(No Model.) 2 Sheets—Sheet 1.

W. A. KONEMAN.

SPRINKLER.

No. 530,534. Patented Dec. 11, 1894.

Fig. 1.

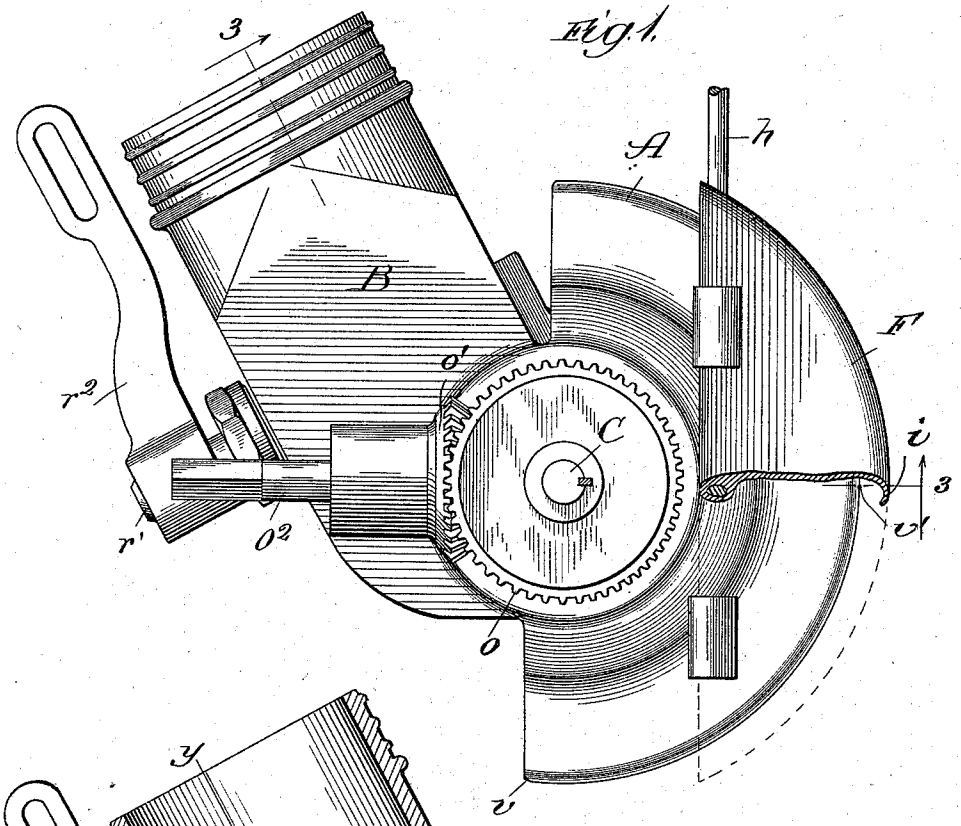
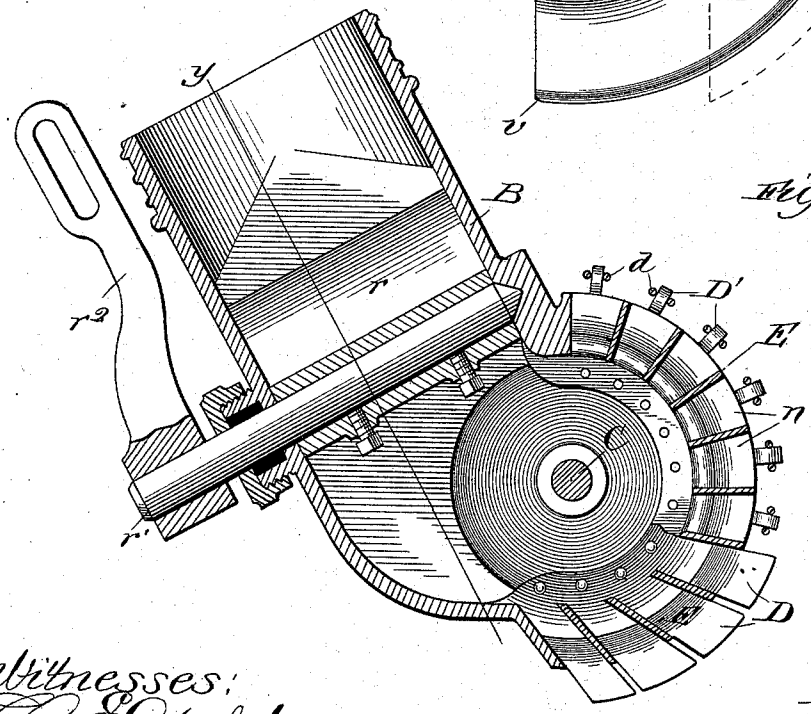


Fig. 2.



Witnesses:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

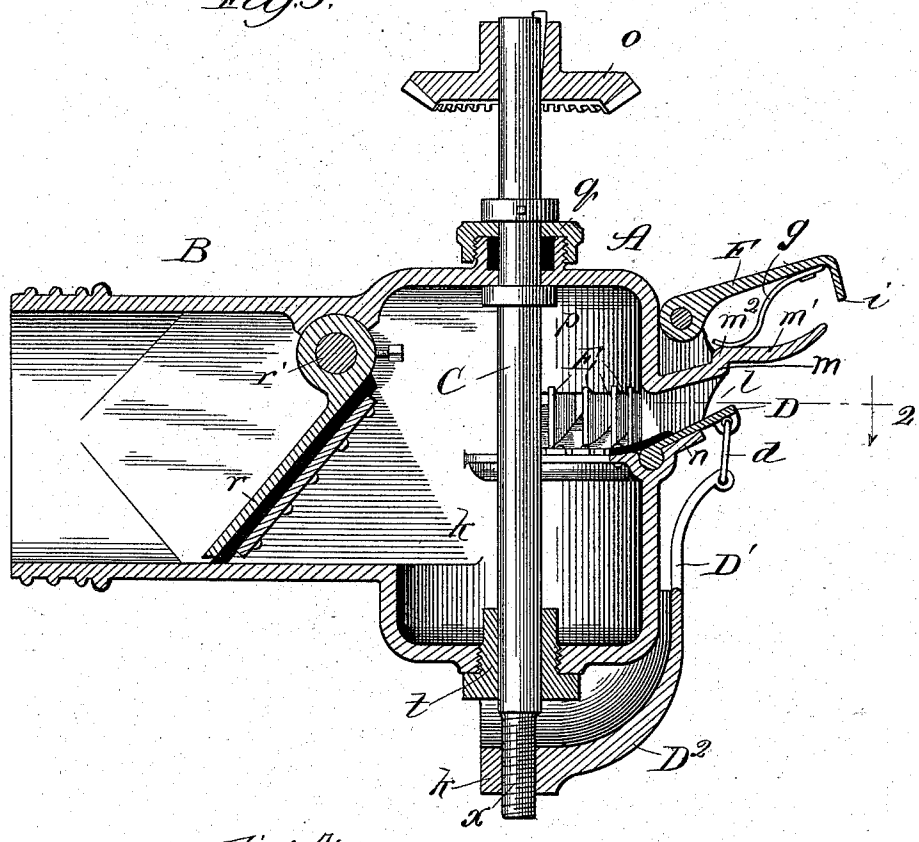

Fig. 4.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM A. KONEMAN, OF CHICAGO, ILLINOIS.

SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 530,534, dated December 11, 1894.

Application filed December 29, 1893. Serial No. 495,126. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. KONEMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Sprinklers, of which the following is a specification.

My invention relates to an improvement in sprinklers or spraying-nozzles of the variety especially designed for use on watering-carts for street-sprinkling.

My objects are to provide a construction of sprinkler whereby its capacity for water shall be regulable under the ready control of the operator; which shall operate to discharge water to the greatest advantage for street-sprinkling; which shall render the reach of the discharge from the sprinkler regulable at the will of the operator without, to that end, requiring the head or pressure to be varied; and which shall, moreover, afford a generally improved street-sprinkler.

In the accompanying drawings, Figure 1 is a plan view, partly broken, of my improved sprinkler. Fig. 2 is a plan section of the same taken at the line 2 on Fig. 3 and viewed in the direction of the arrow. Fig. 3 is a vertical section taken at the line 3—3 on Fig. 1 and viewed in the direction of the arrows; and Fig. 4 is a diagrammatic view in front elevation illustrating the variation in the relative inclination of the outer lateral and the rear and inner lateral portions of the deflector-extension of the mouth of the sprinkler.

The sprinkler is formed, as by casting, preferably in two longitudinal sections which, when fastened together afford the head A, having a circular face and the neck B, in which latter is hinged a valve r to open backward, the protruding end of the pivot-pin r', which carries the valve, being provided with a handle r^2 through the medium of which to turn it.

The under one of the two sections of the device, which is preferably of the cup-form illustrated to adapt it to catch gravel, and the like, has tapped centrally into its head-portion a guide-thimble t for a rotary perpendicular shaft C, which is threaded at x and passes through a stuffing-box q on the upper section, being confined against longitudinal movement by a collar p, and carrying at its outer protruding end a beveled gear o' with which meshes a bevel gear o' suitably journaled on the case.

About the circular face of the under section is formed a flange n affording an upward and outward extending seat. About the circular face of the upper section there extends, somewhat obliquely upward and outward, a lip m, having a deflector-extension m' projecting from an offset m^2, about the upper side of its outer edge. The extension m' is convex on its under side and tends generally upward and outward throughout the portion overlying that side of the mouth or discharge-opening l of the device which is employed as the outer side, or side nearest an edge of the street when applied to a watering-cart as hereinafter described; while the portion of the deflector which overlies the rear and inner sides of the mouth is more depressed, being preferably straight and horizontal as represented, or even inclined somewhat in a downward direction, on a lower plane than the flaring portion.

The diagrammatic view presented in Fig. 4 represents on a straight line the variation referred to about the arc between the points v and v' on Fig. 1.

D^2 is a spider having its center in the form of a nut k engaging the lower protruding threaded end of the shaft C, and provided with upward extending arms D′ at desired intervals apart.

Valves D are hinged at suitable, and preferably equal, intervals at the rear or base of the flange n, to co-operate with the partitions E, hereinafter described, in subdividing the discharge-opening l into channels which should be non-radial with relation to the mouth of the inlet to the sprinkler; and the hinged valves are connected, as by links d, with the arms D′ of the spider.

At intervals alternating with those between the valves D there are provided partitions E which flank the valves to divide the discharge-opening l between the lips into the channels referred to. Thus the valves serve, under their control by the operator, to regulate the vertical dimension or depth of the channels in the discharge-opening. The regulation is effected by turning the shaft C through the medium of the gears o and o', whereby the

spider D^2 is raised and lowered to adjust the hinged valves D, which form the bases of the channels, within the limits permitted by the lip *m* and flange-bearing *n*. As the medium for turning the gear *o'* I show a stem o^3 adapted for the application of a key, as the most conveniently presentable means for the purpose. However, as will be understood, in the use of my sprinkler on a street-watering cart, for which it is particularly intended, there will be a suitable gear-connection with the gear *o'* from the driver's seat, at which a crank, within convenient reach of the driver, will afford the primary actuating medium for the shaft C. Similarly, also, there should be a suitable connection between the valve-handle r^2 controllable from the driver's seat.

As a desirable adjunct for the sprinkler I provide thereon a spring deflecting-hood F, rendered adjustable preferably by hinging, and which has a forward depending lip *i* adapted, when the hood is depressed against the resistance of its controlling spring *g*, the normal tendency of which is to raise it, to overlap the outer edge of the deflector-extension *m'* throughout the outer lateral, or flaring portion, thereof, and afford a medium for, as it were, breaking the discharge of water under conditions wherein it is desirable to curtail, momentarily, the extent of outward throw of the sprinkler, as when the watering-cart is passing a carriage, or the like. The pivot *h* of the hinge is shown in Fig. 1 to project at one end. This is for the application to it of suitable means (not shown) by which to turn the hood F down into its operative position, and which may, to that end, be connected with a handle within convenient reach of the driver of the watering-cart referred to.

The operation of my improved sprinkler will be best understood by explaining its functions in connection with a watering-cart. A well-known form of street-watering cart has extending downward and backward from the rear end of the reservoir a central sheet-metal trunk, terminating in two laterally and rearwardly extending branches, the ends of which thus flank the longitudinal center of the vehicle and extend just behind the rear wheels. To the ends of these branches are fastened sprinkers of the class to which my improvement relates. Obviously, then, it is an object to cause each sprinker to throw laterally outward, or in the direction of the side of the street, (thus at a right-angle to a line *y* parallel with the side of the street and denoted in Fig. 2) as far as possible; and it is also an object to limit their extent of throw in the rearward direction, and also inward or toward each other to cause the sprays merely to meet or only slightly to cross one another. The first-named object I accomplish by the upward inclination of the discharge-outlet *l* and the convex outward flaring form of that portion of the deflector *m'* which overlies the outward lateral portion of the mouth or discharge-opening in the face of the sprinkler, whereby the discharge from the sprinkler, under the pressure from the tank, is forced upward to the angle of inclination which effects the desired extent of reach of the spray. The quantity of the discharge may be regulated according to requirement for different kinds of street-pavement by narrowing the discharge-outlet *l* and channels into which it is divided, which is accomplished by raising the valves D, as required, by rotating the shaft C.

As hereinbefore stated, when it is desired to curtail momentarily the extent of outward lateral throw from a sprinkler, the hood F may be readily turned down to cause the lip *i* to overlap the edge of the deflector *m'* and thus direct the discharge more downward.

The second-named object is attained by the horizontal or depressed form of the deflector *m'* where it overlies the rear and inner-lateral portions of the discharge-opening *l*.

What I claim as new, and desire to secure by Letters Patent, is—

1. A sprinkler having in the face of its head a discharge-orifice having partitions dividing it into channels and provided with an upper lip having an outwardly and upwardly projecting deflector-extension, substantially as and for the purpose set forth.

2. A sprinkler having in the face of its head a discharge-orifice having partitions dividing it into channels and provided with an upper lip having a deflector-extension projecting outward and upward where it overlies the outer side of said orifice and depressed throughout a portion of its extent, substantially as and for the purpose set forth.

3. A sprinkler having in the face of its head a discharge-orifice provided with an upper lip having a deflector-extension projecting outward and upward where it overlies the outer side of said orifice and depressed throughout a portion of its extent, and a hood adjustably supported on the head, substantially as and for the purpose set forth.

4. In a sprinkler, the combination with the hollow head having a rounded face provided with a discharge-orifice, of an upper lip projecting obliquely upward from the orifice, a lower flange affording a seat, valves hinged at intervals on said seat, partitions extending between the valves and dividing the orifice into channels, and means, substantially as described, for raising and lowering said valves, from without the head, with relation to their seat, substantially as and for the purpose set forth.

5. In a sprinkler, the combination with the hollow head having a rounded face provided with a discharge-orifice, of an upper lip projecting obliquely upward from the orifice, a lower flange affording a seat, a threaded rotary shaft journaled in the head, a spider engaging the thread on the shaft and carrying arms connected with the valves, partitions extending in the head between the valves and

dividing the orifice into channels, and means for rotating the shaft, substantially as and for the purpose set forth.

6. In a sprinkler, the combination with the hollow head having a rounded face provided with a discharge-orifice and an inlet-neck containing a valve, of an upper lip projecting obliquely upward from the orifice, a lower flange affording a seat, valves hinged on said seat, partitions extending between the valves and dividing the orifice into channels in non-radial relation to the mouth of the inlet, and means, substantially as described, for raising and lowering said valves on their hinges, from without the head, with relation to their seat, substantially as and for the purpose set forth.

7. A sprinkler comprising, in combination, a neck B and a hollow head A formed in an upper and a lower section, the lower section affording a gravel-reservoir and the two sections forming between them a discharge-orifice *l* and having, respectively, the lip *m* provided with a deflector-extension *m'*, and the flange *n*, a rotary threaded shaft C journaled in the head, a spider D^2 engaging the thread on the shaft and carrying arms D', hinged valves D in the orifice connected with the arms D', partitions E depending from the upper section and flanking the valves to divide the orifice *l* into channels, and means for rotating the shaft, the whole being constructed and arranged to operate substantially as described.

WILLIAM A. KONEMAN.

In presence of—
W. N. WILLIAMS,
J. N. HANSON.