March 3, 1942. E. D. MOSS 2,274,843

POURING AND CLOSING CAP FOR RECEPTACLES

Filed April 20, 1938

FIG. 1.

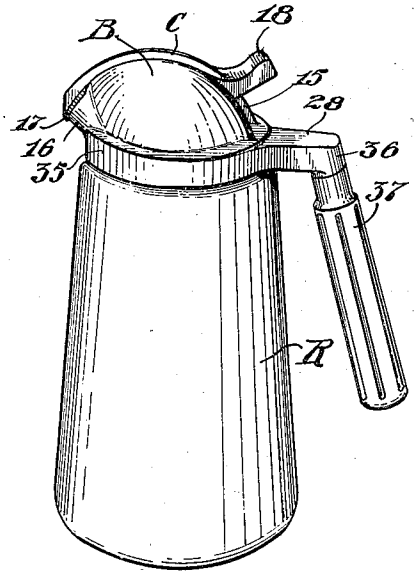


FIG. 2.

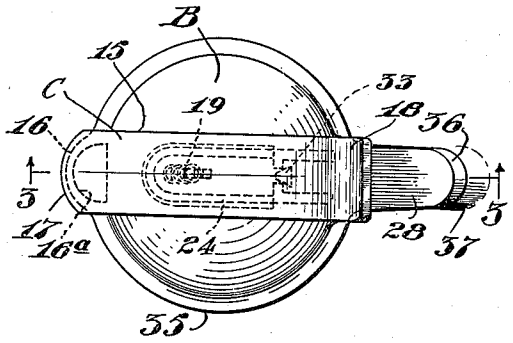


FIG. 3.

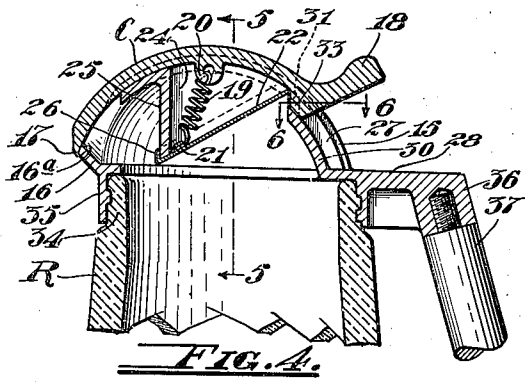


FIG. 5.

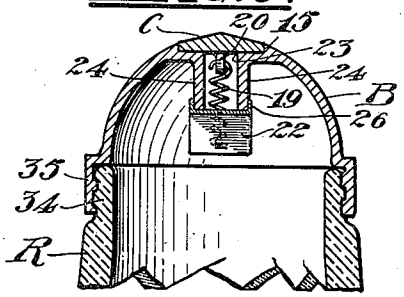


FIG. 4.

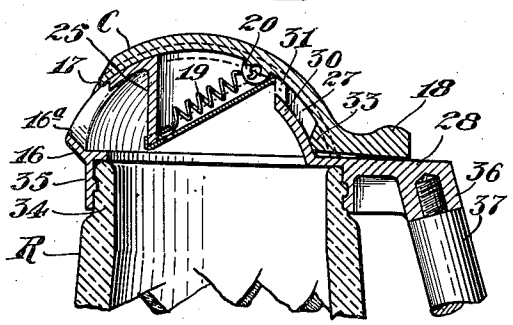
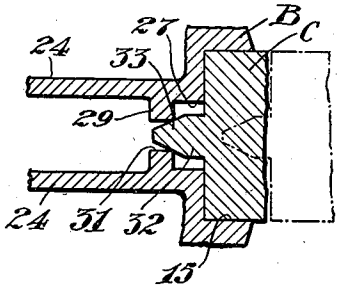


FIG. 6.



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POURING AND CLOSING CAP FOR RECEPTACLES

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7 Claims. (Cl. 65—31)

My invention relates to caps, covers, or the like, for use on bottles, jars, pitchers, and similar fluid containing receptacles, designed normally to close the receptacle to seal the contents thereof against contamination, but adapted to be opened by manual operation to permit pouring of the contents from the receptacle. My invention has particular reference, although not necessarily, to syrup pitchers.

It is a purpose of my invention to provide a cap which, as applied to a syrup pitcher or similar receptacle, is adapted to be manually opened to permit pouring of the liquid from the receptacle, and when released to automatically close in a manner to prevent dripping of the syrup or other liquid from the pitcher.

It is also a purpose of my invention to provide a cap for receptacles which is structurally characterized by its simplicity, durability, low cost of manufacture, easy mode of assembly and disassembly of its parts, and the form of its body and closure member, which lend themselves to being constructed of any suitable composition material, as well as metal.

I will describe only one form of pouring and closing cap for receptacles, embodying my invention, and will then point out the novel features thereof in claims.

In the accompanying drawing:

Fig. 1 is a view showing in perspective one form of cap embodying my invention in applied position on a receptacle.

Fig. 2 is a view on an enlarged scale showing the cap in top plan.

Fig. 3 is a vertical sectional view taken on the line 3—3 of Fig. 2, with the cap in applied position on the receptacle, and with the closure member of the cap in closed position.

Fig. 4 is a view similar to Fig. 3 showing the closure member in open position.

Fig. 5 is a vertical sectional view taken on the line 5—5 of Fig. 3.

Fig. 6 is an enlarged sectional view taken on the line 6—6 of Fig. 3.

In carrying out my invention, I provide a hollow body B of cupped form so as to have an arcuately curved outer or upper side on which a closure member C of like curvature is adapted to slide in a groove 15. This groove is of U-form in cross section and extends from one edge of the body B over to a pouring spout 16 formed in the body adjacent its opposite edge. The closure member C is in the form of a strip permanently curved to the same longitudinal curvature as the groove 15 so as to lie flat therein and to be slidable on the body to open and close the pouring spout 16.

To prevent dripping of any liquid poured from the spout 16, the inner edge 16a (Fig. 2) of the curved part of the spout is on any radius different from that of the curved end edge 17 of the closure member, and, as shown in Fig. 3, the upper surface of the spout is in the same plane as the bottom surface of the groove 15 so that in the closed position of the closure the spout is sealed against the leakage of liquid therefrom.

That end of the closure member C opposite from the spout-closing end is formed with, or has fixed thereto, an extension 18 which projects laterally therefrom at an angle suitable for depression by the thumb of the operator for moving the closure member to a position in which the spout 16 is open. Normally the closure member is urged to spout-closing position by any urging means such as the coiled spring 19. This spring, at its upper end, is secured in an ear 20 on the underside of the closure member C, and at its lower end to a tongue 21 on a plate 22.

To accommodate the ear 20 in its movement with the closure member as the latter is moved to or from open or closed position, the body B is formed with a slot 23. Extending downwardly from the opposite edges of this slot 23 are a pair of side walls 24, tapered in width and connected at their wide ends by a wall 25. The walls 24 and 25, which are formed integral with the cap body, as will be understood, cooperate with the plate 22 to form a housing for the spring 19 and to prevent the passage of fluid from the receptacle upon which the cap is mounted outwardly into the slot 23. Thus, the closure member and spring are protected against contamination by the liquid, or vice versa, and in the instance of syrup, it is prevented from entering the groove 15 and impeding operation of the closure member. The plate 22 is formed at its edges with lips 26 which overlap the edges of the walls 24 and 25 so as to effectively close the housing.

With the spring 19 associated with the closure member C and the plate 22, it will be manifest that the spring not only urges the closure member to closed position with respect to the spout 16, but it urges the closure member downwardly in the groove to maintain the member within the groove at all times, and, yet, allows the member to be slid to open or closed position. By urging the closure member downwardly it is pressed against the spout in its forward sliding movement so as to shear the dispensed liquid in a manner to prevent dripping thereof. Further-

more, the spring serves to maintain the plate 22 in housing-forming position on the walls 24 and 25. Manifestly, the plate 22 can be pulled off of the walls and the spring 19 disconnected to allow removal of the closure member when necessary for purposes of cleaning.

The cap body B for a portion at one end of the groove 15, is indented to form a secondary groove 27 having a lower end wall 28 and an upper end wall 29 connected by a curved bottom wall 30. The wall 29 is divided to form a slot 31 which provides a vent port to admit air to the receptacle and thus facilitate pouring of the contents of the receptacle from the spout 16. The closure member C at its point of junction with the extension 18 is formed with a tongue 32 movable in the secondary groove 27 and provided with a wedge-shaped projection 33 which constitutes a valve for the vent 31.

As it will be observed from the consideration of Figs. 3 and 4, the valve 33 closes the port 31 when the closure member C is in closed position with respect to the spout 16. Conversely, when the closure member is in open position the valve 33 is displaced from the port 31 to open the latter and thus admit air to the receptacle concurrently wtih opening of the spout 16. Not only does the valve 33 function to close the vent 31, but it coacts with the wall 29 to limit movement of the closure member to closed position under the action of the spring 19. The extreme open position of the closure member is defined by the underside of the extension 18 abutting the wall 28.

The cap body B may be constructed in any suitable manner to permit of its temporary or permanent attachment to a receptacle. In the present instance, the cap is shown applied to a conventional form of syrup receptacle R provided with an externally threaded neck 34. The cap body is formed with an internally threaded collar 35 which permits screwing of the cap on the receptacle. To convert the receptacle into a pitcher, the cap body may be formed with a radial projection 36 into which is screwed a handle 37.

With the cap applied to the receptacle as described and the closure member C in closed position as illustrated in Fig. 3, the spout 16 is closed and the vent port 31 likewise closed by the valve 33 so that the contents of the receptacle are sealed against contamination. To pour the contents of the receptacle therefrom, the handle 37 is gripped and the receptacle tilted and, concurrently with or after such tilting, the thumb of the hand is employed to depress the extension 18 to the position shown in Fig. 4, wherein the closure member is slid rearwardly to open the spout 16. In this position of the closure member the valve 33 is moved to open the port 31 and thus admit air to the receptacle, thereby causing free pouring of the contents. In this open position of the closure member the extension 18 abuts the projection 36 so that any excessive pressure exerted on the extension 18 will not tend to distort the cap or loosen its connection with the receptacle. This is advantageous particularly where the cap body and closure member are made of a composition material such as Bakelite, and, hence, subject to breakage. As the cap body and the closure member are both made from a single piece of material, they lend themselves to being molded from any suitable composite material.

Although I have herein shown and described only one form of pouring and closing cap for receptacles embodying my invention, it is to be understood that various changes and modifications may be made herein without departing from the spirit and scope of the appended claims.

I claim:

1. A cap for receptacles, comprising; a body having a groove in one side thereof, a spout at one end of the groove, and a slot disposed within the groove; a plate removably mounted on the body for closing the slot against passage of fluid material from the receptacle into the slot; a closure for the spout slidable in the groove; a spring connected to said plate for maintaining the latter on the body and also connected to said closure for urging the latter to spout-closing position and laterally against said spout; and an extension fixed on the closure for operation to slide the closure to spout-opening position against the tension of said spring.

2. A cap for receptacles, comprising; a body having a groove in one side thereof, a spout at one end of the groove, and a slot disposed within the groove; means on the body for closing the slot against passage of fluid material from the receptacle into the slot, said means comprising walls fixed to the body, and a member spanning the walls; a closure for the spout slidable in the groove; a spring connected to the closure and to the member for urging the closure to spout-closing position, maintaining the closure within the groove and holding the member in spanning relation to said walls; and an extension fixed on the closure for operation to slide the latter to spout-opening position against the tension of said spring.

3. A cap for receptacles, comprising; a cupped body having an arcuate groove on its convex side, an arcuate spout at one end of the groove, and a slot within the groove; means on the concave side of the body for closing the slot against passage of fluid material from the receptacle into the slot; a closure for the spout slidable in the grove; a spring connected to said means and to said closure and disposed within said means for urging the closure to spout-closing position; and an extension fixed on the closure for operation to slide the closure to spout-opening position against the tension of said spring.

4. A cap for receptacles, comprising; a body having a groove therein, a spout at one end of the groove, a slot within the groove, and a secondary groove within and at the other end of the first groove; means on the body for closing the slot against the passage of fluid material from the receptacle into the slot; a vent port in the body at one end of the secondary groove; a closure for the spout slidable in the first mentioned groove; a tongue on the closure slidable in the secondary groove; spring means for urging the closure to spout-closing position; an extension fixed on the closure and operable to slide the closure to spout-opening position against the tension of said spring means; and a valve on the tongue for closing or opening the vent port according as the closure is in spout-closing or spout-opening position.

5. A cap for receptacles, comprising; a body having a groove therein, a spout at one end of the groove and a secondary groove within and at the other end of the first groove; a vent port in the body at one end of the secondary groove; a closure for the spout slidable in the first mentioned groove; a tongue on the closure slidable

in the secondary groove; spring means for urging the closure to spout closing position; and a valve on the tongue for closing or opening the vent port according as the closure is in spout closing or spout opening position.

6. A cap for receptacles, comprising; a body having a groove therein, a spout at one end of the groove, and a secondary groove within and at the other end of the first groove; a wall on one end of the secondary groove; a vent port in said wall; a closure for the spout, slidable in the first mentioned groove; a tongue on the closure slidable in the secondary groove; and spring means for urging the closure to spout closing position wherein the tongue abuts said wall to limit closing movement of the closure and to close the vent port.

7. A cap for receptacles, comprising a hollow body having a pouring opening at one side therein and an outwardly arched top provided with an external arcuate groove therein extending from the opening across the top and to the opposite side of the body, an arcuate closure of substantially the same curvature as said top and slidably guided and arranged in said groove to slide in an arcuate path over the top to cover and uncover said pouring opening, and means to constantly urge the closure into the closed position over the pouring opening, said pouring opening having a curvature which is slightly different from the curvature of the closure to ensure a wiping contact between the opening in the body and the closure to prevent dripping of any liquid from the opening.

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