June 2, 1942. L. PERNU 2,285,227

CLOSURE FOR CONTAINERS

Filed Nov. 4, 1941

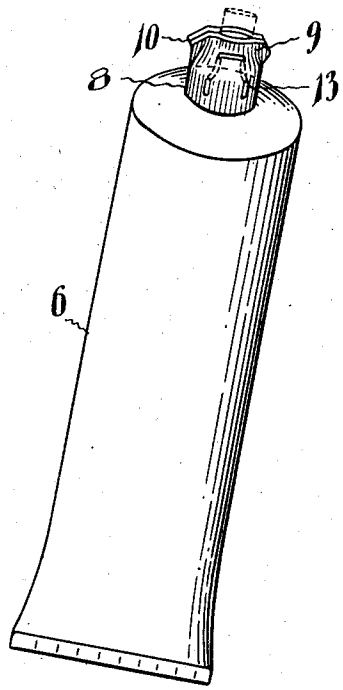


Fig. 1.

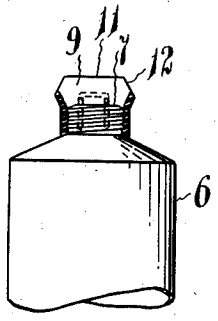


Fig. 2.

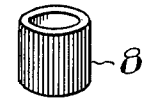


Fig. 3.

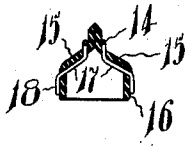


Fig. 4.



Fig. 5.

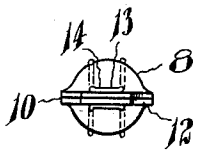


Fig. 6.

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CLOSURE FOR CONTAINERS

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Application November 4, 1941, Serial No. 417,762

1 Claim. (Cl. 221—60)

My invention relates to improvements in closures for containers of the collapsible type commonly used for holding tooth paste and other semi-liquid products.

In particular, the invention concerns a closure for dispensing a ribbon of paste by compression of the container, so that a quantity will be discharged sufficient for immediate use without permitting the contents of the container or tube to dry up. The closure provides a device which when applied to a container enables a paste-like substance to be conveniently dispensed from time to time as occasion requires, and is intended to be substituted for the ordinary screw cap.

The invention essentially consists of a member of rubber or other suitable material adapted to be applied to the neck of a container and having an orifice formed of a pair of lips which are normally constrained to a closed position by restraining means preferably in the form of staples so arranged as to cause the lips to be pressed together to compose an air-tight juncture, which will open under pressure of the paste attendant upon the squeezing of the container.

The closure is highly serviceable and comparatively inexpensive to manufacture. It is particularly useful for tooth paste as it saves having to remove the ordinary cap every time one wants to clean his teeth, and occasionally this cap is misplaced or lost which results in the drying up of the paste.

The drawing illustrates a practical embodiment of the invention, in which

Fig. 1 depicts the closure fitted to a collapsible tube.

Fig. 2 is a fragmentary view of the container showing the closure in section.

Fig. 3 is a perspective view of the cylindrical body of the closure as it appears before the orifice is formed and retained by the restraining devices.

Fig. 4 is an axial section of the completed closure depicting the manner in which the restraining devices hold the lips in sealing relation.

Fig. 5 is a perspective detail of one of the restraining devices.

Fig. 6 is a front elevation of the closure.

Like numerals of reference denote similar parts in each figure of the drawing.

In the drawing, a conventional collapsible container, or tube as it is more commonly called, is generally indicated by the reference numeral **6** and the neck by the reference numeral **7**. The neck is, of course, threaded externally to receive an ordinary screw cap which is discarded in the use of my closure.

In carrying out my invention I find it most expedient to fashion the body **8** from a piece of rubber tubing such as is shown in Fig. 3. The tubular body is of a diameter to sleeve tightly over the threaded neck of the container so that it will be self-retaining. By cutting the body from a length of tubing having a smooth bore of a slightly smaller size than the outside diameter of the neck, I do not find it necessary to provide threads to mate with those on the neck in order to secure the closure to the container. By employing a body **8** having a wall of sufficient thickness, the resiliency is adequate to provide a firm, air-tight seal with the neck. However, it is conceivable that threads might be incorporated in the body for attachment purposes and these might be formed as a part of the rubber body or on the other hand they could be furnished by a separate ring of other material inserted in the body. Such modifications will readily suggest themselves to those skilled in the art, and I do not limit myself to these details of construction nor to a resilient body, since it may be ascertained that a material having the property of flexibility only would answer satisfactorily.

The body **8** is of a length to project beyond the distal end of the neck **7** to provide a pair of lips **9** which are formed by slitting the walls inwardly of the front or forward part at diametrically opposite sides and urging together the slitted portions. The slits are indicated at **10** and serve to enable the lips thus produced to come together evenly throughout their width, which is an important feature in producing an effective sealing juncture or orifice. The frontal edges **11** of the lips are desirably beveled, as shown in Fig. 4, and extend at right angles to the axis of the body. The ends of the lips preferably recede at an angle, as indicated at **12**, at the slitted portion of the body in order to secure maximum efficiency of operation.

The restraining devices **13**, best shown in Fig. 5, employed to retain the lips in their closed formation, comprise a pair of U-shaped metal members oppositely disposed at the sides of the lips. Each of these members is applied as follows: The bight **14** overlies the outer face of a lip at the inmost extent thereof where the wall portion **15** slopes backwardly to the annular wall portion **16** that encircles the neck **7** of the container. The legs are inserted rearwardly through the wall **15** and bent outwardly

alongside of the inner face thereof as at 17 and then inserted through the annular wall 16 with their ends 18 bent over the same. This construction not only retains the lips in contiguous contact but also provides a yieldable orifice which has the salient feature of opening more readily at the medial extent with the result that a thin ribbon of paste will emanate from the lips on compression of the container. Additionally, the restraining devices render the body of the closure more rigid to the effect that it is more firmly secured to the neck. Only moderate pressure of the paste is required to effectively open the lips of the orifice which close automatically on release of the pressure.

What I claim is:

A closure for a collapsible container having a neck, comprising a tubular body of rubber of a diameter to fit tightly upon the neck and of a length to project forwardly thereof, the projecting end of the body being slit inwardly from its frontal edge and deformed so that the slitted wall portions come together throughout their width to define mating lips constituting a discharge orifice, and U-shaped wire members yieldably constraining the lips in their closed relation, the wire members having their bights overlying the outer faces respectively of the lips and their legs inserted through the wall portions adjacent to the lips and bent outwardly and inserted through the annular wall portions with their ends bent down upon the outer surface thereof.

LEO PERNU.