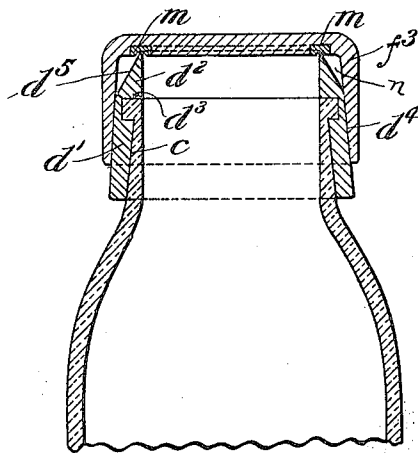


F. GRANT.
MILK BOTTLE.

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1,384,129.

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WITNESSES:

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MILK-BOTTLE.

1,384,129.

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To all whom it may concern:

Be it known that I, FRANK GRANT, a citizen of the United States of America, and resident of Westfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Milk-Bottles, of which the following is a full, clear, and exact description.

This invention relates to a closure for the mouth of a milk or cream bottle, having for its object the provision of means whereby the bottle may be readily and quickly filled, and as readily discharged of part or all of its contents; the closure at all times being retained as an adjunct of the bottle for replacement after removal, and to be returned, as one with the bottle, to the dairy for the refilling of the receptacle.

The improved milk bottle is described and the advantages thereof rendered apparent in conjunction with the accompanying drawings, and the appended claims particularly define the invention.

In the drawings the figure is a sectional view vertically and centrally through the bottle and its closure.

Referring to the drawing, the mouth portion of the bottle at its upper end is made with an outwardly projecting annular bead or flange *a* forming a shoulder *b* at its under side, and below such shoulder the bottle neck *c* is preferably upwardly tapered.

Below the said shoulder a collar *d* is provided, the same being of a non-vitreous material, and presents by its outer surface an upwardly tapered formation, and such surface is of as great or slightly greater prominence, diametrically than the periphery of the flange *a*.

f represents a cap including a flange *f*² which is internally tapered more or less nearly corresponding to the taper of the collar *d* and for a binding frictional engagement about the latter.

Said cap *f* has a central opening in its top surrounded by an externally tapered upstanding annular flange or spout *h*; and *i* represents a supplemental cap having the depending rim portion *i*² formed internally downwardly flaring to more or less nearly correspond to the taper of the part *h*, and to be frictionally engaged therewith or bound thereon.

The said collar may be composed of hard rubber, fiber or other non-vitreous material suitable for the purpose, applied about the

neck under, and to be retained by the shoulder *b* in a plastic condition and caused or allowed to harden, or it may be a band of elastic rubber stretched over the flange *a* and allowed to retract to hug the bottle neck under the shoulder and to partake of the tapered shape by reason of its conformation to the upward convergence of the bottle neck *c*.

When the bottle is to be filled, or cleansed the main cap *f* is removed, and the bottle when sent to the customer is closed by the main cap, and the spout of the latter is closed by the supplemental cap *i*.

The user of the contents of the bottle will generally only remove the supplemental cap, pouring through the spout, or flange surrounding central opening in the main cap; and unused portions of the milk, etc., may be protected from deterioration by the replacement of the cap *i*. Of course for quick emptying of all of the contents of the bottle the main cap *f* and the supplemental cap *i* as one therewith may be removed.

In the drawing a collar *d*¹ surrounding the mouth portion of the bottle is formed step shaped, that is it is made with a portion *d*² extending upwardly above the bottle mouth, having the shoulder *d*³ to rest on the mouth edge, and having the inner wall of the extension *d*² continuous with the surface of the bottle within its neck. The outer surface of the collar at its portion surrounding the bottle mouth has the slightly tapered formation as shown at *d*¹ while the extension has its outside more abruptly beveled as represented at *d*³ converging to the inner surface of the extension to form a sharp pouring edge.

The closure for the so formed bottle may be a single cap *f*³ having the internal surface of its rim or depending flange slightly tapered for the frictional binding engagement with the correspondingly tapered outer surface *d*⁴ of the collar.

The cap may close onto the sharp pouring edge formed by the upper extremity of the extension, preventing in case the bottle is laid on its side, the liquid from flowing around over the outer beveled surface *d*⁵ of the extension and thence to run down the side of the bottle when the cap is removed.

The cap may be as provided inside of its top with an elastic packing ring *m* embedded in an annular groove therefor. The packing ring *m* engages the beveled or sharp

edge of the extension d^2 , whereby said edge will press into the yielding packing ring, as shown in Fig. 2, and form a perfect seal. Between the beveled face d^5 , there is an annular air space n ; when the filled bottle is placed in cold storage the air in this space contracts, thus forming a partial vacuum on one side of the sealing connection between the spout extension and the cap. This arrangement tends to promote adhesion of the top of the cap to the top of the bottle, and to hold the cap snugly sealed on the downwardly widened tapered collar d^1 .

The means for the stoppering of the bottles made as above described and shown is such that the bottles may be laid on their sides in a refrigerator or hamper without liability of leakage to the exterior of the receptacles or of any part of their closures.

I claim:—

1. A bottle closure consisting of a bottle having a neck provided with an external shoulder, a plastic collar molded on the neck and having an extension fitting over the shoulder, said extension having a beveled outer surface providing a sharp terminal edge for said collar, the outer surface of said collar being tapered, the narrower end of said tapered collar being uppermost, a cap having a pendant flange adapted to snugly fit the tapered outer surface of said

collar, the top of said cap having a circular groove registering with the sharp terminal edge of said collar, and a yielding packing ring disposed in said groove and adapted to be compressed by said sharp terminal edge, the cap extending below and inclosing said shoulder and being frictionally held in place.

2. A bottle closure comprising a bottle having a relatively sharp edge extending from the neck thereof, a cap having a pendant flange adapted to embrace the edge and neck and provided with a circular groove in its top portion, and a yielding packing ring in said groove to engage the sharp edge of said neck, the upper portion of the neck being externally beveled, whereby an air space is provided between said beveled neck portion and the pendant flange of the cap, adapted to permit of a partial vacuum against the joint formed by said sharp edge and the gasket, the cap extending below and inclosing said shoulder and being frictionally held in place.

Signed by me at Springfield, Mass., in presence of two subscribing witnesses.

FRANK GRANT.

Witnesses:

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