Oct. 16, 1934. W. S. WARMUTH 1,977,537

CAP FOR CONTAINERS

Filed Sept. 2, 1932

Fig. 1.

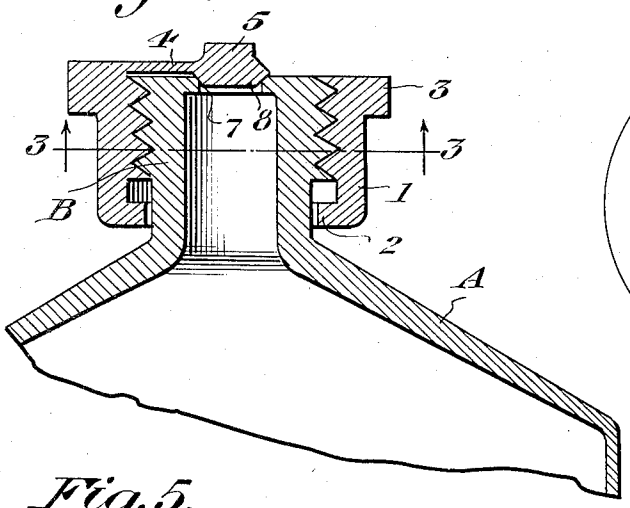


Fig. 2.

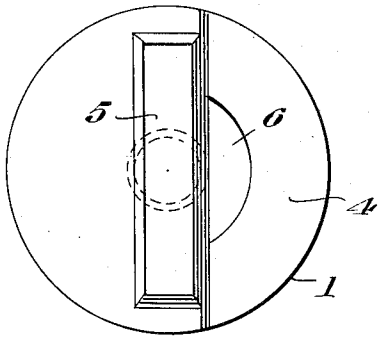


Fig. 5.

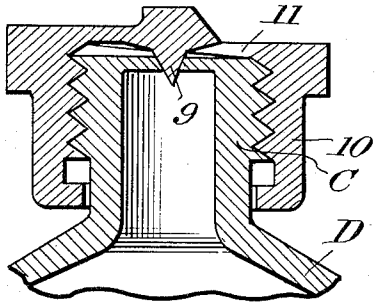


Fig. 3.

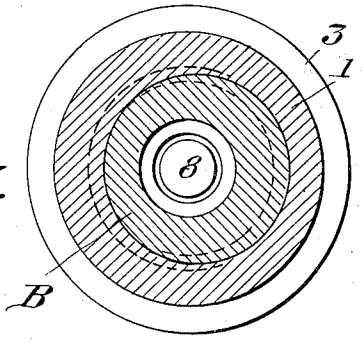


Fig. 6.

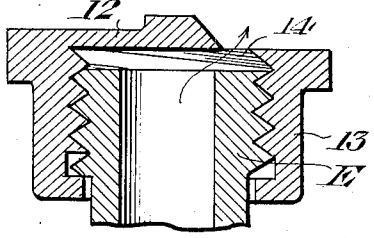


Fig. 4.

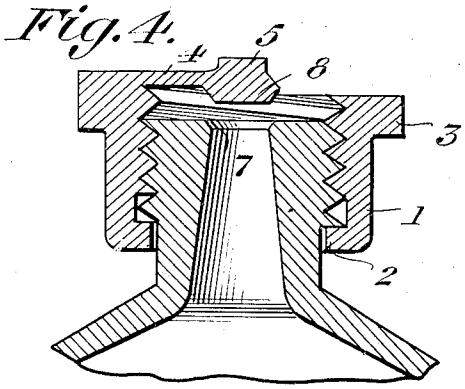
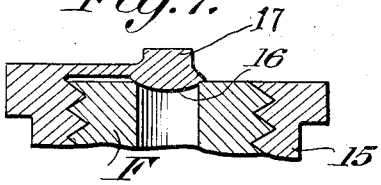


Fig. 7.



William S. Warmuth
INVENTOR

BY Victor J. Evans & Co.
ATTORNEYS

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CAP FOR CONTAINERS

William S. Warmuth, Connellsville, Pa., assignor of one-fourth to Arthur B. Robbins, Connellsville, Pa.

Application September 2, 1932, Serial No. 631,575

4 Claims. (Cl. 221—60)

This invention relates to closure caps for containers, and its general object is to provide a valve cap primarily designed for collapsible tubes, but can be used on all types of containers for controlling the dispensing of the contents thereof, without removing the cap from the container, and the cap is held associated with the container, with the result the cap cannot become lost or misplaced.

A further object of the invention is to provide a container closure cap of the dispensing valve type that will control the quantity dispensed, merely by rotating the cap on the screw neck of the container and when the cap is completely closed, an air-tight connection is made, therefore the contents of the tube are kept in the original as well as in a clean and sanitary condition.

Another object of the invention is to provide a closure cap of the character set forth, that is simple in construction, is applicable to tubes now in general use, is inexpensive to manufacture and is extremely efficient in operation and service.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawing and specifically pointed out in the appended claims.

In describing my invention in detail, reference will be had to the accompanying drawing wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a fragmentary vertical sectional view taken through a collapsible tube illustrating one form of my invention applied thereto.

Figure 2 is a top plan view of the cap as shown in Figure 1.

Figure 3 is a sectional view taken approximately on line 3—3 of Figure 1, looking in the direction of the arrows.

Figure 4 is a sectional view illustrating the cap as shown in Figure 1, in open position and applied to a slightly different type of tube.

Figure 5 is a sectional view of a modified form of cap.

Figure 6 is a similar view of a further modified form.

Figure 7 illustrates a fragmentary portion of a still further modified form.

Referring to the drawing in detail, it will be noted that I have illustrated my cap applied to a collapsible tube, but I want it understood that the cap is applicable to any type of container that includes a screw threaded outlet neck, capable of receiving the cap.

In Figures 1 to 4 inclusive I have illustrated one form of my invention which is applied to a collapsible tube A having a neck B which is provided with the usual screw threads arranged exteriorly thereof.

The cap includes a body in the form of a collar 1 that is provided with screw threads on the inner surface thereof for the purpose of receiving the screw threads of the neck, and formed with the lower edge of the collar 1 is an inturned flange 2 which is engageable with the lowermost thread of the neck in order to prevent the removal of the cap from the neck as will be apparent.

Extending outwardly from the upper edge of the collar is a bead 3 which may be serrated on the periphery thereof, but in any event provides a gripping means for rotating the cap for a purpose which will be presently apparent. The top of the cap is indicated by the reference numeral 4 and formed on and rising from the top and extending transversely thereof is a relatively thick elongated reinforcing portion 5. Arranged laterally of the elongated portion 5 is an outlet opening 6 which allows for the passage of the contents of the container, when the cap is moved from the position as shown in Figure 1, to the position as shown in Figure 4, or to any position between those mentioned, as it will be obvious that the contents of the container or tube as shown can be dispensed in accordance with the user's desires.

Such a function is advantageous when use is made of a cap on a collapsible tube of paste, as the cap can be moved whereby a thin or thick strip of paste can be dispensed.

The tube neck is provided with a valve seat 7 for the purpose of accommodating a valve member 8 formed with the underside of the top, and it will be apparent that when the valve member is seated, an air-tight connection is provided between the cap and neck, with the result that the contents of the tube or other container with which the cap is associated will be retained in the original, as well as a clean and sanitary condition.

In Figure 5 I have illustrated a slightly modified form of my device, and in this form it will be noted that the valve member 9 of the cap 10 is conical shape and is adapted to be seated in a substantially conical shape bore formed in the top of the neck C of the tube D. The top of the

cap 10 is likewise provided with an outlet opening 11 through which are passed the contents of the tube D.

In Figure 6 I have shown a further modified form of my invention in which the under surface of the top 12 of the cap 13 is engageable with the top of the neck E for closing the bore in said neck, and the top 12 is provided with an outlet opening 14.

In the form as shown in Figure 7, the cap is indicated by the reference numeral 15 and includes a rounded valve member 16 that is adapted to be seated upon the edge of the bore of the neck F, and the cap 15 is provided with an outlet opening in its top, which is disposed laterally of the elongated portion 17 in the same manner as in the other forms of the invention.

From the above description and disclosure of the drawing, it will be obvious that I have provided a closure cap for containers that is held associated with respect to the container so as to prevent the cap from being lost therefrom or misplaced, and when use is made of the cap with a collapsible tube as shown, it will be apparent that when it is desired to dispense the contents of the tube therefrom, the cap is rotated on the screw threads to move the valve members off of their seats. The tube is then pressed in the usual manner to cause some of the contents to flow through the outlet openings of the tops of the caps.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:

1. A closure cap for a container including a threaded neck, a threaded body for said cap and received by said neck, means to prevent the removal of the cap from the neck and being formed on said body, a top for said cap, a relatively thick elongated portion formed on, rising from and extending transversely of the cap to reinforce the same, said cap having an outlet opening arranged therein laterally of the elongated portion, and a valve member depending from said top below the elongated portion and engageable with the top of the neck to control the dispensing of the contents of the container through the outlet opening.

2. In a container having a threaded neck, a top for said neck and having a substantially conical shaped opening arranged centrally therein to provide a valve seat, a cap for said container and threadedly secured to said neck, means to prevent the removal of the cap from the neck, a top for said cap, a relatively thick elongated portion formed on, rising from and extending transversely of the cap to reinforce the same, said cap being provided with an outlet opening laterally of the elongated portion, and a conical shaped valve member depending from the top of the cap and having its pointed end receivable in the opening providing the valve seat whereby the valve member cooperates therewith to close the container as well as to control the dispensing of the contents thereof through the outlet opening.

3. A combination with a collapsible tube having a cylindrical threaded portion with a circular orifice, of a closure cap therefor comprising: a threaded portion that co-acts with the said threaded portion of the said collapsible tube, and an end wall, said end wall having an inwardly depending tapering portion arranged concentrically thereof and adapted to extend into said orifice when the cap is screwed down against the end of said tube, and by co-acting with the upper edge of said orifice form a valve, the said end wall being cut away on one side adjacent said depending portion so as to form an eccentrically located outlet opening that is closed by the upper face of the said threaded portion of the collapsible tube when said valve portions are in their closed position.

4. A closure cap for collapsible tubes comprising a threaded portion for engaging the threaded cylindrical portion of a collapsible tube, and an end wall, a tapering portion depending inwardly and concentrically of the said end wall for entering into and forming a valve for the discharge orifice of the tube, the said end wall having a portion thereof cut away to form a discharge opening when the cap is partially unscrewed from the tube.

WILLIAM S. WARMUTH.