

No. 692,252.

Patented Feb. 4, 1902.

R. M. DIXON.
VALVE.

(Application filed Aug. 18, 1900.)

(No Model.)

Fig. I.

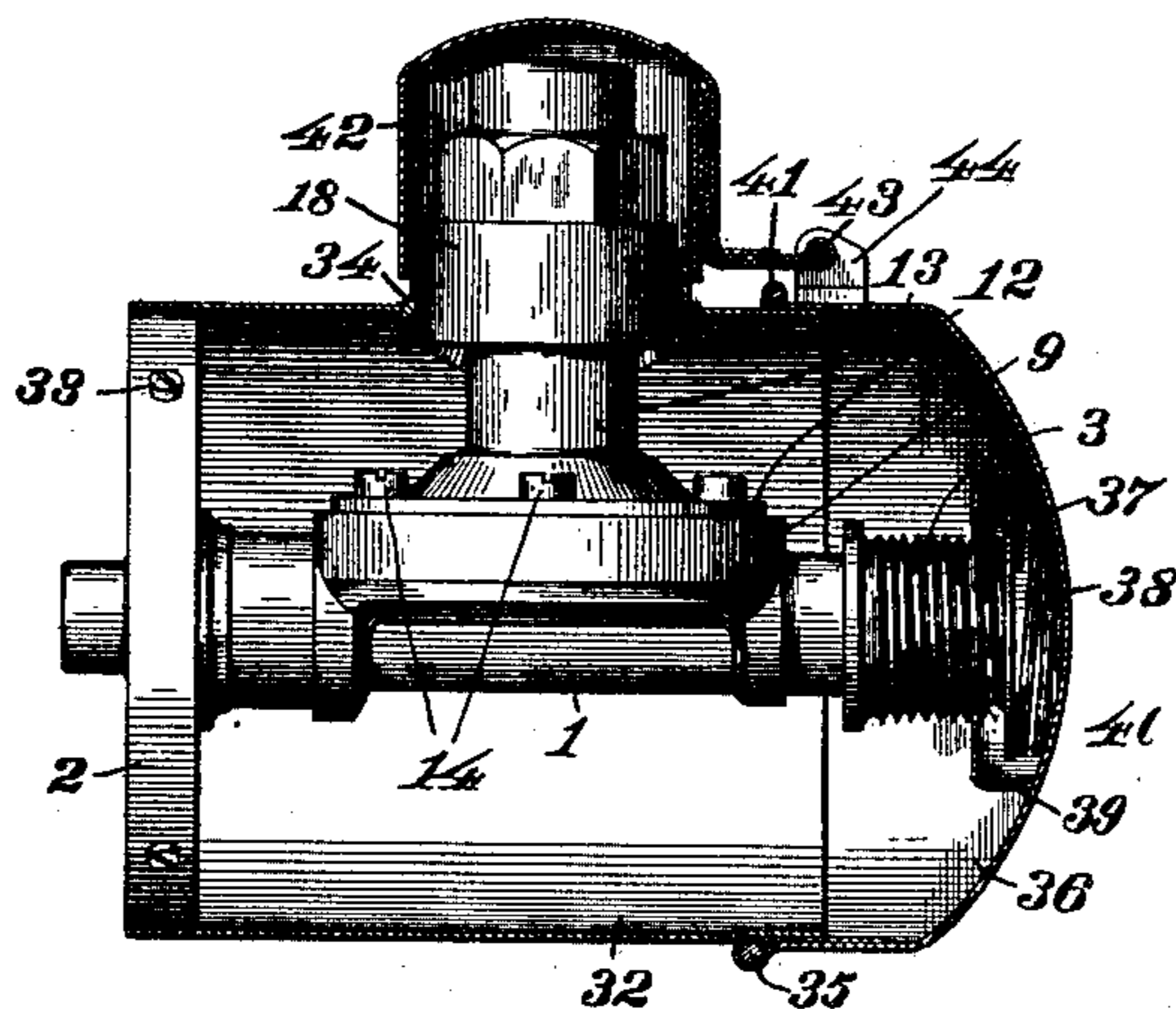


Fig. II.

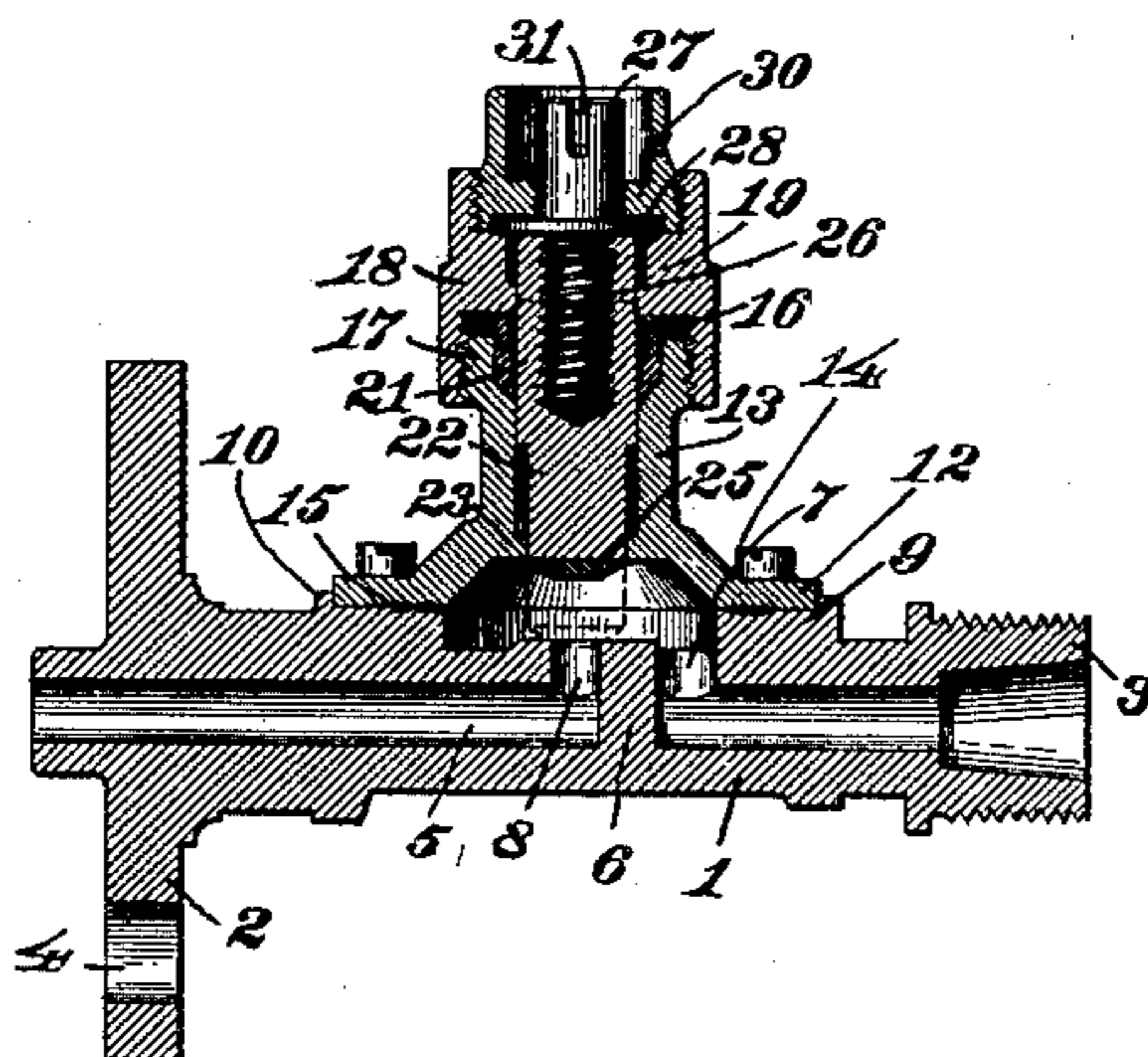
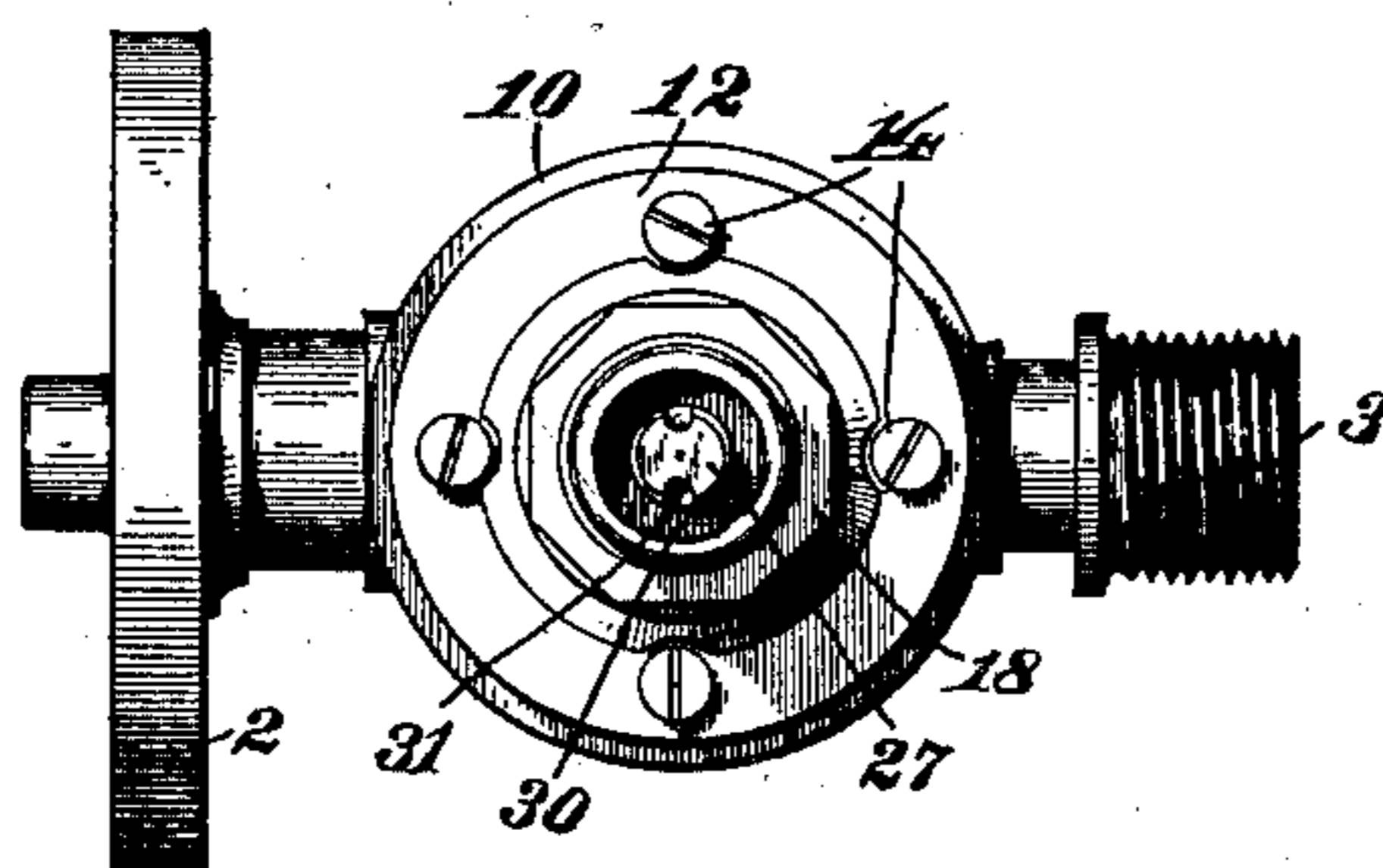


Fig. III.



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UNITED STATES PATENT OFFICE.

ROBERT MUNN DIXON, OF EAST ORANGE, NEW JERSEY.

VALVE.

SPECIFICATION forming part of Letters Patent No. 692,252, dated February 4, 1902

Application filed August 18, 1900. Serial No. 27,272. (No model.)

To all whom it may concern:

Be it known that I, ROBERT MUNN DIXON, of East Orange, in the county of Essex, State of New Jersey, have invented certain new and useful Improvements in Valves, of which the following is a complete specification, reference being had to the accompanying drawings.

My invention relates to improvements in valves of that general class known as "filling-valves." Valves of this description are designed to facilitate the filling of gas-tanks, as of railway-cars, without leakage; and the object of my invention is to produce a valve which is both structurally adapted to prevent leakage when in good operative condition and to facilitate the convenient closing of such leaks as may occur in the mechanism through use or making of other repairs.

In the accompanying drawings, Figure I is a side elevation of my valve mechanism complete, showing the cover for the same with its cap in section. Fig. II is a longitudinal vertical section of the subject-matter of Fig. I, with the cover and its cap omitted and the valve-stem being shown in elevation. In this figure the valve is shown in full lines as open and in dotted lines as closed. Fig. III is a top plan view of the subject-matter of Fig. I, with the cover and its cap omitted.

Referring to the numerals on the drawings, 1 indicates the valve-body, which is preferably of an elongated shape, provided with a base-flange 2 near one end and with a threaded nipple 3 at the other. The base-flange is provided with a plurality of bolt-holes 4, by means whereof the valve-body may be secured in required position, as upon a car. The longitudinal bore 5 of the valve-body is preferably intersected by a partition-wall 6, serving to define upon opposite sides apertures 7 and 8, of which the latter constitutes a valve-seat.

Concentrically surrounding the valve-seat 8 and integral with the valve-body is a base-plate 9, peripherally defined by an annular flange 10. Upon the base-plate and fitting snugly within the annular flange 10 is secured the base 12 of the bonnet-body 13. The base 12 is secured to its base-plate, as by a crown of screw-bolts 14, and preferably against a gasket 15, confined between it and

the base-plate 9. The upper end of the bonnet-body is preferably enlarged to accommodate a stuffing-box within which fits a packing-ring 16 of any suitable material—as, for example, the ordinary compressible packing-ring. The wall 17 of the stuffing-box is externally threaded to accommodate the internal threads of a packing-nut 18, which, screwing upon the threaded stuffing-box, affords means for compressing the packing-ring as required.

Fitting snugly within the coaxial and co-extensive bores of the bonnet-body and the medial portion 19 of the packing-nut 18 I provide a cylindrical valve-carrier 21. As a means of actuating the valve the valve-carrier is preferably provided with a squared extension or terminal 22, that irrevolubly works in a correspondingly-squared aperture formed in an inwardly-extending flange 23 in the bonnet-body 13. To the extremity of the carrier is fixed a valve-disk 25, made of any suitable shape to fit the valve-seat 8 and of any preferred material. The valve-carrier is designed to operate by a true reciprocatory movement, so as to close the disk 25 securely against the valve-seat 8 and without rotatory or other grinding movement. For that reason it is provided in its upper end with an internally-threaded aperture to accommodate the threaded extremity 26 of the valve-stem 27, which is also provided above the screw with an annular flange 28. The flange 28 extends across the bore of the packing-nut 18 within a recess therein. This recess is internally threaded to accommodate the externally-threaded stem-nut that is provided with an inwardly-extending annular flange 30, that serves to confine the flange 28 revolubly in place. By this means the valve-stem by its rotation is adapted to impart through aid of its screw 26 reciprocatory movement to the valve-carrier 21 for opening and closing the valve. The head of the valve-stem is provided with suitable means for operating it—for example, diametrically opposite nicks 31.

The nipple 3, being adapted to be connected with a boss or other means of gas-supply, the valve mechanism above specified is adapted to promote or check the flow of gas through the bore 5 of the valve-body 1. Provision is made in the construction of the valve mech-

anism against leakage both when the valve is open as well as when it is closed. In the open position the packing-ring 16 confines the gas and prevents its escape around the carrier 21, and any tendency to leak at this point may be instantly remedied by turning the packing-nut 18. The valve-carrier 21 may be at any time conveniently removed and a new one substituted by removing the packing-nut 18. The pitch of the screw-threads by which the bonnet-body and packing-nut and the valve-stem and the valve-carrier are respectively united being of the same pitch, the tightening of the packing-nut 18 upon the bonnet-body will not jam the valve.

It is necessary in valves of this class to provide means for protecting it from dust and dirt, and I therefore provide around the valve-body a case 32, which, fitting the flange 2, may be secured thereto, as by screws 33, passing through the apertures in the case and screwing into the flange 2. The case 32 is preferably cylindrical, but is provided with a collar 34, surrounding the bonnet-body. Hinged, as indicated at 35, to the open end of the case is a hose-union cap, which is provided with a plate 37, forced, as by a spring 38, against the edge of the nipple 3, so as to securely close it. The plate 37 is retained in place within the cap, as by a cage 39, in which is an aperture 40 of a diameter to readily admit the nipple 3. The cover 36, being designed to snugly fit over the end of the case 32, abuts when closed against a stop-piece 41 and is provided with a bonnet-cap 42, which, being hinged, as indicated at 43, between lugs 44 on the cover 36, serves the double purpose of closing the collar 34, thereby protecting the valve from above, and of securing both itself and the cover 36 in their closed positions.

The means for protecting the valve mechanism last above described are not embraced in the scope of my invention and are referred to herein only as constituting an accessory to my invention in its preferred complete practical embodiment.

What I claim is—

1. The combination with a valve-body, valve-seat, and bonnet-body secured to the valve-body, of a reciprocating valve-carrier in the bonnet-body provided with means adjacent to the valve for rendering it irrevolvable and being of cylindrical shape above said means, a stuffing-box in the bonnet-body surrounding the cylindrical portion of the carrier, a packing-ring in the stuffing-box, a packing-nut, and means for actuating the carrier.

2. The combination with a valve-body, valve-seat, and bonnet-body secured to the valve-body, of a stuffing-box in the bonnet-body, a packing-nut threaded to the bonnet-body, above the stuffing-box, a valve-carrier adapted to be inserted or withdrawn through the packing-nut and bonnet-body, a flanged stem threaded to the carrier, and a stem-nut threaded to the packing-nut and adapted to confine the flange of the stem, whereby the carrier and stem, either or both, may be removed and replaced upon removal of the stem-nut, without disturbing the packing-nut.

3. The combination with a valve-body, valve-seat, and bonnet-body secured to the valve-body, of an irrevolvable, reciprocating valve-carrier in the bonnet-body, a stuffing-box in the bonnet-body surrounding the carrier, a packing-nut provided upon opposite ends with internally-threaded recesses, one adapted to fit the externally-threaded end of the bonnet-body, and the other to receive an externally-threaded stem-nut screwed therein, a recess in the stem-nut, a valve-stem threaded to the carrier, a flange on the valve-stem confined between the stem-nut and the packing-nut, and a head on the stem within the recess in the stem-nut.

In testimony of all which I have hereunto subscribed my name.

ROBERT MUNN DIXON.

Witnesses:

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