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E. I. VÉREL

2,583,162

STOPPER FOR CONTAINERS

Filed July 27, 1950

FIG. 1.

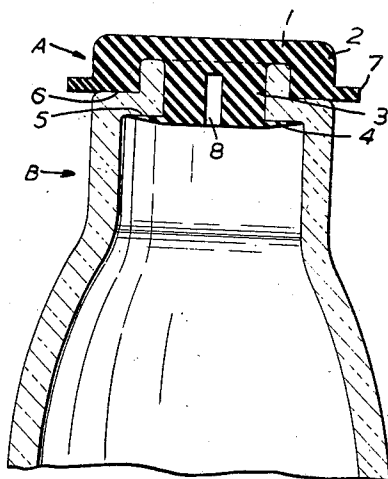


FIG. 2.

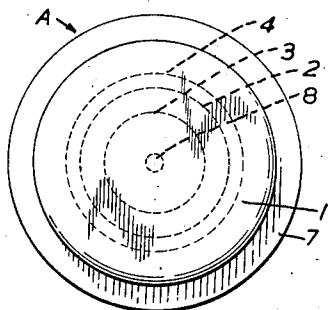


FIG. 3.

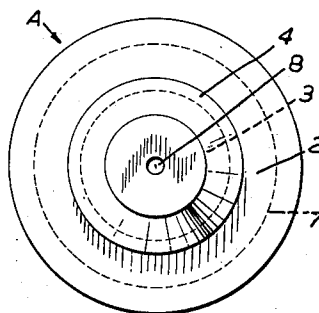


FIG. 4.

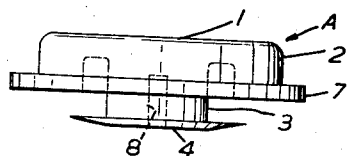
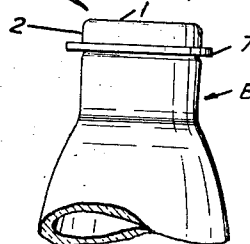


FIG. 5.



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STOPPER FOR CONTAINERS

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3 Claims. (Cl. 215-47)

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This invention relates to stoppers for containers.

An object of the invention is to provide a stopper for a container, especially a container for gaseous liquids such as aerated waters, in which the pressure of the gas assists in maintaining the stopper firmly in position.

An embodiment of the invention will now be described, by way of example, with reference to the accompanying drawing, in which:

Fig. 1 is a fragmentary vertical section of a stopper in accordance with the invention, and inserted in the neck of a container.

Fig. 2 is a plan view of the stopper,

Fig. 3 is an inverted plan view of the stopper,

Fig. 4 is a side elevation of the stopper, and

Fig. 5 is a side view of the stopper inserted in a bottle neck.

Referring to the drawing, the stopper A is made of rubber or other suitable resilient material, and consists of a crown portion 1, a skirt portion 2, a body portion 3 and a peripheral flange portion 4, all of said portions being formed as an integral unit. The body 3 extends below the skirt 2 and the flange 4 which is relatively thin extends outwards so that it lies partially below wall of the skirt 2. The projecting area of the flange 4 is equal to the gross area of the plug body 3 so that when pressure conditions exist within the container, equal forces act on the body 3 and on the flange 4.

The neck of the container B is stepped inwards at right angles and then upwards so as to form the inner and outer flat surfaces at 5 and 6. When the stopper is inserted in the neck, the flange 4 engages the flat 5 and is pushed tightly against same by the gas pressure within the container, while the base of the flange rests firmly on the flat 6. The upwardly stepped portion of the neck, of course, fills the annular space between the body 3 and skirt 2. The outer peripheral surface of the head and skirt of the stopper is aligned with the outer surface of the container B as shown in Fig. 1, and an outwardly projecting peripheral bead 7 is provided integral with the skirt 2 so that the stopper may be more firmly gripped or levered for withdrawal. The body 3 has an axial aperture 8 which facilitates insertion of the body and flange 4 into the bottle neck.

The relative thinness and flexibility of the flange 4 permits easy insertion and, when inserted, allows it to be forced firmly against the flat 5 by the gas pressure within the container, so that the stopper tightly seals the container

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neck. The stopper can be withdrawn by pulling or pushing the bead 7 upwards, and the lower surface of the flange 4 is tapered upwards and outwards so as to increase the flexibility of the flange.

It will be understood that the distance between the flange 4 and the base of the skirt 2 is substantially equal to the thickness of the container between the flats 5 and 6, so that the stepped portion of the neck is firmly gripped.

The container may be a bottle, jar or metal can, and in order to prevent unauthorised removal of the stopper from a filled container, an external seal may be applied in any convenient manner.

It will be noted that the contacting surface areas of the flange 4 and the flat 5 are relatively large so that an effective gripping or pressure surface is provided.

I claim:

1. A stopper for a container, made as an integral unit from resilient material and comprising a plug-like body, a laterally extending crown thereon having a peripheral skirt surrounding a portion of the length of the body and laterally spaced therefrom, and at the end of the body remote from the crown a laterally projecting flexible peripheral flange, the projecting area of said flange being at least substantially equal to the area of the end of the main plug body remote from the crown.

2. A stopper according to claim 1 in which the lower surface of the flange is tapered outwards and upwards so that the flexibility of the flange and the ease of insertion of the stopper into the container are increased.

3. In combination, a container for gaseous liquids and a stopper therefor, the container having a neck which is stepped inwardly substantially normally to the neck axis and upwardly substantially parallel to the neck axis, and the stopper being made as an integral unit from resilient material and comprising a plug-like body, a laterally extending crown thereon having a peripheral skirt surrounding a portion of the length of the body and laterally spaced therefrom by an annular recess, and at the end of the body remote from the crown a laterally projecting flexible peripheral flange, the projecting area of said flange being at least substantially equal to the area of the end of the main plug body remote from the crown, the arrangement being such that when the stopper is inserted into the neck of the container the body plugs the neck, the said flange engages the inner surface of the inwardly

stepped portion of the neck, the upwardly stepped portion fits into said annular recess in the stopper, and the base of the skirt engages on top of the said inwardly stepped portion of the neck so that the stopper tightly seals the the container and when conditions of pressure exist within the container the fluid pressure forces the flange tightly against the inward step.

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