TAMpon APPLICATOR WITH LUBRICATING FEATURE

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

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The present invention is generally concerned with tampon applicators, and more particularly with means for lubricating such applicators so as to facilitate the insertion thereof into body orifices, particularly the vaginal canal for the absorption of menstrual fluid.

The desirability of providing a lubricated tampon or tampon applicator arises from the normally relatively dry nature of the cutaneous area of the cleft of the vulva or more precisely the anterior labial commissures. This area offers a resistance to the passage of any foreign object, and an attempted insertion of a smooth, glazed, dry tampon applicator results in the applicator adhering to the dry or slightly moist tissue of the labia, rolling these members inwardly, greatly hampering any sliding movement and inducing considerable discomfort and chafing of sensitive tissue. This same irritation is experienced on the withdrawal of the applicator tube where any portion of the tube lacks lubrication.

Accordingly, one of the primary objects of the present invention resides in the provision of a means for eliminating this undesirable chafing or irritation.

Another object of the present invention in conjunction with the above object resides in the provision of means for supplying a suitable lubricant on the end of a tampon applicator at the time of use for the subsequent lubrication of the vulva commissure. Such an arrangement enabling the application of the lubricant to the labial walls directly from the end of the applicator with the lubricant being distributed along the full length of that portion of the applicator which is inserted upon an insertion of the applicator.

Another object of the present invention resides in the provision of means whereby application of the lubricant to the tampon applicator is accomplished without the danger of contamination arising in that neither the lubricant nor the inserted end of the applicator need be contacted.

A further object of the present invention resides in the provision of means for insuring the availability of a suitable lubricant at all times obviating the necessity of providing various less satisfactory substitutes therefor.

Additionally, a significant object of the present invention resides in the provision of means whereby the tampon does not come in contact with the lubricant thus preserving the full absorbent quality of the tampon.

Also, it is an object of the present invention to provide a simple though highly effective means for facilitating the use of tampon applicators in a sanitary and comfortable manner.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the tampon applicator of the present invention having the lubricant releasably provided thereon;

FIGURE 2 is an enlarged elevational view of the applicator with various portions broken away for purposes of illustration;

FIGURE 3 is a cross-sectional view taken substantially on a plane passing along line 3—3 in FIGURE 2;

FIGURE 4 is a cross-sectional view taken substantially on a plane passing along line 4—4 in FIGURE 2;

FIGURE 5 is a partial elevational view of the upper end of a tampon having a modified form of lubricant-containing wrapper or envelope prior to the sealing thereof about the applicator.

Referring now more specifically to the drawings, reference numeral 10 indicates one form of tampon applicator comprising the present invention. This applicator includes a tube 12 serving as a container for a tampon 14 prior to the application of this tampon 14, and a tubular plunger 16 telescopically received within the lower open end of the tube 12, both the tube 12 and the plunger 16 being made of a material disintergratable in water such as stiff paper or cardboard which has the outer surface thereof glazed coated with any suitable coating impervious to the type of lubricant 18 which is used in conjunction with the applicator 10 as shall be gone into presently. As will be appreciated from the drawings, the following end 20 of the tube 12 is inwardly rolled with both the leading end 22 and following end 24 of the plunger 16 being outwardly rolled so as to limit both the inward and outward movement of the plunger 16 while simultaneously allowing for the application of the erection thrust at the outer periphery of the tampon wadding 14.

Referring now to the upper or leading portion of the tampon-containing tube 12, it will be noted that a curved section flute or groove 26 is provided circumferentially thereabout with the extreme upper end 28 being inwardly swaged so as to be substantially frusto conical in configuration.

The lubricant 18, which may be of any suitable type, such as for example various oils or jellies which may or may not be medicated, is provided within the circumferential groove 26 and retained therein by an elongated band or strip 30, transparent if so desired, and provided with an extending tab 32 on one end thereof so as to facilitate its removal. This band 30 is of a width sufficient to span the groove 26 and extend both thereabove and therebelow a sufficient distance so as to provide a suitable seal for the retention of the lubricant 18 with an appropriate adhesive being used to secure the longitudinal edges of the band 30, this adhesive stripping cleanly away from the glazed surface of the tube 12 upon a peeling of the band 30 therefrom.

From the foregoing description of the structure of the applicator 10, it will be appreciated that the lubricant 18 is effectively sealed within its storage chamber until just prior to use of the applicator at which time the band 30 is removed and the lubricant allowed to flow over the foremost or leading portion of the tube 12 after which the tube is inserted, the entire lubricating operation being accomplished without the necessity of actually contacting either the lubricant or the leading end of the tube 12.

Inasmuch as the circumferential groove 26 forms a constriction which would inhibit the easy ejection of the tampon 14, it is contemplated that an inner tube 34, of the same material as tube 12, be secured within tube 12,
this inner tube 54 having an inner diameter equal to the inner diameter of the grooved portion of the tube 12 thus presenting a smooth passage for the ejection of the tampon 14.

Figure 5 illustrates a tampon applicator with the lubricant 18 being sealed within the circumferential groove 25 in a slightly different manner, a cap 36 being used. This cap 36, made of any suitable material impervious to the specific lubricant 18 used, is to be cylindrical in shape with the inside diameter thereof being slightly less than the outside diameter of the tube 12 so as to insure a tight fit both above and below the groove 26. Further, in addition to being provided with a closed upper end 38 so as to present a complete closure for the leading or entry end of the applicator, a knurled configuration 40 is provided about the cap 36 so as to facilitate its removal. It will be appreciated that the use of such a cap 36 provides a significant advantage in that any of the lubricant 18 which tends to adhere to the cap will be sheared therefrom by the upper edge of the groove 26 upon pulling the cap 36 from the tube 12.

Attention is now specifically directed toward Figures 6–10 wherein a modified means of providing the desired lubrication is illustrated.

This embodiment contemplates the use of a transparent sealed wrapper or envelope 50 formed by the folding in half of a suitable sheet 52, preferably of plastic, and the sealing of the overlying upper edges 54, lower edges 56, and longitudinal edges 58, the tampon applicator 60 being orientated therein. This applicator 60, as will be appreciated, while being illustrated with straight ends on both the tampon-containing tube 62 and the plunger 64, can if so desired be formed somewhat in the manner of the applicator end in Figures 1–4 with the ends of these members being swaged so as to prevent the accidental removal of the plunger 64 from the tube 62.

The lubricant 66, of any suitable type such as was the case with lubricant 18, is provided within a plurality of individually sealed pockets 68 with these pockets 68 being aligned on the sheet 52 so as to completely encircle the tampon-containing tube 62 adjacent the leading or entry end thereof upon a positioning of the wrapper 50 about the applicator 60.

It is contemplated that this lubricant 66 be discharged by a squeezing or compressing of the pocket 68, and as such, a weakened portion, preferably the upper seal 70 is provided. The use of this upper seal, made substantially weaker than the seal used about the remainder of the pocket 68 enables the directing of the lubricant 66 directly toward the forward or leading end of the tube 62 as is most desirable.

While not particularly limited thereto, these pockets can be formed by the thermal-fusing of an additional sheet of material 72 to the sheet 52 in a manner so as to form outwardly those receptacles or pockets 68 for the lubricant 66, the top edge of the pockets 68 being only partially sealed in a manner sufficient so as to contain the lubricant 66 while at the same time being readily ruptured for the discharge of the lubricant 66.

Finally, in order to facilitate the removal of the tampon applicator 60 from the envelope 50, a longitudinally extending line of weakness or tear portion 74 is provided thus enabling the opening of wrapper 50 and the grasping of the applicator 60 without the necessity of coming in contact with either the lubricant 66 or the inserting end of the tampon-container tube 62, the uncontaminated applicator 60 thereby being maintained.

From the foregoing description taken in conjunction with the drawings, it is considered to be readily apparent that a novel, highly effective and simple means has been devised wherein a tampon applicator can be properly and safely lubricated prior to the insertion thereof so as to avoid the chafing and irritation normally resulting from the resistance to the insertion of such applicators. This is accomplished generally by providing sealed lubricant-containing pockets adjacent the forward or inserting end of the applicator, which pockets are provided with various types of closure means capable of being quickly opened in a manner so as to insure a directing of the lubricant on this forward end, no contact with either the lubricant or forward end being required. It will be appreciated that such an arrangement is of particular significance in insuring an adequate supply of a proper lubricant at all times.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. For use with a tampon applicator having a forward end normally inserted into a body orifice, a lubricant, means for containing said lubricant, said means being openable so as to effect a release of the lubricant in the vicinity of said forward end prior to the insertion of the applicator into a body orifice, said means consisting of a peripheral outwardly opening groove formed about the applicator adjacent the forward end, and removable closure means positioned over said groove in lubricant retaining relation thereto.

2. The device of claim 1 wherein said removable closure means consists of a cap having a closed end and a peripheral wall depending therefrom, said cap being positioned on said forward end with said peripheral wall depending a sufficient distance so as to completely cover said groove.

3. The device of claim 1 wherein said removable closure means consists of an elongated band of a width sufficient to span said groove and of a length sufficient to extend completely around said applicator in superimposed relation to said groove.

4. In combination, a tampon applicator and means for retaining lubricant for selective application to the tampon applicator, said means consisting of a wrapper enclosing said applicator, said wrapper including a plurality of peripherally sealed lubricant containing pockets, said pockets being disposed generally adjacent the forward end of the applicator, said pockets each having a readily frangible portion therein responsive to the application of a compressive force to said pockets so as to discharge the lubricant on the forward end of the applicator.

5. For use with a tampon applicator having a forward end normally inserted into a body orifice, a lubricant, means containing said lubricant, said means being openable so as to effect a release of the lubricant in the vicinity of said forward end prior to the insertion of the applicator into a body orifice, said means consisting of an outwardly opening chamber formed in the applicator adjacent to and slightly rearward of the forward end thereof, and removable closure means positioned over said chamber in lubricant retaining relation thereto.

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