Nov. 13, 1945. H. H. HOBBS ET AL 2,389,053

SPRAY NOZZLE

Filed Aug. 28, 1943

FIG. 1

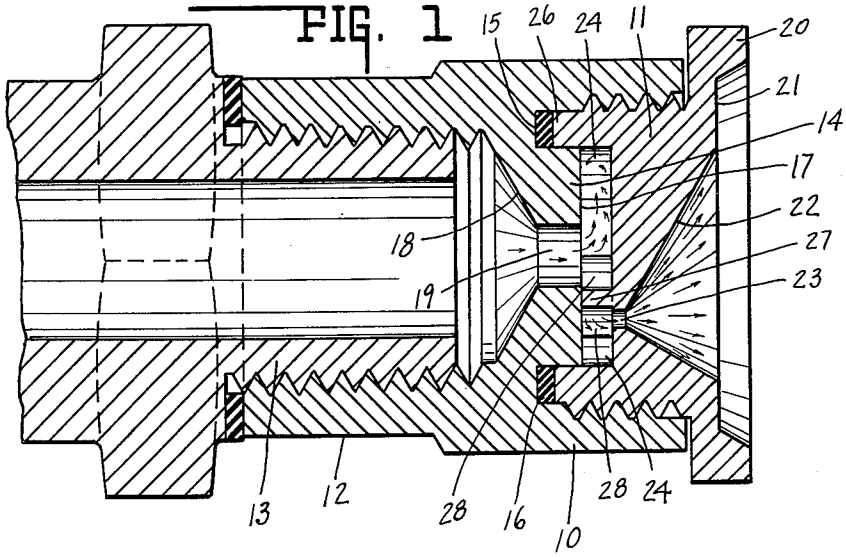


FIG. 2

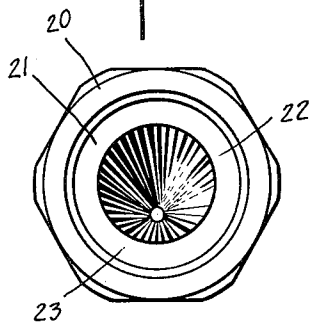


FIG. 3

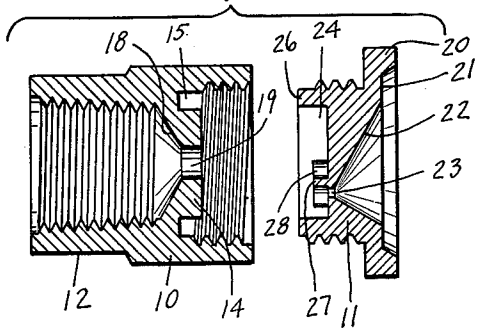


FIG. 4

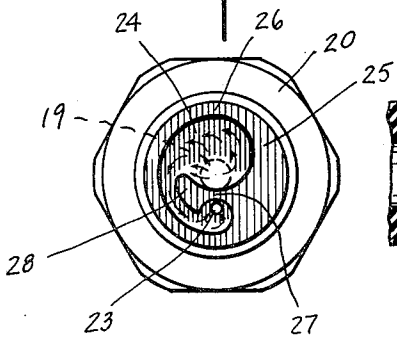
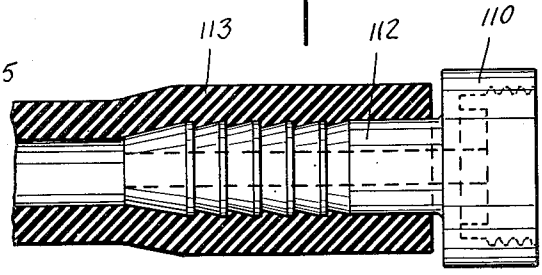


FIG. 5



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SPRAY NOZZLE

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Application August 28, 1943, Serial No. 500,324

1 Claim. (Cl. 299—114)

This invention pertains to a spray nozzle, particularly of the type to be used with spray pumps, bucket pumps, stirrup pumps or compressed air sprayers, such as are customarily equipped with hose and nozzle for discharge purposes.

The principal object of the invention is to provide a spray nozzle which lends itself to simplicity in manufacture and adaptability to plastic and die cast molding, and wherein its structure minimizes the likelihood of clogging, but in case of clogging may be conveniently cleaned. By reason of the construction as hereinafter more specifically set forth, only two members are employed to make up the nozzle, a body member and a cap member, as compared with the usual assembly of a substantially larger number of associated parts as heretofore employed. Thus, the invention comprises a two piece spray nozzle wherein the associated body and cap members are provided with an intermediate convolute passage by means of which the liquid is given a swirling motion followed by a swirling discharge from an eccentrically positioned spray orifice.

The full nature of the invention will be understood from the accompanying drawing and the following description and claim:

Fig. 1 is a central vertical section through the spray nozzle showing the associated members. Fig. 2 is a front plan view of the nozzle. Fig. 3 is the same as Fig. 1 showing the members separated. Fig. 4 is a rear plan view of the cap member. Fig. 5 is a side elevation showing a modified form of the body member.

In the drawing there is illustrated a spray nozzle comprising a body member 10 and a cap member 11. As illustrated, the body member is provided with internal screw threads for receiving the external screw threads of the cap member. The rear end of the body member terminates in a reduced shank portion 12 which is internally threaded for attachment to an externally threaded conduit 13 or valve control unit.

The body member 11 is formed with an annular head 14 protruding within the threaded portion and of reduced diameter to provide a sealing face 17 and an annular recess 15 for reception of a gasket ring 16. Said body member has its inner surface forwardly tapered at 18, terminating in a central discharge orifice 19 communicating with the interior thereof for providing the fluid passage therethrough.

The cap member 11 is formed with a flange 20 about its forward face, which flange is chamfered for receiving a wrench. Said forward face of the cap is recessed, as indicated at 21, said recess being provided with an eccentric funnel-shaped face 22 terminating in an eccentrically positioned spray orifice 23.

The rear portion of the cap member is shown in Figs. 3 and 4, and is provided with a convolute recess 24 formed within the body portion 25 surrounded by the extended flange portion 26. The inlet end of said recess 24 is positioned to communicate with the discharge orifice 19, and its outlet end with the spray orifice 23. The convolute form thereof is developed by an extension therein of the body portion in the form of a curved baffle comprising a reduced neck 27 terminating in a curved head 28.

When the cap member is screwed into the body member, they are so related that the extended flange portion 26 engages in the annular recess 15, having sealing engagement with the gasket 16. The face 17 of the body member engages the body portion 25 of the cap which surrounds the convolute recess, as well as the neck portion 27 and the head portion 28 thereof. The assembly of the two members is such that the orifice 19 communicates with the convolute recess 24 centrally of the cap and as indicated by dotted lines in Fig. 4. Thus, the liquid forced under pressure through the nozzle is caused to travel about the outer wall of said recess past the head 28, finally reaching the restricted spray orifice 23, at which orifice the rotary or swirling motion will have been induced and transmitted therethrough.

Further, for the purpose of illustration, the body member 110 of Fig. 5 may be provided with a peripherally toothed shank 112 for direct insertion in a hose 113.

The invention claimed is:

A two piece spray nozzle comprising a body member provided with an axially disposed liquid discharge orifice and having a protruding portion surrounding said orifice formed with a sealing surface, a cap member adapted to screw into said body member, said cap member having an integrally formed curved baffle on the inner surface thereof adjacent the body member to provide a substantially convolute recess, said baffle being in sealing engagement with the protruding sealing surface of said body member, said recess communicating with a restricted spray orifice in said cap member positioned off center and offset from said discharge orifice, said discharge orifice being in communication with one end of said recess and said spray orifice being in communication with the other end thereof, and an outwardly protruding peripheral flange extending about said cap concentric with said discharge orifice and eccentric with respect to said spray orifice, said orifices and integral baffle being so related as to develop a swirling motion to the discharged liquid.

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