

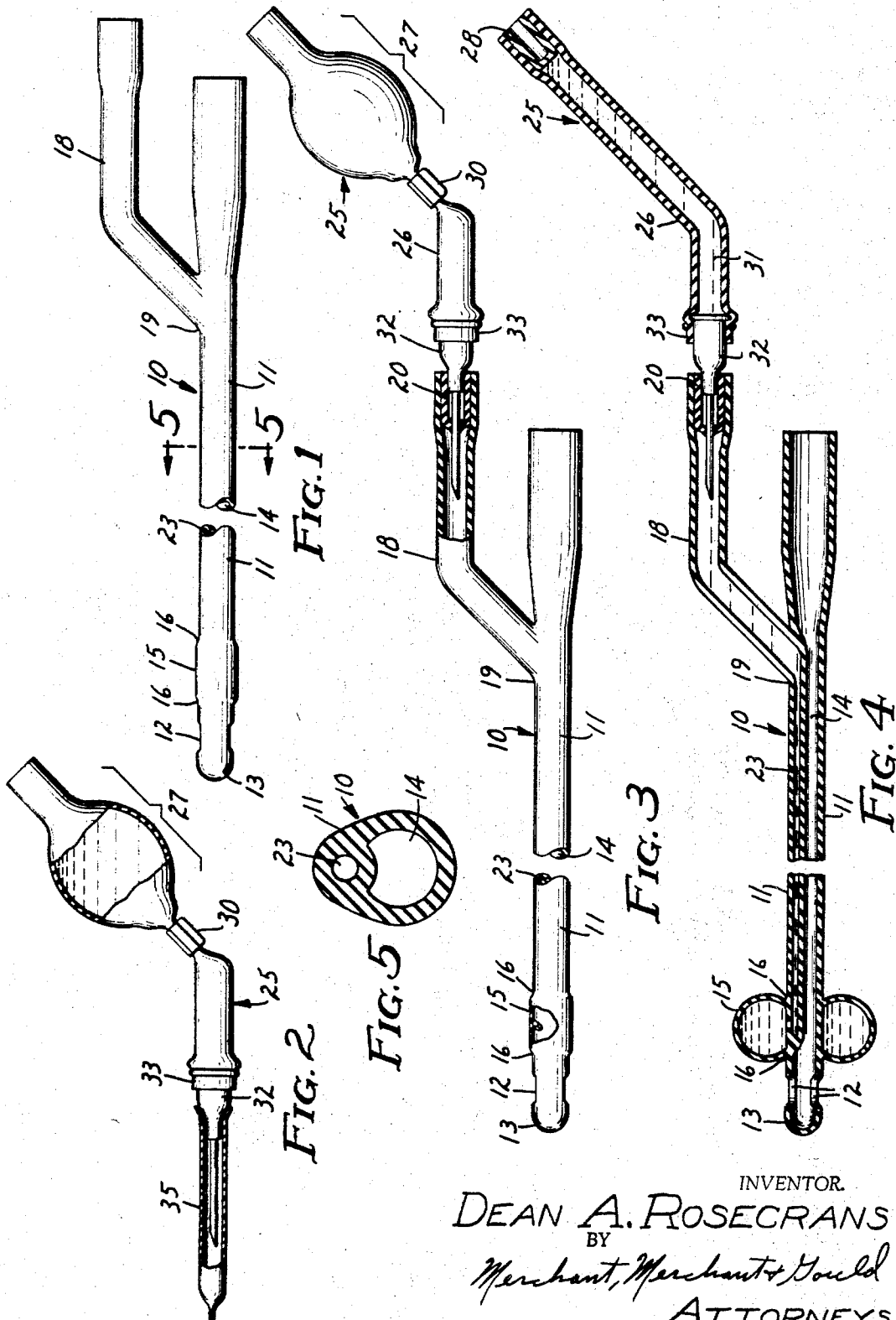
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INFLATION ATTACHMENT FOR INFLATABLE BAG CATHETER

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INFLATION ATTACHMENT FOR INFLATABLE BAG CATHETER

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This invention pertains to improvements in catheter construction and more particularly to an attachment for a catheter wherein the attachment contains a measured amount of fill fluid for inflating the catheter balloon, and which also provides the inflating force necessary to inflate the catheter balloon.

In the conventional Foley-type or balloon-type catheter it is necessary to employ an independent and separate bag inflating means. Generally, a hypodermic syringe is inserted into the filling tube in order to inflate the inflatable bag positioned adjacent the forward end of the catheter tube. Such an external bag filling means is extremely inconvenient in that it is necessary for the operator to have cumbersome auxiliary equipment including the sterile needle, a sterile syringe, and a sterile external aqueous fill liquid source.

To use the catheter the operator must first fill the syringe with the required amount of fill liquid and then insert the needle into the inflating tube to discharge the sterilized fill liquid content of the syringe into the catheter inflatable bag. At all times the operator must be careful not to contaminate the sterilized fill liquid or the syringe and needle.

The present invention provides an attachment which can be used with standard Foley-type catheters of various sizes. In particular, the present invention comprises a container having a resilient, distensible wall portion suitable for holding, when expanded, a premeasured amount of fill liquid. The resilient, distensible wall portion of the container is less elastic than the wall portion of the inflatable bag of the catheter so that the liquid in the container will be under sufficient pressure to inflate the inflatable bag of the catheter. The container has an opening which is controlled by a valve so as to prevent any of the fill liquid from leaking out of the container. A tubular instrument, for example, a hypodermic needle, is connected to the opening of the container. The entire attachment, including the fill liquid, is sterilized and the hypodermic needle is sealed by a sterilized protective package so as to prevent the needle from becoming contaminated or from puncturing the catheter or catheter package and to provide safer handling by hospital personnel.

This attachment can be used with any standard Foley-type catheter by simply removing the sterilized package from around the hypodermic needle and inserting the needle in the inflating tube of the catheter. The valve of the attachment is then opened and the pressurized fill liquid in the container will automatically inflate the catheter inflatable bag to the proper size.

It is one object of this invention, therefore, to provide a catheter inflating attachment which can be used with the standard catheters.

Another object of this invention is to provide a catheter inflating attachment which contains a premeasured amount of inflating fluid and which is economical and easy to use.

These and other objects of the present invention will become apparent to those skilled in the art upon consideration of the accompanying specification, claims, and drawings.

Referring to the drawings, wherein like characters indicate like parts throughout the several views:

FIG. 1 is a side elevation of a standard Foley-type catheter, parts thereof being broken away;

FIG. 2 is a side elevation of the attachment of the present invention, parts thereof being shown in section;

FIG. 3 is a side elevation of the catheter and attachment with the filling fluid in the attachment, parts thereof being broken away and shown in section;

FIG. 4 is a sectional view of the catheter and attachment with the filling fluid being in the inflatable bag of the catheter; and

FIG. 5 is a sectional view as seen from a line 5—5 of FIG. 1.

Referring to the figures, there is shown a conventional Foley-type catheter 10 comprising a tube 11 having orifices 12 at its forward end 13 to permit the passage of body fluid into the bore 14 of tube 11. A resilient, distensible wall member 15 is secured at its ends 16 to the exterior of the elongated tube 11. This wall member 15 engirdles the tube 11 over a region slightly behind the orifices 12. A second fill tube 18 is joined to the tube 11 at a point 19. This second fill tube 18 is fitted with a seal or plug 20 at its rearward end.

The fill tube 18 is joined to the region of the wall member 15 by means of a channel or tube 23 formed in the wall of tube 11.

At attachment 25 comprises a container, such as a flexible tube 26, having a resilient, distensible wall portion 27. The distensible wall portion 27 of tube 26 is suitable, when expanded, for holding a quantity of fill liquid. The rearward end of tube 26 is sealed by a suitable plug 28, while a valve such as clamp 30 constricts tube 26 and prevents any of the fill liquid in the distensible wall portion 27 of tube 26 from flowing through the forward end of bore 31 of flexible tube 26.

A tubular instrument, such as a hypodermic needle 32, is mounted in the bore 31 of tube 26 at the forward end 33 of tube 26. The hypodermic needle 32 is sealed in a detachable protective package 35.

A predetermined amount of fill liquid is inserted in the distensible wall portion 27 of attachment 25. The hypodermic needle 32 is then sealed in a protective package 35 in order to provide a protective cover and prevent contamination of needle 32. In operation, the catheter then is inserted in the body cavity to be drained in the usual manner. The protective package 35 is then removed from hypodermic needle 32 of attachment 25 and the needle is inserted through plug 20 of fill tube 18 of the catheter 10. FIG. 3 shows the catheter with the attachment 25 properly positioned in the fill tube 18, and with the fill liquid in the distensible wall portion 27 of attachment 25. When the attachment 25 is in position in the fill tube 18 of the catheter 10, the valve or clamp 30 is removed and the fill liquid flows through bore 31 of tube 26, hypodermic needle 32, fill tube 18, and bore 23 of tube 11 to bag member 15.

The thickness of the walls of distensible wall portion 27 of attachment 25 is greater than the thickness of the walls of inflatable bag or wall member 15 at the forward end of catheter 10; in other words, the inflatable bag 15 is much more elastic than is the distensible wall portion 27 of attachment 25. Therefore, the fill liquid in the distensible wall portion 27 of attachment 25 will be under pressure and when clamp 30 is released, this liquid will be forced into the inflatable bag member 15 of catheter 10.

It should be apparent to those skilled in the art that the attachment of the present invention can be used with any standard type catheter and yet has the advantage of eliminating the mess and inconvenience associated with previous catheters wherein a quantity of sterilized fill liquid as well as sterilized syringes and needles were necessary to accomplish the inflation of bag 15. The attachment of the present invention is a self contained unit which contains

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a premeasured amount of catheter balloon inflating liquid and which also provides the inflating force necessary to inflate the catheter balloon.

It is to be understood that while I have shown a specific embodiment of my invention that this is for the purpose of illustration only and that my invention is to be limited solely by the scope of the appended claims.

I claim as my invention:

1. For use with a Foley-type catheter comprising an elongated first tube having adjacent to its forward end an orifice to permit the passage of body fluid into the bore of said first tube and having a resilient, distensible wall member secured to and engirdling an exterior portion of said tube so as to form an inflatable bag located adjacent said orifice, said catheter further having a second tube joined to said first tube, said second tube having a rearward end, and a third tube formed in the wall of said first tube joining said second tube with said inflatable bag, and attachment comprising:

(a) a container having an opening therein and having a resilient, distensible wall portion which is less elastic than the resilient, distensible wall member of said inflatable bag, said container containing a fill liquid which expands the distensible wall portion of said container to place said fill liquid under pressure;

(b) valve means connected to said container closing off flow of liquid through the opening of said container until such time as the valve is opened; and

(c) a tubular instrument connected to the opening of said container and adapted to be inserted in the rear-

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ward end of said second tube of the catheter so that, when said valve means is opened, the fill liquid will pass from the container into said inflatable bag thereby inflating the same.

2. An attachment as described in claim 1 wherein said tubular instrument comprises a hypodermic needle.

3. An attachment as described in claim 1 wherein said container comprises a flexible tube having a seal at its rearward end and having a resilient, distensible wall portion, the front end of said tube being attached to the tubular instrument.

4. Apparatus as described in claim 1 wherein the entire attachment is sterilized and wherein the tubular instrument is enclosed in a sterilized package which may be removed when the attachment is to be inserted in the rearward end of the second tube of the catheter.

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