May 9, 1967 I. R. KRASNOFF 3,318,457

ASSEMBLY FOR USE IN INTRAVENOUS FEEDING

Filed Oct. 18, 1966

FIG. 1

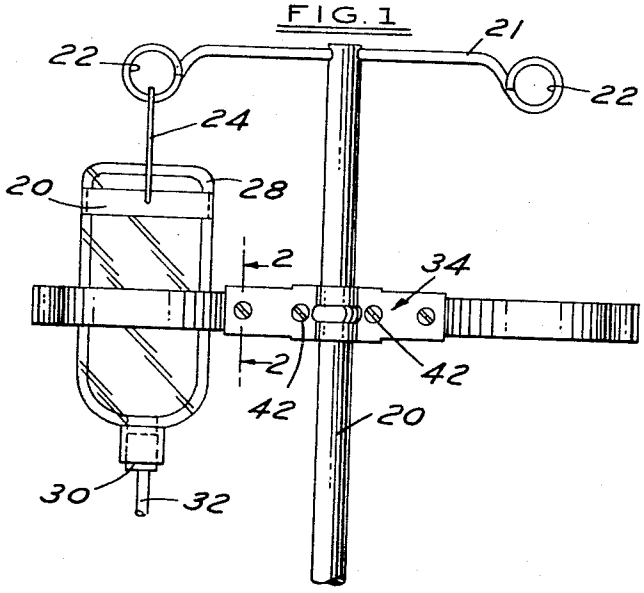


FIG. 2

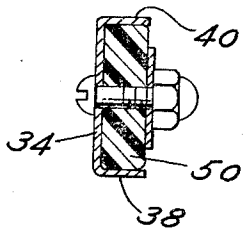


FIG. 3

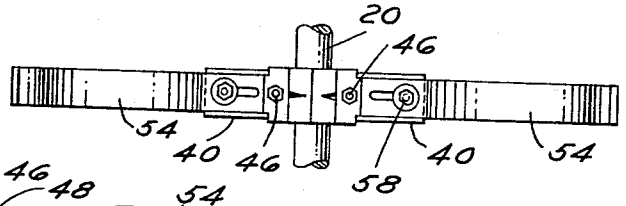


FIG. 4

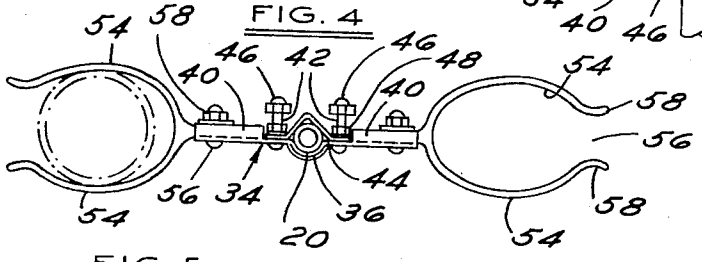


FIG. 5

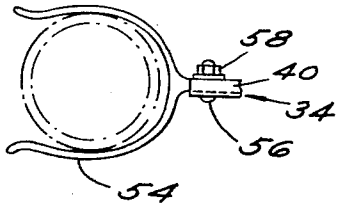
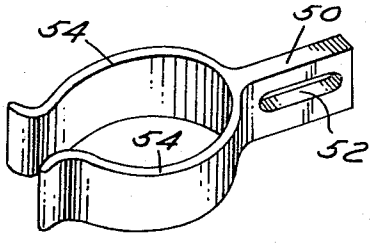


FIG. 6



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United States Patent Office 3,318,457
Patented May 9, 1967

3,318,457
ASSEMBLY FOR USE IN INTRAVENOUS FEEDING

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Filed Oct. 18, 1966, Ser. No. 587,535
4 Claims. (Cl. 211—74)

This invention relates to an assembly for use in intravenous feeding. It has been common in connection with hospital services to attach a so-called "I.V." standard to a bed in which a patient was receiving intravenous feedings of one kind or another. This standard consisted simply of a T-shaped device having a central staff portion and a cross bar at the top with hooks at each end of the bar for special bottles which carry a bail adjacent the bottom surface thereof.

With increased use of intravenous feeding, it has become a practice to move patients on rolling stretchers, in beds and in wheelchairs while carrying also the intravenous standard. In addition, sometimes patients are ambulatory while still receiving the intravenous solutions, and thus they must convey a portable I.V. standard around with them when they move from the bed to the bathroom and so on.

With this arrangement, it has been a problem to stabilize the bottles that are hanging on the normal T standard. Unsafe conditions of swinging, rattling and resultant breakage have occurred from time to time which has been distressing to the patient and sometimes injurious.

It is an object of the present invention to provide an assembly which creates a safe holder for glass or plastic intravenous bottles and plastic bags for the administration of blood whether on a stationary bed staff or in use on rolling devices or for ambulatory patients.

It is a problem to provide such devices which will be adaptable to the various bottle sizes which are utilized and also to make them in such a way that the contents of the bottle can be readily observed and recorded with respect to amount. It is, therefore, an object of the present invention to provide a device which is adaptable to the standard size bottles of varying diameters which are utilized for intravenous feeding and one which is adaptable to varying standards which are used throughout the various hospitals and various sections of the country.

It is a further object of the invention to provide a device which is simple and safe and foolproof and yet readily attached without the use of special tools to any size or type of I.V. standard.

Other objects and features of the invention will be apparent in the following description and claims wherein there is set out the principle of the invention, together with the use thereof in connection with the presentation of the best mode contemplated for the invention.

Drawings accompany the disclosure and the various views thereof may be briefly described as:

FIGURE 1, an elevation of the assembly showing the various parts.

FIGURE 2, a sectional view on line 2—2 of FIGURE 1.

FIGURE 3, a side elevation of the device showing the rear side as it is viewed in FIGURE 1.

FIGURE 4, a top elevation of the device.

FIGURE 5, a partial view showing adaptability to a different bottle size.

FIGURE 6, a perspective view of one of the end clasps.

Referring to the drawings:

In FIGURE 1, an intravenous bottle supporting standard is shown having a vertical staff **20** with a T bar **21** at the top which is composed of a heavy wire having a loop **22** at each end, the loop being opened to receive a

bail **24** which supports, through an encircling metal band **26**, a bottle **28**. The bottle has a neck at the bottom thereof with a suitable stopper **30** and a feed tube **32**.

The device for stabilizing the bottle in position includes a cross clamp having a body portion **34** with a central portion **36** formed outwardly to create a semi-circular recess. The ends of the body **34** are provided with double flanges **38** and **40** parallel to each other and spaced vertically to create a rectangular recess at each end of the body. The central portion of the body **34** is also transfixed at each side of the recess portion **36** by bolts **42** which hold a V clamp **44** in a manner to span one side of a vertical staff **20**. The bolts **42** have acorn nuts **46** to protect the sharp ends thereof and also pressure nuts **48** which allow the portion **44** to be tightly engaged around a support staff **20**.

At each end of the body portion **34** is mounted a clasp member which is composed of a root portion **50** having an elongate slot **52** and flexible branch portions **54** which extend in a substantially elliptical curve outwardly with an open end gap **56**. The ends of the branches are provided with a reverse curve **58** to facilitate entry of the bottle walls into the elliptical recess. A nut and bolt combination **56–58** passes through the end walls of the body **34** and through the slot **52** to hold the root portion of the clasp member in a fixed position of adjustment relative to the central body.

The clasp member is preferably formed of a resilient plastic material which is transparent so that the graduation marks on a bottle may be observed through the member and the liquid level easily determined. With the particular elliptical shape of the root members as shown in the at-rest positions, the device is especially adapted to the use with at least three different size bottles. The standard sizes that are used 250 cc., 500 cc. and 1000 cc. FIGURE 4 shows the clasp engaging a small bottle about the diameter of the minor axis; FIGURE 5 shows the clasp engaging a larger bottle about the diameter of the major axis of the ellipse, and it will be seen that a still larger bottle could be held in the device and still be retained in a resilient clamping relationship by the inwardly curved ends **58** of the branch arms **54**.

It will thus be seen that the body portion **34** can be readily slipped on to the staff **20** of the bottle standard and screwed in place by simply using a coin in the screw slots of the bolt **42**. The clasp members may be adjusted horizontally to correspond to the position of the bail loops **22** and the device is then ready for use.

It will be seen that the device offers no obstruction or difficulty in the placing of the bottles on the standard and with a single motion, the bail **24** can be hooked onto the hook **32** and the bottle hooked into position. From then on, it is secure against unintentional swinging and cannot come in contact with the staff member **20** where it might become fractured. It is also easily observed throughout its entire length so that the attendant can at all times know the liquid level therein.

The device consists of materials having characteristics and properties of self-extinguishment, corrosion and chemical resistant and feasible for autoclaving.

In the appended claims, I have attempted to delineate the novelty of my device over known prior art for the purpose of defining the protected area as well as notifying the pulic relative to the unprotected area. However, I do intend by this claiming to cover any colorable variations, reversal of parts, or equivalents of the device which are within the scope and spirit of this disclosure and not anticipated by the prior art.

What is claimed as new is as follows:

1. An assembly for use in intravenous feeding which comprises:

(a) a standard in the form of a T-shaped support having

a vertical staff and a bottle support loop at each end of the horizontal bar of the T,

(b) a cross-clamp having a body portion with a central area recessed to receive a portion of the vertical staff and a pair of parallel horizontal flanges extending to each side of said recess,

(c) means releasably movable toward said central area to lock said cross clamp on said vertical staff,

(d) a bottle clasp at each end of said body portion comprising a root portion slidably received in each of said pairs of flanges and flexible branch portions positioned to resiliently embrace an inverted intravenous supply bottle supported on a loop of said standard, and

(e) means to position said root portion of said bottle clasp in one of a plurality of positions of horizontal adjustment in a pair of flanges to accommodate various T-bar widths and bottle sizes.

2. An assembly as defined in claim **1** in which the branch portions of the bottle clasp are formed with an at-rest position in substantially elliptical shape with digital ends spaced and curved slightly outwardly to permit bottles having diameters equal to the minor and the major axis and larger than the major axis to be securely engaged.

3. An assembly as defined in claim **1** in which the branch portions of the bottle clasp are formed of material to permit observation of liquid level in said bottles even when the level is within the vertical area covered by said branch portions.

4. An assembly as defined in claim **1** in which the root portion of each of said bottle clasps is slotted horizontally, and said means to position said root portion comprises a clamping screw anchored in said body portion between said flanges.

References Cited by the Examiner

UNITED STATES PATENTS

988,912	4/1911	Tompkins	248—125 X
2,696,963	12/1954	Sheperd	248—229
2,957,187	10/1960	Raia	5—317
3,091,342	5/1963	Crump	211—71
3,178,144	4/1965	Kimoto	248—229

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