(Model.)

W. C. LOCKHART.

SPRAY NOZZLE.

No. 487,628. Patented Dec. 6, 1892.

Fig. 1.

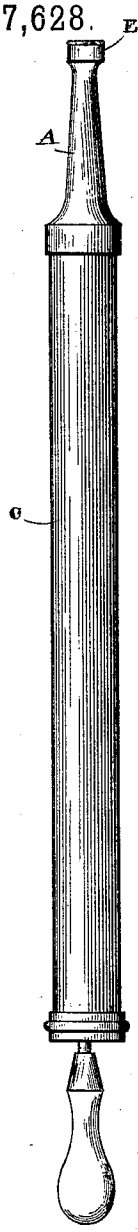


Fig. 2.

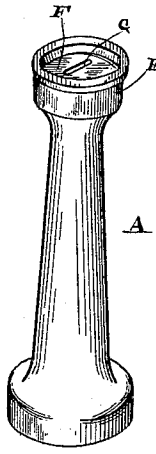


Fig. 4.

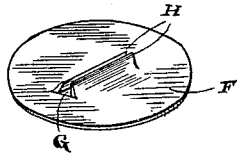


Fig. 3.

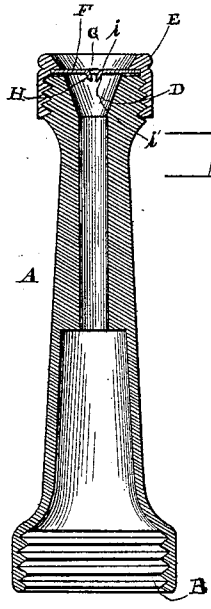
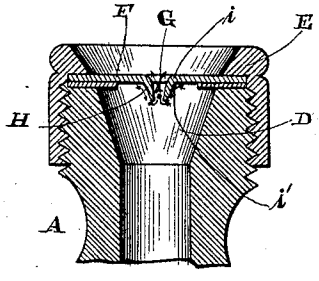


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM C. LOCKHART, OF WATERLOO, INDIANA.

SPRAY-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 487,628, dated December 6, 1892.

Application filed May 11, 1892. Serial No. 432,637. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM C. LOCKHART, a citizen of the United States, residing at Waterloo, in the county of De Kalb and State of Indiana, have invented a new and useful Spray-Nozzle, of which the following is a specification.

This invention relates to spray-nozzles; and it has for its object to provide an improved nozzle which is adapted for use upon syringes, hand-spraying devices, hose, or, in fact, upon any device employed for distributing liquids where it is necessary to spray the stream for various purposes.

To this end the invention has for its main object to provide an improved nozzle simple in construction and inexpensive to manufacture, but one which provides for a perfect confined spray which may be easily graduated as desired.

With these and many other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is an elevation of a syringe or hand-sprayer provided with a nozzle constructed in accordance with this invention. Fig. 2 is a perspective view of the nozzle. Fig. 3 is a sectional view of the same. Fig. 4 is an enlarged detail perspective of the spray-pipe. Fig. 5 is an enlarged sectional view of the nozzle-spray end.

Referring to the accompanying drawings, A represents a tapered nozzle having an interiorly-threaded socket B, which is designed to be secured to a syringe or hand-sprayer C, a hose, or any other liquid-distributing device. The other end of the nozzle A terminates in a flared or conical force-chamber D, which is inclosed by the open nozzle-cap E, engaging the exteriorly-threaded end of the nozzle surrounding the force-chamber D. Clamped over one end of the nozzle A, between the outer face of the cap E and the outer rim of the force-chamber D, is the spray-plate F. The said spray-plate F is provided in the face thereof with a narrow discharge-slot G, from which and projecting inwardly into the force-chamber from each side of the slot are the projecting flanges H. The said flanges H are curved at their bases, so as to form outer rounded edges *i* upon the outer face of the plate and the inner rounded portions *i'* upon the inner face of said plate and directly opposite the outer convexed portions *i*. Now it will be seen that when the liquid is passing through the nozzle the same collects under pressure in the outer force-chamber D, which therefore intensifies the discharge of the water through the narrow slot in the face-plate. It will be apparent that the pressure of water bearing against the spray-plate will be directed by the inner rounded bases *i'* of the opposite flanges over the top of the same, and the liquid passing over the opposite flanges will converge to the center of the slot, which will cause the liquid to turn at right angles to the disposition of the slots and be ejected crosswise thereof in a thin fan-shaped sheet, breaking into the wide-spreading spray. The width of the spray spreads very rapidly and at a distance of twelve feet and under ordinary circumferences is about ten feet.

By the employment of the spray-plate described the spray is confined and will not, like ordinary nozzles, discharge the spray in every direction, thus causing a great waste of material when spraying single rows of objects being sprayed. If a row of plants or any narrow line of surface is to be sprayed, a half-turn of the nozzle will bring the fan-shaped stream edgewise to the objects being sprayed, and thus distribute the spray over a large area. By changing the spray-plate in the nozzle-cap and varying the slots therein various grades of sprays can be of course obtained, and, if desired, by reversing the plate to have the flanges thereof project outwardly a thin contracted spray stream may be obtained.

The construction and many advantages of the herein-described spray-nozzle are now thought to be apparent without further description.

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

1. The combination, with a discharge-nozzle, of a flat spray-plate inclosing one end of said nozzle and provided with a flanged spray-slot, the flanges of the plate projecting from one side or face thereof, substantially as set forth.

2. The combination of a discharge-nozzle having a force-chamber at its outer end and a flat spray-plate inclosing said chamber and provided with a spray-slot and flanges projecting from the sides of said slot into said chamber, substantially as set forth.

3. The combination of a nozzle having a flared force-chamber at its outer end, a flat spray-plate inclosing said chamber and provided with a spray-slot, and opposite flanges projecting from the sides of said slot into said chamber and meeting the plate in rounded corners, and a nozzle-cap removably clamping said spray-plate over said chamber, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM C. LOCKHART.

Witnesses:
JAMES D. MCANALLY,
HARRY N. MCBRIDE.