July 6, 1965 R. NYDEN 3,192,555

CONTAINER DISPENSER CAP WITH CAPTIVE CLOSURE MEMBER AND APPLICATOR

Filed June 19, 1963

FIG. 1.

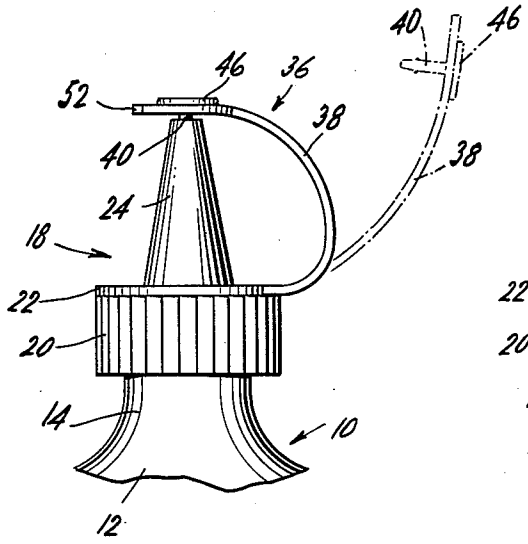


FIG. 2.

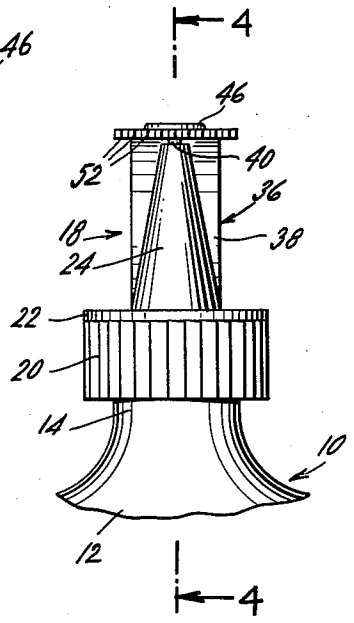


FIG. 3.

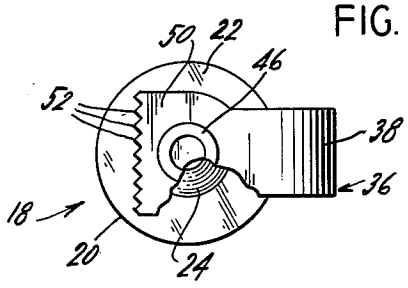


FIG. 4.

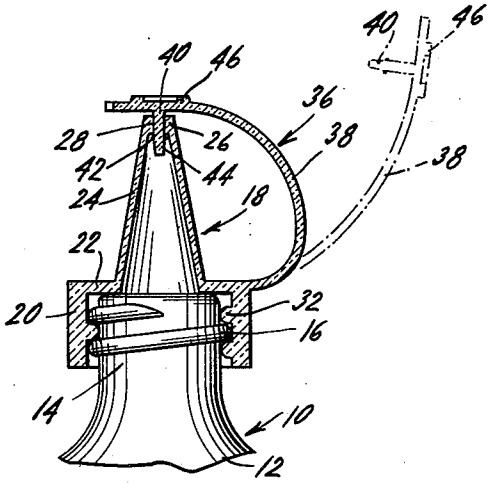
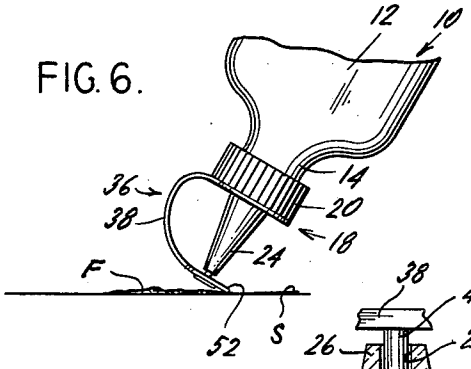


FIG. 6.



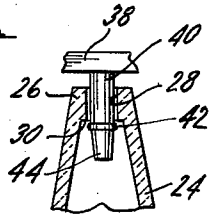


FIG. 5.

INVENTOR.
ROBERT NYDEN
BY Amster & Levy
ATTORNEYS

United States Patent Office

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CONTAINER DISPENSER CAP WITH CAPTIVE CLOSURE MEMBER AND APPLICATOR

Robert Nyden, Manhasset, N.Y., assignor to Pittsburgh Plastics Division Heekin Can Co.

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6 Claims. (Cl. 15—592)

The present invention relates to improvements in dispenser caps for fluid containers, and in particular to a novel and improved closure and dispenser cap having applicator means for spreading the fluid content dispensed by said cap.

In dispenser caps for fluids or semi-fluids, such as glue or the like, it is customary to provide the cap itself with a closure member to cover up the outlet opening. It is also known to provide the closure member with an upstanding applicator portion or extension for spreading the fluid dispensed along a surface. The dispenser cap closures are small and tend to become lost or misplaced, resulting also in the loss of the applicator.

"Captive" closure members for dispenser caps are also known, these closure members being joined to the cap itself by an integral flexible strap. Such "captive" closure members are not provided with applicator means and are not adapted to carry such means because of the requirement that the applicator means be mounted at the top of the closure member, which is the point at which finger pressure must be applied to press the closure member onto the dispenser cap.

It is the principal object of the present invention to provide a closure cap for fluid containers which includes a "captive" closure member and also a fluid applicator, both carried by an integral strap.

Another object of the invention is to provide a closure cap of the character described in which the applicator is located to spread the fluid dispensed, while the closure member is either inserted in said cap in a closed position or is removed from said cap in an open position.

In accordance with the invention herein, there is provided a plastic dispenser cap having means for attachment to a container in communication with the mouth thereof and having an outlet opening for dispensing fluid from the container. The dispenser cap has an integral flexible strap which carries a closure pin spaced a short distance from the end of said strap. The closure pin is adapted to be snap-fitted within the outlet opening of the dispenser cap to close off the latter to the passage of fluid. The strap has an end portion projecting beyond said pin, the outer edge of this end portion being formed with a row of teeth serving as an applicator for spreading over a surface the fluid dispensed from said container.

Additional objects and advantages of the invention will become apparent during the course of the following specification when taken in connection with the accompanying drawings, in which:

FIG. 1 is a side elevational view of a dispenser cap made in accordance with the invention and shown mounted on the neck of a bottle, the closure member of said cap being shown in closed position in full line and in open position in broken line;

FIG. 2 is a front elevational view of the dispenser cap shown in FIG. 1;

FIG. 3 is a top plan view thereof, with a portion of the flexible strap broken away;

FIG. 4 is a vertical section through the dispenser cap, taken substantially along line 4—4 of FIG. 2;

FIG. 5 is a partial section similar to FIG. 4, showing the outlet opening of the dispenser cap with the closure pin therein, on an enlarged scale; and

FIG. 6 is an elevational view showing the applicator portion of the inverted dispenser cap in use for spreading fluid.

Referring in detail to the drawings, there is shown a container 10 with a dispenser cap 18, made according to the invention, mounted thereon. The container 10 may be made of a flexible and resilient plastic with a hollow body 12, and a neck 14 formed with external threading 16. The container 10 may contain a liquid or a viscous fluid such as glue, and because of the flexibility of the body 12, the glue may be fed through the mouth of the inverted container by squeezing the walls of said body.

The dispenser cap 18 includes an annular skirt 20 having a top wall 22 supporting at its center an upstanding conical nozzle 24. The nozzle 24 has a top wall 26, which, as shown most clearly in FIG. 5, is provided with a central outlet opening 28. The outlet opening 28 is of a smaller diameter than the top wall 26, so as to provide a marginal shoulder 30 surrounding the bottom end of said outlet opening 28.

The inner surface of the skirt 20 is formed with threading 32 which meshes with the threading 16 on the bottle neck 14 to mount the dispenser cap 18 on the bottle 10. In this mounted position, the interior of nozzle 24 communicates with the interior of the bottle through a central aperture 34 in the top wall 22.

The dispenser cap 18 is molded of a flexible or semi-flexible plastic such as polyethylene, and when the skirt 20 is turned fully down on the neck threading 16, the inner surface of upper wall 22 engages the edge of the bottle mouth, as shown in FIG. 4, to provide a tight seal about said mouth.

The dispenser cap 18 is formed integrally with closure means 36 which includes a flexible strap 38 projecting as an integral extension from one side of the periphery of the top wall 22. A closure pin or plug 40 is formed integrally with the strap 36 and projects perpendicularly therefrom at a point spaced slightly inwardly from the free end of said strap. As shown in FIG. 5, the closure pin 40 has a cylindrical body portion terminating in an annular flange or snap bead 42 and having a tapered extension 44 projecting beyond said bead.

In closing the dispenser cap, the extension 44 is first fitted into the outlet opening 28 of nozzle 24, the tapered shape of said extension permitting it to be accurately guided into said outlet opening. The user's finger is then placed against the strap 38 above the pin 40 and downward pressure is exerted thereon. This causes bead 42, which is of greater diameter than the outlet opening 28, to be forced through said outlet opening until it has passed entirely therethrough and the cylindrical body portion of pin 40 is within the opening 28. Said cylindrical body portion is of slightly larger diameter than opening 28 so that it closes off said outlet opening and provides an airtight and liquid-tight seal therefor. The insertion of the pin 40 within the outlet opening 28 is therefore a snap action, and in the inserted position shown in FIGS. 4 and 5, the bead 42 is located beneath opening 28 and will abut shoulder 30 to prevent accidental withdrawal of the pin 40.

A projecting annular flange 46 is molded into the outer surface of strap 38 immediately above the pin 40 in such a position that it surrounds the base of pin 40 and is concentric therewith. This flange 46 provides rigidity for the strap 38 in the vicinity of pin 40 to prevent buckling of the strap when the aforementioned finger pressure is applied thereto and when the pin is to be removed by upward pulling pressure on the end of strap 38. The flange 46 also serves as a visual guide for the proper placement of the finger when the downward pressure is to be applied upon the strap.

The end portion of the strap immediately surrounding the pin 40 is made of somewhat greater width, as indicated at 50 in FIG. 3. The end edge of this wider portion 50 is provided with a continuous row of teeth or serrations 52 which serve as applicator means for spreading fluid dispensed from the container 10. In dispensing the fluid, such as glue or the like, the pin 40 is removed from the outlet opening 28 and the strap 38 is allowed to swing back to the clearance position shown in broken line in FIGS. 1 and 4. The walls of the compressible container 10 are then squeezed together, forcing the contained fluid F through the outlet opening 28 on to a surface S. The pin may then be reinserted and firmly locked within the outlet opening 28, are previously described, thereby providing a rigid mount for the applicator teeth 52. The container 10 is then inverted and held at an angle, as shown in FIG. 6, with the hand, grasping the container body 12 as a handle, and the applicator teeth 52 are pressed upon and drawn along the surface S to spread the fluid F thereon. Because of the resilience of the strap 38, the teeth 52 can be pressed tightly against the surface S during the spreading action to provide a thin, uniform layer of the fluid F on the surface. If desired, the applicator may be utilized in the same manner with the pin 40 removed from the outlet opening 28. In this open position, shown in broken line in FIG. 1, the container 10 is inverted and the teeth 52 wiped along the surface S, the flexible strap 38 providing a more resilient spreading action.

It will be appreciated that because the closure pin 40 and the applicator teeth 52 are both carried by the integral strap 38, these members are always available when needed and cannot be lost, dropped or accidentally misplaced.

While a preferred embodiment of the invention has been shown and described herein, it is obvious that numerous omissions, changes and additions may be made in such embodiment without departing from the spirit and scope of the invention.

What I claim is:

1. A dispenser cap for fluid containers having a neck terminating in an open mouth, said dispenser cap comprising an annular skirt portion having means for attachment to the container neck in communication with the mouth thereof, a nozzle portion upstanding from said skirt and in communication therewith, an outlet opening at the free end of said nozzle portion, a flexible strap attached at one end to said skirt portion and being of sufficient length to overlie the free end of said nozzle portion when said strap is in bent condition, a closure pin projecting perpendicularly from one surface of said strap and spaced inwardly from the free end threof, said pin being of a diameter to fit frictionally within the outlet opening of said nozzle portion to close and seal said outlet opening with the free end portion of said strap overlying the free end of said nozzle portion and extending laterally therefrom, and applicator means formed on the free end edge of said strap beyond said pin, said nozzle providing a rigid mount for said applicator means when said closure pin is inserted into said outlet opening, and said strap providing a flexible mount for said applicator means when said closure pin is removed from said outlet opening, whereby said applicator means may be used to spread liquid dispensed through said outlet aperture onto a surface, using said container as a handle.

2. A dispenser cap for fluid containers having a neck terminating in an open mouth, said dispenser cap comprising an annular skirt portion having means for attachment to the container neck in communication with the mouth thereof, a nozzle portion integral with and upstanding from said skirt and in communication therewith, an outlet opening at the free end of said nozzle portion, a flexible strap integral with said skirt portion at the periphery thereof and being of sufficient length to overlie the free end of said nozzle portion when said strap is in bent condition, a closure pin formed integrally with said strap and projecting perpendicularly from one surface thereof at a point spaced inwardly from the free end of said strap, said pin being of a diameter to fit snugly within the outlet opening of said nozzle portion to close and seal said outlet opening, said strap having a terminal portion projecting beyond said pin, said terminal portion extending laterally from said nozzle portion and providing applicator means when said closure pin is inserted within said outlet opening, said nozzle providing a rigid mount for said applicator means when said closure pin is inserted into said outlet opening, whereby said applicator means may be used to spread liquid dispensed through said outlet aperture onto a surface, using said container in inverted condition as a handle.

3. A dispenser cap according to claim 2 in which said closure pin has an integral peripheral flange adjacent its free end, said flange being of sufficiently large diameter than said outlet opening to permit said flange to be forced through said outlet opening to a position in which it underlies said outlet opening and locks said pin in inserted position while said applicator means spreads liquid on said surface.

4. A dispenser cap for fluid containers having a neck terminating in an open mouth, said dispenser cap comprising an annular skirt portion having means for attachment to the container neck in communication with the mouth thereof, a nozzle portion upstanding from said skirt and in communication therewith, an outlet opening at the free end of said nozzle portion, a flexible strap attached at one end to said skirt portion and being of sufficient length to overlie the free end of said nozzle portion when said strap is in bent condition, a closure pin projecting perpendicularly from one surface of said strap and spaced inwardly from the free end thereof, said pin being of a diameter to fit snugly within the outlet opening of said nozzle portion to close and seal said outlet opening, said pin also having means providing a snap-fit in said outlet opening to releasably lock said pin in inserted position, and a row of applicator teeth formed on the free end edge of said strap beyond said pin, said nozzle providing a rigid mount for said applicator teeth when said closure pin is inserted into and locked within said outlet opening whereby said applicator teeth may be used to spread liquid dispensed through said outlet aperture onto a surface, using said container as a handle.

5. A dispenser cap according to claim 4 in which said skirt, nozzle, strap and closure pin are formed integrally with each other.

6. A dispenser cap according to claim 5 in which said strap is formed with a circular bead on its surface opposite the surface mounting said closure pin, the center of said circular bead being aligned with the axis of said pin, and said bead forming a relatively rigid strap area in the vicinity of said pin.

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RAPHAEL M. LUPO, *Primary Examier.*