H. GIBBS.

HOSE NOZZLE.

APPLICATION FILED JAN. 14, 1913.

1,159,015. Patented Nov. 2, 1915.

Fig. 1.

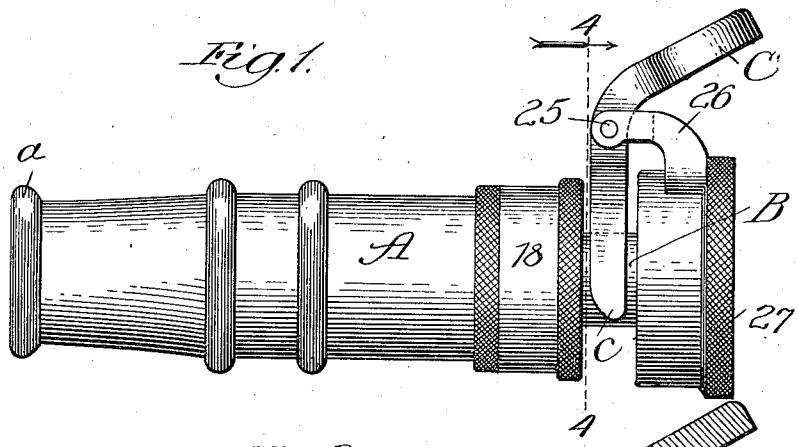


Fig. 2.

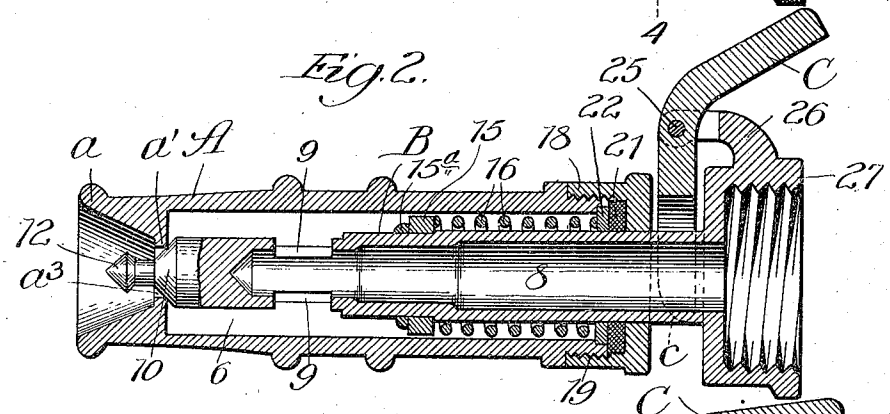
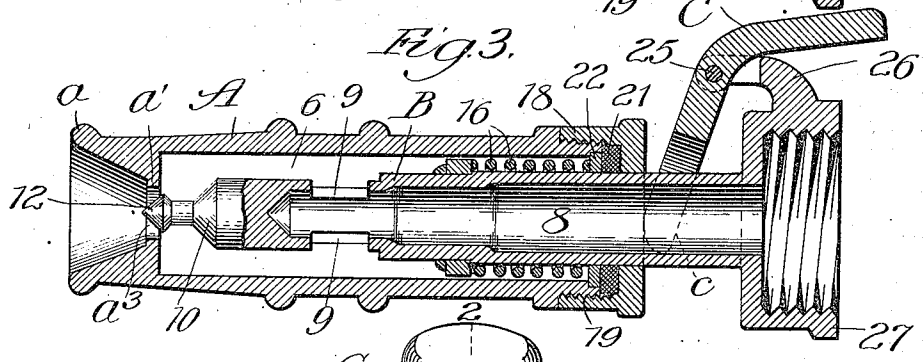
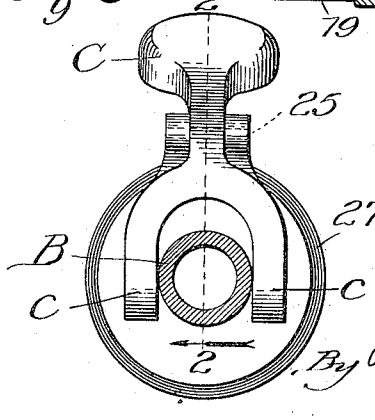


Fig. 3.





Witnesses:

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HOSE-NOZZLE.

1,159,015. Specification of Letters Patent. Patented Nov. 2, 1915.

Application filed January 14, 1913. Serial No. 742,014.

To all whom it may concern:

Be it known that I, HENRY GIBBS, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Hose-Nozzles, of which I do declare the following to be a full, clear, and exact description.

The present invention, while susceptible of wider application, has more particularly for its object to provide an improvement in that class of hose nozzles whereby the water from the hose may be regulated and controlled so that it will issue either in the form of coarse spray, fine spray or in a solid stream, an example of this type of hose nozzle being shown in an application for Letters Patent filed by me January 2, 1913, Serial No. 739,875.

The invention relates more particularly to improved means for effecting the automatic cutting off and manual control of the stream of water and consists in the features of novelty hereinafter described, illustrated in the accompanying drawing and particularly pointed out in the appended claims.

Figure 1 is a view in side elevation of a hose nozzle embodying my invention. Fig. 2 is a view in central vertical section through Fig. 1. Fig. 3 is a view similar to Fig. 2, but showing the parts in different positions. Fig. 4 is a view in cross section on line 4—4 of Fig. 1, parts being shown in elevation.

In the accompanying drawing, A designates the body of the nozzle, the outer end of which is formed by the flaring portion a and an annular contracted portion a' having an opening a^3 therein, the annular contracted portion a' forming a seat for a valve by which the flow of water will be cut off, as will hereinafter more fully appear. The chamber 6 of the body of the nozzle is shown as of substantially uniform diameter from adjacent its inner end to the valve seat a' at its outer end. The body of the nozzle is slidably mounted upon the hollow valve stem B which extends within the chamber 6 and the hollow port 8 of which communicates with the chamber through one or more ports 9.

The outer end of the valve stem B is provided with an enlarged beveled portion 10, preferably slightly larger in diameter than the opening a^3 at the outer end of the body A of the nozzle, this portion 10 serving as a valve which, when forced against the valve seat a' at the outer end of the nozzle, will serve to cut off the flow of water through the opening a^3. Preferably, there projects from the valve 10, a double cone 12 slightly smaller in diameter than the opening a^3 at the end of the body A. When the parts are in the position shown in Fig. 2, with the valve 10 closed against the seat a', the flow of water through the nozzle will be cut off, but by shifting the body portion upon the valve stem until the double cone 12 is more or less within the contracted opening a^3 at the end of the nozzle, the character of the stream of water can be modified so as to cause such stream to issue from the end of the nozzle in the form of coarse spray, fine spray, or as a solid stream.

Upon the exterior of the hollow spindle B is fastened a collar 15. This collar 15 may be held in place in any convenient way, as by pins, or by drops of solder 15^a upon the periphery of the spindle B. Against the collar 15 bears one end of a coiled spring 16 that encircles the spindle; and this coiled spring 16 is held under tension by means of a cap 18 that is screw threaded, as at 19, to the inner end of the body A of the nozzle. Preferably, packing rings or washers 21 and 22 are interposed between the cap 18 and the end of the spring 16. The tension of the spring 16 serves to hold the parts normally in the relative positions shown in Fig. 2, that is to say, with the valve 10 closed against the valve seat a' at the outer end of the nozzle. The cap 18 fits upon the hollow stem B and slidably supports the body portion of the nozzle thereon, and the washer 21 forms a water tight joint between these parts. The collar 15 aids in guiding the longitudinal shift of the body portion of the nozzle upon the hollow stem.

In assembling the parts, the cap 18 and the packing washer and ring 22 are slipped over the hollow spindle B. The spring 16 and the collar 15 are then placed in position on the spindle and the collar fixed thereto. The body portion A of the nozzle is then passed over the spindle and the collar 15 and threaded into the cap 18. The cap 18, packing washer 21 and packing ring 22 fit upon the spindle to properly support the body portion of the nozzle and guide its axial movement. The collar 15 is also of such size that it aids in supporting and

guiding the axially movable hollow body portion.

To effect the shift of the nozzle A upon the hollow spindle B to thereby move the valve seat a' relatively to the valve 10 and cone 12, a hand lever is interposed between these parts and is arranged to move the body of the nozzle against the tension of the spring 16. In the preferred construction shown, an angle lever C is pivoted at 25 to a lug 26 that projects on an enlarged, interiorly threaded coupling 27 upon the inner projecting end of the hollow valve stem or spindle B. The lever C is of angle form and one arm c extends between the enlarged coupling 27 and the cap 18 at the inner end of the body portion of the nozzle. This arm is bifurcated to straddle the hollow stem or spindle B, as most clearly shown in Fig. 4. The other arm of the lever C which forms the finger piece projects rearwardly over the coupling 27, so that it can be conveniently manipulated by the thumb or hand of the person using the hose to which the nozzle is attached.

When the parts are in the normal position shown in Fig. 2, the flow of water through the nozzle will be cut off because the valve 10, at the end of the spindle B will be against the valve seat a' adjacent the outer end of the nozzle A. If, however, the person using the hose depresses, as with the thumb, the free end of the lever C, the body of the nozzle B will be moved forward until the valve 10 is retracted from the valve seat a' and water is permitted to flow through the opening a^3 adjacent the outer end of the nozzle A. Obviously, the extent to which the cone 12 is drawn through the opening a^3 will determine in this construction, as in prior constructions, the character of the stream of water discharged through the nozzle, that is to say, whether the stream shall issue as a solid stream or more or less broken up into spray. As soon as the pressure on the free end of the lever C is released, the spring 16 will retract the nozzle A upon the spindle B from the position shown in Fig. 3 to the position shown in Fig. 2, thereby causing the valve 10 at the outer end of the spindle B to close against the valve seat a' and cut off the flow of water through the nozzle.

It is obvious that the details of construction above set out may be varied without departing from the spirit of the invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. A hose nozzle comprising a hollow stem having a coupling at its inner end and a valve at its outer end, a hollow body portion slidably supported and guided upon said stem and having a discharge opening at its outer end with which said valve coöperates, a spring interposed between said stem and said body portion for normally holding said valve in closed position, and a shifter interposed between said parts for shifting said body portion upon said stem against the tension of said spring, substantially as described.

2. A hose nozzle comprising a hollow stem having an enlarged coupling at its inner end and a valve at its outer end, a hollow body portion slidably supported and guided upon said stem and having a discharge port at its outer end with which said valve cooperates, a spring interposed between said stem and said body portion for normally holding said valve in closed position, and a shift lever projecting into the space between the inner end of said body portion and said enlarged coupling and pivotally mounted on one of said parts for shifting said body portion upon said stem.

3. A hose nozzle comprising a hollow valve stem having an enlarged coupling at its inner end and a valve at its outer end, a body portion slidably supported and guided upon said valve stem and having a discharge opening at its outer end with which said valve coöperates, a spring interposed between said stem and said body portion for normally holding said valve in closed position and an angle lever pivotally mounted upon said coupling and having a finger piece rearwardly projecting over said coupling and an inwardly projecting bifurcated part arranged to straddle said stem and engage said body portion to shift the same outwardly upon said valve stem against the tension of said spring, substantially as described.

4. A hose nozzle comprising a hollow stem having a coupling at its inner end and a valve at its outer end, a body portion surrounding said stem and having a discharge opening at its outer end with which said valve coöperates, a cap and washer mounted on the inner end of said body portion and engaging said stem to slidably support and guide said body portion on said stem, a guiding collar separate from but fixed to said stem within said body portion, a spring coiled about said stem and interposed between said collar and said cap and washer, and a shift lever interposed between said stem and said body portion for shifting the latter outwardly upon the stem against the tension of the spring, substantially as described.

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