

No. 657,152.

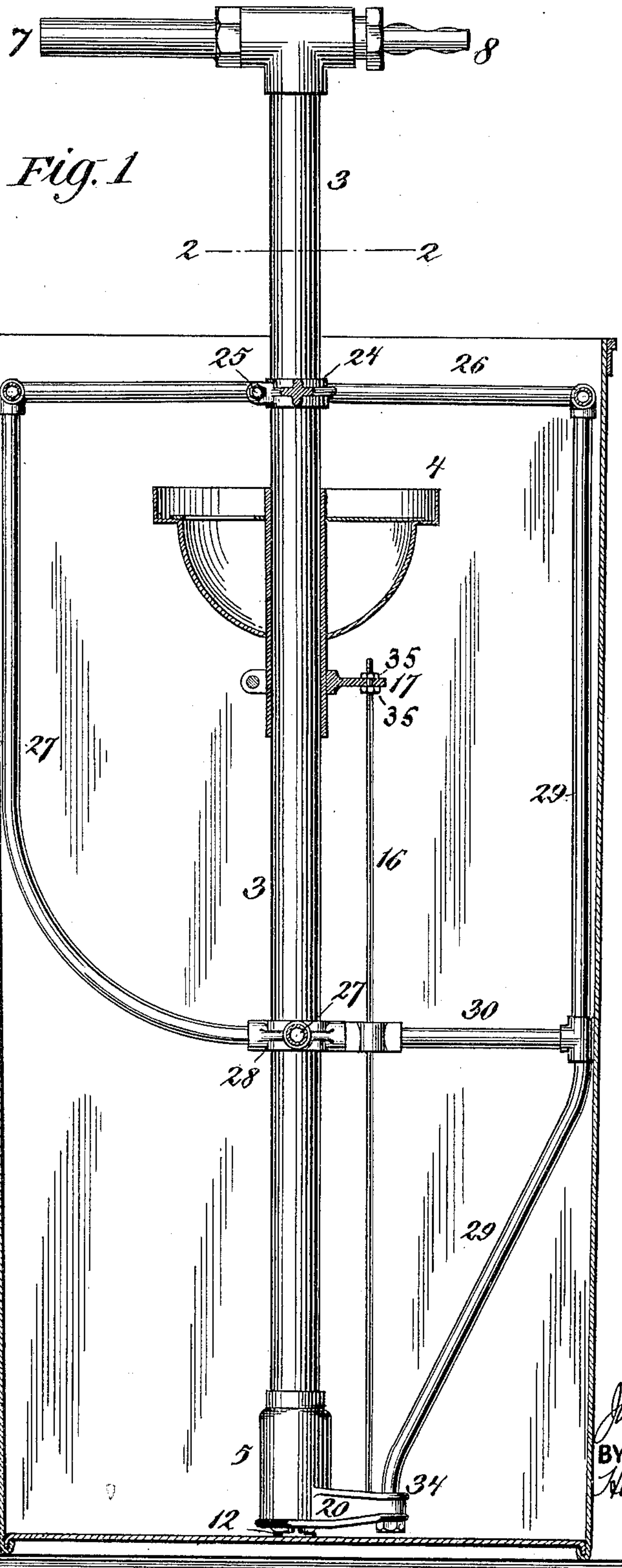
Patented Sept. 4, 1900.

J. E. AUE.
CAN FILLER.

(Application filed Sept. 29, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

Fig. 2,

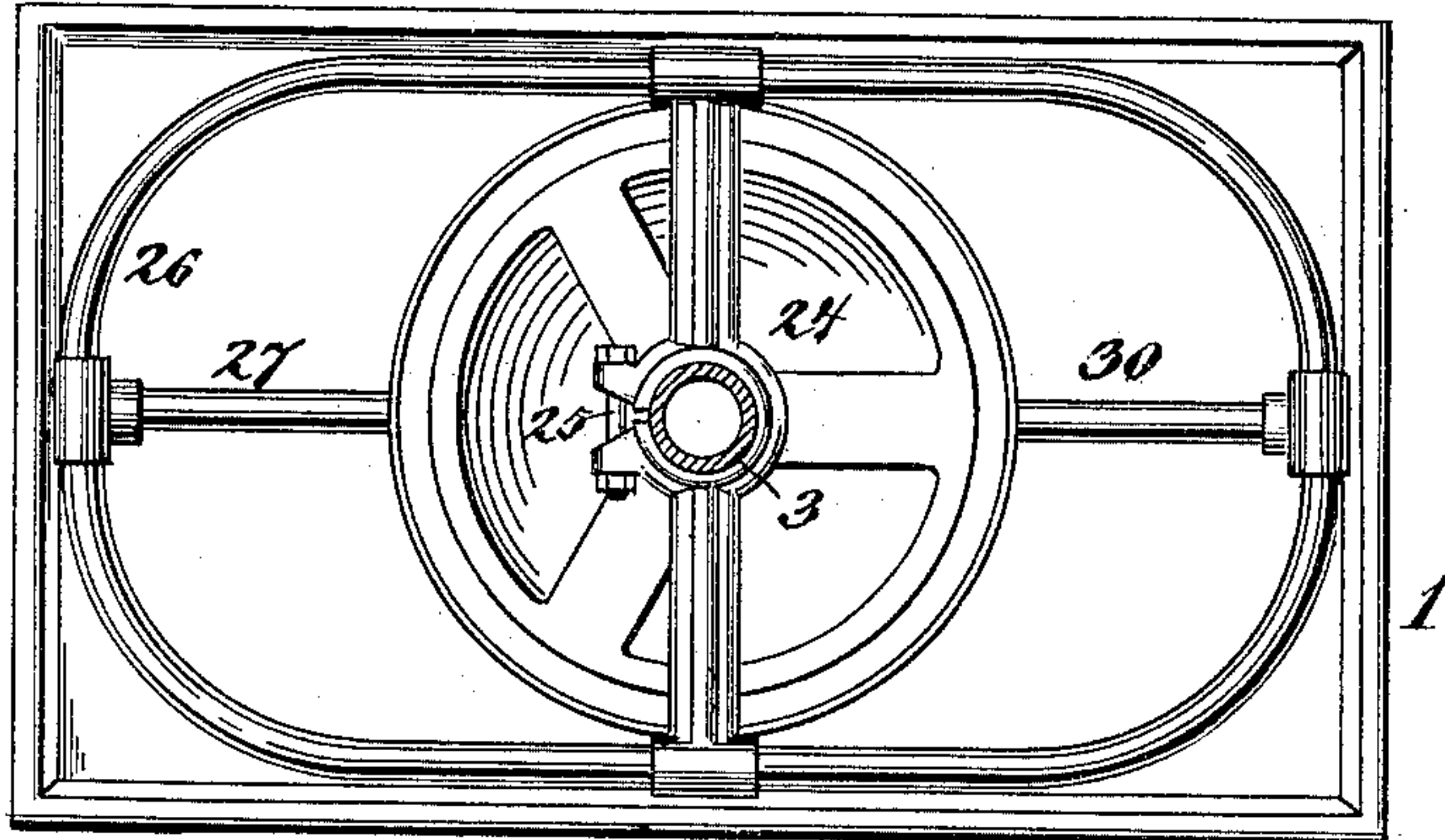


Fig. 3,

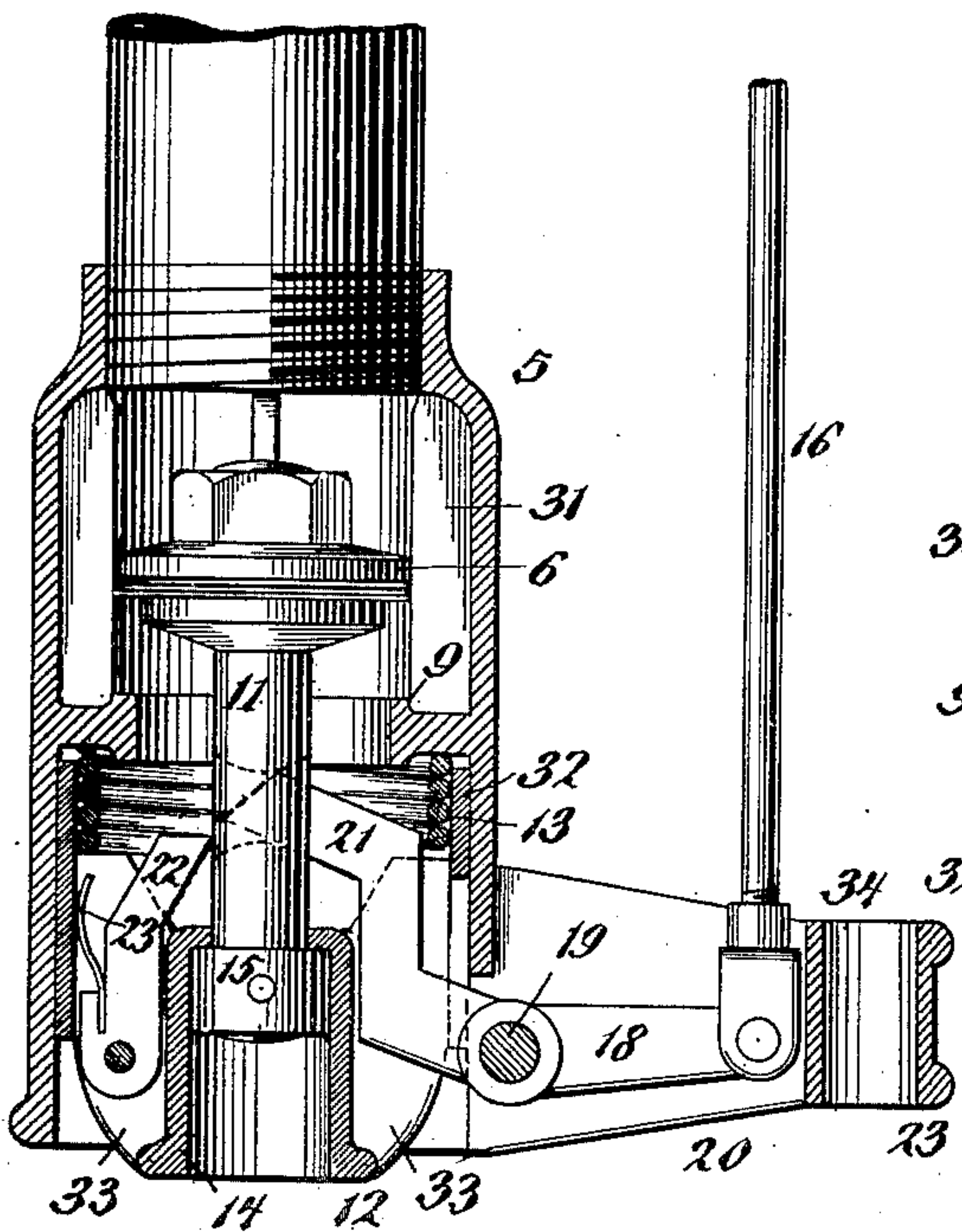
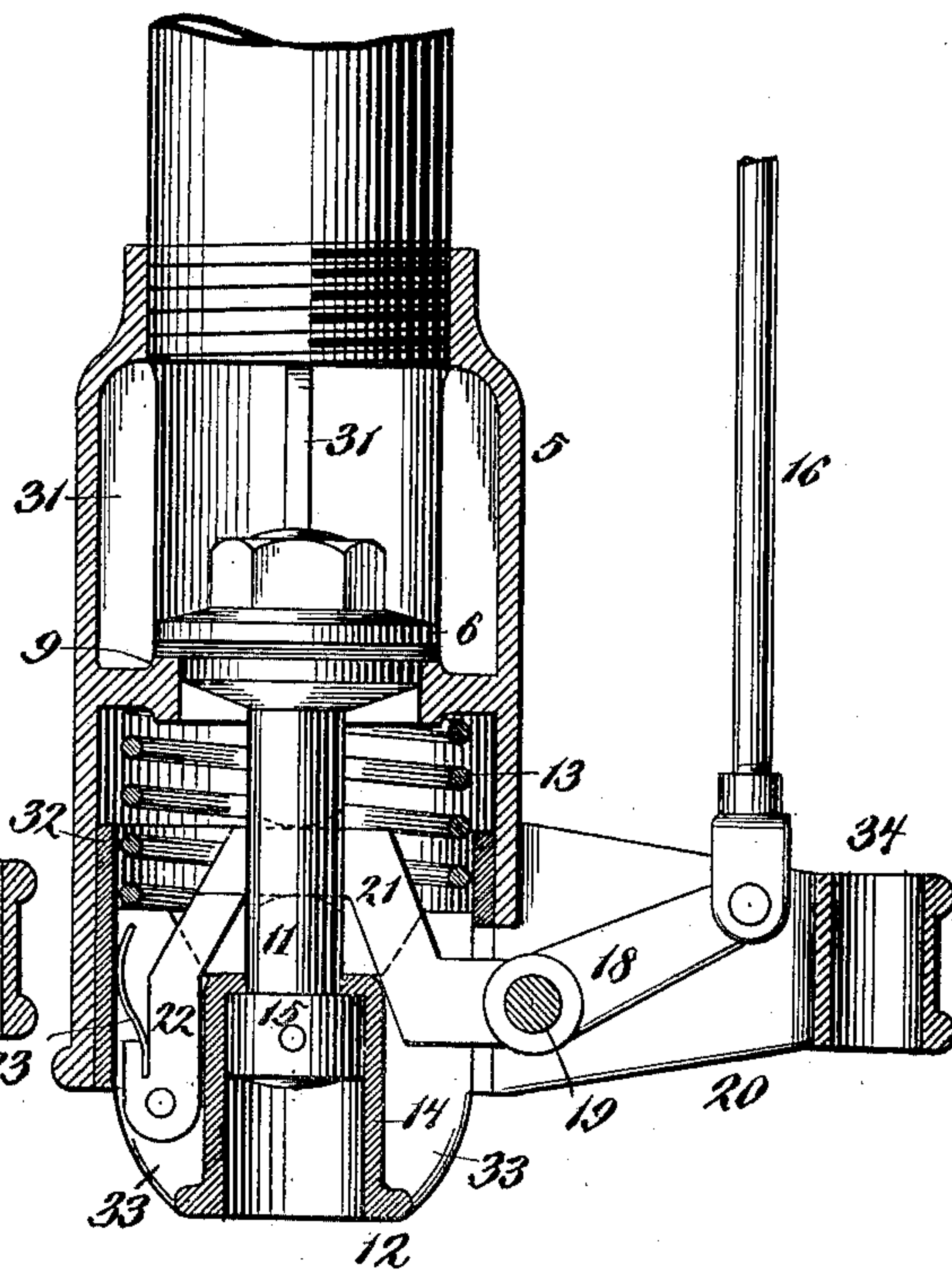


Fig. 4



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JOSEPH E. AUE, OF NEW YORK, N. Y., ASSIGNOR TO THE DE LA VERGNÉ
REFRIGERATING MACHINE COMPANY, OF SAME PLACE.

CAN-FILLER.

SPECIFICATION forming part of Letters Patent No. 657,152, dated September 4, 1900.

Application filed September 29, 1899. Serial No. 732,041. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH E. AUE, a citizen of the United States, and a resident of the city of New York, borough of Bronx, county
5 of New York, and State of New York, have invented certain new and useful Improvements in Can-Fillers, of which the following is a specification, reference being had to the accompanying drawings, forming part hereof.

10 My invention relates to means for filling fluid-receptacles, such as cans, with measured or predetermined quantities of fluid, and the means embodying my invention, hereinafter described, have been designed for
15 the purpose of filling the freezing-cans used in the manufacture of ice.

The objects of my invention are to provide a can-filler which shall be automatic in all its operations, shall not waste the water or other
20 filling fluid, shall at all times maintain the fluid-passages full of fluid, and shall be readily adjustable and of simple construction, durable, and not liable to get out of order; and to the attainment of these and other desirable objects and advantageous features my
25 invention includes improved means whereby a single valve is caused to perform all of the operations required for the control of the fluid-passage through the filler, and my invention includes various other advantageous
30 features, all of which will appear from the following description of the accompanying drawings and will be particularly pointed out in the claims.

35 Figure 1 is an elevation, partly in section, of a can-filler embodying my invention and a vertical section of a freezing-can, within which the can-filler is placed in operative position. Fig. 2 is a plan view of the same in
40 section on a plane indicated by the line 2 2, Fig. 1. Fig. 3 is an enlarged vertical section of the lower part of the filler with the parts as they will appear when the filler is in operative position in contact with the bottom
45 of the can and the valve open. Fig. 4 is a similar view with the parts as they will appear when the filler is out of the can.

50 The can 1 shown is a freezing-can, such as is ordinarily used in ice-manufacturing establishments. These cans are filled to a pre-

determined height with distilled water, which is frozen therein to a solid cake of ice.

The filler has a main tube 3, on which is loosely fitted the fluid-actuated device or float 4. The filler is shown as provided with
55 a T-head having a stem 7 for the attachment of a flexible tube to connect the filler with the source of fluid-supply and also having a handle 8 for convenience in handling the filler.

60 The filler is provided with a single valve, which performs all the operations required for the control of the fluid-passage, such valve in the construction shown being the valve 6, located in an outlet-casing 5 at the
65 exit end of the filler and having a seat 9, formed in such casing and having a downwardly-extending stem 11. A movable foot is also provided fitted to slide vertically in the outlet-casing 5, and a foot-spring 13 is
70 arranged to bear downwardly upon this movable foot and tends to hold the foot in lower position. When, however, the filler is placed in a can, as shown in Fig. 1, the weight of the filler overcomes the spring 13 and the
75 foot is raised to the position shown in Figs. 1 and 3.

The valve-stem 11 extends downwardly through an opening in the upper part of a tubular socket 14, formed in said foot 12, and
80 has a head or collar 15, shown as secured upon the lower end of the stem 11, which restricts the downward movement of the foot-valve 12 relatively to the valve 6 by contact
85 with the upper part of such tubular socket 14 and compels the valve 6 to assume and maintain its lower and closed position when the foot-valve 12 is permitted to assume and maintain its lower position, which occurs at
90 all times except when the weight of the filler is resting upon the foot.

The float 4 is connected to the valve 6 through the float-rod 16, adjustably connected at its upper end to an arm 17, projecting from
95 and shown as secured to the sleeve of the float, and is pivotally connected at its lower end to the outer arm 18 of a rock-lever pivoted on a pin 19 in a bracket 20, extending from the outlet-casing 5. The inner arm 21 of the rock-lever engages the valve-stem 11, 100

projecting through a slot therein, so that the valve is compelled to move with the rock-arm, and the weight of the float when unsupported and free to act will overcome the weight of the valve and hold the valve open, and the buoyancy of the float when the can is filled to the predetermined point will close the valve. The float is not, however, permitted to control the valve except when the filler is in working position, with the foot 12 raised and the spring 13 overcome by the weight of the filler, as the spring 13 when free to act is sufficiently strong to overcome the weight of the float and hold the valve tightly closed. When, therefore, the filler is lifted out of a can, the spring 13 will act to close the valve and the parts will assume the position shown in Fig. 4, and the spring 13 will hold the valve thus closed until the filler is placed in operative position in another can. When the filler is placed in a can and the foot 12 is raised by contact with the bottom of the can, the valve will be lifted and opened by the engagement of the pivoted latch 22 on the foot 12 with the end of the inner arm 21 of the rock-lever, and thus the fluid-pressure, tending to hold the valve down on its seat, will be overcome by the difference between the resistance of the spring 13 and the weight or momentum of the filler, which difference may readily be a force amply sufficient for such purpose. As the rock-lever arm 21 is pushed upwardly its angular movement will cause its end to be withdrawn from over the latch 22, and when the foot reaches its upper position, as shown in Fig. 3, the rock-lever arm 21 will be entirely clear of the latch 22, and the valve will therefore be only under the control of the float and will be held open by the weight of the float until the can is filled to the predetermined point and will then be closed by the buoyant action of the float. When the filler is lifted out of the can, the foot 12 will return to lower position, the inclined inner face of the latch 22 will pass over the inclined outer face of the end of the rock-lever arm 21, and the latch will be returned by its spring 23 to normal position beneath the end of the rock-lever arm ready to lift the valve when placed in a can.

It will be observed that the foot-spring is assisted by the weight of the foot and valve in overcoming the weight of the float, and the weight of these parts, if made sufficiently great, might be alone relied upon; but I usually prefer to employ a spring, as shown. For the guidance of the valve 6 I have shown ribs 31, formed in the outlet-casing 5 above the seat of the valve, and to provide free fluid-passage through the foot 12 I have shown this foot as composed of an outer tube 32 and the inner tubular socket 14, jointed by ribs 33, the foot-spring 13 resting upon these ribs.

The adjustable connection between the float-rod 16 and the float 4 is shown as formed by two nuts 35 35, working on the threaded end of the rod and clamping against the up-

per and lower surface, respectively, of the float-arm 17.

The frame of the filler is preferably so shaped as to hold the filler upright in the can and to shield the float and working parts from injury and is shown as including a top cross-brace 24, clamped to the main tube by a bolt 25 passing through lugs of a split clamp formed in the cross-brace. This cross-brace 24 extends nearly the full width of the interior of the can and has horizontal curved arms 26 extending from the ends thereof around in proximity to the side and end walls of the can. From the middle of the left horizontal arm 26 and from the ends of the top cross-brace 25 curved arms 27 extend downwardly and are joined to a bottom connection 28 upon the main tube 3, and from the middle of the right horizontal arm 26 an arm 29 extends downwardly, is joined to the bottom connection by a longitudinal brace 30, provided with a guide for the float-rod 16, and is bent inwardly and enters a socket 34 at the end of the bracket 20 of the outlet-casing 5.

The only handling required by a filler embodying my invention after it has been connected with the source of fluid-supply is the placing of the filler in a can and the removal of the filler from the can. All other operations are automatic. These operations have been above described, but may be now briefly stated in the order of their occurrence. When the filler is placed in a can in operative position, the foot 12 is raised by contact with the bottom of the can, and thereby the valve 6 is lifted off its seat and moved upward until the foot 12 is disconnected from the valve, and as soon as the valve has left its seat and the fluid has passed beneath it the weight of the float 4 will be sufficient to lift the valve, and therefore the valve may be disconnected from the foot at any point after its initial movement, and the upward movement of the valve will be completed by the preponderating weight of the float. With the foot thus raised and disconnected from the valve the valve is controlled by the float, and as soon as the can has been filled to the predetermined height the float will be lifted and the valve closed. This condition will continue so long as the filler is allowed to remain in the can. When the filler is lifted out of the can, the tendency of the float to fall, and thereby lift the valve, will be overcome by the foot-spring 13, which will lower the foot and hold the valve closed. When the foot reaches lower position, the latch 22 will spring under the rock-lever arm 21 in position to lift the valve from its seat, when the filler is placed in another can.

It is evident that various modifications may be made in the construction shown in the drawings and above particularly described, and that my invention is capable of embodiment, partially or wholly, in structures adapted for filling receptacles of various kinds with

predetermined quantities of fluid, and that parts and features of my invention may be embodied and used with parts other than those above described.

5 What I claim, and desire to secure by Letters Patent, is—

1. A can-filler comprising a valve controlling the fluid-passage of the filler, fluid-actuated means connected to the valve, and tending by its weight to hold the valve open, and automatic means constructed to overcome the weight of the fluid-actuated means and close the valve when the filler is removed from a can and to be overcome by the weight of the filler and to permit the fluid-actuated means to open the valve when the filler is placed in a can, the automatic means and fluid-actuated means being arranged to permit the fluid-actuated means to control the valve after the valve has been thus opened, substantially as set forth.

2. A can-filler comprising a valve controlling the fluid-passage of the filler and a foot for the valve, the valve being detachably connected to the foot so as to be closable independently thereof when the foot is raised, and fluid-actuated means permanently connected to the valve so as to close the same when the can has been filled to a predetermined point, substantially as set forth.

3. In a can-filler, in combination, a valve controlling the fluid-passage of the filler, fluid-actuated means connected to the valve in all positions of the valve and a foot for the valve provided with means normally connected to the valve but disengaged therefrom when the foot is raised, substantially as set forth.

4. A can-filler comprising a valve controlling the fluid-passage of the filler, fluid-actuated means connected thereto and a foot for the valve, such foot being provided with a latch, and the valve and fluid-actuated means including a part normally engaging the latch, but clear thereof when the foot is raised, substantially as set forth.

5. In a can-filler, in combination, a valve controlling the fluid-passage through the filler, fluid-actuated means connected to the valve and tending by its weight to hold the valve open, and automatic means constructed to overcome the weight of the fluid-actuated means when the filler is removed from a can and to be overcome by the weight of the filler when the filler is placed in a can, such automatic means including means normally connected to the valve but disconnected therefrom when the filler is placed in a can, substantially as set forth.

6. In a can-filler, in combination, a valve controlling the fluid-passage of the filler, fluid-actuated means permanently connected to the valve and including a rock-lever, and a foot for the valve provided with a part normally engaging the rock-lever but clear there-

of when the foot is raised, substantially as set forth.

7. In a can-filler, in combination, a valve located in proximity to the exit end of the filler, a float permanently connected to the valve, and a foot for the valve provided with means normally connected to the valve but disengaged therefrom by the upward movement of the foot, substantially as set forth.

8. In a can-filler, in combination, a valve located in proximity to the exit end of the filler, a foot for the valve, the valve being detachably connected to the foot so as to be closable independently thereof when the foot is raised, and fluid-actuated means permanently connected to the valve so as to hold the valve open until the can is filled to a predetermined point and then to close the valve, substantially as set forth.

9. In a can-filler, in combination, a valve located in proximity to the exit end of the filler, a float, a rock-lever permanently connected to the float and engaging the valve, and a foot for the valve provided with a part normally engaging the rock-lever but clear thereof when the foot is raised, substantially as set forth.

10. A can-filler comprising a valve located in proximity to the exit end of the filler, a float, a rock-lever connected to the float and engaging the valve, a foot for the valve and a latch upon the foot, the latch normally engaging the rock-lever but clear thereof when the foot is raised, substantially as set forth.

11. A can-filler provided with an outlet-casing having a valve therein, a foot engaging the stem of the valve, a foot-spring tending to hold the foot in lower position and the valve closed, a float, a rock-lever connected to the float and engaging the stem of the valve, and a latch on the foot normally engaging the rock-lever but clear thereof when the foot is raised, substantially as set forth.

12. In a can-filler, in combination, the main tube 3, the outlet-casing 5 at the lower end thereof, the valve 6 in said casing having the stem 11, the foot 12 engaging the valve-stem, the foot-spring 13 tending to hold the foot in lower position and the valve closed, a float fitted loosely upon the main tube 3 and a float-rod extending downwardly therefrom, a rock-lever having an arm 18 connected to the float-rod and an arm 21 engaging the valve-stem, and the latch 22 carried by the foot 12 and normally engaging the rock-lever arm 21 but clear thereof when the foot is raised, substantially as set forth.

Signed in the county of New York, in the city of New York and State of New York, this 28th day of September, in the year 1899.

JOSEPH E. AUE.

Witnesses:

HENRY L. WILLIAMS,
ALEX. CAMERON, Jr.