

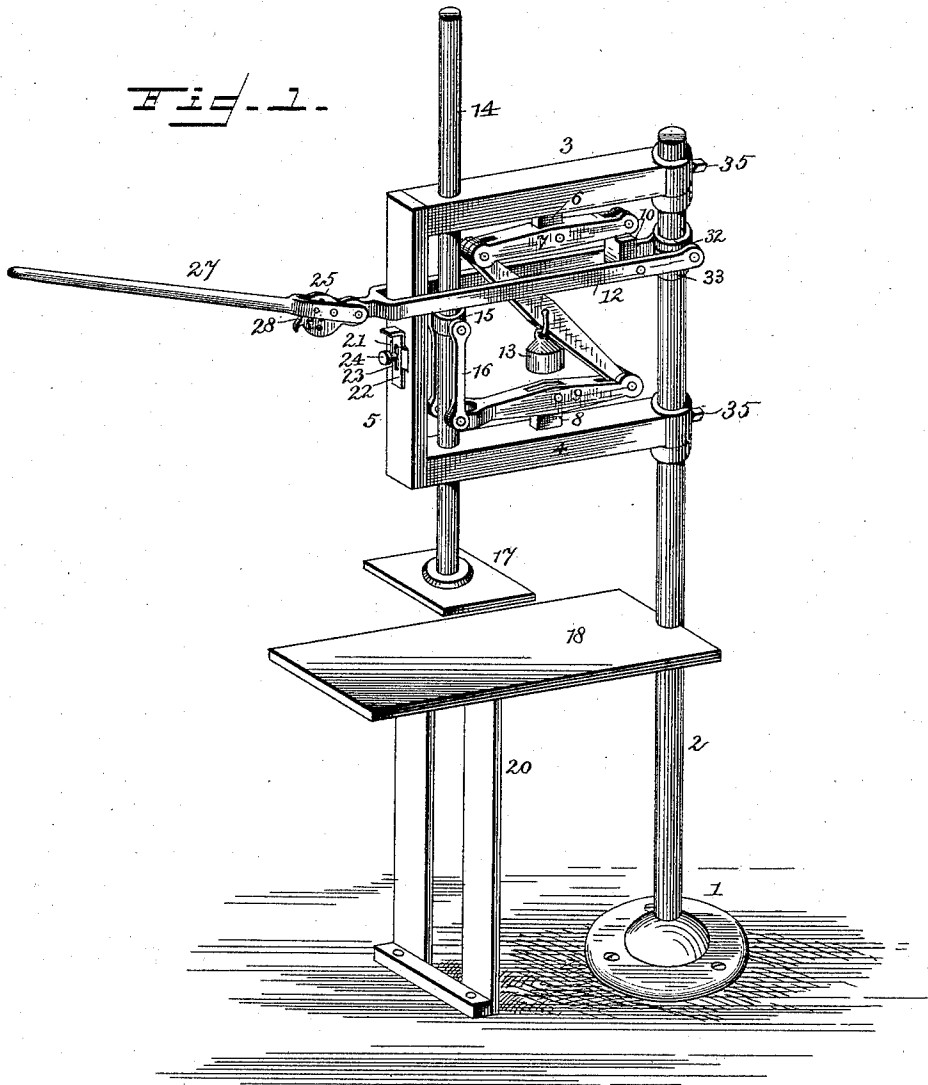
(No Model.)

2 Sheets—Sheet 1.

E. KEENAN, Jr.
MOLDING MACHINE.

No. 442,123.

Patented Dec. 9, 1890.



Witnesses

Chas H. Curand.

Wm. Bagger.

Inventor

Ellis Keenan, jr.

By his Attorneys,

Chas. Snow & Co.

(No Model.)

2 Sheets—Sheet 2.

E. KEENAN, Jr.
MOLDING MACHINE.

No. 442,123.

Patented Dec. 9, 1890.

Fig. 2.

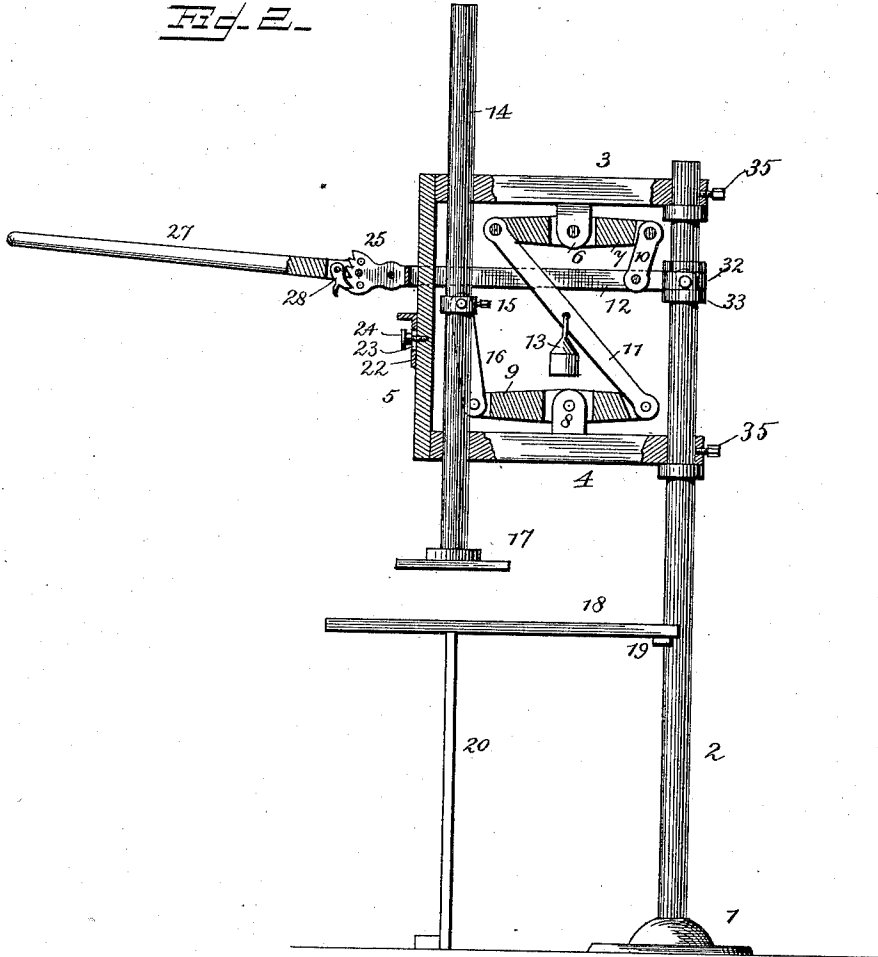
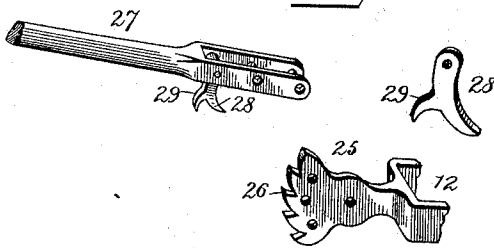


Fig. 3.



Witnesses

Chas. C. Curand.

Wm. Bagger.

Inventor

Ellis Keenan, jr.,

By his Attorneys,

C. Snow & Co.

UNITED STATES PATENT OFFICE.

ELLIS KEENAN, JR., OF BUFFALO, NEW YORK.

MOLDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 442,123, dated December 9, 1890.

Application filed June 12, 1890. Serial No. 355,211. (No model.)

To all whom it may concern:

Be it known that I, ELLIS KEENAN, Jr., a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Machine for Forming Molds, of which the following is a specification.

This invention relates to machines for forming molds; and it has for its object to construct a machine of this class by means of which snap-flask or bench molding may be accomplished more rapidly and with less expenditure of power than by means now in common use.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of the machine embodying my improvements. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a detail view of the operating-lever and its adjustable handle.

Like numerals of reference indicate like parts in all the figures.

1 designates the base, and 2 an upright rising from the same. Upon said upright, which may be constructed of ordinary gas-pipe of suitable dimensions, is hinged or journaled a frame consisting of horizontal parallel arms 3 and 4 and a vertical connecting-piece 5. The upper arm 3 is provided on its under side with a lug 6, to which is pivoted a lever 7. The lower arm 4 is provided on its upper side with a lug 8, to which is pivoted a lever 9. The rear end of the lever 7 has a pivoted link 10, and the front end of said lever 7 is connected by means of a pivoted rod 11 with the rear end of the lever 9, the said rod 11 extending diagonally through the frame.

12 designates the operating-lever, which is bifurcated and which straddles the frame, the ends of the arms of said operating-lever being connected pivotally with a collar 32, journaled between flanges 33, upon the upright 2. The arms of said operating-lever are likewise connected pivotally with the link 10. It follows that by depressing the front end of the operating-lever the lever 7 is actuated, its front

end being raised. Motion is at the same time communicated through the rod 11 to the lever 9, the front end of which is depressed.

A weight 13 is mounted upon the rod 11 to restore the parts to their normal position when pressure upon the front end of the operating-lever is no longer exerted.

The outer ends of the arms 3 and 4 are provided with perforations, forming bearings for a vertically-sliding rod 14. The outer or front end of the lever 9 is bifurcated to admit of the passage of said rod, which latter is provided with a collar 15, which is connected by means of rods or links 16 with the bifurcated end of the lever 9. The collar 15 is adjustable upon the rod 14, which latter may thus be raised or lowered. The lower end of the rod 14 is provided with a plunger or follower 17, which is secured detachably upon the said rod, and which is to be of a size corresponding with the size of the mold or flask which is to be operated upon.

18 designates a bench or table, which is supported upon a flange 19 on the upright 2 and upon a leg or upright 20, rising from the base in front of the upright 2 and at a point directly under the vertically-movable plunger-rod.

The front side of the vertical plate 5, which connects the arms 3 and 4, is provided with dovetailed flanges 21, forming bearings for a vertically-adjustable gage-plate 22. The latter is provided with a slot 23, through which passes the set-screw 24, by means of which the said gage-plate may be secured at any desired adjustment. This gage-plate is for the purpose of limiting the downward movement of the front end of the operating-lever 12, thus regulating the extent to which the plunger-rod 14 may be depressed. The front end of the operating-lever 12 is provided with a head 25, the outer edge of which has a series of teeth or ratchets 26.

27 designates a handle, the end of which is forked and connected pivotally with the head 25 of the operating-lever concentrically with the teeth or ratchets 26. In the forked end of the handle 27 is pivotally mounted a dog or pawl 28, having an outwardly-extending thumb-piece 29. The dog 28 normally en-

gages one of the teeth or ratchets 26, and the handle may thus be adjusted with relation to the lever to suit the height of the operator. When the handle is to be lowered, the dog 28 may be manipulated by its handle 29 to disengage it from the teeth or ratchets 26.

The operation of my invention and its advantages will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed, by those skilled in the art to which it appertains.

The mold or flask is placed upon the gage 18 directly under the plunger, which may then be manipulated the operating-lever be depressed so as to compress the contents of the flask. The pressure may be very accurately regulated by means of the gage 22, which may be adjusted to regulate the extent to which the lever shall be permitted to descend. It will be observed that the handle of the operating-lever is located directly over the head of the operator, who will thus have a direct downward pull, which is much easier and more convenient than when the operating-lever is located to one side of the operator.

The general construction of the machine is simple and inexpensive, and it may be easily operated with satisfactory results. While the operator is placing sand in the flask he may swing the frame, with the operating mechanism, out of the way. Set-screws, as 35, may, however, be provided for retaining it securely in position.

Having thus described my invention, I claim—

1. The combination of an upright, a rectangular frame journaled at the upper end of the same, the levers pivoted to lugs on the upper and under sides of the bottom and top pieces of said frame, respectively, a diagonal rod connecting the outer or front end of the upper lever with the inner or rear end of the lower lever, the bifurcated operating-lever pivoted to a collar journaled upon the upright, the link connecting the said bifurcated operating-lever with the rear end of the lever pivoted to the top bar of the frame, a plunger-rod sliding vertically in perforations at the outer ends of the top and bottom frame-bars, the links connecting said plunger-rod with the front end of the lever pivoted to the bottom frame-bar, the plunger or follower secured detachably at the lower end of the plunger-rod, and a bench arranged under the frame containing the operating mechanism, substantially as set forth.

2. In a machine of the class described, the combination of the frame, the bifurcated operating-lever, a vertically-reciprocating plunger-rod having an adjustable collar, and links connecting the said collar with a lever actuated by the operating-lever by means of the

intermediate mechanism, substantially as described.

3. In a machine of the class described, the combination of the frame, the operating-lever, the vertically-movable plunger-rod, the levers pivoted to the under and upper sides of the top and bottom bars of the frame, respectively, the link connecting the upper lever with the operating-lever, the links connecting the lower lever with the plunger-rod, a rod connecting the outer and inner ends of the upper and lower levers, respectively, and a weight mounted upon said connecting-rod to restore the operating-lever to its normal position, substantially as set forth.

4. In a machine of the class described, the combination of the frame, the vertically-movable plunger-rod, the bifurcated operating-lever straddling the frame, the intermediate mechanism connecting the said operating-lever with the plunger-rod, the teeth or ratchets formed upon a head at the front end of the operating-lever, the handle connected pivotally with the latter, and the dog or pawl pivoted to the handle and engaging the said teeth or ratchets, substantially as and for the purpose set forth.

5. In a machine of the class described, the combination, with an upright, of a frame journaled at the upper end of the same, a vertically-movable plunger-rod in said frame, having a follower at its lower end, and operating mechanism comprising a lever pivoted to a collar journaled upon the upright and suitable connections, substantially as set forth.

6. In a machine of the class described, the combination of the upright, the frame consisting of the arms 3 4 and connecting-piece 5, journaled on the upright, the plunger-rod 14, working through the arms 3 4, and the operating mechanism for the plunger-rod, located within the space inclosed by the parts 3, 4, and 5, as set forth.

7. In a machine of the class described, the combination of the upright, the frame consisting of the arms 3 4 and connecting-piece 5, journaled on the upright, the plunger-rod 14, working through the arms 3 4, the operating-lever 12, connected pivotally to a collar 32, journaled upon the upright, and toggle-joint mechanism located within the space inclosed by the parts 3, 4, and 5 and connecting the operating-lever 12 with the plunger-rod 14, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ELLIS KEENAN, JR.

Witnesses:

CHAS. MURTIZER,
GEORGE J. KEENAN.