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NONREFILLABLE BOTTLE

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2 Claims. (Cl. 215—22)

This invention relates to non-refillable bottles and the object is to provide an improved bottle of this class in which the parts relied upon to prevent refilling are designed and assembled in a simple, practical and economical manner.

The manner in which the foregoing and other objects are attained will appear from the following detailed description taken in connection with the accompanying drawing, in which—

Fig. 1 is a view partly in vertical section and partly in side elevation of a bottle constructed in accordance with my invention.

Fig. 2 is a view in vertical section illustrating the positions assumed by the refill-preventing parts when the bottle is inverted.

Fig. 3 is a top plan view of a baffle member and, Fig. 4 is a bottom plan view of the member appearing in Fig. 3.

As shown in the drawing, a valve seat member 5 is clamped between the bottle neck 6 and a casing 7 by means of a screw threaded clamping ring 8. Said seat member comprises a circular disk of suitable material provided with a tapering opening 9 for the reception of a tapered plug valve 10. In the upright position of the bottle a relatively heavy ball 11 serves to hold the valve 10 in a seated position closing the opening 9. This ball is movable in the casing 7 between the seat member 5 and a combined baffle and ball-seat member 12. The member 12 is a loose sliding fit in the casing 7 between the ball 11 and the top casing wall 13, which is provided with a neck opening 14 adapted to receive a stopper 14a. Said member 12 comprises a disk 15 which carries a dished ball-seat member 16 provided with an outwardly directed marginal flange 17. The disk 15 and the flange 17 are provided with non-registering peripheral notches 18 and 19 through which the liquid content of the bottle is permitted to flow to and through the neck 14 when the bottle is inverted so that the parts assume the position shown in Fig. 2. In the inverted position of the bottle the ball 11 drops into the concave seat afforded by the dished seat-member 16 so that the valve 10 gravitates to the open position shown in Fig. 2. The lugs 20 on the disk 15 serve as spacers for reserving sufficient clearance between the disk and the end wall 13 of the casing to allow free flow of liquid from the opening 18 to the neck 14. A ball indicated by dotted lines in Fig. 1 is preferably arranged in the body portion of the bottle so that, in the inverted position of the bottle, this ball will strike the inner or smaller end of the valve 10 to ensure opening of the valve in case there is any tendency for it

to stick in the seat opening 9. It is only when the bottle is fully inverted, so that the ball 11 drops into the concave seat member 16, that the valve 10 is movable to its open position. In any other position of the bottle the ball 11 is a close fit between the valve 10 and the inner edge of the flange 17 so that the valve is held seated.

The foregoing construction provides an efficient and economical refill-preventing attachment comprising parts which are designed so that they may be conveniently assembled. During such assembly the seat member 5 is first placed on the neck 6 and the valve 10 dropped into the opening 9. The member 12 and the ball 11 are then placed in the casing 7 and the latter clamped to the seat member 5 by means of the clamping ring 8.

Having thus described what I now consider to be the preferred embodiment of my invention, it will be understood that minor changes may be resorted to within the scope and spirit of the appended claims.

Having thus described my invention, what I claim is:—

1. A non-refillable bottle comprising a body portion and a neck portion, the latter presenting an outer end wall provided with a relatively small central outlet, a valve seat member in the neck portion provided with a tapering valve seat opening, a tapering valve plug fitted in said opening, a ball in said neck normally resting on the valve to hold it in a position closing said valve seat opening, a peripherally notched disk slidably fitted in said neck portion, spacer projections on the outer side of said disk engageable with the end wall of the neck portion to maintain flow clearance between said disk and wall, a dished ball seat member centrally secured to the inner side of said disk and presenting a spherically curved ball receiving cavity in which the ball drops to permit opening of the valve when the bottle is inverted, said seat member being provided with an outwardly directed, notched flange lying below and parallel with said disk, said flange being of the same diameter as the disk, the notched portions of the disk and flange being disposed out of alignment with each other.

2. A non-refillable bottle as set forth in claim 1 in which the spacer projections on the outer side of the disk are separated from each other by intervening spacers and in which the notched portions of the disk are located intermediate said spacers and opposite said projections.

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