No. 666,297. Patented Jan. 22, 1901.

G. J. WINKLE.

SPRAY NOZZLE.

(Application filed Apr. 25, 1900.)

(No Model.)

Fig. 1.

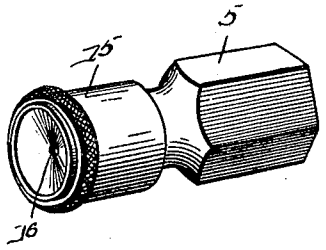


Fig. 2.

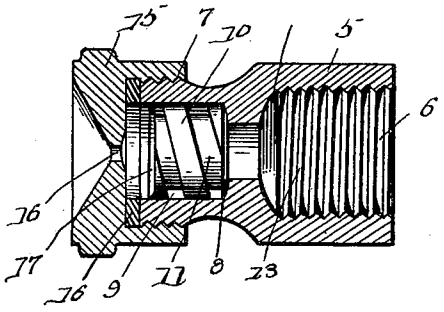
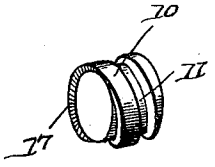


Fig. 3.



Witnesses
F. E. Alden.
Geo. H. Chandlee.

George J. Winkle Inventor
By his Attorneys,
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

GEORGE J. WINKLE, OF SENECA FALLS, NEW YORK.

SPRAY-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 666,297, dated January 22, 1901.

Application filed April 25, 1900. Serial No. 14,312. (No model.)

To all whom it may concern:

Be it known that I, GEORGE J. WINKLE, a citizen of the United States, residing at Seneca Falls, in the county of Seneca and State of New York, have invented a new and useful Spray-Nozzle, of which the following is a specification.

This invention relates to spraying-nozzles, and more particularly to that class employed for hose, although the principles involved may be used in any other connection; and one object of the invention is to provide a construction in which the water from the nozzle will be discharged with a whirling motion and in a fine spray.

A further object of the invention is to provide a construction in which the parts will be few and simple and the entire device will be cheap of manufacture.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a perspective view showing the complete nozzle. Fig. 2 is a central longitudinal section of the nozzle and showing the location and arrangement of the parts thereof. Fig. 3 is a perspective view showing the rotatable cylinder or screw within the shell of the nozzle.

Referring now to the drawings, the nozzle of the present invention consists of a cylindrical casing 5, one end of which is interiorly threaded, as shown at 6, for engagement with the end of a hose, while the opposite end of the casing is reduced in both interior and exterior diameter, the interior of the reduced portion being smooth, while the exterior of the reduced portion is provided with threads 7 for a purpose which will be presently described.

Separating the chambers at the major and minor ends of the casing 5 is an inwardly-directed flange 8, and within the chamber 9 of the reduced end of the casing and resting against this flange is a rotatable cylindrical body 10, having a helical groove 11 in its periphery, so that said body is, in effect, a cylindrical screw provided with a square thread. The length of the cylindrical screw 10 is slightly greater than the length of the chamber 9, in which it is located, while the diameter of the screw is such as to permit it to rotate freely, but not loosely, in the chamber. As shown in Fig. 2 of the drawings, the face of the flange 8 adjacent to the screw is slightly beveled, so that the edge only of the screw rests thereagainst, and the groove of the thread of the screw is thus always exposed to direct access of the water passing from the major chamber 13 of the casing 5 to the minor chamber thereof through the inclosure of the flange.

Upon the outer end of the minor portion of the casing 5 there is screwed a cap 15, which acts to close the end of the casing, except for a small central perforation 16 to permit egress of water, the outer end of the cap having a concentric conical recess, while the inner face of the cap, adjacent to the perforation thereof, is slightly countersunken, the object being to form the metal at the edges of the hole as thin as possible. Upon the end of the casing and between it and the cap is disposed a washer 16, as shown.

With this construction it will be seen that the water in passing from chamber 13 to chamber 9 engages the groove of the screw and acts to rotate it rapidly, depending upon the force of the water, and tends to move the screw against the cap at the outer end of chamber 9. Ordinarily this would act to close the outer end of the groove of the screw, and to prevent this result the outer end of the screw is provided with a wall 17 at its edge, which directly engages the inner face of the cap and holds the body of the screw from contact therewith. The water therefore passes from the groove of the screw into the space between the screw and cap and with a whirling motion and is forced outwardly through the perforation in the cap, the result being the discharge of a fine spray.

What is claimed is—

1. A spraying-nozzle comprising a casing having an interior flange and adapted for attachment of a hose at one end thereof, a cylindrical screw rotatably disposed within the opposite end of the casing, a cap for the casing having a discharge-opening, and a wall at the end of the screw adjacent to the cap and adapted to engage the cap and hold the end of the screw spaced therefrom.

2. A spraying-nozzle comprising a casing having chambers at its ends separated by a

flange, one face of which is beveled, a cylindrical screw rotatably mounted in one of the chambers and adapted to rest at times against the beveled face of the flange, said screw having its opposite end recessed to form a spacing-wall and with which recess the groove of the screw communicates, and a cap for the chamber containing the screw, said cap having a central perforation and having recesses in its faces concentric with and leading to the perforation, the wall of the body being adapted to lie against the cap and hold the recessed portion spaced therefrom.

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

GEORGE J. WINKLE.

Witnesses:
W. H. McCLELLAND,
WM. H. MACKIN.