Aug. 4, 1959 J. G. REDMOND 2,898,017

DISPENSING DEVICE FOR A TOOTHPASTE TUBE OR THE LIKE

Filed July 16, 1957

Fig. 1.

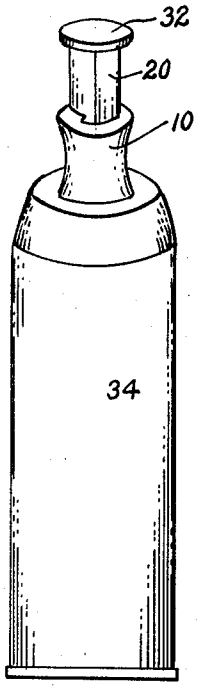


Fig. 2.

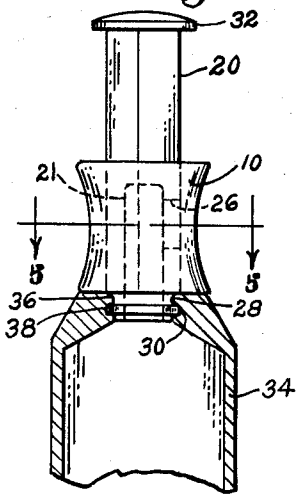


Fig. 3.

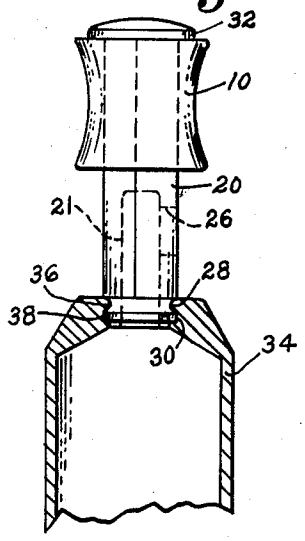


Fig. 4.

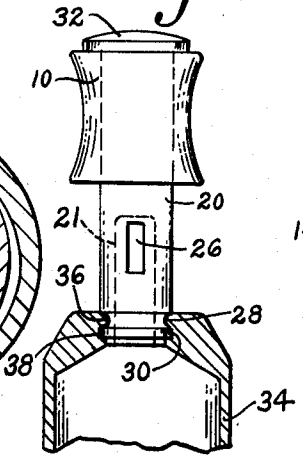


Fig. 5.

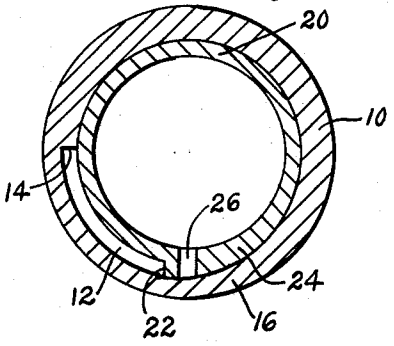


Fig. 6.

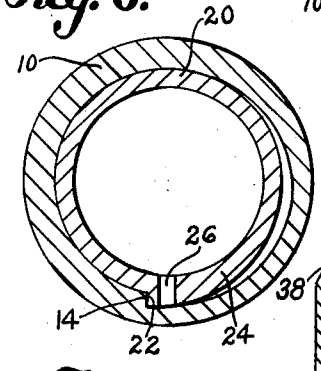
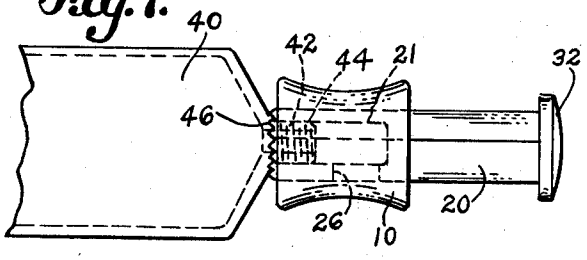


Fig. 7.



INVENTOR.

BY John G. Redmond
Harold E. Cole
Attorney

United States Patent Office 2,898,017 Patented Aug. 4, 1959

2,898,017

DISPENSING DEVICE FOR A TOOTHPASTE TUBE OR THE LIKE

John G. Redmond, Newton, Mass.

Application July 16, 1957, Serial No. 672,281

3 Claims. (Cl. 222—519)

This invention relates to a device attachable to a toothpaste tube or the like, for dispensing the contents of the tube through a discharge opening.

Screw caps are commonly used on tubes to hold shaving cream, toothpaste and the like, which must be unscrewed to obtain any part of the cream or paste, and then screwed in place again. Since this is an inconvenience requiring more time and effort than the average person wishes to so spend, my object has been to provide a more convenient dispensing device which can be opened and closed by easy movements that require less time and effort than the aforesaid screw cap.

Another object is to provide such a device that can be closed by a mere rotative movement which bring cam surfaces together, and likewise opened by separating said cam surfaces by a rotating movement in the opposite direction.

A further object is to provide such a device that may be attached to the well known toothpaste tube or the like which has a screw-threaded neck.

The foregoing and other objects which will appear as the nature of the invention is better understood, may be accomplished by a construction, combination and operative arrangement of parts such as is disclosed by the drawing. The nature of the invention is such as to render it susceptible to various changes and modifications, and therefore, I am not to be limited to the construction disclosed by the drawing nor to the particular parts described in the specification; but am entitled to all such changes therefrom as fall within the scope of my claims.

In the drawing:

Fig. 1 is a perspective view showing my device in sealed position and attached to a toothpaste tube.

Fig. 2 is a front elevational view of my device in sealed position, attached to a toothpaste tube that is shown in section and broken away.

Fig. 3 is a view similar to Fig. 2; but showing my device in open position.

Fig. 4 is a view similar to Fig. 3, showing the discharge opening in the dispensing member in front elevation.

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 2.

Fig. 6 is a sectional view similar to Fig. 5; but showing my device in release position, with the cover ready to be moved to open position.

Fig. 7 is a side elevational view of my device in sealed position attached to a toothpaste tube, showing a modified form of attachment of said device to said tube.

As illustrated, my dispensing device includes a hollow, collar-like cover **10** which has a recess or cut-out **12** at the inner surface thereof, thus providing a shoulder **14** at one end which serves as a stop member. The wall of this cover **10** tapers in thickness, as at **16**, as it approaches said cut-out, thus providing an inner cam surface, later explained.

A dispensing member or stem **20** has a chamber **21** therein, commencing at the lower end of said member

20. The latter has a shoulder **22** which serves as a stop member when it contacts said stop shoulder **14**, as shown in said Fig. 6. The wall of this dispensing member **20** increases in thickness as at **24**, as it approaches said shoulder **22** thus providing an outer cam surface which cooperates with said cover cam surface **16**, when it engages the latter, to hold said cover **10** and dispensing member **20** firmly together when in closed position, as shown in said Fig. 5. No further rotative movement in a clockwise direction is possible from said closed position. When the cover **10** is rotated, in a counterclockwise direction, said surfaces **16** and **24** are separated, as indicated in the release position shown in said Fig. 6, thus permitting said cover to be slid outwardly on said dispensing member **20** to open position, as shown in said Figs. 3 and 4.

Said member **20** has a discharge opening **26** through a wall thereof, in communication with said chamber **21**, which latter terminates slightly outward thereof. Near its lower or inner end **28** said member **20** has a reduced portion **28** which provides a rim **30** inwardly thereof, while at its outer end a cap **32** keeps said cover **10** from sliding off.

My device may be attached to a collapsible container or tube **34**, commonly used to hold some well-known toothpaste or shaving cream or other material which can be ejected by squeezing said container. The latter has a beaded portion **36** which enters the recess provided by said reduced portion **28** and it also has a recess **38** inwardly thereof into which said rim **30** extends. These parts firmly attach my device to said container **34**.

In said Fig. 7 a modified form of attachment to a conventional tube or container **40** of toothpaste or other material is shown. Said tube **40** has the usual exteriorly screw-threaded neck **42**. Said dispensing member **20** has interior screw-threads **44** at its inner end, where said chamber **21** commences, which screw-threadedly connects with said container neck **42**. In order to make this connection more secure on said tube **40**, serrations **46** may be provided on the open end of said dispensing member **20**.

This modified device enables the use of my device on the well-known tube **40** now commonly used, hence my device may be repeatedly used by attaching it to a new tube each time an old one is emptied.

Normally said cover **10** will be in closed position, as shown in said Figs. 2 and 5, with said cam surfaces **16** and **24** in firm engagement so that the cover **10** will remain in closed position, except when some material in said container **34** is desired. Then said cover **10** is rotated counterclockwise to the release position shown in said Fig. 6, with said cam surface **24** opposite said cover cut-out **12**, whereupon said cover may be easily moved outwardly to the position shown in said Figs. 3 and 4, where it will ordinarily remain due to a light, friction fit.

Upon squeezing either of the tubes **34**, or **40**, the contents will pass into said chamber **21** and out said discharge opening **26**. Thereupon said cover **10** may be slid to a position where it covers said discharge opening **26** and rotated clockwise to the sealed position shown in said Fig. 5.

What I claim is:

1. A dispensing device comprising a cylindrical dispensing member having an outer cam surface on its side wall extending longitudinally throughout its length and a hollow cylindrical cover having a corresponding inner cam surface on its side wall extending longitudinally throughout its length, said cover being rotatable and longitudinally slidable on said dispensing member, said outer and inner cam surfaces being so positioned relative to each other that upon rotation of said cover they may be moved into frictional engagement with each other to maintain

said cover in a predetermined position on said dispensing member, said dispensing member having an open chamber at one end and having an opening through its side wall in communication with said chamber and a cap at the end remote from said chamber of greater diameter than the interior of said cover, said cover being of such length relative to said dispensing member that it is slidable on said dispensing member to open or close the opening.

2. A dispensing device as set forth in claim 1 in which said cover has a cut-out therein and a shoulder at one end thereof, said dispensing member embodying a shoulder so positioned as to contact said cover shoulder when said cover is moved to release position.

3. A dispensing device in combination with a tube to hold paste having an exteriorly screw-threaded neck portion, said device comprising a cylindrical dispensing member having an outer cam surface on its side wall extending longitudinally throughout its length and a hollow cylindrical cover having a corresponding inner cam surface on its side wall extending longitudinally throughout its length, said cover being rotatable and longitudinally slidable on said dispensing member, said outer and inner cam surfaces being so positioned relative to each other that upon rotation of said cover they may be moved into frictional engagement with each other to maintain said cover in a predetermined position on said dispensing member, said dispensing member having an open chamber at one end and having an opening through its side wall in communication with said chamber and a cap at the end remote from said chamber of greater diameter than the interior of said cover, said cover being of such length relative to said dispensing member that it is slidable on said dispensing member to open or close the opening, said dispensing member embodying an interiorly screw-threaded portion at its open end whereby said dispensing member may be screw-threadedly connected to said exteriorly screw-threaded neck portion of said tube.

References Cited in the file of this patent

UNITED STATES PATENTS

1,794,023	Lieberthal	Feb. 24, 1931
2,717,721	Gibson	Sept. 13, 1955
2,762,536	Eriksen	Sept. 11, 1956