April 14, 1931. W. F. BOSECKER 1,800,774

COLLAPSIBLE TUBE CLOSURE

Filed Dec. 21, 1929

Fig. 1.

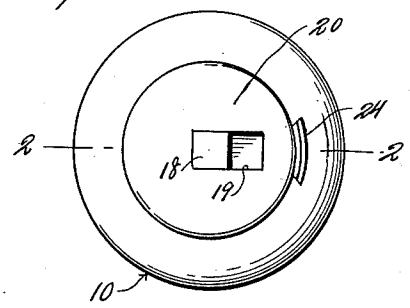


Fig. 3.

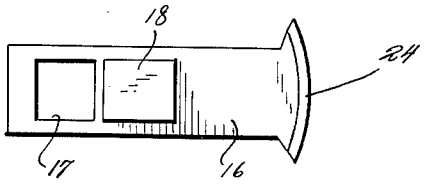
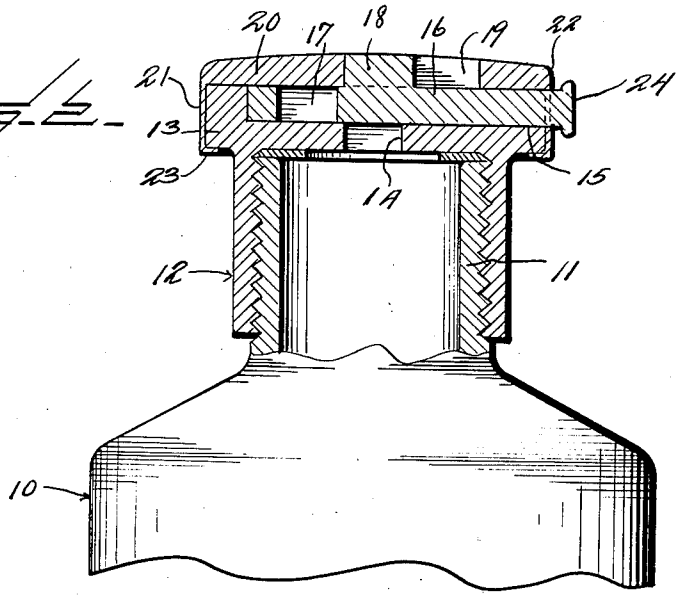


Fig. 2.



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UNITED STATES PATENT OFFICE

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COLLAPSIBLE-TUBE CLOSURE

Application filed December 21, 1929. Serial No. 415,772.

The present invention relates to collapsible tube closures or caps.

An object of this invention is to provide a device of this character by which the material in the collapsible tube may be removed therefrom without removing the cap from the tube.

Another object of this device is to provide a closure which will effectively cut off the material removed from the collapsible tube so that no waste material will remain on the end of the tube.

A further object of this invention is to provide a closure which may be incorporated in a cap which is threadably mounted on the collapsible tube and which will permit removal of the material from the tube without unscrewing the cap.

A still further object of this invention is to provide a device of this character which may be readily and cheaply manufactured and which will not unduly increase the manufacturing cost of the collapsible tube to the point where the device might be considered impractical.

The above and various other objects and advantages of this invention will in part be described in and in part be understood from the following detailed description of the present preferred embodiment, the same being illustrated in the accompanying drawing wherein:—

Figure 1 is a top plan view of a device constructed according to the preferred embodiment of this invention;

Figure 2 is a fragmentary section, partly in detail, taken on the line 2—2 of Figure 1; and

Figure 3 is a top plan view of the slidable closure member.

Referring to the drawing wherein like numerals of reference designate corresponding parts throughout the several views, the numeral 10 designates a collapsible tube of conventional construction but which is provided with a restricted nozzle portion 11 and on which is threadably engaged a cap member generally designated as 12. The cap or closure member 12 is provided at the outer end portion thereof with an annular plate or top member 13 which has an axial opening 14 therethrough so as to permit the material from the tube 10 to be exuded or forced out of the tube. The plate member 13 is also provided with an elongated slot 15 which extends laterally of the cap 12 and opens through one edge portion of the plate 13.

A closure member 16 is slidably mounted in the groove or slot 15. The slidable closure member 16 is provided with an opening 17 therethrough which is positioned spaced outwardly from the inner end portion thereof and is adapted to register with the opening 14 in the cap 12 when the closure 16 is moved outwardly. The closure 16 is also provided with an upstanding lug or cut-off member 18 which slidably engages in an elongated slot or opening 19 in an outer plate 20 and is adapted to limit the movement of the closure member 16 in the top member 13. It is of course understood that the top or plate 13 may be formed integrally with the restricted end portion 11, in which case the threaded sleeve of the cap 12 may be eliminated as well as the threaded portion on the outer end of the restricted member 11.

An annular depending flange 21 is adapted to be mounted on the plate 20 which is adapted to be turned inwardly so as to form an inwardly extending flange 23 for securely holding the cap 20 on the top 13. The outer face portion of the cap 20 is preferably provided with a rounded or beveled outer edge portion 22 so that the cap 20 may contact with the skin without scratching or otherwise injuring the skin.

The slidable closure member 16 is adapted to extend outwardly of the slot 15 and is provided with a suitable engaging portion 24 so that the slide 16 may be pulled outwardly so as to permit the material within the tube 10 to be removed.

In the operation of this device, the slidable closure member 16 is adapted to normally be positioned inwardly of the slot 15 so as to securely seal the cap or nozzle 12 of the tube 10. When it is desired to remove any of the material from the tube 10, the closure member 16 may be pulled outwardly by grasping the handle member 24. The slide 16 may be

moved outwardly to the limit of the slot 19, the cut-off member 18 determining the limit of movement of the slide 16. When the desired quantity of material has been removed from the tube 10, the outwardly extending portion 24 of the closure member 16 may be pushed inwardly, and the edge portions of the slide 16 about the opening 17 will effectively cut off the material in the opening 14, and the upstanding cut-off member 18 will force outwardly any of the material remaining in the outer edge portion of the opening 14.

It will, of course, be understood that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of the invention without departing from the spirit thereof and that the device may be used on a container other than a collapsible tube, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:—

1. In combination with a collapsible tube having a restricted nozzle portion, a closure member for said nozzle portion, said closure member comprising an annular apertured plate, a slidable apertured closure member loosely mounted in said plate, and stop means secured to said slidable closure member and upstanding therefrom, said stop means upon inward movement thereof being adapted to eject the material remaining in the outer portion of the nozzle.

2. In combination with a collapsible tube having a restricted nozzle, a cap for said nozzle, said cap comprising an annular sleeve, an apertured plate mounted on said sleeve, said plate having an elongated slot, a closure member slidably mounted in said slot, and engaging the ends of the slot upon inward or outward movement thereof whereby to limit the movement of the closure member, and cut-off means upstanding from said closure member.

3. In combination with a collapsible tube having a restricted nozzle portion, a closure member for said nozzle portion, said closure member comprising a plate having an axial opening therethrough, a slidable apertured member loosely carried by said plate, an outer plate member for said first plate, means for holding said outer plate on said first plate, said outer plate having an elongated slot therein, cut-off means upstanding from said slidable member engaging said elongated slot in said outer plate, and means for manually operating said slidable member.

In testimony whereof I hereunto affix my signature.

WALTER F. BOSECKER.