United States Patent

Abel

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[54] SUPPORT DEVICE FOR FLUID RECEPTACLES

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[22] Filed: **Aug. 7, 1970**

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Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 741,673, July 1, 1968, Pat. No. 3,548,827.

[52] **U.S. Cl.** ..... **248/312,** 128/275, 211/81, 224/45 AA, 248/215

[51] **Int. Cl.** **A61m 27/00**

[58] **Field of Search** ..... 248/312, 311, 210, 211, 214, 248/215, 240; 211/71, 72, 74, 75, 81, 116; 224/45 A, 45 AA; 128/275, 295; 294/87.28

[56] **References Cited**

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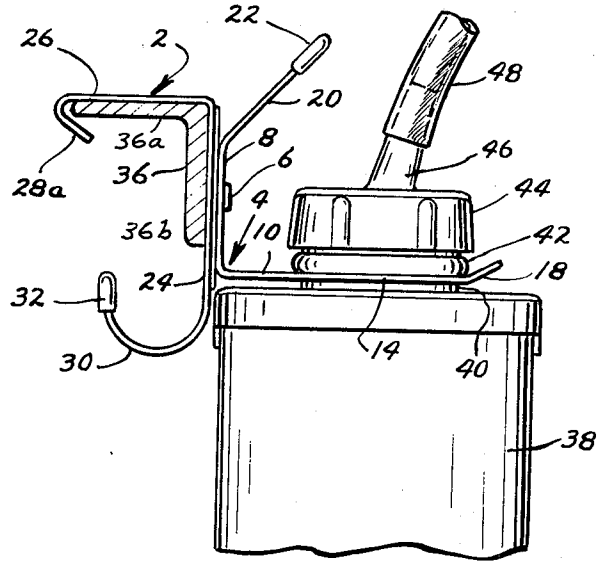
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Primary Examiner—J. Franklin Foss
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[57] **ABSTRACT**

A support device for fluid receptacles, particularly for holding body fluid collecting receptacles at the edge of a hospital bed, comprised of a right angle bracket including means for engaging and holding a liquid receptacle in an upright position, and a mounting plate to which the receptacle holding bracket is pivotally connected. The mounting plate includes flange means at one end thereof for removably attaching the support device to a bed frame member having flat or planar wall elements, and an arcuate hanger at the opposite end thereof for suspending said support device on a round frame member of a wheeled stretcher or wheel chair. The mounting plate may be rotatably adjusted with respect to the receptacle holding bracket to bring either the flange attachment means or the arcuate hanger into position to engage a frame member, the pivotal connection between the receptacle holder bracket and the mounting plate further permitting the mounting plate to pivot to various angular positions with the frame member to which it is attached while the receptacle holding bracket remains in its normal position of use to thereby continuously support a liquid receptacle in an upright position so that its contents will not be spilled.

5 Claims, 7 Drawing Figures



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SHEET 1 OF 2

FIG. 1

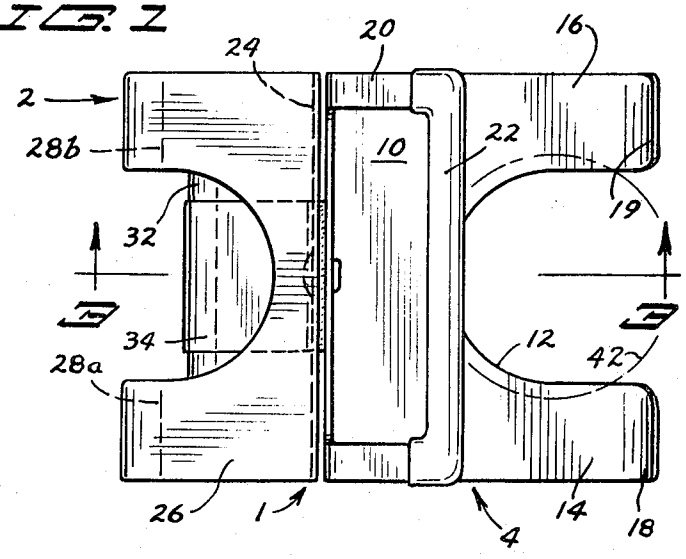


FIG. 2

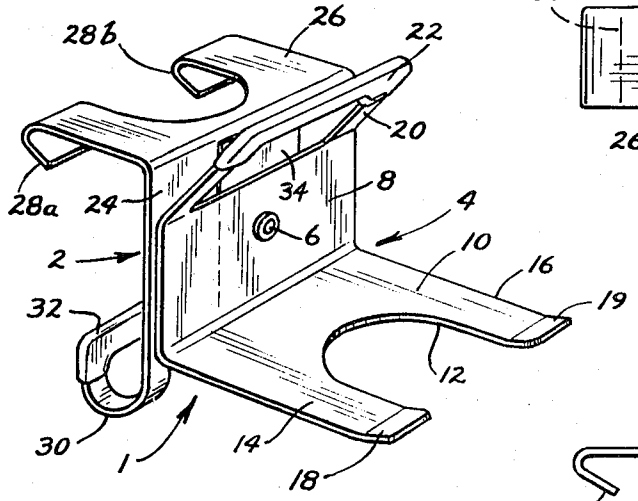
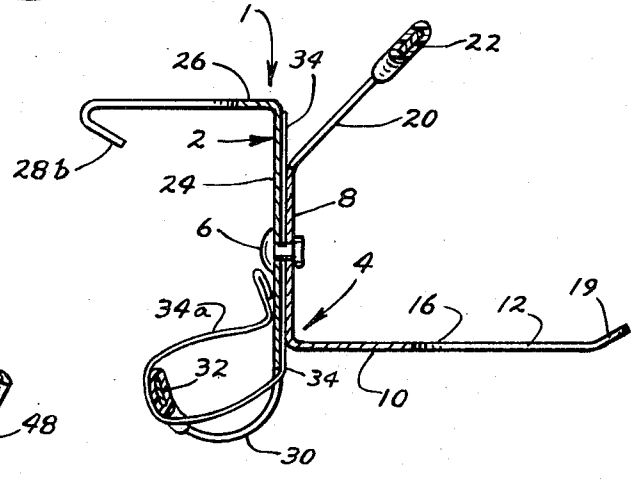


FIG. 3



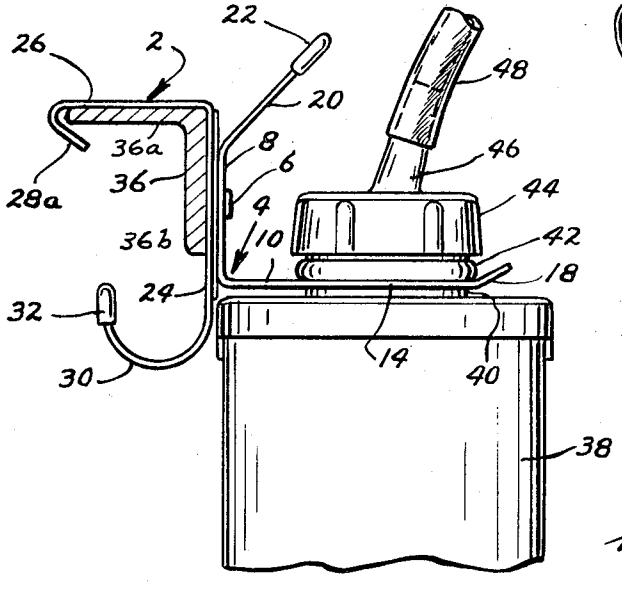


FIG. 4

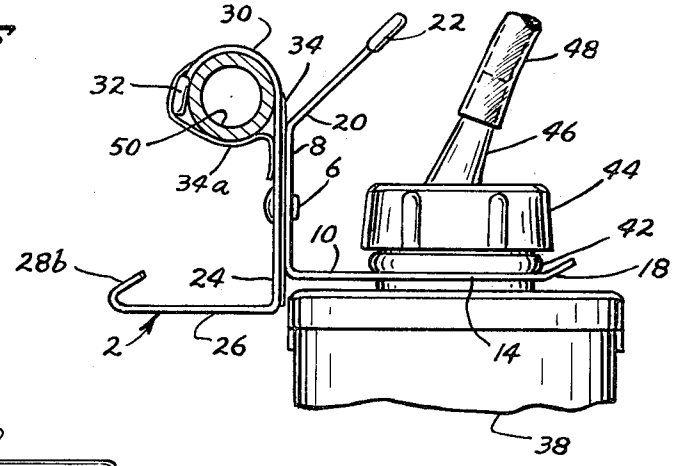
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FIG. 5



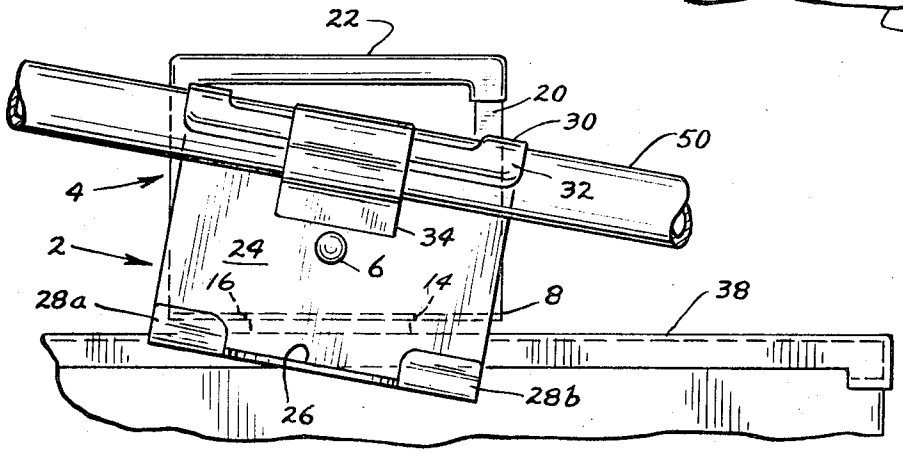


FIG. 6

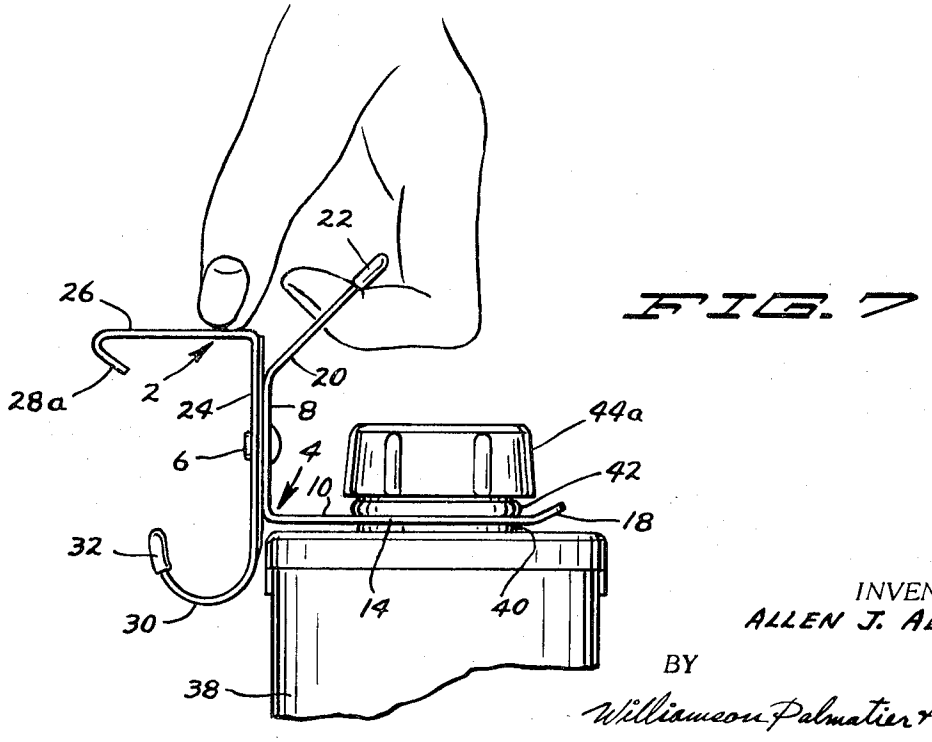


FIG. 7

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SUPPORT DEVICE FOR FLUID RECEPTACLES

This application is a continuation-in-part of my copending application filed on July 1, 1968 under Ser. No. 741,673 now U.S. Pat. No. 3,548,827 and entitled "Body Fluid Drainage and Collecting Apparatus".

SUMMARY OF THE INVENTION

The receptacle support device of this invention is particularly characterized by a receptacle holding bracket and a mounting plate so constructed and arranged with respect to each other as to permit the support device to be removably suspended on either a angular bed frame member having planar wall elements or a round frame member as might be found on a wheel chair or wheeled stretcher for transporting patients, while insuring that the receptacle holding bracket will always be positioned to support a liquid receptacle in an upright position regardless of the angular disposition or inclination of the frame member to which the mounting plate is attached.

These basic objectives are realized by utilizing a swivel connector to attach a receptacle support bracket to a mounting plate provided with attachment means for removable mounting on a frame member, such as a bed frame, the swivel connector defining a horizontal axis about which the mounting plate may rotate or pivot to conform to the angle of inclination of the frame member to which it is attached, with the receptacle support bracket remaining in its normal position of use wherein is is effective to hold a liquid containing receptacle in a perfectly upright position at all times.

As a particularly advantageous feature of my invention, the aforesaid mounting plate is provided at one end thereof with an integral flange adapted to removably engage a right angle frame member of a bed frame, the opposite end of the mounting plate terminating in an arcuately shaped hanger which may be utilized for suspending the support device on a round frame member such as would normally be found on a wheeled stretcher or wheel chair. By rotating the mounting plate 180° on its swivel connection with the receptacle support bracket, the arcuate hanger may be brought into a position wherein it opens downwardly and thus may be employed to suspend the support device on a round frame member.

A further beneficial aspect of my improved receptacle support device resides in the incorporation of a gripping handle on the upper end of the receptacle support bracket, whereby the support device may be utilized to transport a liquid containing receptacle after detaching the mounting plate from the frame member on which it is suspended. In the preferred form of my invention, the receptacle support bracket is of right angle configuration and includes an upright wall member privotally attached to the mounting plate and having the aforesaid gripping handle formed on the upper end thereof. A planar arm projecting horizontally from the upright member of the support bracket is formed with a recess therein between two horizontally projecting fingers on which the neck of a liquid receptacle may be supportably engaged.

These and other objects and advantages of my invention will become readily apparent as the following description is read in conjunction with the accompanying drawings wherein like reference numerals have been used to designate like elements throughout the several views.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top, plan view of the support device of this invention;

FIG. 2 is a perspective view of the receptacle support device;

FIG. 3 is a vertical section view of the support device taken long lines 3—3 of FIG. 1;

FIG. 4 is a side elevation view showing the support device being utilized to support a liquid receptacle on a bed frame;

FIG. 5 is a side elevation view showing the manner in which the support device may be utilized to suspend a liquid receptacle on a round frame member;

FIG. 6 is an end view of the support device and receptacle apparatus of FIG. 5 showing the inclined orientation of the round frame member on which the support device is suspended; and

FIG. 7 is a side elevation view showing the manner in which a handle on the support device may be gripped for transporting a fluid receptacle.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, I have shown in FIGS. 1, 2 and 3 a preferred embodiment of the unique receptacle support device of this invention, which has been designated generally by reference numeral 1. Support device 1 is comprised of a mounting or base plate 2 and a receptacle holder 4 pivotally attached thereto by means of a swivel fastener 6. Receptacle holder 4 preferably takes the form of a right angle support bracket having an upwardly extending wall member 8 and a horizontally projecting receptacle support arm 10 extending at right angles therefrom. Support arm 10 is a planar member and is provided with a recess 12 defined between two, forwardly extending fingers 14 and 16 provides a receptacle receiving and holding means which engages the neck of a receiving vessel in a manner hereinafter explained. The outer ends 18 and 19 of fingers 14 and 16 are turned upwardly to assist in holding a liquid receptacle in place on support arm 10.

Upright wall member 8 of support bracket 10 terminates at its upper end in a gripping handle 20, apertured as is clearly shown in FIG. 1 to provide a gripping space for the fingers of a persons hand, the top, horizontal gripping element of handle 20 being covered with plastic material 22 to provide a relatively soft, rounded gripping surface. Handle 20 angles upwardly and outwardly from wall member 8 to thereby avoid interference of the carrier's fingers with mounting plate 2.

Mounting plate 2 has an upright plate portion 24 coextensive with upright wall member 8 of support arms 4 and connected thereto by means of swivel fastener 6. It will be noted that swivel fastener 6 defines a horizontal axis about which mounting plate 2 may be pivoted or rotated relative to receptacle holder 4. At one end of mounting plate 2 there is provided attachment means constructed and arranged to engage a bed frame member having planar wall elements angularly disposed with respect to each other. This attachment means advantageously takes the form of a horizontal flange 26 depending at right angles from upright plate portion 24 of mounting plate 2 and formed integrally therewith. Hooked end portions 28*a* and 28*b* at the outer extremities of flange 26 are utilized to restrainably engage mounting plate 2 with a frame member having planar wall elements. At its opposite end, plate portion 24 of mounting plate 2 is formed to provide an arcuate hanger 30, which is also coated along its upper edge portion with a plastic material 32. Arcuately shaped hanger 30 is utilized to suspend hanger device 1 on a frame member of round cross section in a manner explained below. Hanger device 1 is also provided with a pressure-sensitive adhesive strip 34 affixed to the forward face of mounting plate portion 24 and having its other, normally loose end 34a wrapped around the outer, horizontal edge of arcuate hanger 30 and affixed to the back face of plate portion 24 of mounting plate 2 when not being used. The manner in which adhesive strip 34 is utilized is explained below with respect to FIGS. 5 and 6.

I have found that mounting plate 2 and receptacle holder 4 may be satisfactorily formed for the purposes intended as metal stampings, these two pieces being initially formed from the same dies for economy and manufacturing convenience. For this reason, flange 26, like support arm 10 of bracket 4 is formed with an arcuate recess therein; and arcuate hanger 30, like handle 20 is initially of rectangular shape with a central aperture therein. As a final forming step, hanger 30 is rolled over to provide the arcuate hanger shape shown.

In FIG. 4 I have illustrated the manner in which my hanger device may be utilized to support a fluid receptacle on a bed frame. The bed frame has been indicated by reference numeral **36** and is of the commonly employed, angle iron configuration having planar wall elements **36a** and **36b**. Mounting plate **2** is removably attached to frame member **36** by hooking end portions **28***a* and **28***b* of attachment flange **26** over the longitudinal edge of flat frame element **36***a* in the manner shown in FIG. **4**. With mounting plate **2** suspended in this manner, arcuate hanger **30** will be in an upwardly opening, U-shaped configuration in its position of nonuse. A liquid receptacle **38** is supported on bracket arm **10** by inserting neck **40** thereof between support fingers **14** and **16** with collar or enlarged annular portion **42** of neck **40** overlying and resting upon fingers **14** and **16** as well as on the top of horizontally extending arm **10**. The overlying, abutting engagement of receptacle collar **42** with the top surfaces of arm **10** and fingers **14** and **16** is illustrated in phantom lines in FIG. **1**. Receptacle **38** has a top closure cap **44** which engages neck **40**, and which is provided with a tubular connecting stem **46** to which a flexible drainage tube **48** is connected. When suspended on support device **1** from a bed frame **36** in the aforesaid manner, receptacle **38** may be effectively utilized to receive body fluids draining from a patient resting on a bed supported on frame **36**. Tubular connecting stem **46** for receptacle **38** is actually a swivel connector, the structure and arrangement of which with respect to closure cap **44** is more fully disclosed in my aforesaid copending application filed on July **1**, 1968, under Ser. No. 741,673. By supporting receptacle **38** at an elevated position on bed frame **36**, in contrast with the common practice of placing liquid receiving vessels on the floor adjacent the patient's bed, the problem of inadvertently upsetting the collecting bottle or receptacle by persons attending the patient is obviated. Pivotal connection **6** between mounting plate **2** and receptacle holder **4** serves the very important function of preventing the tipping of receptacle **38** in the event that bed frame **36** is inclined to elevate the head or foot of the patient's bed by articulating means with which most hospital beds are now equipped. Mounting plate **2**, being firmly secured to bed frame **36**, will rotate therewith about the horizontal axis of swivel connector **6** as bed frame **36** is inclined to various positions to elevate either the head or foot thereof. As mounting plate **2** is pivoted by the bed frame, receptacle support bracket **4** will remain stationary with support arm **10** remaining in the substantially horizontal position shown in FIG. **4** to thereby hold receptacle **38** in the desired upright position, thereby preventing the tipping of receptacle **38** and the spilling of its contents.

The manner in which my unique support device operates to hold a liquid container or receptacle in an upright position on an inclined frame member is further illustrated in FIGS. **5** and **6**. Anticipating that there will be many occasions where it would be necessary and desirable to have some means of supporting a body fluid receptacle on a wheel chair or wheeled stretcher on which a patient is being transported, I have provided arcuate hanger **30** on one end of mounting plate **2** to permit support device **1** to be suspended on one of the round frame members normally found on such conveyances. In order to render support device **1** effective to suspend liquid receptacle **38** on a frame member of round or circular cross section, as is illustrated with respect to member **50** in FIGS. **5** and **6**, it is only necessary to pivot mounting plate **2** through an arc of 180° on a swivel connector **6**. This will have the effect of rotating arcuate hanger **30** to the upwardly disposed position shown in FIGS. **5** and **6** wherein it opens downwardly and may be hooked over the top of round frame member **50** in the manner shown in FIGS. **5** and **6** to suspend receptacle holder **4** thereon. Plastic coating **32** on the outer end of arcuate hanger **30** assists in holding hanger **30** in firm engagement with frame member **50**. As may be noted most clearly with respect to FIG. **6**, mounting plate **2** may be pivoted about swivel connector **6** with respect to upright wall member **8** of receptacle holder **4** to conform to the angle of inclination of supporting frame member **50** for engagement therewith. With upright wall member **8** of receptacle holder **4** maintained in the substantially upright position shown in FIG. **6**, bracket support arm **10** for receptacle **38** will stay in the horizontal position shown, thereby holding receptacle **38** in the upright position shown in FIGS. **5** and **6**. For purposes of illustration, I have shown receptacle **38** in the form of a rectangular vessel. Annular collar or protuberance **42** on neck **40** of receptacle **38** will engage and be supported on fingers **14** and **16** of bracket arm **10** in the same manner described above with respect to FIG. **4**. The side frame members of wheel chairs and mobil cots or stretchers are frequently inclined as is illustrated in FIG. **6** with respect to frame member **50**. In order to further insure that there will be no downward, sliding movement of arcuate hanger **30** along frame member **50** as receptacle **38** becomes loaded and weighted with fluid, end **34***a* of pressure-sensitive adhesive strip **34** is wrapped around frame member **50** in the manner indicated in FIGS. **5** and **6**. With one end of adhesive strip **34** still attached to the front face of plate portion **24** of mounting plate **2**, the other end **34***a* of strip **34** is wrapped tightly around frame member **50** in the manner shown in FIGS. **5** and **6**. End **34***a* is then again attached to the back face of plate portion **24** of mounting plate **2** to assist in holding it in place.

The manner in which handle **20** may be utilized for carrying a receiving vessel or receptacle by means of support device **1** is illustrated in FIG **7**. With receptacle **38** in place on support arm **10**, mounting plate **2** is disengaged from the frame member on which is was supported and handle **20** is grasped by inserting the fingers therethrough in the manner shown in FIG. **7**. The support device may be stabilized against tipping by exerting thumb pressure against the top surface of flange **26** of mounting plate **2**. Plastic coating **22** on handle **20** insures a comfortable grip for the fingers of the person carrying receptacle **38**.

Based on the foregoing description, and accompanying drawings, it will be appreciated that the receptacle support device disclosed herein may be utilized very effectively to perform a number of important functions. The provision of arcuate hanger **30** in combination with hooked attachment flange **26** permits the support device to be removably attached to either an ordinary bed frame of angular shape or to a round frame member on a wheel chair or wheeled stretcher. Whichever supporting means is employed, bracket support arm **10** will always remain in a horizontal position to hold a liquid receiving vessel in an upright position regardless of the position to which mounting plate **2** is pivoted on the frame member to which it is secured. As noted above, handle **20** may be effectively utilized to transport a filled liquid container to a place of disposal or analysis.

Although I have shown and described my unique swivel support device with respect to preferred embodiments thereof, I contemplate that various changes may be made in the size, shape, and arrangement of the various parts thereof without departing from the spirit and scope of my invention as defined by the following claims.

I claim:

1. A support device for holding fluid receptacles comprising:

a mounting plate having attachment means thereon for supporting said mounting plate on a bed frame member, and an arcuately shaped hanger on one end of said mounting plate remote from said attachment means, said hanger being constructed and arranged to assume a downwardly opening position for supporting said device on a round frame member by the rotation of said mounting plate about a horizontal axis extending substantially perpendicular to said mounting plate; and

a receptacle support bracket of right angle shape having a first, upright member coextensive with said mounting plate and pivotally secured thereto to permit relative, pivotal movement between said mounting plate and said bracket about said horizontal axis, and a second member

projecting horizontally from said first member at right angles thereto, said second member having receptacle receiving and holding means formed thereon.

2. A support device for fluid receptacles comprising:

a receptacle holder having means thereon for engaging and supporting a liquid receptacle in an upright position;

a mounting plate pivotally attached to said receptacle holder by swivel connecting means permitting relative pivotal movement between said holder and mounting plate about a substantially horizontal axis extending perpendicular to the vertical plane of said mounting plate;

support means on said mounting plate constructed and arranged to engage a frame member of planar configuration; and

an arcuate hanger on said mounting plate rotatable to a downwardly opening position of use for suspending said device on a round frame member by pivoting said mounting plate on said swivel connecting means.

3. A support device as defined in claim 2 wherein:

said support means comprises a hanger flange formed on one end of said mounting plate at right angles thereto, and said arcuate hanger is formed on the opposite end of said mounting plate, said arcuate hanger normally being in an upwardly opening, U-shaped configuration of nonuse when said support means is being utilized to support said device on a planar frame member, whereby the pivoting of said mounting plate through 180° on said swivel connecting means will bring said arcuate hanger to said downwardly opening position of use.

4. A support device as defined in claim 2 wherein:

said receptacle holder comprises a bracket having an upright member attached to said mounting plate by said swivel connecting means, and an arm projecting outwardly from said upright member and having a recess therein adapted to receive and supportably engage the neck of a receptacle.

5. A support device as defined in claim 2, and further including:

a pressure sensitive, adhesive strip secured to said mounting plate at one end and having a free end adapted to be attached to a round frame member to prevent sliding movement of said arcuate hanger thereon if said round frame member is inclined.

* * * * *