March 19, 1963 D. LOCHNER 3,081,464

SUPPORT FOR A CONTAINER

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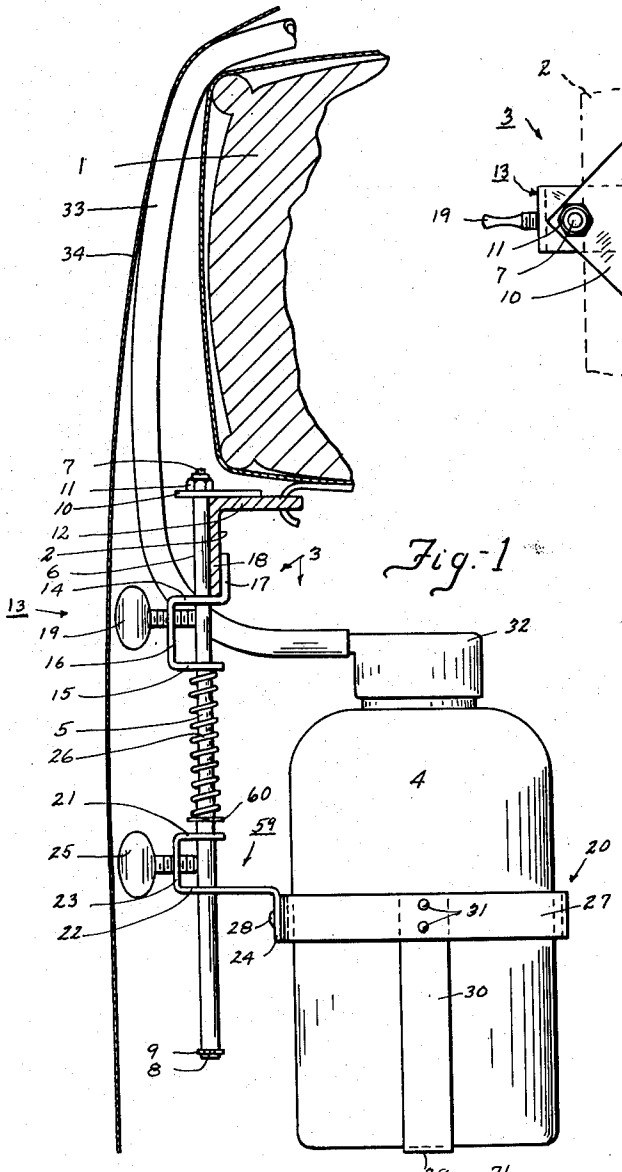


Fig.-1

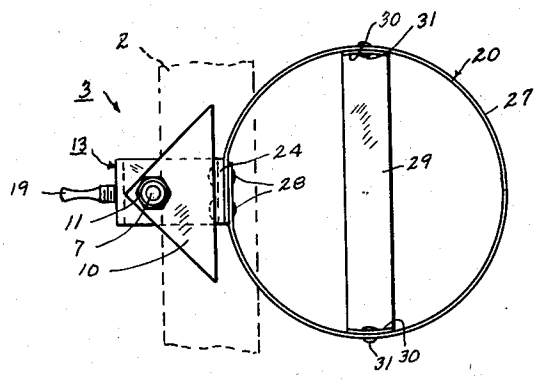


Fig.-2

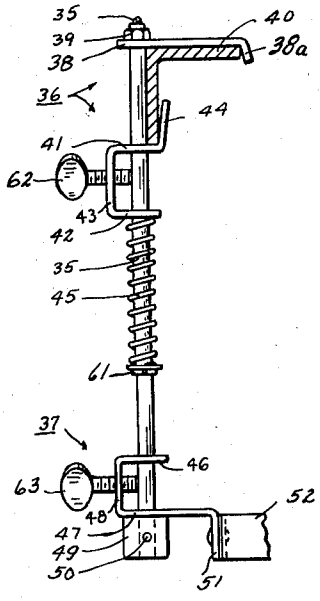


Fig.-4

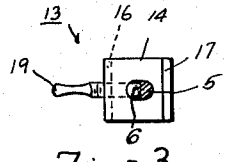


Fig.-3

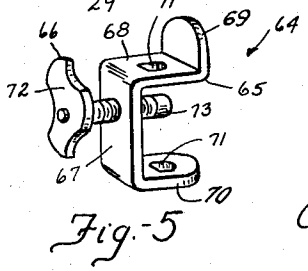


Fig.-5

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SUPPORT FOR A CONTAINER

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The subject invention relates generally to supports and more particularly is directed to a device or assembly adapted to be mounted on a hospital bed for supporting a container for liquid.

The invention may be utilized wherever applicable, but is preferably designed and constructed for use in supporting a container on the side rail of a frame of a hospital bed for collecting liquid from a patient resting on the bed. The conventional setup for this purpose comprises placing a glass container on a floor under the bed and using a tube or catheter to communicatively connect the patient with the container. Such an arrangement has not proven entirely satisfactory because the container is ofttimes accidentally kicked and broken, which not only presents a serious problem with respect to broken glass and an unsanitary condition but destroys the record of the quantity of liquid collected.

With the foregoing in mind, the principal object of the subject invention is to provide a supporting device which overcomes the disadvantages of the above described conventional setup.

More particularly, an important object of the invention is to provide a device which, among other things, comprises an elongate member having unique clamping means at its upper extremity for detachable connection with the side rail of the bed or other mounting and carriage means at its lower extremity for carrying or supporting a container.

A significant object of the inventiton is to design and construct the clamping means so that the device can be readily adjusted to firmly secure the device in place against accidental displacement.

Another object of the invention is to provide a device in which the carriage means is preferably in the form of a basket or receptacle and improved means are provided for attaching or connecting the basket to the elongate member in a manner whereby the basket may be rotatably and/or longitudinally adjusted on the member so that a container of any desired size or height can be placed in the basket and then rotated to a position of substantial concealment under the bed. In other words, some containers are of appreciable height, in which event, it is necessary to adjust the assembly or device to lower the basket so that the basket and container can be swung freely under the mattress of the bed without engaging its side.

A specific object of the invention is to provide an assembly or device in which resilient means is employed to assist in the clamping operation.

Additional objects of the invention reside in providing a device which offers advantages with respect to costs of manufacture, efficiency, attachment, durability and cleanliness.

Other objects and advantages of the invention will become apparent after the description hereinafter set forth is considered in conjunction with the drawings annexed hereto.

In the drawings:

FIGURE 1 is an elevational view illustrating one embodiment of the device operatively associated with a hospital bed of which portions of the latter are in section;

FIGURE 2 is a top view of the device;

FIGURE 3 is a transverse section showing certain structural details of the clamping means;

FIGURE 4 is a modified embodiment of the invention; and

FIGURE 5 is a modified form of a clamping means which can be used with the above structure.

Referring first to the embodiment of the invention exemplified in FIGURES 1, 2 and 3, numeral 1 represents a mattress mounted on a hospital bed frame having a side rail 2 and numeral 3 generally designates the device attached to the rail and suporting a container 4 disposed under the mattress.

The device or assembly 3 includes an elongate shaft or member 5 preferably in the form of a cylindrical steel rod having an upper extremity provided with a flattened or planar side 6 and a reduced threaded portion 7 and the lower extremity with a groove 8 in which a C-shaped spring 9 is detachably secured to constitute an abutment.

A clamping means is provided at the upper extremity of the shaft member and preferably includes a triangular plate 10 which is detachably secured to the shaft by a nut 11 engaging the threaded portion 7 of the shaft, the latter of which extends through an aperture provided therefor in one corner of the plate. The plate constitutes an abutment means or jaw which is held against longitudinal displacement but may be rotated and locked to facilitate placement of the plate in overlapping engagement with an upper horizontal portion 12 of the rail 2 as depicted in FIGURE 1.

The clamping means also includes a generally U-shaped element, clamp or jaw, generally designated 13. This element comprises a pair of legs 14 and 15 joined together by a bridge 16 and an offset 17 constituting a continuation of the leg 14. The legs 14 and 15 are respectively provided with aligned oblong apertures, as shown in FIGURE 3, to receive the upper extremity of the shaft and afford relative longitudinal movement therebetween. It will be noted that the legs 14 and 15 are disposed transversely with respect to the longitudinal axis of the shaft and that the bridge 16 and offset 17 are disposed parallel to such axis, with the offset extending upwardly in spaced relation to the shaft for receiving therebetween a depending portion 18 of the side rail 2.

A fastener, preferably in the form of a thumb screw 19, is threadedly connected to the bridge portion 16 for engaging the flattened side 6 of the shaft to cause the leg 14 to engage the lower edge of the depending portion 18 so as to clamp the rail between the jaw plate 10 and leg 14, and at the same time, prevent relative rotational movement between the shaft and element. The oblong apertures provided in the legs 14 and 15 are of a size to afford sufficient radial movement or clearance to permit clamping of the depending portion 18 between the shaft and upturned offset portion 17 of the element. In other words, the distance between the face of the offset portion 17 engaging the depending rail portion 18 and the inner ends of the oblong apertures is preferably somewhat less than the thickness of the depending portion so as to insure a good clamping action. The arrangement is unique due to the dual clamping effect and ease of slidably adjusting the element on the shaft to accommodate the rail between the plate 10 and element or releasing the device from the rail. The element 13, as alluded to above, is a clamp constituting a jaw disposed in opposed relation to the plate or jaw 10.

A fitting or clamp, generally designated 59, is slidably mounted on the lower extremity of the shaft 5 in axially spaced relation to the element 13 and provided with a carriage, preferably in the form of a basket generally designated 20 for receiving and supporting the container 4 above referred to. More specifically in this regard, the fitting includes a pair of horizontally disposed legs 21 and 22 joined together by a bridge portion 23 and an offset depending portion 24 constituting a continuation of the leg 22. It will be noted that the leg 22 is located below and longer than the leg 21. The legs 21 and 22

are respectively provided with aligned apertures through which the shaft extends and a thumb screw **25** is threadedly connected to the bridge portion of the fitting for engaging the shaft to secure the fitting and carriage connected thereto at any desired elevation. The arrangement is such that the fitting and carriage as a unit can be rotated about the longitudinal axis of the shaft after the thumb screw is once tightened to hold the unit at the level selected. If found desirable, the shaft may be provided with a plurality of axially spaced abutments preferably in the form of annular grooves which may be selectively engaged by the inner end of the screw for holding the unit at the desired elevation or level for rotation. This adjustment of the fitting is desirable, because as stated above, it affords a setup whereby containers of different sizes or heights may be mounted in the basket. For example, if a container having a height appreciably greater than the one shown is to be used, then the unit would be lowered in order that the container could be rotated or swung under the matress without engaging its side to prevent such movement.

Resilient means **26**, preferably in the form of a helical spring, surrounds the shaft between the element **13** and an abutment **60**, the latter of which corresponds to the abutment **9** and is secured to the shaft **5** in the same manner. This spring serves to urge the element **13** towards the plate **10**. Then, when the thumb screw **19** on the element **13** is loosened, preparatory to attaching the device to the rail, the element can be retracted to accommodate the rail and then released in order that the spring will automatically cause the element to move upwardly into clamping relation with the rail, after which the screw can be tightened to positively lock the device in place. The C-shaped spring or abutment **9**, above referred to, serves as a stop to positively prevent accidental release of the fitting from the shaft in the event the thumb screw **25** should become loosened and the abutment **60** is so located that the spring **26** serves its intended purpose while allowing considerable longitudinal adjustment of the fitting **59** relative to the shaft.

The carriage or basket **20** for the container may be designed and constructed in various ways but as exemplified, includes an annular ring or band **27** having ends which are secured in overlapping relation to the depending portion **24** of the fitting **59** by fastening means, preferably in the form of a pair of rivets **28** so that the ring is located in a horizontal plane. The carriage also includes a generally U-shaped member having a bottom portion **29** constituting a seat for the container and also side portions **30** having their upper ends secured against the inner surface of the ring at diametrically spaced locations by two pairs of rivets **31**. The carriage is thus made sufficiently firm and strong and its connection with the fitting stable so as to properly support or carry the container and the weight of its contents.

The container is shown as being provided with a stopper or cap **32** and a tube or catheter **33** is attached to the cap and extends upwardly alongside and over the bed or mattress for communicative connection with the patient. When the container is rotated to a position under the bed it is substantially concealed from view and free from damage as accidental spillage, and when a covering, such as a sheet **34** is normally in place, a visitor, for example, will not know of the existence of the drainage system. This factor of concealment is ofttimes very important to some patients who wil not accept vistors when such system is open to view.

The modified embodiment of the invention exemplified in FIGURE 4 includes an elongate cylindrical shaft or member **35** provided with a clamping means generally designated **36** carried by the upper extremity of the shaft and a fitting generally designated **37** mounted on the lower extremity of the shaft.

The clamping means **36** preferably includes a plate **38** detachably secured to a reduced threaded portion of the shaft by a nut **39**. This plate constitutes a jaw of the clamping means and is adapted to bear against the horizontal portion **40** of a side rail. The plate is preferably provided with a downturned angular portion **38***a* which is adapted to abut the inner edge of the horizontal portion **40** in order to assist in holding the device in a stabilized position. The clamping means **36** also includes a generally U-shaped element or jaw comprising a pair of horizontal legs **41** and **42** joined together by a bridge portion **43**. The legs are respectively provided with aligned apertures which slidably receive the shaft. The leg **41** which is above the leg **42** is provided with an upturned offset portion **44** which is angled so that the lower edge portion of a depending portion of the rail can be wedged in between the shaft and angled portion through the agency of a resilient means preferably in the form of a helical spring **45** surrounding the shaft with its upper end bearing against the lower leg **42** of the element and its lower end bearing on an abutment **61** like the abutments **9** and **60**. It will be noted that the shape of the U-shaped element just described is similar to that of the element **13** above referred to. The element carries a set screw **62** which when loosened will permit one to readily retract the element to accommodate the rail between this element and the plate **38** and then released so that the spring **45** automatically assists in holding the element in relation to the rail, after which the screw can be tightened to lock the element in place.

The shape of the fitting of the clamping means **37** is also similar to that of the fitting of the clamping means **59** and includes a pair of horizontal legs **46** and **47** joined together by a bridge **48**, which legs are respectively provided with aligned apertures which slidably receive the shaft. The lower end of the spring bears on the leg **46** to force the leg **47** against an abutment preferably in the form of a collar **49** fixed on the lower end of the shaft by a pin **50**. The collar prevents accidental release of the clamping means **37** from the shaft and offers a stable support for the clamping means when resting thereon. A set screw **63** may be utilized to firmly secure the clamping means in any desired rotative position. The leg **47** is of a greater length than the leg **46** and is provided with a depending portion **51**. A carriage, preferably in the form of a basket **52**, partially shown, is attached to the depending portion **51** and extends therefrom in the same manner that the carriage **20** above referred to extends from the depending portion **24** of the clamping means **59**.

A clamping means generally designated **64**, illustrated in FIGURE 5, is adapted for use with either of the structures above described, but is preferably used with the shaft **5**. More particularly, this clamping means comprises an element **65** and a thumb screw **66**. The element includes a base wall **67** and a pair of legs **68** and **69**, the latter being provided with an upturned continuation **70** for engaging a bed rail. Each of the legs is provided with an aperture **71** defined by a rounded marginal edge portion and a straight marginal edge portion. The straight marginal edge portion is adapted to engage the flat side portion **6** of the shaft **5** to prevent relative rotational movement between the clamping means and the shaft. If desired, the legs of the clamping means **13** may be provided with apertures corresponding to the apertures **71**.

The thumb screw preferably includes a threaded member and a manualy engageable notched planar plate **72** which is permanently anchored to the member. This plate has the advantage that the overall length of the screw is reduced so there is less likelihood of the screw catching on the bed covers or the clothes of an attendant. The threaded member is also provided with an unthreaded end or abutment **73** and this serves to lock the thumb screw to the element and thereby prevents an operator

from releasing the screw. The thumb screw is assembled with the element by threading the member through the base wall **67** and then permanently securing the plate to the member. The thumb screw shown in FIGURE 5 may obviously be substituted for the screws **25**, **62** and **63** above referred to.

In view of the foregoing, it will be manifest that either of the devices above described can be readily and firmly detachably connected to a bed frame in a manner whereby the carriage can be readily rotated to a position at one side of the bed to permit placement of a container in the basket or to a position of substantial concealment under the bed and off a floor.

Having thus described my invention, it is obvious that various modifications may be made in the same without departing from the spirit of the invention, and, therefore, I do not wish to be understood as limiting myself to the exact forms, constructions, arrangements, and combinations of parts herein shown and described.

I claim:

1. A device of the kind described comprising an elongate shaft, an abutment provided on the upper end of the shaft and having a portion projecting laterally in a plane substantially at right angles to the longitudinal axis of the shaft, a clamp having an upper and a lower leg joined together by a connecting portion, said upper leg being provided with an upturned continuation, said legs being provided with a pair of aligned openings through which the shaft slidably extends to locate said legs substantially at right angles to said axis and said connecting portion substantially in spaced parallel relation to said shaft, means on said shaft and means on said clamp cooperating with one another whereby to prevent relative rotation between said clamp and shaft to locate said upturned continuation below said projecting portion, a locking element threadedly connected to said connecting portion for engaging and disengaging said shaft to facilitate adjustment and securement of the clamp thereto so that a component may be received and held between said shaft and upturned continuation and projecting portion, and a fitting connected to said shaft below said clamp for supporting a component.

2. A device of the kind comprising an elongate shaft provided with cooperating means extending a predetermined distance along one side thereof, a plate secured to the upper end of the shaft and having a portion projecting laterally in a plane substantially at right angles to the longitudinal axis of the shaft, a clamp having an upper and a lower leg joined together by a connecting portion, said upper leg being provided with an upturned continuation, said legs being provided with a pair of aligned openings through which the shaft slidably extends to locate said legs substantially at right angles to said axis and said connecting portion substantially in spaced parallel relation to said shaft, at least one of said openings being shaped to slidably engage said cooperating means whereby to prevent relative rotation between said clamp and said shaft to locate said upturned continuation below said projecting portion, a locking element threadedly connected to said conneiting portion for engaging and disengaging said shaft to facilitate adjustment and securement of the clamp thereto so that a component may be received and held between said shaft and upturned continuation and projecting portion, and a fitting connected to said shaft below said clamp for supporting a component.

3. A device of the kind described comprising an elongate shaft, an abutment secured to the upper end of the shaft and having a portion projecting laterally in a plane substantially at right angles to the longitudinal axis of the shaft, a clamp having an upper and a lower leg joined together by a connecting portion, said upper leg being provided with an upturned continuation, said legs being provided with a pair of aligned openings through

which the shaft slidably extends to locate said legs substantially at right angles to said axis and said connecting portion substantially in spaced parallel relation to said shaft, means on said shaft and means on said clamp cooperating with one another whereby to prevent relative rotation between said clamp and said shaft to locate said upturned continuation below said projecting portion, a locking element threadedly connected to said connecting portion for engaging and disengaging said shaft to facilitate adjustmet and securement of the clamp thereto so that a component may be received and held between said shaft and upturned continuation and projecting portion, a fitting connected to said shaft below said clamp for supporting a component, an elongate helical spring surrounding said shaft, one end of said spring being held against downward movement on said shaft, and the other end of said spring serving to resiliently support said clamp when said element is out of locking engagement with said shaft.

4. A device of the kind described comprising an elongate shaft, an abutment secured to the upper end of the shaft and having a portion projecting laterally in a plane substantially at right angles to the longitudinal axis of the shaft, a clamp means having an upper and a lower leg joined together by a connecting portion, said upper leg being provided with an upturned continuation, said legs being provided with a pair of aligned openings through which the shaft slidably extends to locate said legs substantially at right angles to said axis and said connecting portion substantially in spaced parallel relation to said shaft, means provided on said shaft and means provided on said clamp means cooperating with one another in a manner whereby to provide relative rotation between said shaft and said clamp means, a locking element threadedly connected to said connecting portion for engaging and disengaging said shaft to facilitate adjustment and securement of the clamp means thereto so that a component may be received and held between said shaft and upturned continuation and projecting portion, a fitting having an upper leg and a lower leg joined together by a bridge portion, said lower leg of said fitting being provided with a lateral continuation, a holder carried by said lateral continuation, said legs of said fitting being provided with aligned openings slidably and rotatably receiving said shaft, and a locking member carried by said bridge portion for engaging and disengaging said shaft to facilitate adjustment and securement of said fitting thereon in any desired position.

5. A device of the kind described comprising an elongate shaft provided with cooperating means extending along one side thereof, a plate secured to the upper end of the shaft and having a portion projecting laterally in a plane substantially at right angles to the longitudinal axis of the shaft, a clamp having a pair of legs joined together by a connecting portion, said legs being provided with a pair of aligned openings through which the shaft slidably extends to locate said legs substantially at right angles to said axis and said connecting portion substantially in spaced parallel relation to said shaft, at least one of said legs being provided with an upturned continuation and at least one of said openings being shaped to slidably engage said cooperating means whereby to prevent relative rotation between said clamp and said shaft to locate said upturned continuation below said projecting portion, a locking element threadedly connected to said connecting portion for engaging and disengaging said shaft to facilitate adjustment and securement of the clamp thereto so that a component may be received and held between said shaft and upturned continuation and projecting portion, a fitting for supporting a component, means connecting said fitting to said shaft for slidable and rotary movement thereon below said clamp, and a helical spring surrounding said shaft and interposed between

said clamp and fitting for urging the clamp upwardly when said locking element is in a non-locking condition.

References Cited in the file of this patent

UNITED STATES PATENTS

1,124,020	Hendrick	Jan. 5, 1915
1,273,600	Floyd	July 23, 1918
1,703,069	Strupe	Feb. 19, 1929
2,464,672	Clapp	Mar. 15, 1949

FOREIGN PATENTS

539,544	Great Britain	Sept. 16, 1941
454,268	Canada	Jan. 25, 1949
663,403	Great Britain	Dec. 19, 1951