(No Model.)

T. M. MURPHY.

SPRINKLER.

No. 367,762. Patented Aug. 2, 1887.

Fig. 1.

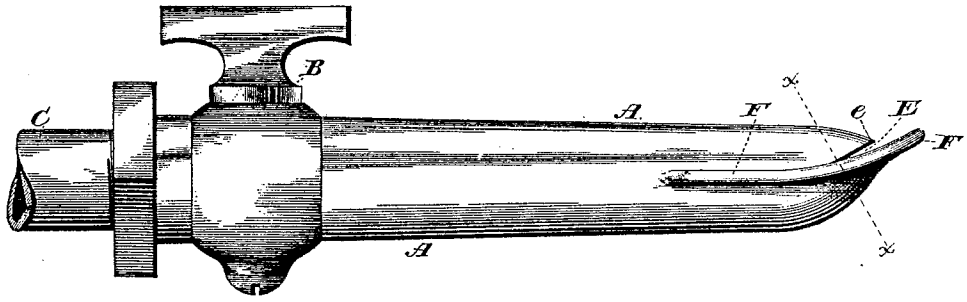


Fig. 2.

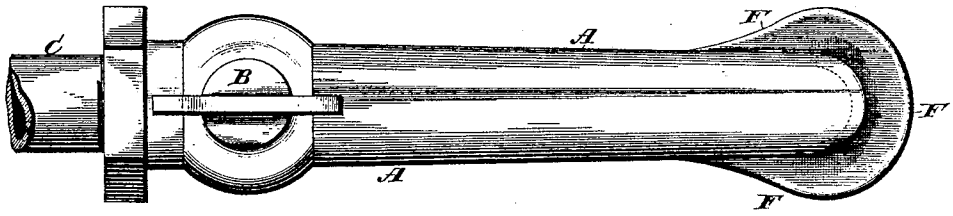


Fig. 3.

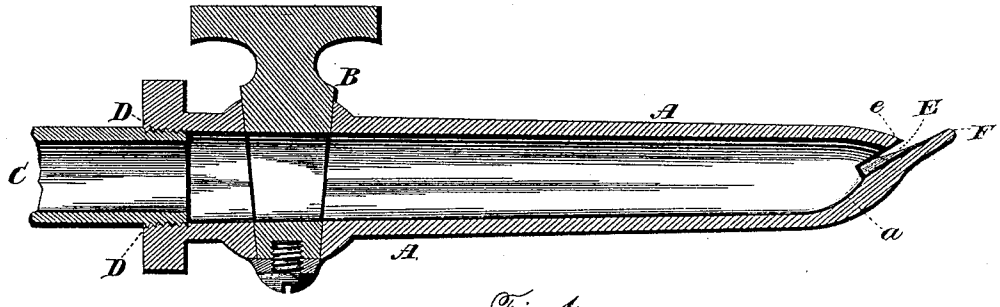
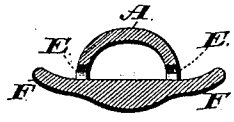


Fig. 4.



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Henry C. Hazard.

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by Prindle & Russell
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UNITED STATES PATENT OFFICE.

THOMAS M. MURPHY, OF ST. LOUIS, MISSOURI, ASSIGNOR, BY MESNE ASSIGNMENTS, TO SAID THOMAS M. MURPHY, TRUSTEE.

SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 367,762, dated August 2, 1887.

Application filed July 8, 1886. Serial No. 207,477. (No model.)

To all whom it may concern:

Be it known that I, THOMAS M. MURPHY, of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Sprinklers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 shows a view of my improved sprinkling-nozzle in side elevation; Fig. 2, a plan view of the same; Fig. 3, a longitudinal vertical sectional view of the nozzle; and Fig. 4, a view of a section on line *x x* of Fig. 1.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to provide an improved sprinkling or spraying nozzle; and with this end in view my invention consists of the nozzle and the construction, arrangement, and combination of the parts thereof, as hereinafter specified.

As will appear from the drawings and from the specification and description to be hereinafter made, my nozzle, as covered in this application, is designed particularly for use when connected with stationary pipes or hose-pipes for sprinkling and spraying streets, lawns, &c., but can be used, also, as a pipe-nozzle by firemen wherever it is desirable to employ a thin sheet of water or spray for covering an extended surface and putting out fire or preventing it from affecting such surface.

In my other application for United States Patent, No. 231,163, I have shown and described my invention as applied to nozzles for use on street-sprinklers, and have covered the said invention broadly and as applied to street-sprinkler nozzles. I do not, therefore, in the present application claim, broadly, a sprinkling or spraying nozzle having an exit-slot for the water and a distributing-lip extending out from such slot and around beyond the ends thereof, as such is shown and broadly covered in my said other application.

In the drawings, A designates the body of the nozzle, which, as shown, is made slightly tapering toward its forward or outer end.

B designates the usual stop-cock or key, and C the pipe or coupling, onto which the nozzle is screwed or otherwise fastened, preferably as shown at D in the drawings.

Instead of having a clear straight passage through the outer or forward end of the nozzle, as usual, such end is closed, with the exception of a narrow slot, E, which spreads the water issuing through it in a thin wide stream. The slot preferably stands at an angle to a horizontal plane through the central or axial line of the nozzle, so as to give the stream issuing through it an upward direction. The end of the nozzle in which this slot is situated is convex or rounded, as shown, so that the upper edge, *e*, of the slot extends in a curved line around to the rear on both sides of its forward central point. The upper portion of the nozzle overhanging the slot forms, then, a semicircular or crescent-shaped lip, which helps to distribute the water evenly in the directions in which the water issues from the slot.

To carry the water issuing from the slot still farther outward and upward, and to cause it to spread out in an even, continuous, and thin stream, I provide the nozzle with the concave or spoon-shaped lip or flange F, extending out from and forming with its upper surface a continuation of the face of the lower side of slot E. Such lip, besides extending out directly in front and at the sides of the slot, is continued well around, beyond, and to the rear of the slot ends or sides. As the water issues from the slot E in a continuous thin sheet or flat stream it is guided upward and outward by the lip F, and passing over the upper edge of the lip is spread out in a broad, thin, even sheet of water, capable of evenly wetting a large space of ground at a time. As the slot extends well around toward the sides of the nozzle end, the sheet of water issuing therefrom and passing off of the lip F is spread out into a broad fan-shaped sheet extending over a large portion of a semicircle.

If the spreading lip or flange F were not extended, as described and shown, around beyond the ends of the slot, the parts of the stream of water issuing from the slot at or near its ends would not be distributed or spread out like the rest of the stream, but running off of the ends of the flange or lip would fall down and wet the surface upon which they fell more than that reached by the rest of the stream.

With the lip or flange extended, as described and shown, well beyond the slot ends every portion of the stream of water is thrown upward and outward and spread out most evenly.

In the drawings I have shown the lip or flange F turned up at a sharper angle around at the sides of the nozzle than at the front end thereof. This construction tends to compensate for the slight retardation of the outward flow of the portions of the stream of water at the ends of the slot or slit E by directing such portions upward and outward at an angle slightly greater than that at which the front part of the stream is thrown or directed by the front portion of the lip.

The slight retardation referred to is caused, obviously, by the contact of the sides of the stream with the slot end. I do not, however, limit myself to the concave lip with the angle of curvature changed, as described, at the sides of the nozzle.

To insure the easy and free outflow of water from the interior of the nozzle through the slot or slit F, I prefer to make the lower side of the inner surface of the nozzle, at the front end of the latter, inclined upward to the lower side of the slot, as shown at *a'* in Fig. 3. The inclined surface so made directs the water easily upward to the slot, and offers no shoulder or abrupt surface to be impinged upon by the water on its passage through the nozzle.

If the nozzle end were simply rounded and the slot cut at an angle, as described, there would be within the nozzle end at the lower side of the slot an abrupt surface or shoulder against which some of the stream of water in the nozzle would strike, so as to cause by friction and by the eddies produced interference with the free flow of water out through the slot.

Having thus described my invention, what I claim is—

1. The sprinkling or spraying nozzle having the slot in its end inclined at an angle to a plane passing through the central longitudinal line of the nozzle, and the upwardly-inclined distributing or spreading lip extending out from the lower side of the slot and around beyond the ends thereof, substantially as and for the purpose specified.

2. The nozzle having the rounded convex end, the slot in such end made in a plane upwardly inclined with reference to a horizontal plane through the axis of the nozzle, and the upwardly-turned lip or flange forming a continuation of the lower side of the slot and extending around beyond the end thereof, substantially as and for the purpose shown.

3. The nozzle having in its end the slot made in an upwardly-inclined plane, the dished distributing or spreading lip extending out from the lower side of the slot and around beyond the ends thereof, and the upwardly-inclined surface within the nozzle directing the contents of the nozzle up to the slot, substantially as and for the purpose shown and described.

Witness my hand this 3d July, 1886.

THOMAS M. MURPHY.

Witnesses:
C. D. MOODY,
B. F. REX.

