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R. E. NICHOLS

1,911,284

CLOSURE FOR COLLAPSIBLE TUBES

Filed April 9, 1932

Fig. 1.

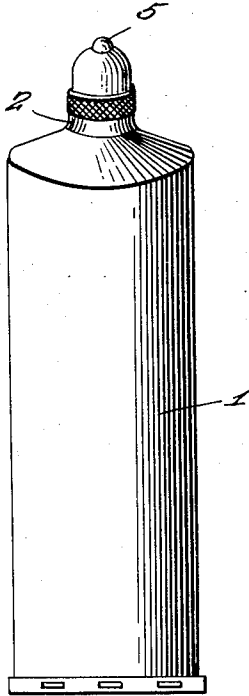


Fig. 2.

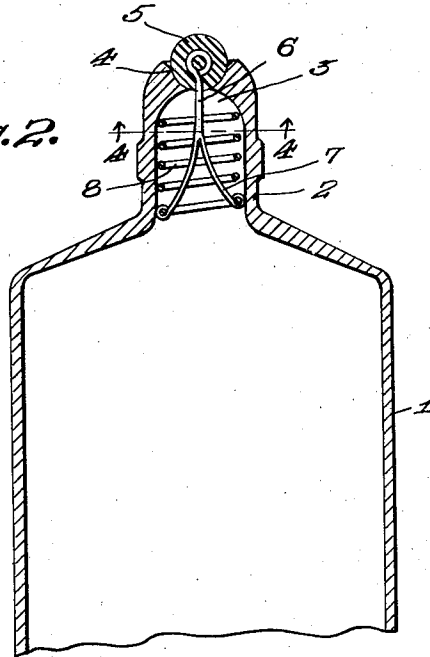


Fig. 4.

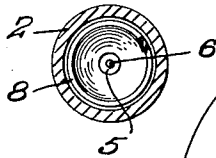


Fig. 3.

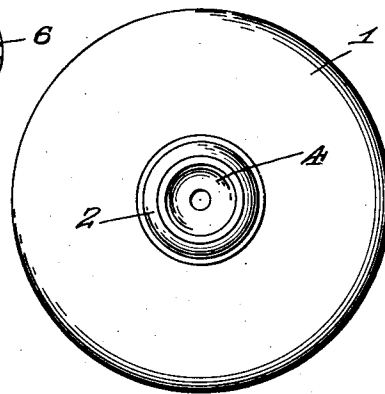
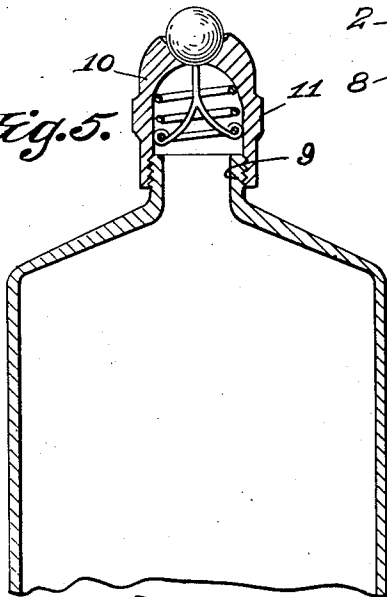


Fig. 5.



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CLOSURE FOR COLLAPSIBLE TUBES

Application filed April 9, 1932. Serial No. 604,324.

This invention relates to closures for collapsible tubes of the type adapted for containing and dispensing semi-liquids, such as tooth paste, shaving cream, and the like, and has for the primary object, the provision of a device of the above stated character which provides an automatic seal for the tube preventing the evaporation of the contents or the entrance of foreign matter and which permits the contents to be dispensed in desired amounts by pressing on the tube and thereby obviating the customary removable closure and the disadvantages thereof.

With this and other objects in view, this invention consists in certain novel features of construction, combination and arrangement of parts to be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawing, in which

Figure 1 is a side elevation illustrating a collapsible tube with a closure constructed in accordance with my invention.

Figure 2 is a fragmentary vertical sectional view illustrating the same.

Figure 3 is a top plan view with the ball valve removed.

Figure 4 is a sectional view taken on the line 4-4 of Figure 2.

Figure 5 is a fragmentary vertical sectional view illustrating a modified form of my invention.

Referring in detail to the drawing, the numeral 1 indicates a conventional type of collapsible tube on which is formed a discharge neck 2 having a chamber 3 therein, the inner wall of which is of semi-circular shape. The neck 2 in the end thereof is provided with a semi-spherical shaped seat 4 communicative with the chamber 3 so that the contents of the tube may be dispensed by pressing on the tube in the usual manner.

A ball valve 5 engages the seat and has an attaching medium 6 extending into the chamber 3. The attaching medium 6 is provided with forked portions 7, the ends of which are bent about the end convolution of a coiled spring 8 located in the chamber 3. When

pressure is applied to the tube 1 the contents force the ball 5 away from the seat 4 against the action of the spring 8 allowing the contents to escape in desired amounts and as soon as the pressure is relieved on the tube 1, the spring 8 seats the valve and closes the neck to prevent evaporation of the contents of the tube or the entrance of foreign matter to the tube.

As shown in Figure 2, the neck 2 forms an integral part of the tube; however, the neck may be constructed to form a separate unit from the tube as shown in Figure 5. The tube in the last named figure is provided with a screw-threaded neck 9 to which an auxiliary neck 10 is threaded. The auxiliary neck 10 is constructed similar to the neck 2 and is provided upon its outer wall with a knurled surface 11 to facilitate the threading thereof onto the neck 9.

While I have shown and described the preferred embodiment of my invention, it will be understood that minor changes in construction, combination and arrangement of parts may be made without departing from the spirit and scope of my invention, as claimed.

Having thus described my invention, what I claim is:—

A closure for collapsible tubes comprising a neck carried by the tube and having a chamber and a discharge port, a valve seat formed on the neck above said port, a ball valve to engage said seat, and an attaching medium carried by the valve and extending through the port into the chamber and having diverging portions, and a coil spring seated in the chamber with the attaching medium extending therethrough and having the ends of the diverging portions thereof secured to one of the end convolutions of the spring.

In testimony whereof I affix my signature.
ROBERT E. NICHOLS.