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DISPENSING TUBE

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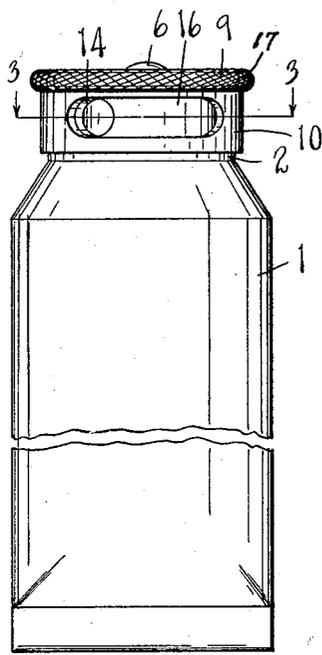


Fig. 1

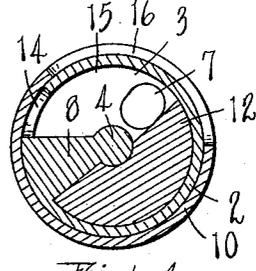
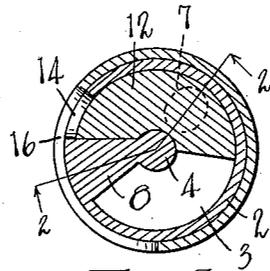
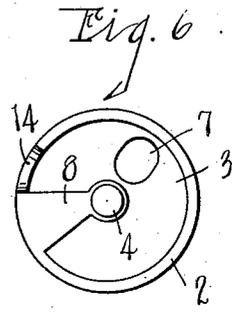
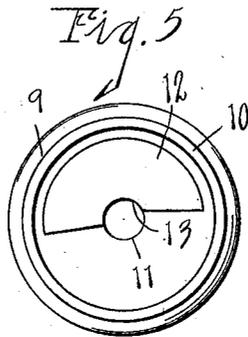


Fig. 3

Fig. 4

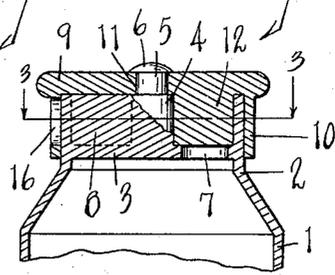


Fig. 2

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DISPENSING TUBE

Application filed June 15, 1931. Serial No. 544,443.

The main object of the invention is to provide a dispensing device which is simple in construction, efficient in operation and relatively easy to assemble.

Another object of the invention is to provide a dispensing closure for collapsible tubes and the like which has the above desirable characteristics and one which is also an efficient closure which is desirable particularly where the tube contains material affected by air.

Objects relating to details and economies of my invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a plan view partially broken away of a collapsible tube constructed in accordance with my invention.

Fig. 2 is a fragmentary view in vertical section of the tube taken on line 2—2 of Fig. 3.

Fig. 3 is a horizontal sectional view of the tube taken on line 3—3 of Figs. 1 and 2.

Fig. 4 is a view similar to Fig. 3 showing the cap in a closed position.

Fig. 5 is a bottom plan view of the cap alone, and

Fig. 6 is a top plan view of the neck of the tube without the cap.

In the drawings, numeral 1 indicates a collapsible tube, the contents of which may be tooth paste, shaving cream, paint pigment or the like. The tube 1 is provided with a neck 2 of reduced section which is preferably in the form of a cylinder.

At the bottom of the neck 2 is formed a horizontal partition 3 having a vertical stud 4 concentric with the cylindrical neck 2 and surmounted by a spindle 5 having a laterally projecting head 6. A vertical slot 7 extends through the partition 3 whereby contents of the tube 1 may be squeezed into the neck 2.

The neck 2 is also provided with a vertical partition or wall 8 which is preferably of V-shape and formed integrally with the inner wall of the neck 2, the stud 4 and the

partition 3. The top of the wall 8 terminates in the plane of the top of the neck 2.

A cap 9 is rotatably mounted on the spindle 5 and is provided with a downwardly extending skirt 10 which embraces the neck 2. The spindle 5 extends through an opening 11 provided therefor in the top of the cap 9. A semi-circular body portion 12 depends from the top of the cap 9 into the neck 2, as indicated in the drawings, the periphery and bottom thereof being shaped so as to slidably fit the inner wall of the neck 2 and the top of the partition 3 respectively.

The center of the body portion 12 is preferably provided with an arcuate recess 13 which is adapted to slide around the periphery of the stud 4.

The opening 7 and the body portion 12 are positioned with respect to each other so that when the cap is closed, one side of the body portion engages a side of the V-shaped wall 8 and the other side lies alongside of the hole 7, uncovering the same as shown by Fig. 4.

The neck 2 is also provided with a horizontal hole 14 in the side thereof adjacent one side of the V-shaped wall 8 in spaced relation to the vertical hole 7 so that a measuring space 15 is provided, when the cap is in its closed position, between the V-shaped wall 8 and the body portion 12.

A peripheral slot 16 is provided in the skirt 10 which is adapted to uncover the hole 14 in the side of the neck 2 when the cap 9 is turned from its extreme closed position, as shown by Fig. 4, around to its extreme open position, as shown by Fig. 3. The slot 16 is preferably approximately equal in length to the peripheral movement of the skirt 10 plus the diameter of the hole 14.

In operation, the tube is squeezed with the cap closed, as shown by Fig. 4, and the contents thereof are forced through the opening 7 in the partition 3 into the measuring space 15 in the neck 2. The cap is then turned to the left causing the bottom of the body portion 12 to cover the top of the hole 7, move the slot 16 so as to uncover the hole 14, at the same time compressing the contents of the space 15 and causing it to be ejected there-

from through the hole 14 in the side of the skirt.

The contents of the measuring space 15 are completely ejected by turning the cap to its complete open position, as shown by Fig. 3. The cap may be left in this position until it is desired to use the tube again or the cap may be turned to its refilling position, as indicated by Fig. 4. The operation of the measuring may be repeated when and as often as desired.

It is to be noted that the closure above described provides an efficient seal when the cap is either in its extreme closed or in its extreme open positions. In any position, however, at least one of the openings 7 or 14 is closed thereby sealing the contents of the tube 1 from the atmosphere and consequent deterioration.

While I have described my improved closure in connection with a collapsible tube, it will be apparent to those skilled in the art that it may be used with other containers such as bottles, uncollapsible tubes or the like. Furthermore, if desired the device may be used by itself for measuring certain quantities of any desired material. In this use, the neck 2 and the cap would take the form of telescoped cylindrical cups in which case either opening could be the inlet opening with the other opening the outlet opening.

As shown by Fig. 1, the cap 9 is preferably provided with a projecting knurled rim 17 around the upper periphery thereof whereby the cap may be easily grasped and turned with the fingers. This is especially desirable where the cap happens to be slippery or wet.

Various changes may be made in the details of construction of my preferred embodiment without departing from the spirit of the invention which is intended to be limited only by the prior art and the scope of the following claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A collapsible tube having a cylindrical neck, said neck having a horizontal partition, said partition having a vertical stud concentric with said neck and extending beyond the top thereof, said horizontal partition having a vertical hole therein, a vertical V-shaped wall in said neck extending horizontally from the inner periphery thereof to said stud and vertically from said partition to the top of said neck, said neck having a horizontal hole therein adjacent said wall, a cap rotatably mounted on said stud having a skirt slidably embracing said neck and a semi-circular body portion depending into said neck, the bottom and sides thereof being shaped to slidably fit the top of said partition and the inner surface of said neck respectively, said skirt having a horizontal slot therein adapted to cooperate with the hole in said neck whereby

when the cap is closed said neck may be filled by pressing the tube and when said cap is rotated said slot permits said body portion to eject the contents of said neck through said horizontal hole, at the same time covering the top of said vertical hole in said partition.

2. A collapsible tube having a cylindrical neck, said neck having a horizontal partition, said partition having a vertical stud concentric with said neck having a spindle of reduced diameter and extending beyond the top thereof, said spindle having a laterally projecting head, said horizontal partition having a vertical hole therein, a vertical V-shaped wall in said neck extending horizontally from the inner periphery thereof to said stud and vertically from said partition to the top of said neck, said neck having a horizontal hole therein adjacent said wall, a cap rotatably mounted on said stud having a hole accommodating said spindle, a skirt slidably embracing said neck and a semi-circular body portion depending into said neck, the bottom and sides thereof being shaped to slidably fit the top of said partition and the inner surface of said neck respectively, said skirt having a horizontal slot therein adapted to cooperate with the hole in said neck, whereby when the cap is closed said neck may be filled by pressing the tube and when said cap is rotated said slot permits said body portion to eject the contents of said neck through said horizontal hole, at the same time covering the top of said vertical hole in said partition.

3. A collapsible tube having a cylindrical neck and an integral partition at the bottom thereof having a stud thereon, a hole therein and a vertical wall, a cap rotatably mounted on said stud having a skirt embracing said neck and a body portion depending into said neck, said neck having a hole therein, said skirt having a peripheral slot coacting with said hole whereby when said cap is closed said neck may be filled by forcing contents of the tube through said hole in said partition, and when said cap is turned from said closed position said body portion covers said hole in said partition, said slot uncovers said hole in said neck, and said body portion compresses the contents of said neck and causes it to be ejected out of said hole in said neck, the length of said slot being equal to the peripheral travel of said cap plus the diameter of said hole in said neck.

4. In combination, a pair of relatively rotatable telescoping cylindrical cups for measuring material, one of said cups having a hole in the wall thereof and the other cup having a hole in the bottom thereof, said cups having coacting integral partitions therein forming a measuring space between said holes, said cup having a hole in the bottom thereof also having a peripheral slot therein coacting with said hole in the wall of the other cup, where-

by the one of said cups may be rotated so that
said measuring space may be filled through
one of said holes and then rotated in the op-
posite direction to close said inlet hole, un-
cover the other hole and eject the measured
5 contents therethrough.

In witness whereof I have hereunto set my
hand.

LOUIS J. SCHEID.

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