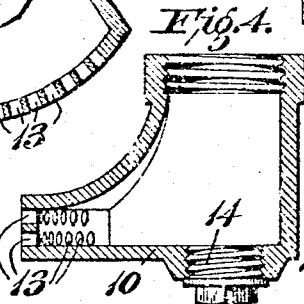
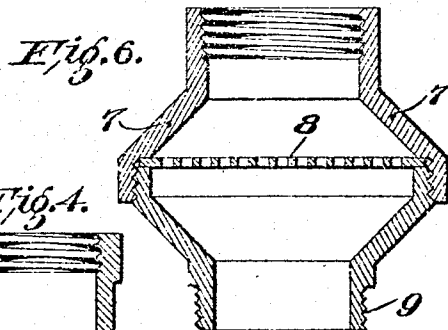
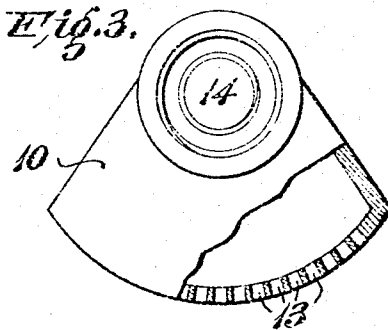
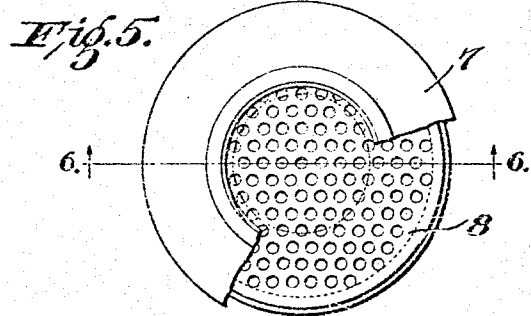
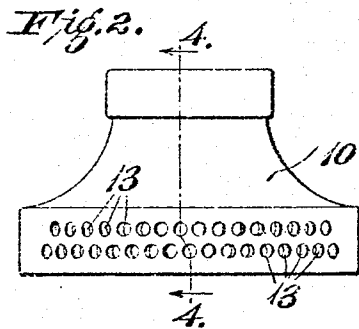
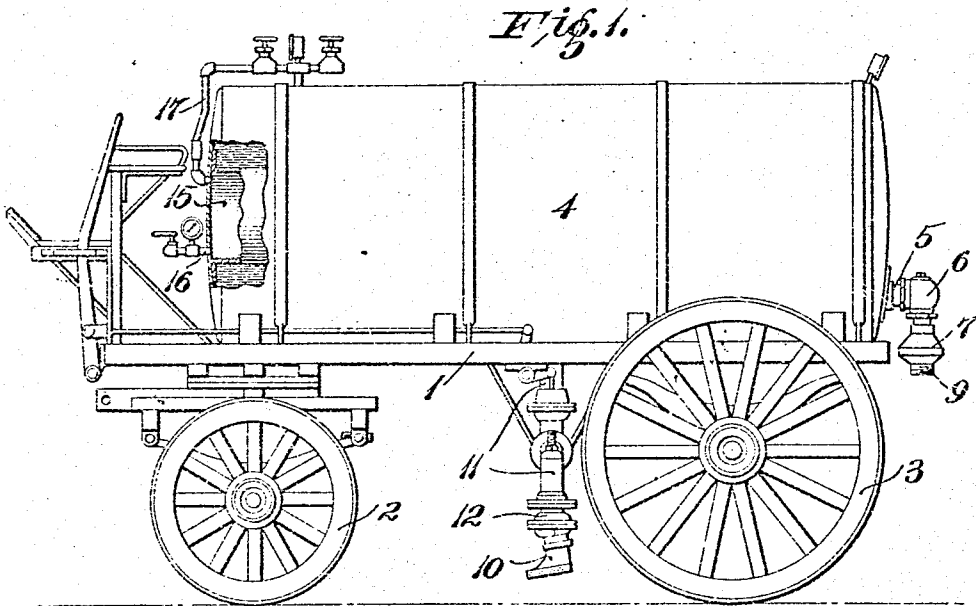


W. RATICAN.
NOZZLE FOR STREET WASHING AND SPRINKLING MACHINES.
APPLICATION FILED JAN. 25, 1911.

1,009,098.

Patented Nov. 21, 1911.



Witnesses:

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UNITED STATES PATENT OFFICE.

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NOZZLE FOR STREET WASHING AND SPRINKLING MACHINES.

1,009,098

Specification of Letters Patent. Patented Nov. 21, 1911.

Application filed January 25, 1911. Serial No. 604,624.

To all whom it may concern:

Be it known that I, WILLIAM RATIGAN, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Nozzles for Street Washing and Sprinkling Machines, of which the following is a specification.

This invention relates to nozzles and more particularly to nozzles for street washing and sprinkling apparatus. The subject-matter is divided out of an application for Letters Patent of the United States for improvement in street washing and sprinkling machines, Ser. No. 348,516, filed by me on December 19, 1906.

It has for its principal objects to improve generally upon nozzles for street washing and sprinkling machines, to provide for the discharge of the water with a considerable force from a relatively low pressure within the tank, to produce a concentrated and evenly distributed wide stream, and to secure effective results from a minimum amount of water.

The invention consists in the parts and in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawing which forms part of this specification, and wherein like symbols refer to like parts wherever they occur: Figure 1 is a side elevation of a street washing and sprinkling machine equipped with a nozzle according to my invention; Fig. 2 is a front view of the nozzle; Fig. 3 is a top plan view of the nozzle, a portion being shown in section; Fig. 4 is a section on the line 4—4 of Fig. 2; Fig. 5 is a top plan view of the strainer, a portion being broken away to more clearly show the diaphragm; and Fig. 6 is a section on the line 6—6 of Fig. 5.

As illustrated in the drawing, the machine comprises a truck-frame 1 which is mounted on front and rear wheels 2 and 3, respectively. A tank 4 is mounted on the frame 1. This tank is adapted to contain water under pressure when the machine is to be used for washing and flushing pur-

poses. An intake water-pipe 5 opens into the rear of the tank 4 near the bottom. This pipe 5 is provided with an inwardly opening check-valve 6 whose construction is obvious and hence not illustrated in detail. On the outer end of the pipe 5 is attached a casing 7 containing a perforated diaphragm 8. The casing has a screw-threaded portion 9 adapted to receive the coupling member of suitable hose-pipe (not shown) through which the tank may be filled with the water from a city main or other source of water supply.

The machine is provided with one or more delivery nozzles 10, as desired. Preferably, two nozzles are provided for the type of machine illustrated in the drawing. In this case, it is desirable to locate the nozzles forward of the rear wheels. The nozzles 10 are preferably adjustably attached to a delivery-pipe 11 which extends laterally and downwardly from the bottom of the tank 4. The adjustment of the nozzles may be effected through the medium of a ball-and-socket or other suitable universal joint 12.

The nozzle 10 is a hollow head whose bottom is closed but whose top portion has a threaded opening therein to adapt it for connection to the lower member of the universal joint 12. The upper portion of this hollow head is inclined forwardly, downwardly and laterally, to an arcuate or cylindrical front wall so as to make the general form of the nozzle fan or sector shaped. In other words, the horizontal dimension of the chamber or hollow interior of the head increases toward the front or delivery part thereof, while the vertical dimension of said chamber decreases toward said delivery part. Said circular wall is provided with a series of perforations 13 which are, preferably, slightly larger than the perforations in the strainer diaphragm 8 and whose diameters are greater than the spaces between them. Preferably, the perforations 13 are arranged in two or more parallel rows and the perforations of one row are staggered with relation to those of the other

row or rows. In other words, the central points of the perforations of one row are in perpendicular alinement with points midway between the perforations of the other row. That is, the perforations of one row overlap those of the other row.

By providing the nozzle with a plurality of comparatively small perforations, arranged substantially as shown, the water is discharged from it with a considerable force from a relatively low pressure within the tank. The overlapping arrangement of parallel rows of perforations produces a concentrated and evenly distributed wide stream, and a minimum amount of water can be discharged with good effect.

The perforated strainer diaphragm 8, prevents large gravel or other particles from passing into the water tank 4. By making each perforation in the delivery nozzles of larger area than the strainer perforations, any very small particles which might pass into the water tank can be readily discharged out through the nozzle perforations and clogging of the nozzles is thereby prevented. By providing a removable plug 14 in a screw-threaded opening in the bottom of the nozzle, the interior thereof may be easily cleaned.

A pressure tank 15 is mounted inside of the water tank; and, for practical purposes, it is preferable to have it extend from end to end thereof. This pressure tank may be charged through a pipe 16 from any suitable source of pressure supply. A second pipe 17 extends from said pressure tank and communicates with the interior of the water tank at the top thereof, so that pressure is at all times exerted on the contained body of water from above. In some cases, where the water-supply is produced under heavy pressure, the pressure tank may be charged by allowing the air within the water tank to be displaced therefrom and forced into the pressure tank through the pipe 17 by the incoming water while said water tank is being filled.

By simply maintaining the water in the water-tank under hydrostatic pressure and adjusting the nozzle to discharge slightly upward, the machine may be used for sprinkling purposes, as distinguished from washing and flushing, for which latter purposes the water must be discharged downwardly at an inclination and under heavy pressure. In some cases, where a relatively wide street is to be sprinkled the water is discharged from the nozzle under heavy pressure.

Obviously, my device admits of considerable modification without departing from my invention and, therefore, I do not wish

to be limited to the specific construction and arrangement shown.

What I claim is:

1. In a street washing and sprinkling machine, a delivery nozzle comprising a hollow head having an arcuate front wall, the horizontal dimension of the chamber of said head widening and the vertical dimension of said chamber decreasing toward said front wall, said delivery nozzle having a plurality of comparatively small delivery apertures in its front wall, said apertures being arranged in parallel rows, and all but the endmost apertures of one row being arranged to overlap two adjacent apertures in another row.

2. In a street washing and sprinkling machine, a delivery nozzle having a universal joint member for mounting it, said delivery nozzle having a plurality of comparatively small delivery apertures arranged in parallel rows, all the apertures of each row being of greater width than the spaces between said apertures.

3. In a street washing machine, a delivery nozzle comprising a hollow head having an arcuate front wall, the horizontal dimension of the chamber of said head widening, and the vertical dimension of said chamber decreasing toward said front wall, said nozzle having a universal joint member for mounting it, said delivery nozzle having a plurality of comparatively small delivery apertures arranged in parallel rows in its front wall, the apertures of each row being of greater width than the spaces between said apertures.

4. A delivery nozzle for street washing and sprinkling machines comprising a hollow head having an arcuate front wall, a closed bottom and a downwardly and forwardly inclining top, the top portion being adapted for connection to a delivery pipe and the arcuate front wall being provided with a plurality of comparatively small delivery apertures arranged in parallel rows, all but the endmost apertures of each row being arranged to overlap the two adjacent apertures in another row.

5. A delivery nozzle for street washing and sprinkling machines comprising a hollow head having an arcuate front wall, a closed bottom and a downwardly and forwardly inclining top, the top portion being adapted for connection to a delivery pipe and the arcuate front wall being provided with a plurality of comparatively small delivery apertures, said apertures being staggered with relation to each other and each aperture except the endmost apertures being arranged to overlap two adjacent apertures.

6. A delivery nozzle for street washing

and sprinkling machines comprising a hollow head having an arcuate front wall, the horizontal dimension of the chamber of said head widening toward said front wall, and
5 the vertical dimension of said head decreasing toward said front wall, said front wall being provided with a plurality of comparatively small delivery apertures arranged in a row and each aperture being of greater

width than the space between the successive 10 apertures.

Signed at St. Louis, Missouri, this 17th day of January, 1911.

WILLIAM RATICAN

Witnesses:

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M. A. SHELTON.