

No. 810,502.

PATENTED JAN. 23, 1906.

J. H. NOLAN & M. L. SANBORN.

CHECK VALVE.

APPLICATION FILED JULY 18, 1904.

Fig. 1

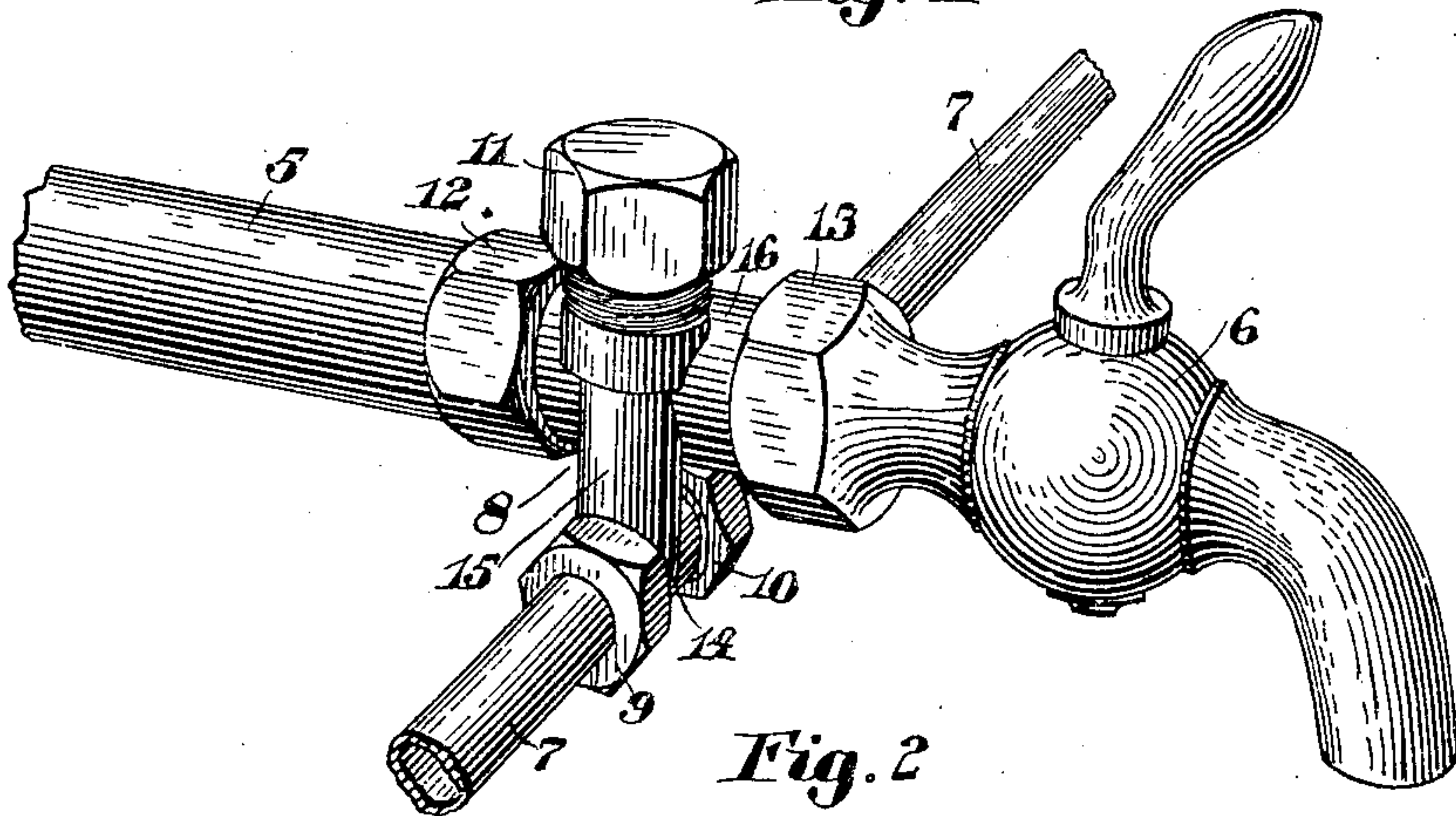


Fig. 2

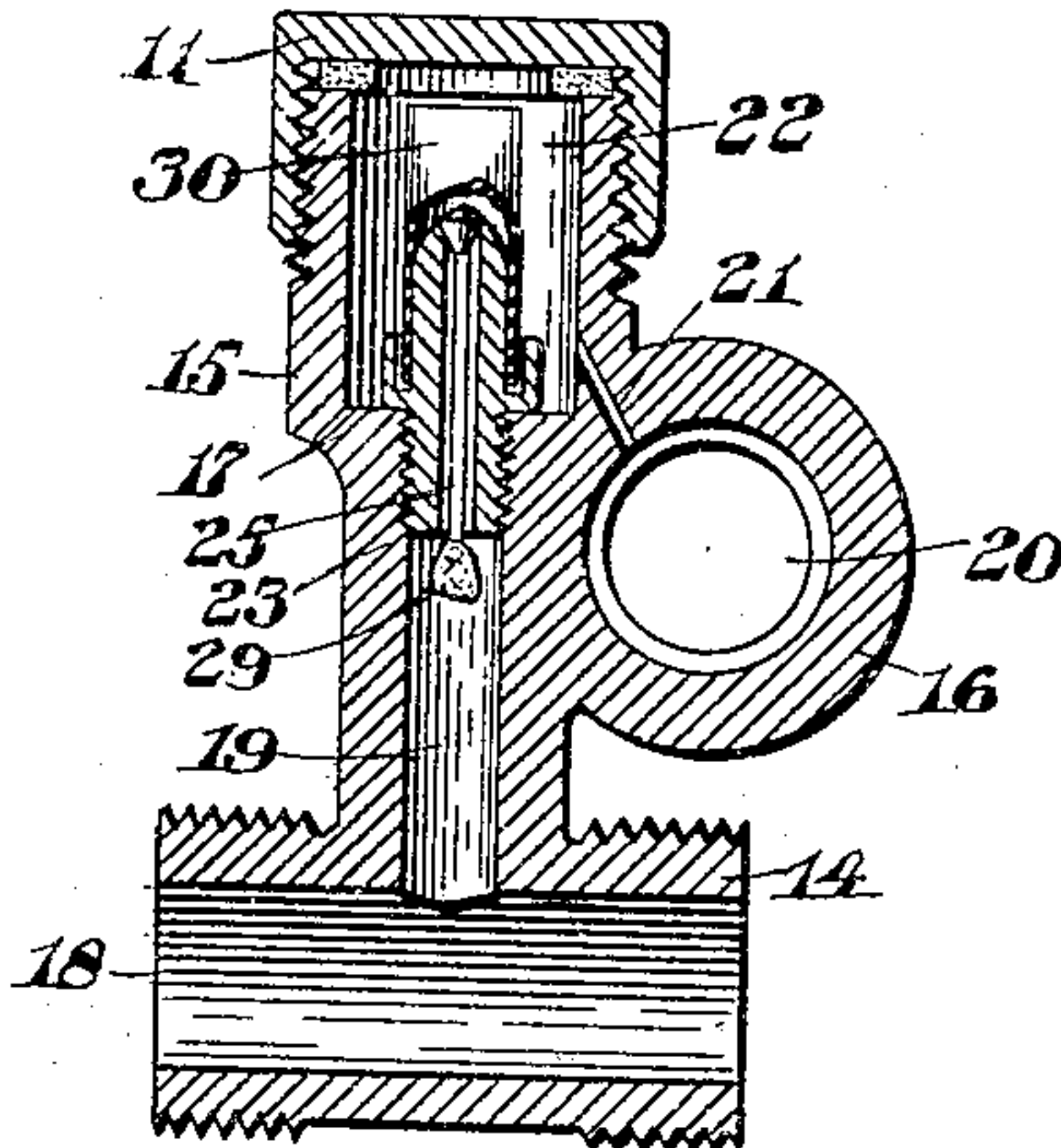


Fig. 3.

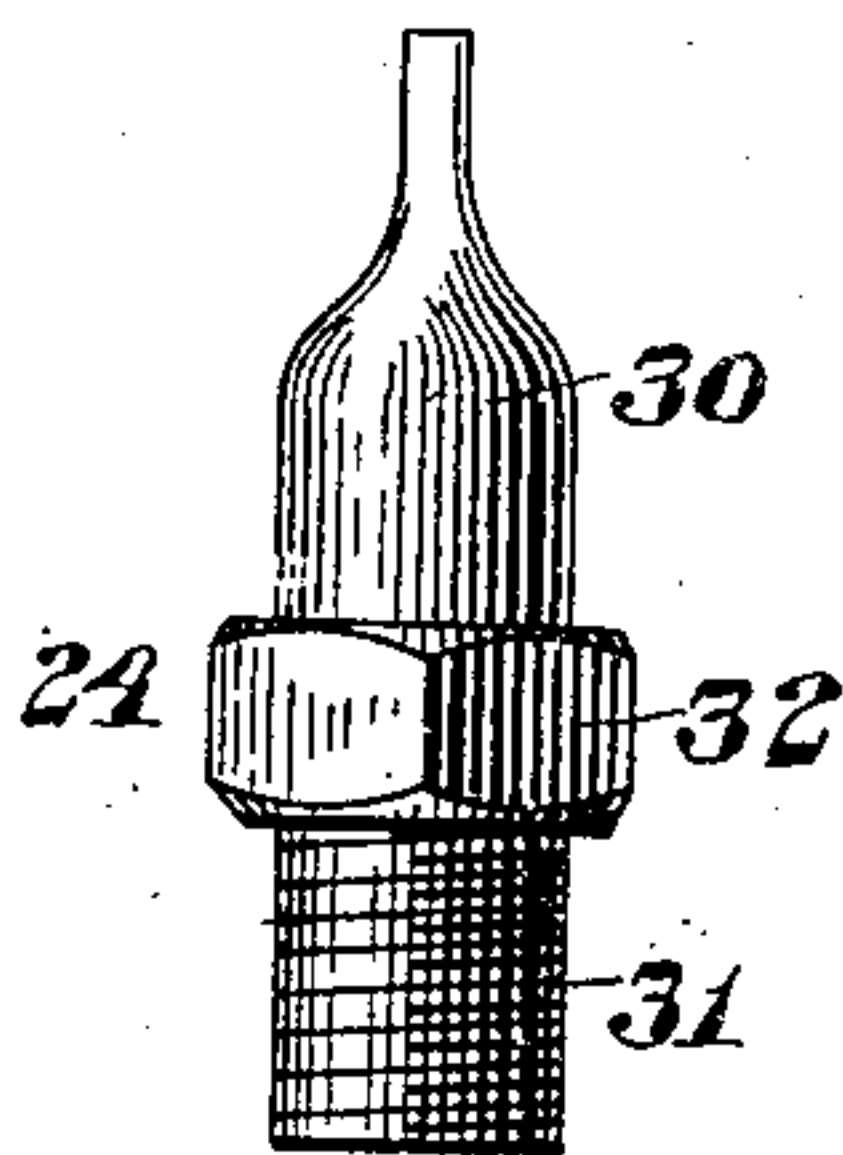
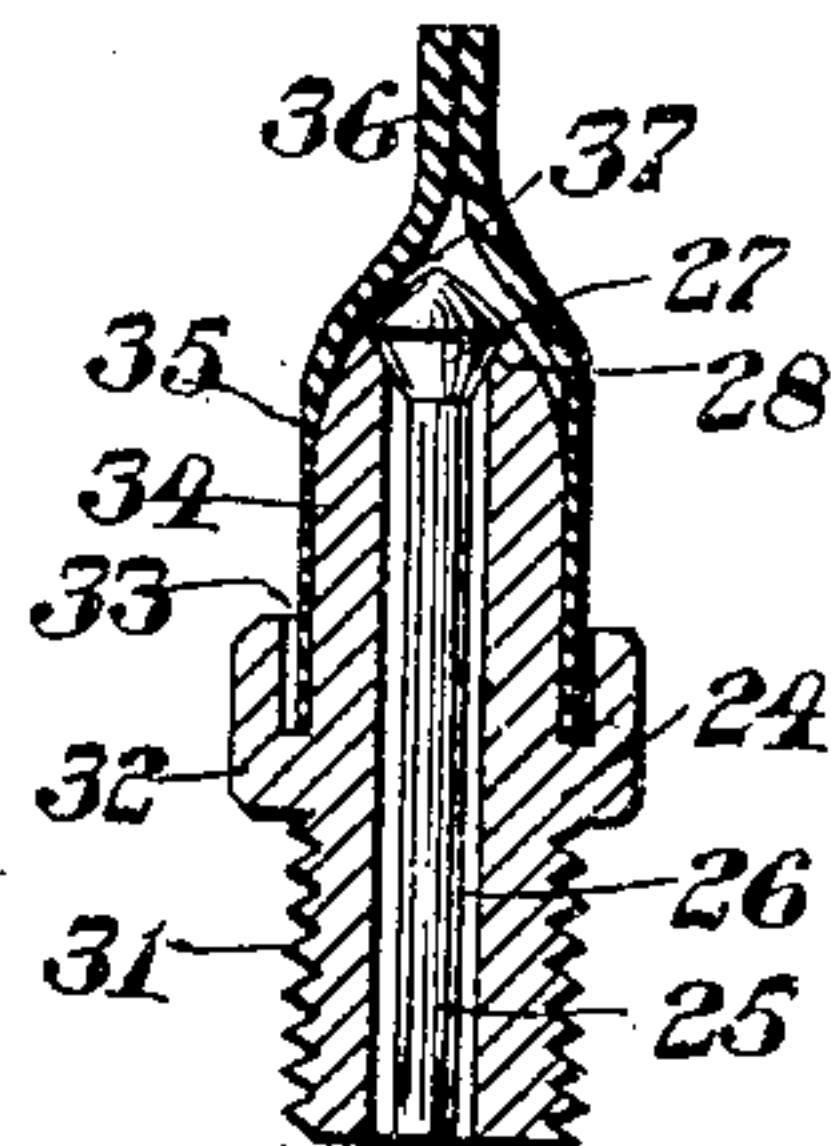


Fig. 4



Witnesses:

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UNITED STATES PATENT OFFICE.

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CHECK-VALVE.

No. 810,502.

Specification of Letters Patent.

Patented Jan. 23, 1906.

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To all whom it may concern:

Be it known that we, JOHN H. NOLAN and MOSES L. SANBORN, citizens of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Check-Valves, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to check-valves to be used in dispensing mechanism for liquids in apparatus such as is shown in the Letters Patent No. 673,922, issued to John H. Nolan May 14, 1901. In apparatus of this nature designed to prevent the liquids from remaining in the discharge or delivery pipes when they are not required to be drawn for any length of time and the liquids are returned to their respective barrels by pneumatic pressure or otherwise, which obviates the necessity of drawing off or wasting the liquid which has deteriorated or become stale by standing in the pipes over night, it is necessary to have supplemental pressure-pipe leading from the source of pneumatic pressure and communicating with the outlet-pipes which lead from each receptacle, and it is necessary to have a check-valve or stop-cock to control each of such points of communication, whereby the contents of the receptacle or receptacles are prevented from entering the supplemental pressure-pipe or backing up into the pipe when the apparatus is in use. If no check-valve or stop-cock controls these points of communication between the supplemental pipe and the outlet-pipes, where more than one receptacle is used there would be a mixture of the several liquids within the supplemental pipe, and it is also desirable that the check-valves or stop-cocks be so constructed as to be entirely free from leakage, so that the liquid would not be forced into the supplemental pipe and from there into the first receptacle, into which the liquid from its discharge-pipe was returned by opening one of the stop-cocks or the pressure-opening of one of the check-valves controlling communication between the supplemental pipe and that particular discharge-pipe, as a mixture of the several liquids in entering the receptacle containing one of the said liquids would destroy the integrity of said liquids. It has been found from experiments

that check-valves are preferable to stop-cocks on liquid-dispensing apparatus, as they are entirely automatic and can be made leakage-tight.

The invention consists in the combination of elements and in certain parts of construction entailed in the combination of said elements to obtain the desired result.

A full understanding of the invention can best be given by a detailed description of a preferred construction embodying the various features of the invention, and such a description will now be given in connection with the accompanying drawings; and we attain our object by the mechanism there illustrated, showing such preferred construction, and the features forming the invention will then be specifically pointed out in the claim.

In said drawings, Figure 1 represents a perspective view of the coupling-piece and its adjacent parts. Fig. 2 is a detail sectional view longitudinally through the supplemental pipe, the coupling-piece, and its working parts. Fig. 3 is an enlarged side elevation of the check-valve proper. Fig. 4 is a sectional elevation of the part shown in Fig. 3.

Latitude is allowed herein as to details, as they may be changed or varied at will without departing from the spirit of our invention and the same yet remain intact and be protected.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The receptacle containing the liquid, which is ordinarily a barrel in the cooling-cellar on the floor below the bar, is not here shown; but from this receptacle passes a discharge or delivery pipe 5, having a discharge-faucet 6, which may be of any construction. The supplemental air-pipe 7 sometimes being a direct connection from the back pressure pipe may run above or below the discharge-pipe, as the reversing of the coupling-piece 8 will not affect the proper working of the check-valve; but it is preferable to run the supplemental pipe below the discharge-pipe and immediately back of the discharge-faucets, as shown in Figs. 1 and 2.

The coupling-piece 8, located just back of the delivery-faucet 6, is so arranged as to connect the supplemental pipe 7 with the

discharge-pipe 5 without rearranging any of those parts where the system is to be applied to a bar already equipped with a main pressure-pipe and delivery-pipes in the usual way.

5 This coupling-piece 8, which contains the check-valve, is shown as having the three stem portions 14, 15, and 16, which are provided with the five coupling-glands 9, 10, 11, 12, and 13, of which two, 9 and 10, at the

10 ends of the horizontal pipe or stem portion 14, which contains the duct 18, are arranged to be connected, respectively, with sections of the supplemental pipe 7, and where a series of couplings are used the last coupling of the

15 series would have its open end stopped by a suitable cap or cover (not shown) which can be screwed on in place of the gland, or, if preferred, the piping 7 could be extended beyond the gland and a suitable cover or cap

20 attached to said free end of piping. If only one delivery-faucet is used, a similar cap or cover can be substituted in place of the gland at the free end of piping 7. In the drawings the portion of the coupling which is connect-

25 ed with the supplemental pipe is shown as below the portions which connect with the discharge-pipe and delivery-faucet, so that when desired the supplemental pipe can be carried along underneath the bar behind the

30 faucets. Extending vertically and at right angles to the stem-piece 14 is another pipe or stem portion 15 of the coupling 8, and this stem 15 having the duct 19 and cup portion 22. This stem 15 contains the check-valve

35 and has its upper or free end ending in a gland or cap 11. Within this stem 15 of the coupling is a seat 17, and attached to the stem portion 15 just below said seat or made a part thereof is the pipe or stem portion 16,

40 having the duct 20 and the glands 12 and 13, which connect, respectively, with sections of the discharge-pipe or of the discharge-pipe and the discharge-faucet. The passage 22 in the upper part of the stem 15 above the seat

45 17 is connected with the passage or duct 20, which connects the discharge-pipe with the faucet by a by-pass 21 for the admission of the pressure from the passages 18 and 19 and the supplemental pipe 7. The pipe portion

50 15 immediately below the seat 17 is screw-threaded, as shown at 23, for the reception of the male screw 31 of the plug-stem 24, provided with the plug or nut 32 and the pas-

55 sage-way 26, which extends upward through the flange portion or upright nipple 34, which is cylindrical in form upon its outer side, sloping inwardly at its upper part, this nipple or flange therefore being open at both ends and carrying interiorly thereof the pin 25, the

60 latter passing through the plug-stem 24, and moving vertically within the same, having a cap portion 27, which has a seat 28 in the flange or nipple 24 and has at its lower portion a lug 29 to prevent its being passed too

65 far upward into the rubber cover or lipped

cap 30 upon the forcing of air from the supplemental pipe 7 into the discharge-pipe 5. The plug 24 is so arranged that upon the screwing down of the stem 24 into the duct 19 the only passage of air or liquid from the

70 duct 19 to the cup 22 would be through the passage-way 26 and upon the corking of this passage-way the same is entirely leakage-tight.

The stem 24 has between the upward-ex-

75 tending flange 34 and the plug 32 a tubular cavity or chamber into which sets the lower portion 35 of the lipped cap 30, made, preferably, of rubber and which is adapted to fit tightly over the flange 34 and the cap-

80 piece 27, so that liquid cannot leak through into the passage-way 26, as it might readily do if no other cover than the cap 27 were used. The cap 30, when not in use upon

85 the flange resembles a flat piece of rubber which when squeezed shows the oblong opening 37 and has its upper or lip sides 36, as shown in Fig. 4, fitting tightly together and only separated when air or other pres-

90 sure is forced upward from the passage-way 26 into its opening 37. With such a cap we have found in practice that it is impossible for liquids to leak from the discharge-

95 pipes into the supplemental pipe.

In the operation of the device when it is

95 desired to pass the liquid in the discharge-pipe 5 back into the receptacle the force of air or other pressure is sent from its source into the supplemental pipe 7, from which it passes through the passage 18 into the duct

100 19, up into the passage-way 26, forcing the cap 27 up from its seat 28. From thence the air presses into the opening 37, pressing the lips 36 of the cap 30 apart, and thence into

105 the cup 22, then by the by-pass 21 into the duct 20 of the stem 16, which is connected with the delivery-pipe 5. Immediately upon the shutting off of the force of air the lips 36 will close, preventing the admission of the liquid, and the pin 25 will drop downward, the cup

110 27 resting upon the seat 28.

It is to be understood that our invention is not limited to the specific details of construction shown in the accompanying drawings,

115 but that said details may be varied in the practical carrying out of our invention. It is also to be understood that the combinations specifically set forth in the claim are intended to be separately claimed without limitation to the use in connection therewith of other

120 features and details of construction illustrated.

Having thus described our invention, we claim as new and desire to secure by Letters

125 Patent—

A check-valve having a stem-plug provided with a duct extending therethrough having an inward-inclined upper edge forming a seat, a vertically-movable pin extending through the duct provided with a tapered

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head normally resting upon the plug-seat, a
lug attached to the lower end of the pin, an
annular rim on the stem-plug forming a tu-
lar cavity, a flexible cap stretched over the
5 upper portion of the stem-plug having its
lower edge inserted within the cavity, said
cap composed of two lips having parallel
sides and whose outer ends are normally
closed flat and permit gases to pass in only

one direction, substantially as shown and de- 10
scribed.

In testimony whereof we affix our signa-
tures in presence of two witnesses.

JOHN H. NOLAN.

MOSES L. SANBORN.

Witnesses:

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