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Perl

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[54] **APPARATUS WITH DISPOSABLE PARTS FOR RAPID SUCCESSIVE ADMINISTRATION OF ENEMAS TO GROUPS OF PATIENTS**

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[52] **U.S. Cl.** **128/227**
[51] **Int. Cl.** **A61m 3/00**
[58] **Field of Search** 128/227

[56] **References Cited**

UNITED STATES PATENTS

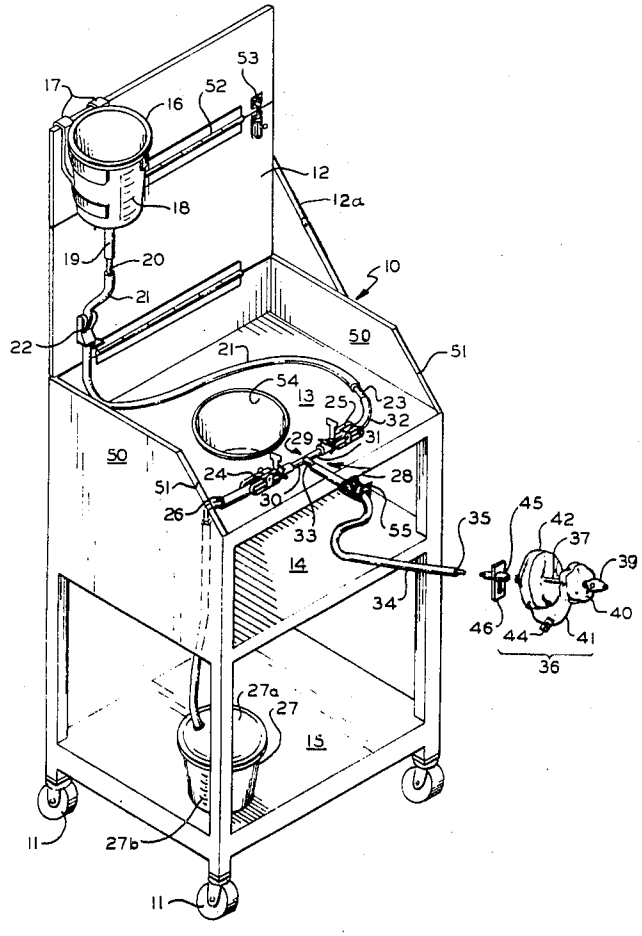
1,746,510	2/1930	Adamson	128/227
3,316,910	5/1967	Davis	128/227
1,572,043	2/1926	Schellberg	128/227

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[57] **ABSTRACT**

Apparatus for administering enemas to patients in geriatric wards and nursing homes for the aged includes a wheeled cart having a receptacle for liquids to be administered and a slop jar for liquids excreted by patients during relief pauses in the administration. A disposable tip having a novel clamp for holding it in place is connected through a disposable T-section of tubing to tubing from the supply receptacle and also to tubing to the slop jar. Shut-off valves secured to the cart comprise a first shut-off valve in the tubing leading from the supply to the T-section, a second shut-off valve in the tubing between the T-section and the slop jar, and a third shut-off clamp valve adapted to receive a flexible leg of the T-section therein, the tubing from the supply being adapted to be connected to this flexible section. The tubing to the slop jar is adapted to be connected to another leg of the T-section, and the third leg of the T-section includes flexible tubing adapted to be connected to the disposable tip. The third shut-off clamp valve is always closed before reverse flow from patient to slop jar takes place whereby contamination of the tubing from the supply is prevented, the T-section and tip are disposable, and contamination of the tubing to the slop jar is immaterial.

3 Claims, 5 Drawing Figures



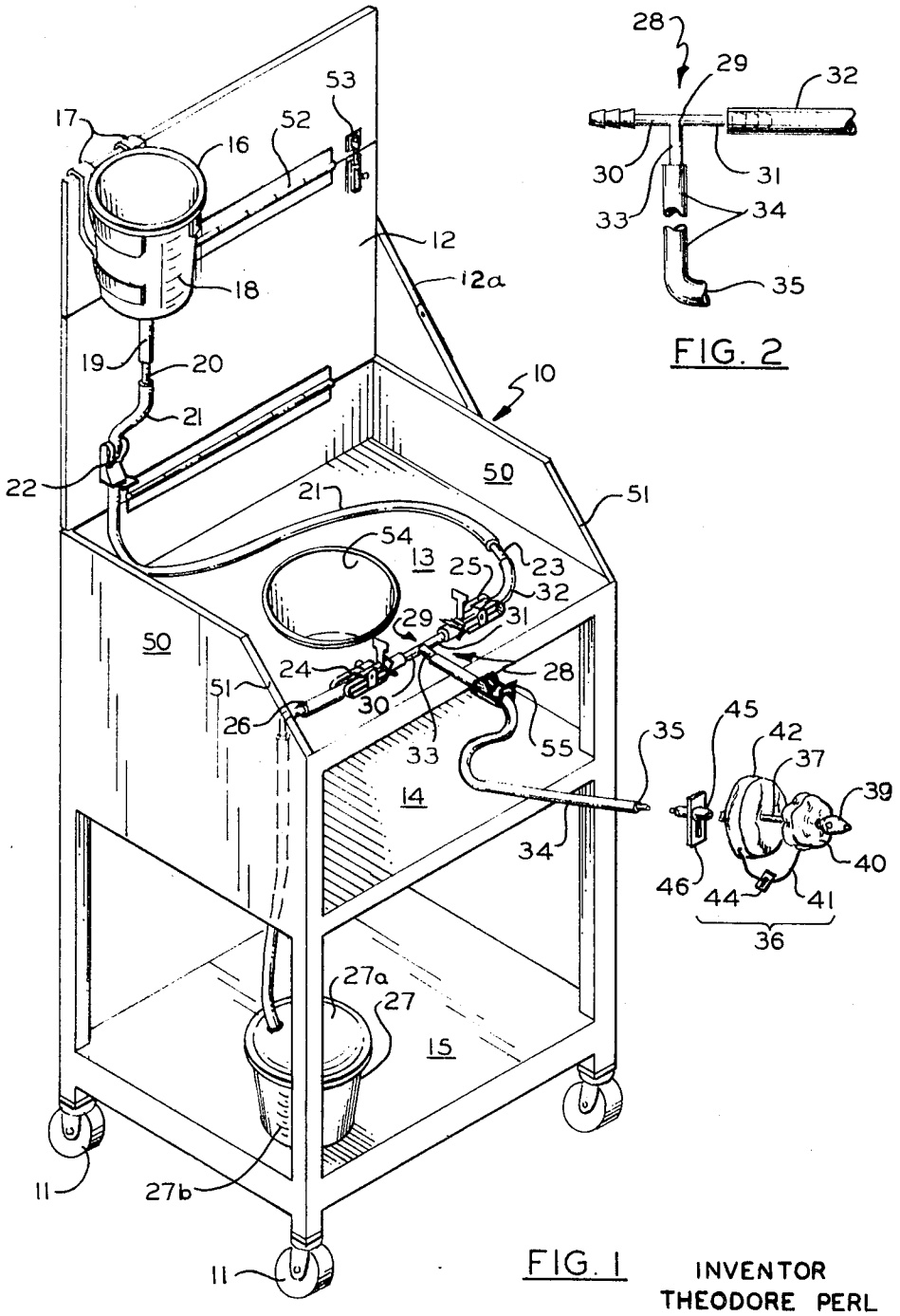


FIG. 1

FIG. 2

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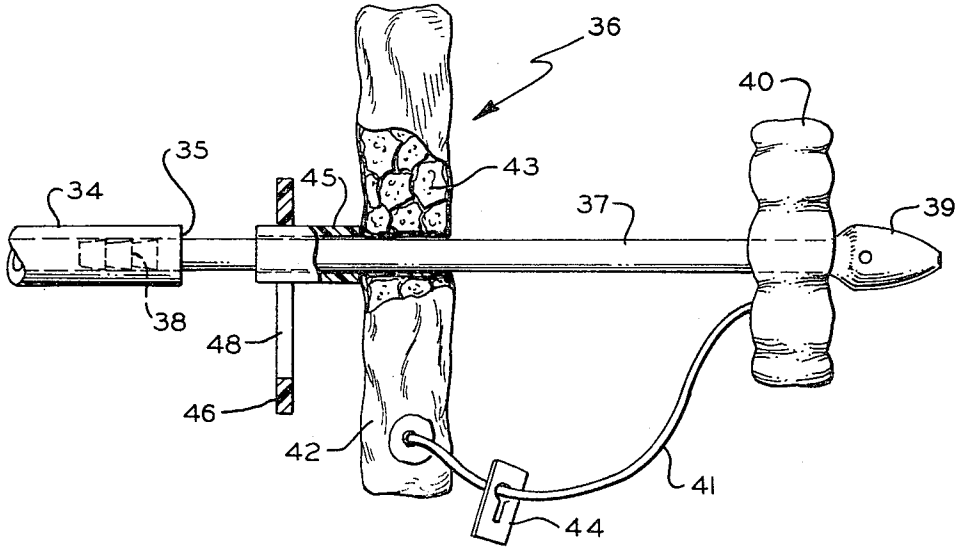


FIG. 3

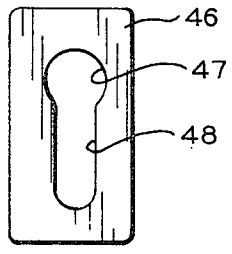


FIG. 4

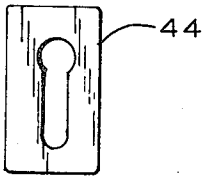


FIG. 5

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APPARATUS WITH DISPOSABLE PARTS FOR RAPID SUCCESSIVE ADMINISTRATION OF ENEMAS TO GROUPS OF PATIENTS

BACKGROUND OF THE INVENTION

This invention relates to surgery equipment for administering douche-type medication and relates more particularly to a cart for carrying a fluid supply receptacle, a slop jar for receiving contaminated fluid from the patient, tubing, including an enema tip, for conducting fluid from the supply receptacle to the patient, and valves secured to the cart and arranged for preventing contamination of certain portions of the tubing, other tubing portions, including the tip, being economically obtainable so as to be disposable after each use.

Many geriatric patients, especially those who are bedridden, require daily enemas for their proper treatment. This is time-consuming and, since skilled personnel should be used, apparatus which can be easily and quickly moved from patient to patient ready for use has long been needed. Disposable tips and tubing are now obtainable but the problem of moving stands, enema bags and tubing from bed to bed is time-consuming.

In the proper administration of enemas it is almost always necessary to pause from time to time in the administration of fluids and frequently it is necessary to allow the return flow of some fluids from the patient in order to obtain relief. This causes problems in contamination of the tubing and possible contamination of fluids in the supply receptacle.

The primary object of the invention, accordingly, is to provide mobile equipment and an arrangement of shut-off valves preventing contamination of the fluid supply tubing and receptacle so that a minimal length of tubing has to be disposed of after each patient has been treated and so that a single supply of fluids may be used for a plurality of patients without risk of contamination.

Satisfactory tips for geriatric patients are now obtainable but means for retaining them in place during treatment are difficult and time-consuming to use. Another object, therefore, is to provide easily used and quickly adjustable retaining means for the tip.

SUMMARY OF THE INVENTION

The invention contemplates a wheeled cart which can be rapidly moved from bed to bed. The cart is adapted to support, in elevated position, a large supply receptacle adapted to contain enough liquid to be administered to a plurality of patients. It also has a lower shelf near the floor adapted to carry a covered slop jar for receiving contaminated fluid released from the patient for relief during the treatment. Tubing from the supply receptacle to a front central area of a top shelf on the cart is provided with a first shut-off valve located near the receptacle and tubing from the central area to the slop jar has a second shut-off valve located on the top shelf. A T-arrangement of tubing having one leg connectable to the tubing to the slop jar, a second leg at least in part of soft flexible plastic tubing connectable to the tubing from the supply receptacle, and a third leg which is at least in part of soft flexible plastic tubing connectable to a disposable tip, is provided for the central area of the table top. A third clamp-type shut-off valve is located in this area adapted to have the soft flexible plastic tubing of the T-arrangement second leg pass therethrough before being connected to the tubing from the supply receptacle.

The T-arrangement is entirely of plastic tubing and can be economically obtained so as to be disposed of after use with a single patient. All three shut-off valves are preferably secured to the cart so that the T-arrangement may be quickly connected in place and disconnected.

The disposable tip which is economically obtainable, has a relatively hard plastic tubing shaft having its proximal end quickly connectable to the soft plastic flexible tubing of the T-arrangement second leg by inserting it therein and has its other distal end terminating in an acorn-shaped, bluntly pointed enlargement for insertion in the anus of a patient. A rubber-like annular balloon is secured normally uninflated on the shaft proximally of the enlargement.

A sponge encased in an airtight plastic envelope is made in an annular form and is slideably carried on the shaft proximally of the balloon for inflating the balloon internally of the patient, the interior of the sponge casing being connected by plastic tubing to the interior of the balloon. This arrangement is to secure the enlarged end of the tip within the rectal chamber of elderly patients whose anal muscles usually have become weak. A clamp plate with a keyhole aperture is carried threaded on the balloon inflating tubing so that the tubing can be pinched in the narrow portion of the aperture when the balloon has been inflated.

The encased sponge has a short neck of soft, flexible plastic material around the tip shaft proximally of the sponge and this neck is threaded through another larger clamp plate with keyhole aperture so that the sponge may be slid distally of the shaft against the patient after the balloon has been inflated and locked in place by pinching the neck in the narrow portion of the clamp aperture to keep the tip in place.

The tip and its novel lock means are entirely of plastic material and can be economically provided so as to be disposable after a single use.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a cart constructed according to the invention and showing a partially exploded view of an improved tip according to the invention;

FIG. 2 is a plan view of the disposable T-arrangement of tubing shown in FIG. 1;

FIG. 3 is a side-elevational view partly in section of the improved disposable tip shown in FIG. 1; and

FIGS. 4 and 5 are plan views of the locking plates of FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. 1, the four-legged cart **10** has casters **11** for mobility, a hinged lid **12**, a top shelf **13** about bed-high, a utility shelf **14** therebelow, and a bottom shelf **15** near the floor. The lid **12** may have means **12*a*** for locking it in raised position.

A liquid supply receptacle **16** is provided with bracket arms **17** adapting the receptacle to be hung elevated from the top edge of the lid when it is open. Receptacle **16** preferably is transparent and has a scale **18** printed thereon enabling the operator to readily determine the amount of liquid administered to a patient. A tubular outlet **19** from the bottom of receptacle **16** is

connected by a nipple 20 to a length of soft flexible supply tubing 21 which runs through a wellknown type of shut-off clamp valve 22 secured to lid 12 to a central area at the front of shelf 13 where it terminates in a nipple 23.

Two of another wellknown type of shut-off valve clamps 24 and 25 are secured in spaced relation to the front center area of shelf 13 and flexible ejection tubing 26 through valve clamp 24 extends down to a slop jar 27 on bottom shelf 15. The slop jar 27 preferably has a cover 27*a* and is preferably transparent with a scale 27*b*.

As will be hereinafter apparent, valves 22 and 24 and tubing 21 and 26 may be of any desired type.

A disposable T-arrangement of tubing 28 is provided supported mainly on shelf 13 between clamps 24 and 25. The T-arrangement comprises a tee 29 of relatively hard plastic material having one leg 30 connected to tubing 26 by being inserted nipple-wise in the upper end of the tubing and comprising one leg of the T-arrangement. Another leg 31 of the tee is inserted nipple-wise into a short section 32 of soft plastic tubing running through the valve clamp 25 and whose other end is connected by nipple 23 to the tubing 21. Leg 31 and tubing 32 comprise a second leg of the T-arrangement.

A third leg of the T-arrangement is formed by a third leg 33 of tee 29 inserted nipple-wise in a relatively long section of flexible plastic tubing 34 adapted to be connected at 35 to a disposable tip 36 shown partially exploded in FIG. 1.

Referring to FIG. 3, the tip 36 comprises an elongated tubular shaft 37 extending from a proximal end 38 adapted to be connected nipple-wise to the end 35 of tubing 34 to its distal end which is provided with the usual blunt-pointed acorn-shaped enlargement 39 adapted to be inserted in the patient.

Secured to shaft 37 just proximally of enlargement 39 is a collapsible annular balloon 40 of resilient material, shown inflated. The balloon 40 is connected by a flexible tube 41 to an airtight flexible casing 42 around a sponge 43. The sponge and its casing are novel in that they are annular and are slideably carried on shaft 37 proximally of balloon 40. A locking plate 44 with a keyhole-shaped aperture is strung on the tube 41 so that, when the balloon 40 is inflated by squeezing sponge 43, the tube 41 may be closed by sliding the tube down into the narrow portion of the aperture.

A novel means for locking the tip 36 in position after the balloon has been inflated is comprised by the flexible neck 45 which projects proximally from the sponge casing 42 around the shaft 37. The neck 45 carries another locking plate 46 having a keyhole-shaped aperture, the neck normally extending through the round enlarged end 47 of the aperture. When the sponge 43 in its casing is slid distally on shaft 37 against the patient it may be locked in place by forcing neck 45 down into the narrow portion 48 of the aperture. Casing-enclosed sponges have heretofore been used as balloon inflating means but the concept of using the annular encased sponge as a retainer is novel.

It will also be noted that the sides 50 of the cart 10 above the shelf 13 have been beveled at their front corners 51 to provide the patient with easier access to the shut-off valve 24 so that the patient can open this valve for relief when the valve 25 is closed.

To cover the front edge of shelf 13 the lid 12 is provided with another hinge 52, as shown, and lid 12 is provided with one or more bolt locks 53 to immobilize hinge 52 when the receptacle 16 is in place.

Shelf 13 is also provided with a central recess in which a drip pan 54 may be placed and a normally open fourth shut-off clamp valve 55 on the soft tubing section 34 is provided for purposes which will hereinafter be explained.

In operation, receptacle 18 is hung from the raised lid and filled with the desired fluid or fluids, clamp 22 being closed. A new T-arrangement 28 of tubing is installed in place, leg 30 being inserted in the upper end of tubing 26, the soft tubing section 32 being strung through the open clamp valve 25 and connected to the nipple 23, and the longer section 34 of soft tubing being connected to the end 38 of shaft 37 of a new tip 36.

Valves 25 and 24 are then closed and valve 22 is opened. Usually it is preferable that the end 39 of tip 36 be held over the pan 54 while valve 25 is briefly opened to fill the tip with fluid.

The operator then inserts the end 39 of the tip 36 and the deflated balloon 40 in the patient, inflates the balloon 40 by compressing the sponge 43 and closes the tube 41 by applying the clamp 44. The tip is then withdrawn to move the balloon against the inner aspect of the anus and the sponge 43 in its case 42 and the attached neck 45 are then slid along shaft 37 against the patient and clamp 46 applied to lock the sponge against the patient. The operator then notes the level of fluid in the receptacle on the scale 18 and opens valve 25.

As intervals, as is usual, the valve 25 is closed and, if the patient complains of discomfort, valve 24 may be briefly opened by the operator or the patient. After a pause, the valve 25 is again opened and administration of the fluid is thus continued until the prescribed volume of fluid is administered. The operator, in calculating this volume by reading scale 18, may also observe the level shown on scale 27*b* to calculate the amount of fluid ejected.

After the administration is complete, valves 25 and 24 are closed and the normally open clamp 55 is slid along tube 34 adjacent shelf 13 and closed. Tube 34 is then disengaged from leg 33 of the tee and the patient moves to the toilet carrying with him the tip and tube 34. Alternatively, the patient may be moved to a bedpan and the tip and tube 34 or the whole T-arrangement 26 removed, clamp 44 being removed to deflate the balloon and clamp 46 released if necessary.

Tip 36 is disposed of in any convenient receptacle and the tee 29 and attached tube 32 disengaged from nipple 23 and tubing 26 and disposed of after closing valve 22 and opening valve 25. The end of tube 21 and nipple 23 may be placed in the drip pan 54 to avoid the leaking of fluid onto shelf 13 and the slop jar 27 is replaced and removed for emptying by an assistant.

After installing a new T-arrangement 28 and attaching a new tip 36, the cart 10 may then be moved to a new location for treating another patient.

It will now be apparent that a single trained operator will be able to treat a whole ward of patients in a greatly decreased amount of time by using the cart 10.

I claim:

1. Apparatus for rapid successive administration of enemas to groups of patients, including a moveable support structure having shelf means at substantially bedside heighth, elevated means thereabove for sup-

porting a supply receptacle of fluid to be administered, support means below the shelf means carrying a slop jar, ejection tubing leading from the shelf means to the slop jar and including an ejection shut-off valve secured to the shelf means, supply tubing including a first supply shut-off valve leading from the supply receptacle to the shelf means and terminating in a nipple, a second clamp-type supply shut-off valve secured to the shelf means adjacent the ejection shut-off valve, a tee having one leg adapted to be connected to the ejection tubing through the ejection shut-off valve, a relatively short length of elastic tubing connected at one end to a second leg of the tee and threaded through the clamp type supply shut-off valve, the nipple at the end of the supply tubing being connected to the other end of the short length of tubing, a relatively long length of flexible tubing connected at one end to the third leg of the tee and connected at its other end to an elongated tubular shaft of an enema tip the distal end of the shaft terminating in a bluntly pointed enlargement, an inflatable annular balloon of flexible material secured around the shaft proximally of the enlargement, an annular sponge carried on the shaft proximally of the balloon, the annular sponge being totally encased in an airtight flexible casing whose interior is connected to the interior of the balloon by flexible tubing, means for locking the casing to balloon tubing closed, and means for thereafter locking the casing enclosed sponge against the patient, whereby the apparatus is adapted for use with geriatric patients, the tee, the short length of elastic tubing, the long length of flexible tubing and the tubular shaft, sponge and balloon of the enema tip all being made of economically made plastic material so as to be disposable parts and thrown away after treating one patient so that like parts may be substituted for treating the next patient.

2. Apparatus for rapid successive administration of enemas to groups of patients, comprising: a wheeled cart having a top shelf substantially at bed heighth and at least one lower shelf, means on the cart for supporting a receptacle for fluids to be administered elevated above the top shelf, supply tubing terminating in a supply nipple for conducting fluid from the receptacle to the level of the top shelf, a first shut-off valve in the supply tubing, a slop jar on the lower shelf, ejection tubing for conducting ejected fluids from the level of the top shelf to the slop jar, a second shut-off valve secured to the top shelf for cutting off flow of fluids through the ejection tubing, a third shut-off clamp valve secured to the top shelf spaced from the second valve, a T-arrangement of tubing mainly supported on the top shelf and having a first leg adapted to be connected to the ejection tubing as a nipple near the second valve, the T-arrangement having a second leg at least in part of soft flexible tubing adapted to be operatively passed through the third clamp valve and whose end is adapted to be connected to the terminal nipple of the supply tubing, the T-arrangement having a third elongated leg at least in part of flexible tubing, and an enema tip attached to the end of the flexible tubing of the third leg, the tip having an elongated tubular shaft having its distal end terminating in a bluntly pointed enlargement, an inflatable annular balloon of airtight flexible material secured around the shaft proximally adjacent the enlargement, an annular sponge totally enclosed in an airtight flexible annular casing slideably carried on the shaft proximally of the balloon, a short section of small flexible tubing connecting the interior of the casing and the interior of the balloon for inflating the balloon by squeezing the sponge, a first lock plate having a keyhole-shaped aperture, the small flexible tubing passing through the aperture, the sponge casing having an annular neck around the shaft projecting proximally therefrom, and a second lock plate having a keyhole shaped aperture, the neck and shaft passing through the aperture of the second lock plate, whereby, after insertion of the tip the balloon may be inflated and locked inflated by pinching the small tube in the narrow portion of the slot of the first lock plate, the sponge being then slid adjacent the patient and locked in place by pinching the neck in the narrow portion of the slot of the second lock plate.

3. Apparatus as defined in claim **2** wherein the third elongated leg of the T-arrangement carries a normally open fourth shut-off valve, whereby the fourth valve may be closed prior to disconnecting the T-arrangement from the cart and removing the tip from the patient and at least part of the third leg then disconnected from the cart so that the patient may be moved prior to removing the tip.

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