L. W. CUSHMAN.

SPRAY NOZZLE.

APPLICATION FILED AUG. 10, 1908.

962,946. **Patented June 28, 1910.**

Fig. 1.

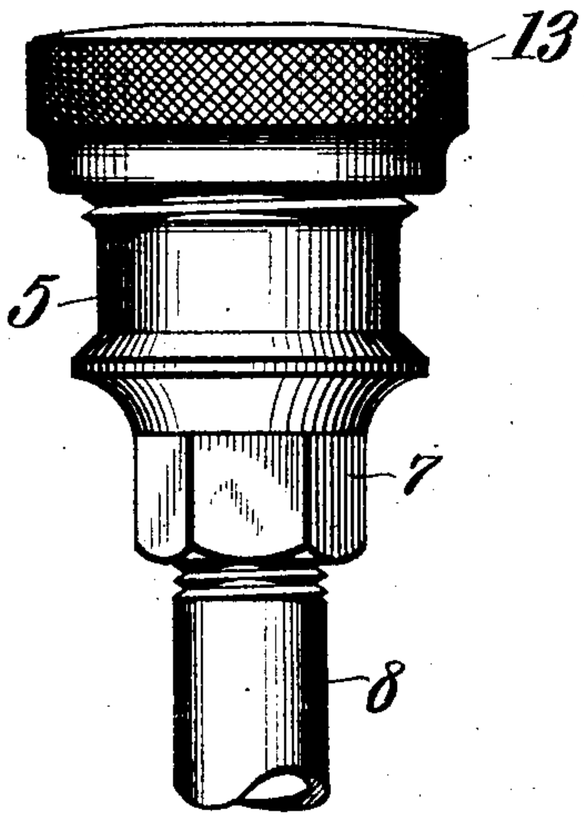


Fig. 2.

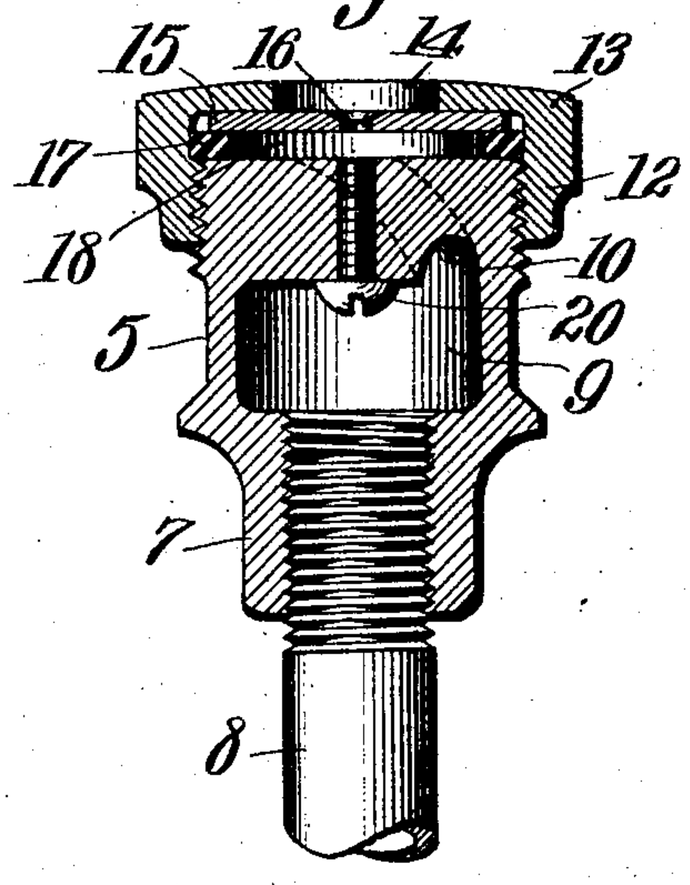


Fig. 3.

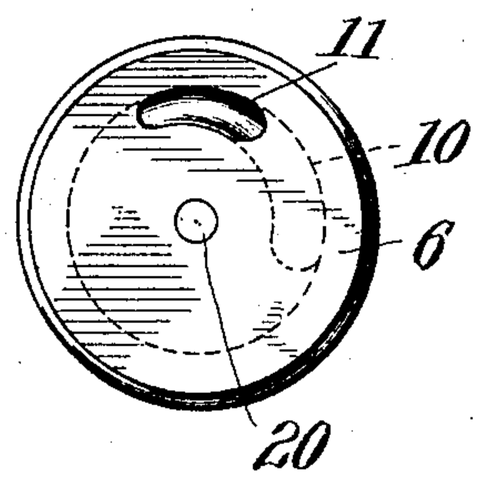
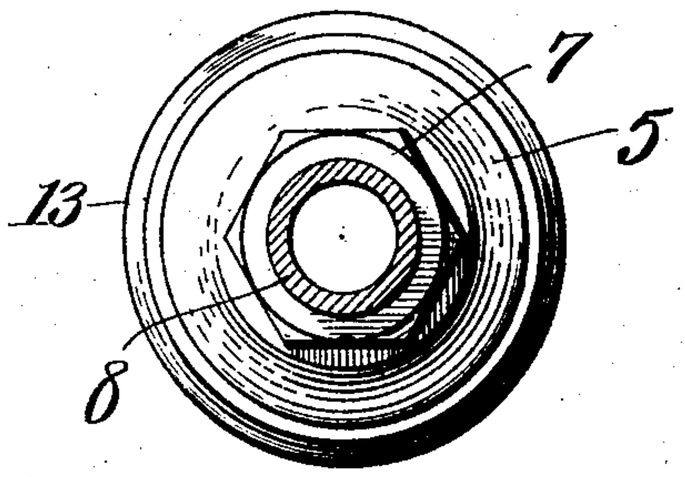


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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SPRAY-NOZZLE.

962,946. Specification of Letters Patent. Patented June 28, 1910.

Application filed August 10, 1908. Serial No. 447,850.

To all whom it may concern:

Be it known that I, LUCIAN W. CUSHMAN, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented a new and useful Spray-Nozzle, of which the following is a specification.

This invention relates to spray nozzles and has for its principal object to provide a nozzle of simple and economic construction through which liquid may be forced and distributed in a finely diffused spray.

A further object of the invention is to provide a nozzle having a minimum number of parts and to so construct the nozzle that it may be readily adjusted from a spray to a direct jet nozzle.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a side elevation of a nozzle constructed in accordance with the invention. Fig. 2 is a section view of the same. Fig. 3 is an end view of the body of the nozzle. Fig. 4 is a similar view looking from the opposite end, the liquid supply pipe being shown in section.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In carrying out the invention a single piece nozzle body 5 is employed comprising a face plate 6, from the rear side of which projects a centrally disposed boss 7 that is interiorly threaded to receive the usual supply conduit 8. Arranged in the body portion to the rear of the face plate is a chamber 9 from which leads a helical passage 10 opening at 11 through the front of the face plate 6 at one side of the center thereof, the whole forming a tortuous passage from the supply conduit 8 to the face plate.

The periphery of the body plate 6 is threaded and screwed thereon is the annular wall 12 of a point cap 13 that is provided with a central opening 14. A flat detachable wall or disk 15 is located within the hood and has a central discharge orifice 16 of comparatively small diameter.

Arranged between the disk 15 and the body plate 6 is a packing washer 17 of compressible material, said washer being located outside the discharge end 11 of the channel and also surrounding the discharge orifice 16. It will be observed, having reference to Fig. 2, that this packing washer spaces the disk 15 from the body plates 6 forming between the same a chamber 18 with which the channel 9 and the discharge orifice 16 communicate. Further said washer bears against the marginal portion of the disk and produces an effective liquid tight joint.

Experience has demonstrated that this nozzle is very effective and that it will produce a finely diffused spray. There are no internal removable parts through the body which are likely to become corroded in place or lost when the nozzle is taken apart. The channel from the conduit is comparatively large so that there is no danger of clogging. Moreover because of the conformation thereof the liquid is forced outwardly through said channel and is driven against the cap or disk at an angle which causes the liquid to flow rapidly in the little chamber, said liquid being finally discharged through the orifice in the disk where the same has a whirling motion thus causing a very fine spray under ordinary pressure.

Extending through the central portion of the face plate 6 is an opening that is in direct alinement with the opening 16. The opening in the plate is threaded and normally is plugged by a screw 20. This screw may be removed at pleasure in order to secure a direct passage from the chamber 9 to the outlet 16 so that a portion of the liquid may be directed from the nozzle in the form of a jet.

What is claimed is:—

1. In a spraying nozzle, a body portion having a tortuous channel and an axial passage, means removably inserted in the axial passage, and a cap upon the body having a central discharge opening.

2. In a spraying nozzle, a body portion having a tortuous channel and a threaded axial passage, a threaded plug removably screwed into the said passage, and a cap

upon the body having a central discharge opening located opposite to the said axial passage.

3. In a spraying nozzle, a body portion having a tortuous channel and an axial passage, a boss projecting from the body and threaded to receive a conduit, a plug inserted in the said passage and removable through the conduit receiving opening in the boss, and a cap upon the body formed with an axial discharge opening.

4. In a nozzle, a body portion having a helical channel and a direct axial passage, a removable plug normally closing said passage, a disk arranged in front of the body portion and provided with a central opening, a packing washer between the disk and the body portion, and a cap having a threaded connection with the body and serving to hold said disk in place.

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

LUCIAN WALTON CUSHMAN.

Witnesses:
E. B. CUSHMAN,
A. WEBER.