April 2, 1935. J. D. DUNNING 1,996,284

OUTLET CONTROL MEANS FOR COLLAPSIBLE MATERIAL HOLDING TUBES

Filed March 17, 1934

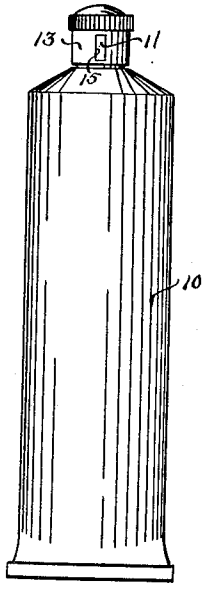


Fig. 1.

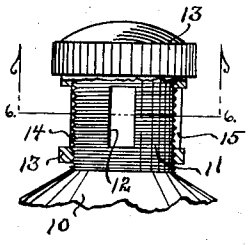


Fig. 2.

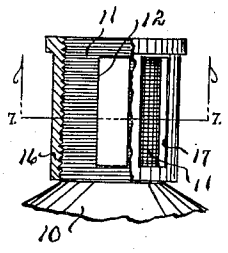


Fig. 3.

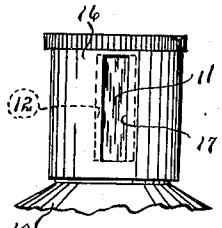


Fig. 4.

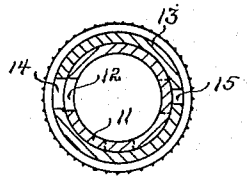


Fig. 6.

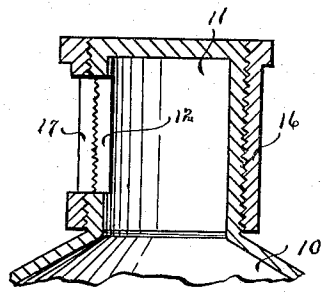


Fig. 5.

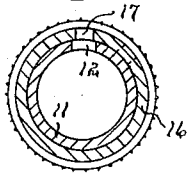


Fig. 7.

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UNITED STATES PATENT OFFICE

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OUTLET CONTROL MEANS FOR COLLAPSIBLE MATERIAL HOLDING TUBES

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Application March 17, 1934, Serial No. 716,073

1 Claim. (Cl. 221—60)

This invention relates to collapsible metal tubes for holding plastic materials such as tooth paste, cosmetic creams, shaving cream soaps, medical creams and lotions, glue, paint, and the like.

The principal object of my invention is to provide an outlet control means for collapsible material holding tubes that is rapid and positive in operation.

A further object of this invention is to provide a metal material holding tube and opening and closing means therefor that eliminates the necessity of completely removing the usual closing screw cap, thereby insuring the user against accidental loss of the closing cap.

A still further object of this invention is to provide a plastic holding and dispensing tube that projects the material being dispensed in the form of a ribbon and in a direction transversely to the longitudinal axis of the tube.

A still further object of my invention is to provide a plastic holding and dispensing tube that permits the selection of a plurality of varying discharge openings, thereby making possible streams of varying cross-sectional area.

A still further object of this invention is to provide an outlet control means for material holding and dispensing tubes that is economical in manufacture and durable in use.

These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, pointed out in my claim and illustrated in the accompanying drawing, in which:

Fig. 1 is a side view of an ordinary metal material holding tube with one form of my opening and closing means employed thereon and in a closed condition.

Fig. 2 is an enlarged side view of the nozzle end of a tube having still another form of my opening and closing member thereon, a section of which is cut away to more fully illustrate the construction of the same.

Fig. 3 is an enlarged side view of the nozzle end of a tube with my opening and closing member thereon, a section of which is cut away to illustrate the specific collar construction which is a slight modification from the construction shown in Fig. 2.

Fig. 4 is an enlarged side view of the nozzle end of a tube and an opening and closing collar thereon, having a construction like that shown in Fig. 3.

Fig. 5 is an enlarged side sectional view of my device as illustrated in Fig. 3, and shows the same in an open condition.

Fig. 6 is a cross-sectional view of the device as shown in Fig. 2 and is taken on line 6—6 of that figure, but with the cap rotated from a closed position to an open position.

Fig. 7 is a cross-sectional view of the device as shown in Fig. 3 and is taken on line 7—7 of that figure, but with the collar rotated from a closed position to an open position.

The present method of opening and closing the discharge end of metal tubes of this class is with an ordinary cup cap screwed onto the threaded end of the tube's discharge nozzle. This is objectionable as it takes a considerable length of time to screw the cap completely off and then screw it back on. What usually happens is that the detachable cap is lost entirely or accidentally dropped down the outlet pipe of the lavatory. I have overcome all such objections, as will be appreciated by those using tubes of this nature.

Referring to the drawing, I have used the numeral 10 to designate the usual collapsible metal holding tube having the threaded discharge end nozzle portion 11. This nozzle portion in my invention differs from the usual nozzle in that it has a longitudinal discharge slot opening 12 in its side wall, as shown in Fig. 2. When an opening and closing cap of a construction shown in Fig. 1 and Fig. 2 is used, the forward end of the nozzle 11 may either be open or closed, but if a construction shown in Fig. 3, Fig. 4, or Fig. 5 is used the end of the nozzle must be of closed construction. I have used the numeral 13 to designate my opening and closing member as illustrated in Figs. 1, 2, and 6. This member is a cup cap threaded onto the nozzle portion 11 of the tube. The numerals 14 and 15 designate two spaced apart longitudinal slot openings in the side wall of the cap 13. These two slot openings are of different widths and are capable of selectively registering with the slot opening 12 of the nozzle 11.

By this arrangement of parts, when it is desired to obtain material from the tube, it is merely necessary to slightly rotate the member 13 until either the slot opening 14 or 15 registers with the slot opening 12 in the nozzle 11. By the slot openings 14 and 15 being of different sizes, one may selectively obtain a stream of material from the tube of different cross-sectional area. The cross-sectional area of the stream of material may also be adjustably varied by adjusting the de-

gree of registration of the slot opening in the cap relative to a slot opening in the nozzle. To close the tube it is merely necessary to rotate the cap slightly to a position where the slot opening or openings in the cap do not register with the slot opening in the nozzle portion. From this description it will readily be noted that the material desired may be easily and quickly obtained from the tube and without danger of losing the closing cap.

In Figs. 3, 4, 5, and 7, a slightly modified cap member 16 is shown. This member 16 is exactly like the screw cap member 13, except that it has no bottom and therefore is of collar construction. Its operation is exactly like that of the cap 13. The numeral 17 designates the slot opening in the side of the collar 16. Any number of slot openings may be formed in the members 13 or 16, but it is believed that for most purposes a single slot opening will suffice.

By the slot openings in the cap members 13 and 16 and the slot opening in the nozzle 11 being longitudinal of the longitudinal axis of the tube 10, the stream or ribbon of the material passing from the tube will be to the side or transversely of the length of the tube, thereby making for ease and naturalness in handling, which is not the case if the material were to be discharged out of the end of the nozzle.

From the foregoing, it will be noted that I have provided a very desirable opening and closing means for material tubes.

Some changes may be made in the construction and arrangement of my improved outlet control means for collapsible material holding tubes without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claim any modified forms of structure or use of mechanical equivalents which may be reasonably included within its scope.

I claim:

In a device of the class described, a material holding tube of the collapsible type, a discharge nozzle on said tube having a longitudinal slot opening with spaced apart edges, and a closure member threaded on said nozzle having two similarly shaped longitudinal slot openings each capable of selectively registering with said slot opening in said nozzle; one of said slot openings in said closure member having an opening area substantially less than that of the other slot opening.

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