

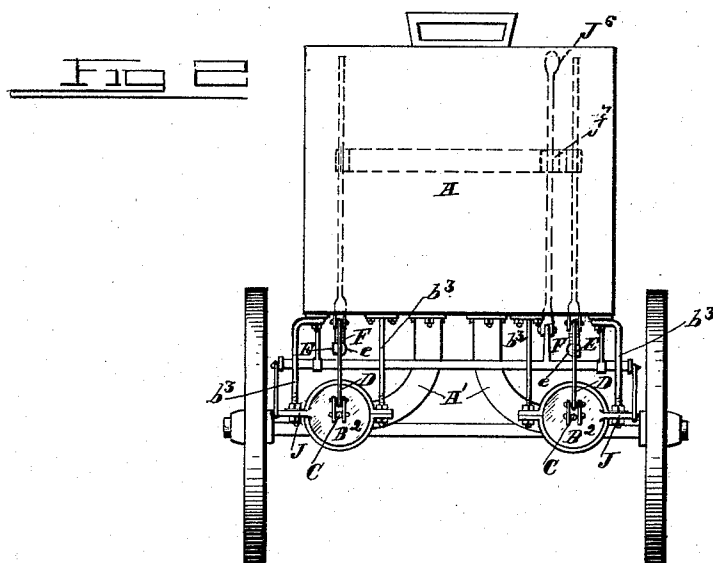
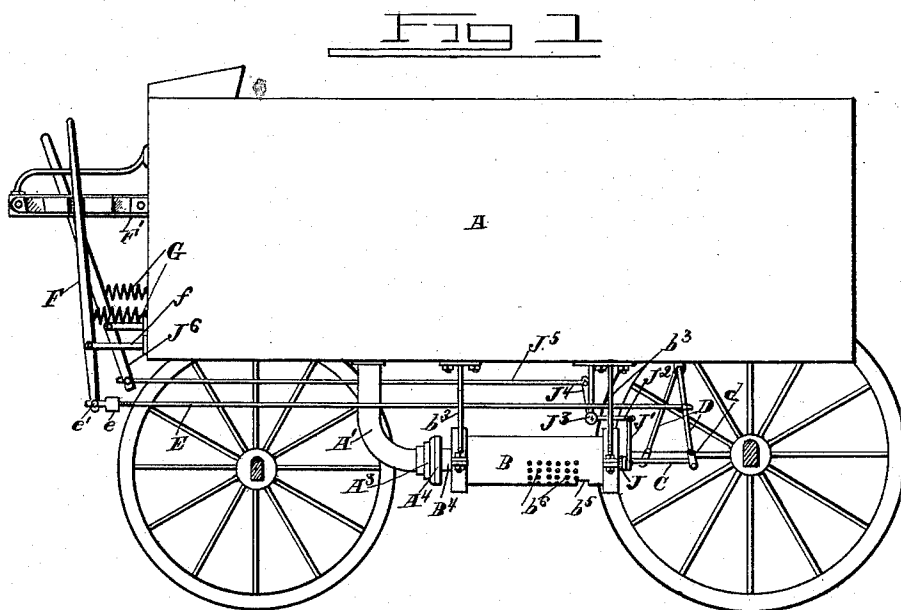
(No Model.)

2 Sheets—Sheet 1.

F. & L. WINKLER.
STREET SPRINKLING MACHINE.

No. 477,481.

Patented June 21, 1892.



Witnesses

C. W. Seville

Arthur E. Soule

Fred Winkler & Subart Winkler

By his Attorney *W. H. Alexander*

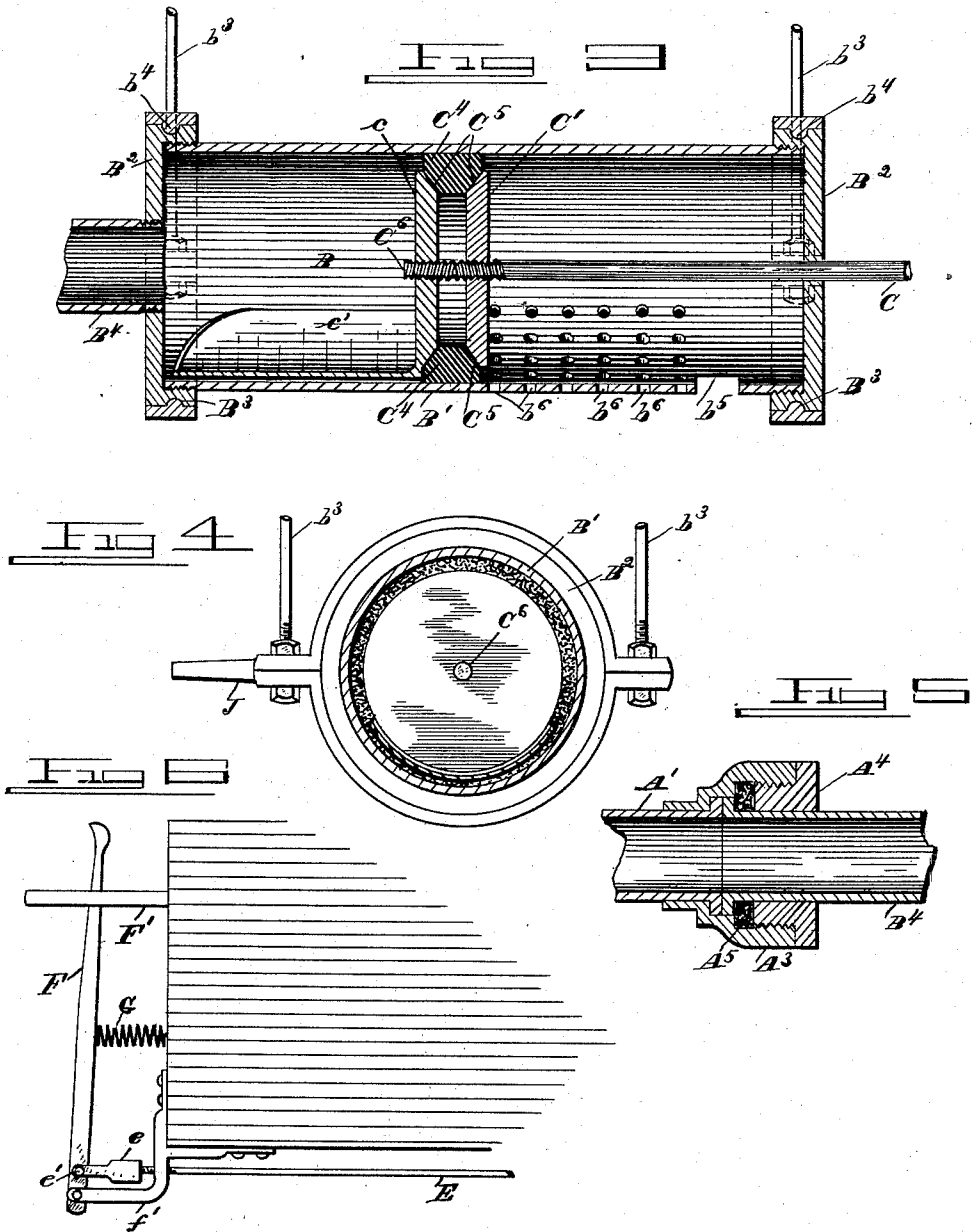
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L. W. Seville
Arthur E. Dorell

Inventors
Fred Winkler & Leonard Winkler.
By his Attorney W. Alexander

UNITED STATES PATENT OFFICE.

FRED WINKLER AND LENHART WINKLER, OF SOUTH BEND, INDIANA.

STREET-SPRINKLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 477,481, dated June 21, 1892.

Application filed January 26, 1892. Serial No. 419,313. (No model.)

To all whom it may concern:

Be it known that we, FRED WINKLER and LENHART WINKLER, of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Street-Sprinkling Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a side elevation of a street-sprinkling machine with our improved sprinkling devices. Fig. 2 is a rear view of the same. Fig. 3 is an enlarged longitudinal section through one of the sprinklers. Fig. 4 is a transverse sectional view of the same. Figs. 5 and 6 are detail views.

This invention is an improvement in street-sprinkling machines; and its objects are to provide improved sprinklers which can be adjusted to different positions, so as to spray the water to the most advantage, and wherein the number of jets or sprays can be regulated by the driver at will, so that a greater or less amount of water will be distributed from the sprinklers, as is desired.

The invention consists in the novel construction and mountings of the sprinklers, the novel construction of the pistons, plungers, or valves therein, and in certain other novel details of construction and combination of parts hereinafter clearly described, and set forth in the claims.

Referring to the drawings by letters, A designates a tank of any suitable construction mounted on suitable running-gear. B B are the sprinklers, arranged side by side underneath the tank and lying parallel with the sides thereof.

The sprinklers are constructed as follows: B' is a cylinder having its ends exteriorly screw-threaded and closed by heads B², having annular grooves or ribs B³ in their perimeters. The sprinklers are suspended beneath the body or tank by hangers b³, formed of split rings, the upper halves of which are suspended from the gear by rods, as shown in the drawings, and the lower halves of which are bolted to the upper halves, so that they

can be readily taken therefrom. The heads B² B³ are clasped loosely in the rings, and the latter have internal ribs or grooves b⁴ to fit into the ribs or grooves B³ of the heads, thereby preventing the sprinklers slipping out of the hangers, yet permitting them to freely revolve therein. The lower halves of the split rings can be taken off and the sprinklers removed at pleasure. Attached to one head B² is a forwardly-extending neck or tube B⁴, which has a packed connection with the water-supply pipe, as shown. The ends of tube B⁴ and pipe A' are both flanged, and on the former is a coupling-ring A³ and on the latter a gland A⁴, screwing into the ring A³, a packing A⁵ being interposed between the gland and ring, as shown, thus forming a water-tight connection between the pipe A' and sprinkler and allowing the latter to be turned or rotated without leakage at the joint. One head B² has a laterally-projecting arm J, which is connected by a link J' to an arm J² on a rock-shaft J³, which is suspended beneath the tank, and is rocked by means of a crank-arm J⁴, rod J⁵, and lever J⁶, which is arranged near the driver's seat, so that it can be easily operated by him, and a notched locking-plate J⁷ may be provided to lock lever J⁶ in any position. By this means the sprinkler may be rotated in its hangers, for a purpose hereinafter disclosed.

Each cylinder has a series of rose-jet openings b⁶ in its lower portion, as shown, and at its rear end is a large flushing or washout opening b⁷, as shown.

The piston C fits snugly in the cylinder B and is formed of two washer-plates C' c, plate c being opposed to the end of tube B⁴. As shown in Fig. 3, these washers have central threaded openings, and are thereby secured onto the end of the piston-rod C⁶, the inner end of which is formed with a right and left hand screw-thread respectively engaging washers C' c. These washers may be beveled, as at C⁵, on their opposed faces, as indicated in Fig. 3, and between them is placed an annular packing C⁴, preferably of rubber or expansible material, and when the washers are forced together the beveled faces C⁵ cause the packing to spread outwardly against the inner face of cylinder and fit snugly therein.

When the packing wears, the piston can be drawn back to opening b^5 and the washers held so that they cannot turn, and then the piston-rod is turned, forcing the washers together and expanding the packing, as desired. The washers, however, may be attached to the rod in various ways. Both might be loose thereon and adjusted by nuts, or one washer might be fixed and the other adjustable in relation thereto, as will be obvious to a mechanic. A forwardly-projecting segmental curved flange c' is formed on the outer face and lower edge of washer c and is adapted to overlie the lowermost of the jet-openings, so as to relieve the water-pressure thereon and cause the water to be more equably distributed through the several jet-openings, as the flange will uphold the body of water in the cylinder, yet enough water can pass thereunder to supply the lower jets.

The end of the piston-rod C^6 projecting through the rear head B^2 is loosely connected, as by a link d , to the lower end of a lever D , suspended from the tank or gear. Lever D is connected by a pitman-rod E to a foot-lever F , pivoted at or near one end and rising beside the foot-board in position to be operated by the driver. Lever F may be fulcrumed on a bracket f , attached to the tank, as shown in Fig. 1, and pitman E be connected to the lower end of the lever F , so that when the driver pushes forward the upper end of the lever the piston is drawn backward, uncovering more or less the jet-openings. A spring G is attached to the end of tank and bears against the lever above the fulcrum thereof and normally tends to shift the lever so as to open the sprinklers; or the lever F may be pivoted at its lower end to a bracket f' , depending from the end of tank, pitman E being connected thereto above its pivot, as indicated in Fig. 6, so that the spring and driver's foot will operate to force the piston inward and shut off the water. The upper end of lever F lies in a serrated keeper F' , by which it can be locked in any position desired, so that the driver can thereby regulate the position of the piston in the cylinder, and consequently the number of jet-openings uncovered, or altogether cut off the water.

Preferably two sprinklers are employed, arranged side by side beneath the tank. If desired, their piston-rods may be both connected to the same lever D , and thus one pitman-rod and foot-lever control the two or more sprinklers; or the sprinklers at opposite sides of the machine may have independent controlling-levers. Both sprinklers may have independent rotating devices, or the arms J thereof may be connected to a single rock-shaft and operated by one lever J^6 . Pitman E is adjustably connected to lever F by a half-turn buckle or bifurcated nut e , the legs of which are removably attached to the lever F by a bolt e' , while the nut proper is screwed onto the thread of the pitman-rod. By removing bolt e' the half-buckle can be disengaged from the

lever and then turned, as desired, to shorten or lengthen the connection between levers D and F . By this means the normal position of the pistons in the cylinders can be regulated. The cylinders are rotatable in the rings so that they can be adjusted to direct the greater number of jets toward the side of the tank in directions opposite of the other sprinkler, thereby more evenly distributing the water and preventing an undue quantity falling beneath the tank. Should either sprinkler give out, the other can be set to sprinkle on both sides evenly, or both sprinklers can be turned so as to direct their jets in same direction.

By the means described, without changing the discharge of the water, it can be directed outward from the tank or inward. Thus by one sprinkler the water can be spread to one side or the other or between the wheels of the vehicle. When passing another vehicle or street-crossing, the driver without shutting off the water can shift the sprinkler so as to direct the jets beneath the tank without splattering people or objects in passing.

If dirt, &c., should accumulate in the tank or sprinklers, the pistons should be drawn back past the flushing-openings b^5 , when the rush of water therethrough will clean out the sediment, &c. The tanks can also be quickly emptied in this manner.

Having described our invention, what we claim as new, and desire to secure by Letters Patent thereon, is—

1. The combination of the tank, a perforated rotatable cylinder suspended thereunder, having a series of perforations and a wash-out-opening between said perforations and one of the heads, and devices, substantially as described, whereby the driver can rotate said cylinder, the piston in the cylinder, and means whereby the driver can shift said piston, substantially as described.

2. The combination of the perforated cylinder, with an adjustable piston therein having a segmental flange, substantially as described.

3. The combination of the stationary hangers, the rotatably-adjustable perforated cylinder connected thereto, and an adjustable piston in said cylinder, having a segmental flange adapted to overlie some of the perforations therein, substantially as set forth.

4. The combination of the piston-rod, the washer-plates on the end of said rod, having their opposed faces oppositely beveled and one of said plates having an exterior projecting segmental flange, and an expansible washer clamped between the beveled portions of the washer-plates and expanded thereby, substantially as and for the purpose described.

5. The combination of the tank, the rotatable sprinkler connected thereto, the crank-arms, link-rods, and lever for adjusting said cylinder, substantially as described.

6. The combination of a rotatable perforated cylinder, its heads, split-ring hangers therefor, and rib-and-groove connection be-

tween said hangers and heads, with a piston having a segmental flange adapted to overlies part of the perforations in the cylinder, substantially as and for the purpose described.

5 7. The combination of the suspended splitting fixed hangers, the perforated and rotatably-adjustable cylinder, the cylinder-heads embraced by said hangers, and the crank-shafts, links, rods, and levers, substantially
10 as described, for adjusting said cylinder, and the water-supply pipe, and the adjustable piston in the cylinder having a segmental flange adapted to overlies the lowermost perforations in the cylinder, as and for the purpose set forth.

15 8. The combination of the tank, the rotatably-adjustable perforated sprinkling-cylinder suspended therefrom, the piston in said cylinder, having a segmental flange adapted
20 to overlies the lowermost perforations in the cylinders, and the rods and levers for adjusting said piston, substantially as described.

9. The combination of the tank, the split rings suspended therefrom, the rotatably-adjustable perforated cylinder supported by
25 said rings and having a flushing-opening near its rear ends, in combination with the adjustable piston having a segmental flange overlies the lowermost perforations in the cylinder, the piston-rod, the lever connected
30 thereto and suspended beneath the tank, the foot-lever at the front of the tank, the spring, and the adjustable pitman-rod connection between said levers, all constructed and arranged to operate substantially as and for the
35 purpose set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

FRED WINKLER.
LENHART WINKLER.

Witnesses:

JAMES DUSHANE,
NEIL G. CRABILL.