

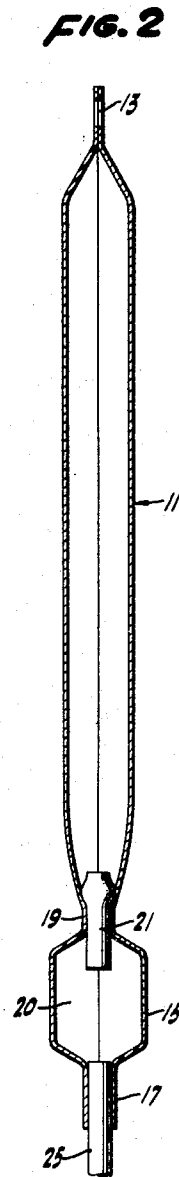
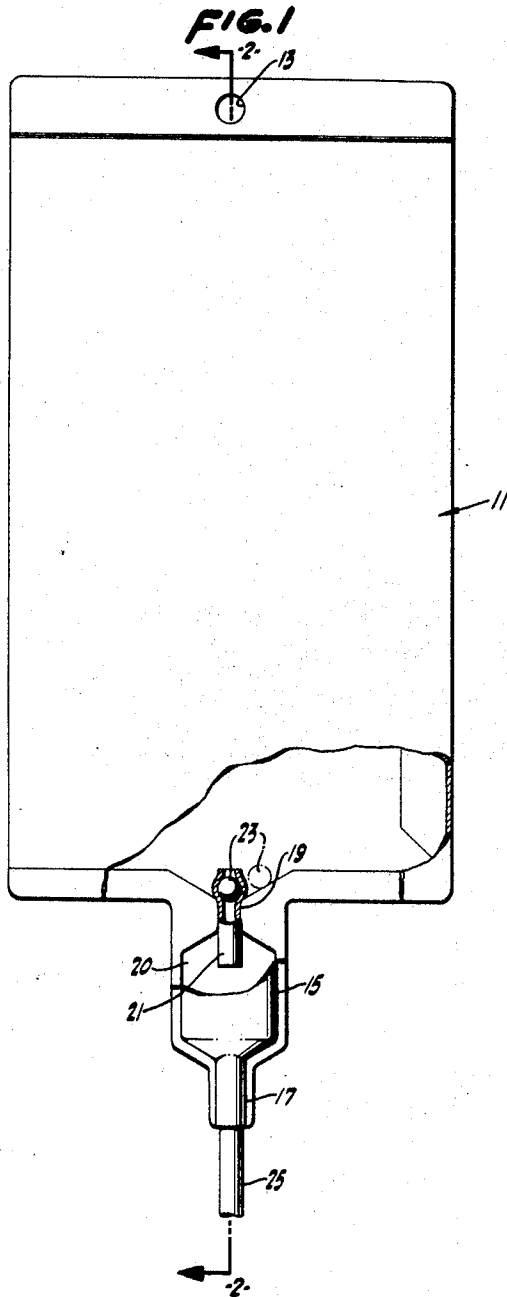
Sept. 23, 1958

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2,853,069

FLEXIBLE CONTAINER WITH INTEGRAL FLOW CONTROL

Filed May 9, 1955



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FLEXIBLE CONTAINER WITH INTEGRAL
FLOW CONTROL

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Application May 9, 1955, Serial No. 506,719

1 Claim. (Cl. 128—214)

This invention relates to a container for dispensing fluids and in particular to a container for administering intravenous solutions.

There is an increasing demand for inexpensive flexible bags for the collection and administration of intravenous solutions, because these bags can be easily stored and transported and can be discarded after a single use thereof saving the expense and time normally consumed in sterilizing the same. However, the bag must be provided with some sort of contrivance by which it can be opened to enable administration of the contents thereof, and the contrivances heretofore utilized have been relatively expensive and complicated.

It is a principal object of the present invention to provide a flexible disposable container for dispensing fluids, particularly intravenous solutions, in which there is provided an inexpensive displaceable closure in the opening of such container, displaceable from its impeding position by the application of displacing forces indirectly to the closure through the flexible walls of the container.

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 flexible disposable bag embodying the concepts of the present invention and having parts broken away to show the construction of the closure for the bag opening.

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

As illustrated in these figures, the objects of our invention are embodied in a flexible bag 11 formed in any conventional manner, such as by a pair of transparent plastic sheet cut-outs, heat-sealed or otherwise, secured together at their side and bottom margins and capable of being heat-sealed along their upper margins after it has been filled with the desired solution. Provided in the upper end of bag 11 is a hole 13 by which the bag may be suspended from any suitable support.

Formed as an extension of the lower end of bag 11 and merging therewith is a neck 15 of reduced size serving as a drip chamber 20 and terminating in a tubular outlet 17. The upper end of the neck 15 is substantially narrowed to form an opening 19 communicating at its upper end with the interior of the bag and at its lower end with the drip chamber 20. Disposed within opening 19 is a short elastomer tube 21 sealed to the walls of the container in any suitable manner and extending

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into the bag cavity for a purpose to be presently described.

Lodged in the upper end of the tube 21 is a closure member 23, such as a glass marble, having a diameter greater than the inner diameter of tube 21 so as to expand the tube slightly and thus remain sealed in position against the ordinary forces effective thereagainst during handling, shipping, storage, etc.

In use, the bag is filled in the usual manner through its open upper end and thereafter the upper end of the bag is sealed by the application of heat or by induction heating. When it is desired to administer the contents of the bag, a section of flexible tubing 25 is inserted into outlet 17, the neck of the bag is gripped by the attendant at a point just below the ball 23, and pressure is applied to the ball to squeeze it upwardly out of the tube 21 and into the bag cavity. The ball 23 is therefore restrained by the upper end of the tube 21 from reassuming a position closing said tube and the tube thereafter serves as a drip tube, the rate of flow therethrough being observable by the attendant.

By the present invention there is provided a simple inexpensive disposable flexible bag equipped at its lower end with a simple and inexpensive closure readily removable from its impeding position by forces applied indirectly thereto through the flexible walls of said bag, and which when displaced, is restrained from reassuming its closed position.

Although a drip chamber type of disposable bag has been disclosed, it will be appreciated that the invention is not intended to be limited to this particular type of bag and applies equally to other types of flexible bags.

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:

A disposable plastic container for the administration of intravenous solutions comprising a solution chamber merging at its lower end with a drip chamber of reduced size; a short section of flexible tubing sealed with said bag at the juncture of said solution and drip-meter chambers, the upper end of said tubing extending into said solution chamber and the lower end thereof extending into said drip-meter chamber; and a closure member lodged in the upper end of said tubing, said closure member being readily removable from the upper end of said tubing by the indirect application of pressure thereto through the walls of said bag.

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