

A. F. ALLEN.

Improvement in Hose-Pipe Nozzle.

No. 132,617.

Patented Oct. 29, 1872.

Fig. 1.

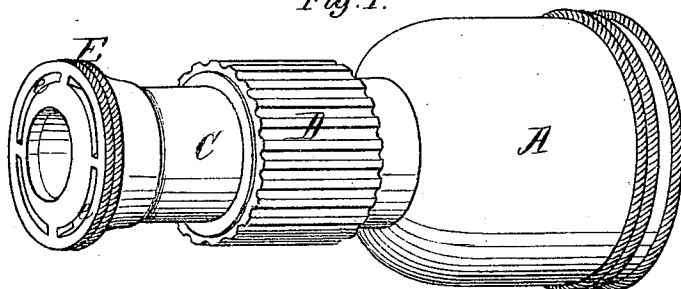


Fig. 2.

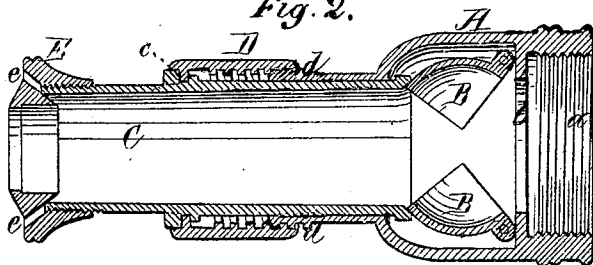


Fig. 3.

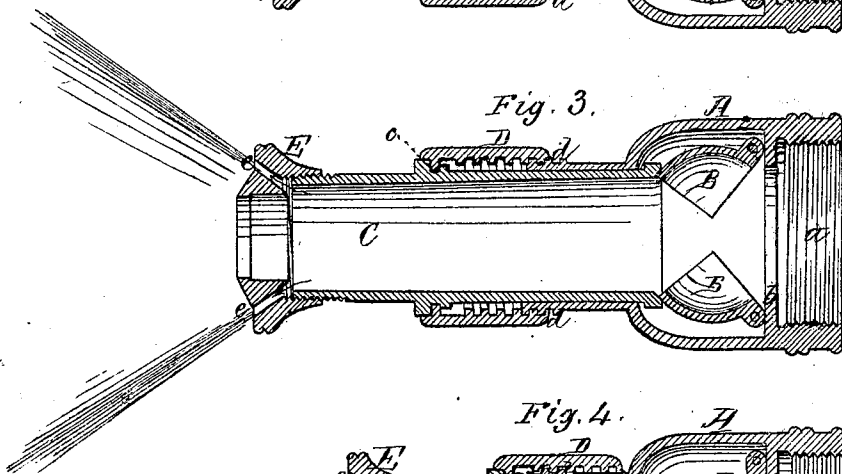
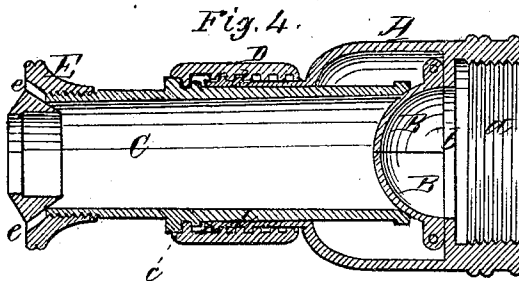


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

ALBERT F. ALLEN, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN HOSE-PIPE NOZZLES.

Specification forming part of Letters Patent No. **132,617**, dated October 29, 1872.

To all whom it may concern:

Be it known that I, ALBERT F. ALLEN, of the city and county of Providence, in the State of Rhode Island, have invented a certain new and useful Hose-Pipe Nozzle, of which the following is a specification:

My invention consists in the novel combination, in a hose-pipe nozzle, of a cut-off valve and a spraying attachment, by means of which the exit flow of water may be cut off entirely, or permitted to flow in a solid stream, or with an encircling spray in addition thereto, as may be required; and I do hereby declare that the following specification, taken in connection with the drawing furnished and forming a part of the same, is a true, clear, and accurate description of a nozzle embodying my invention.

Referring to the drawing, Figure 1 represents in perspective one of my improved nozzles complete and ready for attachment to the hose-pipe; Fig. 2 represents the same in longitudinal section with the cut-off valve open and the spray-valve closed, and as if delivering a solid stream; Fig. 3 represents the same with the cut off and spray valves open, as if delivering the central solid stream and the surrounding shield of spray; and Fig. 4 represents the same with the cut-off and spray valves closed entirely.

A denotes the base of the nozzle. It is cylindrical in form, with an enlarged bell-shaped end, and is provided at its largest end with an interior screw-joint, *a*, for connection with a hose-pipe in the usual manner. Adjacent to an interior flange, *b*, a short distance from the entrance, the cut-off valve is placed. The valve consists of two quarter sections of a hollow globe, each of which is designated as B. When the valve is closed its edge, which is at right angles to the length of the nozzle, rests upon the face of the flange *b*, as shown in Fig. 4. Each section is hinged at one side to the walls of the base. When opened, the sections swing on their hinges from the flange *b* back into the bell-shaped interior of the base, and affords a practically free delivery equal to the capacity of the nozzle. C denotes the barrel of the nozzle, which is made to serve, in this instance, as a controlling device for the cut-off valve. It is cylindrical in form, its exterior fitted to enter the interior of the cylindrical neck of the base A and be in contact

with the valve B. Its interior end adjacent to the valve is beveled so as to have a general bearing upon the exterior surfaces of both sections of the valve. It will be readily obvious that by withdrawing the barrel the valves will be free to open, while by advancing it the valves will be closed and held in that position. A short distance from the delivery end of the barrel is an annular groove, *c*. D denotes a sleeve-nut, which is provided with an interior screw, and fitted to a screw-thread, *d*, cut on the exterior of the cylindrical-neck of the base A. It is also provided with an interior annular projection, which is loosely fitted to fill the annular groove *c* on the barrel C. By turning the sleeve-nut the barrel is advanced from or drawn into the neck of the base A, and made to release or bear upon the valve B. E denotes the tip of the nozzle and the spray-valve combined. It is secured to the end of barrel C by means of a screw connection. The exterior of the tip is flaring or bell-shaped, and is provided with a central cylindrical aperture for the delivery of the main or solid stream, which is considerably smaller than the interior of the barrel C. Surrounding the central orifice is an annular spray-discharge orifice, *e*, broken only by the presence of sufficient metal to combine the portion of the tip between the central and the spray orifice with the exterior portion. When the tip is turned so as to advance from the barrel on its screw the spray-orifice is opened. When returned toward the barrel its outer end, by passing the spray-orifice, closes it entirely. This portion of the nozzle is of my own invention, and is covered by Letters Patent issued to me dated April 27, 1869, No. 89,456.

The operating screw connecting the sleeve-nut D and the barrel C can be made so as to allow the valve to open wide after about two turns (or even less) of the sleeve-nut. The valve constructed as described is admirably adapted to this purpose, for the water-way is wholly unobstructed when the valve is opened, and the nozzle need not necessarily be bulky in its structure for the proper accommodation of the valve, for the sections roll back and occupy but little more space than that occupied by the thickness of the metal comprising the sections.

I am aware that nozzles combining a cut-off,

a sprinkler, and a solid stream aperture have been heretofore made; but such were so constructed that the solid stream and sprinkler could not be employed simultaneously, and therefore the spray or "sprinkle" could not afford protection for the fireman against heat at a fire while the solid stream was employed. By combining within the nozzle the means for cutting off the entire delivery and for delivering a solid central stream, with or without the spray, it is adapted to all special and to many general uses, and can be readily applied to any hose-pipe having the usual suitable screw-nozzle connections whenever the plain hose-pipe and nozzle may not be deemed preferable.

I claim as my own invention, and desire to secure by Letters Patent—

1. The combination, within a hose-pipe nozzle which is adapted for ready connection with a hose-pipe, of a cut-off valve and a spray-throwing device, which is also provided with independent means for cutting off the spray, substantially as and for the purposes specified.

2. The combination, within a hose-pipe, of the sectional semi-globular valve B and the annular valve closing and holding device for engaging with the exterior surface of the valve sections, and arranged to be operated longitudinally from the exterior of the pipe, substantially as and for the purposes specified.

ALBERT F. ALLEN.

Witnesses:

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