No. 636,273. Patented Nov. 7, 1899.

W. H. MILLER.

SPRINKLER HEAD.

(Application filed Feb. 23, 1898.)

(No Model.) 2 Sheets—Sheet 1.

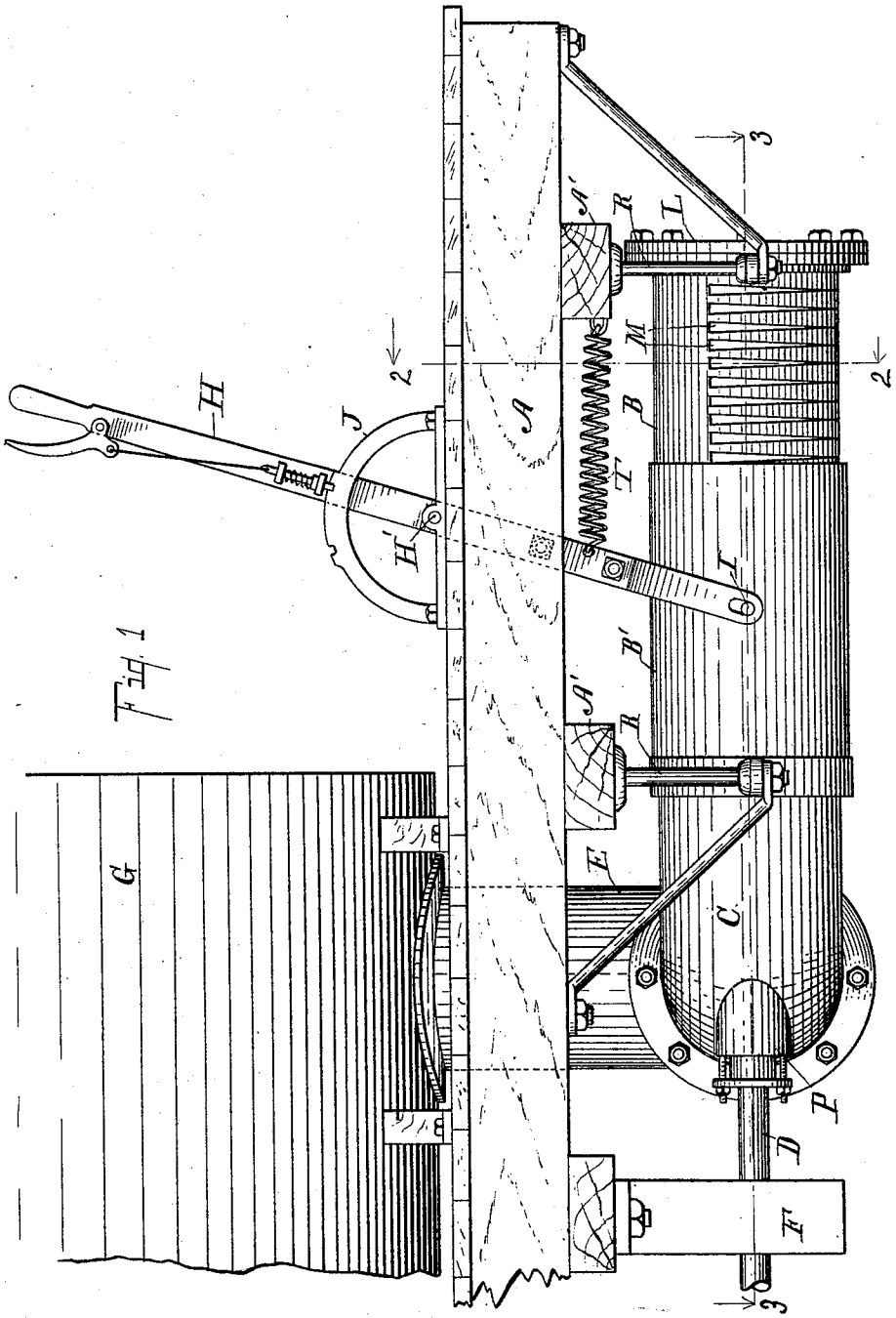


Fig. 1

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Otis A. Earl

Inventor,
William H. Miller
By Fred L. Chappell
Att'y.

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

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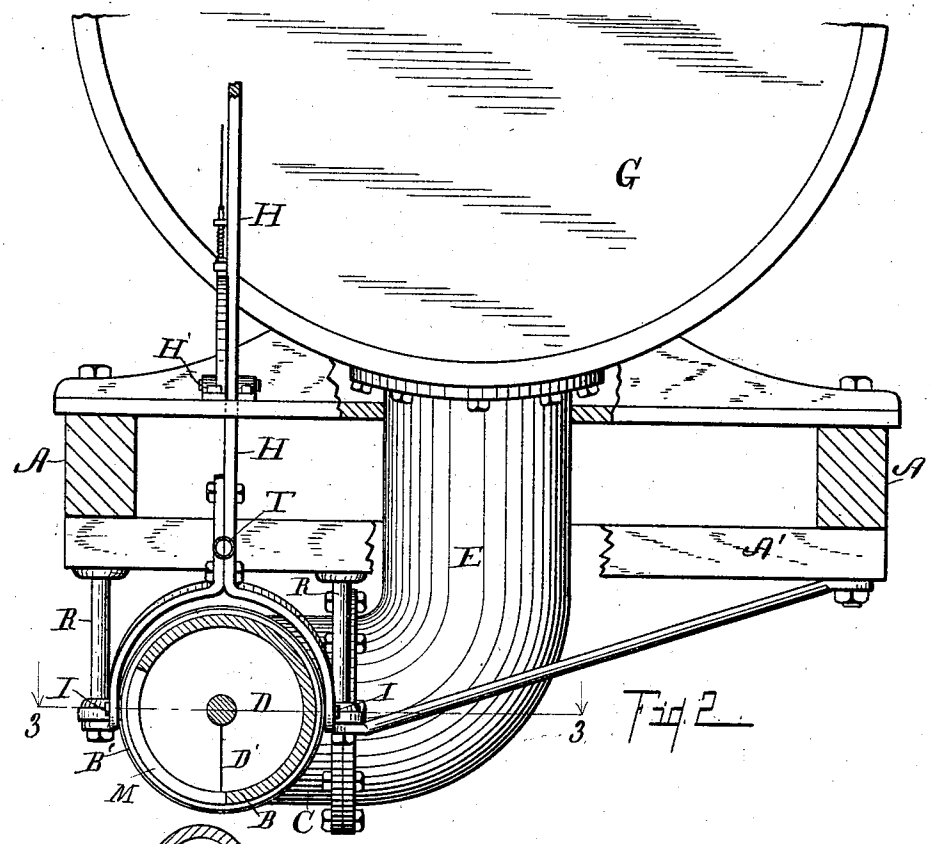


Fig. 2.

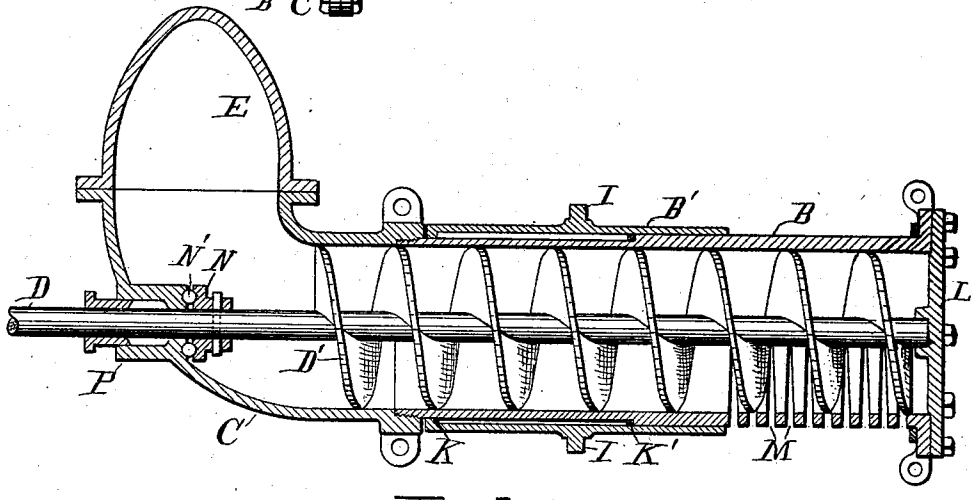


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM H. MILLER, OF SOUTH BEND, INDIANA, ASSIGNOR TO THE MILLER-KNOBLOCK COMPANY, OF SAME PLACE.

SPRINKLER-HEAD.

SPECIFICATION forming part of Letters Patent No. 636,273, dated November 7, 1899.

Application filed February 23, 1898. Serial No. 671,402. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MILLER, a citizen of the United States, residing at the city of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Sprinkler-Heads, of which the following is a specification.

This invention relates to improvements in sprinkler-heads and improvements in sprinklers generally, being in many respects an improvement and simplification of the structure shown in my United States patent, bearing date October 5, 1897, No. 590,999.

The objects of this invention are, first, to simplify sprinkling-heads for use in connection with power-sprinklers; second, to provide an improved construction of sprinkling-heads in which the spray can be readily cut off without danger of straining or injuring the parts; third, to provide an improved means of cutting off the spray of a sprinkler whereby the joint formed will be a packed joint and all leakage prevented; fourth, to provide a power sprinkler-head of improved construction whereby the mouths of the perforations or slots for the passage of the spray will be always kept clean.

Further objects will definitely appear in the detail description to follow.

I accomplish these objects by the devices and means described in this specification.

The invention is definitely pointed out in claims.

The structure is fully illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved sprinkler-head with portions of the platform of a street-railway car and tank to which the sprinkler-head is attached. Fig. 2 is a transverse sectional view taken on line 2 2 of Fig. 1, looking in the direction of the little arrows at the ends of the section-lines. Fig. 3 is a horizontal longitudinal view taken on a line corresponding to line 3 3 of Fig. 2, looking down, the outer casing only being shown in section.

In the drawings similar letters of reference refer to similar parts throughout the several views.

A is the platform of a car, made in any suitable form; G is the tank thereon, and B is the sprinkler-head, which is connected to the tank by the pipe E, which is extended down and curved out to one side and extended in the direction of the car at the front or rear end thereof, as described.

The head B is supported in position by suitable bolts or hangers R, dependent down from the under side of the platform of the car and joining the same by suitable ears, the whole being suitably braced.

The interior of the sprinkler-head B is turned true in a lathe or made true in any suitable or convenient way. It is flanged at the forward end, and the plate L, like an engine sprinkler-head, is bolted thereto by suitable bolts. The shaft D extends longitudinally and centrally through the head B and is provided with an auger or screw blade D', as clearly appears in the drawings. The shaft D at its rear end extends through a stuffing-box of the usual pattern and into a suitable motor supported on the under side of the platform. Power can be applied to the shaft to rotate it in any well-known way, the particular means not being of this invention. Toward the front end of the sprinkler B are formed transverse spray-openings, narrowing from their tops downwardly to the under side of the cylinder, where they become very narrow, the object being to distribute a heavy spray through the same at the top and a light spray at the bottom to secure an even distribution of water, though this can be accomplished by a series of perforations varied in size in the same direction. I, however, prefer the slots in this connection, as they will operate very satisfactorily in connection with the screw, which keeps accumulations constantly cut away, in allowing a very free passage of the water to all points. I provide on the shaft D a collar N, containing ball-races, and provide on the inner end of the stuffing-box P corresponding ball-races, and put anti-friction balls N' between the two to relieve the end thrust on the shaft D. This end thrust could be provided against in other ways; but I prefer to accomplish it in this way.

On the outside of the tube B, forming the head, I place a sleeve B', shouldered at K internally on its inner end, and the head B is

also provided with the shoulder K′, corresponding thereto. Packing is placed to come between the shoulders K K′ and pack the joint at that point, and a packing is provided at the end of the sleeve B′ on the flange at the outer end of the head B. I move this sleeve B′ back and forth by means of the lever H, which is provided with the usual adjustable bolt H′ and segment J and is slotted at its lower end, which is bifurcated to receive the trunnions or pins I I on the opposite sides of the sleeve B′. A spring T is provided, connecting the said lever to the front portion of the platform, exerting a constant pressure to close the sleeve B′ over the sprinkler-head B. The spring could be otherwise connected to accomplish the object and is desirable to retain the sleeve B′ automatically in place against the packings to preserve a perfectly-tight joint when the head is closed.

Having thus described my improved sprinkler-head, I desire to state that some of its advantages are that no relief-valve or other means is required to prevent injury to the parts when the spray-openings are quickly closed and that the action of the auger-blade D′ over the apertures constantly removes all accumulations and allows a perfectly-free passage of water through the same, making the spray very effective and satisfactory. It will also be observed that the structure is exceedingly simple to secure the desired end.

Having thus described the various objects and enumerated their advantages, I desire to state that the invention can be considerably varied in its details without departing from my invention. The particular construction of sleeve B′ on the sprinkler-head is capable of use on other styles of sprinklers or where the water is forced through the same merely by force of gravity and will be found to be very satisfactory and effective in that relation. The screw might be used with other means of cutting off the spray or with other means of controlling the supply of water thereto and would be very effective in that relation, and, as I have already stated, any suitable power can be applied to the screw for its actuation. Other variations from these here suggested will no doubt suggest themselves to those skilled in the art to which my invention pertains. I, however, desire to state in this relation that the exact combination of elements as I have produced them I believe possess merits over any others in certain particulars and the exact specific combination to be very advantageous.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a sprinkler the combination of the tank G, the supply-pipe E, leading therefrom and terminating in a suitable cylindrical sprinkler-head B, having a shoulder and reduced portion thereon with suitable spray-openings therethrough, a sleeve with an internal shoulder adapted to slide over the spray-head to close the spray-openings and having a packing next to its shoulder and on its outer end; a bifurcated lever H, with suitable slots to engage pins on the side of the sleeve; a spring T, connected to said lever to pull the same forward to hold the sleeve normally in the closed position; suitable means of adjusting the lever; a screw within the sprinkler-head supported on a suitable shaft; a stuffing-box to pack the shaft and means of actuating the shaft as motor F, all coacting together substantially as described for the purpose specified.

2. In a sprinkler apparatus the combination of a suitable tank; a spray-head consisting of a suitable cylindrical portion connected thereto; one end of which is closed; a screw or auger blade adapted to revolve within said cylinder and means of revolving the same, for the purpose specified.

3. In a sprinkler the combination of a suitable supply-tank, the spray-head connected thereto containing suitable spray-openings and a screw supported within said head and means of revolving the same for the purpose specified.

4. In a sprinkler the combination of a suitable source of supply; a cylindrical sprinkler-head containing suitable spray-openings; a screw adapted to revolve within the same and a sleeve with an internal shoulder adapted to slide over the spray-openings on said head; a suitable packing adapted to fit the shoulder and a packing for the end of the sleeve, for the purpose specified.

5. In a sprinkler the combination of a suitable source of supply; a cylindrical sprinkler-head containing suitable spray-openings; a screw adapted to revolve within the same and a sleeve with an internal shoulder adapted to slide over the spray-openings on said head; a suitable packing adapted to fit the shoulder and a packing for the end of the sleeve, and a suitable spring connection to hold the sleeve normally in the closed position for the purpose specified.

6. In a sprinkler the combination of a suitable cylindrical head having transverse slots for spray-openings, a suitable screw revolving within the head and in contact with the inner surface for the purpose specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

WILLIAM H. MILLER. [L. S.]

Witnesses:
HORACE T. REYNOLDS,
ALBERT W. MORRELL.