The principal object of this invention resides in the provision of an aerosol actuator adapter which may be made of polyethylene or similar plastic material and is intended for general use primarily on tilt-action aerosol valve types. This actuator adapter forms a plug-type friction fit with the inside wall of a vaginal applicator tube or the like, and the adapter extends a sufficient distance into this tube, and has a detachable connection therewith, so that the applicator tube acts as a handle or lever to tilt the adapter in a positive manner to cause it to actuate the aerosol valve stem.

Another object of the invention resides in the provision of a device as above described in which a passage in the adapter contains means providing a tight friction fit with the valve stem, and has a smaller passage extending from the tip of the valve to the outside part of the actuator where a cupped or depressed surface is presented allowing only a small quantity of the aerosol content to remain in the actuator after filling the tube and this provides a reservoir area allowing for later slow foam expansion.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which:

FIG. 1 is a view in elevation showing the aerosol, applicator and adapter in operative position;

FIG. 2 is a sectional view on an enlarged scale illustrating the actuator adapter in operative position;

FIG. 3 is a sectional view similar to FIG. 2 but showing the applicator removed from the actuator adapter; and

FIG. 4 is a bottom plan view of the lower end of the applicator tube looking in the direction of arrow 4 in FIG. 3.

In illustrating the present invention, the reference numeral 10 designates an aerosol bottle of conventional construction containing for instance a foam material. This bottle has a tilt valve stem 12 also of conventional construction and includes a ferrule or the like 14 as is well known. In this type of valve, the stem 12 is tilted in order to actuate the valve and dispense material from the container or bottle 10.

The actuator adapter of the present case is a sanitary plastic device comprising a main body portion 16 having a central passage therein 18, this passage leading from a cupped or conical depression 20 at the tip 22 into a cylindrical passage 24 of larger diameter than passage 18. The passage 24 receives and frictionally grips stem 12 to assemble the adapter to the valve stem 12.

The adapter is provided with a flange or base 26, this being generally circular, and centrally thereon and communicating with passage 24 there is a depression 28 which is at the bottom of the adapter and allows side-wise motion or tilting motion of the entire adapter, FIG. 1, with respect to the ferrule 14.

It will be noted that the adapter 16 is provided on the exterior surface thereof with a tapered surface and this is for a purpose to be described.

The vaginal tube is indicated at 30 and it is provided with the usual expulsion plunger or the like 32 having an operating button or the like 34 as is more or less conventional. When the tube 30 is filled, the contents thereof may be expelled through the lower end of the tube by means of the plunger 32.

At the lower end of the vaginal applicator there is provided a head or the like 36. This head is secured to the tube 30 as shown in FIG. 2 and it is preferably enlarged at its extending portion, i.e., beyond the end of the tube 30. The head 36 is centrally hollow as at 38 having the shoulder 40 for limiting the extent of the lower end of the tube 30. The member 36 is interiorly ribbed or screw-threaded at 42 and when it is applied to the adapter 16, these ribs form a holding and sealing means by means of a plug-type friction fit between the tapered exterior surface of the adapter and the internal surface or inside wall of the member 36 on the tube 30. When the foam type material for example is expelled by the pressure in the aerosol bottle 10, no leakage will occur between the adapter and the vaginal tube.

In the use of the device, the member 36 is applied to the adapter 16 as described and then the tube 30 is used as a handle or as a kind of lever for tilting the adapter 16 and thus the valve stem 12, so as to cause the valve to open and allow escape of the material in the aerosol bottle into the tube 30. The actuator is intended to be used in either an upright or an inverted position to fill a standard or substantially standard vaginal applicator tube. The plunger 32 is first withdrawn in order to prevent pressure build-up in the tube. During storage, the actuator adapter is on top of the container and can readily be capped. Any foam expansion which occurs in the actuator after use would occur in an upward direction, i.e., away from the aerosol valve stem 12 and would be directed into the reservoir area at 20, minimizing drip or spill of the foaming material. It will be noted that the adapter actuator 16 extends well into the member 36, and this therefore provides for a space in the applicator tube for foam expansion when the actuator is removed after filling, and therefore the tube does not leak or drip. The base 26 may be utilized for assisting in actuation of the valve if desired, but the easiest way to actuate the valve is by relatively tilting the tube and bottle. There is a tight friction fit between the valve stem and the adapter at the interior thereof, and the small diameter hole extending from the valve to the outside cupped surface allows only a small volume of foam to remain in the actuator after use, and this also provides a reservoir area to allow for the later foam expansion in turn providing for a cleaner, easier actuated device which is not so apt to drip the foam when the tube has been filled and removed from the adapter.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. The combination with an aerosol container having a tilt able stem for actuating the valve thereof to provide for the ejection of the contents of the container, of an applicator for receiving the container contents, said applicator comprising an elongated tube having an open end, a plunger in the tube for axial movement therein for retraction of the plunger from the open end of the tube to allow the container contents to enter the tube ahead of the plunger, said plunger being movable toward the open end of the tube to expel the contents in the tube from the open end thereof, a hollow body on the open end thereof and extending therefrom, said hollow body forming an extension of the tube, and an adapter for the stem of the aerosol container, said adapter comprising an elongated body having a restricted passage therethrough receiving the stem and mounting the adapter on the stem, said adapter body being free-ended and extending beyond the stem and having an exterior surface...
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3. The combination of claim 1 wherein the passage in the adapter has an enlargement at the open end of the adapter body providing a reservoir, and an enlargement at the inner end of the passage forming a shoulder intermediate the ends of the passage, the shoulder forming a stop for the end of the stem of the aerosol.

2. The combination of claim 1 wherein the passage 4

tapering down outwardly toward the free end of the adapter body to easily receive the hollow body on the applicator, a part of the exterior surface of the adapter body inwardly of the tapering portion thereof being generally cylindrical and receiving the hollow body in a removable sliding close fit to temporarily secure the applicator to the stem of the aerosol container, whereby the applicator may be mounted on the adapter for positively actuating the adapter and in turn causing the adapter to actuate the stem by tilting the same to release part of the aerosol content into the tube in condition to be expelled by the plunger when the applicator is removed from the adapter.

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