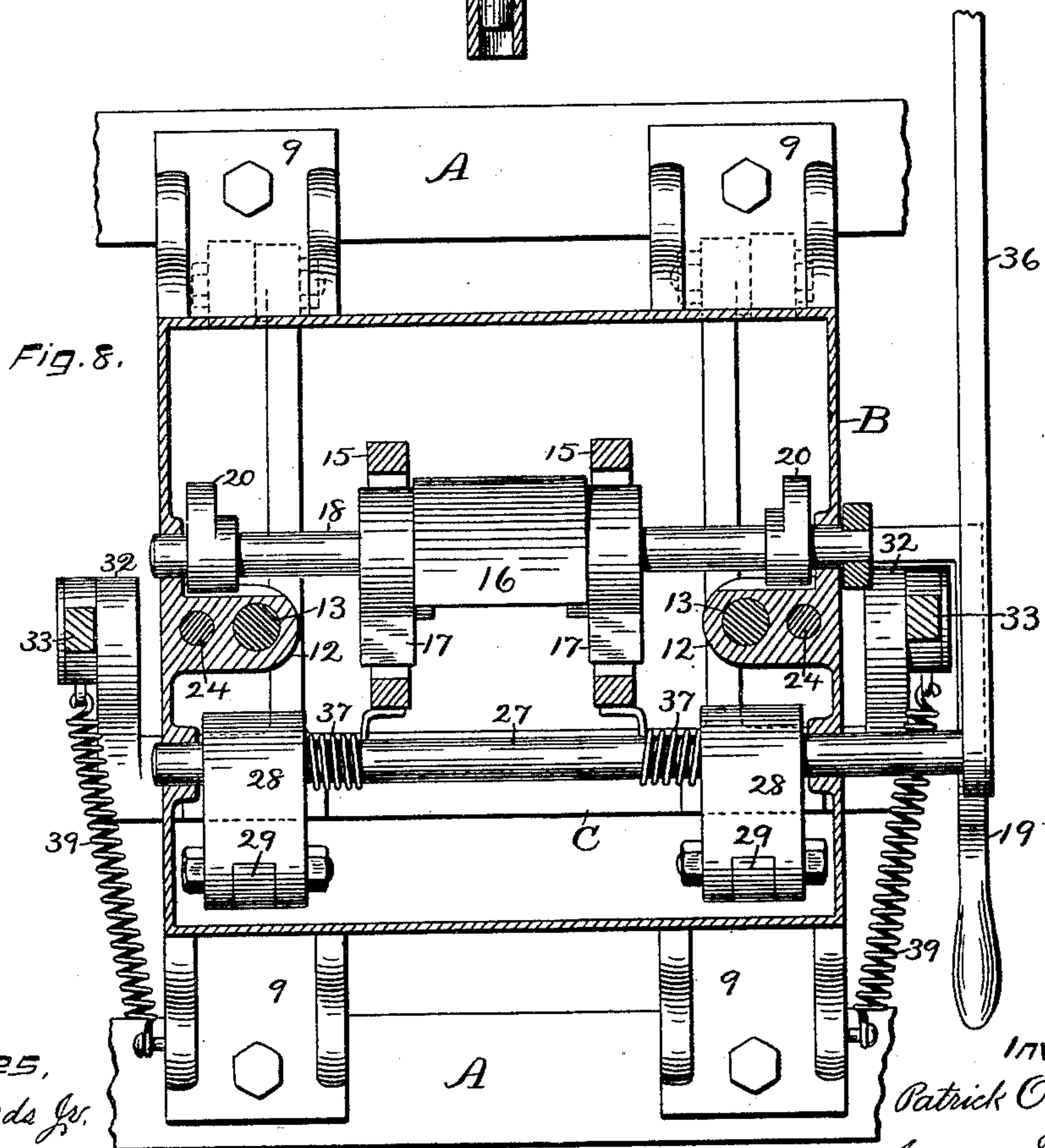
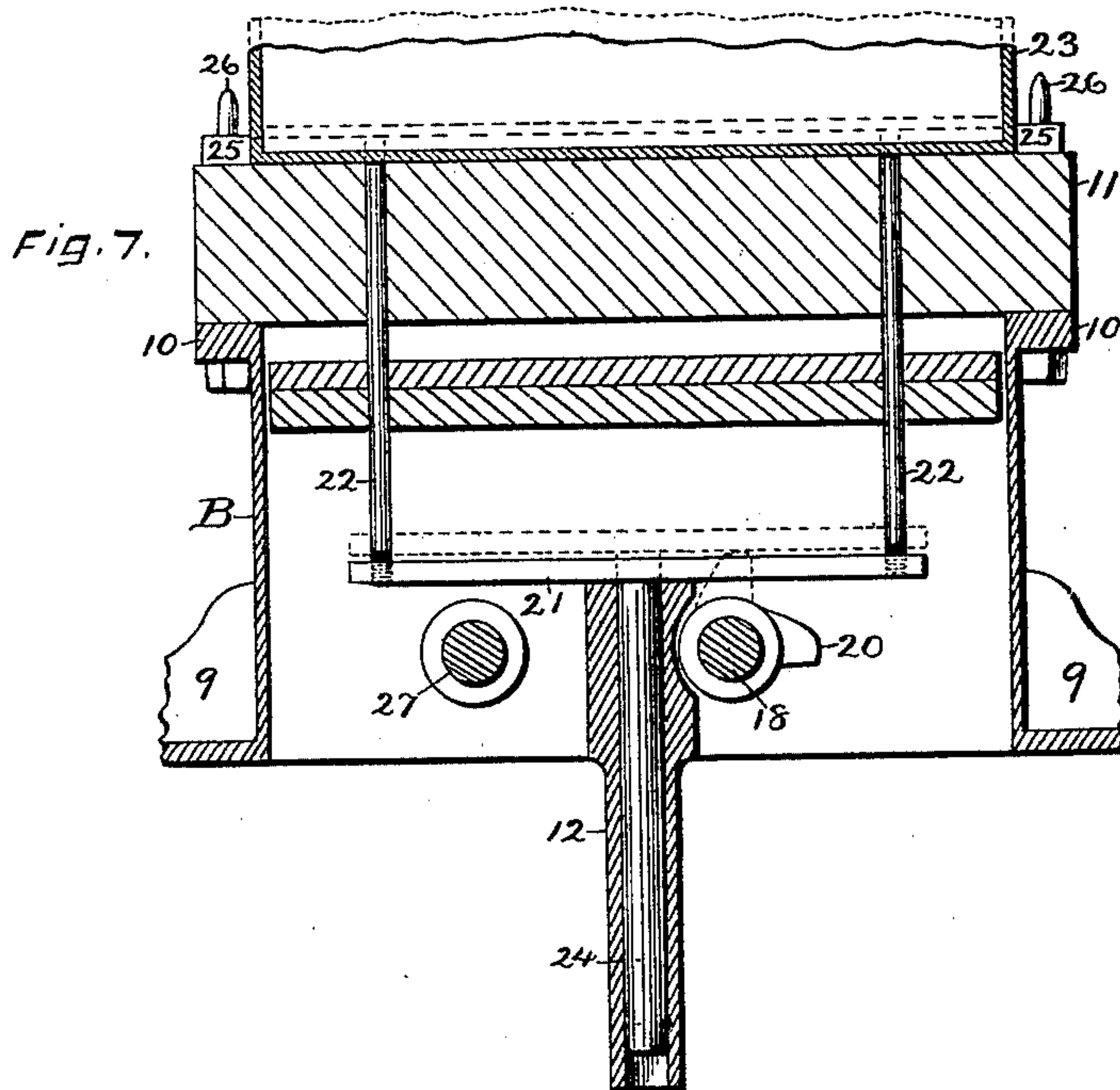
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Thos. Corseaden

INVENTOR.  
Patrick O'Connor  
By James Sheppard



# UNITED STATES PATENT OFFICE.

PATRICK O'CONNOR, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO JAMES REYNOLDS, OF SAME PLACE.

## MOLDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 462,276, dated November 3, 1891.

Application filed December 30, 1890. Serial No. 376,262. (No model.)

*To all whom it may concern:*

Be it known that I, PATRICK O'CONNOR, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Molding-Machines, of which the following is a specification.

My invention relates to improvements in molding-machines; and the objects of my improvement are simplicity in construction, compactness in form, and general efficiency in operation.

In the accompanying drawings, Figure 1 is a side elevation of my machine with the parts in position for drawing down the presser-board. Fig. 2 is a like view of the same with the presser-board drawn down. Fig. 3 is an enlarged partial section on the line *xx* of Fig. 2, the parts not sectioned being shown in front elevation. Fig. 4 is a plan view of the bail or swinging frame that draws down the presser-plate, the pivotal lugs of the main case or frame to which said bail is attached being shown in horizontal section. Figs. 5 and 6 are vertical sections on line *yy* of Fig. 3, showing the parts in different positions. Fig. 7 is a vertical section on line *zz* of Fig. 3; and Fig. 8 is a horizontal section on line *ww* of Fig. 3, the cams and shafts being shown in plan view.

A A designate the rails of the workman's bench or stand, upon which the case or frame B of the machine is supported. This case or frame is substantially in box-like form, with suitable feet or brackets 9 for supporting it upon the bench, and provided at its top with a flange 10, upon which to secure the bed 11. The case or frame B is provided with inwardly-projecting lugs 12 upon its inside at the middle portions of its ends or narrowest sides, as shown most clearly in Fig. 8, which lugs project downwardly quite a distance below the base of the frame, as shown in all of the figures excepting Figs. 4 and 8. A hole is bored vertically through each lug to form a guide for the pattern-slide.

13 designates the rods or legs of the pattern-slide, which are guided in the lugs 12, and 14 is the pattern-slide, attached to said rods and bearing any suitable patterns, as 15, which extend up through the bed 11, as shown

in Figs. 5 and 6. On the under side of the pattern-slide are two pendent frames 15, within which are the slide-operating cams 16 17, secured to the shaft 18, which has its bearings in the case or frame B and is operated from the outside by means of the lever 19. The cam 16 is between the pendent frames 15 and acts directly upon the under side of the pattern-slide 14 to lift the same, while the cams 17 (one for each of the pendent frames 15) act upon the lower ends of said frames to force the pattern-slide downwardly. (See Fig. 6.) Upon the shaft 18 are cams 20, that act upon a cross-bar 21, to which are secured lifting-rods 22, that extend up through the bed 11 to a point directly under the rim of the flask 25, as most clearly shown in Fig. 3. The cross-bar 21 is supported on a rod 24, that is guided in a second vertical hole in each of the lugs 12. The flask 23 is provided with suitable perforated ears 25 to receive the dowel-pins 26 of the bed, as in ordinary molding-machines.

Extending through the case or frame B at a point in front of the shaft 18 is another shaft 27, upon which two toggle-arms 28 are rigidly secured. To the outer ends of these arms other toggle-arms 29 are connected by a hinge-joint, the opposite ends of said arms terminating in a ball-like form, which fits the sockets 30 of the bail or swinging frame C. This frame is pivotally secured to the case or frame B through the lugs 31, which constitute a part of said case. The forward end of the frame, upon each side of the machine, is provided with short arms 32, to which are pivoted the swinging arms 33 of the presser-plate 34. The outer ends of these arms are threaded and provided with nuts 35 for the purpose of adjusting the presser-plate up or down, as may be desired. The outer end of the shaft 27 is provided with a presser-lever 36 for operating said shaft. Springs 37 are placed upon the shaft 27 to balance the presser-lever 36 and hold it back in position, as shown in Fig. 1, until the operator is ready to draw it forward. The case or frame B is also provided with a stop 38 for the arms of the presser-plate, and said arms are provided with a light spring 39 to hold them against said stop.

The machine being supplied with suitable



patterns, the lever 19 is operated to bring it into the position shown in Figs. 1, 3, and 5 to elevate the pattern-slide, so that the patterns 15 project the desired distance above the bed. 5 The flask 23 is placed in position and filled with sand, the presser-plate meantime being turned to the rear, as indicated by the broken lines in Fig. 1. After filling the flask with sand the presser-board 40 is placed on the 10 sand over the flask and the presser-plate thrown into position above it, as shown in Fig. 1. The presser-lever is then brought forward into the position shown in Fig. 2, whereby the toggle-arms 28 and 29 are straightened to 15 depress the swinging bail or frame C, and thereby draw downwardly the arms 33 and presser-plate 34 into the position shown in Fig. 2 to firmly pack the sand. The pressing-lever 36 may then be thrown backward, where 20 it will be held by the springs 37, and the presser-plate also thrown backward out of the way. The lever 19 may now be operated to force the cams 17 upon the pendent frames 15 and bring the pattern-slide downwardly to with- 25 draw the patterns from the sand. The continued motion of the lever and shaft 18 causes the cams 20 to strike against the cross-arms

21 and push the lifting-rods upwardly against the rim of the flask to lift it or loosen it on the dowel-pins 26. Another flask is placed 30 in position and the lever 19 returned to carry the pattern-slide upwardly ready to repeat the operations before described.

While I have shown and described lifting devices for starting the flask off the dowel- 35 pins, it is evident that the same may be omitted, if desired, or other lifting devices substituted therefor without any change in the mechanism for packing the flask.

I claim as my invention— 40

In a molding-machine, the combination, with a mold-support, of the shaft 27, the lever 36, secured to said shaft for turning the same, the swinging bail C, the toggle-arms 28 and 29, one of which is carried by said shaft and 45 the other of which is seated upon said swinging bail, the pressure-plate 34, and its arms 33, pivoted to said bail, substantially as described, and for the purpose specified.

PATRICK O'CONNOR.

Witnesses:

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WILLIAM S. PARDEE.