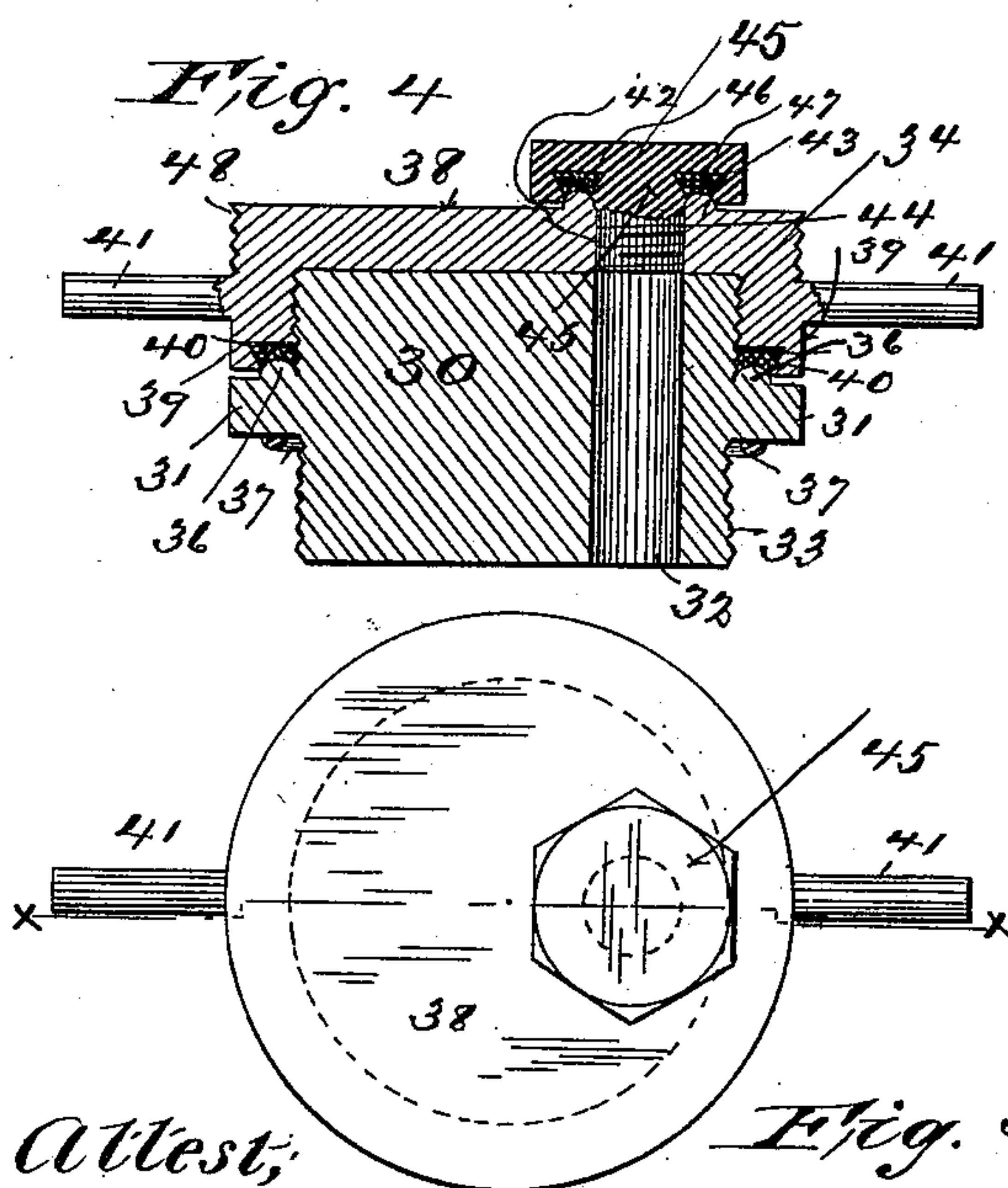
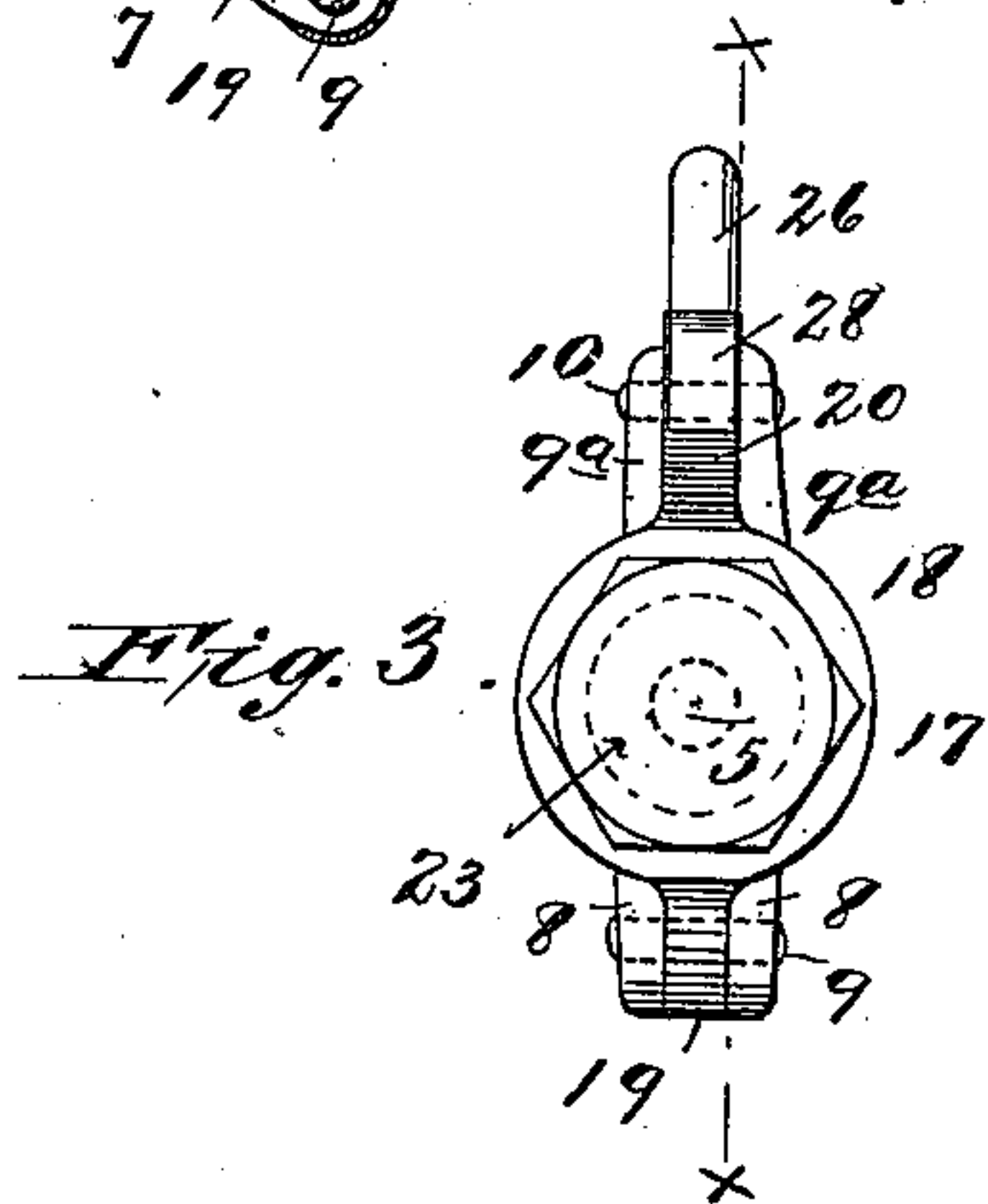
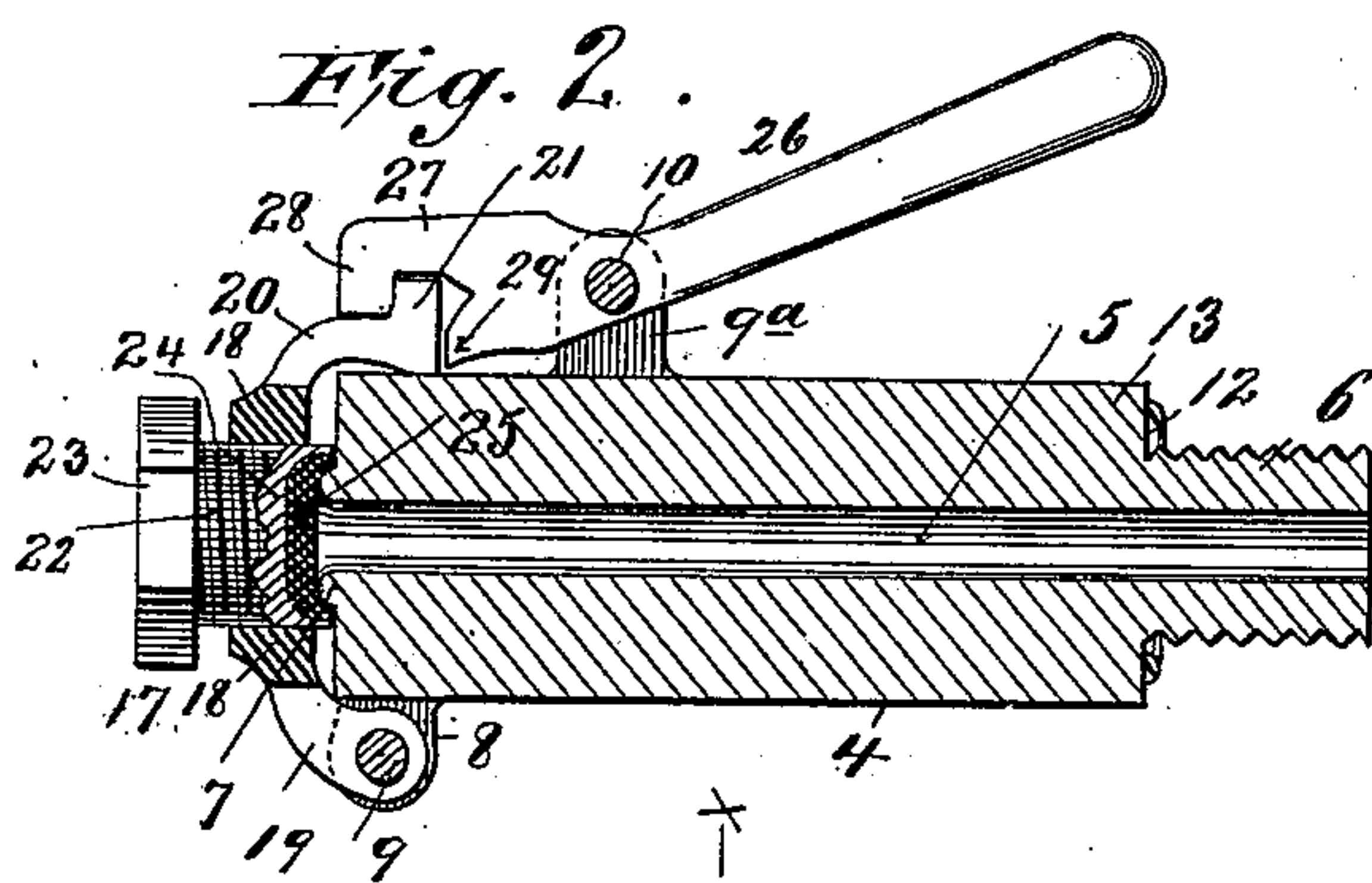


(No Model.)

A. G. LEONARD.
FIRE EXTINGUISHER.

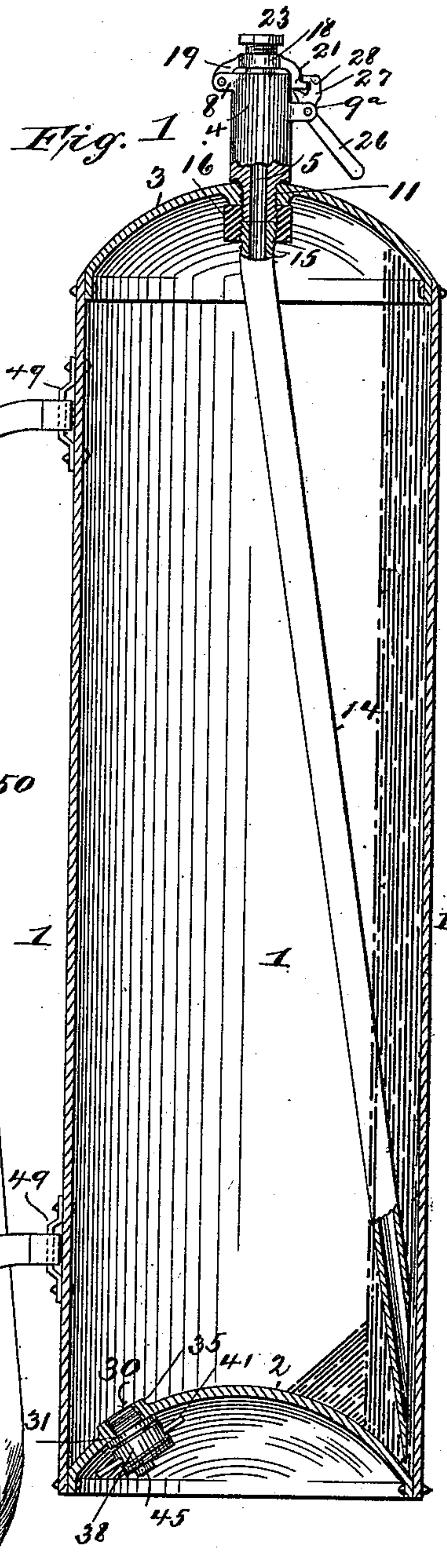
No. 512,834.

Patented Jan. 16, 1894.



Attest,
C. W. Benjamin,
H. F. Durbin.

Fig. 5.



Inventor,
Arthur G. Leonard,
by Joseph L. Levy,
Atty.

UNITED STATES PATENT OFFICE.

ARTHUR G. LEONARD, OF NEW YORK, N. Y.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 512,834, dated January 16, 1894.

Application filed December 12, 1892. Serial No. 454,820. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR G. LEONARD, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Fire-Extinguishers, of which the following is a specification.

My invention relates to that class of extinguishers which are portable in their nature, and in which water or other liquid under pressure is contained within a suitable receiver or a reservoir; and my invention primarily consists in the structure hereinafter described and further pointed out in the claims.

In the drawings: Figure 1 is a longitudinal sectional elevation of a complete reservoir embodying my invention; Fig. 2, a longitudinal sectional elevation of the discharge nozzle, taken approximately on the line $x x$, Fig. 3; and Fig. 3, a front elevation of the same; Fig. 4, a sectional elevation of the inlet plug, taken approximately on the line $x x$, Fig. 5; and Fig. 5, a plan view of the same.

Similar figures refer to similar parts throughout the several views.

The main object of my invention is to so dispose the parts of the extinguisher in relation to each other, that I will have a controllable outlet or vent lying in the direction of the length of the reservoir and at either end of the same, and an inlet plug at the end of the reservoir opposite the controllable vent.

Another part of my invention lies in the particular structure of the controllable nozzle or vent and in the inlet plug, the object of both structures being first, as to the controllable vent, to prevent the leaking of the contained gases or fluids under pressure, so as not to destroy the efficacy of the device when occasion requires its use, and means for freely and expeditiously discharging the contents of the reservoir; and secondly, in regard to the inlet plug, one which will admit of easy and expeditious connection with the source from which the fluid under pressure is obtained and disconnection therefrom, and means for insuring a tight joint therein as before set forth. To this end I employ a cylinder 1 of any suitable or desired construction and made of any suitable material, preferably cylindrical, in which is secured by rivets or otherwise

the concave bottom or end plate 2, and at the other end the convex end or head 3 which is secured to the cylinder in the same manner. The controllable vent or outlet consists of the plug 4, preferably cylindrical in shape, having the central aperture 5 extending entirely through it and through an exteriorly screw threaded shank 6. Surrounding the aperture 5 at the front end of the plug 4 is an annular raised seat 7, and at one side of the forward part of said plug lie two lips or lugs 8, between which extends a pin 9. At the other side of the plug and to the rear of the forward end thereof are two other lugs 9^a, between which extends a pin 10.

By reference to Fig. 1 it will be seen that the head 3 has a boss 11 which is interiorly screw threaded, and into which the shank 6 passes, the union of the plug and the head being made water or air tight by means of the annular washer 12 of rubber or any other soft material, which may be interposed between the head 3 and shoulder 13 of the plug and confined in position by screwing the plug home, or said washer may be affixed to the shoulder 13 and practically form a part thereof. Extending from the plug and diagonally downward to the opposing angle or corner of the reservoir 1 is a tubular service pipe 14 which is bent at 15 into alignment with the plug 4, it being exteriorly screw threaded for the purpose of enabling the coupling 16 to unite it and the plug together, making a continuous way from the lower part or opposing end of the reservoir to the plug, where the service pipe is cut diagonally across, so as to permit it to lie closely to the side (or while in actual use the bottom) of the reservoir, thus enabling it to take up and discharge the very last, and in fact almost all the contained water or liquid, whether the reservoir is disposed longitudinally or at an angle to the perpendicular, as shown by the water lines in Fig. 1. However its main use will be with the length of the reservoir lying approximately horizontal, so that I prefer that the opening of the service pipe should be presented to the "bottom" as shown.

From the foregoing it will be seen that I have provided a device wherein a controllable discharge nozzle lies in the longitudinal axis of the reservoir, and the service pipe leading

therefrom, which connects with the controllable vent or nozzle, is adapted to permit the vent to be used while occupying a position which is angular to the vertical. This I consider a great improvement over the fire extinguishers that are adapted to discharge at an angle to the axis of the reservoir, except by the use of a flexible vent, and which are sustained vertically so that, so far as this part of my invention is concerned, I do not limit myself to the details of construction herein shown.

The outlet or discharge of the contained liquid under pressure is controlled by means of the swinging cap 17 having the circular and apertured disk 18, and downwardly extending lug 19 curved inwardly, through which the pin 9 passes, by means of which pin the cap 17 is secured to the plug and supported by the lugs 8, the other side of the cap 17 being provided with a curved arm 20 ending in an upwardly extending shoulder 21. The disk 18 of the cap 17 is centrally apertured and interiorly screw threaded, and in which is adapted to be moved an exteriorly screw threaded plug 22 having the enlarged head 23 squared for engagement with a wrench, the other end of the plug being chambered, as shown at 24, Fig. 2, in which chamber is secured a packing 25 of soft metal, cement, or the like, which packing is adapted to engage the annular seat 7 surrounding the aperture or orifice 5 of the plug 4. A freeing and locking arm 26 is pivoted on the plug 4 within the lugs 9^a by the pin 10, the forward part of said arm 27 being provided with a downwardly extending finger 28, and from the arm 27 extends a lug or stop 29, which is adapted to strike the shoulder 21 when the finger 28 and the shoulder are disengaged, and which frees the cap from the end of the plug, and limits the upward movement of the lever. Assuming the cap to have been swung downward on the pin 9 to discharge the reservoir, or before the same has been charged, the cap would be secured in place and the discharge outlet sealed in the following manner. The cap in being brought into the position it occupies in Figs. 1, 2, and 3, brings the plug 22 and its contained packing in alignment with the aperture 5 and its annular seat 7, the shoulder 21 of the arm 20 being then in such a position that the freeing and locking arm 26 can be moved to bring the finger 28 in contact with the shoulder 21. The cap now being held in front of the outlet aperture, said aperture can be securely sealed by the screw threaded plug being screwed inwardly, bringing the packing 25 to bear on the annular seat 7, the cap 17 resisting the inward movement of the plug by means of the engagement of the shoulder 21 with the finger 28 of the locking and freeing arm 26.

It will thus be seen that I do not close the vent by means of a cap pivoted in front of it, but by means capable of operation independent of the cap, the cap only being a supporting medium for such means, and for the pur-

pose of preventing undue wear or pressure being brought on the packing 25 by a movement of the freeing and locking arm 26, I have located the lug 29 thereon, so as to limit the movement of said arm, by its striking the plug 4, at the same time providing means for mechanically freeing the packing in the screw plug, and unsealing the discharge plug, by the point of the lug striking against the shoulder 21 and pressing it outwardly. The outlet being sealed, as before set forth, and water under pressure being sent into the reservoir, or pressure generated therein, if desired, (as my invention, before set forth, is not limited to either use) a movement of the locking and freeing arm 26 toward the discharge or outlet plug 4 will disengage the shoulder 21 and finger 28, permitting the cap to vibrate downwardly on its hinging pin 9, which will give the contained liquid the opportunity of passing out from the reservoir.

The charging plug, which is preferably located in the end of the reservoir opposite to the outlet, and which in the present case is secured in the bottom 2, is constructed as follows: A plug 30 having a circumferential ledge 31 is provided with an aperture 32 which is located eccentrically in said plug. Both ends of the plug at each side of the ledge 31 are exteriorly screw threaded, as at 33, 34, the threaded part 33 being adapted to be screwed into the interiorly screw threaded boss 35 formed on the bottom or end 2 of the reservoir. The under side (the top side in Fig. 4) is provided with an annular seat 36, and against the other side of the ledge 31 lies an elastic washer 37 of metal or other suitable material, which may be either affixed thereto, or retain that position when the lug is screwed into the boss 35. The screw threaded portion 34 of the plug 30 is adapted to receive a cup shaped cap 38, the interior of the annulus 39 of which is screw threaded for this purpose, the upper portion of said annulus being apertured, in which aperture is placed packing 40 of any suitable kind or nature, said packing being held within the annular aperture by the angular sides thereof, and being in alignment with the annular seat 36. The cap 38 has arms 41 extending outwardly therefrom, and an aperture 42 eccentric to the axis of the cap, but within the same arc as the aperture 42, said aperture being interiorly screw threaded and having an annular seat 43 encircling said aperture, into which aperture the screw threaded stem 44 of a screw plug 45 is adapted to move, the under side of the head of said plug having an annular recess 46 with angular walls, in which recess packing 47 of any desired or suitable material is placed, which packing aligns with the annular seat 43. When the reservoir has water or other liquid therein under pressure, the aperture in the cap 38 will not be aligned with the aperture 32 of the plug 30, the washer 37 packing the union of that plug with the head 2, and the combi-

nation of the seat 36 and packing 40 and the screw plug 44 keeping the entire device air and water tight. When it is desired to pass water or other liquid under pressure (or not
5 under pressure) into the reservoir, a pipe leading from a source of supply is secured to the screw threaded portion 48 of the cap 38. The screw threaded plug 44 having been previously removed, then the apertures through
10 the plug 30 and the cap 38 may be aligned with each other, (or they could have been previously aligned) which will permit the water, &c., to pass up into the reservoir, and after the filling of the reservoir is completed,
15 the cap 38 can be turned by the arms 41, bringing the aperture therein away from the aperture 32, after which the feeding pipe can be removed therefrom and the plug 44 inserted, the engagement of the packing 47
20 with the annulus 43 making a tight joint.

For the purpose of supporting the reservoir upon the shoulder of the operator horizontally or at an angle to the vertical, and also so that both his hands can be left free to work
25 the discharge outlet and manipulate the stream, I secure to the reservoir the bails 49 between which the strap 50 extends. This will enable the reservoir to be supported and lie between the arm and body of the operator,
30 leaving his hands free to manipulate either the discharge outlet or the feeding plug at will. If while in this position the cap 17 is found to fall back in front of the discharge plug, the strap 50 can be secured to the side
35 of the reservoir opposite to that shown, so that gravity will hold the cap away from the opening or orifice in the discharge plug, and the bails 49 can be set on both sides, so that this can be readily accomplished.

40 Many changes and modifications may be made in the present structure without departing from the spirit of my invention.

I claim—

1. The combination with the reservoir and
45 orificed outlet plug extending out therefrom, of a hinged cap on said plug adapted to be moved in front of said orifice, movable sealing devices in said cap aligning with the orifice, means independent of the cap for free-
50 ing it and unsealing the plug, said sealing and cap freeing devices being entirely outside of the reservoir, the orificed plug being disposed in line with the longitudinal center of the reservoir, and a service pipe connected with
55 said outlet plug, its open inner end being disposed adjacent to one of the longitudinal sides of the reservoir, substantially as described.

2. The combination with a reservoir, of the
60 plug 4 having the orifice 5 and seat 7, of the disked cap 17 hinged thereto by means of

the arm 19 and pin 9, the arm 20 with shoulder 21 on the cap, the recessed plug 24 movable in said disk, having the packing 25, and the lever 26 hinged to the plug having the
65 finger 28 adapted to engage the shoulder 21, substantially as described.

3. The combination with a reservoir, of the plug 4, the cap 17 hinged thereto, the lever 26 hinged to the plug, a shoulder 21 on the
70 cap 17 and finger 28 on the lever 26 adapted to engage, and a lug 29 on said lever adapted to strike the shoulder 21 to free the cap or limit the lever's movement, substantially as described. 75

4. The combination of a reservoir with the screw threaded plug 30 having the ledge 31, annular seat 36 thereon and eccentric aperture 32, of the cap 38 having the annulus 39
80 with packing 40 in the annulus, the eccentric aperture 42 therein, and arms 41 extending therefrom, substantially as described.

5. The combination of a reservoir with the cap 38 having the aperture 42 and annular seat 43 surrounding the aperture, of the screw
85 plug 44 having the head 45 with the recess 46, packing 47 in the recess, the seat and packing being adapted to be brought together, substantially as described.

6. The combination with the reservoir, of
90 the threaded plug 30 having an eccentrically located aperture 32, a screw threaded extension 33 for affixture to the reservoir, and a cap 38 having an annular and threaded rim 39 and an aperture therein, the cap being ro-
95 tatable about the plug to bring both apertures into or out of alignment, substantially as described.

7. The combination with the reservoir 1, of the inflexible discharge plug 4 in the head
100 disposed in the axial center of the reservoir, the cap 17 hinged to the discharge plug adjacent the end of the orifice therein, a sealing plug and packing therein movable in said cap, a freeing and locking lever pivoted to
105 said plug, a projection on the cap adapted to engage the freeing and locking lever to resist the movement of the sealing plug, and a service pipe 14 leading from the plug into the res-
110 ervoir, the inner end of which is cut on the bias which lies close to the wall or side of the reservoir and within an angle formed by the union of the end 2 and such wall or side, substantially as described.

Signed at New York, in the county of New
115 York and State of New York, this 5th day of December, 1892.

ARTHUR G. LEONARD.

Witnesses:

HUGH F. HENRY, Jr.,
H. B. WHIPPLE.