

[54] PACKAGE FOR AN UNDERARM SPRAY PRODUCT

3,549,055 12/1970 Gatland 222/402.13

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[57] ABSTRACT

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A container-delivery unit for an underarm spray product such as an antiperspirant or deodorant. A preferred embodiment includes a pressurized container and is characterized by a unique elongated delivery head extending from the container body and having an elongated concave surface surrounding a spray orifice. Preferred embodiments have an actuator trigger portion located near the lateral surface of the container body and moveable in a way to facilitate easy and convenient use of the product. This device and certain features of the preferred embodiment provide a unique and conveniently operating package for an underarm spray.

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[51] Int. Cl. B65d 83/14

[58] Field of Search..... 222/402.12, 402.13, 182; 128/225; 132/88.7; 401/190; 239/288.5

[56] References Cited
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10 Claims, 5 Drawing Figures

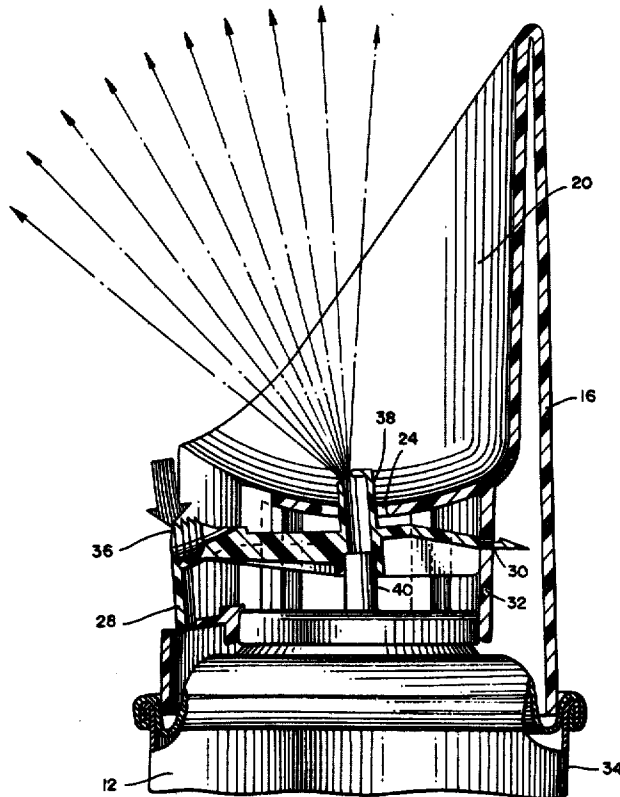


FIG. 2

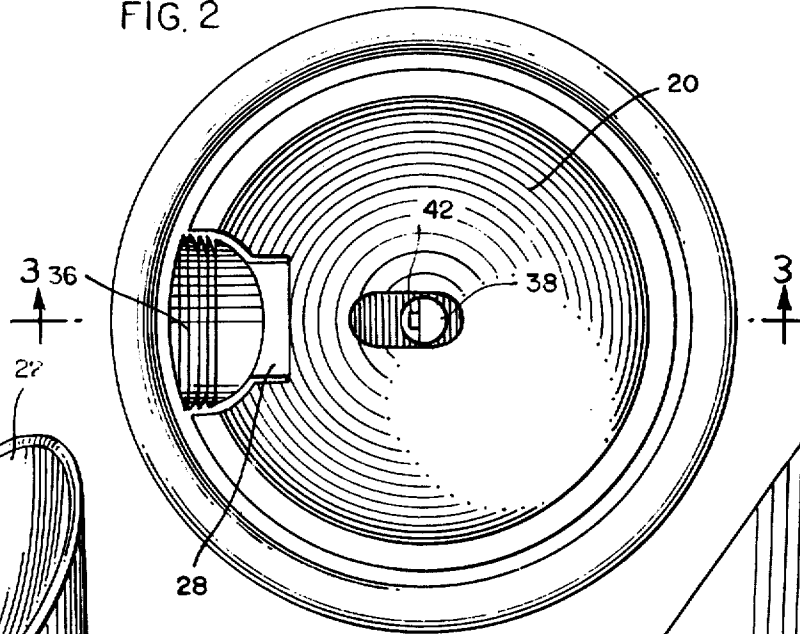


FIG. 1

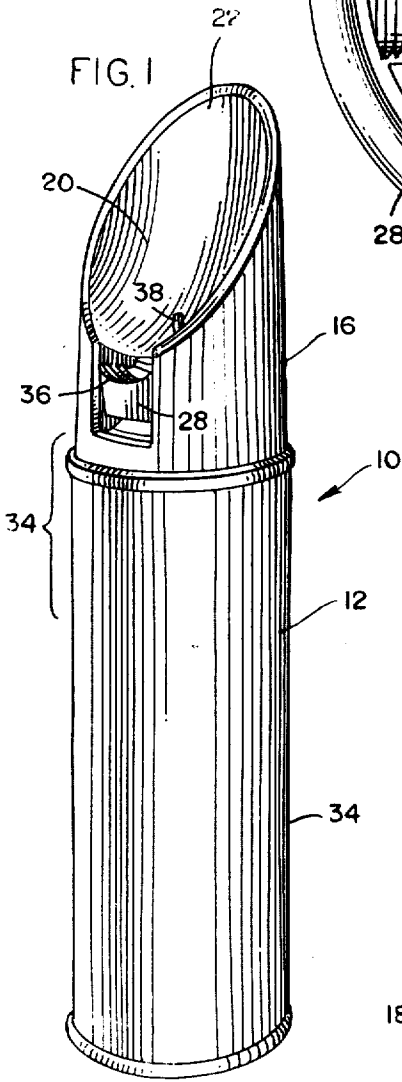
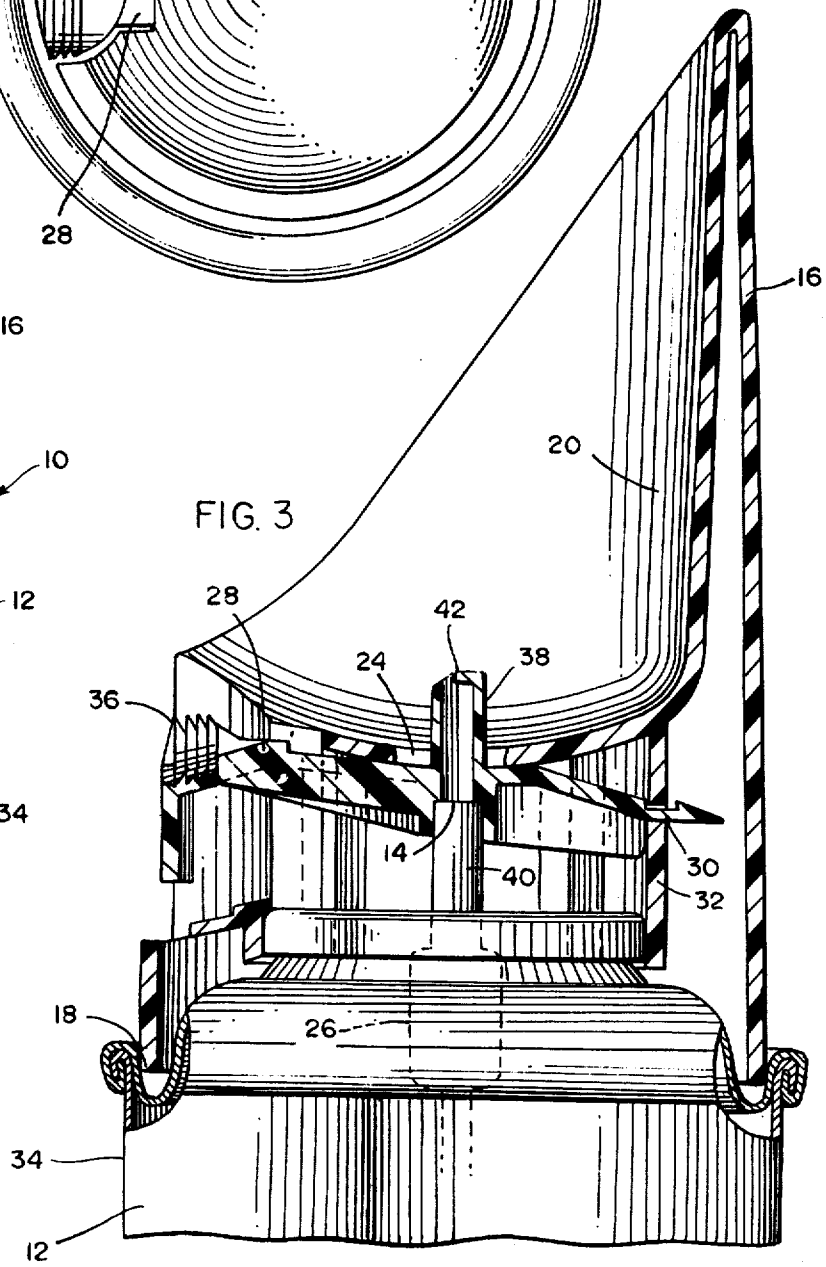


FIG. 3



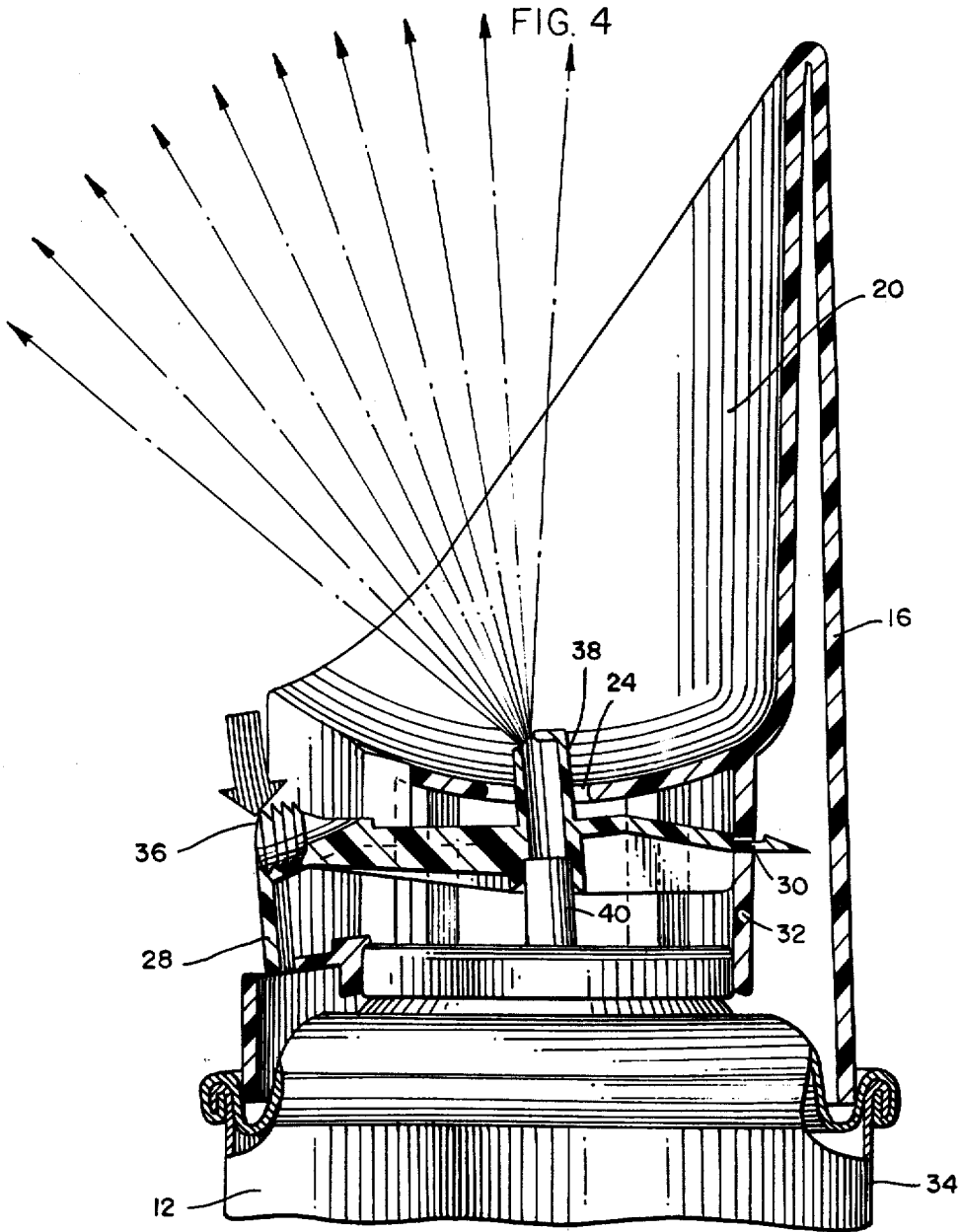
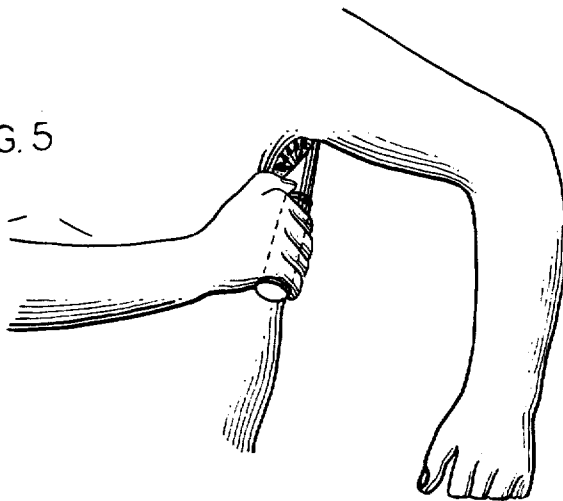


FIG. 5



PACKAGE FOR AN UNDERARM SPRAY PRODUCT

BACKGROUND OF THE INVENTION

This invention relates to containers which have spray devices for application of compositions such as deodorants or antiperspirants to the axilla.

In recent years pressurized or aerosol products for underarm use, such as antiperspirants and deodorants, have become extremely popular. Aerosol sprays have been found far superior in many respects to the squeeze bottle sprays and gel-type products which are applied by contact of a gel stick to the axilla. The problems associated with the course spray of the squeeze bottle spray product and the problems associated with the direct contact of the stick gel product are well known. Therefore, aerosol spray products, which eliminated the contact of stick gels and the course spray and dripping associated with squeeze bottle sprays, were well received and continued to be widely used.

However, there are problems associated with devices used for pressurized delivery of underarm spray products. One primary problem is misdirection of product and another is excessive overspray or wasted product. These problems have been widely experienced by users of such products.

Another problem associated with the well known and widely used aerosol underarm products is difficulty in obtaining an even application of the product to the underarm area. For example, a heavy concentration is applied to one particular area while a very small amount is applied to another area. Product is wasted in many cases due to uneven application.

Another significant problem associated with such packages and sprays is related to ease of application. It often would be required to assume an unnatural hand and arm position to obtain a proper application of an aerosol product of the prior art.

BRIEF SUMMARY OF THE INVENTION

This invention is directed to the solution of the aforementioned specific problems by the provision of a superior container-delivery unit for pressurized underarm spray products. According to this invention, a unique elongated delivery head extends from the container body and includes an elongated concave surface surrounding a spray orifice. The concave surface approximates a mirror-image of the axilla. The elongated head can readily be positioned underneath the arm with the concave surface facing toward the underarm area at a fairly close range, such as with the boundary line of the concave surface touching or close to the approximate boundary line of the axilla. This invention provides directional control, even application of product and ease of application. It prevents or drastically reduces misdirection, overspray and product waste.

In a preferred embodiment, an actuator trigger is located near the surface of the container body and/or in a particular location relative to the concave surface to provide improved ease of application. In other preferred embodiments, the concave surface is of a certain shape or orientation to provide improved ease of application.

OBJECTS OF THE INVENTION

It is an object of this invention to provide a container-delivery unit for underarm spray products which overcomes the aforementioned problems.

Another object of this invention is to provide a pressurized delivery system for underarm spray products which avoids the problem of overspray and product waste.

Another object of this invention is to provide an aerosol package-delivery unit for underarm spray products which provides directional control and even application of such products.

Yet another object of this invention is to provide a pressurized package-delivery unit for underarm spray products which allows application of a product to the axilla from one position, avoiding the necessity of moving the package during application.

Still another object of this invention is to provide a pressurized package-delivery unit for underarm products which is characterized by ease of application of the product.

BRIEF DESCRIPTION OF THE FIGURES

These and other important advantages will become apparent from the following description and from the drawings showing preferred embodiments wherein:

FIG. 1 is a perspective view of a preferred embodiment of the container-delivery device of this invention.

FIG. 2 is an enlarged top plan view of the device of FIG. 1.

FIG. 3 is a fragmentary sectional view taken along section 3—3 as indicated in FIG. 2.

FIG. 4 is a fragmentary view as in FIG. 3, but showing the actuator means in depressed position whereby the valve means is actuated.

FIG. 5 illustrates the method in which the device of this invention is used.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Throughout the figures, like numerals are used to identify like elements.

FIG. 1 is a perspective view of a preferred container-delivery unit 10 of this invention. Package 10 has a reservoir means 12 which is a cylindrical body of greater length than width. Reservoir 12 may be a two or three piece metal can. Contained within reservoir 12 is an underarm spray product such as an antiperspirant or deodorant. Also included within container 12 may be a liquid or gaseous propellant which is used to expel the underarm spray product through port 14 which is defined in reservoir means 12 and which is centered in one end of the cylindrical container.

Connected to container 12 is a delivery head 16 which extends therefrom and which is elongated generally in the direction of the axis of container body 12. Head 16 is preferably a molded plastic piece which is friction or snap fitted to container body 12 as shown at numeral 18.

Delivery head 16 forms an elongated concave surface 20 defined by a boundary 22 which forms a generally elliptical loop falling substantially in a single plane. Delivery head 16 defines an aperture or passageway 24 through concave surface 18 and aligned with port 14. Passageway 24 is located in a generally central portion

of concave surface 20. Delivery head 16 will be described in greater detail further herein.

A valve 26 is connected to container 12 and is used to control the flow of a pressurized underarm product from reservoir 12 through port 14. Actuator 28 is a second class lever, having as its fulcrum a pivoting connection 30 by which actuator 28 is attached at one end to internal structural element 32 of delivery head 16. Actuator 28 extends from connection 30 across port 14 and valve 26 in a first radial direction and terminates in alignment with lateral wall 34 of container 12. This terminating portion of actuator 28 is substantially flush with lateral wall 34. A trigger portion 36, which is approximately the width of the thumb of an adult, is located near lateral wall 34.

Integrally molded with actuator 28, in a position aligned with port 14 and passageway 24, is conduit 38. Conduit 38 joins with valve stem 40, which forms port 14. When actuator 28 is depressed by application of pressure on trigger portion 36, valve stem 40 is depressed and the product contained within reservoir 12 flows through valve stem 40, conduit 38 which is joined thereto, and exits from conduit 38 by passing through spray orifice 42 which is defined by conduit 38. Spray orifice 42 is located near concave surface 20. Spray orifice 42 is designed to provide a spray pattern which will substantially cover the axilla, as is described hereinafter.

In the preferred embodiment shown in the figures, trigger portion 36 of actuator 28 is moveable in a direction generally along lateral wall 34 and in a direction generally parallel to the axis of container 10.

Referring again to concave surface 20, boundary 22 thereof is generally an elliptical loop of a size approximately conforming to the boundary of the axilla when the arm is in a lowered position. When the elongated delivery head is inserted under the arm and placed in the area of the axilla as shown in FIG. 5, recessed or concave surface 20 forms a substantial mirror-image of the axilla area. When the valve is actuated, a spray discharged through orifice 42 will substantially cover the area of the axilla with an underarm product, such as a deodorant or antiperspirant. Because of this method of application, overspray and the attending problems will be eliminated or substantially reduced.

In this embodiment, boundary 22 of surface 20 is generally within a single slant plane. Preferably, the spray from orifice 42 will intersect a substantial portion of that part of the slant plane which is enclosed within boundary 22. With this sort of wide spray pattern, substantial coverage of the axilla may be achieved without movement of head 16 during application.

In this preferred embodiment, the plane of boundary 22 is slanted at about 45° to a plane normal to the axis of container 10. This slant orientation further facilitates convenient application of the underarm product.

In the preferred embodiment shown in the figures, trigger portion 36 of actuator 28 is near that portion of concave surface 20 which is closest to the lateral wall of reservoir 12. This general arrangement of the actuator provides very easy application in the manner illustrated in FIG. 5.

While the cylindrical container shape of the preferred embodiment shown in the drawings is highly preferred, other configurations may be used. It is necessary only that the lateral wall of the container be configured to be readily grasped in hand in a manner mak-

ing application of the contained underarm spray product convenient. Metal containers such as standard two or three piece cans may be used. However, plastic aerosol containers and a wide variety of other types of containers are usable in the container-delivery unit of this invention.

The delivery head shown in the figures is preferred from a standpoint of ease and convenience of use. However, there may be significant variations in the configuration of the delivery head without departing from the spirit and scope of this invention. For example, the boundary which defines a concave surface need not fall in one plane but may be arched to some degree. Further, although the slanted boundary plane shown in the figures is preferred, other orientations are within the scope of this invention.

The delivery head of this invention may be conveniently molded in plastic in a form which is readily attachable to the dome or an aerosol container or some other portion thereof. However, the delivery head may be made of other materials and by other methods and may be attached to a container in a variety of ways, as will be known to those skilled in the art who are made aware of this invention. Indeed, the delivery head may be molded together with the container body as a single piece or may be formed as a single piece with the container body by some other method.

The actuator arrangement shown in the drawings is highly preferred from the standpoint of convenience and ease of use in the normal position of application to the underarm area. It is convenient to displace trigger portion 36 in a axial direction generally along lateral wall 34. However, displacement in other directions along lateral wall 34 may be convenient in other embodiments. Indeed, the movement of trigger portion 36 may be by a radial depression or some other convenient motion. Locating trigger portion 36 near that portion of concave surface 20 or boundary 22 which is closest to the cylindrical lateral wall of the container makes the application procedure quite convenient and natural.

While in the foregoing specification this invention has been described in relation to certain preferred embodiments thereof, and many details have been set forth for the purpose of illustration, it will be apparent to those skilled in the art that the invention is susceptible to additional embodiments and that certain of the details described herein can be varied considerably without departing from the basic principals of the invention.

What is claimed is:

1. A container-delivery device for an underarm spray product, comprising:

means to contain said product, said means having a lateral wall configured to be readily grasped in hand and a discharge port, said means defining an axis line;

conduit means connected with said port, extending from said container means and terminating in a spray orifice for discharge centered along a reference line which forms an acute angle with said axis line;

valve means to control the flow of said product through said spray orifice;

actuator means connected to said valve means; and a head member connected to said container means and elongated in a direction along said axis line,

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said head including a surface which defines a passageway for and surrounds said spray orifice, said orifice being near the center of said surface, said surface terminating in an edge which defines a plane substantially normal to said reference line, said surface being concave whereby said spray orifice is substantially recessed from said edge and said surface approximates a three-dimensional mirror image of the human axilla.

2. The device of claim 1 wherein said edge of said concave surface forms a generally elliptical loop substantially within a single plane.

3. The device of claim 1 wherein the spray orifice is designed to provide a wide spray pattern to cover the axilla from one position.

4. The device of claim 1 wherein said actuator means includes a trigger portion located near said lateral wall.

5. The device of claim 4 wherein said trigger portion is moveable in a direction generally along said lateral wall to actuate said valve.

6. The device of claim 1 wherein said lateral wall of said container means forms a cylinder and one end of said cylinder defines said port.

7. The device of claim 6 wherein said actuator means extends along said reference line, from said valve means toward said lateral wall, and having a trigger portion located near said lateral wall.

8. The device of claim 7 wherein said trigger portions is moveable in a direction generally along said lateral wall to actuate said valve.

9. The device of claim 8 wherein said trigger portion

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is moveable in a direction generally parallel to the axis line.

10. A container-delivery device for an underarm spray product, comprising:

cylindrical reservoir means to contain said product, said means having a lateral wall configured to be readily grasped in hand, said reservoir means including a discharge port at one end thereof;

valve means connected to said reservoir means to control the flow of said product through said port; actuator means connected to said valve means;

a delivery head connected to and extending from said one end of said reservoir means and elongated in the direction of the axis of said reservoir means, said head forming an elongated concave surface extending therealong to form a substantial mirror-image of an axilla, said surface having a boundary forming a generally elliptical loop which is substantially in a single plane, said head defining a passageway terminating through said surface; and

conduit means connected with said port and extending in said passageway, said conduit means terminating in a spray orifice defined therein near said concave surface, said orifice and said concave surface facing generally in a first radial direction, said actuator means extending from said valve means toward said lateral wall generally in said first radial direction and having a trigger portion located near said lateral wall.

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