May 1, 1962 D. M. DUNKLEE 3,032,240

DISPENSING CLOSURE FOR CONTAINERS

Filed March 16, 1959

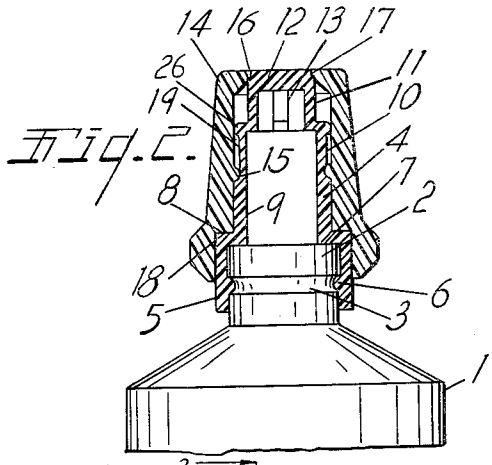

Fig. 2.

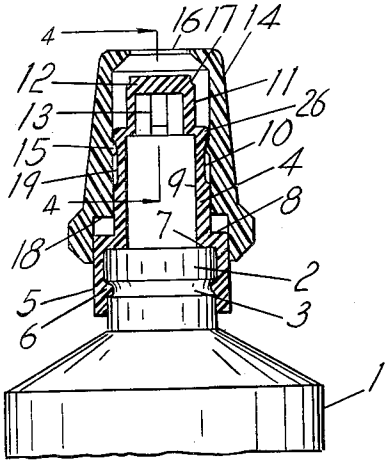

Fig. 3.

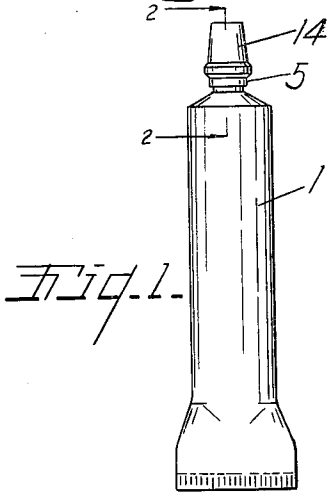

Fig. 1.

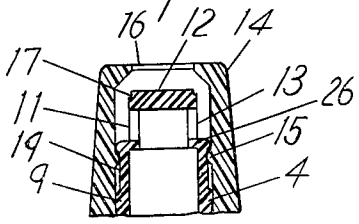

Fig. 4.

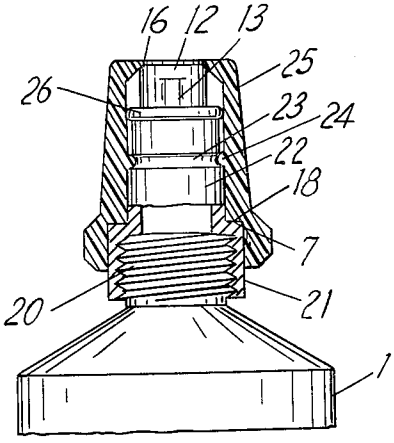

Fig. 6.

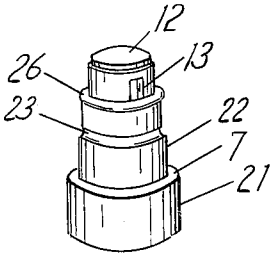

Fig. 5.

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DISPENSING CLOSURE FOR CONTAINERS

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This invention relates to a dispensing closure for containers for flowable material such, for example, as toothpaste, shaving cream and other types of paste-like materials.

The main objects of this invention are:

First, to provide a closure for containers for flowable materials which may be quickly adjusted to open or to dispensing position and quickly closed acting as a cut-off valve and which remains in either adjusted position until manually manipulated.

Second, to provide a closure embodying these advantages which may be economically produced, is compact and attractive in appearance and may readily be formed of springable plastic material.

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

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

FIG. 1 is a side elevational view of a collapsible tube type of container and closure therefor embodying my invention.

FIG. 2 is an enlarged fragmentary view partially in vertical section on a line 2—2 of FIG. 1 with the closure in closed position.

FIG. 3 is a corresponding view in section on a line corresponding to line 4—4 of FIG. 3 disclosing the preferred arrangement of the discharge opening of the closure body member.

FIG. 4 is a fragmentary section on a line corresponding to line 4—4 of FIG. 3.

FIG. 5 is a perspective view of a modified form of body member.

FIG. 6 is a fragmentary view partially in longitudinal section corresponding to that of FIG. 2 of a modified form or embodiment of my invention in which the closure member is adapted to be threaded upon screw threaded necks of containers.

In the accompanying drawing I have illustrated my invention in connection with a collapsible tube type of container designated generally by the numeral 1.

In the embodiment illustrated in FIGS. 1 to 4, detailed therein, the neck 2 of the container 1 is provided with an annular groove 3. The closure of my invention comprises the body member 4 desirably formed of plastic, as is conventionally illustrated, and comprises an inner portion 5 having an internal annular rib 6 retainingly engaged with the groove 3 in the neck 2. That is, it is retainingly engaged for ordinary manipulation in the opening and closing of the closure member but in the embodiment detailed in FIGS. 2 and 3 the portion 5 of the body member is springable so that it may be engaged with a neck by endwise thrust and with pull it may be disengaged, but that requires more stress than would be incident to the use manipulation of the closure.

The member 4 has an inwardly facing shoulder 7 engaged with the end of the neck so that the body member is nonslidably and nontiltably supported on the neck 2. The body member has an external shoulder 8 and an intermediate cylindrical portion 9 of substantial length provided with a peripheral groove 10 of substantial width.

The body member has an outer end portion 11 of substantially less diameter than the intermediate portion and having a closed outer end 12 and discharge side

openings 13. The cap member 14 is also desirably formed of plastic and is internally dimensioned to slidably sleeve upon the body member for longitudinal frictional sliding adjustment thereon and is provided with an inwardly projecting internal rib 15 engaging the groove 10, the width of the groove limiting the longitudinal adjustment of the cap upon the body member, as is illustrated in FIGS. 2 and 3.

The cap has a central discharge opening 16 dimensioned to closingly or sealingly fit the shouldered outer end portion 17 of the body member and coacts therewith to provide a cut-off valve, see FIG. 2. The cap has an inwardly facing shoulder 18 which seats upon the shoulder 7 of the body member when the cap is in fully closed position. This provides a very firm supporting engagement of the parts. The cap is springably engageable with the body member, that is, it is formed separately and assembled with the body member merely by applying end thrust to the cap and body member. However the parts are held in assembled relation for ordinary use.

In discharge position a free flow is provided and to cut off the flow it is only necessary to seat the cap. The upper end of the body member and the outer end of the cap are flush when in closed position so that the dispensed material may be wiped off the same.

In the embodiment shown in FIGS. 5 and 6, the container 1 is provided with a threaded neck 20 and is common with widely used types of dispensing containers of the general type illustrated. In this embodiment the inner portion 21 of the body member is internally threaded to threadingly engage the neck 20. The body member has an intermediate portion 22 having an annular groove 23 therein adapted to receive the internal rib 24 on the cap 25 when the cap is in closed position.

In this embodiment the springability of the cap permits the disengagement of the rib 24 in the groove 23, the rib being slidable between the groove and the outwardly projecting rib 26 on the body member which serves as a stop limiting the opening movement of the cap. Otherwise the structure is essentially the same as that of the embodiment illustrated in the other figures. The body member of this embodiment is illustrated in FIG. 5.

I have illustrated two embodiments of my invention, that detailed in FIG. 6 adapts the closure to types of dispensing containers having threaded necks. While both embodiments are manipulated the same, that is, merely by an outward upward pull on the cap and an inward closure thrust thereon, the embodiment detailed in FIGS. 2, 3 and 4 does not require as much manipulating stress as in the embodiment shown in FIGS. 5 and 6 in which there is a snap in engagement instead of there being only frictional engagement of the part, as in the embodiments of FIGS. 1 to 4 inclusive. However, both embodiments are easily manipulated and both provide an effective cut off or valve controlling the discharge.

Having thus described the invention, what is claimed as new and desired to secure by Letters Patent is:

1. The combination with a dispensing container provided with a discharge neck, of a dispensing closure for said container comprising a body member including an inner portion supportedly engaged upon said neck and having an outwardly facing external shoulder and an intermediate cylindrical portion disposed outwardly of said shoulder and having an external groove therein of substantial width which has an annular recess at its inner end, the body member having an outer portion of less diameter than its said intermediate portion, said outer portion being closed at its outer end and having an annular outwardly facing shoulder at the tip thereof and a discharge in the side thereof, and a cap member of springably resilient plastic sleeved upon said body mem-

ber for longitudinal sliding adjustment thereon and having an internal annular rib-like keeper member projecting into said groove in said body member in frictional sliding engagement with the bottom thereof and engaging said recess at the inner end thereof when the cap member is in its closed position with its inner end in supported engagement with said shoulder on said body member, said cap member having a central opening at its outer end dimensioned to receive said shoulder portion of said tip of said body member.

2. A dispensing closure for containers comprising a body member supportedly engageable with a container and including a tubular cylindrical portion having an external annular groove therein of substantial width, the body member having an outer portion of less diameter than said cylindrical portion thereof and being closed at its outer end and having a discharge opening in the side thereof, and a cap member of springably resilient material sleeved upon said body member for longitudinal sliding adjustment thereon and having an internal keeper of substantially less width and projecting into said groove and in frictional and sliding engagement with the bottom thereof, said groove having a recess at its inner end with which said keeper member releasably engages when the cap member is in its closed position, said cap member having a central discharge opening at its outer end which is closed by the outer end of said body member when the cap member is in closed position.

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