

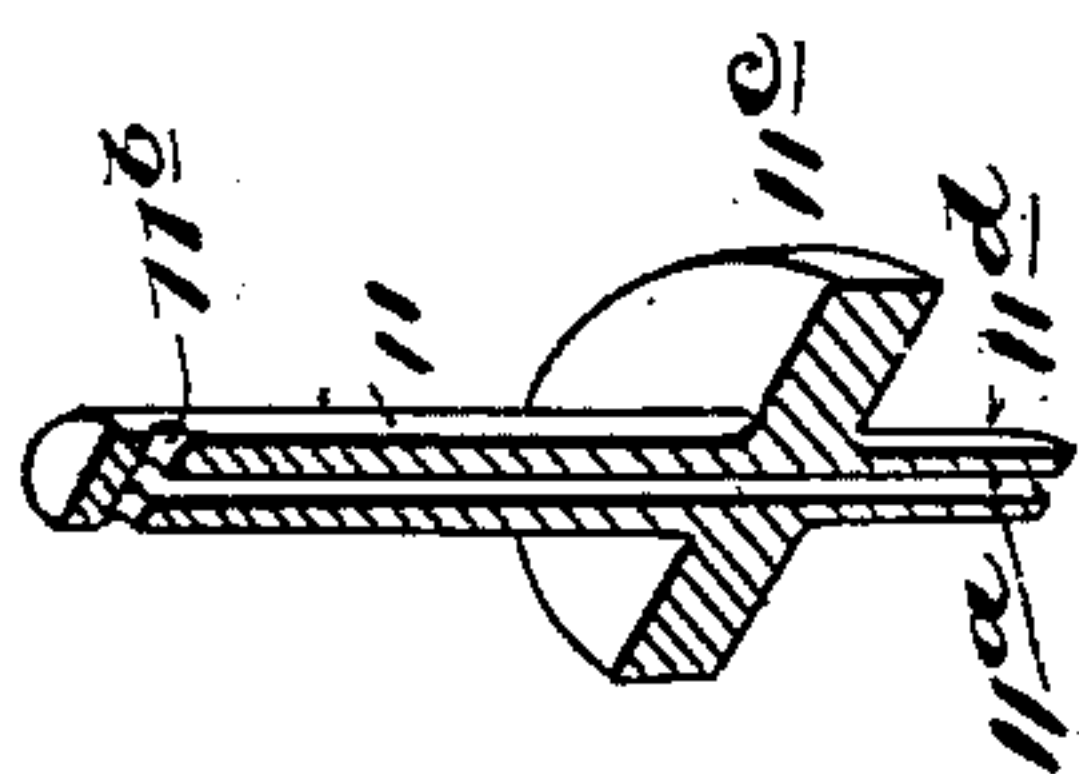
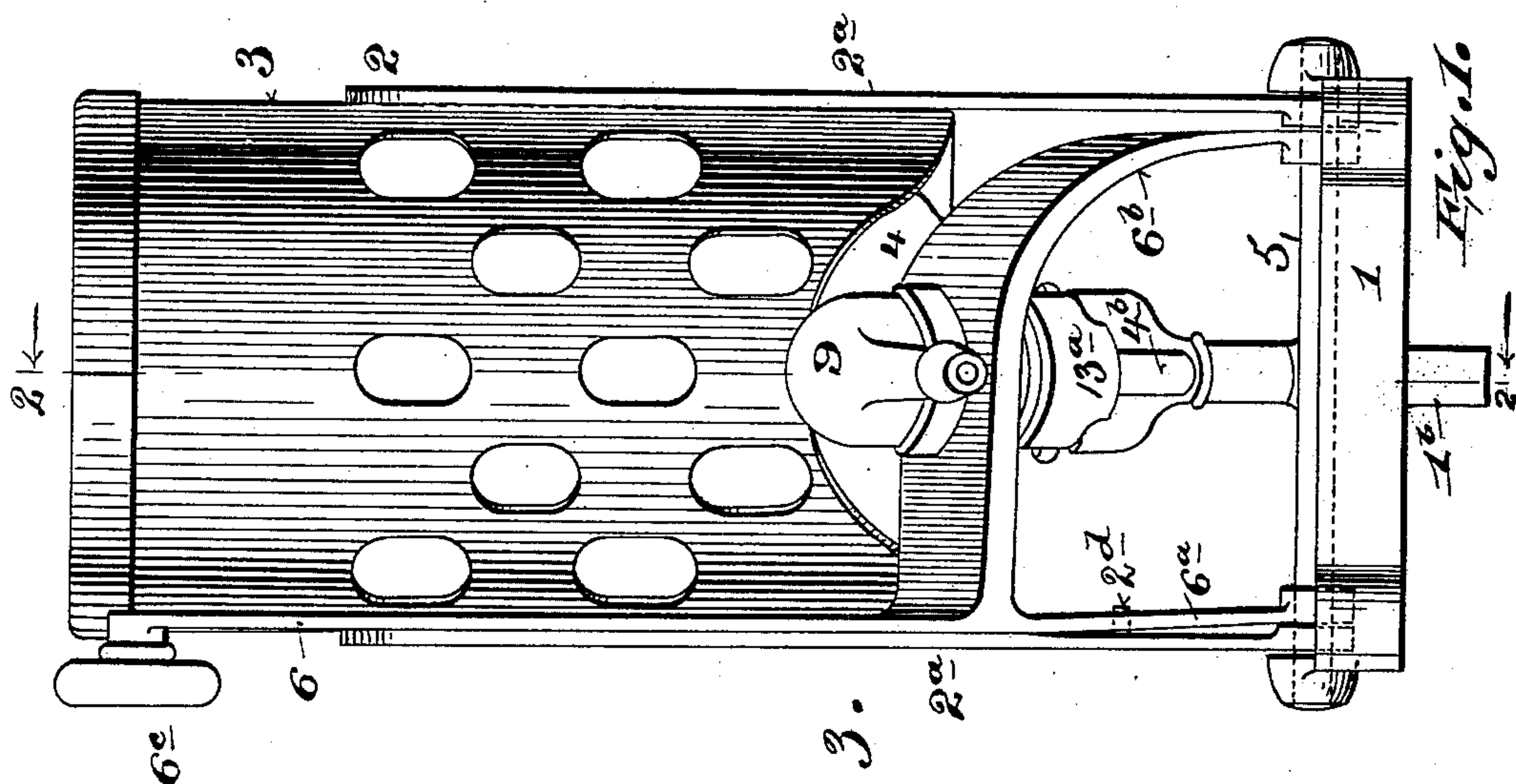
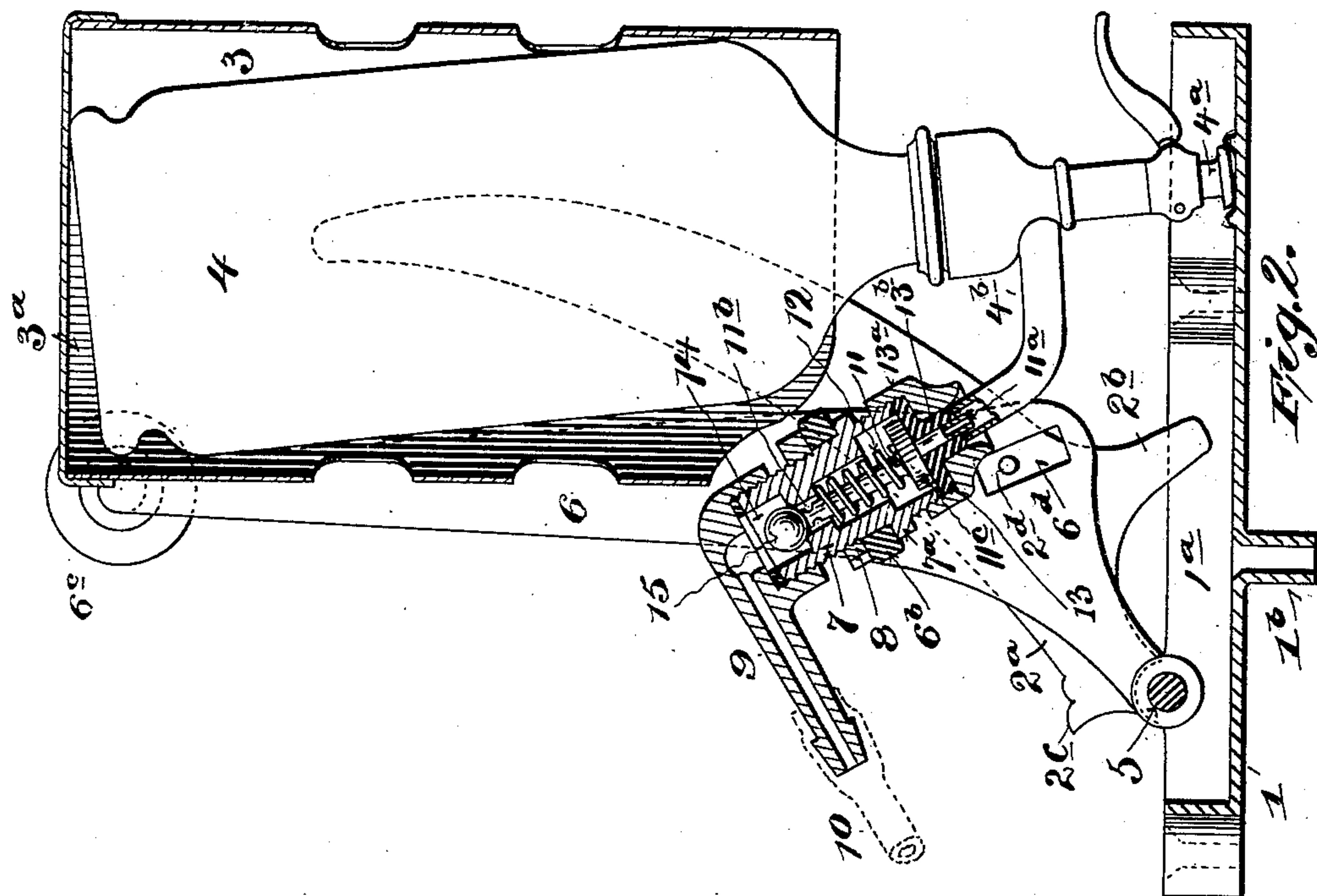
**No. 677,246.**

**Patented June 25, 1901.**

**G. MATTHEWS.**  
**SIPHON FILLING MACHINE.**

(Application filed Mar. 7, 1901.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## SIPHON-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 677,246, dated June 25, 1901.

Application filed March 7, 1901. Serial No. 50,179. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE MATTHEWS, a citizen of the United States, residing in New York city, borough of Manhattan, State of New York, have invented certain new and useful Improvements in Siphon-Filling Machines, of which the following is a specification.

The object of my invention is to provide a simple, convenient, and efficient machine for filling siphons with aerated liquids and the like; and to this end the invention comprises a base, a movable frame adapted to receive a siphon and to press upon the same to open the valve of the siphon, and a valve through which liquid can be conducted to the nozzle or outlet of the siphon, said valve being supported so that it may be brought into operative relation to the nozzle of the siphon.

The invention also consists in the novel details of improvement that will be more fully hereinafter set forth, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is an end view of a siphon-filling machine embodying my invention. Fig. 2 is a vertical section thereof on the plane of the line 2 2 in Fig. 1; and Fig. 3 is a sectional detail, enlarged, of the valve-stem.

In the accompanying drawings, in which similar numerals of reference indicate corresponding parts in the several views, 1 indicates a suitable base, which may be attached to a support in any appropriate manner, and said base is shown provided with a receptacle or tray 1<sup>a</sup>, adapted to receive spilt liquid, an outlet 1<sup>b</sup> leading therefrom. To the base 1 is pivotally connected a frame 2, comprising an inverted receptacle 3, adapted to contain a siphon-bottle 4 and two arms 2<sup>a</sup>, shown pivotally connected to a cross-rod 5, carried by the base 1. The arms 2<sup>a</sup> are shown provided with projections 2<sup>b</sup> 2<sup>c</sup>, adapted to bear against the base 1 to limit the swinging movement of frame 2. When the bottle 4 is placed within the frame, the valve-stem 4<sup>a</sup> is adapted to rest upon the base and the bottom of the bottle is adapted to be acted upon by the top 3<sup>a</sup> of receptacle 3, so that when the latter is pressed upon the bottle the valve 4<sup>a</sup> will open.

6 is an arm or handle pivotally connected

with base 1, as by being journaled on the rod 5, and is shown provided with a depending portion 6<sup>a</sup> on one side of the machine and an extension 6<sup>b</sup>, that crosses to the other side of the machine, both parts 6<sup>a</sup> 6<sup>b</sup> being journaled on the rod 5. (See Fig. 1.) The arm 6 is shown provided with a grip 6<sup>c</sup> for operating the same. The arm 6 is shown connected with the frame 2, the latter being provided with a pin or projection 2<sup>d</sup>, that passes through a slot 6<sup>d</sup> in the arm 6. (See Fig. 2.) When the frame 2 is moved backwardly, the siphon-bottle 4 can be inserted or removed from the receptacle 3, and when said bottle is in said receptacle the parts are to be moved forwardly until the valve-stem 4<sup>a</sup> rests upon the base 1, (see Fig. 2,) and then a further forward movement of the frame 2 presses the bottle downwardly to open valve 4<sup>a</sup> for the admission of liquid into the nozzle or outlet 4<sup>b</sup> of the siphon-head.

The receptacle 3 serves as a shield to protect the operator from broken glass if the bottle explodes during the filling. I provide a valve that is interposed between a liquid supply or reservoir and the nozzle 4<sup>a</sup>, and said valve is preferably carried by the arm or lever 6 in such position as to aline with the nozzle 4<sup>b</sup> when the parts are in position for final operation, as shown in Fig. 2. For this purpose I have shown a valve-casing 7, secured to the extension 6<sup>b</sup>, a flange 7<sup>a</sup> and nut 8 serving to clamp the casing 7 in position. Upon the upper end of casing 7 is attached a coupling 9 for connection with a hose or tube 10, leading from a liquid supply or reservoir. Within the casing 7 is a valve-stem 11, shown provided with a bore 11<sup>a</sup>, adapted to aline with or enter the nozzle 4<sup>b</sup>, and at the opposite end the bore 21<sup>a</sup> is closed but opens sidewise through ports at 11<sup>b</sup>. (See Fig. 3.) The stem 11 has a flange 11<sup>c</sup> pressed by a spring 12, that presses at its opposite end against a shoulder in the casing 7. The flange 11<sup>c</sup> is contained within a chamber in casing 7, so that the valve-stem 11 can reciprocate, and the end 11<sup>d</sup> of the stem that projects beyond the flange 11<sup>c</sup> is surrounded by a diaphragm 13, that bears against the flange 11<sup>c</sup> and is provided with a nipple 13<sup>b</sup>, adapted to be engaged by the end of nozzle 4<sup>b</sup>. (See Fig. 2).

12<sup>a</sup> is a cap fitting upon casing 7 and inclos-



ing the diaphragm 13, the edges of the latter being gripped between the cap and the end of the casing. The cap 13<sup>a</sup> has a flaring mouth to receive the end of nozzle or outlet 4<sup>b</sup>, a space being provided in which the flange 11<sup>c</sup> can reciprocate. The outer end of casing 7 has a valve-chamber 14, in which a valve 15 is located, and the latter is adapted to close the main chamber or channel in the casing 7 against the pressure of incoming liquid, and the valve 15 is adapted to be pressed outwardly by valve-stem 11 to permit the entrance of liquid into the port 11<sup>a</sup> of the valve-stem. This opening of the valve is accomplished when the nozzle 4<sup>b</sup> presses against nipple 13<sup>b</sup> as the arm 6 is drawn forwardly, and the diaphragm 13 will bend to allow the stem 11 to travel back to unseat valve 15. Any other suitable valve arrangement can be provided for regulating the flow of liquid from the hose 10 into the nozzle or outlet 4<sup>b</sup> of the siphon.

The operation of the machine is as follows: The arm 6 and frame 2 are moved rearwardly and a siphon-bottle is inserted into the receptacle 3, and the parts are then moved forwardly until the valve-stem 4<sup>a</sup> rests upon base 1, the nozzle or outlet 4<sup>b</sup> being meanwhile adjusted to the valve-stem 11, as shown in Fig. 2, so as to bear upon the nipple 13<sup>b</sup>. The frame 2 is next drawn forwardly and downwardly to push the bottle 4 toward base 1, and at the same time as the nozzle 4<sup>b</sup> is held from appreciable downward movement the arm 6 is drawn forwardly and moves the valve toward the nozzle 4<sup>b</sup>, causing the diaphragm 13 to push stem 11 backwardly, thereupon raising valve 15 from its seat, and the liquid will pass through the valve and into the bottle through the nozzle 4<sup>b</sup>, past the valve 4<sup>a</sup>, which is now open. During the filling operation the arm 6 can be rocked to disengage the valve from nozzle 4<sup>b</sup>, so that "sniffing" or the escape of excess gas from the bottle can be permitted, if desired, and then the valve can be returned to the nozzle to allow more liquid to enter the bottle. The movable connection between the frame 2 and arm 6 permits this rocking of the arm, while the extreme movements of the arm are controlled by the frame. When the bottle has been filled as desired, arm or handle 6 is moved backwardly, whereupon the valve carried by said arm will close, and the pressure on the bottle being released the valve 4<sup>a</sup> will also close, and thereupon when frame 2 is moved back sufficiently far the bottle 4 can be withdrawn from receptacle 3. Instead of the valve having movement independent of the frame laterally it could be connected firmly to the frame to move therewith.

The machine is simple in construction, so that the bottle can be readily inserted and removed, and connection between the nozzle 4<sup>b</sup> and the valve-stem 11 can easily and accurately be made.

I do not limit my invention to the precise details of improvement shown and described, as they may be varied without departing from the spirit thereof.

Having now described my invention, what I claim is—

1. The combination of a base to support the valve of an inverted siphon-bottle and a frame above the base adapted to receive and press upon a bottle, with a valve adapted to coact with the outlet of the bottle when the frame is operated, substantially as described.

2. The combination of a base to support the valve of an inverted siphon-bottle and a frame adapted to receive and press upon a bottle, with an arm carrying a valve adapted to coact with the outlet of the bottle when the arm is operated, substantially as described.

3. The combination of a base and a frame adapted to receive and press upon a bottle, with an arm carrying a valve adapted to coact with the outlet of the bottle when the arm is operated, and a connection between the frame and arm to permit the latter to have independent movement for adjustment of the valve in connection with the nozzle or outlet of the bottle, substantially as described.

4. The combination of a base, a frame pivotally connected therewith to swing thereover and adapted to support and press upon a bottle, means for limiting the swinging movement of said frame, and a valve adapted to coact with the nozzle or outlet of the bottle, substantially as described.

5. The combination of a base, a frame provided with a shield to receive a bottle and having a portion adapted to bear upon the bottle to press the same toward the base, an arm, a valve for coaction with the nozzle or outlet of said bottle, and means for supporting said valve by said arm, substantially as described.

6. The combination of a base, a frame adapted to receive and press upon a bottle, means to limit the swinging movement of said frame, an arm having an extension, and a valve carried by said extension to be pressed in connection with the nozzle or outlet of the bottle, substantially as described.

7. The combination of a base, a frame adapted to press upon a bottle, an arm, a valve having a casing connected with said arm, the valve-stem being adapted to aline with the nozzle or outlet of the bottle, a diaphragm held between the valve-stem and the nozzle, and a check-valve to be operated by said stem to open a passage into the bore of said stem, substantially as described.

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