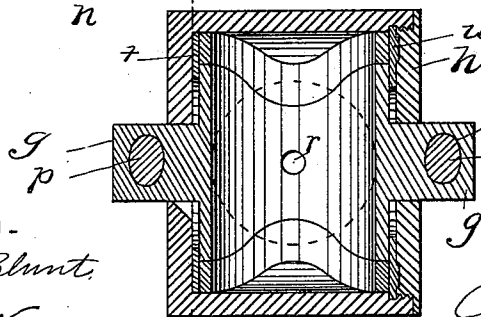
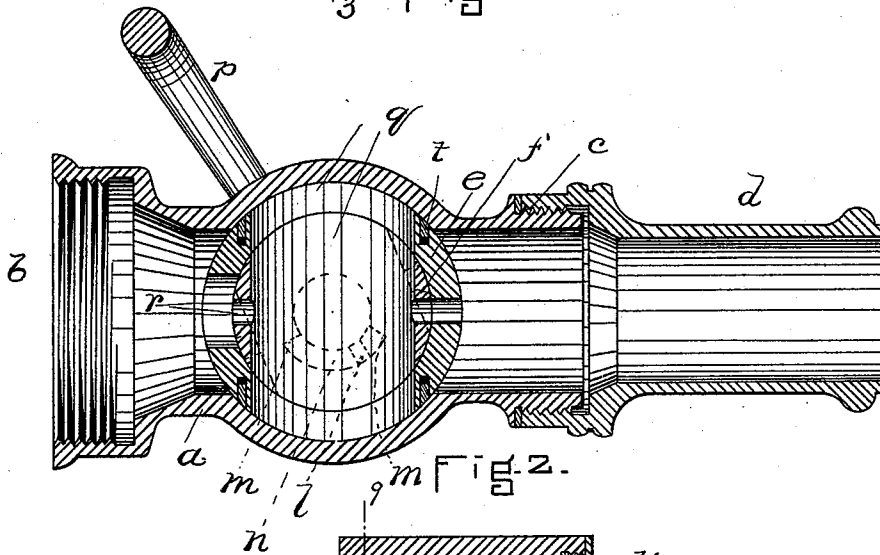
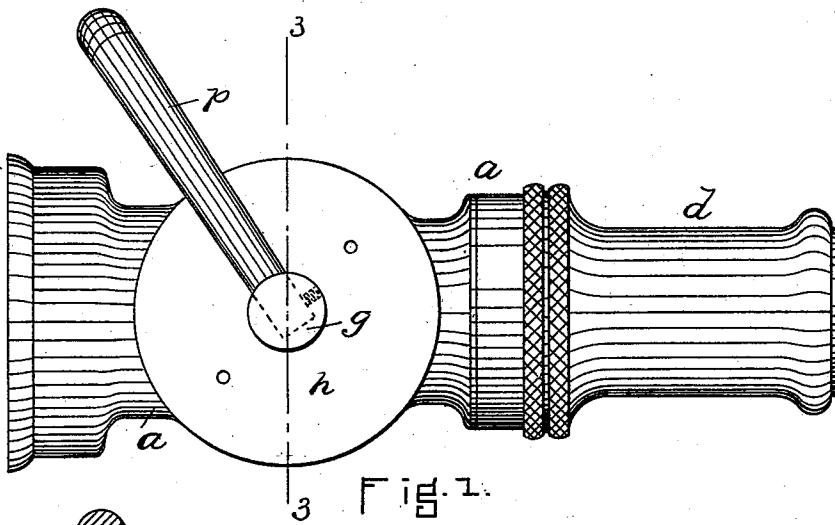


C. CALLAHAN.
HOSE NOZZLE.

No. 541,716.

Patented June 25, 1895.



WITNESSES.

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(No Model.)

3 Sheets—Sheet 2.

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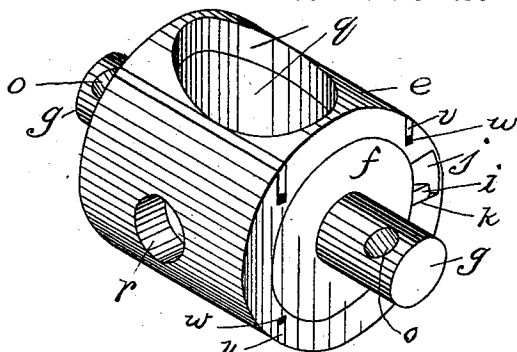


Fig. 5.

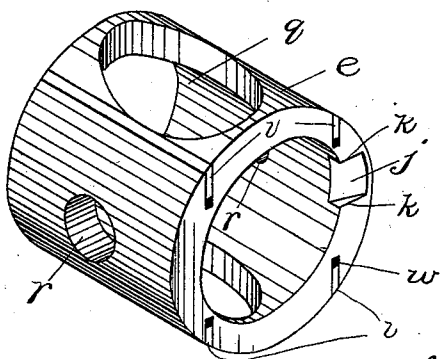


Fig. 6.

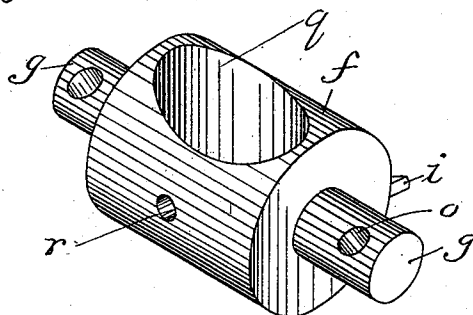


Fig. 7.

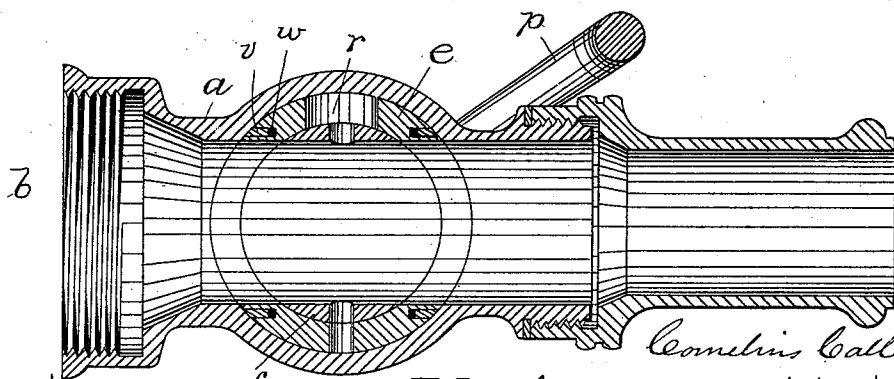


Fig. 4.

WITNESSES.

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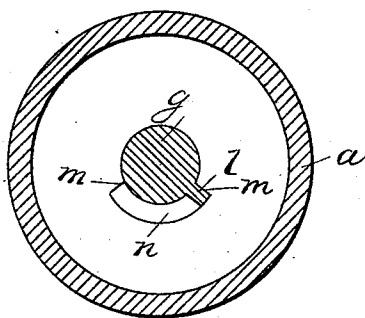
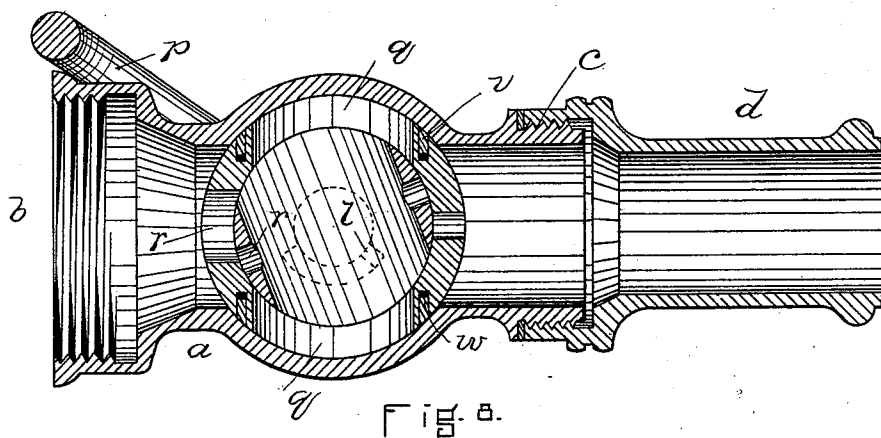
(No Model.)

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UNITED STATES PATENT OFFICE.

CORNELIUS CALLAHAN, OF CANTON, MASSACHUSETTS.

HOSE-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 541,716, dated June 25, 1895.

Application filed January 24, 1895. Serial No. 536,156. (No model.)

To all whom it may concern:

Be it known that I, CORNELIUS CALLAHAN, of Canton, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Hose-Nozzles, of which the following is a specification.

This invention has relation to that class of hose nozzles employing a rotary plug valve by the manipulation of which the stream of water is turned on and shut off.

It is the object of the invention to provide such improvements in hose nozzles as will enable a small stream or a stream of the full capacity of the nozzle to be turned on and shut off by the movement of a single part in the same manner but only to varying extent.

To these ends the invention consists of a hose nozzle embodying in its construction a duplex rotary plug, each member of which is adapted to have a limited movement imparted thereto independent of the other, and each of which members is provided with two ways or ports one of which is full to permit of a stream of the full capacity of the nozzle to flow therethrough, and the other limited, so that a small stream or jet may be thrown from the nozzle, the construction and arrangement as a whole being such that by a manipulation of the same means either of said ports or ways, as desired, may be brought into "register" with the way through the nozzle, or the plug may be operated to shut off the stream altogether.

Reference is to be had to the annexed drawings and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

The said drawings illustrate one form of means in which my invention may be embodied, in which drawings—

Figure 1 is a side view of my improved hose-nozzle complete. Fig. 2 is a longitudinal central sectional view thereof, the members of the plug being shown in position for the throwing or employment of a small jet or stream. Fig. 3 is a transverse sectional view taken on the line 3 3 of Fig. 1. Fig. 4 is a view resembling Fig. 2, but showing the plug in position for throwing or employing a full stream. Fig. 5 is a perspective view of the two members of the duplex plug assembled to the position in which they are represented in Fig. 2. Fig. 6 is a perspective view of the

outer member, and Fig. 7 a like view of the inner member of the plug. Fig. 8 is a view resembling Figs. 2 and 4, but showing the plug in position assembled to cut off the flow of water entirely. Fig. 9 is a detail view designed to show the means for limiting the rotary movement of the outer member of the plug.

My invention is applicable to a hose nozzle or pipe or water conduit of any form that is adapted to have a rotary plug cut-off combined therewith.

In the form shown in the drawings *a* designates a pipe, constituting the body of the nozzle which is internally screw-threaded at its rear end as at *b* to enable it to be attached to the coupling device of a hose, and externally screw-threaded at *c* for the attachment of the tip or nozzle proper *d*. The pipe *a* is provided with an enlarged chamber in the sides of which the plug is journaled. The plug is duplex in character, being composed of an exterior member *e* adapted to have a limited rotary motion in the enlarged chamber of the pipe, and an interior member *f* adapted to have a limited rotary motion within the member *e* and independent thereof, and also to be moved in unison with the exterior member.

The exterior member is formed as a short tube and the interior member is formed so as to fit neatly therein and is provided on its ends with trunnions *g*, one of which has a bearing in the side of the enlarged chamber of the pipe and the other in the cap *h* screwed upon a flange or boss formed upon the pipe opposite the first-mentioned trunnion bearing.

A lug *i* on one end of the interior member at its periphery, when the parts are assembled, extends into an offset or cut-away *j*, between the shoulders, *k k* of which it is adapted to play so that it may rotate within the exterior member and independent thereof to this extent. On the opposite end of the interior member at or near the trunnion *g* there is formed another lug *l* adapted to play between the shoulders *m m* of a groove or cut-away *n* formed in the side of the pipe (see Fig. 9 and dotted lines in Fig. 2) in order to limit the rotary motion of the exterior member and the interior member when moved in unison therewith. The trunnions *g* extend beyond the pipe and the said cap, and in the said extended ends there are formed holes *o o* for the recep-

tion of the ends of a U-shaped handle or bail *p*, so that by the movement or swinging of the said handle the interior member may be first rotated within the exterior member to the extent allowed for the play of the lug *i* between the shoulders *k k*, and then operate to rotate both members in unison to the extent permitted by the movement of the lug *l* between the shoulders *m m*. The two members have a full port or way *q* formed through their bodies transversely of their axes, and a restricted port *r* extending through at a right angle to the full port, but also transversely of their axes, the said ports being formed so that when both members shall have been moved in one direction to their extreme limits the full ports or ways *q* will register or be in line and the nozzle will be fully open so that a full stream may be discharged therethrough, as is clearly represented in Fig. 4. When the two members are in the position shown in Fig. 8, so that the nozzle is entirely closed, a forward movement of the handle will partially rotate the inner member in the outer member which will remain motionless, until the lug *i* strikes against the forward shoulder *k* of the cut-away *j*. The members will then be in the position shown in Fig. 2 with the restricted ports *r* in line or registering so as to discharge a small or limited stream through the nozzle, as in cases where but a little water is needed, and a full stream would do damage. A still further movement of the handle *p* will rotate the inner member and with it the exterior member, by reason of the engagement of the lug *i* with the shoulder *k* until the members are in the position illustrated in Fig. 4 when lug *l* will abut against shoulder *m* and the full ports or ways *q* will register or be in line so that a full stream of water may be discharged therethrough.

When it is desired to shut off the stream and close the nozzle, the handle *p* is moved backward, which will cause the inner member to be first moved to the limit of its independent movement relatively to the exterior member (that is, until lug *i* moves through the cut-away *j* and abuts against the rear shoulder *k*) and then will move both members in unison until lug *l* abuts against the rear shoulder *m*, the members then being in the position shown in Fig. 8, and the nozzle being closed. If, when a full stream is being discharged through the full ports, it is desired to discharge a limited stream, it is first necessary to entirely close the nozzle by moving the handle to its extreme rear limit, and then move it forward as above described until the restricted ports register or are in line.

In order to frictionally retard or hold back the outer member, so that the result just described may be accomplished, I interpose a friction ring *t* of leather or other suitable material between one end of said outer member and the casing, and another friction ring *u* between the other end of said outer member and the screw cap *h*. With this construction

and arrangement of parts, after the screw cap is turned into place, the said friction rings *t u*, will bear upon the outer member so as to hold it against movement while the inner freely operating member is being independently rotated within the limits allowed by the lug *i* and shoulders *k k*.

The cap *h* is provided for the purpose of affording means of putting the plug and its cooperating parts in place, and of removing the parts for the purpose of renewal and repairs.

v designates metallic packing strips set in grooves formed in the periphery or outer surface of the outer member and longitudinally thereof, and resting upon strips *w* of rubber or other suitable springs placed in the bottom of said grooves to press the packing strips outward against the interior surface of the pipe, to prevent leakage between the surface of the plug and the pipe. There may be as many of these packing strips set into the plug as may be needed.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

1. A hose nozzle embracing in its construction a duplex rotary shut-off plug consisting of an interior and an exterior member, each provided with a full port or way and a restricted port or way.

2. A hose nozzle embracing in its construction a duplex rotary shut-off plug consisting of an interior and an exterior member each provided with a full port or way and a restricted port or way and a single operating handle for both members.

3. A hose nozzle embracing in its construction a duplex rotary shut-off plug consisting of an interior and an exterior member each provided with a full port or way and a restricted port or way, the interior member being constructed to have an independent limited movement within the exterior member, and a single operating handle for both members.

4. A hose nozzle embracing in its construction a duplex rotary shut-off plug consisting of an interior and an exterior member each provided with a full port or way and a restricted port or way, the interior member being constructed to have an independent limited movement within the exterior member, a single operating handle directly connected with the interior member to move both members, and friction means for retarding the movement of the exterior member.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 9th day of January, A. D. 1895.

CORNELIUS CALLAHAN.

Witnesses:

MARGARET CALLAHAN,
ARTHUR W. CROSSLEY.