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J. DROBNIOWSKY

2,186,449

DISPENSING DEVICE

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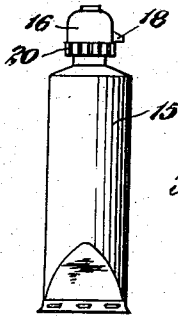


Fig. 1

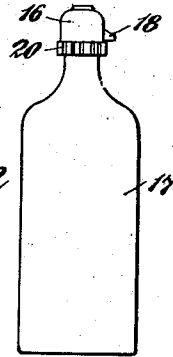


Fig. 2

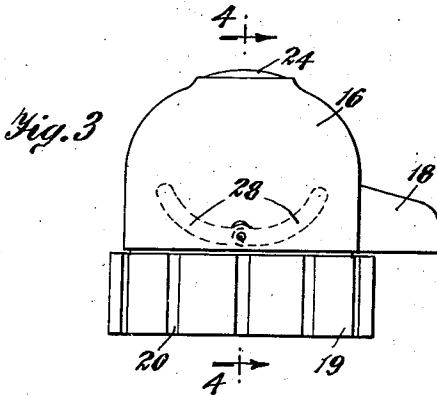


Fig. 3

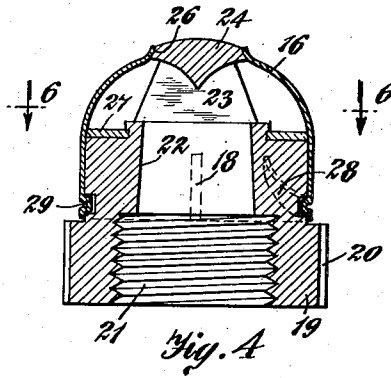


Fig. 4

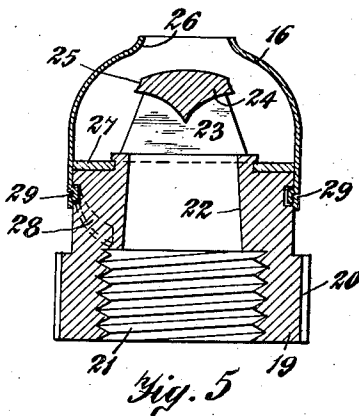


Fig. 5

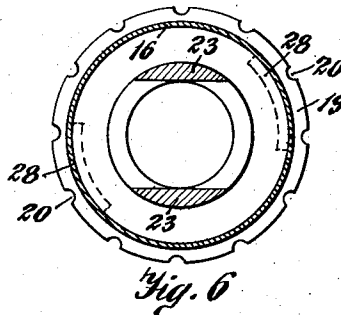


Fig. 6

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DISPENSING DEVICE

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2 Claims. (Cl. 221-60)

This invention relates to closures, adapted for engagement on the dispensing end of collapsible tubes, bottles and other forms of containers dispensing plastic, semifluid or liquid materials.

5 The principal object of this invention is to provide a closure for containers that will maintain the contents in sterile condition and prevent loss of material from evaporation.

10 Another object of the invention is to improve the construction of a closure particularly adapted to be applied to or used in connection with compressible tubes containing toothpaste, shaving cream and many like substances.

15 A further object is to provide an ejector valve operating within a rotatable actuator which, upon rotation, causes the cap to open and close.

Other objects of this invention are set forth in the following specification and accompanying drawing, in which:

20 Figure 1 is a side elevational view of a collapsible tube having a closure made in accordance with the invention.

Figure 2 is a similar view of a bottle.

25 Figure 3 is an elevational view of the device assembled.

Figure 4 is a vertical sectional view, taken on line 4-4 of Figure 3, showing the closure in closed position.

30 Figure 5 is a vertical sectional view, showing the closure in open or delivery position.

Figure 6 is a sectional view of the device taken on line 6-6 of Figure 4.

35 Referring to the drawing in greater detail, the numeral 15 represents a collapsible tube of usual construction, having a removable closure thereon, and 17 shows a bottle having a threaded end on which the closure has been placed.

40 Figure 3 shows the closure assembled end in which 16 is a semi-rotatable cap having a semi-spherical upper portion, downwardly depending tubular sides and a wing 18 extending outwardly therefrom providing a finger grip for manually semi-rotating the cap.

45 An annular base 19 has grooved 20 spaced therearound forming a finger grip for tightening the device on the tube, its screw threaded opening 21 is made in different sizes adapted to fit standard threaded elements used by tube manufacturers.

50 Above the base 20 is a conical passage 22 extending from the threaded section upward through the body. Integral with and extending upward from the base are a pair of narrow opposed arms 23, connected at their upper ends 55 by an ejector valve 24.

The outer edges of the valve supporting arms are shaped to conform to the interior of the cap 16, and the circumferential edge 25 of the ejector valve 24 is contoured to tightly fit the interior reversed curve 26 forming a valve seat as best 5 seen in Figure 4.

A packing ring 27, set in an undercut recess in the top of the base, prevents leakage of material between the rotatable cap 16 and the body 19. 10

Formed on the peripheral face of the mid-portion of the body 16, and diametrically opposite, are a pair of helical grooves 28.

15 After assembling, the cap and base units 16 and 19 respectively, have key-like depressions 29 spun or otherwise forced inwardly partially through the wall of the cap 16 and into the grooves 28 to an extent preventing removal of the cap, but permitting its free rotation.

20 It will be seen that as the cap is rotated upon the base, it will be moved upward and downward in accordance with the direction in which it is turned; also that the movement of the cap is limited by the circular length and angularity of the spiral grooves 28. 25

It is to be understood that modifications of this invention may be made without departing from the essential features, construction and arrangements of parts as shown and described.

What I claim is: 30

1. In a closure for containers having a neck, an annulus fixed thereon, a valve plug having depending arms integral with said annulus and disposed axially thereover, said annulus having opposed helical channels in its outer surface, a 35 cap circumjacent said annulus, a valve seat cooperative with said plug and carried by said cap, an inreaching projection on said cap extending into said channels, and means for manually rotating said cap whereby said plug may be 40 raised and lowered with respect to said valve seat.

2. In a closure for container mouths, a cylindrical body on the container mouth, a valve slug spaced above and integral with said body, said 45 body having one or more helical grooves in its periphery, a cap rotatable on said body, internal key elements in said cap extending into the helical grooves, a handle reaching radially from said cap, and a valve seat carried by said cap cooperative with said valve slug as it is raised and 50 lowered by manipulation of said handle.

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