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E. J. WHITE ETAL

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BOTTLE WITH HANGER SUPPORT

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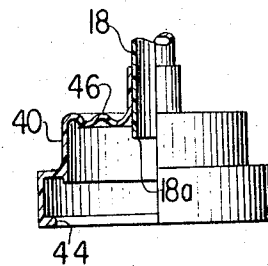
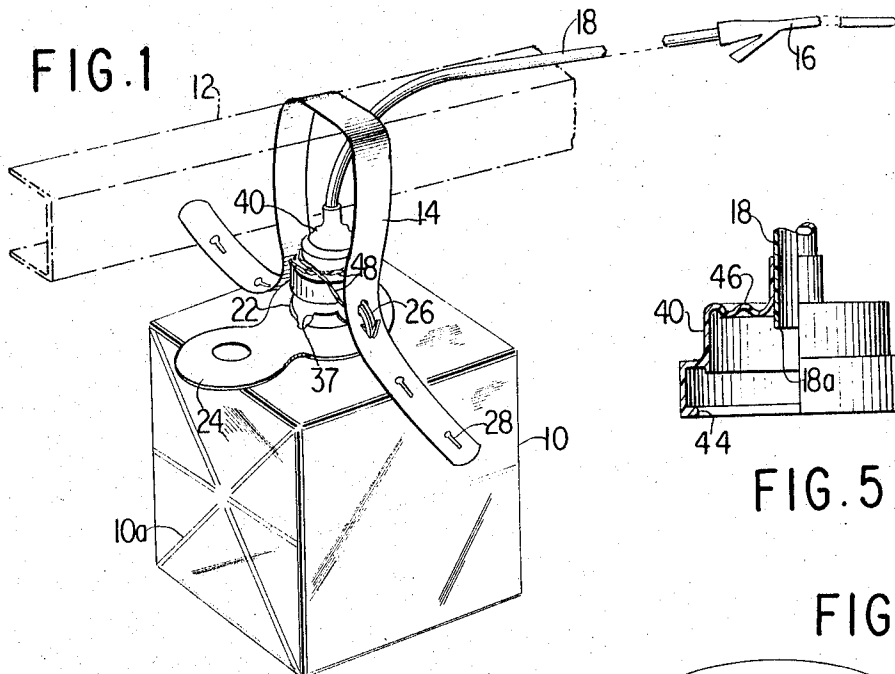


FIG. 4

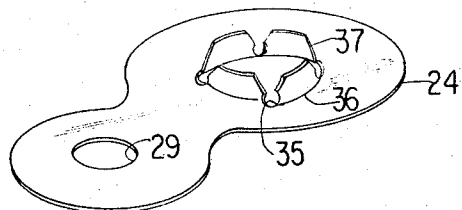
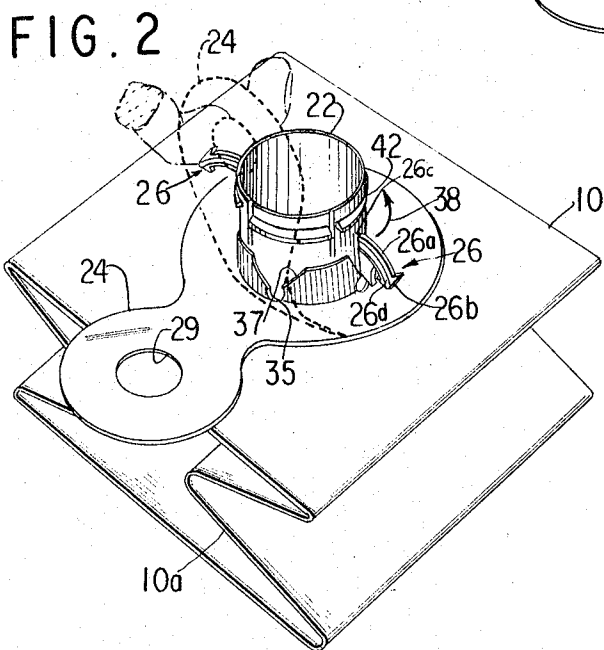
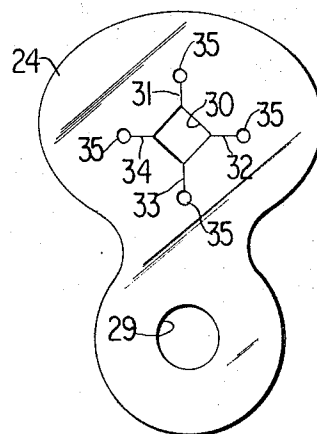


FIG. 3



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BOTTLE WITH HANGER SUPPORT

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This invention relates to drainage bottles and more particularly to means for supporting or suspending such bottles.

Drainage bottles made of flexible plastic materials are frequently used in hospitals to collect drainage fluid from body cavities, one prevalent use being for collecting drainage fluid from the bladder as the latter is drained via a Foley catheter. Because of their flexible nature, the drainage bottles need to be suitably supported as they are being filled. The support may be a floor stand but more frequently the bottles are suspended by a strap from a side rail of a bed or the like.

In the latter case, it is desirable to have a handle or to provide some way to conveniently hold the flexible bottle when the suspension strap is being released from or attached to the bed rail, particularly when a full bottle is being removed from its suspended condition for emptying. In this case of a bottle supported on a floor stand, it is also desirable to have a handle or other convenient means for holding and handling the bottle, for example, to empty a full bottle or to adapt it for use by an ambulatory patient.

Because of their construction and the types of materials used, it is not always feasible or practical to form a support or suspension hanger integral with the plastic bottle, and therefore an arrangement has to be provided to secure such support or suspension hanger to the bottle.

Accordingly, it is an object of the present invention to provide a drainage bottle and hanger both constructed and arranged to facilitate attachment of the hanger to the bottle.

Another object is to provide a drainage bottle having means thereon for securing a hanger to facilitate handling of the bottle, said means being adapted to cooperate with a suspension strap for suspending the bottle from a bed rail or the like whereby the hanger may be used to support the bottle independently of the suspension strap.

A further object is to provide certain improvements in the form, construction, arrangement and material of the several elements whereby the above named and other objects may efficiently be attained.

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

FIG. 1 is a perspective view of a drainage bottle and support means therefore.

FIG. 2 is a perspective view, similar to FIG. 1, but with the drainage tubing and suspension strap removed.

FIG. 3 is a plan view of the hanger before it is placed on the neck of the bottle.

FIG. 4 is a perspective of the hanger with the tabs extended to the position they assume on the neck of the bottle.

FIG. 5 is an elevational view, partly in section, of the adaptor for attaching the drainage tube to the neck of the bottle.

Referring to the drawings, FIG. 1 shows a drainage

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bottle 10 suspended from a bed rail 12 or the like by a suspension strap 14. The drainage bottle 10 is connected to a catheter 16 via a drainage tube 18 (partially shown), the latter being so disposed as to provide a downhill path for fluid flow from a body cavity (e.g. bladder) to the drainage bottle 10.

The bottle 10 has a cylindrical neck 22 on which are formed suitable means for affixing the suspension strap 14, for attaching a handle 24, and for connecting the end of the drainage tube 18. Thus, the neck 22 is provided with two diametrically opposed lugs 26 which are generally flat, as shown, with their connecting edges extending axially of the neck 22. The lugs 26 and the neck 22 are made integral of a suitable plastic material. The neck 22 is of sufficient thickness to provide the required rigidity for its various support functions while the lugs 26 are made of a thickness sufficient to support the bottle 10 when it is suspended thereby but which are adapted to be flexed to one side in order that the handle 24 may be slipped thereover and secured around the neck of the bottle as will be described.

As best shown in FIG. 2, each lug 26 has a hook 26a formed thereon adapted to engage openings or slits 28 in the suspension strap 14. The hook 26a may have an arrow pointed tip as shown at 26b. A plurality of suitably spaced openings 28 may be provided at each end portion of the strap 14 for adjusting the size of the suspension loop as may be desired, for example, to raise or lower the bottle 10 relative to the bed rail 12 or to accommodate different size bed rails or other supports. It will readily be evident that the strap 14 may be easily attached to and detached from the hooks 26a to suspend the bag from the bed rail, to remove it therefrom, or to adjust it thereon.

In addition to providing a suspension for the bottle, the strap 14 may also be used as a handle to carry the bottle from one location to another. However, when removing the bottle 10 from the bed rail, it is desirable to provide some other means to support the weight of the bottle and its contents in order to take the weight off of the suspension strap 14 as the latter is removed from around the bed rail. This additional support means is particularly desirable when using bottles made of plastic film or other types of collapsible or non-rigid structures which are not readily supportable other than by suspension. Accordingly, the separate handle 24 is provided for this purpose, such handle also being adaptable for use as a convenient carrying handle to transport the bottle.

As best shown in FIG. 3, the handle 24 is initially formed from a flat sheet of material, e.g. latex, having a finger opening 29, an opening 30 adapted to fit onto the neck 22 of the bottle 10 and slits 31, 32, 33, 34, each of which terminate in openings 35 to relieve stress concentrations and to accommodate the lower portions of the lugs 26 as will be described. The diameter of the circle 36 defined by the outer radial extremities of the openings 35 is approximately equal to the outer diameter of the neck 22 of the bottle. Accordingly, the opening 30 in the handle 24 may be placed over the neck 22 and the handle pushed downwardly thereon as the portions of the handle between the slits 31, 32, 33, 34 bend upwardly to form upwardly extending tabs 37 around the neck of the bottle as illustrated in FIG. 4. The handle 24 is, of course, placed on the neck 22 before the suspension strap 14 or drainage tubing 18 is connected up.

The lugs 26 in their normal extended position (FIGS. 1 and 2) are ordinarily in the way, preventing slipping of the handle 24 to its lower position on the neck 22. However, as previously mentioned, the lugs 26 are adapted to be flexed to one side so that the handle 24 may be slipped thereover to a position underlying the lugs. Thus the lugs 26 which are joined to the neck 22 along an elongated section running axially of the neck are manually flexed about said elongated section to one side (as indicated by the arrow 38 in FIG. 2) to lie adjacent to the outer surface of the neck 22, conforming to the circular shape of the latter. With both lugs 26 flexed in this manner, the handle 24 may be slipped down the neck, past the bent over lugs 26, to the position shown in FIG. 2 whereupon the lugs may be released to resume their normal unflexed position (FIGS. 1 and 2) due to the natural resiliency of the plastic material. Various other methods may also be employed to slip the handle 24 past the lugs 26. For example, one side of the handle 24 may be placed below one lug while the latter is in its normal extended position and then the other lug bent to one side so that the diametrically opposed side of the handle may be slipped thereby. Also the lugs may be flexed in opposite directions and the handle 24 turned or rotated slightly as it is passed over the neck to facilitate axial movement past the lugs. The lugs 26 in their normal extended position prevent the handle from slipping off of the neck as will be evident from FIG. 2. Also once the handle 24 is in place, it is prevented from rotating on the neck due to the engagement between the lower extremities of the lugs 26 and the portions of the openings 35 between adjacent tabs 37. The lugs, therefore, in addition to providing a means for affixing the suspension strap 14 to the neck, also hold the handle 24 on the neck of the bottle in a predetermined position whereby a finger may be inserted into the opening 29 to flex the handle upward and provide a convenient manual suspension support as represented by broken lines in FIG. 2.

The drainage tube 18 may be attached to the neck 22 of the bottle by an adapter 40 fitted over the opening of the neck. The neck has an annular ridge 42 below which a ridge 44 on the inner surface of the adapter 40 is adapted to fit to facilitate securing the adapter in place on the neck. The adapter 40 may be made of a readily flexible material having circular corrugated rings 46 therein forming a diaphragm which may easily flex to accommodate varying lead-in angles of the drainage tube 18. The end 18a of the drainage tube 18 terminates within the adapter 40 as shown in FIG. 5 so that when the tube 18 is bent relative to the axis of the adapter 40 and the corrugations 46 are flexed, the terminating end 18a will not contact the inside surface of the adapter 40, thereby preventing formation of an unbroken path of liquid film through which bacteria may pass from the bottle 10 upstream to the drainage tube 18 to the patient.

As previously mentioned, the ridge 44 on the adapter 40 underlies the ridge 42 on the neck 22 to hold the adapter in place. Additional means in the form of two endless rubber bands 48 may also be provided to hold the adapter. Each band passes over one side of the adapter 40 in the area of the corrugations 46 and extends downwardly across to the other side where it is looped under the lug 26 thereby exerting a resilient force holding the adapter 40 on the neck 22.

As shown in the drawings, the drainage bottle 10 is made of a flexible material, e.g. plastic, and is adapted to be collapsed along the fold lines 10a to facilitate storage before use. The neck 22 may be integral with the main body of the bottle or suitably secured thereon. For example, the neck may be fused to the bottle during the molding operation to form what is in effect an integral connection. It will be understood, however,

that the invention is not limited to bottles of the type illustrated as it will be evident that other types of bottles may be used, for example, bottles made from a suitably sealed sleeve of plastic film and having a neck thereon.

Although two lugs 26 are shown and described, it will be understood that more than two may be provided, and similarly, more than four tabs 37 may be used. Also the tabs may take various other shapes as desired, for example, the opening 30 may be eliminated and the slits 31, 32, 33, 34, extended inwardly to the center to form two intersecting slits which will define triangular tabs when the handle is placed on the neck of the bottle. The lugs 26 may be provided with a thin section 26c immediately adjacent the neck to facilitate flexing at such section. Also reinforcing ribs 26d may be formed on the lugs as desired, for example, adjacent the upper edge.

It will be understood that various changes may be made in the form, construction and arrangement of the several parts without departing from the spirit and scope of the invention and hence we do not intend to be limited to the details shown or described herein except as the same are included in the claims or may be required by disclosures of the prior art.

What we claim is:

1. A plastic drainage bottle having a neck, lugs extending from said neck, a hanger having a section fitted about said neck, at least one of said lugs being constructed and arranged to be temporarily flexed to permit said hanger to be slipped on said neck past said lugs to underlie the latter and thereafter to be held in place by the lugs as the latter resume their normal unflexed condition.

2. A plastic drainage bottle according to claim 1 wherein said one lug is generally flat to facilitate flexing.

3. A plastic drainage bottle according to claim 1 wherein said one lug is joined to said neck along an elongated section running axially of the neck, said one lug being flexed at said elongated section.

4. A plastic drainage bottle according to claim 1 wherein at least one of said lugs has means thereon for detachably connecting a suspension strap thereto.

5. A plastic drainage bottle according to claim 4 wherein said means comprises a hook portion to which said suspension strap is connected.

6. A plastic drainage bottle according to claim 5 wherein said hook has a reinforcing rib formed integral therewith.

7. A plastic drainage bottle according to claim 1 wherein said section of said hanger is initially flat and has slits, the portions between said slits forming tabs which are flexed to extend generally perpendicularly to the general plane of said flat hanger when the latter is in position on the neck.

8. A plastic drainage bottle according to claim 7 wherein circular cutouts are disposed at the terminal ends of said slits to avoid concentrated areas of stress.

9. A plastic drainage bottle according to claim 7 wherein said section has an opening to receive said neck.

10. A plastic drainage bottle according to claim 7 wherein said lugs are accommodated between two adjacent tabs such that the lugs prevent rotation of the hanger on the neck.

11. A plastic drainage bottle according to claim 7 wherein said tabs fit about the periphery of said neck.

12. A plastic drainage bottle according to claim 1 wherein said hanger has an extension with an opening therein forming a handle.

13. A plastic drainage bottle and support therefore, a cylindrical neck on said bottle, integral lugs extending outwardly of said neck, a suspension strap having means engageable with said lugs, said lugs having hook means for receiving said engageable means to detachably affix said suspension strap thereto, a hanger having one section extending away from the neck to form a handle

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or the like and another section having an opening for receiving said neck, at least one of said lugs being constructed and arranged to be temporarily flexed to permit said hanger to be slipped on said neck past said lugs to a position underlying the latter whereby said lugs hold said hanger on said neck as said lug resumes its normal unflexed condition.

14. A plastic drainage bottle and support therefore according to claim 13 wherein there are two diametrically opposed lugs each having a generally flat construction to facilitate flexing.

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