United States Patent

Pass

[15] **3,685,913**

[45] **Aug. 22, 1972**

[54] CREAM AND LATHER APPLICATOR

[72] Inventor: **Roger D. Pass,** 1119 W. Montana Ave., St. Paul, Minn. 55108

[22] Filed: **Sept. 22, 1970**

[21] Appl. No.: **74,387**

[52] **U.S. Cl.** **401/190,** 222/402.11, 401/263, 401/264

[51] **Int. Cl.**.....**A46b 5/02,** B65d 83/06

[58] **Field of Search**.....401/190, 264; 222/402.11, 402.25, 222/402.1

[56] **References Cited**

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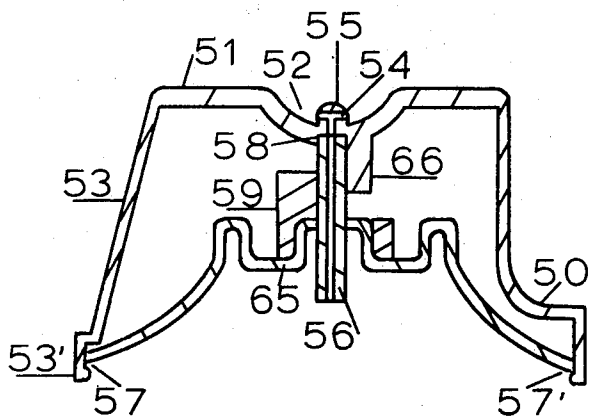
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Primary Examiner—Lawrence Charles

[57] **ABSTRACT**

For the spreading of shave cream lather, depilatories, unguents and the like substances on the face or other parts of the body, an improved applicator of the type attached to an aerosol container: wherein a deflection plate and/or an expansion chamber coacts with the applicator and the aerosol valve orifice, to direct the flow of lather and the like onto the spreading surface, and to prevent the lather from squirting into the eyes or other undesired areas of the user; wherein the operation of the valve is controlled by lever mechanisms, pressing plates, and locking stops.

4 Claims, 34 Drawing Figures



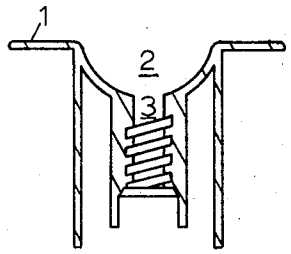


FIG. 1

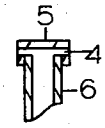


FIG. 2

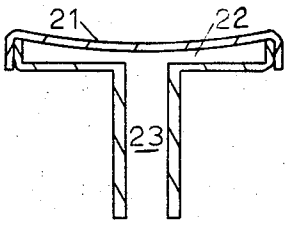


FIG. 8

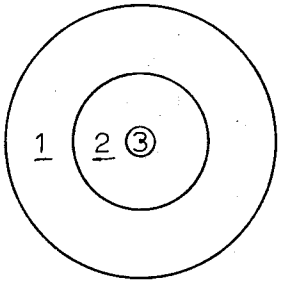


FIG. 3

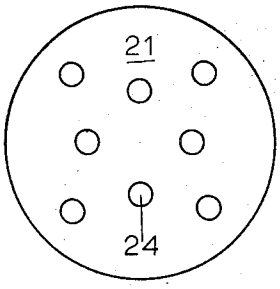


FIG. 9

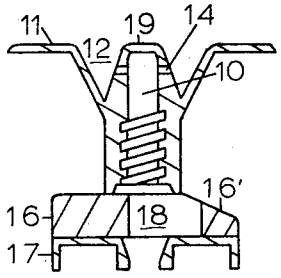


FIG. 4

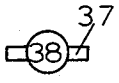


FIG. 11

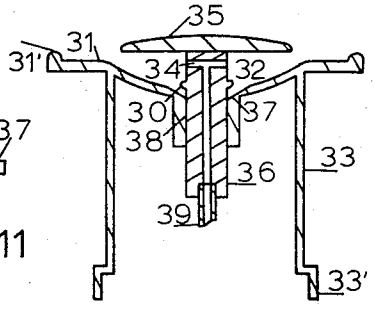


FIG. 10

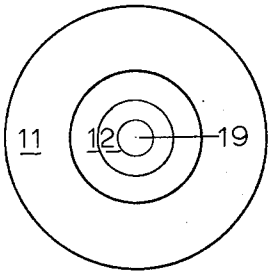


FIG. 5

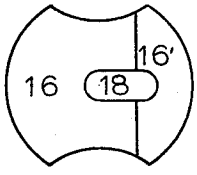


FIG. 6

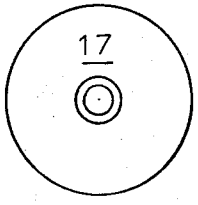


FIG. 7

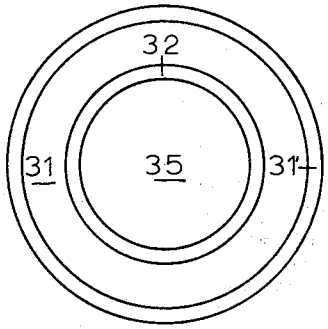


FIG. 12

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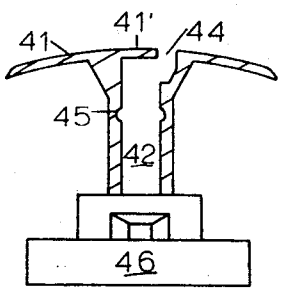


FIG. 13

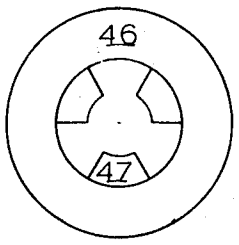


FIG. 14

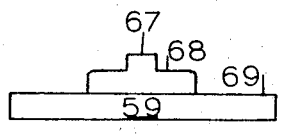


FIG. 18

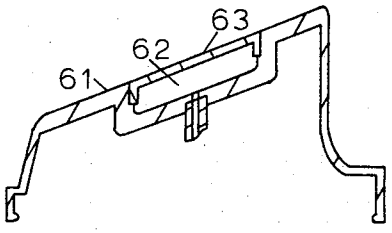


FIG. 19

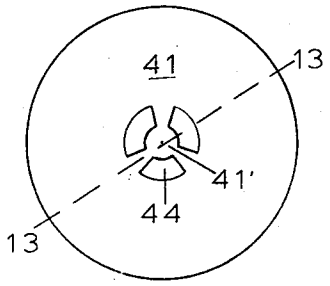


FIG. 15

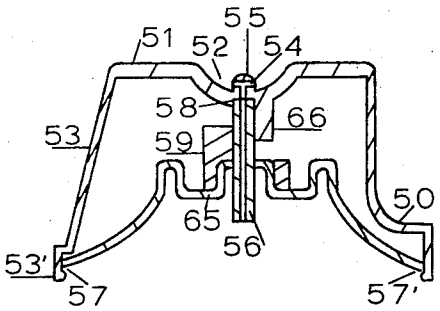


FIG. 16

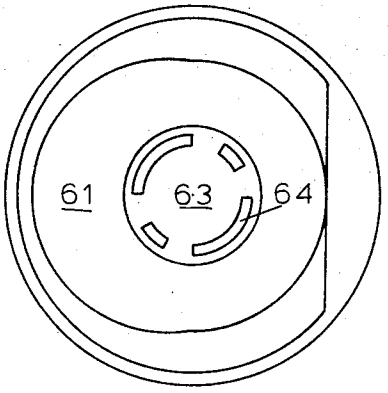


FIG. 20

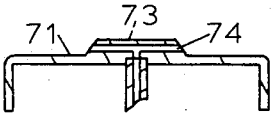


FIG. 21

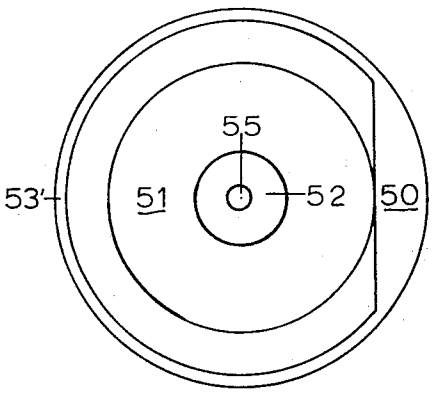


FIG. 17

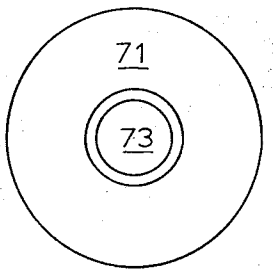


FIG. 22

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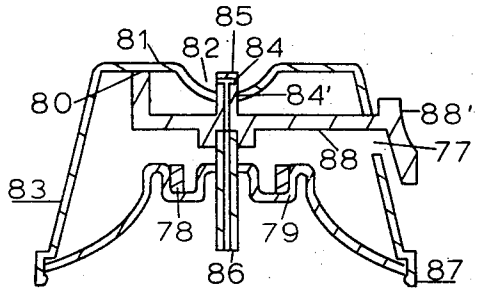


FIG. 23

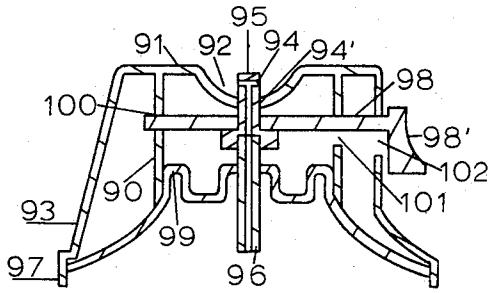


FIG. 27

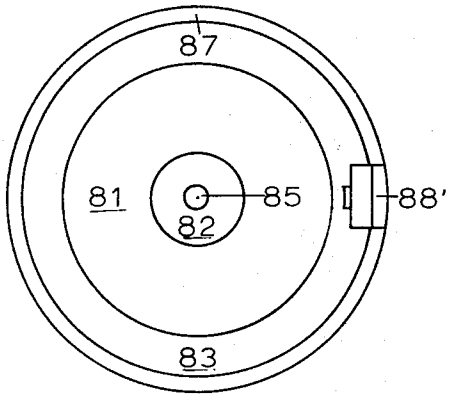


FIG. 24

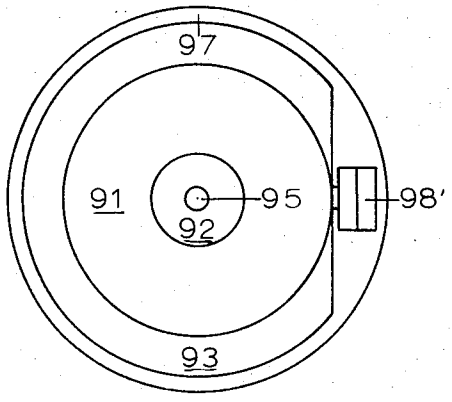


FIG. 28

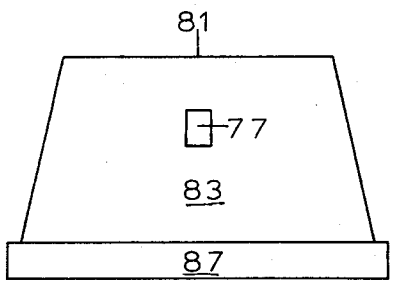


FIG. 25

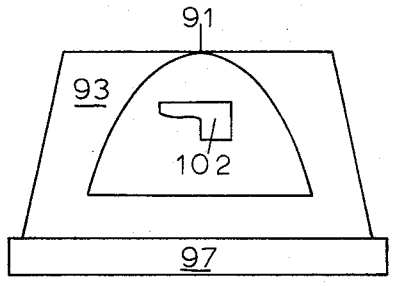


FIG. 29

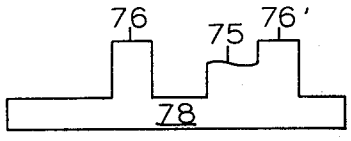


FIG. 26

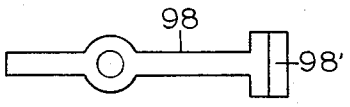


FIG. 30

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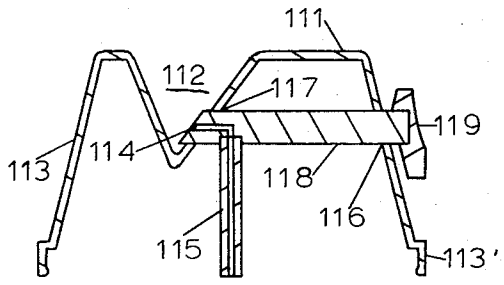


FIG. 31

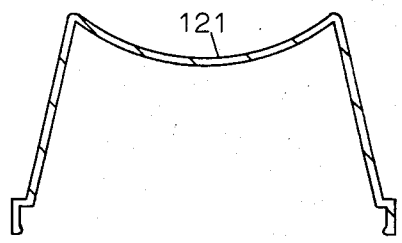


FIG. 33

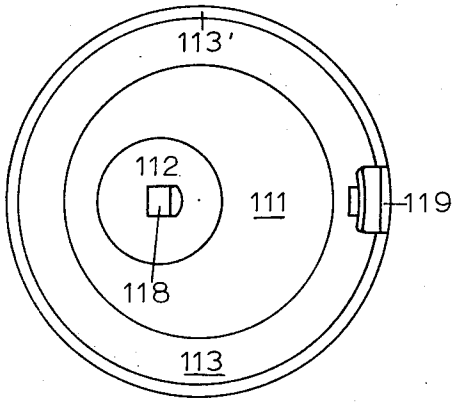


FIG. 32

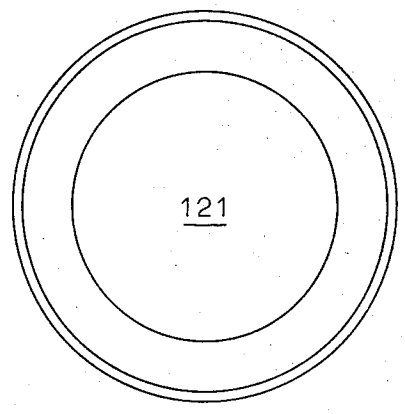


FIG. 34

Roger D. Pass

CREAM AND LATHER APPLICATOR

CROSS-REFERENCES TO RELATED APPLICATIONS INVENTION

In a previously applied for patent filed by the applicant, Roger D. Pass, Ser. no. 22544, group no. 336, filing date Mar. 25, 1970, an applicator for spreading shave cream lather was described that provided for an applicator to be attached to an aerosol container.

BACKGROUND OF THE INVENTION.

1. Field of the Invention

Dispensing, particularly from aerosol containers (class 222, dispensing) and the simultaneous spreading of the dispensed material (class 118, coating apparatus).

2. Description of the Prior Art

The prior art includes: shave cream lather dispensing aerosol containers having a valve for regulating the flow of lather through an orifice with means of actuating the valve; an applicator for the spreading of lather on the face or other parts of the body adaptable for attachment to the aerosol container. (For prior applicator art refer to patent filed by the applicant, Roger D. Pass, Ser. no. 22544, group no. 336, filing date Mar. 25, 1970, Applicator For Shaving Lather). This invention is superior to the existing prior art in that it utilizes a combination of expansion chambers and/or deflection plates which prevent the lather and the like from squirting from the applicator into the eyes or other undesired areas of the user. There are also incorporated into the applicator improved means of operating the aerosol valve.

SUMMARY OF THE INVENTION

In a preferred embodiment, an expansion chamber (i.e., a concave depression) is located in the spreading surface of the applicator. The aerosol valve tube or an extension tube of an aerosol valve tube protrudes through the base of and into the expansion chamber, or protrudes into a convex hub located within the expansion chamber. An orifice or orifices located in the end of the tube which protrudes or located in the convex hub deflects the lather coming through the tube into the expansion chamber preventing the lather from squirting into the eyes or other undesired areas of the user. Valve actuating means include a lever rotatably mounted on the aerosol valve tube or the extension tube and extending to and through a slot in the outside side of the applicator. When pressed down, the lever wedges against the inside top of the applicator and the tube causing actuation of the aerosol valve. To lock, the lever is rotatably snapped in a groove located in the side of the applicator or a stationary collar is fitted around the inside flange of the aerosol container, having at one end a raised portion which when the applicator is rotated around the outside flange of the aerosol container wedges under the lever preventing its downward movement. By holding the aerosol container so that the spreading surface rests gently against the face shave cream lather can be ejected and spread directly on the face or other parts of the body by the spreading surface without the user having to worry about being squirted in the eyes or other undesired areas.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a sectional view of an applicator threaded valve stem hole. The spreading surface has an expansion chamber.

FIG. 2 is a deflection means attachable to an aerosol valve stem.

FIG. 3 is a top view of FIG. 1.

FIG. 4 is a sectional view of an applicator with a threaded aerosol valve stem hole and a locking means. The spreading surface combines an expansion chamber and a deflection hub.

FIG. 5 is a top view of FIG. 4.

FIG. 6 is a top view of the upper locking means shown in FIG. 4, a lock slide plate.

FIG. 7 is a top view of the lower locking means shown in FIG. 4, a base plate.

FIG. 8 is a sectional view of an applicator designed for attaching to an aerosol valve stem. The concave spreading surface covers an expansion chamber.

FIG. 9 is a top view of FIG. 8.

FIG. 10 is a sectional view of an applicator with a flanged base and a pressing plate.

FIG. 11 shows a top view of the passage for the shaft of the pressing plate.

FIG. 12 is a top view of FIG. 10.

FIG. 13 is a cross sectional view, taken through 13—13 of FIG. 15, of an applicator having a convex spreading surface with an expansion chamber and deflection means. A side view is shown of a locking means.

FIG. 14 is a top view of the lower locking plate shown in FIG. 13.

FIG. 15 is a top view of FIG. 13.

FIG. 16 is a sectional view of an alternate embodiment of an applicator with an expanding flange and a locking stop.

FIG. 17 is a top view of FIG. 16.

FIG. 18 is a developed view of the locking stop shown in FIG. 16.

FIG. 19 is a sectional view of an applicator having an expansion chamber with a separately attached deflection cover.

FIG. 20 is a top view of FIG. 19.

FIG. 21 is an alternate embodiment of an applicator spreading surface.

FIG. 22 is a top view of FIG. 21.

FIG. 23 is a sectional view of an applicator spreading surface, locking stop and a lever arm.

FIG. 24 is a top view of FIG. 23.

FIG. 25 is a side view of FIG. 23 showing a slot for the lever arm.

FIG. 26 is a developed side view of the locking stop shown in FIG. 23.

FIG. 27 is a sectional view of an applicator having interior side walls, a valve actuating lever arm and a deflection extension tube.

FIG. 28 is a top view of FIG. 27.

FIG. 29 is a side view of FIG. 27 showing a slot for locking the lever arm.

FIG. 30 is a top view of the lever arm shown in FIG. 27.

FIG. 31 is a sectional view of an applicator making use of a push arm to actuate a tilt type valve.

FIG. 32 is a top view of FIG. 31.

FIG. 33 is a sectional view of an aerosol valve protective cap adapted for the spreading of said contents.

FIG. 34 is a top view of FIG. 33.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIGS. 1, 2 and 3 are of a cream and lather applicator having a passage 3 adaptable for threading the applicator to the stem of an aerosol valve of the kind operated by tilt motion. This applicator could just as well be attached to a tilt type valve stem by a slide fit of the type shown in FIG. 8. The flat circular spreading surface 1 surrounds a lather impeding means, which is a means of directing the flow of contents onto the spreading surface while preventing said contents from squirting haphazardly into the eyes or other undesired areas of the user. It is understood that an aerosol valve which the user could easily and exactly control the ejection of contents therefrom would partially or even totally eliminate the need for the impeding means. The lather impeding means incorporated into this applicator include an expansion chamber 2 and a deflection cap 5 attachable to a tilt type valve stem 6. The ports 4 of said deflection cap 5 provide an egress for the contents of the aerosol container. When assembled, the tilt type valve stem 6 screws or slips on said passage 3 so that the ports 4 project into the expansion chamber 2. When the base of the applicator is not resting firmly on the top of the aerosol container the aerosol valve can be actuated by sideway finger pressure on the side of the applicator. Lather is then released through the ports 4, into the expansion chamber 2 and onto the spreading surface 1.

The usefulness of the expansion chamber, the deflection means and the spreading surface lies not so much in their form, of which they could take many different shapes, but in their function. The spreading surface could just as well be square, oval, concave, convex, bumpy or any other shape, configuration or size within reason. Its usefulness lies mainly in its function of spreading the contents on the face or other parts of the body, rather than in its' form. The primary function of the expansion chamber is to provide a reservoir in which shave cream, lather, gels, or dipilatories can expand and/or accumulate. The user could either simultaneously eject and spread said contents on his body; or the user could first eject enough of contents to fill up the reservoir and then spread the contents on his body. A second function of the expansion chamber, but not necessarily contingent on the first, is to provide a housing for the aerosol valve stem and/or deflection means. The usefulness of the deflection means lies in its function of deflecting the lather into the expansion chamber and/or the spreading surface.

FIGS. 4 and 5 show an applicator having a passage 10 adaptable for threading the applicator to the stem of an aerosol valve of the kind operated by tilt motion. A flat, circular spreading surface 11 surrounds a lather impeding means which includes an expansion chamber 12 surrounding a deflection hub 19 which surrounds said passage 10 and protrudes into said expansion chamber 12. The top of the deflection hub 19 could be above, level with or below the spreading surface 11.

FIGS. 4, 6 and 7 illustrate a locking means, FIG. 4 showing it in the locked position. The lock slide plate 16 when pushed to the maximum distance allowed by the elongated slot 18 causes at least one-half of the applicator base to lie over the beveled area 16' of the lock slide plate 16. An aerosol valve may now be actuated when the applicator is pushed in line with the elongated slot 18 towards the beveled area 16'. Lather then flows from the ports 14, into the expansion chamber 12 and onto the spreading surface 11. The base plate 17 is designed to facilitate the pushing of the lock slide plate 16 and may not be necessary on some aerosol containers.

FIGS. 8 and 9 are of an applicator with an impeding means including an expansion chamber 22 and a deflection cover 21 adaptable for attachment as a cover over said expansion chamber 22. The surface of said deflection cover 21 is concave, has a multiplicity of openings 24 to provide an egress for the contents, and acts as a means for spreading said contents on the face or other parts of the body. The passage 23 is adaptable for attaching the applicator to the stem of an aerosol valve of the kind operated by tilt motion.

FIGS. 10, 11 and 12 show an applicator having: a block ridge 31' which hinders the flow of lather over the edge of the circular spreading surface 31, exterior sidewalls 33 which attach to the top edge of an aerosol container by the flange 33', a deflection extension tube 36 slidably set in a passage 38 centrally located in the expansion chamber 32 having one end attached to an aerosol valve stem 39 and the other end to a pressing plate 35. Pressure applied to said pressing plate 35 activates an aerosol valve which releases lather into said expansion chamber 32 through the ports 34 and onto said spreading surface 31. The locking means consists of two lugs 30, located on said deflection extension tube 36 which can be aligned by rotation with the two grooves 37 located on the expansion chamber 32 at the periphery of said passage 38, to permit downward movement of said deflection extension tube 36. By rotating said lugs 30 out of alignment with said grooves 37 downward movement of said deflection extension tube 36 is locked preventing accidental actuation of the aerosol valve.

FIGS. 13 and 15 show an applicator having a convex spreading surface 41 with three independent openings 44 positioned outwardly along the outside periphery of passage 42 so that the portion of the spreading surface 41' between said openings 44 acts as a lather deflecting means. A continuous groove 45 located on the inside circumference of said passage 42 acts to grip a mating projection located on a tilt type valve stem so that the applicator is capable of snapping on and rotating around said tilt type valve stem.

FIGS. 13 and 14 illustrate a locking means, FIG. 14 showing a top view of the base lock plate 46 having three equally spaced gear teeth 47.

FIGS. 16, 17 and 18 show an applicator having exterior sidewalls 53 terminating in an expanding flange 53' which grips the top edge of an aerosol container tightly at pivot point 57 and then expands gradually around its circumference to provide a slidable action between the applicator and the aerosol container. When pressure is applied to the finger pressing indent 50, which is molded as part of the exterior sidewalls 53 of the applicator, the valve stem 56, which is seated in the passage 58 located in the underside of the expansion chamber 52, is depressed ejecting lather from the ports 54 located in the deflection hub 55, into the expansion chamber 52 and onto the spreading surface 51.

A locking means consists of a stationary collar **59** having three levels fitted around the inside valve housing flange **65** of an aerosol container. When the applicator is rotated on the aerosol container, a guiding projection **66** on the underside of the expansion chamber **52** abuts against the side of level **67** and rests upon level **68**. In this position downward movement of the applicator is locked preventing accidental actuation of the aerosol valve. When the applicator is rotated in the opposite direction so that the guiding projection **66** is over level **69** the applicator is unlocked.

FIGS. **19** and **20** show an applicator which is designed to actuate an aerosol valve in the same manner as shown in FIG. **16**. The oblique oval shaped spreading surface **61** has an expansion chamber **62** in which a deflection cover **63** with openings **64** can be inserted. The deflection cover **63** provides an almost completely smooth flat surface for spreading lather.

FIGS. **21** and **22** show an applicator in which the ports **74** are located in the deflection hub **73** which rises above the flat circular spreading surface **71**. For best results, the tubular holes in the deflection hub **73** should be so directed that the lather flows from said ports **74** out and down upon said spreading surface **71**. The deflection hub **73** can also act as a spacer between the face and said spreading surface **71**.

FIGS. **23**, **24**, **25** and **26** show an applicator having exterior sidewalls **83** terminating in a flange **87** which grips the top edge of an aerosol container. The deflection extension tube **85** of the lever arm **88** projects through the passage **84'** and rotatably engages the stem **86** of the aerosol valve. When downward pressure is applied to the pressing button **88'** of the lever arm **88** which extends through the slot **77** in the exterior sidewalls **83**, the end of the lever arm **88** opposite the pressing button **88'** wedges against the top of the applicator at point **80** and causes downward movement of the aerosol valve. Lather is then ejected through the deflection extension tube **85**, out from the ports **84**, into the expansion chamber **82** and onto the spreading surface **81**. A locking means consists of a stationary collar **78** having three projections fitted around the inside valve housing flange **79** of an aerosol container. When the applicator is rotated around the aerosol container so that said lever arm **88** abuts against the side of projection **76'** and rests upon projection **75**, the lever arm **88** is locked preventing accidental actuation of the aerosol valve. When the applicator is rotated in the opposite direction so that said lever arm **88** abuts against the side of projection **76**, the lever arm **88** is unlocked.

FIGS. **27**, **28**, **29** and **30** show an applicator having exterior sidewalls **93** terminating in flange **97** which grips the top edge of an aerosol container, and having interior sidewalls **90** which grip the inside valve housing flange **99** of an aerosol container. A lever arm **98** is rotatably mounted on a deflection extension tube **95** which is seated on the aerosol valve stem and extends through the passage **94'**. The lever arm **98** projects through three linear slots, slots **100** and **101** located in the interior sidewalls **90**, and slot **102** located in the exterior sidewalls **93**, and terminates on the outside of the exterior sidewalls **93** in a pressing button **98'**. The ports **94** of the deflection extension tube **95** project into the expansion chamber **92**. All three of the slots are horizontally elongated to allow for horizontal rotation of the lever arm **98**. Only slots **101** and **102** need be vertically elongated to allow for downward movement of the lever arm **98**. When downward pressure is applied to the pressing button **98'**, the other end of the lever arm **98** wedges against the top of the slot **100**, causing downward movement of the aerosol valve. Lather is then ejected through the deflection extension tube **95**, out from the ports **94**, into the expansion chamber **92** and onto the spreading surface **91**. A locking means consists of the L-shaped slot **102**. When the lever arm **98** is rotated so that it rests in the horizontally elongated portion of the slot **102**, the lever arm **98** is locked preventing accidental actuation of the aerosol valve.

FIGS. **31** and **32** show an applicator having exterior sidewalls **113** terminating in flange **113'** which grips the top edge of an aerosol container. A push arm **118**, seated upon the stem **115** of a tilt type aerosol valve, is slidably set transversely in the passage **117**, extends outwardly through slot **116** located in said exterior sidewalls **113** and terminates in a lock button **119**. When inward pressure is applied to said lock button **119** the push arm **118** causes sideways movement of the aerosol valve. The contents of the aerosol container are then ejected through the port **114** of said push arm **118** into the expansion chamber **112** and onto the spreading surface **111**.

FIGS. **33** and **34** show a very simple applicator being in the form of an aerosol valve protective cap with a concave spreading surface **121**. To operate, said protective cap is removed from the aerosol container and a portion of the contents is ejected onto the concave spreading surface **121** which acts as a holding reservoir for the contents. The applicator is then held next to the face or other parts of the body and the contents are then spread on same by the user.

It is understood that the lather impeding means could also apply to the impeding of not only shave lather but also shave creams, gels and depilatories. Therefore, the lather impeding means as described in the specification will be referred to as the content impeding means in the claims.

It should be understood that the invention is not to be limited to the particular embodiments disclosed, as these are intended to be illustrative of the invention. It also should be noted that some advantages may be gained by using particular embodiments of the disclosed ideas and/or prior art in combinations not shown with each other. Undue multiplicity would result from trying to show every possible combination.

I claim:

1. A cream and lather applicator for the spreading of shave cream lather and the like on the face or body for use on an aerosol container having an aerosol valve, said applicator comprising in combination: a housing, such as a protective cap having a circular top portion the outside surface of which comprises the spreading surface for the said spreading of shave cream lather and the like on the face or body; side walls extending from said circular top portion and terminating in a flange adaptable for attaching to the top edge of an aerosol container, said flange secured pivotally at one point of its circumference to said top edge of said aerosol container and movable slidably within predetermined limits at all other points of said circumference to said

top edge of said aerosol container; a passage located in said circular top portion of said protective cap, said passage capable of seating the valve stem of said aerosol valve and conveying shave cream lather and the like from the orifice of said valve stem to said spreading surface; a finger pressing indent on said sidewall opposite of said pivot point so that downward pressure on said finger pressing indent results in lever action movement of said protective cap to operate said aerosol valve.

2. In claim 1 an expansion chamber surrounding a deflection hub which surrounds said passage located in said circular top portion of said protective cap, said deflection hub having ports located therein and in communication with said passage, said ports at such an angle as to direct the longitudinal flow of shave cream later and the like radially outward and into said expansion chamber.

3. In claim 2 the plane of said spreading surface being at an oblique angle to the central axis of the body portion of said aerosol container.

4. In claim 2 a locking means consisting of a stationary collar having three levels fitted around the inside valve housing flange of said aerosol container; a guiding projection on the underside of said expansion chamber; when the applicator is rotated on said aerosol container, said guiding projection abuts against the side of the top level and rests over the next lower level effecting a locked position; when the applicator is rotated so that said guiding projection rests over the third and lowest level said applicator is capable of a downward movement which actuates said aerosol valve.

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