

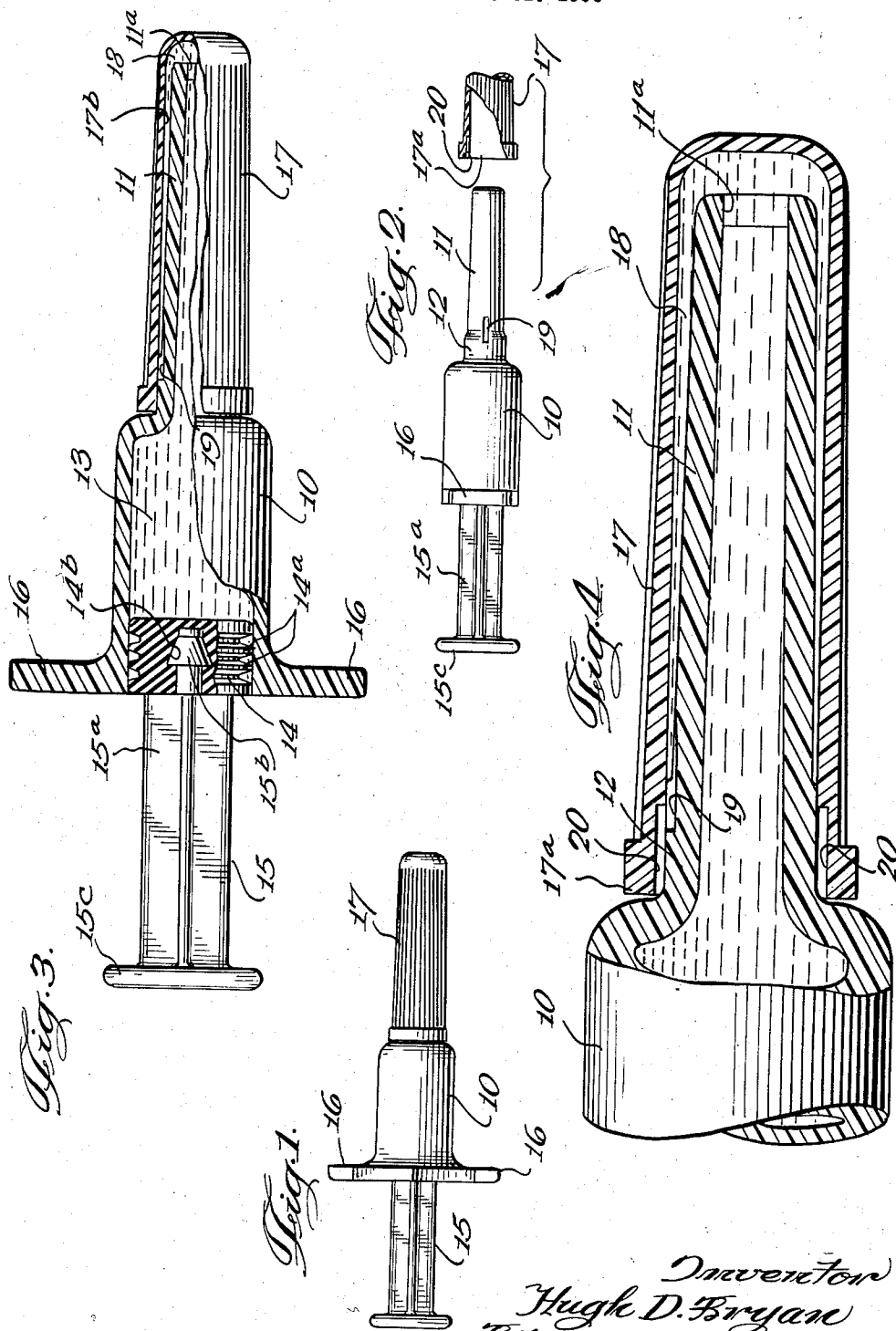
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H. D. BRYAN

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MEDICAMENT APPLICATOR

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Inventor
 Hugh D. Bryan
 By
 Schramm, Hoffman, Brady & Wagner
 Attorneys

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MEDICAMENT APPLICATOR

Hugh D. Bryan, Evansville, Ind., assignor to Mead Johnson & Company, a corporation of Indiana

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4 Claims. (Cl. 128—260)

This invention is concerned with a medicament applicator and more particularly with an applicator for applying a medicament bearing carrier material to the interior walls of a body cavity.

There are many situations where it is desirable to administer medicine by depositing the medicine in a body cavity, such as the rectum, the medicine being systemically absorbed through the wall of the cavity. This method of medication is particularly well adapted for infants whose stomachs are sometimes upset, preventing the administration of the medicament orally.

I have devised and disclose and claim herein a novel applicator for depositing a medicament bearing material in a body cavity.

One feature of the invention is that the applicator comprises a material containing body from which material may be expelled and having a nozzle portion adapted for insertion into a cavity, a removable cap covering the nozzle and at least partially spaced therefrom, and means for venting the space between the cap and nozzle to permit a portion of the material in the body to enter the space between the cap and nozzle, lubricating the nozzle. Another feature is that the cap and nozzle each have vent channel portions formed therein, the cap and nozzle being rotatable relative to each other to bring the channel portions into communication venting the space between the cap and nozzle, permitting the expulsion of some of the material from the body to such space.

Further features and advantages will readily be apparent from the following specification and from the drawings, in which:

Figure 1 is a side view of a medicament applicator with the cap in place;

Figure 2 is a fragmentary exploded view with the cover removed;

Figure 3 is an enlarged view, partially in section, of the applicator; and

Figure 4 is a fragmentary enlarged view, with the nozzle and cap in section, showing the vent channels in communication.

The use of an applicator of the type described herein is facilitated by reducing the difficulty of inserting the nozzle thereof into the body cavity. Particularly when administering medicament by this means to an infant it is extremely desirable that the nozzle portion be inserted with a minimum of difficulty as normally one hand must be used to hold the infant, leaving the other hand to effect insertion of the nozzle and the expulsion of the medicament material from the applicator. The invention disclosed herein contemplates the provision of a venting arrangement for the space between the cap and nozzle of the applicator permitting lubrication of the outer surface of the nozzle with some of the medicament material thereby facilitating insertion.

Turning now to the drawings, the applicator shown includes a body or barrel 10 of a suitable plastic, such as styrene. An elongated nozzle 11 is formed inte-

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grally with the barrel and has a discharge opening 11a at the tip thereof. The nozzle is provided with an enlarged and thickened base portion 12 at its juncture with the barrel. The chamber 13 defined by the body portion 10 and the interior of the nozzle 11 are filled with the desired medicament mixed with a suitable fluent carrier material which preferably has a slightly flowable or paste-like consistency. A stopper 14 closes the open end of chamber 13 and is provided with a plurality of sealing ribs 14a which engage the interior wall of the barrel. A plunger 15 has a stem portion 15a with a projection 15b which is snapped into a complementary opening 14b in the stopper. The other end 15c of the plunger is enlarged to permit the application of pressure thereto. A pair of ears 16 extend outwardly from the open end of barrel 10 and may be grasped by the forefinger and middle finger in using the applicator. The thumb, of course, is used to depress the plunger expelling the contents of chamber 13.

An elongated cap 17, preferably of a polyethylene plastic, is placed over the nozzle 11 to keep it clean and prevent the loss of medicament material prior to use. The open end portion 17a of the cap frictionally engages and seals with the enlarged base portion 12 of the nozzle when the cap is in place. The interior surface 17b of the cap is spaced from the nozzle 11 throughout substantially the entire length thereof, forward of the base portion 12 and the cap is somewhat longer than the nozzle so that discharge opening 11a is unobstructed.

In order to permit the lubrication of the outer surface of nozzle 11 it is desirable to vent the space 18 between the nozzle and the cap to permit some of the material within the chamber 13 of the applicator to be expelled therefrom into this space. Accordingly, a vent channel portion 19 is formed in the wall of the enlarged base portion 12 of the nozzle 11 and extends longitudinally into the wall of the nozzle. A pair of diametrically opposed vent channel portions 20 are formed in the interior surface of the open end 17a of the cap. When the applicator is filled and packaged, the cap 17 is so placed on the nozzle 11 that the channel portions 19 and 20 are not in communication. However, when the applicator is to be used, the cap 17 may be rotated, without removing it from the nozzle, to bring the vent channel portions 19 and 20 into communication. Plunger 15 may then be depressed a short distance forcing some of the medicament bearing material through opening 11a into the space between the nozzle 11 and cap 17. Sufficient material may thus be expelled to fill substantially the entire space 18, coating the whole outer surface of the nozzle. The cap is next removed and the nozzle may be inserted in the body cavity with a minimum of resistance.

The provision of two vent channel portions in the cap permits the space to be vented by turning the cap only 90° or less. If desired, suitable marking may be applied to the barrel 10 and outer surface of cap 17 to indicate the position of the vent channel portions, facilitating alignment thereof.

The nozzle 11, which is preferably of a relatively rigid styrene material, has a wall of constant thickness with both the interior and exterior surfaces being tapered inwardly toward the outer end thereof. This particular configuration facilitates molding of the styrene plastic. The cap 17 has a straight inner bore so that the space between the cap and the nozzle increases toward the forward end thereof. The outer surface of the cap is tapered toward the forward end resulting in a cap of decreasing thickness. This construction facilitates the molding of the polyethylene material of which the cap is preferably made.

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While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims.

I claim:

1. In a medicament applicator for depositing a medicament bearing paste-like carrier material in a body cavity, and having a material containing body from which the material may be expelled, an enlarged nozzle adapted to be inserted into the body cavity, having a discharge opening at the tip thereof and joined to said body by an enlarged base portion having a longitudinally extending channel therein, and an elongated cap removably positioned over said nozzle and having an end portion frictionally engaged with said enlarged base, the interior wall of said cap being spaced from said nozzle throughout substantially the entire length thereof to provide a closed space therearound, there being a longitudinally extending channel in said end portion of the cap which may be brought into communication with the channel in said base to vent said space whereby some of the material in said body may be expelled into said space to lubricate the nozzle, facilitating the insertion thereof into a body cavity.

2. An applicator of the character described in claim 1, wherein two spaced channels are provided in one of said portions.

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3. An applicator of the character described in claim 1, wherein said nozzle is of styrene, is tapered inwardly toward the tip thereof and has a wall of constant thickness, and the cap is of polyethylene and has a straight inner bore.

4. An applicator for a medicament bearing flowable material comprising a material containing body from which the material may be expelled and having a nozzle portion adapted for insertion into a cavity, a removable cap covering said nozzle and at least partially spaced therefrom, and selectively operable vent means having a portion on said nozzle and having another portion on said cap, whereby the nozzle and cap may be rotated relative to each other to bring said vent portions into communication to vent the space between the cap and nozzle permitting a portion of material in said body to enter said space and lubricate said nozzle.

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