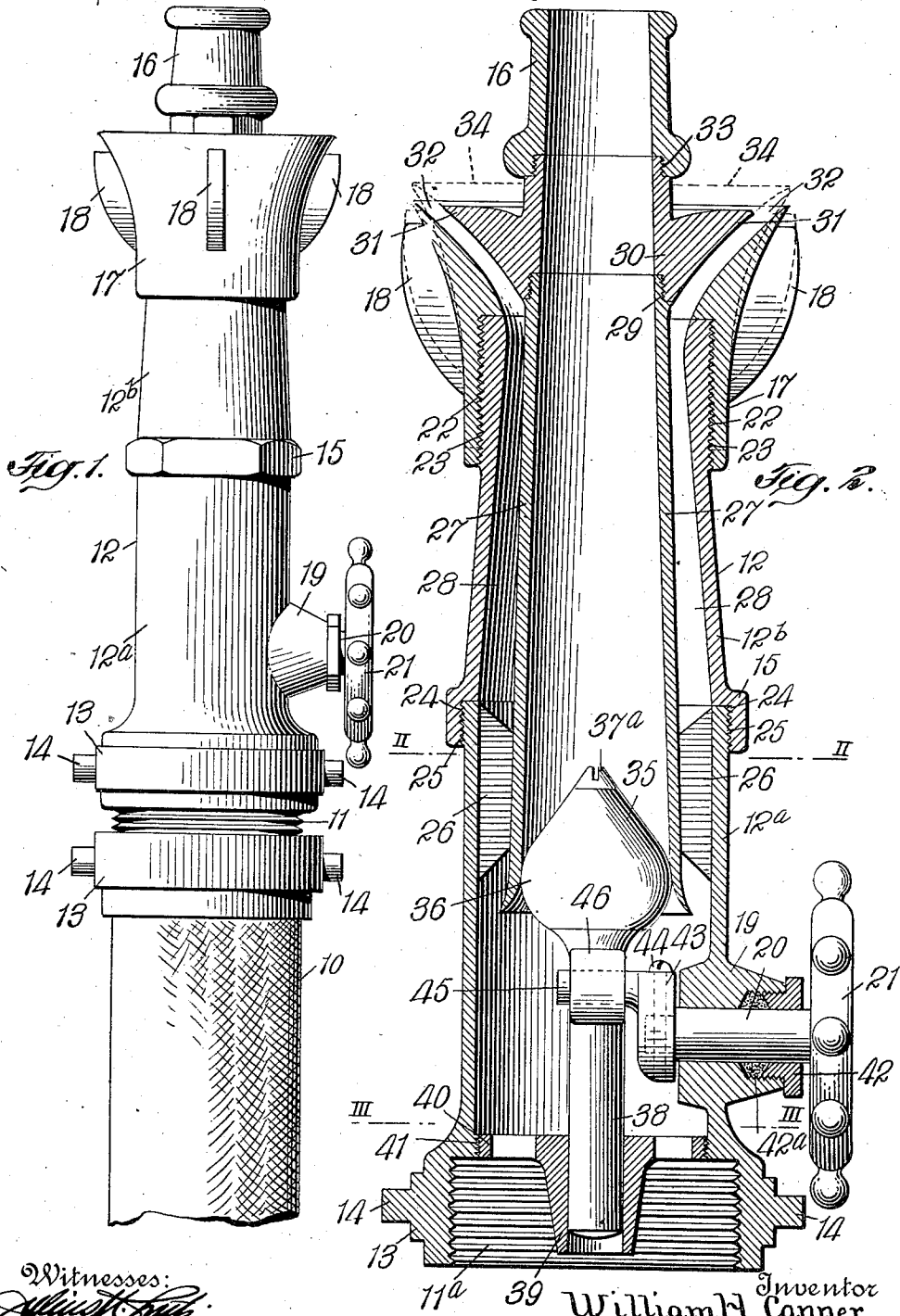


W. H. CANNER.  
 CONVERTIBLE HOSE NOZZLE.  
 APPLICATION FILED FEB. 12, 1910.

1,011,315.

Patented Dec. 12, 1911.

2 SHEETS-SHEET 1.

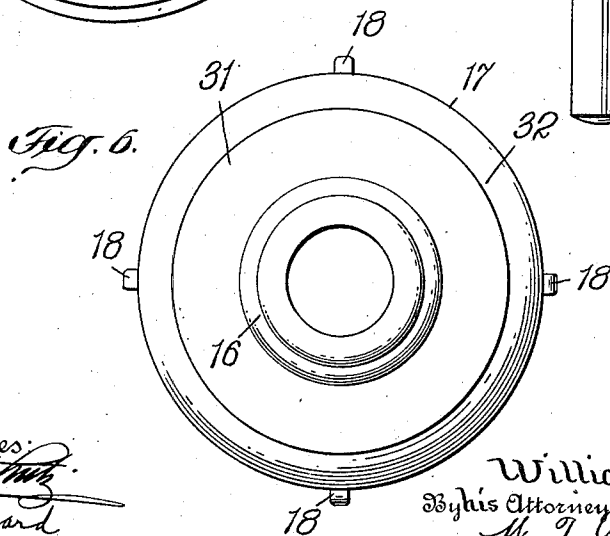
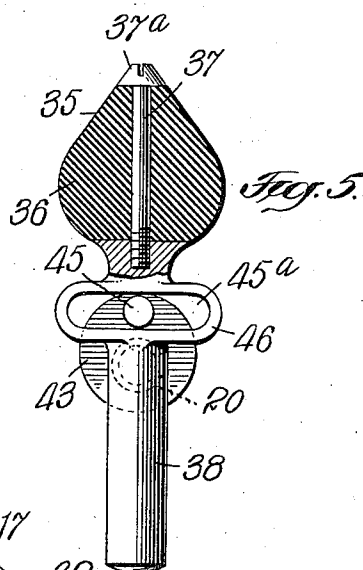
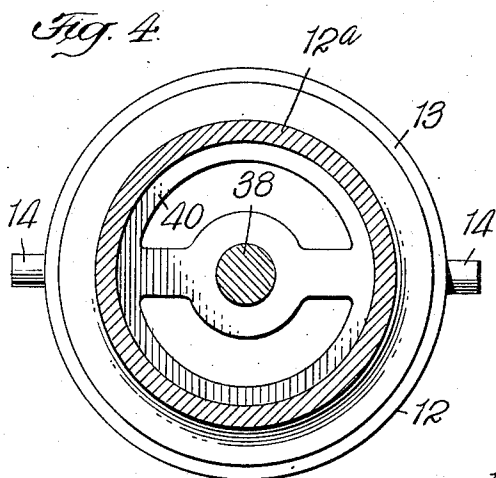
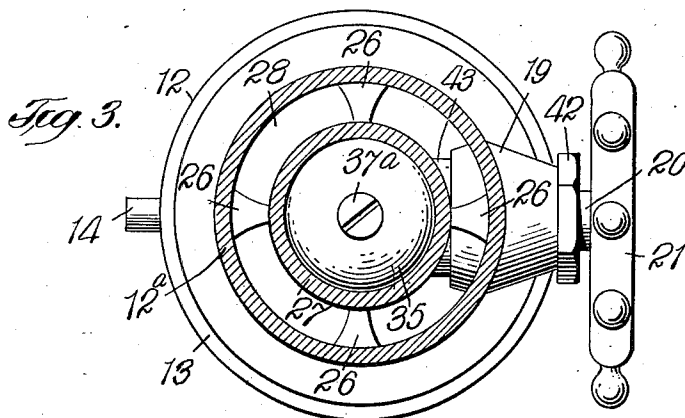


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**1,011,315.**

2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

WILLIAM H. CANNER, OF CORONA, NEW YORK, ASSIGNOR TO SANGER NOZZLE COMPANY, INC., A CORPORATION OF NEW YORK.

## CONVERTIBLE HOSE-NOZZLE.

1,011,315.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed February 12, 1910. Serial No. 543,595.

*To all whom it may concern:*

Be it known that I, WILLIAM H. CANNER, a citizen of the United States, and resident of Corona, county of Queens, and State of New York, have invented certain new and useful Improvements in Convertible Hose-  
Nozzles, of which the following is a full, clear, and exact specification.

My invention relates to improvements in convertible hose-nozzles used in connection with fire-hose and other pipes which are used for throwing water under pressure for extinguishing fires, washing and sprinkling streets, and other like purposes.

The primary object of the invention is to provide a nozzle of simple and inexpensive construction, but which is very efficient in being adapted to withstand the highest pressure in permitting the ejection of a stream of water to be thrown to a great height and distance, and my invention has particular reference to that class of nozzles provided with two orifices or discharge openings from one of which the water may be ejected in a straight, solid stream and from the other outlet the water may be distributed in a circular conical sheet covering a wide area of space, and, when extinguishing a fire, forming a water-shield between the fireman and the fire thereby affording protection from the effects of the heat by driving the flames and smoke before him.

A further object of the invention is to provide efficient means for quickly and conveniently shutting-off the water from passing through one or the other orifice or outlet so that when desired a straight solid stream may be played upon a fire or the circular conical sheet of water distributed for sprinkling purposes, or the two streams may be discharged simultaneously.

Furthermore, the invention is so constructed as to be very durable and the various parts may be readily assembled, and, moreover, the means provided to shut off the water supply serves to obviate the danger of bursting the hose or damaging parts of the nozzle.

With these ends in view my improved convertible hose nozzle consists of a body part or pipe having two orifices or discharge openings at its upper end and being provided adjacent to said ends with means to conveniently and quickly close one or

the other of the orifices as occasion or necessity requires.

The body part of the nozzle is secured to a lower part or pipe in which a valve is arranged having a body portion adapted to close the lower mouth or inlet opening of a centrally disposed interior pipe carrying the nozzle proper, the said valve being actuated by the shaft of a handwheel connected with its inner end to a crank within the lower pipe, the pin or arm of which is guided in a yoke below the head of the valve which is forced when the wheel is rotated to ascend or descend with its stem for the purpose of entirely or partly closing the inlet opening of said interior pipe, thus controlling at will the force and volume of the solid stream of water to be discharged from the nozzle proper.

Between the body part of the nozzle proper and inner pipe a channel is provided for passage of the spraying or sprinkling stream of water, and the volume or force of discharge of the stream is controlled in its ejection from the nozzle by providing a cup-shaped sleeve held to the end of said body part, and which is adapted to be readily rotated by hand when it is desired to open or close the channel for distributing the streams of water simultaneously or alternately.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification in which similar characters of reference indicate corresponding parts in all the views, the said invention being more fully described hereinafter and then pointed out in the appended claims.

In the drawing, Figure 1 is a side elevation of one form of my convertible hose nozzle as connected to a fire-hose. Fig. 2 is a vertical longitudinal section showing a detail view of the valve and its operating means. Fig. 3 is a horizontal section, partly in detail, taken on the line II—II of Fig. 2. Fig. 4 is a horizontal section taken on the line III—III of Fig. 2. Fig. 5 is an elevation of the valve, showing the body thereof in section, as used in connection with my improved nozzle, and Fig. 6 is a top plan view of the nozzle.

The hose-pipe 10 may be connected to the nozzle proper, as at 12, in any suitable man-

ner, for instance, by means of the threaded end 11 engaging the inner threaded end, as at 11<sup>a</sup>, of said nozzle, and the nozzle proper 12 consists mainly of a lower part or pipe 12<sup>a</sup> and an upper part or pipe 12<sup>b</sup>. The end of said hose as well as the lower part 12<sup>a</sup> of the nozzle are provided with the customary flanges 13 formed with projecting lugs 14 adapted to be engaged by a spanning wrench in fastening or separating said nozzle and the hose 10, and as a convenient means for connecting or disconnecting the pipes 12<sup>a</sup> and 12<sup>b</sup> a wrench-seat 15 is provided at the lower end of the pipe 12<sup>b</sup>. At its upper end the nozzle is provided with an annular flanged mouthpiece 16, and adjacent to the lower end thereof is arranged an exterior sleeve or cup-shaped cap 17, provided with handles as at 18. There may be one or a plurality of these handles 18 for the purpose of facilitating the rotation of said cap when closing or opening the orifice or outlet for the discharge therethrough of the circular stream of water as will be hereinafter more particularly explained.

Near its lower end the pipe 12<sup>a</sup> is provided with a laterally extending sleeve or bearing 19 in which is journaled the shaft 20 of a hand-wheel 21 which may be of any well known construction, but I prefer, as shown, the form of a steering wheel. The cap 17 is rotatable upon the nozzle proper, and said cap is held thereto as indicated in Fig. 2, by the threaded inner wall 22 engaging the exterior threads 23 at the upper end of pipe 12<sup>b</sup>, while the lower end of said pipe underneath the wrench seat 15 is interiorly threaded, as at 24, for engagement with the outer threads 25 at the upper end of pipe 12<sup>a</sup>.

An apertured disk or spider-plate 26 of strong and durable construction is arranged in the pipe 12<sup>a</sup> adjacent to the point of connection with the upper pipe 12<sup>b</sup>, and said plate 26 may be integral with and form a support for the centrally disposed pipe or tube 27 adapted for the delivery of the solid stream of water. The wall of the nozzle 12 and the wall of the pipe 27 are spaced apart providing a channel 28 which gradually decreases in width toward the upper end of the tube 27, and the said upper end is exteriorly threaded, as at 29, so as to be adapted to receive the inner threaded lower end of an interior tubular crown or cap 30. The crown 30 is provided with outwardly projecting walls 31 which are parallel with the outwardly curved inner walls of the cap 17 forming therebetween a continuation of the space or channel 28 so that the circular stream of water discharged from the orifice or outlet 32 of the nozzle will be deflected at an angle allowing a wide area of space to be sprayed at the same time forming a protective shield against the heat effecting

the person holding the nozzle, and to the upper exteriorly threaded end of said crown 30 is screwed, as at 33, the inner threaded lower flanged end of the mouthpiece 16 forming the discharge orifice for the solid stream of water.

The parts of my nozzle, as shown in Fig. 2 of the drawings, are in a position for ejection of both a circular or conical and a solid stream of water therefrom. As previously described it is clear that by rotating the outer cap 17 by means of the handles 18 to a position shown by dotted lines, as at 34, the orifice or discharge outlet 32 will be shut as the inner curved walls of the cap 17 will contact with the corresponding curvature of outer walls of the cap or crown 30 and only a solid stream of water will be permitted to pass through the nozzle.

A valve 35 having preferably a pear-shaped or cone-shaped body 36, made of fiber, leather or any other suitable material, is connected to a stem 38 by a bolt 37 the head, as at 37<sup>a</sup> of which engages the apex of said body 36 and passing therethrough is adapted to be screwed, as shown in Fig. 5, with its threaded opposite end into a threaded opening on top of said stem 38. The valve 35 is arranged in the pipe or lower part 12<sup>a</sup> of the nozzle 12, and the stem 38 of the valve 35 is held and adapted to be guided in a vertical movement by a boss or projecting sleeve 39 provided underneath a spider-plate or apertured disk 40 which is peripherally threaded and adapted to engage the threaded interior, as at 41, of the pipe 12<sup>a</sup>. The shaft 20 carrying the hand-wheel 21 upon its outer end enters the body of the nozzle through the guiding sleeve 19 and is journaled therein by a gland or stuffing box 42, screwed into the outer end of said sleeve, any leakage at these parts being prevented by suitable packings, as at 42<sup>a</sup>. The inner reduced end of said shaft 20 is connected to a crank 43 by means of a bolt or pin 44 vertically passing through the crank and the reduced end of said shaft. The horizontal arm or pin 45 of said crank projects through the opening 45<sup>a</sup> of the stem 38 of said valve, and is guided in its movement by the yoke 46 of said valve-stem, so that upon a rotation of the wheel 21 and the crank 43 in one or the other direction the pin 45 of the crank will slide along the inner face of the yoke 46 and force the stem and the valve-body to descend or ascend as the case may be for the purpose of closing the lower mouth of pipe or tube 27 entirely or partly, thus regulating the afflux of the water and the force of discharge according to requirement. These successive changes in the outflow of water are made without suddenly checking the water thereby all danger of bursting the hose by shutting the water abruptly off

while the pressure continues is avoided and ample time is given for stopping the pumps during the manipulation of the closing means.

5 It is clear that changes may be made in the shape and proportions of the parts forming my improved convertible nozzle for fire-hose and the like without departing from the spirit and scope of the present invention as described and laid down in the  
10 appended claims and illustrated in the accompanying drawings, therefore I do not wish to be limited to particular form herein set forth and shown.

15 Having thus described my invention I claim as new and desire to secure by Letters Patent:

1. A convertible hose-nozzle of the character described, comprising a body composed  
20 of two firmly connected pipe-sections, a centrally disposed inner tube in said body carrying a nozzle at its upper end, a valve to open and close the lower mouth of said tube, a hand-wheel upon the outside of said  
25 body to actuate said valve and spider-plates above and below said valve in the lower pipe section, the upper spider plate forming a guide for the lower end of the inner tube and the lower spider-plate being adapted to  
30 guide the stem of said valve, substantially as described and for the purpose set forth.

2. A convertible hose nozzle of the character described, comprising a body composed of firmly connected pipe-sections, a centrally  
35 disposed inner tube in said body carrying a nozzle at its upper end, its lower end extending into the lower pipe-section, a spider-plate to guide said ends within said pipe-section, a valve to open or close the lower  
40 mouth of said tube, a yoke upon the stem of said valve, a crank having a pin movable in the yoke and adapted to operate the valve, a shaft carrying said crank upon its inner end, and a hand-wheel upon the outer end  
45 of said shaft to operate said valve, substan-

tially as described and for the purpose set forth.

3. A convertible hose nozzle of the character described, comprising a body composed of two firmly connected pipe-sections, a  
50 wrench seat covering the point of connection of said sections, a centrally disposed inner tube in said body carrying a nozzle at its upper end, its lower end being guided by a spider-plate in the lower pipe-section, a  
55 cone-shaped valve to open or close the lower mouth of said tube having its body seated upon a yoke of the stem for said valve, a spider-plate and a boss to guide the lower end of said stem, means to operate said  
60 valve and means to connect the nozzle to a fire-hose, substantially as described and for the purpose set forth.

4. A convertible hose nozzle of the character described, comprising a body, a centrally  
65 disposed inner tube in said body provided at its upper end with a crown carrying the nozzle proper for the discharge of a solid stream of water, the lower mouth of said tube extending into the lower section of  
70 said body, a valve to close or open said mouth, a hand-wheel to operate said valve to a raised or lowered position, a shaft carrying said hand-wheel upon its outer end and entering the lower pipe section, a packing to  
75 prevent leakage at the point of entrance of said shaft, a crank secured to the inner reduced end of said shaft having an arm operating in a yoke upon the stem carrying the body of said valve and means for holding  
80 and guiding said stem in a vertical direction when moved, substantially as described and for the purpose set forth.

This specification signed and witnessed this 8th day of February A. D. 1910.

WILLIAM H. CANNER.

Witnesses:

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