

(No Model.)

P. FUERBRINGER.
SPRAY NOZZLE.

No. 582,051.

Patented May 4, 1897.

Fig. 1.

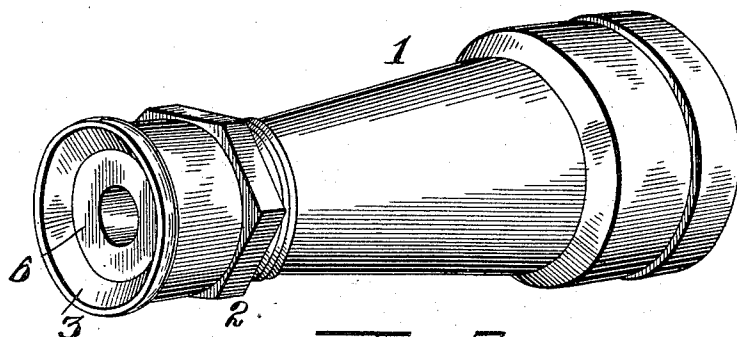


Fig. 3.

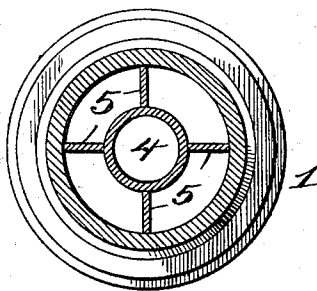
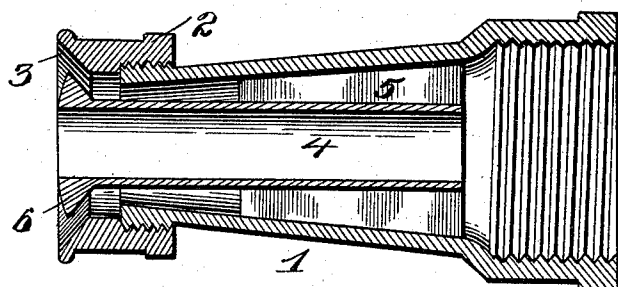


Fig. 2.



Inventor

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Witnesses

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UNITED STATES PATENT OFFICE.

PHILIPP FUERBRINGER, OF ELLENVILLE, NEW YORK.

SPRAY-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 582,051, dated May 4, 1897.

Application filed August 3, 1895. Serial No. 558,144. (No model.)

To all whom it may concern:

Be it known that I, PHILIPP FUERBRINGER, a citizen of the United States, residing at Ellenville, in the county of Ulster and State of New York, have invented a new and useful Spray-Nozzle, of which the following is a specification.

This invention relates to an improvement in spray-nozzles for fire-hose, garden use, fountains, &c.

The object of the present invention is to simplify and improve the construction of devices of this character, with a view to obtaining one by means of which the size of the stream of water or the diameter of the circle of the spray may be easily and quickly regulated.

To this end the invention consists in an improved spray-nozzle embodying certain novel features and details of construction and arrangement of parts whereby advantages in point of simplicity and efficiency are attained, as hereinafter fully described, illustrated in the drawings, and finally pointed out in the claim.

In the accompanying drawings, Figure 1 is a perspective view of the improved spray-nozzle constructed in accordance with this invention. Fig. 2 is a longitudinal section through the same with the parts shown in position for affording a large or wide-spread stream or spray. Fig. 3 is a transverse section through the nozzle.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the drawings, 1 designates the main body of the nozzle, which is preferably made of cylindro-conoidal shape or in the form of a hollow tapering cylinder, the rear end of which is expanded in diameter and internally screw-threaded for the purpose of coupling the same to a section of hose in a manner well understood. The forward reduced or contracted end of the nozzle is externally screw-threaded, as shown, whereby it is adapted to receive an internally-threaded sleeve 2, the base or inner end of which is formed similar to a hexagonal nut for the purpose of obtaining a good hold, by means of which the sleeve may be turned and ad-

justed inward or outward upon the forward end of the nozzle for a purpose that will appear. The outer end of the sleeve 2 is formed with a flaring mouth 3, which coöperates with a conical deflector carried by the nozzle to spread the stream of water and change the same into a spray of large diameter.

4 designates a tube in the form of a true hollow cylinder open at both ends, which is arranged centrally within the nozzle 1 and secured firmly in place by means of four radially-extending webs 5, interposed between said tube and the interior surface of the nozzle and soldered or otherwise rigidly secured to both the tube and nozzle. This inner tube serves to divide the water passing through the nozzle into a small central stream and a circular surrounding stream.

The outer extremity of the centrally-disposed tube 4 is expanded in diameter or formed with what may be termed a "conical" deflector 6, the inner conical wall of which corresponds in pitch approximately to the flare of the outer end or mouth of the adjustable sleeve 2. It will thus be seen that when the adjustable sleeve 2 is turned back into the position shown in Fig. 2 the water passing through the nozzle upon the exterior of the centrally-disposed tube therein will strike against the conical deflector 6 and be projected laterally in such manner as to form a widely-spreading spray of large diameter. By adjusting the collar 2 the thickness and diameter of the spray may be regulated to suit the operator, and by adjusting said collar until it rests in contact with the inner conical surface of the deflector 6 the annular passage between the centrally-disposed tube and the inner surface of the nozzle is closed, after which the entire body of water is forced to pass through the central tube, which has the effect of condensing the stream and projecting the same to a greater distance.

By the arrangement described the conical deflector 6 is located entirely within the plane of and inclosed and protected by the adjustable sleeve 3, so that the said cone and the free advance end of the inner tube 4, which is left unsupported from the webs 5 to the discharge end of the nozzle, are effectually prevented from injury.

The improved nozzle above described will thus be seen to be capable of being used either upon a fire or garden hose or in connection with fountains, it being possible thereby to
5 develop either a single powerful stream or a widely spreading or radiating spray of any desired thickness and diameter or to obtain both a solid stream and spray at the same
10 time. The construction also enables the operator to make any of the several changes without cutting off the flow at the hydrant or checking the discharge of water.

By making the main or outer body of the nozzle of cylindro-conoidal form and the inner
15 tube in the form of a true cylinder an annular waterway is provided the opposing walls of which converge toward the discharge end of the nozzle, thus serving to compact the water in its passage through the nozzle and
20 thereby cause the same to be projected with greater force.

It will be apparent that changes in the form, proportion, and minor details of construction may be resorted to without departing from
25 the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what

is claimed as new, and desired to be secured by Letters Patent, is—

The herein-described spray-nozzle comprising the tapering outer shell or tube 1, having
30 an enlarged and internally-screw-threaded inner end, and an externally-screw-threaded outer end, the central tube 4, of equal diameter from end to end and provided with rigid
35 radial webs 5, tapering toward the discharge end of said tube and conforming in extent and taper to the interior bore of the outer shell 1, and inserted into the inner end of said
40 shell and tightly wedged therein, said tube 4, having an integral deflector 6 at its outer end, and the screw-threaded sleeve 2, adjustable upon the outer end of the shell 1, and provided with a flaring mouth 3, said deflector
45 being always covered and protected by the sleeve, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

PHILIPP FUERBRINGER.

Witnesses:

C. G. A. FISCHER,
WILLIAM BOOTH.