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A. A. SCOTT

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CLOSURE FOR COLLAPSIBLE TUBES

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Fig. 1.

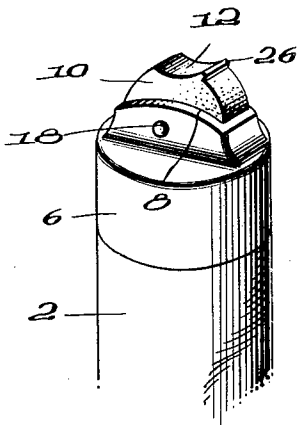


Fig. 2.

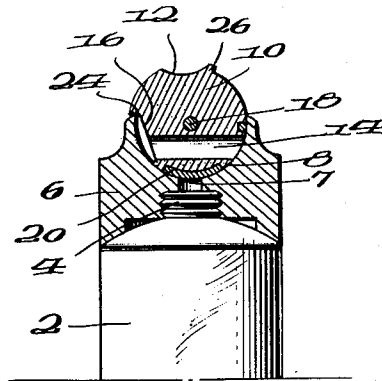


Fig. 3.

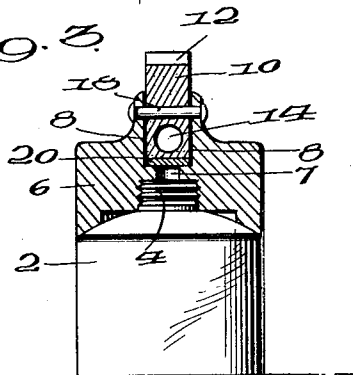


Fig. 4.

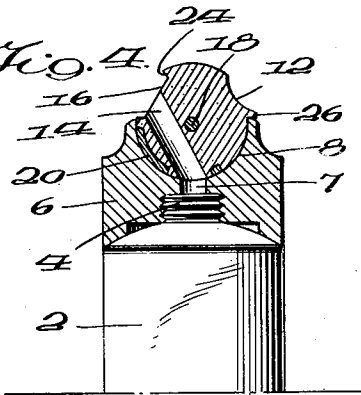


Fig. 6.

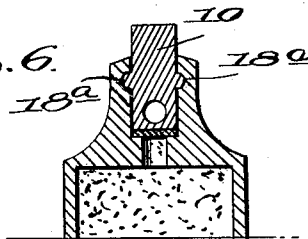
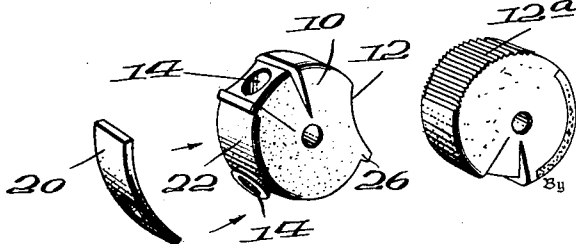


Fig. 5.

Fig. 7.



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CLOSURE FOR COLLAPSIBLE TUBES

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3 Claims. (Cl. 221-60)

My invention relates to an improvement in a closure for a collapsible tube.

The purpose of my invention is to provide a closure for collapsible tubes which may be readily operated with one hand to open and close the tube and without removing the closure from the tube.

A further object of my invention is to provide a tube closure which will leave no surfaces which will be exposed to collect paste, dust or dirt, when the closure is in a closed position. This provides a closure which when closed keeps the material in the tube entirely sanitary.

A further object of my invention is to provide an interchangeable tube closure which may be affixed to an ordinary collapsible tube.

In the accompanying drawing:

Fig. 1 is a perspective view of my tube closure;

Fig. 2 is a front elevation partly in section showing the disk in a closed position;

Fig. 3 is a similar view at right angles thereto;

Fig. 4 is a front elevation partly in section showing the disk in an open position;

Fig. 5 is a disassembled perspective view showing the closure disk and gasket;

Fig. 6 is a sectional view of a modified form of my device; and

Fig. 7 is a perspective view of the disk showing a slight modification.

The usual collapsible tube 2 is provided with the ordinary threaded stem 4, with an opening therethrough and to which my tube closure 6 may be attached. The closure 6 is provided with a threaded portion to be screwed onto the stem 4, and an orifice 7 extends upwardly through the closure in position to register with the opening through the stem when the closure is screwed thereon.

The tube closure 6 is provided with a curved seat 8, which is provided with a substantially semi-circular concave surface or seat communicating at its lower side with the orifice 7. The closure operating disk 10 is circular in form, so that it may be seated within the semi-cylindrical seat 8, and is secured therein by the pivot pin 18, or trunnions 18^a between the disk 10 and the sides of the closure 6 as shown in Fig. 6, and in either event allowing approximately one-half thereof to be exposed.

On the upper or outer side of the disk 10, I provide a finger cavity 12, which facilitates the operation of the disc. The disc 10 is provided with a hole 14, extending through the lower portion thereof in a position of a secant which will be in the position shown in Fig. 2 when the

tube is closed, and which will assume the position shown in Fig. 4 when open to connect the opening through the stem 4 of the tube to a point outside of the closure 6.

At the end of the hole 14 which is remote from the stem 4 of the tube 2, when the closure 6 is in the open position, shown in Fig. 4, I provide a cut-away portion 16, so that the end of the hole 14 and adjacent surfaces will not come into contact with the surface of the semi-cylindrical seat 8 when the closure is opened and closed, as shown in Fig. 2.

On a part of the circular disc 10, which is normally within the curved seat 8, I provide a cork or similar gasket 20, for bearing upon and making a close contact with the semi-cylindrical seat 8. The disc 10 is cut-away as at 22 to provide a surface or seat for the cork gasket 20. This surface 22 may be serrated, if desired, to enhance the flexibility of the gasket and secure a more uniform frictional contact thereof.

At one end of the cut-out portion 16, I form a stop 24 which extends radially sufficiently far to engage the closure 6 at one end of the seat 8 when the disc 10 is turned in one direction and thereby limit the turning movement of the disk in that direction, and a second stop 26 is provided at an end of the finger cavity 12 to engage the opposite end of the seat 8 and limit the turning movement of the disc in that direction. By these stops I am enabled to provide stops so that the circular disc 10 may be turned only through the required number of degrees relative to the closure 6, or changed from the closed position as shown in Fig. 2 to the open position, as shown in Fig. 4, or vice-versa.

In the modified form, shown in Fig. 7, I have utilized the same construction as described above with the exception that the disc 10 has serrations 12^a on the periphery thereof instead of the cavity 12, and by which the disc is turned.

While I have not disclosed in Figs. 1 to 5 of the drawing a form of my closure for collapsible tubes, which is made integral with the tube, it will be understood that such a modification of my closure would not require any more change than the omission of the screw-threads which are a part of the conventional form of collapsible tube opening, for in making my closure integral with the collapsible tube, it will only be necessary to provide the semi-cylindrical seat 8 instead of screw-threads when forming the collapsible tubes, as shown in Fig. 6.

It is within my knowledge that innumerable attempts in making sanitary and efficient tube clo-

asures have been made, but, as far as I am aware, none of these closures have been satisfactory, either because the closure was so constructed that a portion of the tube contents would remain on the outside of the closure after the same was closed or because when the closure was opened, a portion thereof would smear along some normally exposed surface, thereby contaminating the portion of the closure which at all times should be kept in a sanitary condition, in the event that the closure is to be used for a tube of tooth-paste, shaving-cream, or the like. By the use of my tube closure, I am enabled to avoid these difficulties and provide a closure which at all times remains clean, in a sanitary condition, and conveniently operated with one and the same hand holding the tube.

I claim:

1. A closure adapted to be affixed to the mouth of a collapsible tube, said closure having a semi-cylindrical seat therein and provided with an orifice establishing communication between the seat and the mouth of the tube, a closure-operating disk corresponding in shape with and fitted to turn in said seat, the disk provided with a hole in the position of a secant for registry with the orifice when the device is in its open position with a gasket interposed between the disk and seat for making a close contact between the seat and disk.

2. A closure adapted to be removably attached to the mouth of a collapsible tube, said closure

having a semi-spherical seat with opposed parallel walls and provided with an orifice establishing communication between the interior of said tube and said seat, and a disk having a cylindrical portion fitted to the seat and side walls and adapted to turn thereagainst, means for pivoting the disk in position with respect to the seat and side walls so that a portion is enclosed by the side walls and the remaining portion protrudes beyond the side walls to provide means for turning the disk back and forth, the disk having a hole extending therethrough in the position of a secant.

3. A closure adapted to be removably attached to the mouth of a collapsible tube, said closure having a semi-spherical seat with opposed parallel walls and provided with an orifice establishing communication between the interior of said tube and said seat, and a disk having a cylindrical portion fitted to the seat and side walls and adapted to turn thereagainst, means for pivoting the disk in position with respect to the seat and side walls so that a portion is enclosed by the side walls and the remaining portion protrudes beyond the side walls to provide means for turning the disk back and forth, the disk having a hole extending therethrough in the position of a secant, the disk having means on the protruding portion for limiting the turning movement in both directions.

ALEXANDER A. SCOTT.