No. 674,371. Patented May 21, 1901.

C. ALTENBURGER.

SPRAYING NOZZLE.

(Application filed June 16, 1900.)

(No Model.)

Fig. 2.

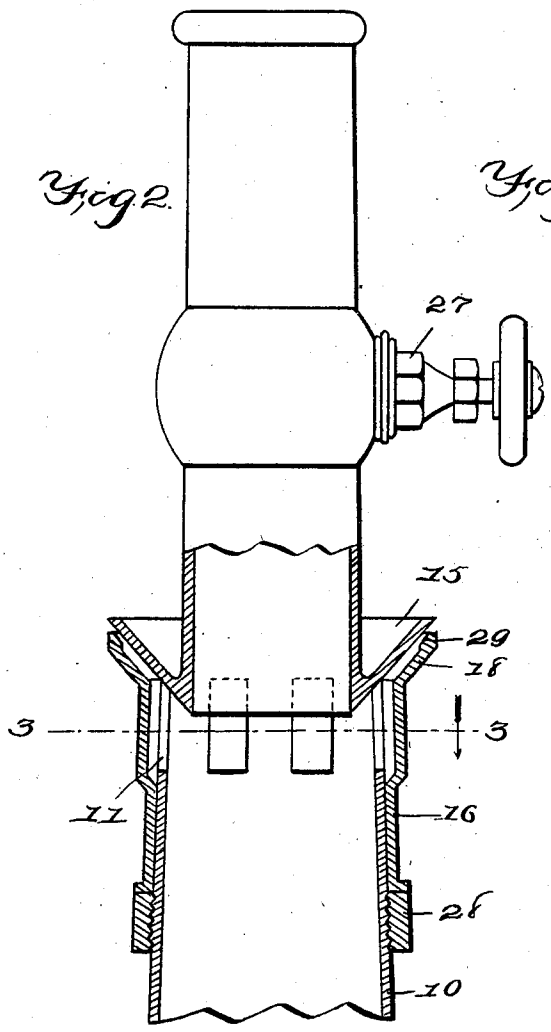


Fig. 1.

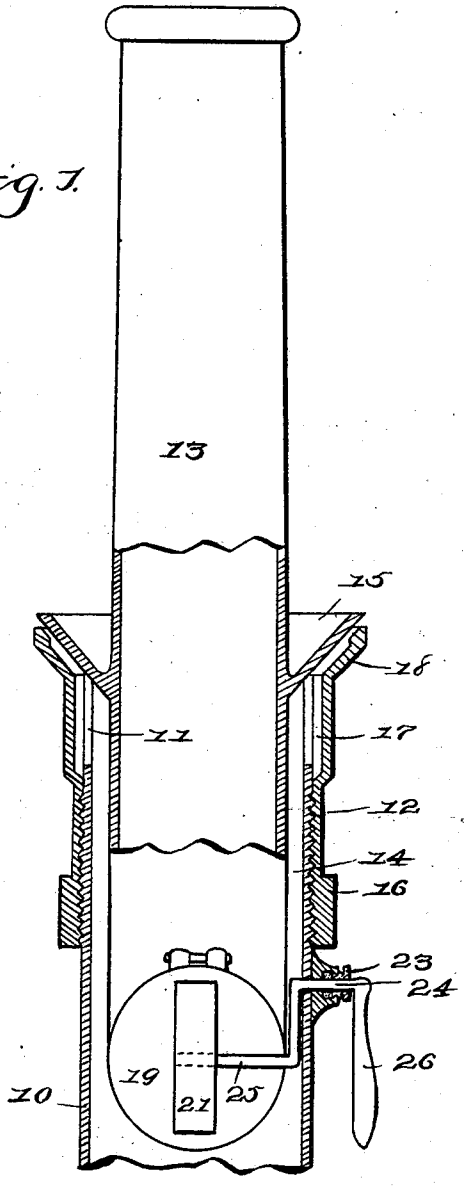
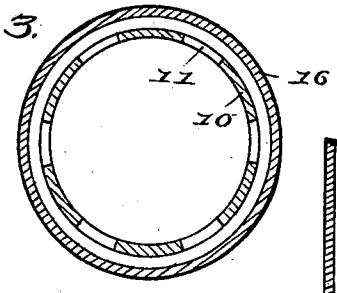


Fig. 3.



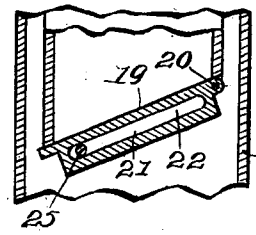


Fig. 4.

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UNITED STATES PATENT OFFICE.

CARL ALTENBURGER, OF DES MOINES, IOWA.

SPRAYING-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 674,371, dated May 21, 1901.

Application filed June 16, 1900. Serial No. 20,612. (No model.)

To all whom it may concern:

Be it known that I, CARL ALTENBURGER, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented certain new and useful Improvements in Spraying-Nozzles, of which the following is a specification.

The object of this invention is to provide a spraying-nozzle of simple, durable, and inexpensive construction in which the quantity of water to pass through the spraying-opening may be quickly and easily regulated and when a straight flow from the nozzle is desired the parts may be readily adjusted to discharge a stream of water of the full capacity of the mouth of the tip without being interrupted or retarded by the spraying device; and my object is, further, in this connection to provide improved means for cutting off the straight flow through the nozzle.

My invention consists of certain details in the construction, arrangement, and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claim, and illustrated in the accompanying drawings, in which—

Figure 1 shows a vertical central sectional view of my improved spraying-nozzle, partly in section to show details of construction. Fig. 2 shows a like view of a modified form. Fig. 3 shows a horizontal sectional view through the indicated line 3 3 of Fig. 2, and Fig. 4 shows a detail vertical sectional view of the valve on the inner end of the nozzle-tip of my preferred form.

Referring to the accompanying drawings, I have used the reference-numeral 10 to indicate the body portion of the nozzle. The sides of the body portion are preferably cylindrical and of uniform diameter throughout. At the outer end of the body portion is a series of openings 11, and the outer surface of the body portion is preferably screw-threaded at 12. The tip portion of the nozzle (indicated by the reference-numeral 13) is preferably cylindrical in shape and of uniform diameter throughout and extends from a point in the interior of the body portion to a point beyond the end of the body portion, leaving a considerable space 14 between the tip portion and the body portion. This tip portion is preferably formed integral with the body portion. At the outer end of the body portion I have formed on the tip portion an outwardly-inclined flange 15.

Mounted upon the screw-threaded portion of the part 10 is an internally-screw-threaded collar 16. The outer end portion of this collar beyond the screw-threaded portion is inclined outwardly to form spaces 17 adjacent to the openings 11, and the extreme outer portion of the collar 16 is flared outwardly at 18, parallel with the flange 15, thus forming a narrow passage-way for water to pass through the openings 11, through the passage-way 17, and between the flanges 15 and 18, which obviously give direction to the spray. It is obvious, further, in this connection that the collar 16 may be screwed upwardly until the flange 18 engages the flange 15, when the flow will be stopped, and, further, the volume of the spray may be quickly and accurately controlled by an adjustment of the collar 16 upon the body portion. At the inner end of the tip portion 13 I have provided a valve 19, hinged to the tip portion at 20 and capable of swinging in a vertical plane to lie against the inner end of the tip portion and securely close the same or to open and lie parallel with the body portion and leave a free uninterrupted passage-way through the tip portion. For operating this valve I have provided the following means: On the device of the valve is a rib 21, having the slot 22, seated in a stuffing-box 23. On the body portion 10 is a crank-shaft 24, having its end 25 placed in the slot 22. A handle 26 on the outer end of the crank-shaft 24 provides means whereby the valve may be operated from the exterior of the nozzle. By this arrangement of the valve it is obvious that when the lever 26 is moved to close the valve the stuffing-box through which the shaft passes will give sufficient friction to the shaft to hold the valve in any position in which it may be placed. Then when a current of water is passed through the nozzle the impact thereof upon the under surface of the valve will firmly seat same against the lower portion of the valve-tip, thus preventing leakage and permitting the use of a simple and inexpensive valve of comparatively light weight, so that the nozzle will be substantially balanced on the sides.

In the modified construction shown in Fig. 2 the tip portion of the nozzle extends only from the inner end of the flange 15 outwardly, and a cut-off valve 27 is placed in the tip portion beyond the flange, and in this form I have shown the collar 16 slidingly mounted upon the base 10 and a screw-threaded collar 28 mounted upon a screw-threaded portion of the part 10 and in engagement with the under end of the collar 16. In use with this form of device the sliding collar 16 may be moved outwardly to cut off or diminish the flow through the spraying-nozzle by a manipulation of the collar 28, and it may be moved backwardly to increase the flow by moving the collar 28 downwardly upon the body portion. By forming a valve-seat 29 at the outer end of the flared collar 18 a small chamber is provided between the flanges 15 and 18 when closed. Hence when water is admitted to the nozzle its pressure between the parts 15 and 18 will automatically cause the sliding sleeve to move in a direction to open the spraying portion of the nozzle. Therefore there need be no connection between the rotatable collar 28 and the sliding sleeve 16.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States therefor, is—

An improved spraying-nozzle, comprising a body portion having openings 11 therein, a tip portion, a flange on the tip portion cast integral with the body portion, a collar screwed to the exterior of the body portion, a sleeve slidingly mounted on the exterior of the body portion to be engaged by said collar and having the flange 18 and seat 29, for the purposes stated.

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