Dec. 14, 1926. 1,610,484

L. BOGGERO ET AL

DISPENSING TUBE

Filed May 19, 1926

Fig. 1

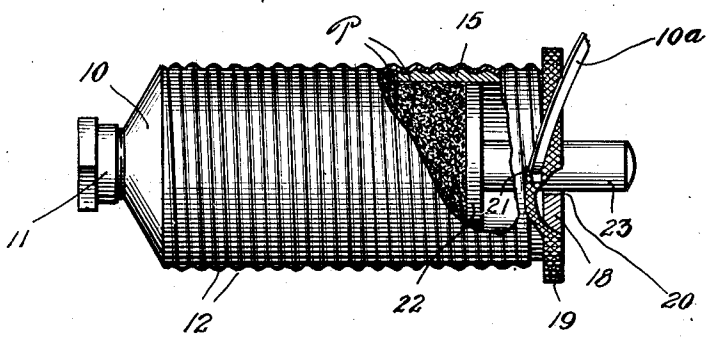


Fig. 2

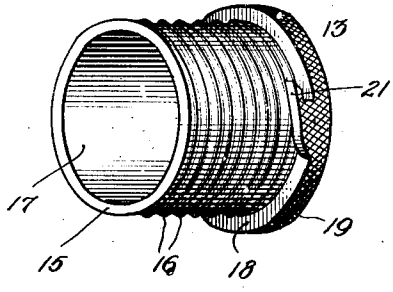


Fig. 3

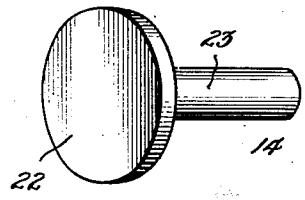
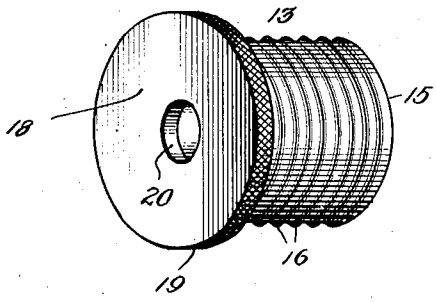


Fig. 4



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UNITED STATES PATENT OFFICE.

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DISPENSING TUBE.

Application filed May 19, 1926. Serial No. 110,102.

This invention relates to the dispensing of greases, pastes, shaving cream, cosmetics, or other commodities, and has particular reference to a novel and efficient means for regulating the length of the container from which the commodity is to be dispensed.

Among the objects of the invention is to provide a tube having a delivery end remote from which is a peculiar ejector mechanism so acting upon the tube as to maintain the tube of constant diameter and cross sectional form, but providing for the reduction in the length of the tube as the ejector action progresses.

More specifically, one of the objects of our invention is to provide a dispensing tube of any suitable frangible material such as lead or other soft metal and having plunger means at one end movable forward toward the delivery end of the tube at intervals, and having means associated with the plunger means for severing the tube for reducing the length thereof in accordance with the progressive forward movements of the plunger.

With the foregoing and other objects in view the invention consists in the arrangement and combination of parts hereinafter described and claimed and while the invention is not restricted to the exact details of construction disclosed or suggested herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings in which like reference characters designate the same parts in the several views, and in which:—

Figure 1 is a side elevation, partly in section, of a preferred embodiment of our invention.

Fig. 2 is a perspective view of a follower.

Fig. 3 is a perspective view of the plunger.

Fig. 4 is a perspective view of the follower, this view being at the reverse end from that shown in Fig. 2.

From what has been premised above it will be understood that the tube 10 is to be made preferably from cheap frangible metal substantially in accordance with the usual practice of the making of dispensing tubes, and is provided at its delivery end with any suitable cap or closure mechanism 11. The main shell of the tube instead of being cylindrical is provided with a spiral thread 12 effective especially on the inner surface, though for cheapness and convenience of manufacture, the thread obtains on both the inner and outer surfaces.

The end of the tube remote from the cap 11 would be open but for the follower and plunger mechanism now about to be described. After the tube is filled with the contents represented by the letter P, the follower and ejector mechanism is inserted, filling or closing the open end of the tube.

The mechanism just referred to comprises, as shown herein, two parts—a follower 13 and a plunger 14. The follower comprises a thimble shaped nipple portion 15 having an external thread 16 and a preferably smooth cylindrical bore 17, and at its outer end it is provided with a disk 18 having a knurled rim 19 extending laterally beyond the nipple and having at its center a smooth central hole 20. The thread 16 conforms to the thread 12 formed on the inner surface of the tube. Formed on the inner surface of the periphery of the disk 18 close against the thread 16 is a cutter 21, the active edge or point of which is spaced from the disk equal to about the pitch of the thread.

The plunger comprises a plain disk or head 22 from the center of one side of which projects a stem 23. The disk 22 fits slidably into the interior surface of the follower, while the stem slides smoothly in the center hole 20 of the disk. The length of the stem approximates that of the thimble or nipple 15.

The operation is substantially as follows: With the tube filled with the paste P and the follower 15 introduced to close the rear end thereof, the follower being screwed into place according to the usual operation of a screw and nut, the paste will force the plunger outward or with the disk 22 close to the disk 18 of the follower, the stem 23 projecting to the maximum extent. To eject the paste as desired from time to time the operator simply grasps the rear end of the tube between his first two fingers and presses upon the end of the stem with his thumb, whereby the movement of the plunger toward the delivery end will cause the ejection of as much of the paste as is desired at that time. This ejector action may be repeated as often as desired until the stem is forced down substantially flush with the disk 18, the disk of the plunger at this time coming flush with the inner end of the nip-

ple 15. For subsequent ejection of the paste the operator will hold the tube in one hand and grasp the knurled flange 19 of the follower with his other hand and rotate the members relatively causing the cutter 21 to shear off the rear end of the tube in accordance with the rotation of the follower. That is to say, for every turn of the follower the cutter will slice off the equivalent of one thread of the tube. While this action continues the paste enters again within the nipple causing the plunger to be returned relatively outward to its original position. The strip 10[a] of the tube thus sheared off will then be torn off adjacent to the cutter by simply grasping it and giving it a pull or twist with the fingers. Then the ejection of the paste may proceed as at the beginning by pressure on the extended arm of the stem. It will thus be seen that the device is always kept in proper form and in a clean, neat, sanitary condition, and that the ejector mechanism may be operated successively until the last vestige of the paste is ejected. Ordinarily the several parts are all made of cheap material and so may be discarded when the tube is empty or exhausted. The cutter mechanism may include a bit of sharp steel as the cutting point, but this is very cheap.

We claim:

1. In a dispensing device, the combination of a tube for holding the commodity to be dispensed, forwardly-movable ejector mechanism in the one end of the tube for forcing the commodity forward, said ejector mechanism including a cutter acting upon the tube and constituting means for reducing the length of the tube from time to time in accordance with the forward movement of the ejector mechanism while maintaining the tube in normal cross sectional form

2. In a device of the class set forth, the combination of a tube of circular cross section and having delivery controlling means at one end, and ejector mechanism at the other end, said ejector mechanism including a plunger, and means associated with the plunger to reduce the length of the tube while maintaining its normal circular form in cross section.

3. In a device of the class set forth, the combination of a tube having an internal thread from one end to the other, a rotatable follower threaded into one end of the tube and constituting a closure therefor, said follower including a cutter projecting radially beyond the threads and constituting means to shear off the rear end of the tube to reduce the length thereof when the follower is rotated with respect to the tube.

4. In a dispensing device including a frangible tube ejector mechanism including a tubular follower movable forward within the tube and maintaining the tube in constant cross sectional form, a cutter carried by the follower and projecting outward therefrom beyond that portion of the follower within the tube and constituting means to reduce the length of the tube in accordance with the forward movement of the follower, and a plunger fitted slidably within the follower and movable independently of the movement of the follower.

5. Mechanism as set forth in claim 4 in which the follower is threaded within the tube and is moved forward by rotation because of the threads.

6. Mechanism as set forth in claim 4 in which the plunger is provided with a stem projecting from the follower, the length of the stem being substantially equal to the length of the follower.

In testimony whereof we affix our signatures.

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