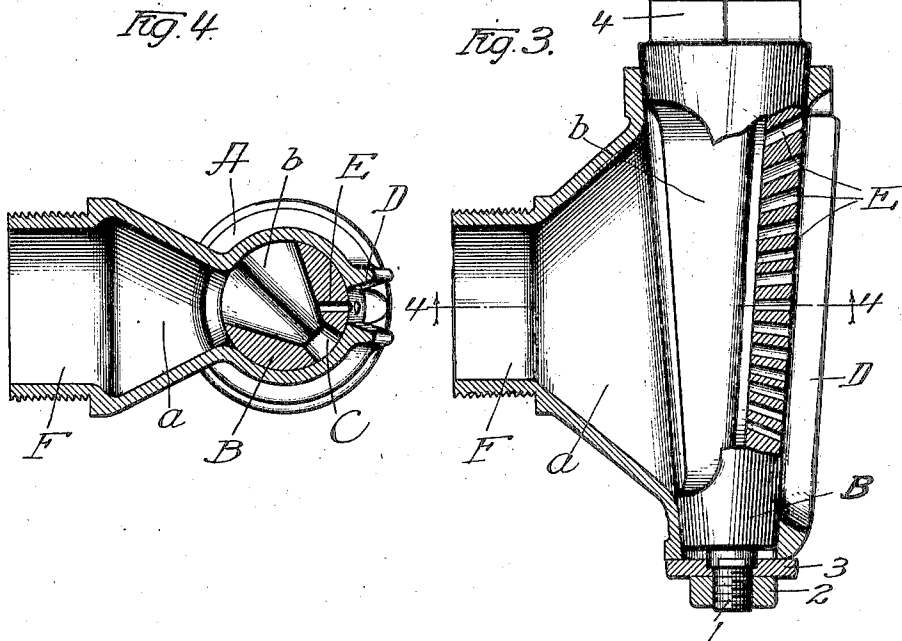
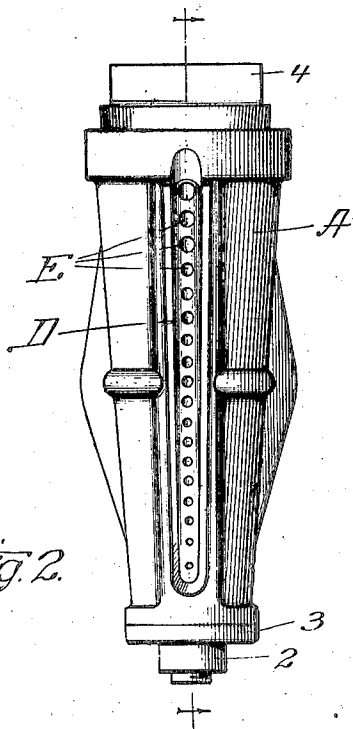
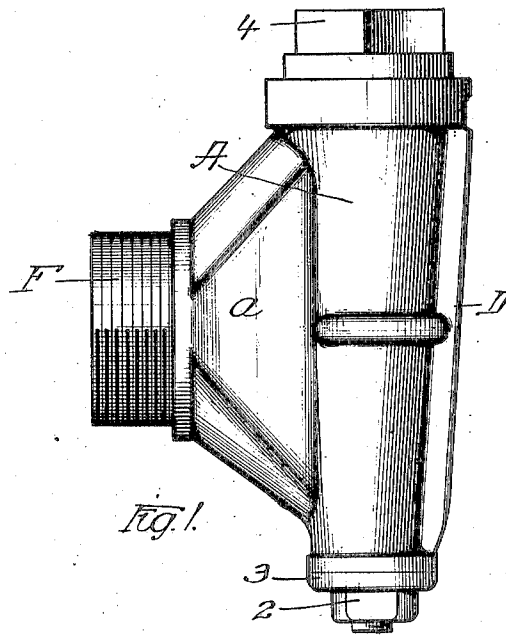


J. D. FILBIN.
 COMBINED FLUSHER AND SPRINKLER NOZZLE.
 APPLICATION FILED APR. 2, 1917.

1,273,349.

Patented July 23, 1918.



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UNITED STATES PATENT OFFICE.

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COMBINED FLUSHER AND SPRINKLER NOZZLE.

1,273,349.

Specification of Letters Patent.

Patented July 23, 1918.

Application filed April 2, 1917. Serial No. 159,129.

To all whom it may concern:

Be it known that I, JAMES D. FILBIN, a citizen of the United States of America, and resident of Cleveland, Cuyahoga county, Ohio, have invented a certain new and useful Improvement in Combined Flusher and Sprinkler Nozzles, of which the following is a specification.

My invention relates to discharge-nozzles for street-flushing and sprinkling machines. It relates more particularly to nozzles of that kind in which a rotary valve is employed for controlling the discharge of the water or other liquid, and in which the valve-casing is provided with a slot forming the discharge-opening. Preferably, in the nozzle of this kind the rotary valve-member is tapered, and the valve-casing is provided with a correspondingly tapered valve-seat, so that no leakage occurs, whereby the water or other liquid is only discharged when the passage in the rotary valve-member is brought opposite the slot or discharge-opening in the casing.

Generally stated, the object of my invention is to provide an improved construction and arrangement whereby a nozzle of this general character is adapted for either sprinkling or flushing purposes, without the necessity of using any additional parts or devices, and whereby the ordinary flushing-nozzle, by the addition of jet-openings in the rotary valve-member thereof, is rendered suitable for use as a sprinkler, so that any machine in which the nozzle is employed can be used for either flushing or sprinkling the streets.

It is also an object to provide certain details and features of construction and combinations tending to increase the general efficiency and desirability of a combined flushing and sprinkling nozzle of this particular character.

To the foregoing and other useful ends, my invention consists in matters hereinafter set forth and claimed.

In the accompanying drawings:—

Figure 1 is a side elevation, or a top plan view, depending upon the position in which the nozzle is used, of a combined flushing

and sprinkling nozzle embodying the principles of my invention.

Fig. 2 is a view of the discharge side of said nozzle.

Fig. 3 is a view similar to Fig. 1, but showing the casing and a portion of the rotary valve-member in longitudinal section.

Fig. 4 is a transverse section on line 4—4 in Fig. 3.

As thus illustrated, my invention comprises a valve-casing A of any suitable form or character, and a rotary valve-member B, the latter being tapered toward one end thereof, and the casing being correspondingly shaped to fit the taper of the movable valve-member. This valve-member is provided along one side thereof with a flared inlet *b* adapted to communicate with the inlet-chamber *a* of the casing. At a point directly opposite this inlet *b*, the rotary valve-member has an outlet or discharge-slot C adapted to register with the longitudinal discharge-slot D in the valve-casing. The smaller end of the rotary valve-member is provided with a threaded portion 1, and with a nut 2 which engages said threaded portion, said nut bearing against a washer 3 which in turn bears against the smaller end of the tapered valve-casing. The larger end of the rotary valve-member is provided with a square portion 4 which can be suitably connected with any operating means, or to which a wrench can be applied to adjust it into position to either open or close the discharge-slot of the nozzle.

In addition, the rotary valve-member B is provided with a longitudinal row or series of holes E, this row or series of holes being parallel with and close to the slot C, but such a distance therefrom that the slot C is closed by the casing when said row of holes is brought opposite the discharge-slot D of the casing. It will be seen that these holes extend at an angle to the discharge-slot C (see Fig. 4), so that these holes E are in the plane of the axis of the rotary valve-member. Furthermore, it will be seen that the holes E at the middle or center of the row or series extend practically at right angles to said axis, whereas, the holes at

each side of the center and toward the ends of the valve-member are turned at an oblique angle, so that the jets of water or other liquid will diverge from the nozzle. Again, it will be seen that the hole at the end of the row adjacent the large end of the rotary valve-member B is the largest, and that these holes grow smaller along the row toward the smaller end of the rotary valve-member, so that the largest hole is adjacent the square end-portion 4 of the rotary valve-member, while the smallest hole is adjacent the threaded portion 1 of the rotary valve-member. It will also be observed that the slot D tapers toward the smaller end of the rotary valve-member B (see Fig. 2), so that the discharge of the water is through a slot which is smaller at one end than at the other. The slot C can be tapered to correspond to the taper of the slot D, and with this construction a sheet of water will be discharged which is thicker at one edge than at the other, when the slot C is opposite the discharge-slot of the casing. By rotating the member B a little, the openings or holes E are brought opposite the slot D, and the slot C is closed, whereby the discharge is changed to a spray composed of spreading jets of liquid.

A threaded boss F forms the inlet for the valve-casing A, and can be connected to the source of supply in any suitable or desired manner. It will be understood, also, that a nozzle of this kind can be employed with its axis either horizontal or vertical, or disposed at an angle, inasmuch as nozzles of this kind are employed in different positions, depending upon the character of the work to be performed. With the combination of the slot C and the series of holes E, the nozzle can be used in any suitable or desired position for flushing the streets, and by rotating the member B slightly, the same nozzle can then be used for sprinkling the streets. Thus a combined flushing and sprinkling nozzle is produced without the necessity of using any additional parts or devices, the one rotary valve-member and the one casing being sufficient for both purposes. But the additional provisions in the rotary valve-member, consisting of holes or passages disposed in a row parallel with the discharge-slot, make it possible to use one and the same nozzle for either flushing or sprinkling the streets.

In some cases, the tapered nozzle will be used vertically with its larger end uppermost, so that the portion 4 will be at the top. In such case, the tapered slot D will throw a heavier sheet of water at its upper end than at the lower end thereof, thus causing a more even and desirable distribution of the water on the street surface. This feature can be used, of course, with either the

flusher slot C or the sprinkler openings E alone, or with both.

From the foregoing, it will be seen that the tapered plug is so formed that it provides means for effecting one kind of discharge, and also means for producing a different character of discharge, by a rotary adjustment of the plug in the casing. As shown and described, one discharge is in the form of a thin sheet of water, while the other discharge is in the form of a plurality of separate jets of water. It will be understood, however, that the discharge may be of any suitable or desired character, in each case, and that the means for producing the discharge will be of any suitable character, without departing from the spirit of my invention. I do not, therefore, limit myself to the exact construction shown and described.

What I claim as my invention is:—

1. A combined flushing and sprinkling nozzle, comprising a rotary valve-member which is tapered toward one end thereof, a valve-casing providing a tapered seat for said valve-member, the said casing having an inlet at one side and a longitudinal discharge-slot at the other side thereof, and said valve-member being provided with a transverse passage for connecting said inlet with said discharge-slot, said transverse passage terminating at the discharge side of said valve-member in a longitudinal row of holes and a slot extending parallel with said row of holes, so that said member can be adjusted to bring either its slot or its row of holes opposite said discharge-slot of the casing, thereby to adapt said nozzle for use either as a flusher or a sprinkler.

2. The said nozzle (substantially as set forth in claim 1) in which said discharge-slot of the casing tapers toward the smaller end of the rotary valve-member, and in which said holes grow smaller along the row toward the smaller end of said discharge-slot.

3. The said nozzle (substantially as set forth in claim 1) in which said holes converge toward the inlet side of said rotary valve-member.

4. A combined flushing and sprinkling nozzle, comprising a valve-casing and a movable valve-member therein, one of said elements having both a discharge-slot and a row of discharge-holes extending parallel with said slot, and the other element having an opening to communicate with either said slot or said row of holes, whereby said nozzle can be used either as a flusher or a sprinkler.

5. A discharge-nozzle comprising a rotary valve-member which is tapered toward one end thereof, a valve-casing providing a tapered seat for said valve-member, the

said casing having an inlet at one side and a longitudinal discharge-slot at the other side thereof, said rotary valve-member having a transverse passage to connect said inlet with said discharge-slot to produce one kind of discharge, and means adjustable to a position opposite said slot to connect said passage with the slot and thereby to produce

a different character of discharge, said discharge-slot being tapered toward one end thereof, said means comprising a row of openings, and said row tapering in the same direction as said discharge-slot. 10

Signed by me at Chicago, Illinois, this 27th day of March, 1917.

JAMES D. FILBIN.