Aug. 16, 1955 R. BERNHARDT 2,715,485

DISPENSING CAP

Filed Feb. 9, 1950

Fig. 1.

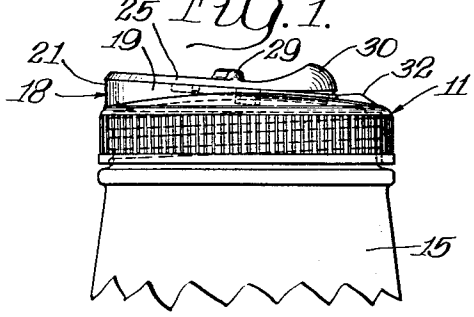


Fig. 2.

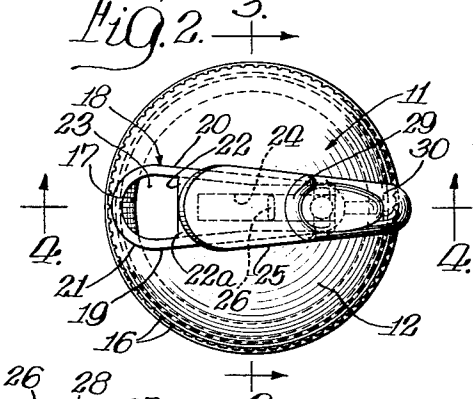


Fig. 3.

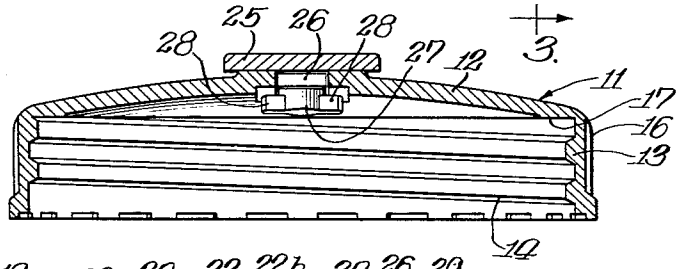


Fig. 4.

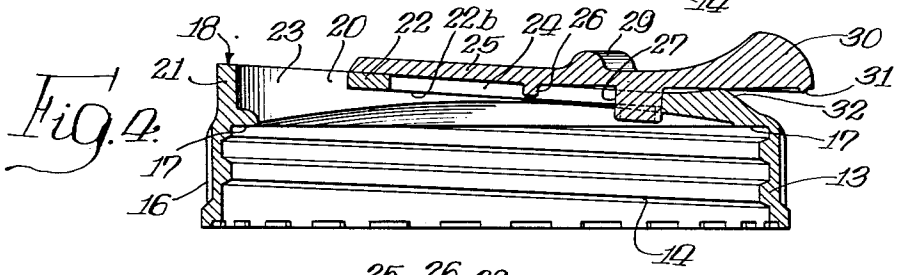


Fig. 5.

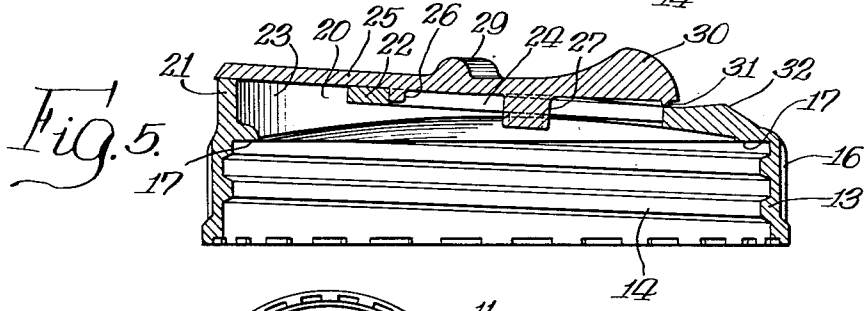
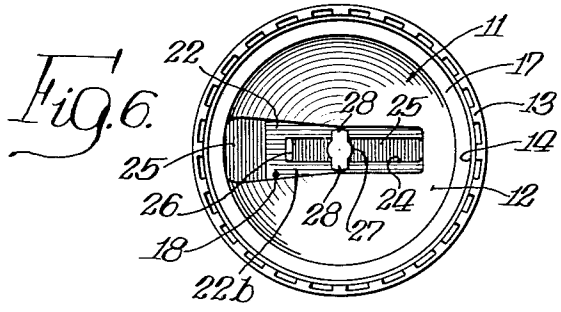


Fig. 6.



INVENTOR.
Rudolph Bernhardt,
BY
Smith, Olsen & Baird
Attys.

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2,715,485

DISPENSING CAP

Rudolph Bernhardt, Evanston, Ill.

Application February 9, 1950, Serial No. 143,294

3 Claims. (Cl. 222—498)

This invention relates to the dispensing art and pertains more specifically to an improved dripless server or container dispensing cap particularly suitable for dispensing strained honey, various other liquids, and granular substances.

An important object of the present invention is to provide, in a very simple and inexpensive dispensing cap or dispensing device, such for example as that disclosed and claimed in my copending application Serial No. 111,013, filed August 18, 1949, now Patent No. 2,657,837, dated November 3, 1953, having a dispensing opening therein and a slide selectively movable to open and closed positions with respect to the opening, improved means for causing the slide to snap from its closed position into its open position and from its open position into its closed position as the slide is moved from one of these positions toward the other, said means serving to retain the slide in either of its selected positions and thus preventing inadvertent opening and closing of the dispensing device.

Still another object of the invention is to provide a dispensing cap of the kind stated above comprising only two pieces, each piece being capable of fabrication in plastic or like material, and said pieces being easily assembled and disassembled for simplicity of manufacture and ease in cleaning.

These and other objects and advantages of the present invention will be apparent from the following description of a preferred embodiment thereof, taken in connection with the accompanying drawing, in which:

Fig. 1 is a side view of a dripless server or dispensing cap embodying the present invention, the cap being shown applied to the top of a container which is illustrated only in part;

Fig. 2 is a top plan view of the cap showing the slide thereon in open position;

Fig. 3 is a sectional view of the cap taken on line 3—3 in Fig. 2;

Fig. 4 is a similar view taken on line 4—4 in Fig. 2;

Fig. 5 is a view like that of Fig. 4, but showing the slide in its closed position; and

Fig. 6 is a bottom plan view of the cap showing the slide in its closed position.

In the drawing, the numeral **11** indicates, generally, a body element of a dispensing cap constructed in accordance with the present invention. A top portion **12** of the body element is circular in shape (Fig. 2) and slightly domed (Fig. 3) and has depending therefrom, around its periphery, an annular skirt **13** which is internally threaded as at **14** to receive the external threads on a neck of a container **15** suitable for containing such substances as strained honey, syrup and various other liquids, as well as granular products such as sugar or salt. If desired, the external or outer surface of the skirt **13** may be knurled as at **16** to provide a better grip for manually threading the body element **11** onto the threads of the container **15**, and for removing it therefrom. At the junction of the skirt **13** and the top portion **12** of the body element, an annular shoulder **17** may be provided upon the interior surface of the body element above the threads **14** to seat upon the rim or upper edge of the mouth of the container.

Formed upon the top **12** of the body element **11** is a raised, ramp-like portion indicated generally by the numeral **18** in the drawing. This inclined ramp portion is integral with the top **12** and comprises two wedge-shaped, upstanding side walls **19** and **20** which converge with the external surface of the top **12** at their right ends, as seen in Fig. 1. At their left ends, the walls **19** and **20** are interconnected by an upstanding circular wall **21** which serves as a pouring lip in a manner more fully described below. Interconnecting and integral with the parallel upper edges of the upstanding side walls **19** and **20** is a panel **22** which, in conjunction with the tops of the upstanding walls **19**, **20** and **21**, provides a flat but inclined top surface **22***a* (Fig. 2) on the ramp portion **18**. The under-surface **22***b* (Fig. 6) of the panel **22** is also flat and inclined. A large dispensing opening **23** is provided in the panel **22** at its left end, as best seen in Figs. 2, 4 and 5, and an elongated slot **24** is formed in the panel **22** longitudinally thereof. It will be noted that the dispensing opening is defined by the circular upstanding wall **21**, the left-hand extremities of the side walls **19** and **20**, as seen in Figs. 2, 4 and 5, and by the left-hand edge of the panel **22**, as seen in these same views.

Mounted upon the flat upper surface **22***a* of the ramp portion **18** is a slide member **25** which has a flat under-surface upon which is provided a protrusion **26** extending into the slot **24**. The slide is preferably formed of plastic or other resilient material. Also provided upon the under surface of the slide **25** is a mounting member for securing the slide to the body element **11**. This mounting member is in the form of another protrusion spaced on the slide longitudinally from the protrusion **26** and comprises a post **27** formed on the under-surface of the slide and extending downwardly through the slot **24**. Formed upon the lower extremity of the post are two ears **28** which ride upon the under-surface **22***b* of the panel **22** on opposite sides of the slot **24**. Upon the upper surface of the slide may be formed a raised, moon-shaped bead **29** which, with a raised hump **30** formed upon the right end of the slide, as viewed in Figs. 1, 2, 4 and 5, provides a saddle for receiving the tip of a thumb or finger by which an operator may reciprocally move the side **25** to its open and closed positions on the upper surface **22***a* of the ramp portion **18** of the body element **11**.

A short skirt or rim-like bead **31** is formed on the underside of the slide **25** at its right-hand end beneath the hump **30**. This skirt is disposed immediately adjacent the edge of the slide and conforms to the rounded shape of the end of the slide (Fig. 2), the skirt gradually converging with the flat under-surface of the slide along the sides of the latter (Figs. 4 and 5). Arranged to cooperate with the skirt **31** is a raised rib or boss **32** formed on the external surface of the top portion **12** of the body element transverse the path of movement of the slide and the skirt **31** thereon and adjacent the lower end of the ramp-like portion **18**.

From the foregoing description of the dispensing cap, taken in connection with the drawing, it will readily be understood that the slide **25**, in both its open position and in its closed position, covers the elongated slot **24**. The protrusion **26** and the second protrusion or post **27** ride in the slot as the slide is moved from one position to the other. The protrusion **26** is preferably of a width slightly less than that of the slot, and the diameter of the post **27** is also approximately equal to the width of the protrusion. In the movement of the slide from one

position to another it will thus be understood that the protrusion **26** and the post **27** ride along the two side walls of the slot **24** and serve to guide the movement of the slide. In moving the slide to its closed position, the protrusion **26** comes to rest against the left-hand end of the slot **24** (Fig. 5) and serves as a stop to limit the longitudinal movement of the slide into its closed position. On the other hand, when the slide is moved into its wide open position, the post **27** comes to rest against the right-hand end of the slot **24** (Fig. 4) and serves as a stop for the slide in the open position. The two ears **28** on the lower extremity of the post **27** are at right angles with the longitudinal center line of the slot **24** and ride on the under-surface **22***b* of the panel **22** (Fig. 6), thus slidably retaining the slide **25** on the ramp portion of the body element **11**.

In moving the slide from its closed position to its open position, the skirt **31** on the slide first rides up onto the rib **32** on the top **12** of the body element **11** and then, because of the resiliency of the slide, the skirt snaps over the rib as the slide is moved on into its open position (Fig. 4), thus producing clean and positive movement of the slide into its wide open position. While the slide is in this position, the container **15** may be tipped to pour its contents through the opening **23** of the dispensing cap, the upstanding circular wall **21** serving as a useful pouring lip during this operation, particularly when the substance being discharged from the container is a liquid or a semi-liquid such as strained honey. During this pouring operation the presence of the rib **32** in the path of the skirt **31** prevents the slide **25** from falling or sliding into its closed position, thus eliminating the necessity of manually holding the slide in its open position while pouring.

When a desired quantity of the contents of the container **15** has been poured from the opening **23** in the dispensing cap, the container may be returned to its upright position and at the same time the slide **25** may be moved toward its closed position. In so moving the slide, the skirt **31** thereon again rides up onto the rib **32** and then snaps over the same as the slide is moved on into its full closed position. As the slide approaches its closed position, the left end of the slide, as seen in Figs. 4 and 5, rides along the upper edges of side walls **19** and **20** and across the top of the circular upstanding wall or lip **21** to remove therefrom any residual liquid or the like which may have remained thereon, the slide at the same time moving into its full closed position wherein it completely seals the opening **23**.

In the closed position of the slide it will be noted, particularly from Fig. 5, that the skirt **31** on the slide is interposed between the slide and the upper surface **22***a* of the top of the body element **11** of the cap, thus causing the right-hand end of the slide to be bent slightly upwardly and to be lifted slightly from this surface. This causes the ears **28** on the slide mounting post **27** to bear upwardly against the under-surface **22***b* of the panel **22** and the left-hand end of the slide to bear downwardly upon the upper surface **22***a* of the panel, creating an increase in friction between the slide and the body element which retains the slide in its full closed position and tends to eliminate inadvertent opening of the slide.

It will readily be seen that the present invention is ideally suited for embodiment in a two-piece dispensing device which may be formed entirely of inexpensive resilient plastic or the like. Assembly and disassembly is extremely simple and therefore tends to reduce manufacturing costs and to increase the ease with which cleaning may be accomplished. To disassemble the device, the slide may be moved to a half open position, the left end thereof (as seen in Figs. 4 and 5) is flexed upwardly to raise the protrusion **26** out of the slot **24**, the slide is then pivoted through 90 degrees to bring the ears **28** in alignment with the longitudinal center line of the slot, and the entire slide is then lifted from the body element. To assemble, this process is carried out in reverse order.

Although only one form of the invention has been shown and described by way of illustration, it will be understood that the invention may be embodied in various other constructions which come within the scope of the appended claims wherein the term "dispensing cap" is used broadly. For example, in an alternate construction, the body element of the "cap" might very well be an integral part or a wall of a container and might not be removable therefrom.

I claim:

1. A dispensing cap comprising, a body element having on the exterior thereof a longitudinally extending slide receiving surface provided with a dispensing opening therein and an elongated slot, a resilient slide member on said surface completely covering said slot, retaining means on said slide member extending through said slot and engaging an interior surface of the body element on opposite sides of said slot for retaining said slide on said slide receiving surface, said resilient slide member being longitudinally slidable on said slide receiving surface between an open position wherein said dispensing opening is unobstructed by said slide and a closed position wherein a first end portion of said slide covers said opening and a portion of said slide receiving surface adjacent the opposite end of said slide is exposed, a depending skirt on said opposite end of said slide, said skirt being interposed between said slide and said slide receiving surface when said slide is in said closed position for flexing said last-mentioned end of said slide upwardly to increase the friction between said first end portion of said slide and said slide receiving surface in the vicinity of said dispensing opening and between said retaining means and said interior surface to hold said slide in closed position, and an upstanding rib on said exposed portion of said slide receiving surface in the path of and traversed by said skirt during movement of said slide, said depending skirt cooperating with and being moved entirely across said rib from one side thereof to the other in a snapping action during movement of said slide between said open and closed positions.

2. A dispensing cap comprising, a body element having on the exterior thereof a longitudinally extending planar slide receiving surface provided with a dispensing opening therein and an elongated slot, a planar resilient slide member on said surface completely covering said slot, retaining means on said slide member extending through said slot and engaging an interior surface of the body element on opposite sides of said slot for retaining said slide on said slide receiving surface, said resilient slide member being longitudinally slidable on said slide receiving surface between an open position wherein said dispensing opening is unobstructed by said slide and a closed position wherein a first end portion of said slide covers said opening and a portion of said slide receiving surface adjacent the opposite end of said slide is exposed, a depending skirt on said opposite end of said slide, said skirt being out of contact with said slide receiving surface when said slide is in said open position and being interposed between said slide and said slide receiving surface when said slide is in said closed positon for flexing said last-mentioned end of said slide upwardly to increase the friction between said first end portion of said slide and said slide receiving surface in the vicinity of said dispensing opening and between said retaining means and said interior surface to hold said slide in closed position, and an upstanding rib on said exposed portion of said slide receiving surface in the path of and traversed by said skirt during movement of said slide, said depending skirt cooperating with and being moved entirely across said rib from one side thereof to the other in a snapping action during movement of said slide between said open and closed positions.

3. A dispensing cap comprising, a body element having

on the exterior thereof a longitudinally extending slide receiving surface provided with a dispensing opening therein and an elongated slot, a resilient slide member on said surface completely covering said slot, retaining means on said slide member extending through said slot and engaging an interior surface of the body element on opposite sides of said slot for retaining said slide on said slide receiving surface, said resilient slide member being longitudinally slidable on said slide receiving surface between an open position wherein said dispensing opening is unobstructed by said slide and a closed position wherein a first end portion of said slide covers said opening and a portion of said slide receiving surface adjacent the opposite end of said slide is exposed, a depending skirt on said opposite end of said slide, said skirt slidably engaging said slide receiving surface when said slide is in said closed position for flexing said last-mentioned end of said slide upwardly to increase the friction between said first end portion of said slide and said slide receiving surface and between said retaining means and said interior surface to hold said slide in closed position, and an upstanding

rib on said exposed portion of said slide receiving surface in the path of and traversed by said skirt during movement of said slide, said depending skirt cooperating with and being moved entirely across said rib from one side thereof to the other in a snapping action during movement of said slide between said open and closed positions, said rib engaging the underside of said second mentioned end of said slide and raising the same when said slide is in said open position, thereby flexing said slide to retain the same in said open position.

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