

W. Gurley,

Nozzle,

N<sup>o</sup> 55,285,

Patented June 5, 1866.

Fig. 1

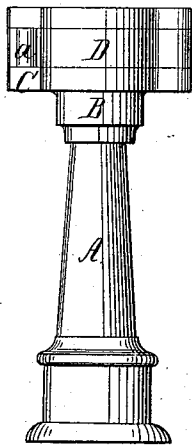


Fig. 2

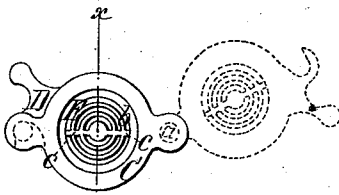


Fig. 3



Witnesses

Jm Lynn  
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# UNITED STATES PATENT OFFICE.

WILLIAM GURLEY, OF TROY, NEW YORK.

## WATER-SPREADING NOZZLE FOR FIRE-ENGINES.

Specification forming part of Letters Patent No. 55,285, dated June 5, 1866.

### *To all whom it may concern:*

Be it known that I, WILLIAM GURLEY, of Troy, in the county of Rensselaer and State of New York, have invented a new and Improved Water-Spreading Device for the Nozzles of Fire-Engines, Pumps, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an external view of my invention; Fig. 2, an end view of the same; Fig. 3, a detached enlarged section of the spreader, taken in the line *x x*, Fig. 2.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and improved attachment for the nozzles of the hose of fire-engines, pumps, &c., for the purpose of spreading the stream when necessary, in order that it may be projected over a greater area.

In the application of a water-spreader to a nozzle there are two important features or requisites to be considered. In the first place the water should be spread by a means that will offer the least possible resistance to it; and, second, said means should be capable of adjustment in such a manner that it may with the greatest facility be applied to the nozzle so as to spread the stream or be moved entirely out of the way of the latter when the spreading of the stream is not desired.

My invention consists in placing the spreader entire within a block or plate attached or applied to the nozzle in such a manner that the spreader may be adjusted, entire or bodily, in line with the stream or interior of the nozzle, or moved out from the nozzle, there being but one piece or part to move, so that the movement or adjustment may be quickly made, and the arrangement rendered very compact and durable.

My invention further consists in a novel manner of constructing the spreader, the same being composed of a series of frustums of cones placed one within the other, the smaller ends inward, as hereinafter fully shown and described, whereby the stream will be spread and the least possible degree of resistance offered to it.

A represents a nozzle, which may be con-

structed substantially in the usual way, with the exception that its discharge end is formed with a chamber, B, considerably larger in diameter than the orifice of the nozzle proper, said chamber having a screw-thread cut on its exterior surface to receive a socket, C, in which a plate, D, is fitted and secured at one end by a pivot rod or bolt, *a*. The plate D may be adjusted so as to fit snugly within the socket, or it may be turned out from the socket, and in this plate the spreader E is fitted. (Shown clearly in Figs. 2 and 3.) This spreader E is composed of a series of frustums of cones, *b*, placed concentrically one within the other, their smaller ends being inward or facing the orifice of the nozzle, spaces being allowed between the several parts *b* for the water to pass through, as shown clearly in Fig. 3. These parts or frustums of cones *b* are connected together and to the plate D by arms *c*. (Shown in Fig. 2.)

The parts *b*, composing the spreader, may be made with any degree of divergence, according to the extent in which it may be desired to spread the stream, and these parts are fitted within a conical opening in the plate D, as shown in Fig. 3. The spreader thus constructed is fitted within the plate D at such a point that when said plate is adjusted within the socket C the spreader will be in line with the interior of the nozzle, and the water consequently will pass through the spreader, and the stream spread or expanded by the divergence given it by the spreader. When it is not desired to spread the stream the plate D is shoved out from socket C, as indicated in red, Fig. 2.

By this arrangement it will be seen that the spreader is adjusted entire or bodily with the plate D, and the adjustment may be quickly done and the device rendered very compact and simple, there being but one movable or adjustable part. The spreader also, constructed as described, spreads the stream while offering but a small degree of resistance to it, and without breaking or scattering the water, as is the case where abrupt projections are presented to it.

I do not confine myself to the precise arrangement of the plate D as herein described, for it may be connected to the nozzle in other ways and the same end attained.

Having thus described my invention, I claim

as new and desire to secure by Letters Patent—

1. The placing of a spreader for the nozzles of engines, pumps, &c., within a plate, so that the spreader may be adjusted over the orifice of the nozzle or moved off from it bodily or entire by the movement of a single part, D, substantially as shown and described.

2. A spreader composed of a series of frustums of cones placed one within the other and arranged so as to form a single or entire part, substantially as shown and described.

WILLIAM GURLEY.

Witnesses:

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EDWARD P. SEARLE.