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DISPENSING CAP AND CLOSURE FOR CONTAINERS

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11 Claims. (Cl. 65—31)

This invention relates to dispensing caps and closures for containers of honey, syrup, catsup, and other viscous liquids that are inherently difficult to dispense in the usual manner. This invention is an improvement on my co-pending application Serial No. 170,781 filed October 25, 1937, which became Patent No. 2,229,303 January 21, 1941.

One of the objects of this invention is to provide means for holding and guiding the slide plate from the lower or inner side thus removing the necessity for external lugs or guides which rub on the upper surface of the slide plate and detracts from the appearance of the dispenser by wearing off the plating or polish.

Another object is to provide the “quality” appeal of a cast thumb-piece and yet retain the advantage of a closure assembly that is readily removable from the cap for cleaning purposes and quickly attached thereto, thus reducing the assembly cost.

This invention also provides a seat for the spring portion of the closure assembly which combines the advantage of ready accessibility for cleaning with a spaciousness which precludes the danger of the spring becoming rusted or corroded therein as may occur in a more restricted seat.

A still further object is to provide a closure assembly with the slide plate of a non-corrosive material and a spring to actuate the slide plate of a more resilient material and yet retain the advantage of removability.

The above mentioned advantages and many others can be readily comprehended from the description and aided by the accompanying drawing, wherein

Figure 1 is a side view, in vertical cross section, of the invention attached to the container, part of which is shown;

Figure 2 is a cross section on the line A—A of Figure 1;

Figure 3 is a plan view of Figure 1;

Figure 4 is a side view, partly in cross section, of a modified form;

Figure 5 is another modified form showing a side view with the cap and handle cast integral with the container;

Figure 6 is a view of Figure 5 looking in line with the handle and spout.

The dispensing cap, shown in Figure 1, has a top 7 having an annular dependent skirt 8. This skirt has provisions, such as threads therein, for attaching the cap to a container 9. The top 7 is continued on another plane forming the top plate 10. This raised portion of the top has a vent hole 11, a pouring spout 12 covered with a side plate or slidable closure 13, and a slot 15 wherein slides a clip 14. This clip is attached to the lower or inner side of the slide plate 13 and guides the slide plate in its sliding movement, it also prevents lateral movement of the slide plate. The slide plate is preferably made of a non-corrosive material, such as stainless steel, or a molded plastic, of which the cap and closure may also be cast. Acid containing materials can then be dispensed without harm to the dispensing device. This clip has a pair of wings 16 pressing against the top plate 10 on both sides of the slot 15 thus pulling the slide plate firmly against the upper surface of top plate 10 and closing the pouring spout.

The slide plate has a continuation forming a thumb-piece 17 with flanges 18 to give it a more substantial appearance. Extending downwardly from the slide plate is a spring 19 the lower end of which rests on the bottom of a V-shaped groove 20. One side of this groove is formed by the dependant skirt 8, the other side 21 by a raised portion of the bottom plate 22 having flanges 23, 24 which with the bottom plate terminate in a handle 24. These flanges close the ends of the V-shaped groove thus retaining the lower end of the spring 19 therein. The sides of the V-shaped groove are preferably spaced at an angle approximately equal to the angle generated by the movement of the spring 19 when the slide plate is retracted. The sides of the V shaped groove then act as stops preventing excessive movement of the slide plate 13. The above reference characters refer to similar parts in all figures.

I find that by using a V-shaped groove instead of a slot, that the spring 19 can be thicker and more resilient, and thus react with greater force. The distortion of the spring when the slide plate is retracted is distributed along its entire length and part of the slide plate. In the two modifications I show other means for guiding the slide plate as I do not wish to be limited in the manner in which my novel closure assembly is used in dispensing devices of this type. The closure assembly consists of the slide plate, the thumb-piece, and the actuating spring or the lower end of the thumb-piece 17 and in Figure 1, the clip 14.

In Figure 4 I have shown one of a pair of lugs 25 which guide the slide plate in the usual manner. The rivet 26 which connects the spring 19 and the thumb-piece 17, is extended and normally closes the vent hole 11.
The modification shown in Figures 5 and 6 has the dispensing cap and the handle cast integrally with the container. The guiding means, ball 27, is a wire bent into a C shape, having its ends inserted in the depressions 28. There are two projections 29, 30 on each side of the container between which the ends of the ball lie, thus preventing movement thereof, when the slide plate is retracted. The ends of the V shaped groove are open and the bottom is curved to facilitate molding. To prevent sideward movement of the lower end of the thumb piece 17, or the spring 19 if the closure assembly shown in Figures 1 or 4 is used, the end is curved as shown at 30 to conform with the curve at the bottom of the V shaped groove. The spring 19 passes through a slot in the thumb-piece 17.

The closure assembly shown in Figures 1, 4, or 5 is interchangeable with either of the other two dispensing caps by: removing or adding the clip 14, adding a curve at the end of the spring 19, changing the location of the vent holes 11, and/or other minor alterations apparent to anyone skilled in the art.

All of the dispensers shown in the drawing are operated by grasping the handle 24, tipping into a pouring position and depressing the thumb-piece 17, this in turn retracts the slide plate 13 uncovering the pouring spout 12. In Figures 1 and 5 the slide plate, when open, arches over the vent hole thus allowing the admittance of air. When the thumb-piece is released the spring rapidly propels the slide plate forward into a closed position cutting off the flow from the pouring spout.

Any of the closure assemblies shown can be readily removed from or attached to the dispensing caps.

I claim:

1. A combined cover and dispenser for a container, comprising a cover having an annular dependent skirt, a lifting means attached to said skirt forming a V shaped groove at the point of attachment, said skirt forming one side of said V shaped groove the other side of which acts as a stop for a spring piece attached to a slide plate normally closing said cover, said V shaped groove having closed ends thus retaining the lower end of said spring piece in position at the bottom of said V shaped groove, means for guiding said slide plate, and means for sliding said slide plate into an open position.

2. A device for the dispensing of a flowable substance, comprising in combination, a base and cover member having a pouring spout at one side thereof and having a slot opening into said spout, a closure plate slidably mounted over said spout and slot, a spring clip adapted to slide in said slot having means, bearing on the inner side of said base and cover member, whereby said closure plate is held in close slidable contact with said pouring spout, manually operable.

3. The combination set forth in claim 2, a handle attached to said base and cover member, and means for holding said closure plate yieldably in a closed position.

4. In a dispenser of the slidable closure type, the combination with a base attachable to a container and provided with a spout, of a closure adapted to slide over and across said spout, means for guiding said closure, a thumb-piece formed integrally with said closure, a spring adapted to hold said closure normally closing said spout, means for connecting one end of said spring to said closure, and a pocket formed opposite said spout, the other end of said spring being inserted in said pocket and pressed against the bottom thereof, the said closure, thumb-piece, and spring, forming a removable unit.

5. In a dispensing device of the slidable closure type attachable to a container, a cap having a pouring spout and having a slot extending through the cover portion thereof, a slidable closure normally closing said pouring spout, a guide member slidable in said slot and being connected to said closure, means for guiding said guide member having a portion thereof bearing against the inner surface of said cover portion thus holding the closure in close sealing contact with the edges of the pouring spout, and means for manually operating said closure.

6. A dispensing and shearing device adapted for dispensing viscous liquids and preventing drip, comprising in combination a body member, an upwardly extending dispensing spout at the forward side of said body member, a stationary shearing member formed on the upper end of said spout, a guideway extending diametrically in alignment to said stationary shearing member, a slidable shearing member mounted in said guideway arranged to afford a close shearing action between the forward end of said slidable shearing member and said stationary shearing member, a pocket formed in said device, and a spring for automatically driving said slidable shearing member across said stationary shearing member substantially as and for the purpose set forth, said spring reacting against the bottom of said pocket.

7. A dispenser of the slidable drip shearing closure type comprising in combination, a base attachable to a container, a pouring spout at one side of said base, said spout having a stationary spout shearing portion, a slidable drip shearing closure normally closing said spout and arranged to shear off the flow of material from said spout when passing over and across said stationary spout shearing portion, means for guiding said closure in its sliding movement, an extension of said base forming an integral handle opposite to the spout, a pocket formed in said extension, a thumb-piece formed integrally with said closure, a spring reactive to pressure exerted downwardly on said thumb-piece, said spring reacting against the bottom of said pocket and being arranged to propel said closure across said spout upon releasing the downward pressure on said thumb-piece, and the said thumb-piece and said closure being arranged and related whereby downwardly exerted pressure applied to the thumb-piece will cause the closure to slide to a spout open position.

8. The combination set forth in claim 2, a handle attached to said base and cover member, and means for holding said closure plate yieldably in a closed position.

9. In a dispenser of the slidable closure type, the combination with a base attachable to a container and provided with a spout, of a closure adapted to slide over and across said spout, means for guiding said closure, a thumb-piece formed integrally with said closure, a spring adapted to hold said closure normally closing said spout, means for connecting one end of said spring to said closure, and a pocket formed opposite said spout, the other end of said spring being inserted in said pocket and pressed against the bottom thereof, the said closure, thumb-piece, and spring, forming a removable unit.

10. In a dispensing device of the slidable closure type attachable to a container, a cap having a pouring spout and having a slot extending through the cover portion thereof, a slidable closure normally closing said pouring spout, a guide member slidable in said slot and being connected to said closure, means for guiding said guide member having a portion thereof bearing against the inner surface of said cover portion thus holding the closure in close sealing contact with the edges of the pouring spout, and means for manually operating said closure.

11. A dispensing and shearing device adapted for dispensing viscous liquids and preventing drip, comprising in combination a body member, an upwardly extending dispensing spout at the forward side of said body member, a stationary shearing member formed on the upper end of said spout, a guideway extending diametrically in alignment to said stationary shearing member, a slidable shearing member mounted in said guideway arranged to afford a close shearing action between the forward end of said slidable shearing member and said stationary shearing member, a pocket formed in said device, and a spring for automatically driving said slidable shearing member across said stationary shearing member substantially as and for the purpose set forth, said spring reacting against the bottom of said pocket.
closure normally closing the spout and reacting against the bottom of said spring seat, said seat being arranged to allow a movement of said leaf spring the end of said spring being the pivoting line of said movement, said closure, thumb-piece, and leaf spring forming a removable unit.

9. The combination with a container, of a cap having a pouring spout and, attached opposite thereto, a handle, said handle being provided with a V-shaped groove located between the cap and the handle, the bottom of the groove being closed by the handle, a slide plate normally closing said spout, a thumb-piece associated with and adapted to retract said slide plate, means for guiding said slide plate, a pivot member extending downwardly from said slide plate having its lower end pivoted on the closure at the bottom of said V-shaped groove, the sides of said V-shaped groove forming an angle approximately equal to the angle described by said pivot member when the slide plate is retracted from a normally closed to an open position, thus holding the pivot member in a restricted seat and yet allowing sufficient movement for the opening of the spout, and means for retaining the lower end of said pivot member in position at the bottom of said V-shaped groove, the said slide plate, thumb-piece, and pivot member forming a unit quickly removable from said device to facilitate cleaning.

10. A device for dispensing viscous liquids and preventing drip, comprising a container, a pouring spout for the contents of the container, a handle opposite to the spout for lifting the device, there being a V-shaped groove in the upper part of the handle where it joins the body of the device, a longitudinally slidable closure plate normally closing said spout, a thumb-piece associated with and adapted for operation to retract said closure plate, means for laterally guiding said plate to keep it in alignment with said spout, a pivot member extending downwardly from said plate and having its lower end pivoted on the handle at the bottom of said V-shaped groove with the end of the pivot member resting on the handle, the sides of said V-shaped groove forming an angle approximately equal to the angle described by said pivot member when the slide plate is retracted from a normally closed to an open position, thus holding the pivot member in a restricted seat and yet allowing sufficient movement for the opening of the spout, and means for retaining the lower end of said pivot member in position at the bottom of said V-shaped groove, the said plate, thumb-piece, and pivot member forming a unit quickly removable from said device to facilitate cleaning.

11. A dispensing device comprising a container having a pouring spout and having a handle secured thereon, a closure held slidably in alignment with said pouring spout, a notch in said device having a convex bottom, a spring piece connected to said closure, and a thumb-piece having a downwardly extending member with a concave lower end, the said lower end being inserted in said notch, the said spring piece interconnecting the thumb-piece and the closure and holding the closure normally covering the pouring spout.

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