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DISPENSERS OF THE SQUEEZE BOTTLE TYPE

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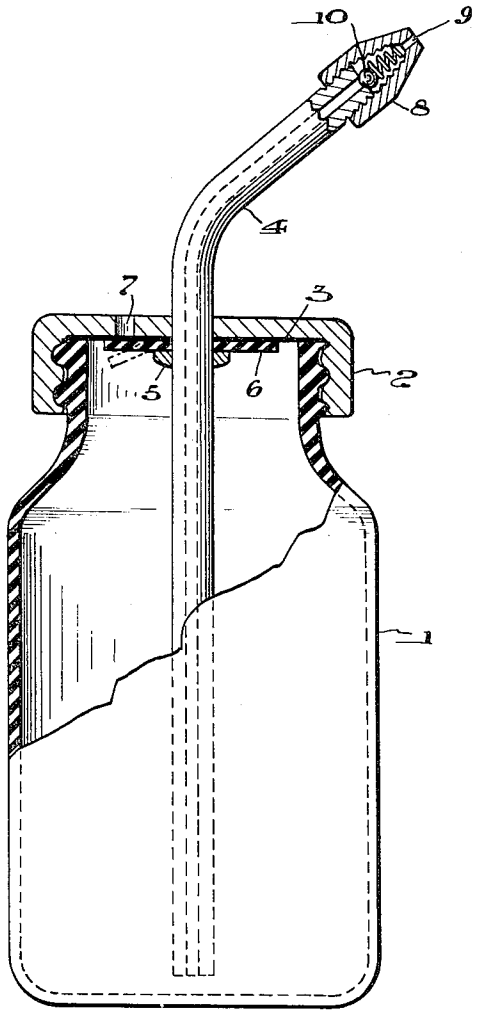

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DISPENSERS OF THE SQUEEZE BOTTLE TYPE

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2 Claims. (Cl. 299—90)

My invention relates to dispensing devices, and more particularly to those of the squeeze-bottle type having a spray head or other discharge nozzle.

My invention has for its object the provision of a device that comprises a container of the squeeze-bottle type, which is of resilient material and is provided with a simplified arrangement of check valves that repectively open inwardly and outwardly, whereby, there will be no backflow through the tube that leads to the discharge nozzle, upon expansion of the container to its normal shape when squeezing pressure is removed. The discharge tube, therefore, is alway approximately filled with liquid, for instant discharge.

The single figure of the drawing is a partial sectional and side elevational view.

The container is here shown in the form of a bottle or jar 1 of live rubber or other resilient material such as one of the plastics, so that after squeezing thereof by the hand of the user, it will expand to its normal shape, to draw in a charge of air. A cap 2 has snug-fitting engagement with the container, a packing gasket 3 being provided, if necessary, to serve as an air seal.

A discharge tube 4 has tight-fitting engagement with the cap and with a washer 5 that holds a flexible disc 6 snugly against the inner surface of the cap, so that the disc will serve as an inwardly-opening check valve for an inlet hole 7 in the cap.

A nozzle 8 is mounted on the outer end of the discharge tube 4 and has a spray opening or other suitable discharge orifice 9. An outwardly-opening check valve

10 is provided in the head 8, to permit discharge of fluid but preventing back flow into the tube 4.

It will be seen that when the bottle is compressed, pressure will be created therein to effect discharge of liquid through the tube 4 and the nozzle 7. The arrangement is advantageous, because at no time after the device is first put into use will there be any substantial quantity of air in the tube 4, with the result that there will be instant discharge upon squeezing of the bottle and a particular extent of compression of the bottle will result in a substantial predetermined amount of discharge.

I claim as my invention:

1. A dispensing device, comprising a container of resilient material, having a tight-fitting cap of relatively rigid material that has an inlet hole, a discharge tube that extends through the cap, from a point within the container to a point exteriorly thereof and has tight fit therewith, a resiliently-flexible disc, a relatively narrow friction washer that holds the disc flatly against the inner surface of the cap, the disc thus normally covering the hole, a spray nozzle on the outer end of the tube, and an outwardly-opening check valve adjacent to the outer end of the tube, that prevents back flow through the spray head, the disc serving as an inwardly-opening check valve.

2. A dispensing device, comprising a container of resilient material, having a tight-fitting cap of relatively rigid material that has an inlet hole, a discharge tube that extends through the cap, from a point within the container to a point exteriorly thereof and has tight fit therewith, a resiliently-flexible disc fitting against the inner face of the cap, a retaining washer having tight frictional engagement with the tube and holding the disc against the cover, at areas spaced from the said hole, a spray nozzle on the outer end of the tube, and an outwardly-opening check valve adjacent to the outer end of the tube, that prevents back flow through the spray head, the disc serving as an inwardly-opening check valve.

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