

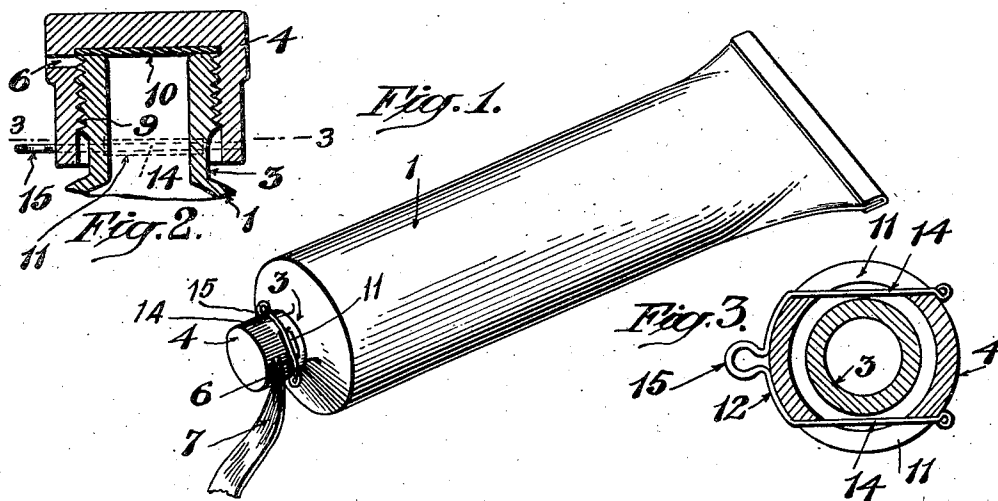
Apr. 24, 1923.

1,452,967

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CLOSURE FOR TUBES

Filed Feb. 23, 1921



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UNITED STATES PATENT OFFICE.

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CLOSURE FOR TUBES.

Application filed February 23, 1921. Serial No. 447,302.

To all whom it may concern:

Be it known that I, LOUIS A. FREEDMAN, a citizen of the United States, and a resident of the city, county, and State of New York, have invented a certain new and useful Improvement in Closures for Tubes, of which the following is a specification.

This invention relates to a closure means for a collapsible tube of the kind usually used for containing tooth paste, shaving cream, paints or like articles and the object of this invention is to provide a closure means in which the threaded cap need not be removed when it is desired to eject the contents of the tube.

A further object of this invention is to provide a closure cap for a tube provided with an opening through which the contents of the tube may be ejected when the cap is rotated to uncover the opening.

A still further object of this invention is to provide a closure cap which cannot readily become detached from the tube and consequently lost, and yet which may, when desired, be readily removed from the tube.

With these objects and other objects which may hereinafter appear in view, I have devised the particular arrangement of parts hereinafter set forth and more particularly pointed out in the claims appended hereto.

Reference is to be had to the accompanying drawing forming a part hereof in which

Figure 1 is a perspective view of a tube with my improved closure means.

Figure 2 is a vertical sectional view of the upper end of the tube showing the closure cap in closed position;

Figure 3 is a sectional view on the line 3—3 of Figure 2 looking in the direction of the arrows.

Throughout the various views of the drawings, similar reference characters designate similar parts. In the preferred embodiment of my invention as disclosed in the accompanying drawing, 1 indicates the body of the tube having a narrowed upper end 3 which is provided with the usual opening through which the contents of the tube is ejected. At 4 is the closure cap which is threaded internally at 5 to permit the cap to be threaded on the exterior threads 9 on the end 3 of the tube.

The cap is provided adjacent its upper end with an elongated slot 6, which slot is formed in the side wall of the cap and forms

the opening through which the contents of the tube are ejected. It is noted that the opening is placed but a very slight distance below the upper end of the cap so that it requires but slight rotating movement of the cap to bring the opening 6 above the upper edge of the end 3 of the tube to permit the contents of the tube to be ejected. The position of the tube in this condition is shown in Figure 2.

The cap 4 is provided with a resilient gasket 10 for the purpose of making a tight joint between the cap 4 and tube opening 3.

By slight rotation of the cap it is caused to seat on the upper end of the tube opening 3 and the opening 6 in the cap is covered by the side wall of the end 3 of the tube thus effectively closing the end of the tube. The opening 6 in the cap 4 is, when desired, provided in an elongated form to enable the contents 7 of the tube to be ejected in a ribbon-like form, particularly when tooth paste is contained within the tube.

The cap 4 is provided in its side wall with a pair of elongated slots 11 which are situated adjacent the lower end of the cap and below the opening 6. At 12 is a spring yoke retaining device having a pair of spring arms 14 which lie in the slots 11. The spring yoke is provided with a central loop portion 15 which may be grasped to remove the spring yoke from the cap when it is desired to completely remove the cap from the threaded end 3 of the tube.

It will be seen that the spring arms 14 lie below the threaded portion 9 of the end of the tube and the threaded portion of the tube acts as an abutment for the spring arms and restricts movement of the cap 4 on the tube end. When it is desired to remove cap 4 from the end 3 of the cap the yoke member 12 is withdrawn by drawing the same from the cap by pulling on the loop portion 15. When the spring yoke 12 is removed from engagement with the cap 4 the end of the tube 3 can be disengaged from the cap in the event of the same becoming clogged or for other reasons.

From the foregoing it is obvious that my invention is not to be restricted to the exact embodiment shown but is broad enough to cover all structures coming within the scope of the annexed claims.

What I claim is:

1. A device of the class described com-

prising a tube having a threaded end, a closure cap received on said threaded end, said cap having an opening, means on said cap for restricting movement of the cap on the threaded end, said means being removable to permit removal of the cap from the tube.

2. A device of the class described comprising a closure cap having in its wall openings and removable spring retaining devices extending into said openings.

3. A device of the class described comprising a tube having a threaded end, a closure cap having an elongated opening in its side wall adjacent its upper end and spring arms on said cap engaging the end of the tube below the threads thereon.

4. A device of the class described comprising a closure cap having an opening in its side wall, and a pair of openings below said first mentioned opening and a pair of spring arms extending into the interior of

the cap through the last mentioned pair of openings.

5. A device of the class described comprising a tube having a threaded end, a cap adapted to be received thereon, an opening in the side wall of said cap and a removable spring-clip engaging said cap and extending through openings therein.

6. A closure cap having a pair of openings in its side wall and a spring retaining device having a pair of spring arms extending into said openings.

7. A closure cap having a pair of slots in its said wall and a retaining device comprising a yoke shaped member having a pair of spring arms extending through said slots and a loop portion on the yoke shaped member between the arms.

Signed at the city, county and State of New York, this 19th day of February, 1921.

LOUIS A. FREEDMAN.