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2,486,056

COMBINED PACKAGE AND APPLICATOR

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Fig. 1.

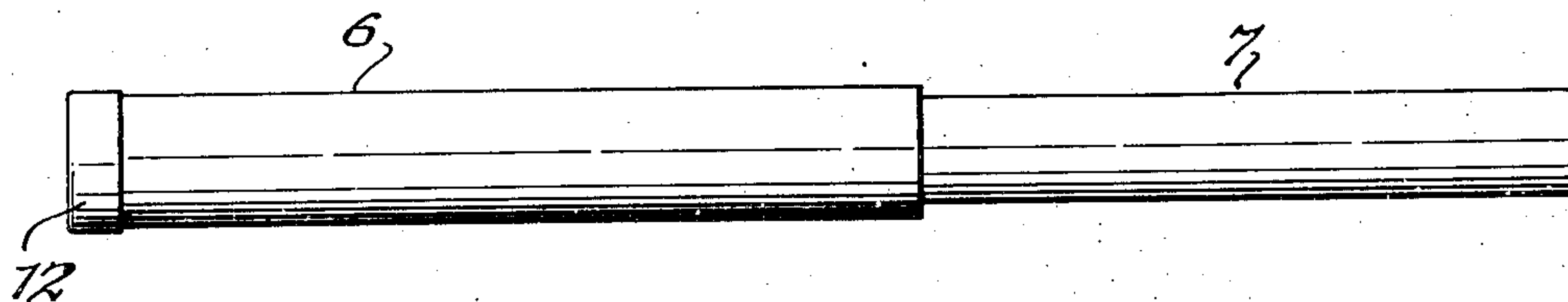


Fig. 2.

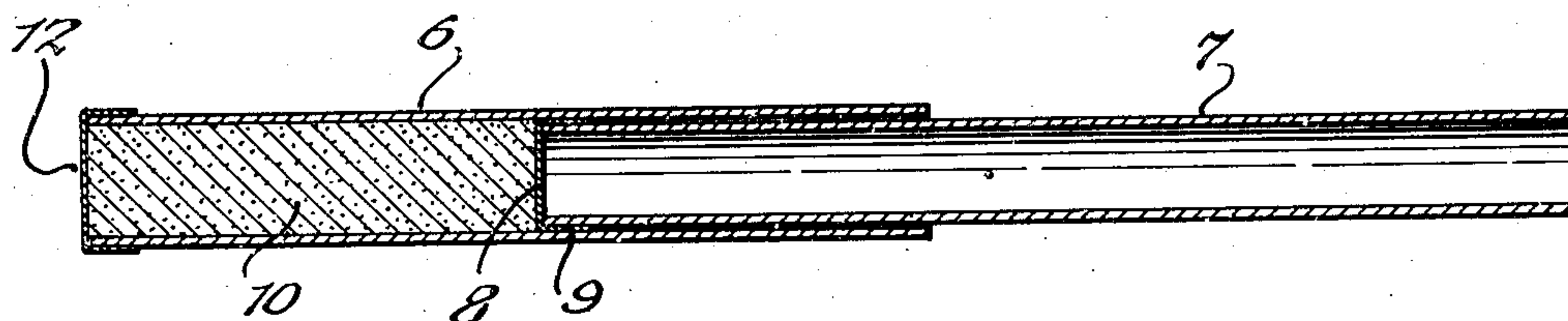


Fig. 3.

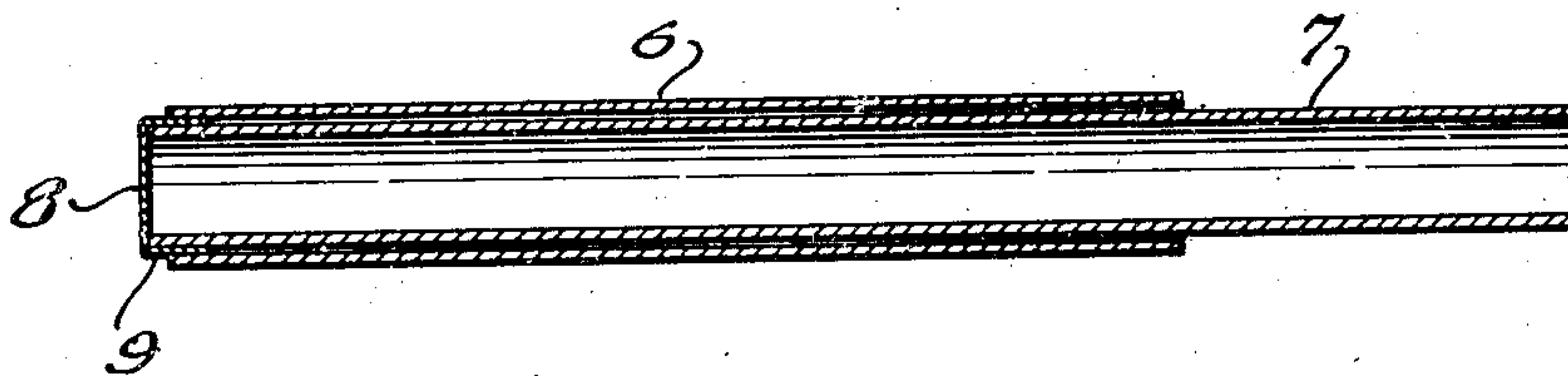
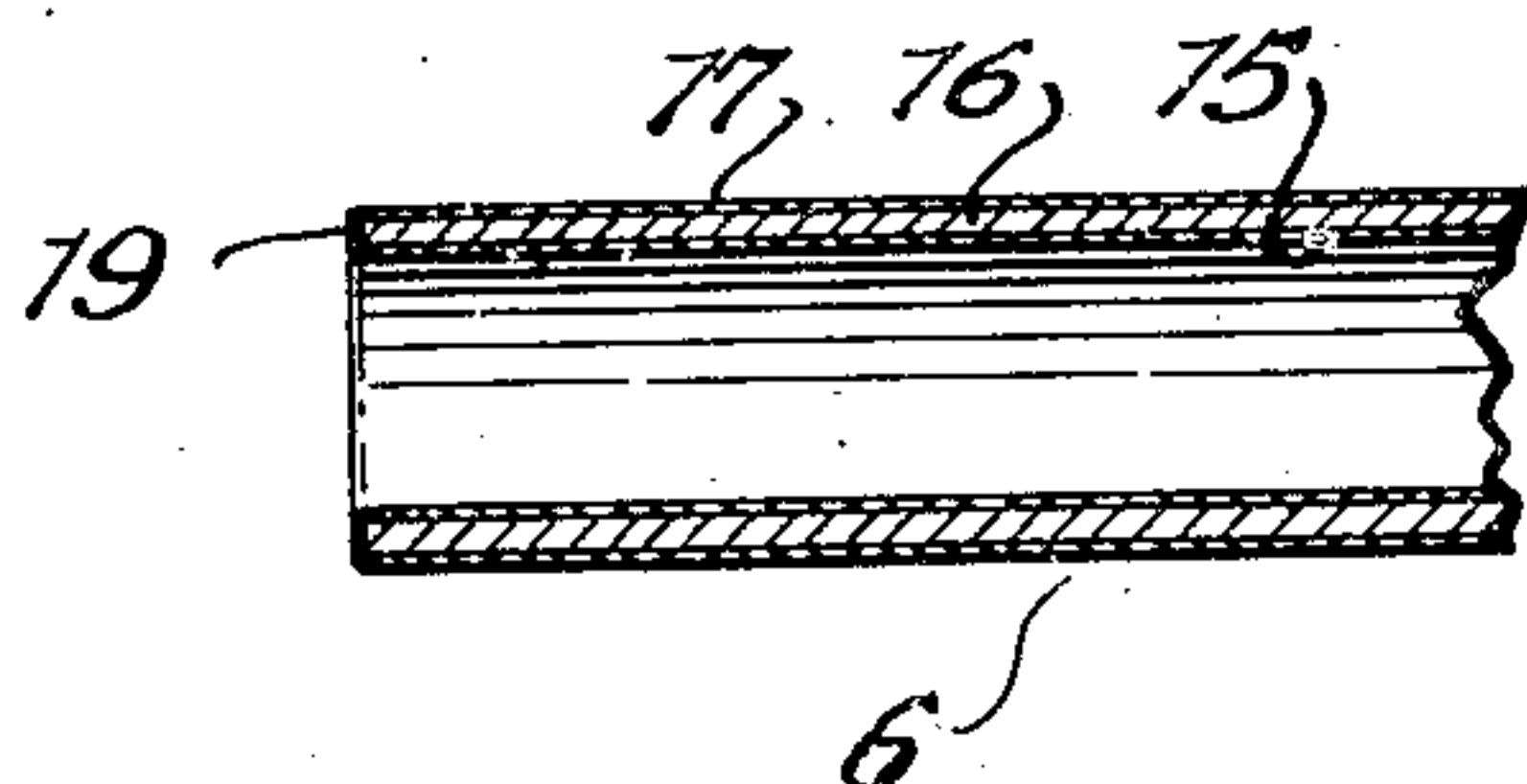


Fig. 4.



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COMBINED PACKAGE AND APPLICATOR

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1 Claim. (Cl. 128—261)

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This invention relates to applicators of the type usable for introducing powders, pastes, jellies or the like into orifices of the body, for feminine hygiene or for medicinal purposes.

Applicators have heretofore been provided which comprise a tube formed to be inserted into a body cavity and from which a charge of medicinal or other material may be expelled to a cavity by means of a plunger or inner tube, and these devices were intended for repeated use. With devices of this type, it is difficult to discharge the desired quantity of material to the body cavity and these devices have the further objections that it is frequently difficult to recharge the same with the desired amount of material for a single application, and it is also difficult to thoroughly clean and sterilize the devices after each use of the same.

One of the objects of this invention is to provide an applicator of this type of inexpensive construction, which may contain sufficient material for one application or treatment and which also serves as a package or container for the preparation to be administered, and which can be discarded after use. Another object is to provide a combined applicator and container of this type of improved and simplified construction and which is positive and reliable in use both as an applicator and as a package. Other objects and advantages of this invention will appear from the following description and claim.

In the accompanying drawings which illustrate by way of example one embodiment of this invention:

Fig. 1 is a longitudinal elevation of a combined applicator and package embodying this invention.

Fig. 2 is a central sectional view thereof.

Fig. 3 is a central sectional view thereof, showing the parts thereof in the positions which they occupy at the completion of the application of the contents to a body cavity.

Fig. 4 is a fragmentary section, on an enlarged scale, of the outer tube of the combined applicator and package.

Devices serving both as applicators and packages according to this invention each include an outer tube 6 and an inner tube 7 telescopically arranged in the outer tube. The inner tube is somewhat longer than the outer tube, so that when the inner tube is completely inserted into the outer tube, a portion of the inner tube will extend beyond an end of the outer tube. The inner tube forms a plunger or piston to expel material from the outer tube, and any suitable

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means may be provided to close that end of the inner tube which is arranged within the outer tube. In the construction, for this purpose, a cap 8 is secured to that end of the inner tube. This cap preferably has an integral cylindrical flange 9 which extends around the peripheral portion of the inner end of the inner tube, and the outer surface of the flange 9 has a slidable and substantially liquid-tight fit within the outer tube. The cap consequently, forms a piston reciprocable within the outer tube. When the inner tube is partly withdrawn from the outer tube as shown in Figs. 1 and 2, a space is formed within the outer tube between the cap 8 at the left in Figs. 1 and 2 within which any suitable substance or material 10 to be administered may be contained, and the cap 8 securely closes one end of this space. The other end of this space may be closed by means of a suitable closure cap 12 secured to the end of the outer tube 6. This closure cap is removable from the outer tube, but the cap 8 is glued, cemented or otherwise securely fastened to the inner tube.

When the parts are in the positions shown in Figs. 1 and 2, the device forms a package or container for a charge 10 of the material or substance to be administered, and this substance is securely sealed in the space provided therefor, so that the device forms a package or container in which the substance or material may be kept in clean and sanitary condition until used. The entire device preferably is further wrapped in a suitable envelope or enclosure of paper, cellophane, or other suitable material (not shown).

When the device is to be used, the closure cap 12 is first removed. The device may then be inserted into a cavity while the parts are in the positions shown in Figs. 1 and 2 with the end uncovered by the closure cap leading, and when the outer tube has been inserted to the desired or necessary extent, the inner tube 7 is pushed into the outer tube in a direction to expel the material 10. When the expulsion of the material has been completed, the parts will occupy the relative positions shown in Fig. 3, and the entire device may then be removed from the cavity. If the material 10, within the device, is in the nature of a jelly or salve, then after removal of the closure cap 12, the inner tube 7 is preferably first inserted into the outer tube to a slight extent sufficient to expel a small quantity of the contents, so that they project beyond the outer tube, whereupon the device may be inserted into the cavity and used as described. Before withdrawing the device, the inner tube 7 is preferably

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turned to detach the jelly or salve from the cap 8 thereof before withdrawing the device.

The entire device is preferably made of inexpensive materials, so that the device may be discarded after one use. Any suitable materials may be employed for this purpose. Preferably the outer tube is made as indicated in Fig. 4, in which 15 represents an inner layer of a material which is inert with reference to the material 10 contained in the tube. A waxed paper is suitable for most purposes for which the device is used, but cellophane or other sheet materials may be substituted for the waxed paper. The material of which the inner layer 15 is made is selected not only for its ability to contain the material 10 without deterioration of the material or of the inner layer 15, but also to provide a surface on which the cap 8 will readily slide.

Around the inner layer 15 is wrapped a layer 16 of a relatively stiff material such, for example, as cardboard which may be wrapped spirally around a mandrel or tool on which the outer tube is formed, and the layer 16 is suitably cemented or otherwise secured to the inner layer 15. The cardboard or re-inforcing layer 16 may be covered on the outer surface thereof with a cover sheet 17 which may be of ordinary paper, clay coated paper, or other suitable material, and this layer is also glued, cemented or otherwise secured to the re-inforcing or cardboard layer 16. In place of the inner sheet material 15, the interior of the re-inforcing layer may be suitably protected by a coating of any suitable material.

The outer tubes 6 may be formed in long lengths and cut to size. In order to protect the ends of the intermediate and outer layers 16 and 17 from contact with the material 10, this end of the outer tube which is closed by the cap 12 is preferably dipped in wax or other suitable material to impregnate the ends of the intermediate and outer layer 16 and 17 against contact with the material contained in the outer tube. 19, Fig. 4, represents such coating applied to the end of the outer tube.

The two caps 8 and 12 may be formed of paper or other material, and if desired, these caps may be treated with wax or other coating material to protect them from the material 10. The inner tube 7 may be constructed in the same manner as the outer tube 6, but since the interior of this tube does not contact the material 10 to be administered, the inner wax paper layer may be omitted.

The device described has the advantage that the correct quantity of material to be administered may be accurately inserted into each device, so that it is not necessary for the user to place the material in to the device. The device forms a package in which the material may be sealed so that it will be kept in a clean, sanitary and us-

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able condition. Since the combined package and applicator is made of inexpensive material, it may be discarded after use, so that no cleansing or sterilizing of the same after use is necessary. By arranging the flange of the cap 8 about the exterior of the inner tube, a tight fit of the cap within the outer tube can readily be provided, and in the use of the applicator the force necessary to expel the material 10 is less than would be required if the entire outer wall of the inner tube 7 were in frictional contact with the inner surface of the outer tube.

Devices of this kind can be individually wrapped in envelopes or covering materials, or may be placed in boxes or containers which will keep the outer tube in sterile condition, so that devices of this type are ready for instant use. They occupy a relatively small space and can be easily carried by a person for use when necessary.

I claim:

A combined applicator and package for administering substances to a body cavity, including inner and outer tubes telescopically arranged with the inner tube of greater length than the outer tube, said outer tube being made of cardboard and having an inner layer of waxed paper and having the discharge end of said tube coated with wax, to protect said tube against the substance to be administered, said inner tube extending partly into said outer tube and forming between one end of said outer tube and an end of the inner tube, a space for the substance to be administered, a cap for closing the inner end of said inner tube rigidly secured to said inner tube and having a substantial liquid tight and slidable fit within said outer tube, and a closure cap formed to be removably secured to said end of said outer tube for closing said end of said outer tube, said caps being made of a material which is inert with reference to said substance, said two caps forming the ends of a space in said outer tube for containing said substance to be administered and forming with said outer tube a package for said substance, said inner tube and the cap thereon, when said closure cap is removed, being movable toward said end of said outer tube to act as a piston to expel the substance to be administered from the outer tube.

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