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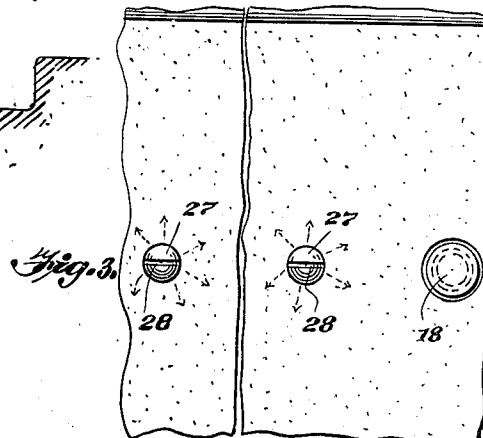
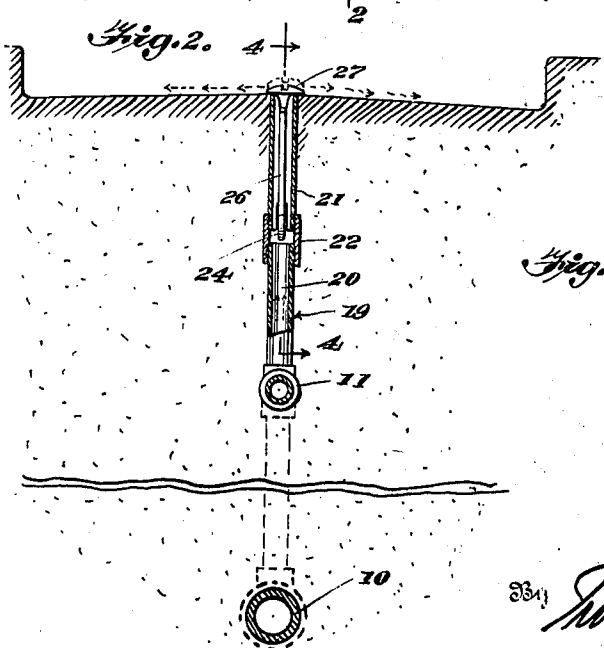
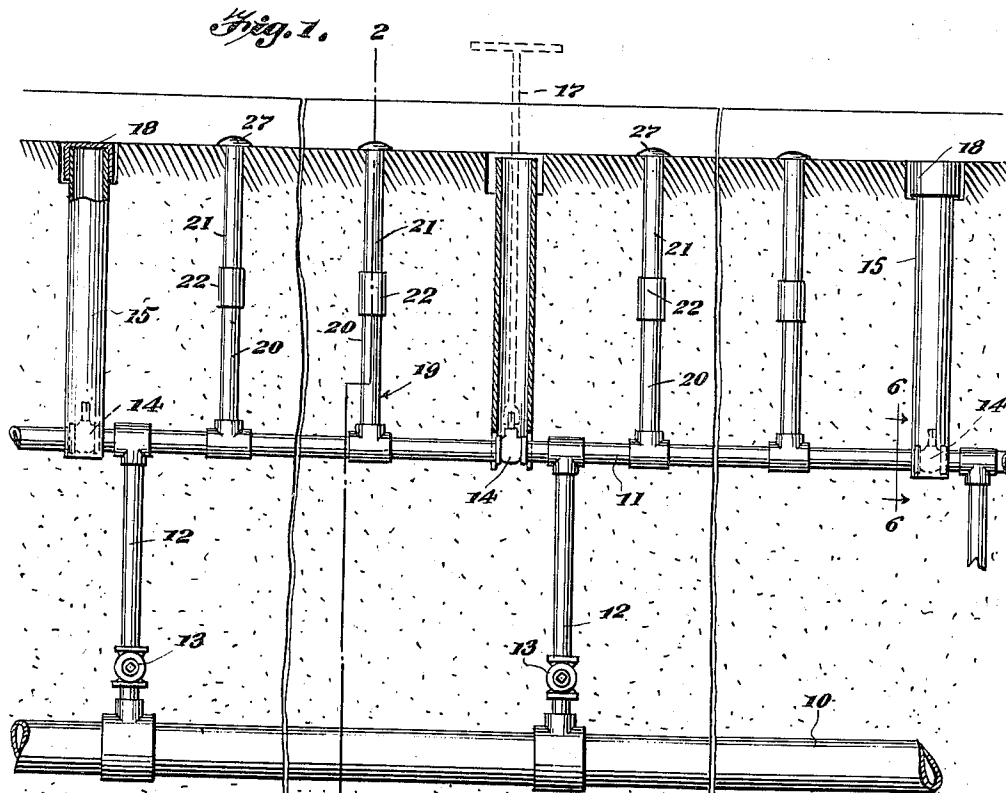
J. J. CRUME

2,278,976

STREET WASHING APPARATUS

Filed May 16, 1940

2 Sheets-Sheet 1



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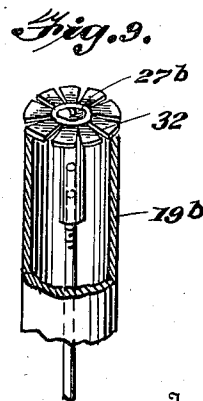
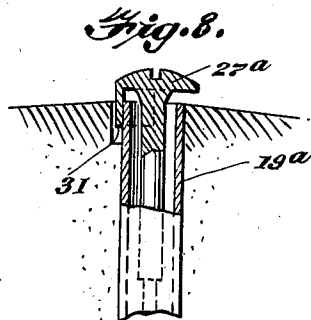
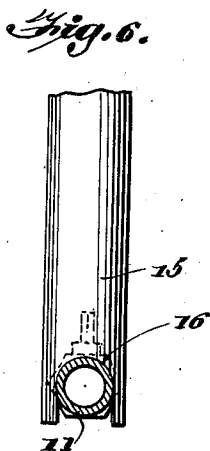
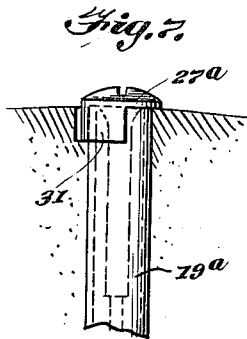
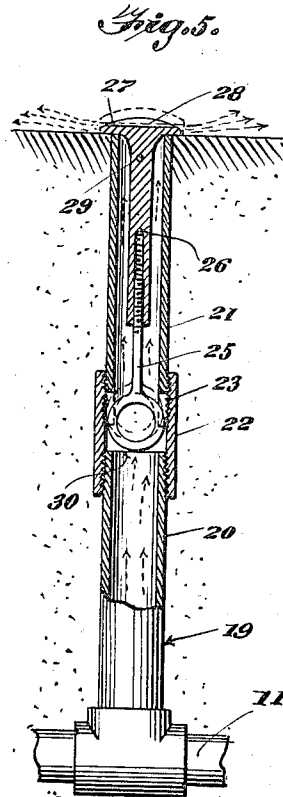
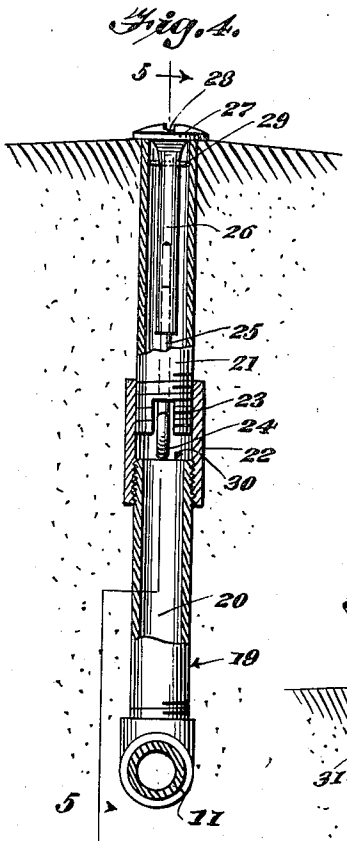
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STREET WASHING APPARATUS

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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

2,278,976

## STREET WASHING APPARATUS

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Application May 16, 1940, Serial No. 335,618

2 Claims. (Cl. 299—61)

This invention relates to street washing apparatus and has for one of its objects the production of a simple and efficient means for washing streets by flushing or spraying water over the surface of the street from discharge nozzles embedded within the paved surface of the street.

A further object of this invention is the production of a simple and efficient spray or flushing nozzle which will automatically open under pressure of the water passing therethrough, and will close through gravity when pressure of the water is cut off.

Another object of this invention is the production of a simple and efficient mechanism so constructed as to facilitate the sprinkling of lawns and the like, wherein the system is embedded in the ground below the surface of the lawn.

Other objects and advantages of the present invention will appear throughout the following specification and claims.

In the drawings:

Figure 1 is a vertical sectional view of a roadway showing the system embedded in the road bed, certain parts of the apparatus being shown in vertical section;

Figure 2 is a vertical sectional view taken on line 2—2 of Figure 1;

Figure 3 is a fragmentary top plan view of a portion of a roadway showing the sprinkling or flushing valves and one of the traps through which the water may be turned on and off;

Figure 4 is an enlarged vertical sectional view of one of the flushing or sprinkling valves taken on line 4—4 of Figure 2;

Figure 5 is a vertical sectional view taken on line 5—5 of Figure 4;

Figure 6 is a vertical sectional view taken on line 6—6 of Figure 1;

Figure 7 is a fragmentary side elevational view showing a modified type of nozzle or cap;

Figure 8 is a vertical sectional view through the structure shown in Figure 7, the valve or nozzle pipe being shown partly in elevation; and

Figure 9 is a sectional perspective view of a portion of one of the valve or nozzle pipes, showing a sprinkling nozzle or cap.

By referring to the drawings, it will be seen that 10 designates a water main which is buried under the surface of the pavement in any desired location, preferably down the center of the street. A feeder pipe 11 is buried in the center of the street under the surface of the pavement and extends parallel with the water main 10, as shown in Figure 1. The water main 10 is connected to the feeder pipe 11 at intervals through-

out its length by branch supply pipes 12. Each branch supply pipe 12 carries a manually operated valve 13 which may be used to cut off the supply of water through the pipe 12, should occasion arise, such for instance as in the case of needed repair or replacement.

The feeder pipe 11 carries a plurality of manually operated valves 14 at proper locations throughout the length of the pipe 11 to manually and selectively control the passage of water through the pipe 11. A casing pipe 15 extends vertically from each valve 14 to the surface of the pavement of the roadway and each casing pipe 15 is provided with a curved notch 16 at its lower end to permit the lower end of the pipe 15 to snugly fit over the manually operated valve 14 and properly shield the valve 14. The casing pipe 15 provides a well through which a key 17, shown in dotted line in Figure 1, may be inserted to open and close the valve 14 encased by the casing pipe 15. A closure cap 18 fits over the outer end of the casing pipe 15 to normally close the same and prevent dust, debris and the like, from clogging the well of the pipe 15. This cap 18 extends flush with the surface of the pavement of the roadway.

One or more sprinkler or flushing pipes 19 is carried by the feeder pipe 11 intermediate the valves 14 and casing pipes 15 and communicates with the feeder pipe 11. Any number of these pipes 19 may be used to suit the convenience of operation. The pipes 19 extend vertically from the feeder pipe 11 to the surface of the pavement, as shown in Figure 1. Each sprinkler or flushing pipe 19 comprises a lower section 20 and an upper section 21 connected by a threaded nipple 22. The lower end of the upper section 21 is provided with slots 23 formed therein for receiving the ring 24 of the stem 25. The stem 25 is threaded into the lower end of the shank or neck 26 of the flushing valve head 27. The flushing valve head 27 overhangs the upper end of the upper section 21 of the flushing pipe 19 and is adapted to normally close the same. This head 27 lies close to the surface of the pavement and is preferably rounded upon its outer surface and is provided with a groove 28 which may be engaged by a screw-driver to adjust the shank 26 upon the stem 25 and regulate the distance of lift of the valve under pressure of the water passing through the pipe 19, thereby regulate the amount or volume of water discharged from under the valve 27. A transverse pin 29 is carried by the shank 26 near the head 27 to stabilize the shank and prevent the shank from wobbling

as it is raised and lowered under pressure of the water. The upper end 30 of the lower section 20 is arranged in close relation to the lower end of the upper section 21, and at a proper distance to prevent the ring from dropping out of the slots 23 in the lower end of the upper section 21 when the stem 25 is disconnected from the shank 26.

In Figures 7 and 8, I have shown a modified form of cap or head wherein the cap or head 27<sup>a</sup> is provided with a half skirt or cuff 31 extending down one side of the pipe 19<sup>a</sup>. The skirt or cuff 31 depends from the edge of the head 27<sup>a</sup> for approximately one-half of its circumference. The skirt or cuff 31 will cause water discharged from under the cap or head 27<sup>a</sup> to be distributed in one direction, thereby providing a directional flushing device to facilitate flushing one side of a road, street and the like, when desired.

In Figure 9, I have shown a further modified form of the cap or head especially provided for sprinkling lawns and the like, wherein the pipe 19<sup>b</sup> carries a sprinkler head 27<sup>b</sup> having radiating slots or slits 32 through which water may be sprayed from the upper end of the pipe 19<sup>b</sup>. The head 27<sup>b</sup> is supported by a shank 26<sup>b</sup> which may be connected to a threaded stem 25<sup>a</sup> similar to the stem 25. The head 27<sup>b</sup> may replace the head 27, shown in Figure 1, when the device is used as a sprinkler in place of a flushing means. In this case all other parts of the apparatus are the same with the exception of the head 27<sup>b</sup>.

From the foregoing description, it should be understood that by opening and closing the manually operated valves 13, the distance that the street is to be washed may be regulated, and by substituting the head 27<sup>a</sup> for the cap or head 27, the direction in which the pavement or street is to be washed may be regulated. Furthermore, the sprinkler head 27<sup>b</sup> may be used in place of the head 27 when the device is used for sprinkling lawns, and the like, as stated above. Furthermore, the water may be turned on or off in as many blocks as may be desired, and vehicles standing on the streets will not interfere with the washing nor will they be splattered, due to the fact that the water is flushed laterally of the head 27 close to the surface of the pavement of the roadway from the center of the street or roadway toward the curbing or gutter. This apparatus will eliminate the necessity of using a street sweeper and portable sprinkler, and the streets may be washed in a very few minutes,

a large area being manipulated by one operator, since the operator would turn on and off the water when and where desired, and in this way thoroughly flush the street and leave no trash, dust and the like, all such material being washed down the gutter to the usual storm sewer system. The heads 27 will automatically close the outer ends of the pipes 19 as soon as the water pressure is cut off, in this way preventing the clogging of the pipes 19.

It should be understood that certain detail changes in the mechanical construction may be employed without departing from the spirit of the invention, so long as such changes fall within the scope of the appended claims.

What I claim as new is:

1. A device of the class described comprising a flushing element, the flushing element comprising an upper section having a discharge end and a lower section, a coupling for the sections, a valve carried by the upper section and having a closure valve head overhanging the discharge end of the upper section, guiding means for holding the valve against lateral play within the upper section, the valve having a shank, a stem threaded in the shank, a ring carried by the stem, slots formed in the lower end of the upper section receiving the ring for adjustably limiting the upward movement of said stem and valve, and the upper end of the lower section arranged in close proximity to the lower end of the upper section and constituting a stop for engaging said ring and preventing said ring from dropping out of said slots.

2. An apparatus of the class described comprising a water-flushing element, means for supplying water to the flushing element, the water-flushing element having a water discharge end adapted to extend approximately flush with the surface of the street, a vertically moving gravity closing valve adapted to normally close the discharge end of the flushing element and also adapted to open under pressure of water entering the flushing element for preventing splashing of the water and directing the flow of the water radially from the flushing element close to the surface of the street, and a depending skirt extending partly around said valve and slidably contacting the exterior of the flushing element for bracing the valve and for directing the flow of water from the discharge end of said flushing element to one side thereof.

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