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FLEXIBLE BAG HAVING SELF-SEALING ENTRYWAY

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FIG. 1

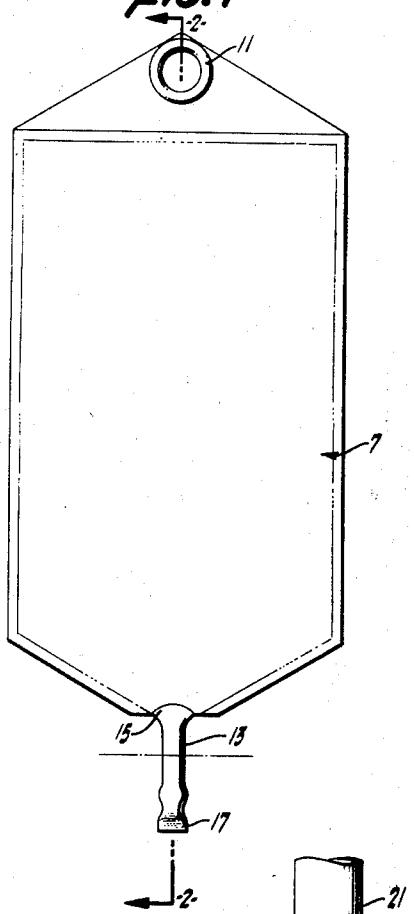


FIG. 2

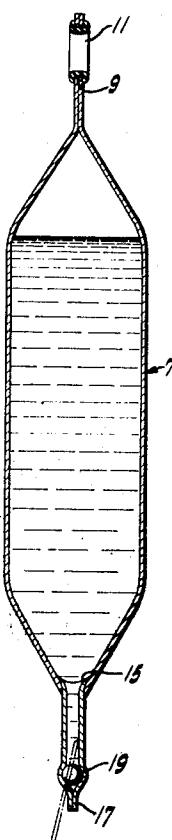
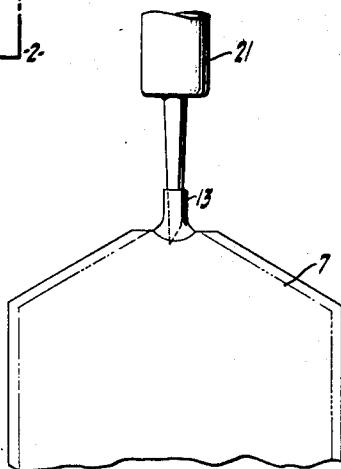


FIG. 3



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FLEXIBLE BAG HAVING SELF-SEALING ENTRYWAY

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1 Claim. (Cl. 128—272)

This invention relates to a container for fluids and particularly to a flexible disposable bag suitable for use in the collection and administration of intravenous solutions.

It is a principal object of the present invention to provide a flexible disposable bag suitable for the collection and administration of an intravenous solution having a puncturable needle entryway closed at its outer end and containing a self-sealing element sealingly engaging the entryway, whereby a donor needle may be thrust through the wall of the entryway at a point adjacent the outlet end thereof and then through the self-sealing element to fill the bag, and after withdrawal the self-sealing element functions to close the needle opening therein and prevent fluid leakage through the needle hole in the entryway wall.

Another object of the present invention is to provide a bag as above described in which the self-sealing element is located adjacent the closed end of the entryway so that when administration of the collected fluid is desired, the bag may be inverted, the entryway severed at a place between the self-sealing element and the bag body, and an infusion set inserted into the entryway portion remaining on the bag.

Various other objects of the present invention will be apparent from the following description taken in connection with the accompanying drawings, wherein:

Fig. 1 is a front elevational view of a bag embodying the concepts of the present invention.

Fig. 2 is a vertical sectional view taken along line 2—2 of Fig. 1.

Fig. 3 is a view of the bag after severance of the end portion of the tube and showing an infusion set inserted into the tube portion remaining secured to the bag.

As illustrated in these drawings, the objects of our invention are embodied in a disposable flexible bag 7 conveniently formed of two superposed plastic sheets sealed along their edges by any suitable means such as for example the application of heat or the use of adhesive. Provided in the upper end of the bag 7 is an opening 9, and fitted therein is a grommet 11 for suspending the bag from a hook.

Extending into the lower end of the bag 7 is a puncturable tube 13 having a feathered upper flared end 15 sealed to the surrounding walls of the bag by any suitable means. The lower free end 17 of the tube 13 is pinched together and sealed by any suitable means, and disposed within the

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tube immediately above its sealed end is a puncturable elastomer ball 19 of a diameter somewhat greater than the diameter of the tube 13. As a result of this construction, the tube 13 is under sufficient tension at this point to effect a positive seal with the ball 19 and to positively hold the ball in place.

In use, the bag is suspended by its grommet 11 from a hook or other similar device. The needle of a donor set is then thrust through the wall of tube 13 at a point below and adjacent to the ball 19 and thence through the ball into an intermediate portion of the tube into communication with the interior of bag 7. After the collection of blood from the donor has been completed, the needle is withdrawn from ball 19 and its surrounding tubing, whereupon the ball, due to its inherent resiliency, seals off the needle opening thereby preventing fluid leakage which would otherwise occur through the needle opening formed in the wall of tube 19.

When it is desired to administer the intravenous solution so collected in the bag, the bag is inverted, the tube 13 severed at a point between ball 19 and the body of bag 7 to provide a bag entryway. An infusion set 21 is then inserted into the entryway so formed by the tube 13, and the bag is re-inverted and then suspended from its grommet 11 so that its contents can be administered to a patient.

By the present invention, a simple inexpensive flexible disposable bag suitable for administering intravenous solutions has been provided, said bag having a novel entryway containing a self-sealing element for sealing off the opening made by a donor needle into the entryway after the needle is withdrawn. Although the self-sealing element has here been illustrated as a ball, other shapes can of course be substituted.

While we have shown the preferred form of our invention, it is to be understood that various changes may be made in its construction by those skilled in the art without departing from the spirit of the invention as defined in the appended claim.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:

An article of the class described, comprising: a completely sealed, disposable flexible intravenous solution bag; a section of flexible tubing formed integral with said bag and communicating with the interior thereof; and a body of resilient, needle-puncturable, self-sealing material sealed within said tubing intermediate its ends, the outer free end of said tubing being pinched and sealed together over said body of resilient material.

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