

PATENT SPECIFICATION

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(54) CAP FOR A PRESSURIZED AEROSOL-DISPENSING CONTAINER

(71) I, EIICHI KIMURA, of No. 198, 3-chome, Kamifukushima-kita, Hukushima-ku, Osaka-shi, Japan, a Japanese citizen, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a cap for a pressurized aerosol-dispensing container.

Most of pressurized aerosol-dispensing containers available on the market use a full over cap designed to protect the nozzle aperture from soiling or damage and to prevent inadvertent or chance operation of the dispensing button during carriage or transportation or when contacted with other objects. Such cap, when placed in position, usually completely covers the nozzle or ejection section of the container. Therefore, to use the container, the cap must first be removed and then the dispensing button depressed. In other words, to obtain the aerosol from a container equipped with such cap requires four different operations, i.e. removal of the cap, location of the place to put the removed cap, depressing of the dispensing button, and re-attachment of the cap after use. In some cases, the user has trouble in finding a place to put the removed cap and may even lose it. Thus, the conventional full over cap is inconvenient and quite unsatisfactory from the standpoint of quick and efficient use of the container.

According to this invention I provide a cap for a pressurized aerosol-dispensing container which has a vertically-movable valve-actuating press-button from which a nozzle projects laterally, the cap having a concave top which has a central opening to receive the press-button when the cap is fitted, and a plurality of walls extending downwardly in the form of skirts from the top and being spaced from each other outwardly from the opening in the top, the innermost of the walls acting as a guideway for the press-button when the cap is fitted and the innermost wall and the next wall outwardly therefrom both having a vertically extending slot open at

their base edges to permit them to pass over the nozzle during fitting of the cap.

Preferably, there are three of the said walls of which the outermost is apertured to permit passage of the aerosol jet. It is preferred also that the said outermost wall and the said wall next outwardly from the innermost wall respectively engage two shoulders on the container when the cap is fitted. Preferably the top has a finger-receiving groove extending from the passageway to the side of the cap, the groove exposing a part of the press-button for operation when the cap is fitted on a container.

It is preferred that the press-button, when the cap is fitted to the container, does not project upwardly beyond the major part of the rim of the concave top.

The invention also provides a pressurized aerosol-dispensing container in combination with a cap according to the invention.

In general, the cap of the invention may easily be designed for any type of aerosol-dispensing container which was originally designed for use with a full over cap such as mentioned above.

One embodiment of the present device is now described by way of Example with reference to the accompanying drawings, in which:—

Figure 1 is a view in part-section elevation of a known cap fitted on an aerosol-dispensing container;

Figure 2 is a side view of a cap for an aerosol-dispensing container in accordance with the present invention;

Figure 3 is a plan view of the cap of Figure 2;

Figure 4 is an underneath view of the cap of Figure 2;

Figure 5 is a sectional view taken along the line B—B of Figure 2; and

Figure 6 is a view in sectional elevation of the cap of Figure 2 shown fitted on a container.

As is apparent from Figure 1 of the drawings, the conventional full over cap has a flat hood portion 2 formed atop an external cylindrical wall 1, the bottom edge of which

[Price 25p]

Price 75p

is securely fitted in the inside of a curled seam rim 9 provided projecting slightly outwardly at the boundary between the head portion and the body portion of an aerosol-dispensing container 7. Depending from the underside of said hood portion 2 is a cylindrical inner wall 4, the bottom edge of which is a lip 5 securable by a snap-fit on the outside of a curled seam rim 8 which slightly projects at the boundary between the head portion of the container 7 and the dispensing valve assembly. The inner wall 4 is formed with a slot 6 adapted to allow the nozzle 11 of the container to extend therethrough outwardly, and at a part of the external wall 1 just opposed to the slot 6 there is formed an opening 3 designed such that the spray of the content liquid can issue out therethrough. As will be apparent from the foregoing description, it is impossible with this full over cap to operate the dispensing button 10 directly from the outside of the cap.

Such inconvenience is eliminated in the cap according to the present invention which is illustrated in Figures 2 to 6 of the drawings in which features corresponding to features of the cap of Figure 1 have identical reference numerals and will not be described again. The cap of Figures 2 to 6 has a generally concave top 13, instead of the flat surface 2 in the conventional full over cap, and in the centre of said concave surface is an opening 15 of a diameter that allows close fitting of the dispensing button 10 in said opening. Extending downwardly from the peripheral edge of said opening 15 is a guiding wall 16 of a suitable length forming a passageway to receive the press-button 10 and formed with a slot 17 in alignment with the slot 6 of the wall 4 so that the nozzle 11 can extend out through said both slots. In the top 13, a groove 14 extends from the periphery of the opening 15 to the outer side wall 1 of the cap on the opposite side from the spray opening 3. The groove 14 forms a finger slot. It can be seen that the button 10 is of uniform cylindrical cross-section over its height, and is of substantially the same height as the guiding wall 16.

In using the cap of Figures 2 to 6, the cap is fitted onto the container 7, inserting the dispensing button 10 into the opening 15 of the cap so that it does not project above the rim of the top 13 and the nozzle 11 extends through the slots 6 and 17, whereby the cap is fixed in position as shown in Figure 6. With the cap being thus fixed in position, a part of the head portion of the dispensing button 10 will extend into the finger slot 14, so that if a finger is placed in said finger slot 14 the fingertip will be automatically guided onto the upper surface of the dispensing button 10, and hence if said dispensing button 10 is depressed by the fingertip, the dispensing valve 12 is opened to

allow release of a spray of the content liquid in the container 7 through the nozzle 11.

As described above, the cap shown in Figures 2 to 6 permits operation of the dispensing valve 12 from the outside of the cap, with no need of removing it, and also the direction of spray is easily determined by placing a finger in the finger slot. Further, the cap can be readily adapted for an aerosol-dispensing container which was designed for use with a conventional full over cap, so that the owner of such a container has only to buy the cap of the invention and fit it on the container to obtain the convenience and advantages offered by the present invention. Also, manufacturers or dealers of the containers equipped with the conventional full over caps need not alter the container design when replacing full over caps with the caps according to the present device.

WHAT I CLAIM IS:—

1. A cap for a pressurized aerosol-dispensing container which has a vertically-movable valve-actuating press-button from which a nozzle projects laterally, the cap having a concave top which has a central opening to receive the press-button when the cap is fitted, and a plurality of walls extending downwardly in the form of skirts from the top and being spaced from each other outwardly from the opening in the top, the innermost of the walls acting as a guideway for the press-button when the cap is fitted and the innermost wall and the next wall outwardly therefrom both having a vertically extending slot open at their base edges to permit them to pass over the nozzle during fitting of the cap.

2. A cap according to claim 1 having three of the said walls of which the outermost is apertured to permit passage of the aerosol jet.

3. A cap according to claim 1 or 2 wherein the said walls are cylindrical and concentric.

4. A cap for a pressurized aerosol-dispensing container having a hood portion atop an external peripheral wall whose base edge is fittable against the inside of a rim at a shoulder of the body portion of the container, an inner wall extending downwards vertically from the underside of said hood portion, said inner wall having a base edge fittable against the outside of a rim at the head portion of the container, said inner wall also having a slot open at its base edge through which a nozzle of a dispensing button of the container is to be passed during fitting of the cap, and a spray hole being formed in said external wall opposed to said slot, a concave recess being formed in the upper surface of the hood portion, said concave recessed hood portion having in its centre an operating opening of a diameter

is securely fitted in the inside of a curled seam rim 9 provided projecting slightly outwardly at the boundary between the head portion and the body portion of an aerosol-dispensing container 7. Depending from the underside of said hood portion 2 is a cylindrical inner wall 4, the bottom edge of which is a lip 5 securable by a snap-fit on the outside of a curled seam rim 8 which slightly projects at the boundary between the head portion of the container 7 and the dispensing valve assembly. The inner wall 4 is formed with a slot 6 adapted to allow the nozzle 11 of the container to extend therethrough outwardly, and at a part of the external wall 1 just opposed to the slot 6 there is formed an opening 3 designed such that the spray of the content liquid can issue out therethrough. As will be apparent from the foregoing description, it is impossible with this full over cap to operate the dispensing button 10 directly from the outside of the cap.

Such inconvenience is eliminated in the cap according to the present invention which is illustrated in Figures 2 to 6 of the drawings in which features corresponding to features of the cap of Figure 1 have identical reference numerals and will not be described again. The cap of Figures 2 to 6 has a generally concave top 13, instead of the flat surface 2 in the conventional full over cap, and in the centre of said concave surface is an opening 15 of a diameter that allows close fitting of the dispensing button 10 in said opening. Extending downwardly from the peripheral edge of said opening 15 is a guiding wall 16 of a suitable length forming a passageway to receive the press-button 10 and formed with a slot 17 in alignment with the slot 6 of the wall 4 so that the nozzle 11 can extend out through said both slots. In the top 13, a groove 14 extends from the periphery of the opening 15 to the outer side wall 1 of the cap on the opposite side from the spray opening 3. The groove 14 forms a finger slot. It can be seen that the button 10 is of uniform cylindrical cross-section over its height, and is of substantially the same height as the guiding wall 16.

In using the cap of Figures 2 to 6, the cap is fitted onto the container 7, inserting the dispensing button 10 into the opening 15 of the cap so that it does not project above the rim of the top 13 and the nozzle 11 extends through the slots 6 and 17, whereby the cap is fixed in position as shown in Figure 6. With the cap being thus fixed in position, a part of the head portion of the dispensing button 10 will extend into the finger slot 14, so that if a finger is placed in said finger slot 14 the fingertip will be automatically guided onto the upper surface of the dispensing button 10, and hence if said dispensing button 10 is depressed by the fingertip, the dispensing valve 12 is opened to

allow release of a spray of the content liquid in the container 7 through the nozzle 11.

As described above, the cap shown in Figures 2 to 6 permits operation of the dispensing valve 12 from the outside of the cap, with no need of removing it, and also the direction of spray is easily determined by placing a finger in the finger slot. Further, the cap can be readily adapted for an aerosol-dispensing container which was designed for use with a conventional full over cap, so that the owner of such a container has only to buy the cap of the invention and fit it on the container to obtain the convenience and advantages offered by the present invention. Also, manufacturers or dealers of the containers equipped with the conventional full over caps need not alter the container design when replacing full over caps with the caps according to the present device.

WHAT I CLAIM IS:—

1. A cap for a pressurized aerosol-dispensing container which has a vertically-movable valve-actuating press-button from which a nozzle projects laterally, the cap having a concave top which has a central opening to receive the press-button when the cap is fitted, and a plurality of walls extending downwardly in the form of skirts from the top and being spaced from each other outwardly from the opening in the top, the innermost of the walls acting as a guideway for the press-button when the cap is fitted and the innermost wall and the next wall outwardly therefrom both having a vertically extending slot open at their base edges to permit them to pass over the nozzle during fitting of the cap.

2. A cap according to claim 1 having three of the said walls of which the outermost is apertured to permit passage of the aerosol jet.

3. A cap according to claim 1 or 2 wherein the said walls are cylindrical and concentric.

4. A cap for a pressurized aerosol-dispensing container having a hood portion atop an external peripheral wall whose base edge is fittable against the inside of a rim at a shoulder of the body portion of the container, an inner wall extending downwards vertically from the underside of said hood portion, said inner wall having a base edge fittable against the outside of a rim at the head portion of the container, said inner wall also having a slot open at its base edge through which a nozzle of a dispensing button of the container is to be passed during fitting of the cap, and a spray hole being formed in said external wall opposed to said slot, a concave recess being formed in the upper surface of the hood portion, said concave recessed hood portion having in its centre an operating opening of a diameter



that allows snug fitting of a dispensing button of the container therein, with a guide wall of a suitable length extending downwardly from the peripheral edge of said operating opening, said guide wall being formed with a slot open at its base edge and in alignment with said slot in the inner wall so that the nozzle can extend through both said slots, and a part of the cap extending from the periphery of said operating opening to the peripheral edge of said recessed hood portion opposite from said spray hole being recessed to form a finger slot.

5. A cap substantially as herein described with reference to and as shown in Figures 2 to 6 of the accompanying drawings.

6. A pressurized aerosol-dispensing container in combination with a cap according to any one of the preceding claims.

7. A pressurized aerosol-dispensing container and cap according to claim 6 wherein the press-button is of uniform cross-section over its whole height, and is of substantially the same height as the said wall forming a guideway or guide.

8. A pressurized aerosol-dispensing container according to claim 6 or 7 as dependent on any one of claims 1 to 3 wherein the cap has three of the said walls of which the outermost is apertured to permit passage of

the aerosol jet and the said outermost wall and the said wall next outwardly from the innermost wall respectively engage two shoulders on the container when the cap is fitted.

9. A pressurized aerosol-dispensing container and a cap according to any one of claims 6 to 8 as dependent on any one of claims 1 to 3 wherein the top of the cap has a finger-receiving groove extending from the passageway to the side of the cap, the groove exposing a part of the press-button for operation when the cap is fitted.

10. A pressurized aerosol-dispensing container and a cap according to any one of claims 6 to 9 wherein the press-button when the cap is fitted to the aerosol container, does not project upwardly beyond the major part of the rim of the concave top.

11. A pressurized aerosol-dispensing container and cap, substantially as herein described with reference to, and as shown in, Fig. 6 of the accompanying drawings.

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