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P. RISS ET AL

3,454,181

COMBINATION CLOSURE AND SEAL

Filed July 1, 1968

FIG 1

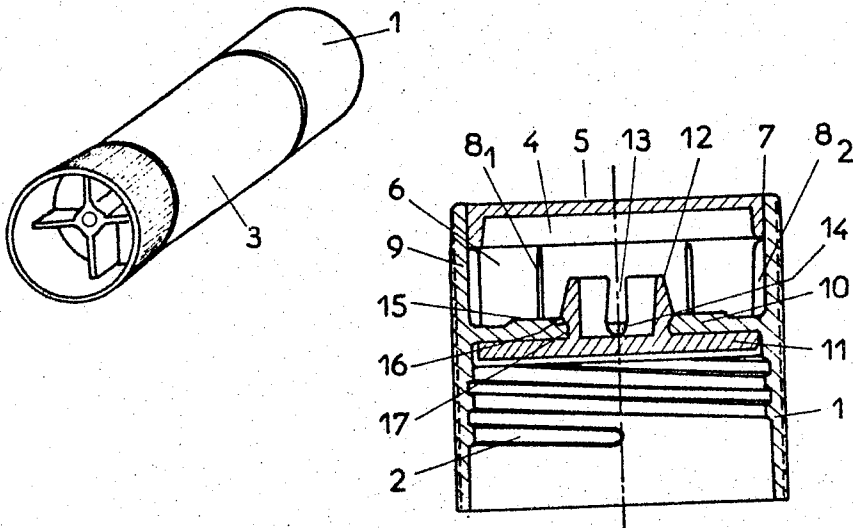


FIG 2

FIG 4

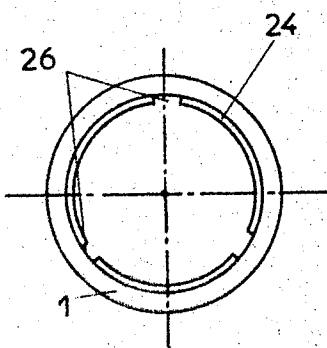
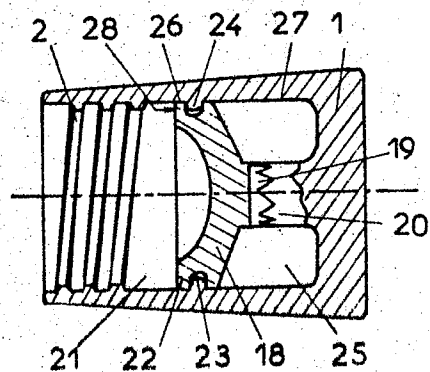


FIG 3



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COMBINATION CLOSURE AND SEAL

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U.S. Cl. 220—39

10 Claims

ABSTRACT OF THE DISCLOSURE

The disclosure concerns a cap for a stick container, said cap comprising a body having an inner thread at one end thereof for screwing onto a stick container, a recessed flange at the other end of said body, ribs in said body permitting penetration of said flange in said body, a lid in said body spaced from said flange, a fluidtight joint carried by said lid, said joint having an annular small collar passing through an opening in said lid, means associated with said joint for preventing rotation therewith during rotation of said cap.

Containers in particular containers made of synthetic material such as plastics materials and called "stick containers" comprise a casing in which an advancing screw in the center is operated outside the base by a rotatable button and the closing at the other end is achieved by a cap.

These containers are of widespread use and require a certain number of properties. The products, contained in these containers, consist partly of volatile substances. In order that the contents do not deteriorate, the containers must be perfectly fluidtight. Moreover, said containers must be of very simple operation, of an attractive appearance and be able to be manufactured in a large series at a very low cost price.

Known containers, although quite widespread, do not simultaneously fulfill the various requirements. The cap is not fluidtight, which accelerates the volatilisation of the contents and forces the consumer to frequently renew the product. Because of this the seller can only stock small quantities of products which increases the selling price of the product containing the containers. To avoid this disadvantage, there is disposed a joint between the product containing the casing and the bottom of the cap. However during unscrewing the joint adhered to the contents which bothered the user.

The invention proposes to provide an improved stick container comprising in its upper part the fluidtight cap which prevents all contact between a product composed partly of substances which are volatile and the ambient air will make possible a large scale manufacturer at low cost price.

For this purpose, the invention is concerned with a cap for stick containers made of synthetic material, characterized in that it comprises fluidtight means combined with support means and driving means to ensure fluidtightness between the casing of the container and the cap.

The invention will be better understood by referring to the following description made by way of non-limiting example and to the accompanying drawings in which:

FIGURE 1 is a perspective view of a casing comprising a fluidtight cap according to the invention;

FIGURE 2 is a cross-sectional view of a fluidtight cap according to one embodiment;

FIGURE 3 is a cross-sectional view of a fluidtight cap according to another embodiment;

FIGURE 4 shows a device for evacuating air captive in the cap.

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Reference is made to FIGURES 1 and 2. Cap 1 includes a body provided at one end with an inner thread. The inner thread 2 corresponds to an outer thread made at the upper end of casing 3. A flange 4 is recessed on cap 1. This flange 4 has on its outer side 5, integrally made therewith by molding, raised or inlaid inscriptions, these being possibly publicity text, how to use instructions or any other inscription. Penetration of flange 4 in housing 6 made in the upper part 7 of cap 1 is limited by inner ribs 8₁, 8₂ positioned along the inner periphery 9 of cap 1. Fastening of said flange 4 can take place by setting, welding, gluing or by any other means.

The lid 10 of cap 1 carries a fluidtight joint 11 which is compressed when the cap is completely screwed onto casing 3. This joint 11 has an annular small collar 12. There is made in said small collar 12 one or several transverse incisions 13. These transversal incisions 13 serve as a housing for one or several braces 14 made in the central opening of rib 10. There is given to the upper end of small collar 12 a truncated shape which allows encasing joint 11 in rib 10. On the upper side 15 of lid 10 rests the side 16 of shoulder 17 made at the lower end of small collar 12. This shoulder 17 forms a stop and prevents all dissociation between cap 1 and joint 11.

Additionally, brace 14 has for its purpose, on the one hand, to prevent that the two lips of small collar 12 fold upon one another and that as a result joint 11 escapes from its housing and on the other hand, to rotate joint 11 during screwing and unscrewing of cap 1. As a result, joint 11 adhering to the material contained in casing 3 leaves it by itself.

According to another embodiment, cap 1 has a special joint 18 provided with saw teeth 19 along a circumference and interfitted with other saw teeth 20 integral with said cap 1. By this device, the assembly operation is simplified, in effect, it suffices to force joint 18 into housing 21 in order that joint 18 literally puts itself in place and be mobilised in rotation and hence be unable to adhere to the material when the cap 1 is unscrewed.

The lateral surface 22 comprising a groove 23 holds a rib 24 of cap 1.

Nevertheless during assembly a certain quantity of air can remain in cavity 25. There are provided for this purpose leak openings 26 in the rib 24 (see FIGURE 4).

As previously said, the introduction of the special joint 18 is effected by force-fitting. The special joint 18 as shown by FIGURE 3 can be curved. It has a certain elasticity and hence the metal surface of said joint 18 is applied against the inner wall 27 of cap 1.

When cap 1 is screwed on casing 3, the lips of said casing 3 come into contact with the inner periphery 28 of joint 18 and by pushing more or less this part of the joint thus provides fluidtightness.

Although the invention has been described with respect to one particular embodiment thereof, it is understood that the same is in no way limited thereto and that there can be brought to it various modifications of form and materials without thereby departing from the framework and scope of the invention.

What is claimed is:

1. A cap for a stick container, said cap comprising a body having an inner thread at one end thereof for screwing onto a stick container, a recessed flange at the other end of said body, ribs in said body permitting penetration of said flange in said body, a lid in said body spaced from said flange, a fluidtight joint carried by said lid, said joint having an annular small collar passing through an opening in said lid, means associated with said joint for preventing rotation therewith during rotation of said cap.

2. Cap according to claim 1, wherein said annular small collar has at least one transversal incision.

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3. Cap according to claim 1, wherein said annular small collar has a truncated shape.

4. Cap according to claim 1, wherein said small collar has an annular recess at its lower end forming a stop notch.

5. Cap according to claim 1, wherein said joint is flat.

6. Cap according to claim 1, wherein said joint is curved.

7. Cap according to claim 1, wherein said joint has at the upper part thereof a plurality of saw tooth.

8. Cap according to claim 1, wherein said joint has along its outer periphery a circular groove.

9. Cap according to claim 1, having in the inner wall thereof a circular rib in which fits a circular groove made in the periphery of said joint.

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10. Cap according to claim 9, wherein said rib has openings for evacuating air imprisoned in the upper part of said cap during assembly of said joint.

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GEORGE T. HALL, *Primary Examiner*.

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