March 3, 1942. A. H. PETERSON 2,274,849

DISPENSER AND CLOSURE FOR CONTAINERS

Filed March 30, 1939

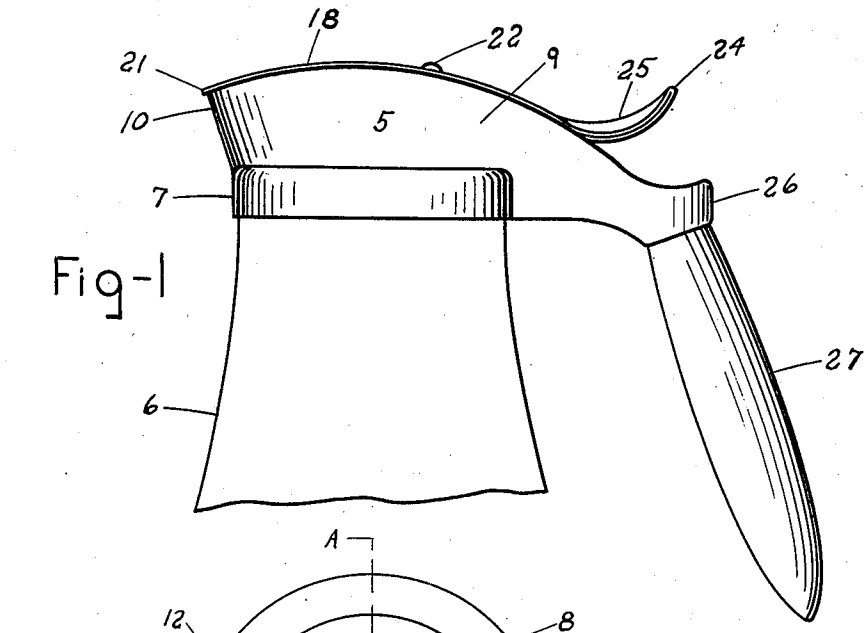


Fig-1

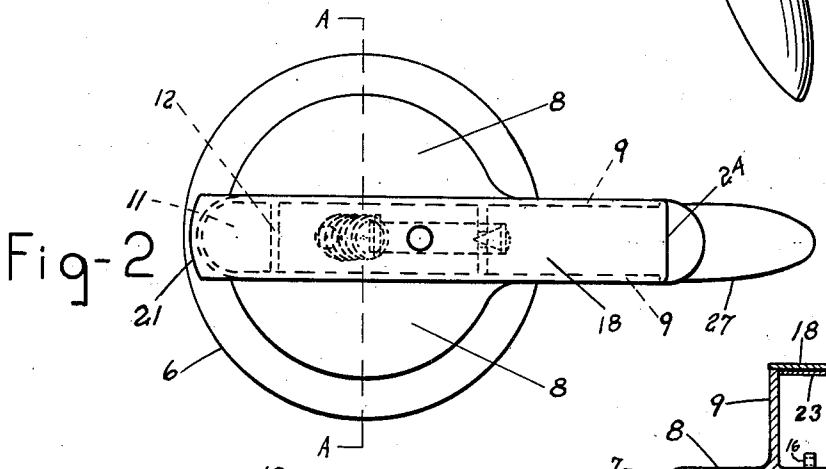


Fig-2

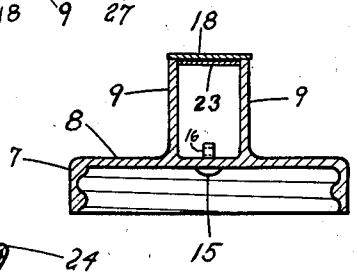


Fig-4

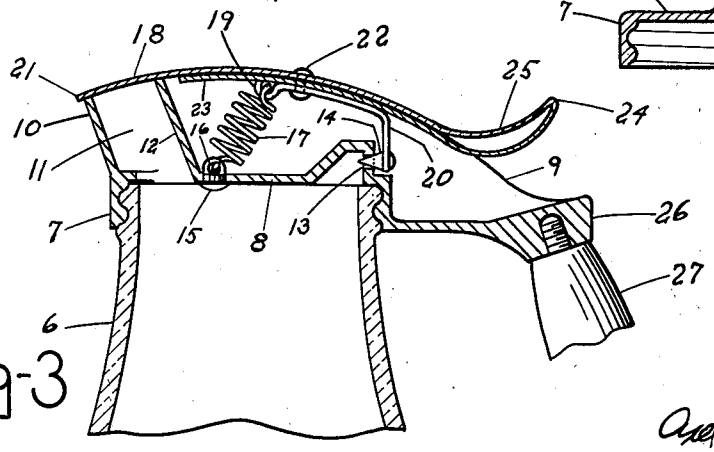


Fig-3

INVENTOR.

Arel H. Peterson

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DISPENSER AND CLOSURE FOR CONTAINERS

Axel H. Peterson, Moline, Ill., assignor, by mesne assignments, to Max Mitchell, Los Angeles, Calif.

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7 Claims. (Cl. 65—31)

This invention relates to dispensers and closures of the slidable shearing blade non-drip type, attachable to containers of honey, syrup, and other viscous liquids or flowable substances.

One of the objects of this invention is to provide a novel non-drip type dispenser and closure for containers, particularly for containers of viscous liquids.

Another object is to reduce the area of the cap surface that is in contact with the slidable shearing blade to a minimum thus preventing the viscous liquids, being dispensed, from interfering with the movement of the slidable shearing blade, especially on the closing or non-positive movement. This interference is particularly noticeable when honey or syrup is being dispensed since they become thick when chilled.

Another object is to provide a novel actuating spring which also holds the slidable shearing blade in close shearing contact with the upper edges of the pouring spout thus dispensing with lugs or a cover plate on the upper surface of the slidable shearing blade which deface the finish on the blade and also hinder its movement.

A further object is to provide a dispenser with an arcuate guideway and shearing blade whereby a thumb-piece attached directly to the blade will have a direction of movement in line with the natural movement of the user's thumb.

A still further object is to place the guiding means and the actuating means on the inner side of the slidable blade thus hiding them from view and adding to the appearance of the device.

Other novel features and advantages will be apparent from the specification read in connection with the drawing, wherein:

Figure 1 is a side view of the dispenser and closure showing it attached to a container, part of which is shown;

Figure 2 is a plan view of the same;

Figure 3 is a sectional view; and

Figure 4 is a sectional view on the line A—A, of Figure 2 with the tension spring 17 removed.

Referring to the drawing, the dispenser and closure 5 is illustrated as attached to a container 6 by any suitable means such as threads on the inside of the skirt 7 depending from the plate 8. The skirt 7 and the plate 8 form a cap across which, and attached to plate 8, are a pair of parallel walls 9, 9 having arcuate upper edges and being cast as thin as is commercially feasible and yet retain sufficient strength for the purpose required, thus reducing the area in contact with the flexible, slidable, shearing blade or cover plate 18, hereinafter called the blade 18. These walls 9, 9 are closed at one end forming the end wall or lip 10 of the pouring spout 11. An abutment 12 between walls 9, 9 completes the pouring spout which communicates with the inside of the container 6. The vent hole 13, stoppered by the plug 14, is also arranged to communicate with the inside of the container. An insert 15 having an eye 16 is inserted in a hole drilled in the plate 8. One end of the tension spring 17 is attached to the eye 16 of insert 15, the other end is attached to the blade 18 by means of a hook 19 formed at one end of the bent strip 20 the other end of which supports the plug 14 and also acts, through the plug, as a stop for the blade 18 in its forward movement after having been manually retracted or opened. The blade 18 is preferably initially curved or bent on a shorter radius than the radius of the upper arcuate edges of the walls 9, 9 whereby the forward or shearing edge 21 of the blade 18 is maintained in close shearing contact with the upper edge of lip 10. Between the bent strip 20 and the blade 18 is a bent under portion of the blade forming a guide strip 23. The bent strip, blade, and guide strip are held together by a rivet 22. The portion of the blade forming the guide strip is reduced in width, before bending at 24, to enable it to slide freely in the guideway formed between the walls 9, 9, and the blade, being of a greater width, will slide on the upper arcuate edges thereof. The ends of these walls, opposite the pouring spout, terminate in a support 26 for a handle 27. Adjacent to the bend at 24 a suitable thumb-piece 25 is formed by bending and forming the blade 18.

The tension spring 17 is inclined in relation to the guideway for the shearing blade 18. A line drawn from the upper edge of the lip 10 to the hook 19 thence to the eye 16 would form an angle hereinafter called the angle of inclination. This angle of inclination shall be measured when the blade is in a normal or closed position as shown in Figure 3. The line from the hook to the eye, forming one side of the angle of inclination, may be considered as the line on which the resultant force acts, that is, the resultant of the forces required to hold the blade in close shearing contact with the upper edges of the pouring spout and the force required to hold the shearing blade yieldably in a normal or closed position and return it thereto after being moved to an open position. This resultant force is shown in Figure 3 as being exerted by a helical tension spring, but any means capable of creating a tension between the blade 18 and cap could be substituted therefor.

I find that, although operable, an angle of inclination of less than approximately twenty-five degrees prevents the tension spring from exerting sufficient force to hold the blade against the upper edge of the pouring spout with sufficient shearing pressure and also close the pouring spout in a reasonably tight manner, and an angle of inclination of more than approximately eighty degrees prevents the complete return of the blade to a normal or closed position after being opened.

This dispenser and closure is operated by grasping the handle 26 and tipping into a pouring position, then by applying force to the thumb-piece 24, the blade 18 is retracted against the tension of the tension spring 17 uncovering the pouring spout 11 allowing the contents of the container to flow. Upon releasing the thumb-piece, the tension spring will pull the shearing blade back to a normal or closed position cutting or shearing off the flow from the pouring spout.

It is evident that the cap and/or handle may be cast integrally with the container and that the shearing blade and guideway may be flat instead of curved and that the shape and type of actuating spring may be varied and that other structural changes may be made within the scope of the appended claims.

I claim:

1. In combination with a container, a dispenser and closure therefor, a pair of walls, attached to said closure, having arcuate substantially parallel upper edges, an end wall between said pair of walls, an abutment between said pair of walls, the end wall, pair of walls, and the abutment forming a pouring spout, a flexible shearing blade being initially curved on a shorter radius than the radius of the arcuate edges of said pair of walls, a thumb-piece directly attached to said shearing blade, and means for holding said shearing blade yieldably in a closed position over said pouring spout.

2. A combined dispenser and closure for containers comprising a cap attachable to a container, a pouring spout at one side of the cap, a flexible shearing blade, having a thumb-piece thereon, being held yieldably in a closed position over the pouring spout by a tension spring having one end attached to the cap and having the other end attached to the shearing blade, said tension spring being inclined in relation to an imaginary line drawn from the lip of the pouring spout to the point of attachment of the said tension spring to the said blade at an angle not less than twenty-five degrees and not more than eighty degrees, and a chamber formed in said cap, the chamber and the said blade forming a housing for the tension spring.

3. A combined dispenser and closure attachable to a container comprising in combination a base, a pouring spout on one side of said base, a handle attached to the base opposite the pouring spout, an arcuate guideway on said base, an arcuate shearing blade having rabbeted edges, slidable in and on said guideway, for maintaining the shearing blade in alignment with the pouring spout, a helical tension spring having one end connected to said shearing blade and having the other end connected to said base, said helical tension spring holding the shearing blade yieldably in a closed position and also holding the shearing blade in close shearing contact with the edges of said pouring spout, a vent hole in said base, means attached to the shearing blade for closing the vent hole which means also forms a stop for the shearing blade, and a thumb-piece formed integrally with the shearing blade whereby the said shearing blade is moved to an open position.

4. A dispensing cap for viscous liquids, comprising an open bottom body having an upwardly convex upper portion, an outwardly facing groove in said convex portion, a pouring spout located at one end of said groove; a closure for said spout slidably mounted in the groove; a spring for urging the closure to closed position with respect to the spout and for maintaining the closure within the groove; and an extension fixed on the closure for the application of pressure thereto in a direction to slide the closure in the groove to spout-opening position against the action of said spring.

5. A cap for receptacles, comprising a hollow body having an outwardly arched top forming an inner cupped side and provided with an arcuate external groove extending across the outer side, a pouring spout at one side of the arched top and intersecting one end of the groove and the cupped side of the top, a closure of substantially the same curvature as said top and slidably interfitted with the groove to open and close the spout, a spring for urging the closure to spout-closing position, and extensions fixed on the closure and body in opposed relation to each other and extending laterally outward from both so that by pressure on the extensions the closure extension can be actuated to slide the closure to spout-opening position against the action of said spring.

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, an arcuate downwardly extending stationary shearing member formed on the upper end of said spout, a flanged guideway extending rearwardly and downwardly and diametrically in arcuate 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 lifting handle attached to said body member, an operating member operatively connected to said slidable shearing member for moving said member in one direction by pressing downwardly on said member, and means for automatically driving said slidable shearing member across said stationary shearing member substantially as and for the purpose set forth.

7. A dispensing and shearing device adapted for dispensing viscous liquids and preventing drip comprising in combination a body member, an upwardly extending spout at the forward side of said body member, a downwardly extending stationary shearing member formed on the edge of said spout, an arcuate flanged guideway extending diametrically rearwardly of said stationary shearing member, a slidable shearing member mounted in said guideway and having an arc of smaller radius than the stationary shearing member to afford a close knife-like shearing action between the forward end of the slidable shearing member and the downwardly extending stationary shearing member, a lifting handle attached to said body member, an operating member operatively connected to said slidable shearing member for moving said member in one direction by pressing downwardly on said operating member, and means for automatically driving said slidable shearing member across said stationary shearing member substantially as and for the purpose set forth.

AXEL H. PETERSON.