

(No Model.)

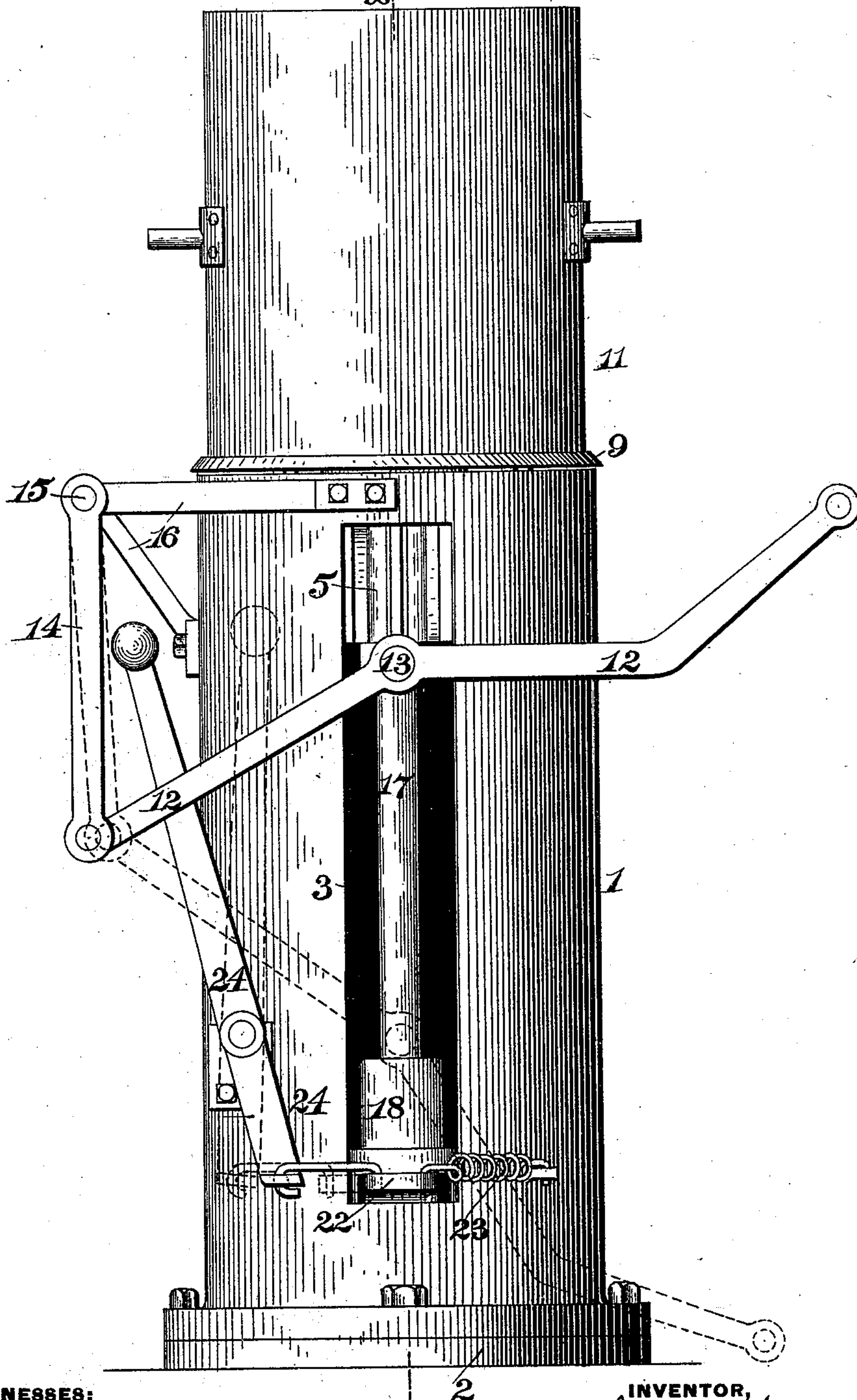
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C. HERMAN.
MOLDING MACHINE.

No. 528,295.

Patented Oct. 30, 1894.

FIG. 1.



WITNESSES:

Daniel S. Wolcott
C. Hunt.

INVENTOR,

Charles Herman
by George H. Christy
Att'y.

(No Model.)

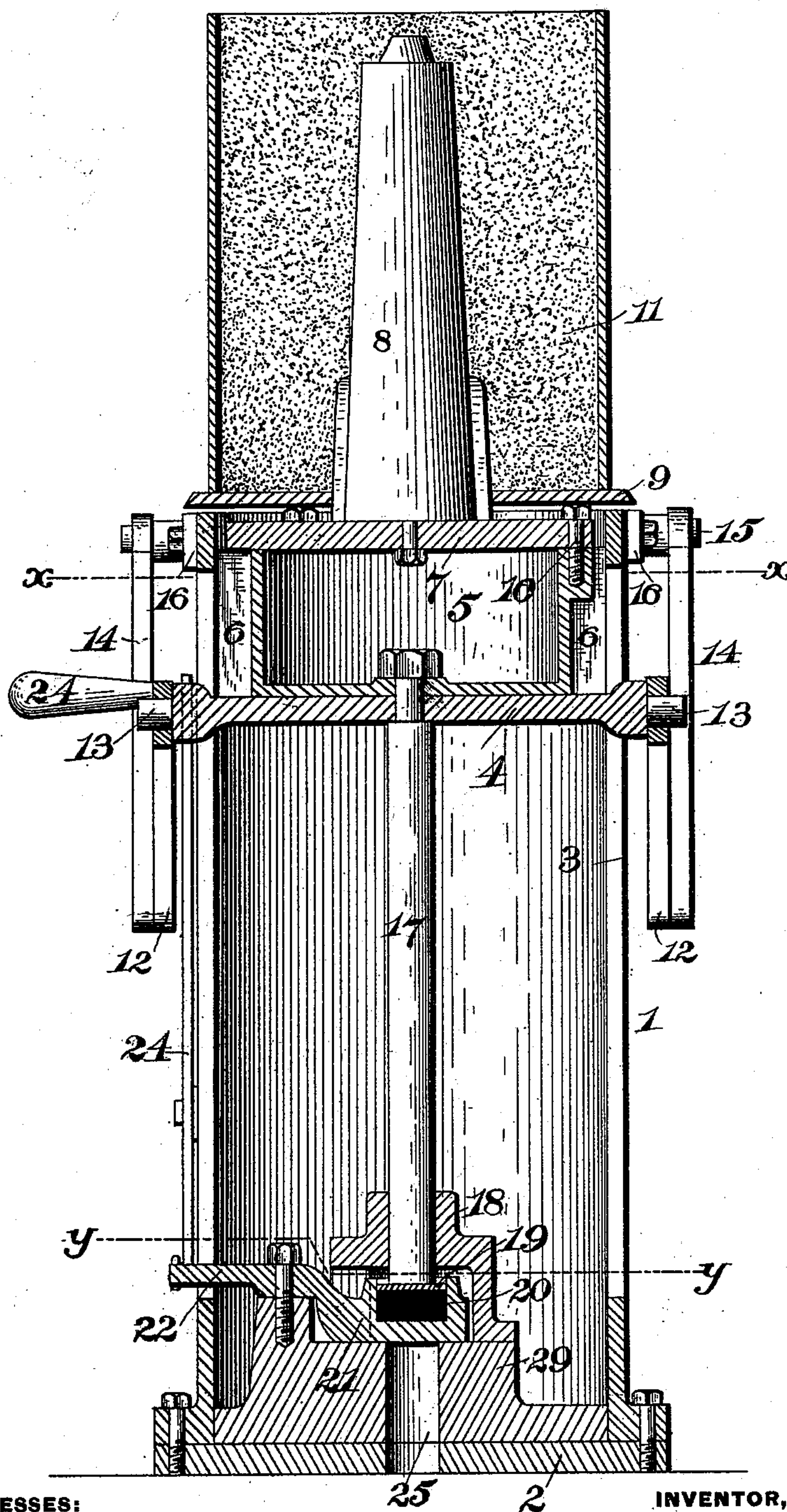
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MOLDING MACHINE.

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Patented Oct. 30, 1894.

FIG. 2.



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(No Model.)

3 Sheets—Sheet 3.

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MOLDING MACHINE.

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FIG. 3.

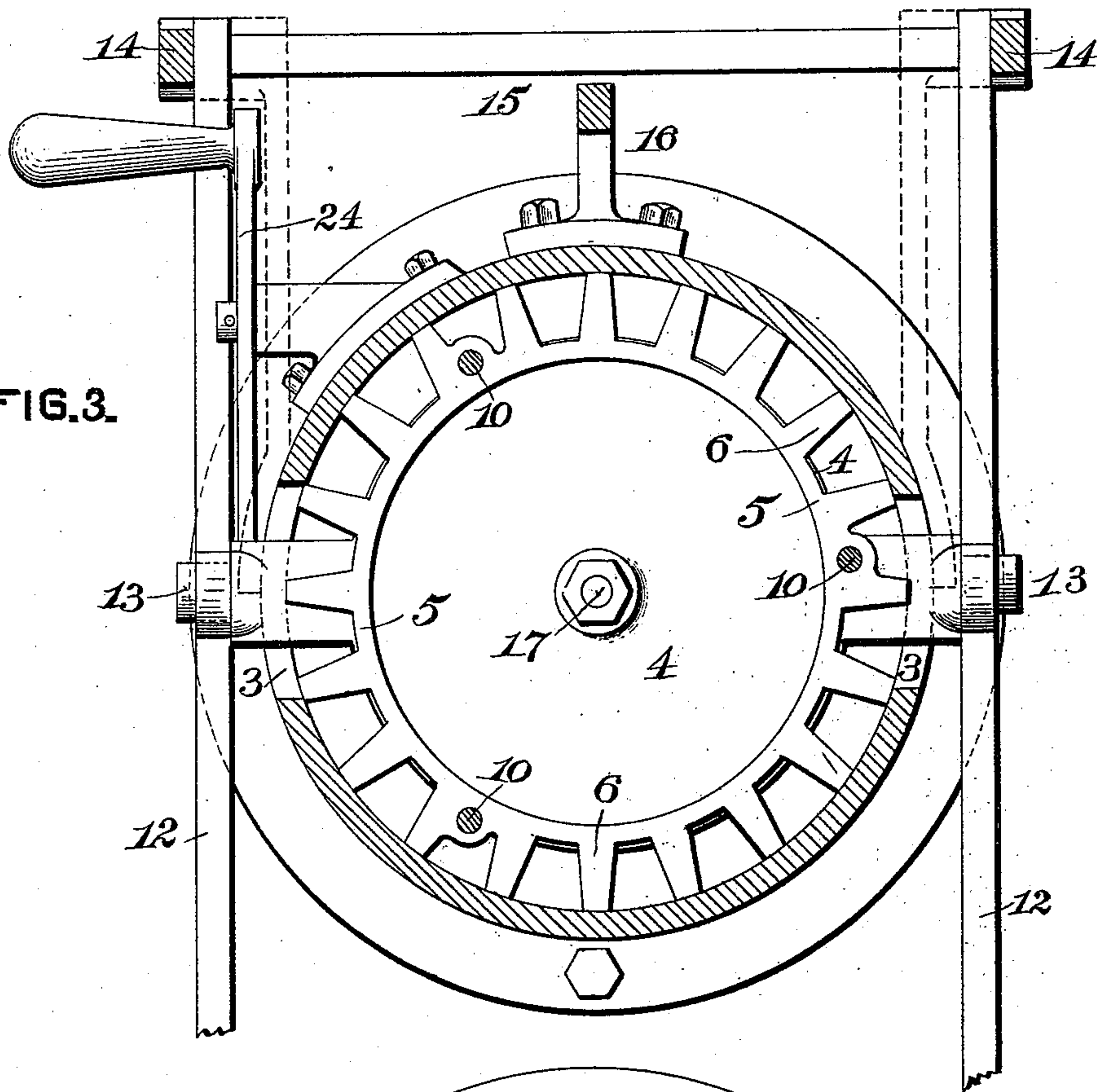
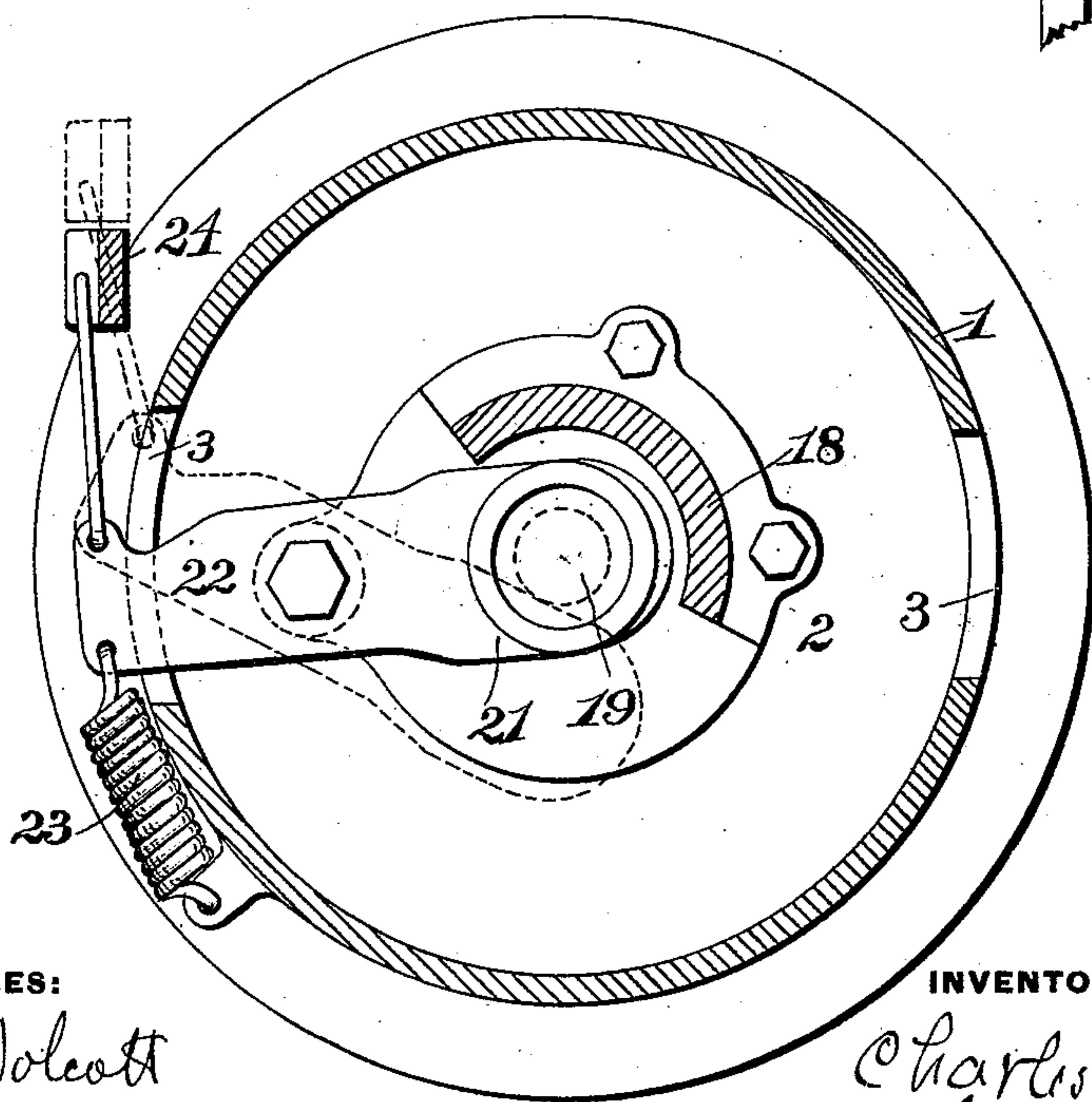


FIG. 4.



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UNITED STATES PATENT OFFICE.

CHARLES HERMAN, OF ALLEGHENY, PENNSYLVANIA.

MOLDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 528,295, dated October 30, 1894.

Application filed June 26, 1893. Serial No. 478,922. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HERMAN, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Molding-Machines, of which improvements the following is a specification.

The invention described herein relates to certain improvements in sand molding machines, and has for its object a construction whereby the sand may be evenly compacted around the pattern in the flask, and the pattern easily and quickly withdrawn.

In general terms, the invention consists in the construction and combination substantially as hereinafter described and claimed.

In the accompanying drawings forming a part of this specification, Figure 1 is a side elevation of my improved machine. Fig. 2 is a sectional elevation of the same, and Figs. 3 and 4 are sectional plan views, the planes of section being indicated by the lines x, x , and y, y , respectively, of Fig. 2.

In the practice of my invention, a cylindrical frame 1, is mounted upon a suitable base plate 2, and is provided with longitudinal slots 3 for the projection of the ends of the cross-head 4, arranged within the cylinder. This cross-head is made of somewhat smaller diameter than the cylinder, as shown in Fig. 3, and upon the cross-head is secured an annular frame 5, provided with a series of radial fingers 6, adapted to bear against the inside wall of the cylinder 1, and serve as a guide for the cross-head in its vertical movements. Upon the annular frame 5, is placed a board 7, to which is secured the pattern 8. A post 17 is secured to the cross-head 4 and extending down through the guide 18 attached to the base plate 2, is normally supported by the jarring block 20. The jarring block 20 is arranged within a carrier 21, normally held over an opening 25, through the base plate 2, and provided with an arm 22, which is pivotally arranged upon the base plate 2. To the outer end of the arm 22, is connected a spring 23, adapted to hold the block 21 in normal position, and to the arm 22 is also connected a lever 24, by which the carrier 21 may be shifted out of line with the opening 25 through the base plate 2.

In the molding operation the cross-head is raised by means of levers 12, provided with bearings for the trunnions 13 of the cross-head 4 and pivoted to the lower ends of links 14 loosely supported at their upper ends by a shaft 15, mounted in arms 16 attached to the cylindrical frame 1. In forming a mold, a draw plate 9, provided with openings for the projection of the pattern therethrough, is first slipped over the pattern, and rests upon the heads of a series of bolts 10, securing the pattern board 7 to the frame 5. Upon the draw plate 9, is then placed the flask 11, which is then filled with sand. The molder now raises the levers 12 and with them the cross-head and parts carried thereby, including the flask and contained sand, to a sufficient height and then permits the whole to drop, the downward movement being arrested by the jarring block 20. The jarring thus imparted to the sand causes it to settle and compact around the pattern, and is repeated until the desired degree of compactness is obtained.

I have found by experience, that it is desirable in order to obtain good results, to employ an elastic cushion as a jarring block for stopping the motion of the moving parts, for the reason that the elasticity of the cushion will prevent a loosening up of the sand in the upper portion of the flask, as inevitably occurs when using a solid jarring block or stop, and necessitating the use of a follower plate on top of the sand in the flask, to prevent the loosening up thereof. Hence, I prefer a piece of rubber or other resilient material for receiving the impact of the post 17, in lieu of a solid non-resilient material as has been the practice heretofore. In order to protect the resilient block, it is preferred to cover the same with a metal plate 19, as shown in Fig. 2. After the sand has been sufficiently jarred or compacted in the manner described, the operator, by pulling on the lever 24, shifts the carrier 21, thereby permitting the rod 17 to pass down through the opening 25. During this downward movement of the cross-head, pattern plate and pattern, the draw plate 9 will rest upon the upper end of the cylindrical frame 1, thereby stopping the downward movement of the flask, and permitting the withdrawal of the pattern by the continued

downward movement of the cross-head and pattern 8.

The openings between the fingers of the annular guide frame permit the sand to fall 5 to the bottom of the cylindrical frame, thus avoiding all clogging of the machine.

It will be observed that the guide frame is attached to the base plate by which the jarring block is supported and that the opera- 10 tive mechanism is carried by the guide frame, so that the machine can be readily moved or transported from place to place. When it is desired to remove the flask from the machine before drawing the pattern, a non-adjustable 15 jarring block may be attached to or formed integral with the base plate.

As in forming molds, the sand is compacted firmly around the pattern and considerable force is required to withdraw the pattern, 20 when a steady pull is employed. In my improved machine the stripping plate is movable above the end of the guide frame, which serves as a stop for the stripping plate during the drawing of the pattern, so that in 25 drawing a pattern the pattern board, pattern, stripping plate and flask are raised by the lever 12 until the stripping plate is a short distance above the guide frame or stop, and the several parts are allowed to drop. As they 30 drop the stripping plate and flask are stopped with a jar, thereby loosening the pattern in the sand, so that the pattern will readily separate from the mold.

I claim herein as my invention—

35 1. In a molding machine, the combination of a movable pattern board, and pattern, a stripping plate movable with the pattern board during the normal operation thereof, a

post connected to the pattern board a stop for arresting the downward movement of the 40 stripping plate during the withdrawing movement of the pattern board, and a jarring block, substantially as set forth.

2. In a molding machine, the combination of a movable cross-head or pattern board, a 45 post connected to the pattern board, and a resilient jarring block, substantially as set forth.

3. In a molding machine, the combination of a movable cross-head or pattern board, a 50 post or support movable with the cross-head, and a movable jarring block normally held in line with the post or support, and means for shifting the jarring block out of line with the post or support, substantially as set forth. 55

4. In a molding machine, the combination of a base plate having an opening there- 60 through, a movable carrier normally held over said opening, a jarring block mounted in said carrier, a reciprocating post and a cross-head, or flask-support movable with the post, substantially as set forth.

5. In a portable molding machine, the combination of a guide frame, a base plate at- 65 tached to the frame, a movable cross head or pattern support, a post connected to the pattern support, a lever pivotally mounted on the frame and connected to the pattern support, and a jarring block carried by the base plate, substantially as set forth. 70

In testimony whereof I have hereunto set my hand.

CHAS. HERMAN.

Witnesses:

W. S. THOMAS,
DARWIN S. WOLCOTT.