April 4, 1967 J. L. ROONEY 3,312,376

DISPENSING CONTAINER WITH A VENTING WASHER

Filed July 2, 1965

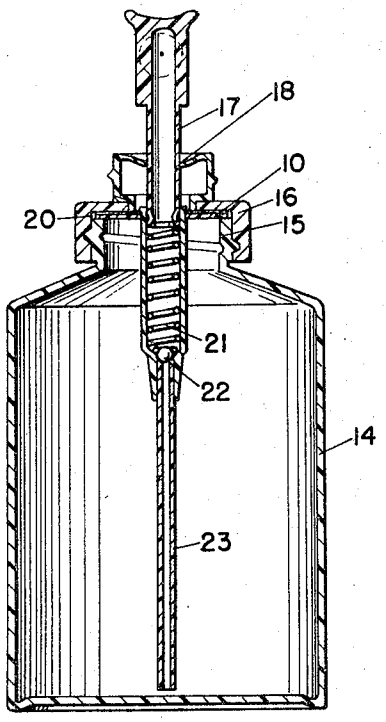

FIG. 1

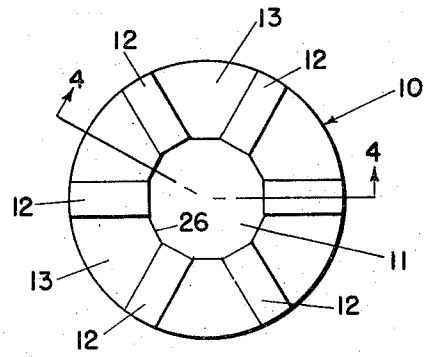

FIG. 3

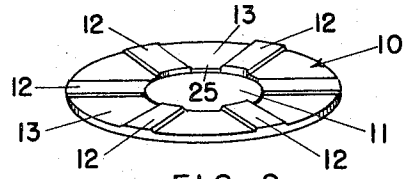

FIG. 2

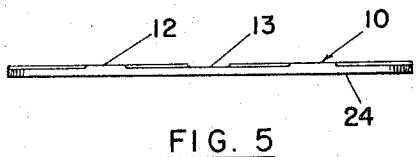

FIG. 5

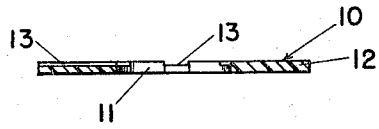

FIG. 4

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DISPENSING CONTAINER WITH A VENTING WASHER

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5 Claims. (Cl. 222—320)

This invention relates to containers and, more particularly, to breather washers in combination with containers.

In various types of dispensing bottles and "squeeze" type bottles, it is desirable to provide a washer which will allow air to breathe into the bottle after the bottle has been squeezed and to replace the liquid that is dispensed therefrom.

It is, accordingly, an object of the invention to provide an improved breather washer.

Another object of the invention is to provide a breather washer which is simple in construction, economical to manufacture, and simple and efficient to use.

Another object of the invention is to provide an improved combination dispensing bottle and breather washer.

With the above and other objects in view, the present invention consists of the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawing and more particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportions, and minor details of construction without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing:

FIG. 1 is a longitudinal cross sectional view of the bottle and washer combination according to the invention;

FIG. 2 is an isometric view of a washer according to the invention;

FIG. 3 is a top view of the washer shown in FIG. 2;

FIG. 4 is a cross sectional view taken on line 4—4 of FIG. 3 of the washer to a slightly larger scale than FIG. 1; and

FIG. 5 is a side view of the washer.

Now with more particular reference to the drawings, the container **14** is shown having a threaded neck **15** which receives the internally threaded cap **16**. The cap has the dispensing pump which is of a conventional type having the plunger **17**, internal spring **21**, and check valve **22**, with the tube **23** extending down into the container. The cap is made of resilient material and has a flat inside surface.

The upper end of the neck terminates in a flat shoulder which rests against the flat under surface **24** of the breather washer **10**. The breather washer is of slightly lesser diameter than the internal diameter of the cap, and therefore provides an annular space **20** between the outer periphery of the washer and the inner periphery of the cap. The underside of the cap rests on the flat surfaces defined by ribs **12**.

The washer is a generally annular member having a hole or center opening **11** and a flat under surface **24**. The upper surface of the washer has the circumferentially spaced radially extending ribs **12**. The ribs **12** are

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approximately half the thickness of the washer itself; that is, the ribs are approximately one-third of the overall thickness of the washer and ribs. The spaces between the ribs of the washer indicated at **25** at the ends thereof adjacent the center opening **11** are approximately equal to the width of the ribs themselves. The ribs **12** terminate in at least 6 flat ends that define the opening. The ribs **12** have flat top surfaces as indicated and the space between the ribs indicated at **13** is likewise flat. The plunger **17** extends down through the central opening **18** in the cap and through the center opening **11** in the center of the washer into the container **14**. The center opening **11**, which is located in the center of the washer **10**, is defined by the flat edges **26** which insure a tight grip on the plunger **17**.

The purpose of the breather washer is to draw air back into the container when light pressure is exerted therein but to seal against leakage when the pressure is increased. This washer is primarily used in squeeze spray bottles to let them return to shape after they have been squeezed.

The washer may be made of a material having the properties of polyethylene or suitable molded plastic or rubber.

The foregoing specification sets forth the invention in its preferred practical forms but the structure shown is capable of modification within a range of equivalents without departing from the invention which is to be understood is broadly novel as is commensurate with the appended claims.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A breather washer comprising an annular member having a non-circular hole at the center thereof,
one side of said washer being flat,
the side of said washer opposite said flat side having circumferentially spaced radially extending ribs,
said ribs having generally parallel edges and being wide relative to their thickness and having flat top surfaces.

2. The washer recited in claim **1** wherein
said washer is approximately twice the thickness of said ribs.

3. The washer recited in claim **1** wherein
said washer is made of a material having the properties of polyethylene.

4. A dispensing container comprising a bottle and a dispensing means on said bottle, said container having an open end terminating in a shoulder, a venting washer resting on said shoulder,
said washer having a flat surface resting on said shoulder and a hole defined by at least six flat surfaces in the center of said washer,
circumferentially spaced radially extending ribs on said washer on the side thereof remote from said flat side,
said ribs each having a flat side remote from said washer,
said ribs extending from said hole to the outer periphery of said washer,
said ribs having a width substantially equal to the space therebetween at the ends thereof adjacent said hole,
and a cap on said container,

said cap having a flat inside surface resting on said ribs, the outside diameter of said washer being slightly less than the inside diameter of said cap whereby a space is defined between the outside periphery of said washer and the inside periphery of said cap, said cap being made of a relatively resilient material.

5. The dispensing container recited in claim 4 wherein said dispensing means comprises a stem extending through said cap and through said hole in said washer,

and said flat sides defining said hole grip said dispensing means.

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