

T. A. DE VILBISS.
 SPRAY HEAD.
 APPLICATION FILED APR. 30, 1909.

1,052,223.

Patented Feb. 4, 1913.

Fig. 1.

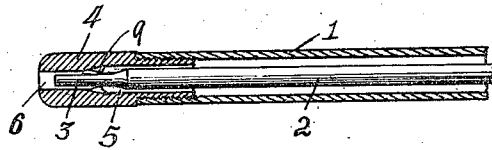


Fig. 2.

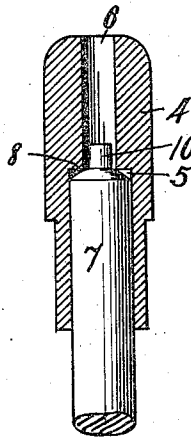


Fig. 3.

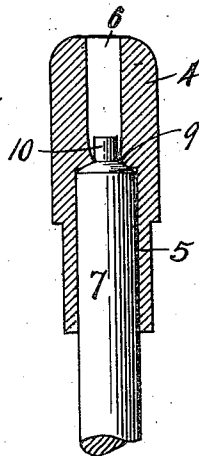


Fig. 4.

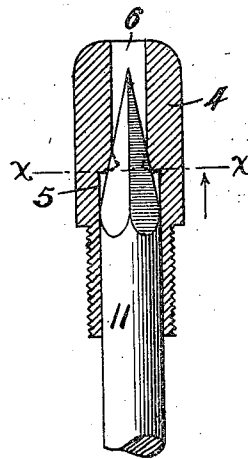


Fig. 5.

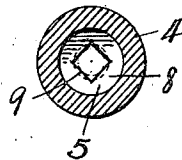
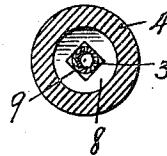


Fig. 6.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS A. DE VILBISS, OF TOLEDO, OHIO, ASSIGNOR TO THE DE VILBISS MANUFACTURING COMPANY, OF TOLEDO, OHIO, A CORPORATION OF OHIO.

SPRAY-HEAD.

1,052,223.

Specification of Letters Patent.

Patented Feb. 4, 1913.

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To all whom it may concern:

Be it known that I, THOMAS A. DE VILBISS, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Spray-Head; and I do hereby 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 figures of reference marked thereon, which form a part of this specification.

My invention relates to spray-heads for atomizers or other instruments in which the discharge of a fluid under pressure from one of two tubes through a throat common to both creates a suction through the other of said tubes and a discharge of liquid in spray or vaporized form from such throat.

In the construction of spray-heads of this type it is important that the discharge end of one tube be accurately centered within the spray-head and as close to the discharge end thereof as possible, and to accomplish this it has been customary to fit the rear end of the spray-head into the end of the outer tube and onto the end of the inner tube to the rear of the restricted or reduced nozzle end of such latter tube, or in some other similar manner.

The object of my invention is to improve upon the construction of spray-heads and the manner of centering a tube end therein, whereby the nozzle of such tube is supported close to its end within the reduced portion of the throat of the spray-head, thus simplifying the manufacture and assembling of the parts of this class of apparatus and enhancing the practicability and commercial value thereof, as is hereinafter more fully described.

The operation, construction and arrangement of the parts of the invention are fully described in the following specification, and a preferred embodiment thereof and manner of forming the same illustrated in the accompanying drawings, in which:—

Figure 1 is a central longitudinal section of a spray-head embodying my invention with the inner and outer tubes associated therewith. Figs. 2, 3 and 4 are similar enlarged sections of the spray-head at different stages of the shaping process, and Figs. 5

and 6 are cross-sections on the line *x x* in Fig. 4, the latter with the inner nozzle projected therein.

Referring to the drawings, 1 designates the outer tube of an atomizer, 2 the inner tube thereof, which has its discharge end projected beyond the end of the tube 1 and reduced to form the restricted discharge nozzle 3, and 4 the spray-head, which is threaded or otherwise suitably secured within the outer end of the tube 1 and provided with the central longitudinal bore or throat 5 into which the discharge end of the tube 2 projects. The rear end of the bore or throat 5 is of suitable size to receive the large portion of the tube 2 and to provide a space around the same for the passage of fluid from the outer tube 1 through the spray-head, and has its outer end portion reduced, as at 6, to receive the reduced end 3 of the tube 2 and provide a space therearound, as shown in Fig. 1.

For the purpose of accurately centering the nozzle 3 within the restricted portion 6 of the spray-head throat, such portion is further restricted at its inner end in polygonal or irregular form to provide a plurality of annularly spaced points of contact for the nozzle around the interior of the head, as shown in Figs. 1 and 6.

A simple method of accomplishing this consists in inserting a suitable tool 7 within the large end of the bore 5 and forcing it against the shoulder 8 therein to effect an inward upsetting of such shoulder, as shown at 9, said upsetting being restricted by a feat 10, which is substantially the same in diameter as the nozzle 3 of the tube 2 and projects centrally from the end of the tool. On the withdrawal of the tool 7, a tool 11, which has its end tapering to a point and preferably square or other polygonal shape in cross-section, is inserted into the large end of the throat and its tapered end forced within the upset portion 9 thereof to impart a shape thereto which is other than round, as shown in Fig. 5, whereby to provide a plurality of points of contact for the nozzle 3, which is intended to fit snugly therein.

The centering of the nozzle 3 within the spray-head throat in the manner shown has many advantages over the old method heretofore employed of centering the inner tube within the spray-head to the rear of the nozzle 3.

zle, as the nozzle is thereby prevented from lateral displacement in the restricted portion of the bore, the fluid has unrestricted admission to the spray-head throat from the outer tube 1, and the manufacturing and assembling of the parts is simplified.

I wish it understood that my invention is not limited to any specific construction or arrangement of parts except in so far as such limitations are specified in the claim.

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

In an atomizer, the combination with an outer tube, of an inner tube having its discharge-end reduced and projecting beyond the end of the outer tube to form a discharge

nozzle, a spray head connected to the outer extremity of the outer tube and having a central bore to receive the outer extremity of the inner tube, a squared shoulder provided in the bore of the spray head, and spaced projections integral with the shoulder, said projections receiving the reduced discharge extremity of the inner tube and supporting the same centrally of the outer tube.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

THOMAS A. DE VILBISS.

Witnesses:

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PURCELL SCHEIBER.