June 23, 1931. F. WOLF 1,811,224

ACCESSORY DEVICE FOR COLLAPSIBLE TUBES

Original Filed Jan. 18, 1928

Fig. 1.

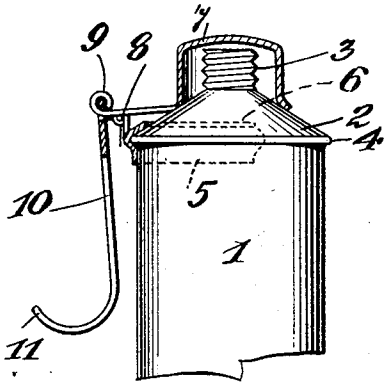


Fig. 3.

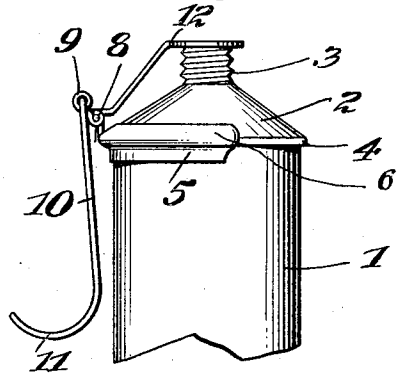


Fig. 2.

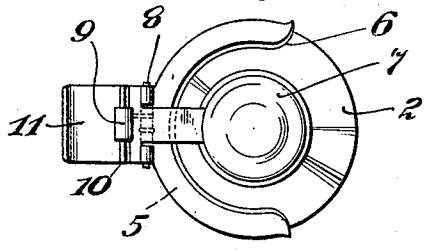


Fig. 4.

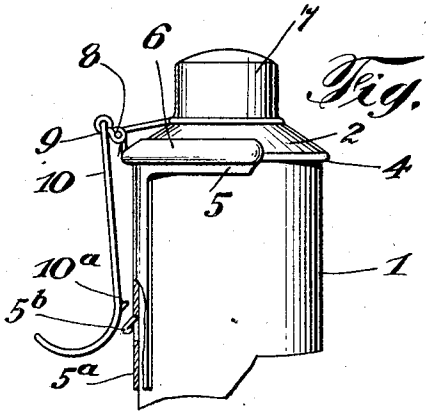


Fig. 6.

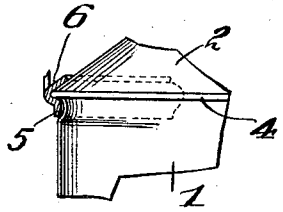
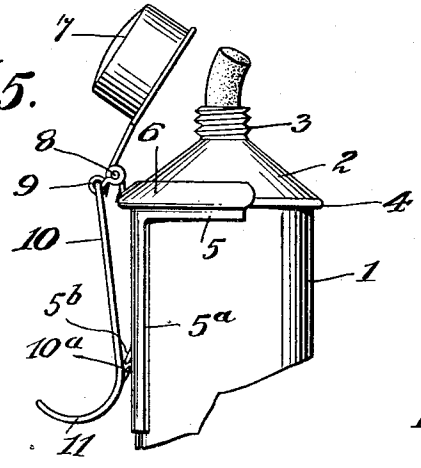


Fig. 5.



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UNITED STATES PATENT OFFICE

FRANK WOLF, OF NEW YORK, N. Y.

ACCESSORY DEVICE FOR COLLAPSIBLE TUBES

Original application filed January 18, 1928, Serial No. 247,499. Divided and this application filed December 24, 1928. Serial No. 328,107.

My invention relates to attachments for containers; and particularly to a detachable accessory for a collapsible tube to receive tooth paste, shaving cream and other preparations.

This application is a division of my application, Serial No. 247,499, filed January 18, 1928.

An object of the invention is to provide an accessory which is shaped to grip or clamp the tube, by engaging it at the edge of the rigid top, where the yielding body of the tube is joined to the top. At this point the circular outer edge at the bottom of said top, (when the tube is in upright position) projects somewhat to form a bead or flange. The accessory of this invention holds itself on the top, but also acts upon the body of the tube adjacent the top and tends to squeeze that part of the body inward and towards the flange. Thus the accessory is securely retained in the required position.

Another object of my invention is to provide a simple device of the kind mentioned for enabling a sanitary closure to be connected with the outlet neck of the tube. The accessory is inexpensive and can be easily mounted in position, and detached at will. It can also be utilized for purposes other than mounting a closure if desired.

Collapsible tubes present objections and difficulties in use because they are usually closed by small screw caps, which are easily dropped and lost, and always hard to handle. Also the screw threads on the outlet neck for the cap in practice afford lodgment to some of the contents of the tube as the latter are squeezed out; and thus uncleanness is produced at the discharge end of the tube. My invention, among other things accomplished by it, overcomes this drawback.

The scope and nature of the invention are fully set forth in this specification and I may make changes in the shape and arrangement of the various parts that are embraced within the meaning of the appended claims.

On the drawings,

Figure 1 is a side view of a collapsible tubular container showing my attachment on the discharge end thereof, this attachment being partly in section;

Figure 2 is a top plan of the device shown in Figure 1;

Figure 3 is a side elevation of an accessory similar to what is presented in Figures 1 and 2, slightly modified;

Figure 4 is a side view of another modification;

Figure 5 shows the attachment of Figure 4 carrying a closure member, lifted to permit the contents of the tube to be expelled; and

Figure 6 is a diagrammatic view to show more fully the mode of engagement of the tube by the accessory.

On the drawings the same numerals identify the same parts throughout.

Referring first to Figures 1 and 2, the upper part of the relatively soft body of a collapsible tubular container for tooth paste or the like is indicated at 1. It has a conical upper end or top 2 provided with a central threaded outlet neck 3 for the usual screw cap which closes the tube. A bead or flange 4 may encircle the circumference of the conical top 2. This bead reinforces the tube and makes it relatively hard and rigid around the edge of the top 2. The numeral 5 indicates a resilient clamping element approximately semicircular and shaped to grip the tube 1 around the top 2. This clamp may have a portion which engages the body 1 adjacent the bead 4; and be grooved inside to receive the bead 4; and have its upper edge turned over at 6 to rest upon the top 2. To this clamp is secured a protecting or covering member in the form of a relatively large cap or closure 7; the connection being provided by means of a hinge 8; and the cap has an extension 9 to which is pivotally connected an operating member 10 having one end which is bent up as shown at 11. The hinge 8 may be a spring hinge to keep the cap 7 normally covering the neck 3, and to lift the cap one merely pulls the member 10 down with the finger. If desired, the spring can be omitted, for when the tube is kept in upright position, the weight of the cap is sufficient to keep it down over the neck 3.

In ordinary tubes, the body 1 is soft, so

that the contents can be expelled through the neck 3 by squeezing the tube. The top 2 is stiffer. I prefer to shape the clamp 5 so that the lower edge portion below the overturned upper edge 6, when the clamp is fully on, tends to press inward on the outside of the body 1, holding the bead 4 between the upper edge 6 and the lower edge portion of the attachment; and for this purpose the inner side of the element 5 may be provided with a groove into which the bead-flange 4 is snugly received. When the element 5 is forced on the tube as far as it will go, the lower edge portion tends not only to press the adjacent part of the soft body inward, but also to crowd it upward, to some extent towards the flange, as indicated in Figure 6; and thus the clamp is held firmly in place.

In Figure 3 the covering member is in the form of a flat plate 12 which lies over the end of the neck 3 and is bent and connected to the clamp 5 in the same way.

Figure 4 shows the attachment of Figure 1 with the clamp 5 provided with an extension 5*a* running down along the side of the tube, and the operating member 10 has a projection 10*a* to engage and hook under a similar projection 5*b* of extension 5*a*. By bringing these two projections into engagement the cap can be held in raised position, as indicated in Figure 5.

This accessory can easily be put on by forcing the clamping element against the side of the tube to engage therewith at substantially opposite points. The element 5 is slightly greater than a semicircle; and its two arms will be elastic and spring towards each other to a sufficient extent to enable these arms to grip the tube 1 and especially to engage the bead 4 with sufficient pressure to require a pull to separate the clamping element from the tube 1. Thus the clamping element and the cap 7 (or the cap 12) can be taken off the tube together merely by disengaging the clamping element 5 from the top of the tube and bead 4; and the accessory can be attached just as easily by pushing the top of the tube between the two curved arms of the clamping element 5.

With the clamping element in place the closure 7 or 12 serves to close the outlet through the neck 3 and the original screw cap can be discarded.

The shape of the closure pivoted on the clamp 5 can of course be varied, or the closure can be omitted entirely; or the clamp can be provided instead with a hook or eyelet, or some other means to hang up or otherwise support the tube when it is not needed.

The clamp 5 when it engages the bead flange 4 of the top 2, strengthens the top of the tube, holds it in its normal or initially rigid position and prevents it from warping.

I claim:—

1. A device for attachment to a collapsible tube having a body and a top with a relatively stiff bead-flange around its lower edge outstanding from the body, said device comprising a semi-circular clamp formed of resilient metal the arms of which tend to have a closing spring action for gripping the bead-flange, said arms being grooved for receiving the bead-flange therein and in cross section being formed of angularly related portions rigid with respect to each other, which define the groove, said portions being adapted to contact the opposite sides of the bead-flange and retain the latter between them, whereby firmly to support the tube by said clamp.

2. A device for attachment to a collapsible tube having a soft body and a rigid conical top with a relatively stiff bead-flange around its lower edge outstanding from the body, said device comprising a semi-circular clamp formed of resilient metal the arms of which tend to have a spring closing action for gripping the bead-flange, said arms having a continuous groove for receiving the bead-flange therein and in cross section being formed of angularly related upper and lower portions rigid with respect to each other, which define the groove, the upper portions adapted to contact with the upper side of the bead-flange and conical top while the lower portions are adapted to contact with the lower side of said bead-flange and to press into the soft body, whereby firmly to hold the tube by said device.

3. A device for attachment to a collapsible tube having a top with an outlet nozzle and a bead-flange around its lower periphery outstanding from the body, said device comprising a semi-circular clamp formed of resilient metal the arms of which tend to have a closing spring action for gripping the bead-flange, said arms having a continuous groove for receiving the bead-flange therein and in cross section being formed of angularly related upper and lower portions rigid with respect to each other, which define the groove, the upper portions adapted to contact with the upper side of the bead-flange and to overlie the top about the outlet nozzle and the lower portions adapted to contact with the lower side of the bead-flange and to press against the body, and a cap closure for the outlet nozzle carried by the clamp and provided with an operating element.

4. A device for attachment to a collapsible tube having a top with an outlet nozzle and a bead-flange around its lower periphery outstanding from the body, said device comprising a semi-circular clamp formed of resilient metal the arms of which tend to have a closing spring action for gripping the bead-flange, said arms having a continuous groove for receiving the bead-flange therein and in cross section being formed of angularly related upper and lower portions rigid with

respect to each other, which define the groove, the upper portions adapted to contact with the upper side of the bead-flange and to overlie the top about the outlet nozzle and the lower portions adapted to contact with the lower side of the bead-flange and to press against the body, a cap closure for the outlet nozzle carried by an upper portion and provided with an operating element, an extension on a lower portion adapted to contact with the side of the body, and cooperating means on said operating element and said extension adapted to be engaged for holding the cap in open position.

In testimony that I claim the foregoing as my invention, I have signed my name hereto.

FRANK WOLF.