(No Model.)

# C. S. DOLLEY & M. O. REHFUSS.

## SPRAYING NOZZLE.

No. 600,193. Patented Mar. 8, 1898.

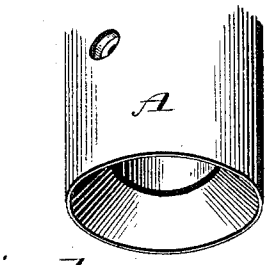



Fig. 1.

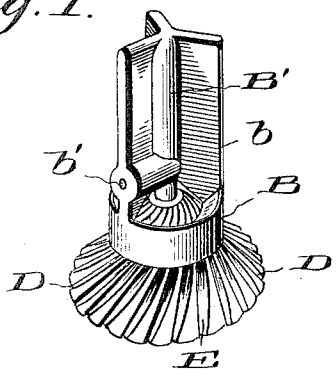



Fig. 2.

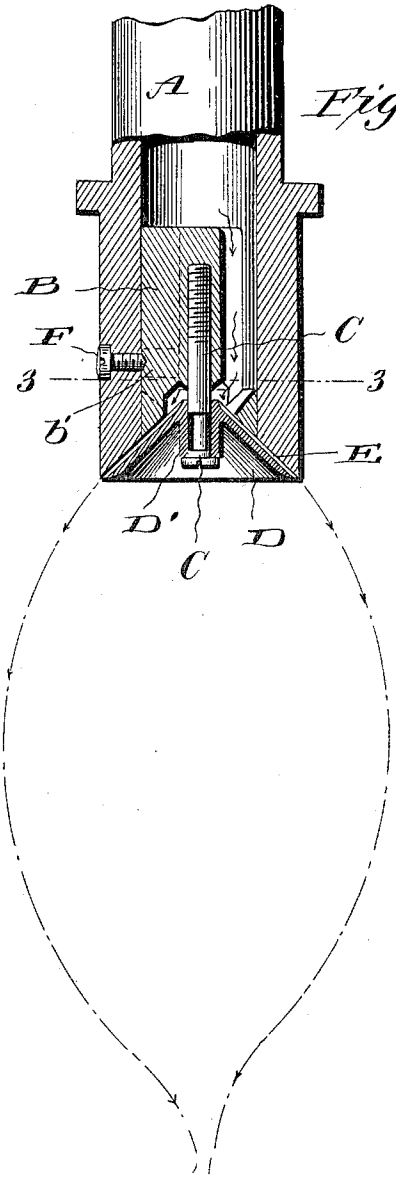
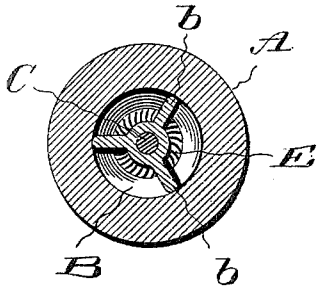



Fig. 3.




Witnesses:
L. C. Hills.
A. L. Hough

Inventors:
Chas. S. Dolley and
Martin O. Rehfuss,
by Franklin A. Hough
Atty.

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# UNITED STATES PATENT OFFICE.

CHARLES S. DOLLEY AND MARTIN O. REHFUSS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO THE UNIVERSAL FOOD AND LIQUID IMPROVING COMPANY, OF SAME PLACE.

## SPRAYING-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 600,193, dated March 8, 1898.

Application filed April 3, 1897. Serial No. 630,614. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES S. DOLLEY and MARTIN O. REHFUSS, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Spraying-Nozzles; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in sprayers and emulsors, and especially to a novel device for attachment to a liquid-supply pipe, whereby under proper regulation of pressure the liquid is broken up into a spray or caused to flow in a thin sheet having an oval or elliptical shape, with a view to exposing every particle of the liquid to the action of a vacuum that all its contained air may be exhausted or to the action of a gaseous medium that the liquid may be thoroughly saturated with and acted upon by the same.

The device is peculiarly adapted to the mixing of gases and liquid or of two liquids, it acting as an emulsor, the gas or liquid to be combined being added to the main flow before it enters the device.

The device is, moreover, adapted to use in connection with fountains where it is desired to produce an attractive display by means of flowing waters, the hollow elliptical body of water flowing from the device being readily illuminated from within.

To these ends and to such others as the invention may pertain, the same consists, further, in the novel construction, combination, and adaptation of the parts, as will be hereinafter more clearly described, and then specifically defined in the appended claim.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which drawings similar letters of reference indicate like parts throughout the several views, in which—

Figure 1 is a perspective view showing the sprayer and emulsor detached from the nozzle end. Fig. 2 is a central longitudinal section through the nozzle and sprayer or emulsor. Fig. 3 is a cross-section on line 3 3 of Fig. 2.

Reference now being had to the details of the drawings by letters, A designates the nozzle end of the device, which has a bore in its end of sufficient size to receive the rack B, which is made up of the central post B′, having the radiating wings *b*, connected to a ring at the lower end of the rack. The said post B′ is recessed out in its lower end and has formed therein screw-threads designed to engage with the threads of the screw C, which is provided to hold the sprayer or emulsor D to the rack by the headed end of the said screw passing through an aperture at the apex of the conical-shaped sprayer or emulsor. This sprayer or emulsor has an inner and downwardly-projecting portion D′, which is recessed out, and the lower end of the said portion D′ is designed to rest on the head of the screw on which it rests and revolves. About the conical surface of the sprayer or emulsor is a series of grooves E, which are spirally disposed, as illustrated in the drawings, which are provided for the purpose of causing the sprayer or emulsor to rotate as the liquid comes in contact with the conical surface thereof.

The rack is held to the nozzle by means of a set-screw F, which is adapted to engage in a screw-threaded aperture or hole *b′* in a wing of the said rack.

It will be noted that the end of the nozzle is tapered in, so as to allow the conical surface of the sprayer or emulsor to be seated within the end of the nozzle, and when adjusted in place the ends of the sprayer or emulsor and nozzle will be in the same plane, and there will be a sufficient space left between the two inclined surfaces to allow the liquid to be thrown out in a spray or a thin sheet as the sprayer or emulsor rotates.

It is our purpose, among others, to utilize

this device in the process of treating liquids, which involves the exhaustion of air from the liquid and the subjection of the liquid to the action of a gaseous medium or in which it is desired to thoroughly combine or emulsify a gas and a liquid or two liquids, and also to furnish a means whereby a colored or other light may be surrounded by a thin sheet of flowing water, which will be illuminated and thus form an attractive display for fountains or other objects.

If preferred, the nozzle may be directed upward, when the sheet or sprayed liquid will assume the shape of an urn within which lights may be placed and the sheet of liquid illuminated.

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

In combination with the nozzle having its end tapering in, a rack, having radiating wings thereto, secured within the nozzle, the screw-threaded pivotal post supported by the rack, the conical sprayer or emulsor mounted on said post, the conical surface of the sprayer or emulsor provided with a series of spirally-radiating grooves, the lower ends of the nozzle and sprayer or emulsor being disposed in the same plane substantially as shown and described.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES S. DOLLEY.
MARTIN O. REHFUSS.

Witnesses:
WM. J. MERRILL,
CHAS. H. BANNARD.