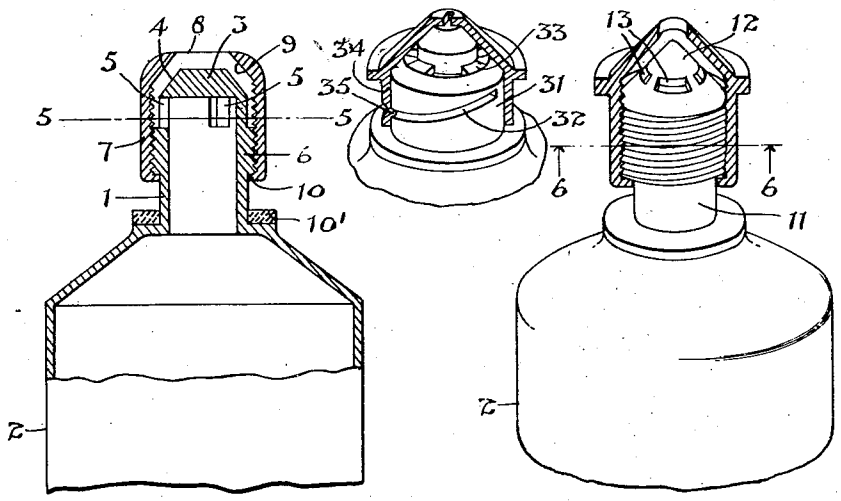
Jan. 11, 1927. 1,614,077

F. McLAUGHLIN

CLOSURE FOR DISPENSING CONTAINERS

Filed March 10, 1925

Fig. 1. Fig. 2a. Fig. 2.



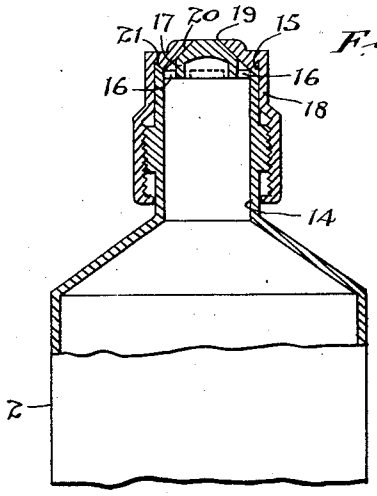


Fig. 3.

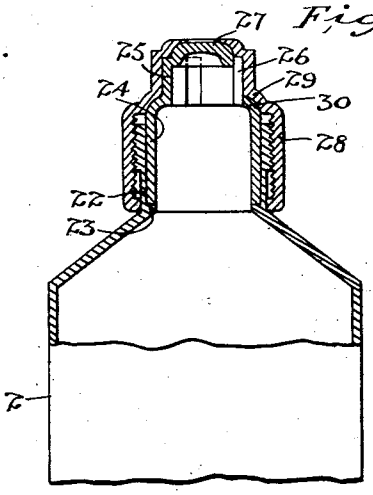


Fig. 4.

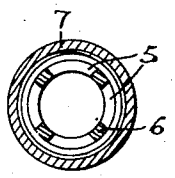


Fig. 5.

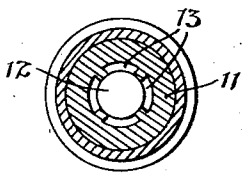


Fig. 6.

Inventor.

Frank McLaughlin.

by H. J. S. Dennison Atty.

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UNITED STATES PATENT OFFICE.

FRANK McLAUGHLIN, OF TORONTO, ONTARIO, CANADA.

CLOSURE FOR DISPENSING CONTAINERS.

Application filed March 10, 1925. Serial No. 14,496.

The principal objects of the invention are, to provide means for opening and closing the discharge orifice from a collapsible tube which will always remain in place upon the tube and will be easily manipulated, of simple structure and thoroughly sanitary and will enable definite measurement of the material being dispensed.

The principal feature of the invention consists in forming the tube with discharge openings and providing a movable cap to close said openings and having a discharge opening therein.

In the accompanying drawings, Figure 1 is a longitudinal sectional view through the dispensing end of a tube showing one form of my improved closure.

Figure 2 is a perspective view partly in section showing a slightly different form of dispensing end. Fig. 2ª is a detail of a further form.

Figure 3 is a longitudinal sectional view showing a further modification of the invention.

Figure 4 is a longitudinal sectional view showing a still further modification.

Figure 5 is a horizontal sectional view through the line 5—5 of Figure 1.

Figure 6 is a horizontal sectional view through the line 6—6 of Figure 2.

Collapsible tubes are used very extensively in connection with the dispensing of soaps. creams, pastes, liquids and like materials, but it always has been an objectionable feature in connection with the use of such tubes, that the cover or closure is very liable to be lost or damaged when removed or in replacing.

The present invention contemplates securing a movable cap upon the discharge end of the tube in such a manner that by a slight movement it will open or close the discharge opening therein.

In the form illustrated in Figure 1 the neck 1 of the tube 2 is formed with a closed end 3 provided with a bevelled outer surface 4.

A plurality of orifices 5 are formed in the neck below the closed end 3 through which the material contained in the tube is extruded.

The outer wall of the neck is provided with an enlarged portion 6 which is here shown threaded and upon this threaded enlargement is threaded a cap 7 which is provided with a centrally arranged orifice 8 formed with a tapering inner wall 9 corresponding with the bevelled end surface 4 of the tube neck.

There is by reason of the enlarged portion 6 a space between the side walls of the outer end of the neck and the inner wall of the cap, so that when the cap is moved outwardly and the bevelled inner surface thereof is moved free of the surface 4, the contents of the tube will flow through the orifice 8 in the cap. A slight turning movement of the threaded cap will tighten it down so that the bevelled surfaces engage and the tube is effectually closed.

It is desirable that the cap should be secured from removal from the tube and in order to accomplish this purpose in a simple manner, the bottom edge of the cap may be flanged inward and the flange 10 will engage the underside of the enlarged portion 6 and form a positive stop. Other means, may of course, be provided to limit the outer movement of the cap, or, if the cap is made sufficiently long in its threaded portion so that it will not be liable to be completely unscrewed it will not require to be fastened against removal.

In the form shown in Figure 1 a soft gasket 10′ is provided at the base of the neck 1 against which the flange 10 engages when the cap is closed in order to prevent leakage past the thread.

In the form shown in Figure 2 the threaded neck 11 is provided with a conical end 12 which is perforated with the openings 13 in alignment with the interior of the tube so that when the cap is released and the pressure is applied to the tube, the contents are extruded longitudinally through the openings instead of laterally as is the case with the structure illustrated in Figure 1. In this form there are sealing surfaces at both sides of the discharge orifices of the tube.

In the structure shown in Figure 3 the neck 14 terminates in an inwardly bevelled edge 15 and the openings 16 are arranged between the bevelled edge and the central conical portion 17.

The cap 18 is threaded on to an enlarged portion of the neck and has a central opening 19 with a tapered seat 20 and a bevelled recess 21 is formed at the lower portion of the seat to receive the edge 15 of the neck portion. The beveled edge effectively

scrapes the soap from the inner wall of the cap and seats in the recess 21 forming an air tight seal.

In the modification illustrated in Figure 4 the neck 22 is formed with an open end and a shoulder 23 and into this open end is inserted a drawn member 24 which fits against the shoulder 23, fitting in the neck with a pressed fit. The outer end is provided with a reduced portion 25 having slots 26 in the side wall thereof and a rounded cap-shaped end 27.

A cap 28 is threaded on to the threaded portion of the neck 22 and is provided with a shoulder 29 which seats against the shoulder 30 of the member 24, thus preventing the overflow contents of the tube from being forced back around the threaded neck portion and also forming an effective seal.

An important feature of the present invention is that the quantity of material dispensed may be accurately measured. This is accomplished by opening the cap then pressing the tube until the material begins to protrude through the orifice in the cap and then closing the cap. Upon the closing of the cap all the material filling the space between the end of the tube and the inside of the cap will be forced out through the opening in the cap. The quantity is thus accurately measured and there will be no loss.

It will be readily understood that many different forms of this invention may be devised without departing from the principal feature thereof, which is to provide a movable cap on the perforated neck end of a tube to open and close the perforations.

In the form of the invention shown in Figure 2ª the cylindrical neck 31 is formed with a spiral groove 32 which terminates below the shoulder 33 and the cap 34, which is adapted to close against the tapered top, has an indent or lug 35 which projects into the spiral.

What I claim as my invention is:—

1. A dispensing container having a valve seat, openings in said valve seat intermediate of the width thereof, and a closure having a single discharge opening and a seat to engage the aforesaid seat on each side of the openings therein to seal said openings.

2. A dispensing container having a neck threaded externally intermediate of its length, openings leading from the interior of said neck beyond said threaded portion, a conical valve seat formed on the outer end of said neck, an annular bevelled flange forming a continuation of the wall of said neck portion extending outwardly beyond the base of said conical valve seat, a cap threaded on to the threaded portion of said neck and having an annular bevelled seat in the inner side of its head adapted to engage said annular bevelled flange to form a sealed joint, an outlet opening in the head of said cap and means for limiting the outward movement of the cap.

FRANK McLAUGHLIN.