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47A; 128/349(Inquired)

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[54] **CATHETER PACKAGE WITH SELF-CONTAINED LUBRICANT**  
**7 Claims, 4 Drawing Figs.**

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150/52  
[51] Int. Cl..... A61b 19/02

**ABSTRACT:** A package for elongated surgical or medical devices such as catheters in which friable capsules containing a lubricant such as liquid silicones are packed adjacent one end of the device in a position to be broken by pressure so that the lubricant is released from the capsules but retained adjacent the device to be lubricated as the latter is moved through the lubricating zone immediately prior to use.

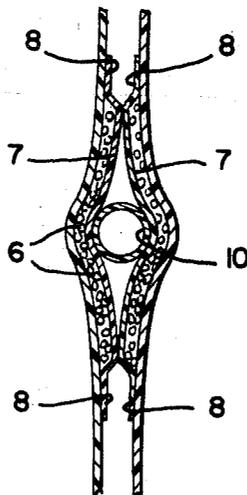


FIG. 1

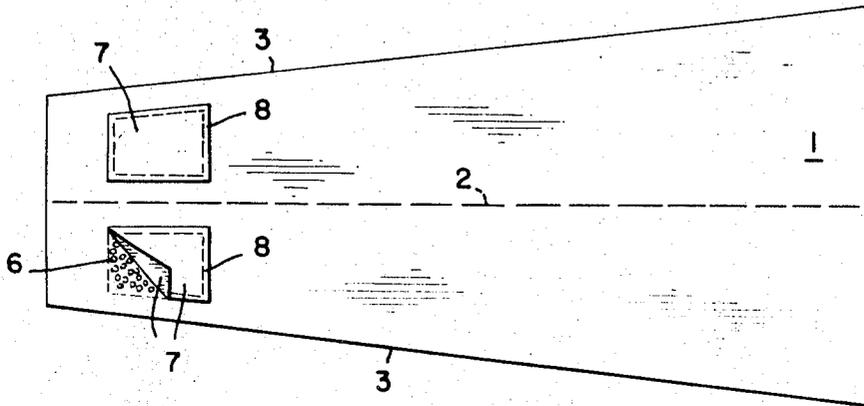


FIG. 2

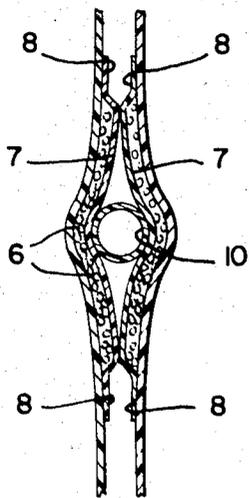
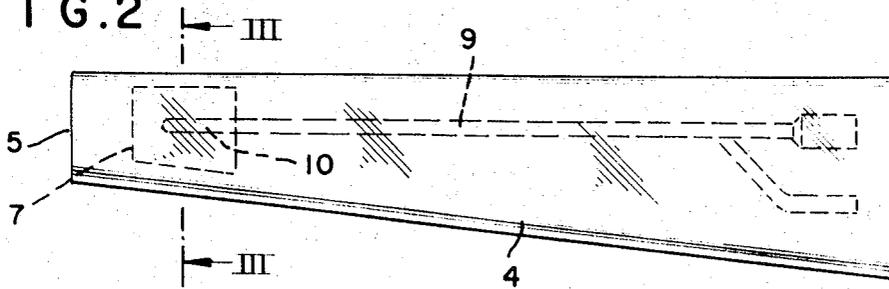
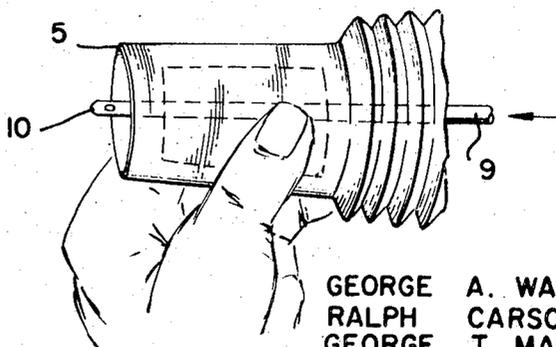


FIG. 3

FIG. 4



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## CATHETER PACKAGE WITH SELF-CONTAINED LUBRICANT

This invention relates to a package for catheters or the like in which the distal end of the catheter is enveloped within a pad or patch of porous material adjacent which there are located lubricant (silicone) containing capsules adapted to be broken by pressure to release the lubricant which permeates the porous material, so that advancing the catheter through said material effectively lubricates the surface of the catheter. The subassembly of catheter, porous material and capsule is, preferably, enfolded within an elongated sleeve which, in turn, may be enclosed within a package of any normal and customary type.

Catheters and other elongated devices intended for insertion into body cavities are commonly packaged on backing strips of cardboard and sealed in flexible, partly transparent, plastic envelopes to maintain sterility up to the time of use. It is also common to supply a separate tube or packet of lubricant, such as an antiseptic water soluble jelly, which must be applied to the catheter or the like (in a rather messy operation) to prepare the device for insertion into the patient's body with a minimum of discomfort or trauma. According to the present invention the lubricant is packaged with the catheter in such a manner that the catheter may be caused to emerge from the package fully lubricated and ready for insertion.

A practical embodiment of the invention is shown in the accompanying drawings, wherein:

FIG. 1 represents a plan view of the catheter sleeve before folding, the permeable patch over one bed of capsules being partially turned back to expose the capsules;

FIG. 2 represents a plan view of sleeve closed around a catheter;

FIG. 3 represents a transverse section on the line III-III of FIG. 2, on an enlarged scale; and

FIG. 4 represents a detail perspective view showing the manner of use of the invention.

Referring to the drawings, the catheter sleeve is formed by a trapezoidal shaped sheet 1 of heat sealable plastic material, preferably transparent, designed to be folded on its longitudinal axis 2, the free edges 3, 3 being heat sealed together along the line 4, both ends being left open.

The lubricating elements are constituted by approximately rectangular beds of lubricant (silicone) containing capsules 6 adhesively secured to the sheet 1 near the smaller end 5 thereof and disposed symmetrically with respect to the fold line 2. Capsules containing liquid silicone and being about the size of BB shot are commercially available, the capsules being of thin plastic material which can be broken by squeezing to release the contents. Each bed of capsules is covered by a permeable patch 7 of nonwoven paper fabric or the like sealed to the sheet 1 on all sides, as indicated at 8.

A catheter 9 or the like is most conveniently laid in place on one half of the sheet 1, with its tip 10 on one of the patches 7 before the other half of the sheet is folded over and sealed, as described above, although the catheter could be inserted into the sleeve after it has been formed.

It will be understood that this form of packaging is adaptable to tubular devices other than catheters, in any situation where lubricity may be desired, and reference herein to

catheters is not intended to be restrictive.

The assembly of sleeve, catheter and lubricating elements is designed to be enclosed in the usual manner within an elongated envelope or other package (not shown) for sterilization and eventual use.

In use, the outer package is removed and may be discarded since the sleeve continues to protect the catheter from contamination. Firm pressure is applied to the area of the capsules 6 to break all or most of them and release silicones in the space beneath each patch 7. The lubricating liquid readily permeates and penetrates the nonwoven paper patches which, with continuing manual pressure, substantially envelope the end of the catheter to coat it effectively with the lubricant. The catheter is passed through the lubricating area by holding that area in one hand, as shown in FIG. 4, and advancing the catheter step by step by gripping it firmly with the other hand (through the sleeve) at a distance back from the lubricating area and pushing it forward as the sleeve collapses, accordian-wise (FIG. 4).

The catheter lubrication system disclosed herein is very advantageous in that the encapsulations are located initially in the areas where lubrication of the catheter or tube is to take place; there is no separate packet to be opened and its contents applied to an exposed catheter, with attendant mess from spillage. The use of inert liquid silicones, as opposed to water soluble jellies, is desirable because the catheter lubricated with silicones will remain lubricated for the entire procedure whereas a catheter or tube lubricated with a water soluble lubricant may lose its lubricity during the procedure and cause discomfort to the patient. Furthermore, according to the present invention, the catheter or tube is completely protected during the lubrication and intubation operations, possibly eliminating the need for using sterile gloves with a consequent saving of cost.

We claim:

1. A package for an elongated surgical or medical device comprising a flat sleeve of flexible plastic material adapted to contain said device, a plurality of lubricant filled friable capsules attached to an inner surface of said sleeve adjacent one end thereof, and a permeable sheet covering said capsules.

2. A package according to claim 1 in which two groups of capsules are located in oppositely disposed areas of said inner surface.

3. A package according to claim 1 in which the permeable sheet is a patch of nonwoven fabric secured to the inner surface of the sleeve along a line enclosing the capsules.

4. A package according to claim 3 in which the capsules are attached in a limited area, the patch is approximately rectangular and its line of securement is adjacent its periphery.

5. A package according to claim 1 in which the sleeve is constituted by an elongated sheet of material folded along its centerline and having its long edges sealed together.

6. A package according to claim 5 in which groups of capsules are located symmetrically on opposite sides of the center fold line, the sheet covering each group being a patch of nonwoven fabric secured to the surface of the sheet along a line enclosing the capsules.

7. A package according to claim 5 in which the sleeve is of tapering form, the capsules being attached to inner surface areas adjacent the narrower end of the sleeve.