

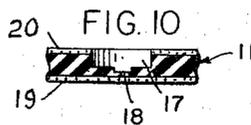
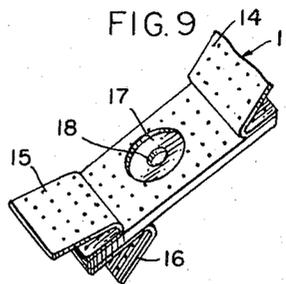
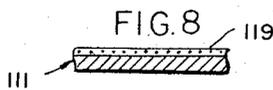
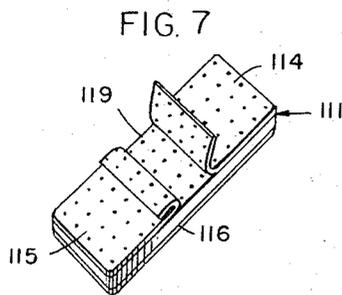
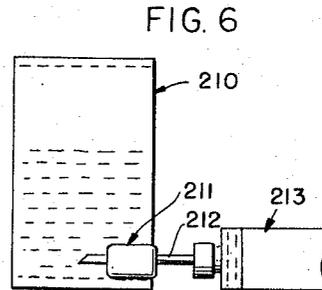
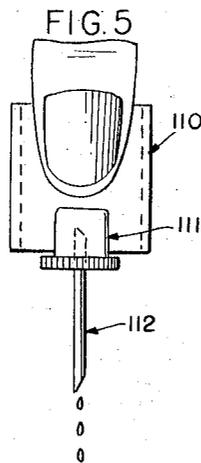
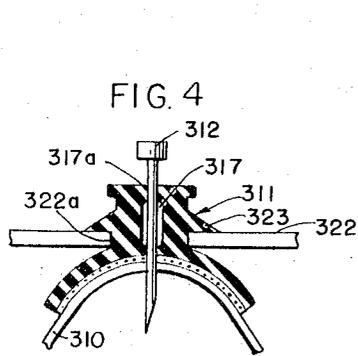
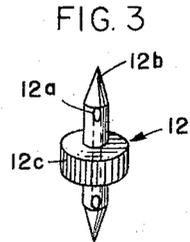
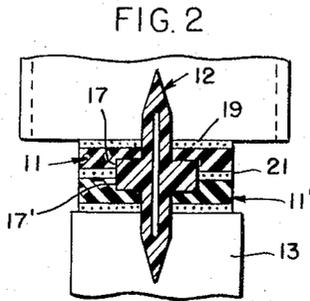
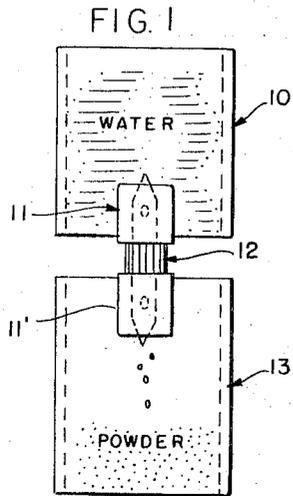
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ASEPTIC DRAINING AND SUPPORT MEANS FOR FLEXIBLE BAGS

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ASEPTIC DRAINING AND SUPPORT MEANS FOR FLEXIBLE BAGS

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1 Claim. (Cl. 248—224)

This invention relates to aseptic draining means for flexible bags and, more particularly, to a novel patch adapted to be adhesively united to a flexible container and which is capable of resealing following cannula puncture.

It is an object of the invention to provide a novel method and means for draining flexible containers, particularly through the use of readily affixed cannulae. As such, the invention has particular utility in conjunction with the dispensing and administration of liquid medications.

Another object of the invention is to provide a novelly contoured or constructed patch adapted to be adhesively united to a flexible container, i.e., a plastic bag, in which the patch construction facilitates coupling of the bag to another element.

Other objects and advantages of the invention may be seen in the details of construction and operation set down in this specification.

The invention is described in conjunction with the accompanying drawing, in which—

FIG. 1 is an elevational view of an embodiment of the invention wherein a powdered medicament container is coupled to a liquid container through the guise of a double ended cannula piercing patches constructed according to the instant invention;

FIG. 2 is an enlarged fragmentary sectional view of the central portion of FIG. 1 and whereby additional details of construction can be seen;

FIG. 3 is a perspective view of the double ended cannula of the preceding views;

FIG. 4 is a fragmentary sectional view of a modified form of the invention;

FIG. 5 is an elevational view of yet another form of the invention;

FIG. 6 is an elevational view showing a liquid container coupled to a hypodermic syringe, the syringe being shown fragmentarily;

FIG. 7 is a perspective view of one form of the inventive patch;

FIG. 8 is an enlarged sectional view of the patch of FIG. 7, with protective strips removed;

FIG. 9 is a perspective view of another form of the inventive patch; and

FIG. 10 is a sectional view of the patch of FIG. 9 with protective strips removed.

Referring now to FIG. 1, represented is the operation of transferring a liquid such as water from an upper bag or container 10 to a lower bag or container 13 by means of a double ended cannula 12 piercing patches 11 and 11'. The lower bag 13 may contain a powder suitable for solution just prior to administration or other use.

The particular patch employed in the embodiment seen in FIG. 1 can be appreciated from a consideration of FIGS. 2 and 9. Referring first to FIG. 9 it is seen that the numeral 11 again generally designates the patch which is initially covered by means of protector strips 14 and 15 seen in the process of being removed from the upper surface of the patch. Similarly, a bottom protector 16 is seen in the process of being removed. The patch 11 is equipped with a central recess 17 and disposed within the central recess 17 is a smaller opening 18. The upper surface of the patch 11 is covered by an adhesive layer 19

while the lower surface is covered by an adhesive layer 20.

The assembly of FIG. 2 is achieved when the double ended cannula 12 is employed and the cannula 12 is seen in perspective in FIG. 3. There it will be noted that the through bore 12a communicates with the beveled or pointed end 12b so as to provide a flow passage for liquid from the container 10 to the container 13. Additionally, the chamber formed by the recesses 17 and 17' (see FIG. 2) accommodates the manipulating portion 12c of the cannula 12. The chamber formed by the recesses 17 and 17' is created by joining two patches as shown in FIG. 10 by means of the adhesive layers 20 of the two patches. The joined adhesive layers of the two patches become the layer 21 of the double patch shown in FIG. 2.

In the operation depicted in FIG. 1, the protectors 14-16 have been removed and the patch 11 resulting therefrom has been applied along an edge of the plastic bag 10 which may be constructed of polyvinyl chloride, polyethylene, etc. Such materials are transparent preferably and are incapable of confining the puncture made by a cannula of the size normally employed for transferring fluid. With the inventive patch however a tight aseptic seal with the cannula 12 is achieved. Further, the patch 11 in extending along both the front and back faces of the bag 10 serves to confine portions of the bag against any tendency to rupture under the penetration of the cannula 12.

Another environment in which the invention is advantageously used can be seen in FIG. 5 where a container of medicament, paste, etc. is designated by the numeral 110 and has adhesively affixed thereto the inventive patch 111 and also features the attachment of a delivery cannula 112. The particular patch employed in the FIG. 5 showing can be seen in FIGS. 7 and 8. In FIG. 7 the numeral 111 again designates generally the patch which is seen to include protectors 114, 115 and 116 with the protectors 114 and 115 being partially removed to expose the adhesive layer of 119. In the embodiment of the invention used in FIG. 5 there is no need for having a second adhesive layer (corresponding to the layer 20 of FIG. 10) inasmuch as the lower surface of the patch 111 is exposed to the atmosphere as can be appreciated from a consideration of FIG. 5.

Yet another environment in which the invention finds advantageous application is seen in FIG. 6 wherein a medicament container 210 is again equipped with an edge-overlapping patch 211 for penetration by means of a cannula 212 provided as part of a hypodermic syringe barrel generally designated 213. In this fashion, liquid medicament can be withdrawn sequentially and intermittently from the container 210 without a possibility of contamination inasmuch as the rubber patch reseals itself upon cannula removal. The aseptic character of the patch is advantageously obtained by adding to the rubber an atoxic antiseptic substance such as zinc 2-pyridinethiol 1-oxide. Relative to the adhesive, a variety of adhesives are commercially available which are pressure sensitive and adapted to adhere rubber to plastic materials.

A further modification of the patch can take the form seen in FIG. 4, the adhesive strap or patch generally designated 311 is seen to be equipped with a projecting part for coupling to a box or other support surface as at 322. The strap 311 is seen to include a flange 323 which is tapered so as to facilitate insertion through the opening 322a in a rigid member such as the side of a box or other enclosure. To facilitate entry of the cannula 312 into the container 310, the patch 311 is equipped with a transverse passage 317 which is closed at its outer end as at 317a by an integral portion of the patch 311.

While in the foregoing specification a detailed description of the invention has been set down for the purpose

3

of explanation, many variations of the details herein given may be made by those skilled in the art without departing from the spirit and scope of the invention.

I claim:

A resilient, rubber-like patch adapted for contact attachment to a liquid-filled, flexible container to be drained, said patch being adapted to reseal itself following cannula puncture and containing an antiseptic material dispersed therein, said patch including a lower planar portion having a layer of adhesive attached to the bottom surface thereof, said patch including an upper portion extending upwardly from said planar portion, said upper portion being generally cylindrical and having a vertically extending bore provided therein, said bore being closed at the top and bottom thereof, said upper portion including a radially outwardly extending flange, said flange having a generally flat lower surface spaced from the upper surface of said lower planar portion and an inclined upper sur-

4

face, whereby said upper portion is adapted to be inserted through an opening in a rigid support for supporting said patch and container by said flange.

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