A vaginal-anal applicator for dispensing material from a pressurized container includes an actuator cap, a dispensing tube and an outer housing member for housing the dispensing tube. The dispensing tube and housing member are movable relative to the actuator cap from a first storage position to a second operating position. The actuator cap includes an actuator finger member which is depressed for releasing material from the pressurized container. The actuator cap further includes a member for limiting the depressed movement of the actuating finger member. The outer housing member includes an outwardly extending flange for limiting relative movement of the housing member and dispensing tube and for maintaining the same in the second operating position.
VAGINAL-ANAL APPLICATOR

This invention relates generally to dispensing apparatus and, more particularly, to a vaginal-anal applicator for dispensing material from a pressurized container into a body cavity.

Vaginal and/or anal applicators of various constructions are well known in the art and are, most frequently, utilized to dispense a medicinal or contraceptive material from a pressurized container into a body cavity. However, these prior art applicators have been unsatisfactory for one reason or another. More particularly, the prior art applicators have been difficult to manipulate and, consequently, the dispensing of material into a body cavity has been difficult or painful. Furthermore, the prior art applicators are, for the most part, of a unitary construction. As a result, it has been difficult to clean or otherwise sterilize these prior art applicators after use.

Accordingly, it is a broad object of the present invention to provide a vaginal-anal applicator which overcomes the above-mentioned disadvantages of the prior art.

A more specific object of the present invention is to provide a vaginal-anal applicator having an improved construction for dispensing material quickly and easily from a pressurized container into a body cavity.

Another object of this invention is to provide a vaginal-anal applicator which is releasably connected for facilitating in the sterilization of the applicator.

In accordance with an illustrative embodiment demonstrating objects and features of the present invention, a vaginal-anal applicator for dispensing material from a pressurized container having a container valve for controlling flow of material from the container includes an actuator cap which is adapted to engage the pressurized container. The actuator cap includes a valve-receiving member which is adapted to operatively engage the container valve and an actuator tube member which defines, along with the valve-receiving member, a material flow passage through the actuator cap. The actuator cap includes an actuator finger member, adapted to be moved or pivoted relative to the actuator cap, thereby depressing the container valve and causing material to flow from the pressurized container through the material flow passage. A dispensing tube, having a base member, releasably engages the actuator cap for directing the material from the material flow passage into a body cavity. The dispensing tube releasably engages a tube housing member which encircles the dispensing tube and which facilitates in the insertion of the dispensing tube into the body cavity. The dispensing tube and dispensing tube housing member are moveable relative to the actuator cap from a first storage position wherein the pressurized container is substantially parallel to the tube housing member to a second operating position wherein the pressurized container is substantially perpendicular to the tube housing member. The dispensing tube housing member includes an outwardly extending flange for limiting the relative movement of the dispensing tube and dispensing tube housing member and for maintaining the same in the second operating position. The actuator cap includes a member for limiting movement of the actuator finger member as the finger member is depressed.

The above brief description, as well as further objects, features and advantages of the present invention will be more fully appreciated by reference to the following detailed description of a preferred, but nonetheless illustrative embodiment in accordance with the present invention, when considered in conjunction with the accompanying drawings, wherein:

FIG. 1 is a front elevation view showing the vaginal-anal applicator according to the present invention in a second operating position;

FIG. 2 is a top plan view of the vaginal-anal applicator of the present invention;

FIG. 3 is a sectional view, taken substantially along the line 3—3 of FIG. 2 and looking in the direction of the arrows, showing the vaginal-anal applicator in a first storage position;

FIG. 4 is a sectional view, taken substantially along the line 4—4 of FIG. 2 and looking in the direction of the arrows; and

FIG. 5 is a view substantially similar to the view of FIG. 4 but showing the vaginal-anal applicator of the present invention in the second operating position.

Referring now to the drawing and, more particularly, to FIG. 1 thereof, a vaginal-anal applicator according to the present invention is generally designated 10. As best seen in FIGS. 1 and 3, vaginal-anal applicator 10 includes an actuator cap, generally designated 12, a dispensing tube, generally designated 14, and a dispensing tube housing member, generally designated 16, which encircles the dispensing tube. Actuator cap 12 is adapted to engage a conventional pressurized container, generally designated 18, which contains a material under pressure. By way of example, the material in pressurized container 18 may be a medicinal or contraceptive material.

Pressurized container 18 includes a container body 20. Extending upwardly from the container body, the pressurized container includes a container neck portion 22. A conventional container valve 24 extends from neck portion 22 and, as is known in the art, is adapted to be moved downwardly or shifted sidewardly, thereby releasing the material from container 18.

Actuator cap 12, which is adapted to engage container valve 24, includes a substantially cylindrical outer wall member 26. Outer wall member 26 is adapted to engage the container neck portion 22 of pressurized container 18 and is also adapted to rest on a container lip 28a formed at the juncture of container body 20 and container neck portion 22. An actuator finger member 28 is disposed at the top of actuator cap 12 and is adapted to move relative to the actuator cap for causing material to flow from pressurized container 18 by actuating container valve 24.

More particularly, actuator finger member 28 defines a top finger-receiving surface 30, substantially perpendicular to outer wall member 26, which is constructed and arranged to be depressed to actuate container valve 24. Finger-receiving surface 30 may include ridges 32 which facilitate in the movement of actuator finger member 28 ensuring that the finger of a user will not slip off finger-receiving surface 30 as actuator finger member 28 is depressed.

As shown more particularly in FIGS. 4 and 5, actuator finger member 28 is integrally attached to outer wall member 26 at outer wall portion 26a. Outer wall member 26 defines downwardly extending slots 26b in the vicinity of outer wall portion 26a which allows outer wall portion 26a to be pivoted inwardly as actua-
tor finger member 28 is depressed. However, once actuator finger member 28 is released, outer wall portion 26a pivots outwardly back to its original position. This moves actuator finger member 28 back to the position indicated in FIG. 3.

Actuator cap 12 includes a substantially cylindrical and hollow valve-receiving member 34 which extends downwardly from finger-receiving surface 30. As indicated in FIG. 3, valve-receiving member 34 is adapted to receive and operatively engage container valve 24 which is inserted partially into the valve-receiving member. Valve-receiving member 34 may include an inwardly extending lip 34a for limiting the insertion of container valve 24 into the valve-receiving member. This lip would advantageously be included for the case where outer wall member 26 would not engage lip 20a of pressurized container 18. If container valve 24 were inserted all the way into valve-receiving member 34, the container valve would abut the bottom of finger-receiving surface 30 and, consequently, the flow of material from pressurized container 18 would be inhibited.

Actuator cap 12 includes an actuator tube member 36 disposed beneath actuator finger member 28 and extending outwardly therefrom. Valve-receiving member 34 and actuator tube member 36, the latter adapted to cooperatively and releasably engage dispensing tube 14, define a material flow passage 38 through actuator cap 12.

In order to limit the downwardly movement of actuator finger member 28 as the finger member is depressed, a substantially U-shaped flange 40 is disposed at the top of actuator cap 12. More particularly, U-shaped flange 40 is disposed at the top of outer wall member 26 and extends outwardly from the outer wall member to define an inclined movement limiting surface 40a (see FIGS. 2 and 3). U-shaped flange 40 is constructed and arranged such that actuator finger member 28 may be depressed and moved downwardly, pivoting about outer wall portion 26a, a distance sufficient to actuate container valve 24. However, limiting surface 40a of U-shaped flange 40 prevents further downward movement of actuator finger member 28 which could possibly damage container valve 24 and/or valve-receiving member 34 or cause the container valve to slip out of the valve-receiving member.

Referring to FIG. 3, dispensing tube 14 is shown as including a base member 42 which is adapted to releasably receive actuator tube member 36 of actuator cap 12. More particularly, actuator tube member 36 is releasably connected to base member 42 through a cylindrical opening 44 in the base member having a diameter corresponding to the outer diameter of actuator tube member 36. Thus, actuator tube member 36 frictionally engages base member 42 allowing the base member to pivot about the actuator tube member from a first storage position to a second operating position, as will be explained hereinafter.

Actuator tube members 36 communicates with a centrally disposed cavity 46 in base member 42. Base member 42 also defines a cylindrical opening 48 into which is journaled a cylindrical dispensing tube member 50 such that the dispensing tube member is frictionally, yet releasably, secured to base member 42.

In order to limit the insertion of dispensing tube member 50 into base member 42, the base member defines a lip 42a which insures that the dispensing tube will not be inserted into the base member to an extent which would otherwise block the opening of actuator tube member 36. The vaginal-ana! applicator 10 thus defines a passageway for the flow of material from pressurized container 18 from container valve 24, material flow passage 38 of actuator cap 12, centrally disposed cavity 46 of base member 42 and dispensing tube member 50.

In order to facilitate in the flow of material from pressurized container 18 to a body cavity, the applicator includes a dispensing tube housing member 16 which encircles and releasably engages dispensing tube 14. Dispensing tube housing member 16 is tapered somewhat and defines an opening 16a at one end thereof through which material exiting from dispensing tube member 50 flows into a body cavity. Base member 42 is frictionally and releasably secured to the other end of dispensing tube housing member 16.

As indicated in FIGS. 4 and 5, dispensing tube housing member 16 defines an opening 16b through which actuator tube member 36 passes, thereby enabling the actuator tube member to engage base member 42 of dispensing tube 14.

A L-shaped flange 52 (see FIG. 3) extends outwardly from dispensing tube housing member 16 and is adapted to limit the pivotal movement of dispensing tube housing member 16 and dispensing tube 14 about actuator tube member 36 thereby maintaining the former in a second operating position, as will be explained hereinafter. More particularly, L-shaped flange 52 is disposed downwardly and outwardly from opening 16b of the dispensing tube housing member and is adapted to engage corresponding flanges 54 (see FIGS. 4 and 5), which are carried by actuator finger member 28, when the dispensing tube and the dispensing tube housing member reach the second operating position.

In order to provide a more complete understanding of the construction and operation of vaginal-ana! applicator 10 of the present invention, a typical operating sequence will be described. Actuator cap 12 is adapted to receive pressurized container 18 and, more particularly, container valve 24 is adapted to be inserted into valve-receiving member 34 of the actuator cap.

In order to facilitate packaging and/or storage of pressurized container 18 and vaginal-ana! applicator 10, the applicator and the pressurized container may be stored or shipped in a first storage position, in which the pressurized container is substantially parallel to dispensing tube 14 and dispensing tube housing member 16, as indicated by the dashed-line position of FIG. 1. However, dispensing tube 14 and dispensing tube housing member 16 are adapted to be moved relative to actuator cap 12 and pressurized container 18, by pivoting the dispensing tube and the dispensing tube housing member about actuator tube member 36, to a second operating position, as indicated by the solid-line position of FIG. 1, wherein the pressurized container is substantially perpendicular to dispensing tube 14 and dispensing tube housing member 16.

When the dispensing tube and dispensing tube housing member are in the second operating position, the dispensing tube and dispensing tube housing member may be easily inserted into a body cavity. When in the second operating position, L-shaped flange 52 of dispensing tube housing member 16 engages flange 54 of actuator cap 12. Flange 52 thus indicates that the second operating position has been reached and further-
more maintains the dispensing tube and dispensing tube housing member in the second operating position.

Once dispensing tube 14 and dispensing tube housing member 16 are in the second operating position, the dispensing tube and dispensing tube housing member are inserted into a body cavity. A user then applies finger pressure to finger-receiving surface 30 of the actuator cap. This causes actuator finger member 28 to pivot about outer wall portion 26a of outer wall member 26 and causes the actuator finger member to be depressed. The movement of actuator finger member 28 causes valve-receiving member 44 to depress or move sidewardly container valve 24. As a result, material from the pressurized container 18 is discharged. The material from the pressurized container flows through container valve 24 through material flow passage 38 of actuator cap 12 into centrally disposed cavity 46 of base member 42. The pressurized material then flows through dispensing tube member 50 into a body cavity.

U-shaped flange 40 limits the movement of actuator finger member 28 thereby insuring that a user will not depress the actuator finger member 28 to an extent which would otherwise damage container valve 24 or valve-receiving member 34 or which would cause the container valve to fall out of valve-receiving member 34.

The user depresses actuator finger member 28 for a time sufficient for the desired amount of material to flow from pressurized container 18 into the body cavity. Release of actuator finger member 28 causes the actuator finger member to pivot back to its normal position at which time flow of material from the pressurized container ceases.

Since vaginal-anal applicator 10 is formed from three releasably connected components — actuator cap 12, dispensing tube 14 and dispensing tube housing member 16, vaginal applicator 10 may be readily dismantled. This enables the applicator to be easily cleaned or sterilized after use.

Obviously, many modifications of the present invention are possible in light of the above teachings. It is to be understood, therefore, that the embodiment described is merely an example of the application of the principles of the invention. Additional embodiments may be devised by those skilled in the art without departing from the spirit or scope of the present invention.

What is claimed is:

1. A vaginal-anal applicator for dispensing material from a pressurized container having a container valve controlling the flow of material from said container, said vaginal-anal applicator being constructed and arranged for directing the flow of said material into a body cavity and comprising an actuator cap adapted to engage said pressurized container and including a valve-receiving member adapted to operatively engage said container valve, an actuator tube member cooperating with said valve-receiving member to define a material flow passage through said actuator cap, and an actuator finger member constructed to be moved relative to said actuator cap for causing material to flow from said pressurized container through said material flow passage, a dispensing tube cooperatively and releasably engaging said actuator cap for causing said material to flow from said material flow passage to a body cavity, said dispensing tube including a base member having a centrally disposed cavity and further including a cylindrical opening extending from said cavity and having a cross-sectional dimension substantially less than the cross-sectional dimension of said cavity and approximately the same as said actuator tube member cross-sectional dimension so as to receive said actuator tube member therein in rotatable relation to provide the releasable engagement, a dispensing tube housing member having a releasable engagement with said base member and extending therefrom for insertion into a body cavity and constructed and arranged to direct said material into said body cavity, said dispensing tube and said dispensing tube housing member being movable relative to said actuator cap from a first storage position to a second operating position wherein said dispensing tube and said dispensing tube housing member are inserted into a body cavity, said dispensing tube housing member including a first integrally mounted means, and said actuator finger member including a second integrally mounted means, said first and second means adapted to abut each other to limit movement of said dispensing tube and said dispensing tube housing member and establish said second operating position.

2. An applicator according to claim 1 wherein said dispensing tube housing member is provided with an elongated hollow configuration with one end encircling said base member in said releasable engagement, said base member includes a second cylindrical opening extending from said cavity and located at right angles to said first cylindrical opening, and a second tube member is releasably mounted in said second cylindrical opening to extend therefrom and terminate adjacent the other end of said dispensing tube housing member to provide a continuing material flow passage from said cavity.

3. An applicator according to claim 2 wherein the cross-sectional dimension of said cavity is greater than the cross-sectional dimension of said second tube member.

4. An applicator according to claim 1 wherein said front means comprises an L-shaped flange mounted on said dispensing tube housing member and extending therealong from said first cylindrical opening, said second means comprises a pair of flanges, each located respectively on a side of said actuator finger member adjacent to said first cylindrical opening, and said L-shaped flange abuts one of said pair of flanges at a time in said second operating position.

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