July 17, 1956 S. MILLER 2,754,823

SUPPOSITORY APPLICATOR

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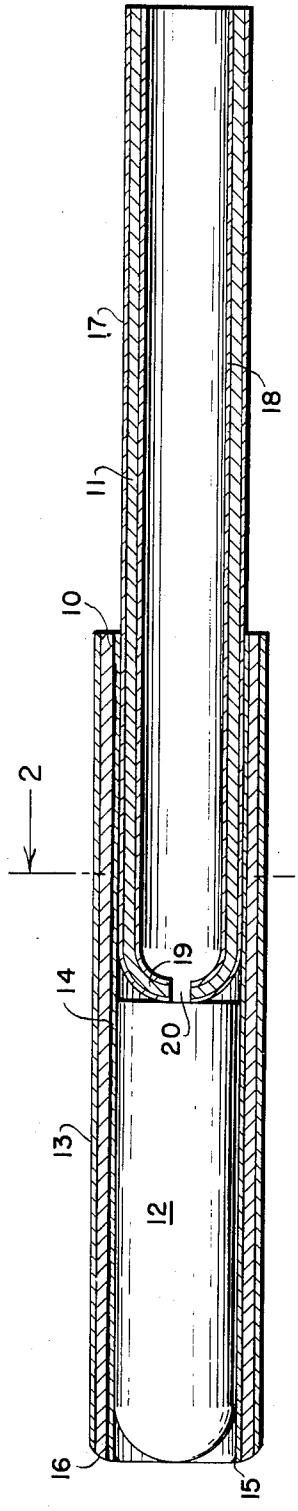


FIG.1

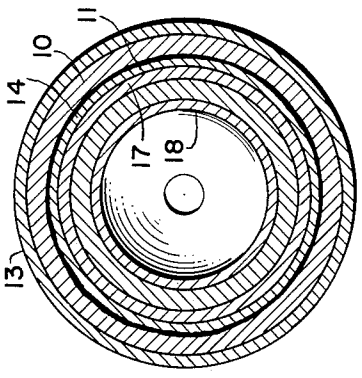


FIG.2

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SUPPOSITORY APPLICATOR

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2 Claims. (Cl. 128—271)

The present invention relates to a new and useful disposable applicator for suppositories which is simple in construction, inexpensive to produce, and sanitary in use.

The conventional mode of inserting suppositories into body cavities by hand is insanitary and messy and the use of perforated cannulas that screw on to tubes containing the medicated material involves mechanically removing and then cleansing the same after each use, which is inconvenient and disadvantageous. As a result, there is no really satisfactory manner of introducing suppositories or suppository materials into body cavities, such as the rectum and vagina, which overcomes the drawbacks of existing practices, and it is with the solution of this problem that the present invention is concerned, whereby a simple, effective, and inexpensive sanitary applicator for suppositories is provided which can be discarded after a single use and which can be carried in the pocket or purse as a complete sterile unit.

One of the objects of the invention is to provide a very simple, inexpensive, single-use, sanitary suppository applicator having advantages not heretofore obtainable and overcoming the disadvantages of prior practices.

Another object of the invention resides in a suppository applicator comprising a pair of closely-fitted telescoping tubes so constructed as to make it possible to insert a suppository into a body cavity easily without handling the same and without damage to body tissues.

A further object of the invention resides in the various structural features and combinations to be particularly described.

Other and still further objects and advantages will be understood by those skilled in the art or will be apparent or pointed out hereinafter.

In the accompanying drawing,

Fig. 1 is a longitudinal, medial, sectional view taken through a suppository applicator embodying the present invention and

Fig. 2 is a transverse cross-section taken along line II—II of Fig. 1.

Referring now to the drawing in detail, the suppository applicator of the present invention comprises a pair of closely-fitted, telescoping tubes **10** and **11**, preferably, but not necessarily, composed of kraft paper or board. The tube **10** is of larger diameter than tube **11**, and the relative diameters are such that tube **11** is slidable within tube **10** and has an external diameter just slightly less than the internal diameter of tube **10**. Tube **10** is so dimensioned as to receive in the forward portion of the bore thereof a suppository such as that indicated at **12**, and this may be of any suitable type or material for any of the usual purposes for which suppositories are intended and for either local or systemic treatment. The suppository may, for example, be composed of any suitable base, such as cocoa butter or a polyethylene glycol polymer (one of the Carbowaxes) in which is incorporated a germicidal agent or other therapeutic substance. The suppository may, for example, have anti-bacterial properties, but the particular nature of the suppository does not constitute a limitation upon the invention.

The tube **10** is litho-coated on its outer surface and its inner surface is lined with paper-backed aluminum foil **14**, the aluminum foil layer being in contact with the tube **10**, or, alternatively, the aluminum foil layer may be disposed facing the suppository. The forward terminus of tube **10** is provided with an inwardly extending overhang, designated at **15**, so that the suppository **12** is prevented from falling out accidentally while the applicator is being unwrapped or otherwise handled, and the corners of the forward edge of tube **10** are rounded off, as shown at **16**, so as to present a smooth guiding surface to the body when the suppository is being inserted into the body cavity. Tube **11** is also externally lithocoated at **17** and is clay-coated on its inner surface at **18**. Without restricting myself thereto, the kraft cores of the tubes **10** and **11** are preferably .012" in thickness and the lithocoatings .005". The clay coating is also preferably .005" in thickness, and the aluminum foil lining of tube **10** is preferably .008" in thickness. These coatings not only protect the tubes from external sources of contamination or damage but provide for smooth, frictional movement of tube **11** within tube **10** and prevent staining of the tubes by the suppository.

Tube **11** is provided at its forward end with a rounded portion **19** of generally hemispherical shape with an axial aperture **20** therethrough. From Fig. 1, it will be noted that this rounded forward end **19** of tube **11** abuts the rear end of the suppository **12** and is adapted to expel the suppository from tube **10** by exerting longitudinal manual pressure against the rearward end of tube **11** at the time the suppository is to be inserted into the body cavity, and, since it is desirable under such conditions to insure positioning of the suppository in the body cavity so that it will not be expelled by the reflex action of the sphincter muscles, the rounded forward end of tube **11** is so configured that it will not damage delicate tissues while still enabling the suppository to be inserted as far as required.

It will be understood that a suppository applicator in accordance with the present invention comprises one or more units each of which is constructed in accordance with the unit shown in the drawing and that each such unit is individually wrapped in any suitable protective material such as cellophane, metal foil, synthetic plastics, and the like, each applicator being disposable after a single use, and that normally a plurality of such individually wrapped units, ready for use, will be marketed in a multi-unit box or container, from which the individual units can be taken as needed. In many cases, however, it is convenient and desirable to carry a single wrapped, sterile unit in the pocket or purse for use, as required, and that the invention therefore makes available a simple, sanitary unit adapted for use at any time and which can be disposed of in a toilet without clogging the plumbing thereof. In this connection, it has been found that a unit having a collapsed length of about 3" is suitable and adequate and that such length does not interfere with the usual toilet plumbing having drain pipes of 2½–4" in diameter, preventing the disposed applicator from becoming lodged transversely in such plumbing.

An advantage of new suppository applicator is that the suppository is held between the internal overhang at the forward edge of the outer tube or sleeve and the rounded forward end of the inner tube or plunger. By partially extruding the suppository, the patient is permitted to anoint troublesome areas prior to total insertion of the suppository; alternatively, the entrance to the body opening may thus be automatically lubricated, whereby

corresponding advantages are obtained when inserting the suppository. Dimensional stability of the sleeve and plunger is achieved by the use of waterproof glue in the laminations assuring ease in expelling the suppository under a wide range of atmospheric (temperature and humidity) conditions. The arrangement is such that a slight but distinct pressure is required to expel the suppository, thus permitting the user to adjust the rate of entry into the body cavity, especially in the event that the body cavity is constricted by inflammation or a pain reflex. The contact between the crimped forward end of the inner tube and the rear of the suppository also effects a certain lubrication of the former, which is desirable.

The foregoing is intended as exemplary and not as limitative since, within the terms and scope of the appended claims, various modifications may be made without departing from the invention.

I claim:

1. A sanitary suppository applicator comprising an outer tube and a concentric inner tube slidable therein, each of said tubes being composed of kraft stock and exteriorly litho-coated, the outer tube being interiorly lined with aluminum foil and the inner tube being interiorly clay-coated.

2. A sanitary suppository applicator consisting of an outer cylindrical tube the exterior surface of which is litho-coated and the interior surface of which is lined with aluminum foil, the said tube being provided with an inwardly extending terminal overhang at its forward end and having a suppository disposed therewithin, an inner tube exteriorly litho-coated and interiorly clay-coated and having its forward end disposed within the inner tube against the suppository for expelling said suppository from the outer tube when the inner tube is moved longitudinally toward the forward end of the outer tube, the said inner tube being provided at its forward end with a hemispherical rounded portion having an axial aperture and the external diameter of said coated inner tube being just slightly less than the internal diameter of said coated outer tube to provide a smooth, frictional fit.

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