

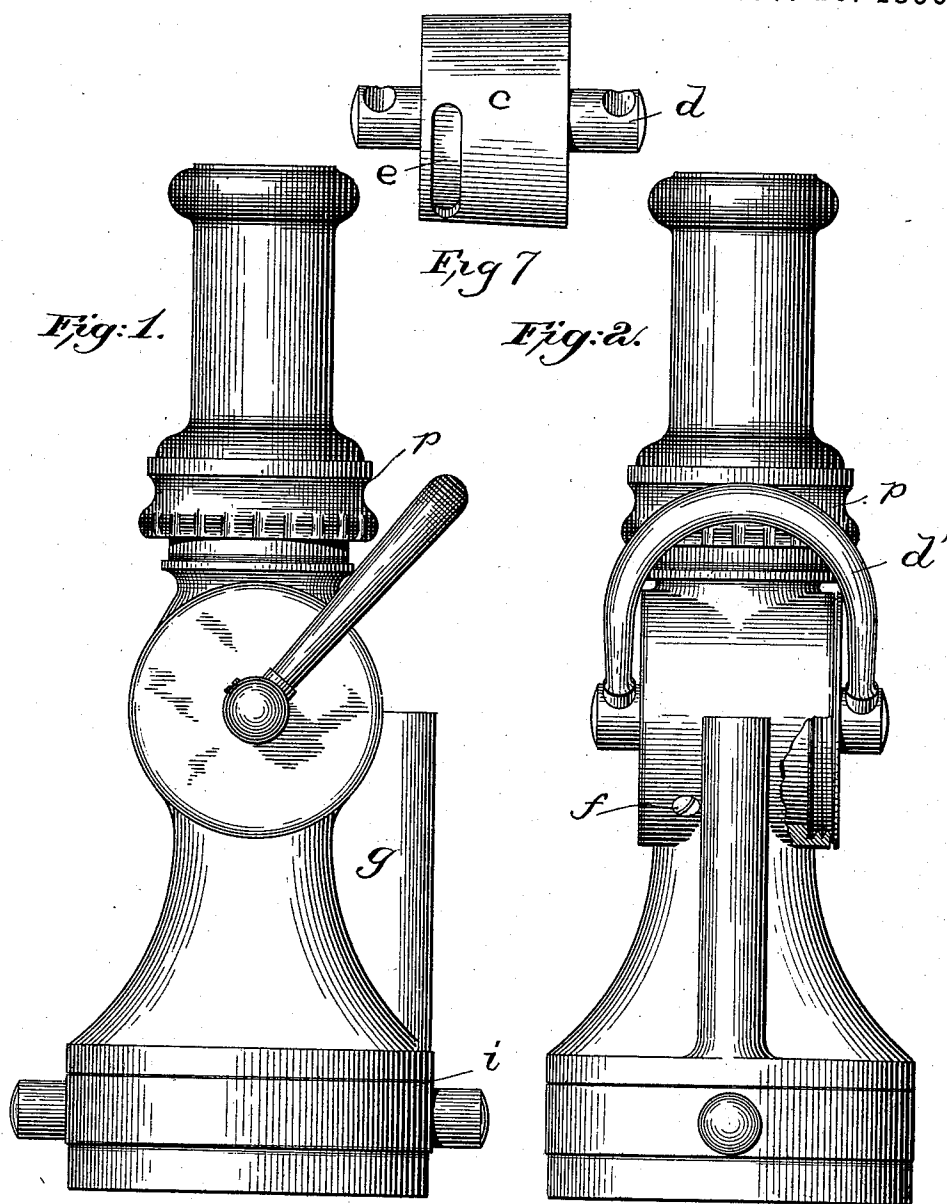
(No Model.)

C. CALLAHAN.
HOSE NOZZLE.

2 Sheets—Sheet 1.

No. 570,903

Patented Nov. 10, 1896.



Witnesses:

Arthur J. Randall,
W. B. May

Inventor:

Cornelius Callahan
By
A. W. Crossley, atty.

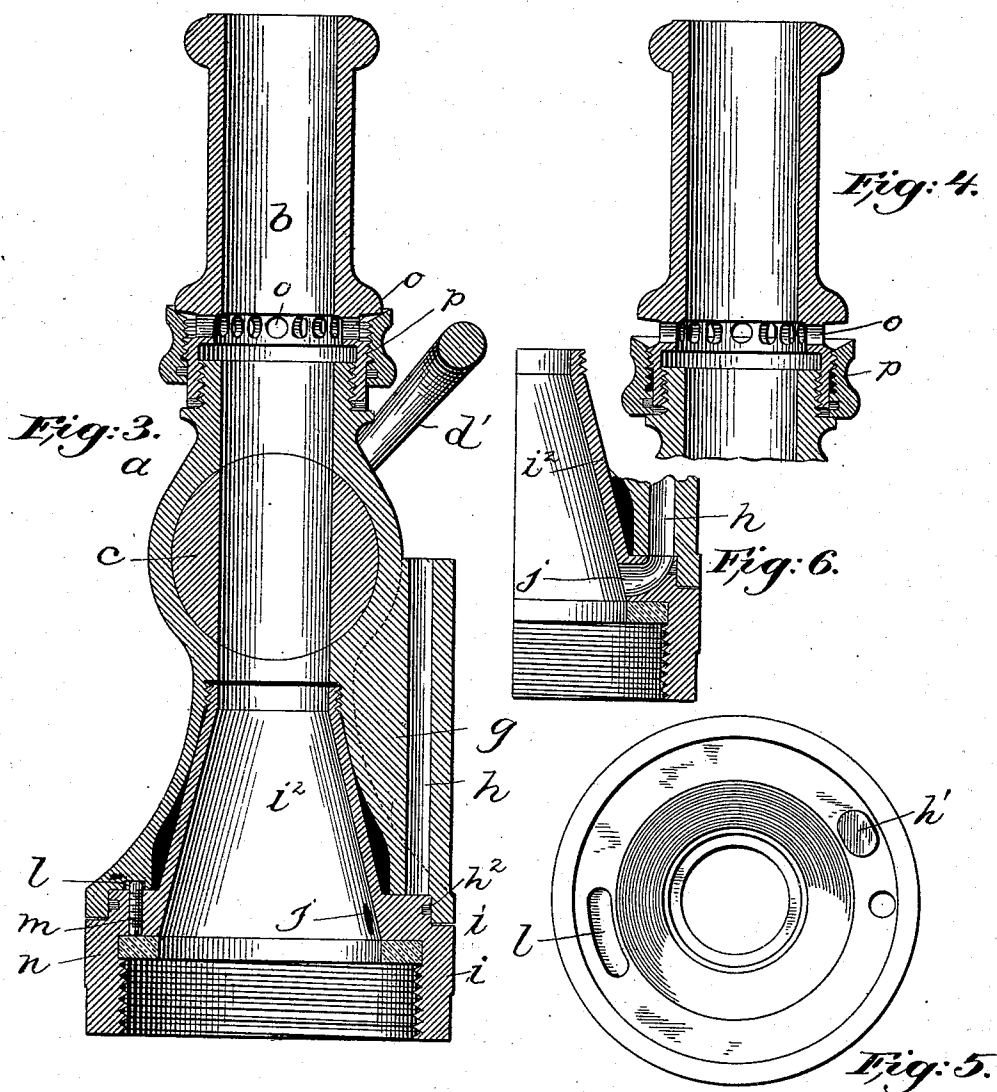
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UNITED STATES PATENT OFFICE.

CORNELIUS CALLAHAN, OF CANTON, MASSACHUSETTS.

HOSE-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 570,903, dated November 10, 1896.

Application filed September 23, 1895. Serial No. 563,385. (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 nozzles for fire-hose generally, and particularly to such as are designed to throw streams of different character suited to the flame which it is desired to extinguish.

It is the object of my invention to provide such improvements in fire-hose nozzles as will facilitate their manipulation and render them more efficient than heretofore.

With this object in view my invention consists of the improvements which I will now proceed to describe in detail and subsequently point out with particularity in the appended claims.

Reference is to be had to the appended drawings, forming a part of this specification, which drawings fully illustrate my invention, and in which—

Figure 1 is a side elevation of my improved fire-hose nozzle, showing it in full-stream open position. Fig. 2 is a front elevation of the same. Fig. 3 is a vertical sectional view of the same, the spraying-nozzle being represented as closed. Fig. 4 is a detail sectional view showing the nozzle as adjusted for spraying. Fig. 5 is a bottom plan view of Fig. 3, showing in part the manner of securing the use of a small stream when needed. Fig. 6 is a sectional detail view having reference to the small-stream feature of the nozzle, and more particularly referred to hereinafter. Fig. 7 is a view of the shut-off plug or cock detached.

In the drawings, *a* designates the body of the nozzle, which may be of any suitable size and conformation and which is provided with the usual stream passage-way or port *b*, controlled by the rotary plug or cock *c*, supported on trunnions or journal-studs *d*, having bearings in the body *a*, and with the projecting ends of which the ends of the operating-bail *d'* are connected.

The plug *c* is provided in its periphery with a limited groove *e*, into which the inner end of a screw *f* extends, so as to limit the movement of the plug by the bail, and so stop it

at its extreme open or shut positions when moved by the bail *d'*, all as will be readily understood.

g designates a boss or enlargement constructed on the body *a*, through which there is formed a reduced passage-way or port *h*, which communicates with the main passage-way *b*. This passage-way *h* may extend from near the base of the nozzle to the plug *c*, as shown, but the form and arrangement are immaterial so long as the boss *g* is formed on the outside of the body *a* and the passage-way or port *h* is restricted or so formed as to emit a small stream therethrough.

i designates a female coupling on the base of the body *a*, which coupling provides means whereby the nozzle may be coupled to a length of hose.

The female coupling consists of a part *i'*, which forms the base of a tapering or conical pipe *i''*. The outer end of the conical pipe is externally threaded, so as to screw into a reduced aperture leading through the plug *c*. This is an important feature of my invention, for by reducing the diameter of the threaded connection of the nozzle with the female coupling the nozzle may be turned or rotated with great ease, whereas if the threaded connection were at the base of the nozzle it would be difficult to turn the nozzle on account of the small leverage, as I have found by experiment.

It will be understood that the female coupling ending in the frusto-conical pipe *i''* may be considered as a portion of the hose, and the nozzle is rotated relatively thereto in order to provide for the formation of a small stream through the reduced nozzle.

The coupling *i* is provided with a port or passage-way *j*, (best seen in Fig. 6,) which communicates between the passage-ways *b* and *h*, so that when the port *j* and passage-way *h* are in register a small or limited stream of water will be thrown through the latter.

In the base of the body *a* a limited groove *l* is formed, into which the inner end of a screw *m*, tapped into the coupling *i*, extends. Now, as the body *a* is adapted to be turned laterally on the coupling *i*, it follows that the port *j* may be brought to register with the port *h* or to be shut therefrom, and that the screw *m* and slot *l* will limit the extent of movement of the body, so as to assure the

exact position of the parts. This is another important feature of the invention and provides a most ready means for employing a small-stream nozzle in connection with a full-stream nozzle on a fire-hose.

h' is a leather packing which is adapted to close one of the small passage-ways when the nozzle is turned so as to shut off the small stream.

*h*² designates a packing interposed between the nozzle *a* and the coupling *c*.

n designates a packing-ring set into the coupling *i* to pack the latter in its relationship to the hose with which the nozzle may be connected.

The tip of the nozzle is made detachable from the main or body portion *a*, as shown, by means of a screw connection, and the detachable part or tip is provided at its base with a series of radial apertures *o*, which may be covered or opened by means of a collar or ring *p*, screwed upon the tip, as is best shown in Figs. 3 and 4. When the ring *p* is screwed forward, as shown in Fig. 3, the apertures *o* will be closed, and when it is screwed toward the hose, as seen in Fig. 3, the apertures *o* will be opened and a spray stream may be thrown from the nozzle. The radial apertures are in front of the plug or valve *c*, so that the latter may be operated while water is gushing through the apertures without first closing them by means of the collar or ring. Were the radial apertures in the rear of the plug, it would be difficult to manipulate the latter when the apertures were open, and the fireman would be drenched with water.

The facility with which the spray streaming may be effected and shut off, also constitutes an important feature of the invention, while the main stream is in operation.

It will be observed that by my invention a full-stream, spraying-stream, and limited-stream nozzle is provided, and one which can be manipulated with the utmost readiness and promptness—things so essential in the use of fire-extinguishing apparatus.

What I claim is—

1. A nozzle for a fire-hose, comprising an integral body part provided with a full-stream port controlled by a plug, and a limited-stream port, combined with a coupling to which the hose is secured and having a port adapted to register with the limited-stream port, said nozzle being adapted to be revolved on said coupling to turn on or shut off the limited stream, as set forth.

2. A nozzle for fire-hose, comprising in its construction a body part having a full-stream port, a plug or valve for said port, a boss on the body part provided with a small or limited stream port, in combination with a coupling adapted to be secured to the hose and to be threaded into the body part, said coupling having an aperture adapted to register with the limited-stream port, and means interposed between the coupling and the body part of the nozzle to limit the movement of one relatively to the other.

3. A nozzle for fire-hose, comprising an integral body part having a valve-controlled full-stream port, and a duct with converging walls leading thereto, and also formed with a boss through which extends a limited-stream port, in combination with a rotatable female frusto-conical coupling adapted to be secured to the hose extending into said duct and having its inner end threaded therein, said coupling having an aperture or duct adapted to register with the limited-stream port, and means for limiting the movement of the body relatively to the coupling.

4. A nozzle for fire-hose, comprising an integral body part having a valve-controlled full-stream port, and a boss formed with a limited-stream port, in combination with a coupling adapted to be secured to the hose, and having a port *j* adapted to register with the limited-stream port, said body part having a slot, and the coupling having a pin extending into the slot, whereby the movements of the body relatively to the coupling are limited.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 30th day of August, A. D. 1895.

CORNELIUS CALLAHAN.

Witnesses:

ARTHUR W. CROSSLEY,
MORRIS B. MAY.