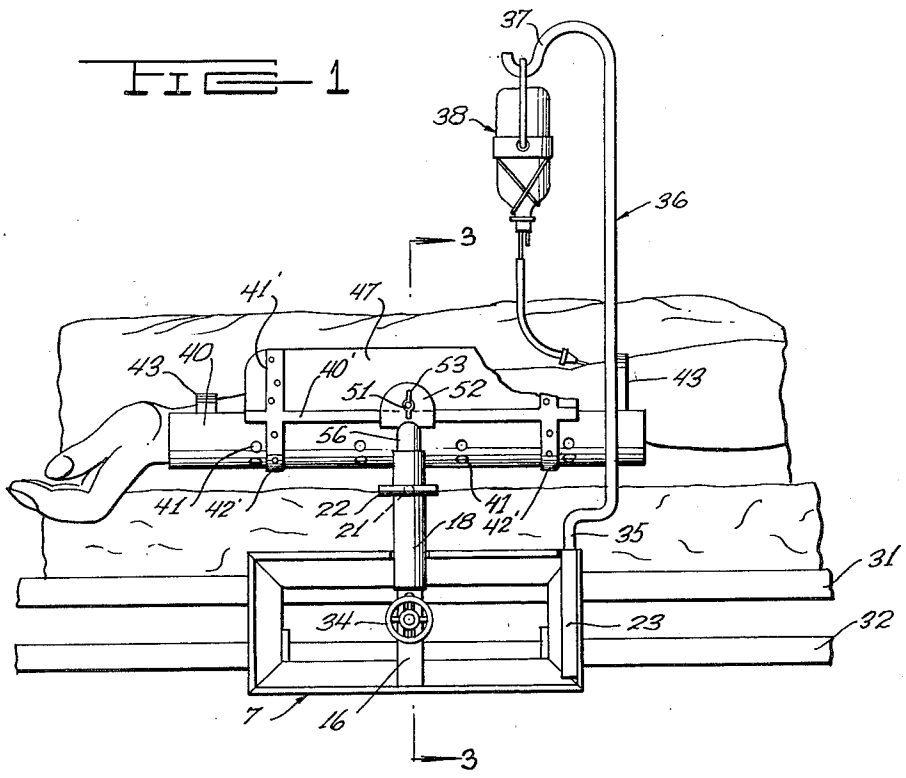
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TRANSFUSION APPARATUS

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FIG 1



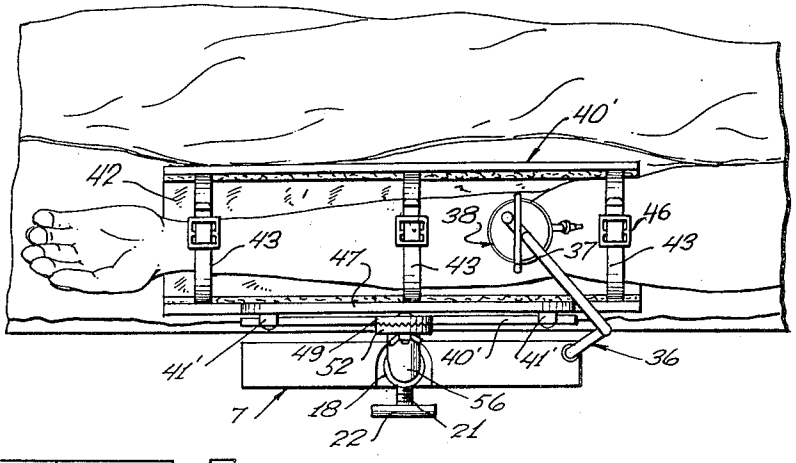


FIG 2

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TRANSFUSION APPARATUS

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FIG 3

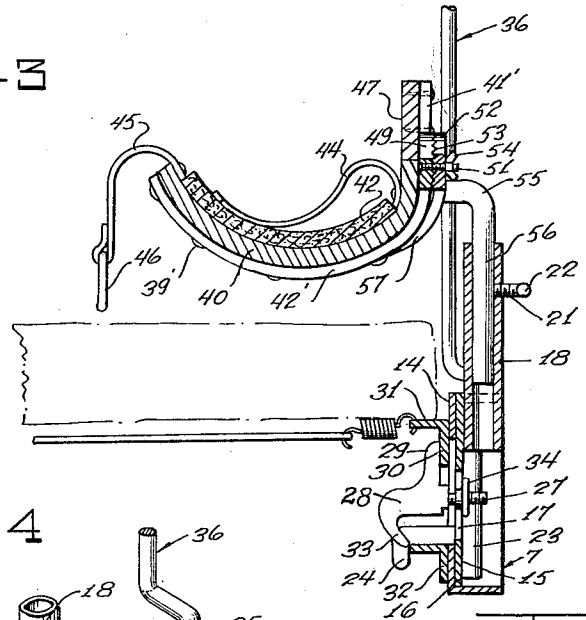


FIG 4

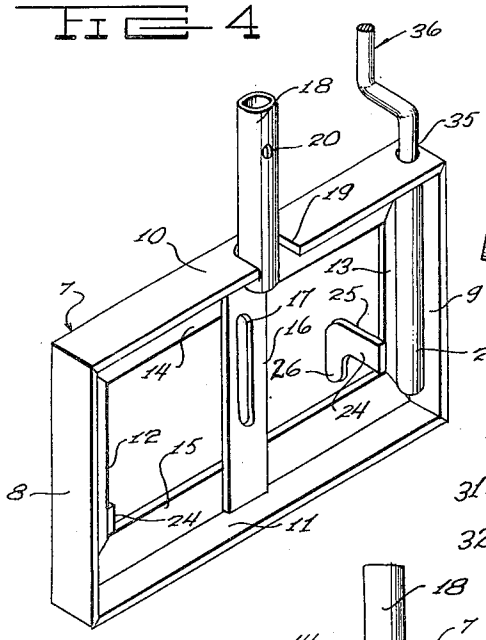


FIG 5

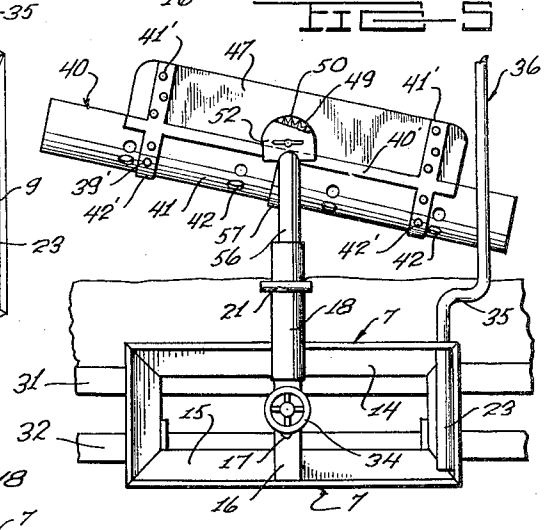
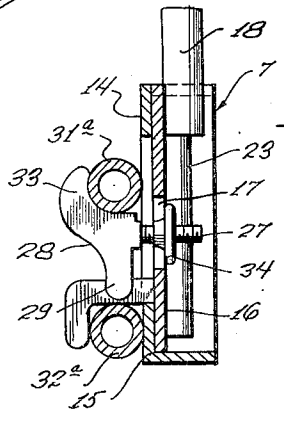


FIG 6



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UNITED STATES PATENT OFFICE

2,551,617

TRANSFUSION APPARATUS

Edward F. Maybert, Cumberland, Md.

Application February 21, 1950, Serial No. 145,484

8 Claims. (Cl. 128—214)

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This invention relates to improved apparatus for supporting a limb of a bed patient relative to the bed during intravenous administrations, the primary object of the invention being to provide a more practical, simplified, lightweight and more efficient device of this character which can be more easily installed, adjusted and used by nurses and others without exertion of unusual strength and continued effort before, during and after intravenous administrations.

Another important object of the invention is to provide a device of the character indicated above which installs more easily and securely on a bed rail and spring side member, and which is more completely and readily adjustable to more efficiently and comfortably support the patient's limb.

Other important objects and advantageous features of the invention will be apparent from the following description and the accompanying drawings, wherein, for purposes of illustration only, a specific embodiment of the invention is shown in detail.

In the drawings:

Figure 1 is an outboard side elevation showing the device in use;

Figure 2 is a top plan view of Figure 1;

Figure 3 is a transverse, vertical section taken on the line 3—3 of Figure 1;

Figure 4 is an inboard perspective view of the frame;

Figure 5 is an outboard side elevation showing an adjusted position of the limb shelf;

Figure 6 is a transverse, vertical section taken through the frame of the device and through tubular bed frame side members, showing special clamping elements therefor.

Referring in detail to the drawings, wherein like numerals designate like parts throughout the several views, the illustrated device comprises a longitudinally elongated, vertical frame 7 comprising flat, vertical ends 8 and 9 joined at their upper and lower ends by flat, horizontal and parallel upper and lower longitudinal members 10 and 11, respectively. Vertical plate members 12 and 13 are secured along the ends 8 and 9, respectively, at their inboard edges, and vertical, longitudinal plate members 14 and 15 are secured along the facing sides of the longitudinal members 10 and 11, respectively, at their inboard edges. A vertical cross member 16 is secured on the outboard side of the longitudinal plate members 14 and 15 midway their ends and formed with a vertically elongated slot 17. In vertical alignment with the slot 17 a perpendicular tube

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18 positioned in an opening 19 in the upper longitudinal member 10 is secured to the outboard side of the upper longitudinal plate member 14, the tube 18 being provided with a threaded hole 20 near its upper end to accommodate a set screw 21 having a cross bar handle 22.

On the inner side of the frame end 9 is secured a vertical tubular socket 23 opening at its upper end through the upper longitudinal member 10. Projecting beyond the inboard side of the frame 7 are fixed bed frame engaging hooks 24, each comprising a horizontal portion 25 secured to the inner edge of a respective one of the vertical plate members 12 and 13 on the frame ends 8 and 9 and a right angular, downturned terminal 26.

Projectable through the slot 17 of the vertical cross member 16 is a bolt 27 having on its inboard end an upper bed frame engaging hook 28 which is reversible from the position shown in Figure 3, to the position shown in Figure 6, for use with angle iron bed frame side members and tubular or round bar bed frame side members, respectively.

The hook 28, as shown in Figure 3, comprises a plate having a vertical projection 29 to engage the inboard surface of the vertical flange 30 of the upper angle iron bed frame side member 31, with the lower hooks 24 resting upon the lower bed frame angle iron side member 32, the inboard side of the frame 7 engaging the outboard sides of the bed frame side members 31 and 32. The hook 28 further comprises a crook 33 opposed to the projection 29 and offset inboardly therefrom. In Figure 6, the projection 29 is free of both the upper and lower tubular bed frame side members 31*a* and 32*a*, while the crook 33 is engaged under and behind the upper tube 31*a*. The bolt 27 has a handwheel nut 34 on its outboard end arranged to be tightened against the outboard side of the cross member 16 to secure the hooks in engagement with the bed frame side members and mount the device at the desired location along the side of the bed.

Removably inserted in the socket 23 is the offset lower end 35 of the rod mast 36 having a lateral hook 37 on its upper end for suspending a transfusion container 38 or the like.

The limb support of the herein illustrated device comprises a horizontally elongated shelf 40 made of plywood, metal or other suitable material in concave-convex cross-section, with the convex bottom and sides having several transverse rows of perforations 41 therein to permit easy stitching on of surgical padding 42 and convenient replacement thereof. Straps 43 are dis-

tributed along the shelf 40 at spaced intervals and consist of strap elements 44, 45 secured to opposite sides of the shelf and connectible by suitable buckles 46. The shelf 40 is supported by a frame comprising an elongated horizontal bar 40' terminating at its ends in standards 41' and inboardly projecting arms 42' to engage under the convex shelf bottom, to which the arms 42' are secured by bolts or rivets 39'. A protective wall plate 47 is secured to the standards 41' to rise from the outboard edge of the shelf 40 and extends in spaced relation to the opposite ends of the shelf and a semicircular clamp element 49 is secured to the outboard side of the middle of the bar 40', and has radial serrations 50 thereon and a centered bolt 51 projecting therefrom.

The bolt 51 passes centrally and freely through another semicircular clamp element 52 having cooperating radial serrations 53 engageable with the serrations on the clamp element 49 when the clamp element 49, and hence the shelf 40, is tilted or rocked on the axis of the bolt 51, when the wing nut 54 on the bolt 51 is loosened and is retightened to clamp and retain the elements 49 and 52 together in a new angular relation.

The clamp element 52 is rigid with the offset upper end 55 of a heavy bar or rod 56 which is slidably inserted downwardly in the tube 18, whereby the shelf 40 is supported for rotational or swinging adjustment on a vertical axis and can be raised and lowered, the desired adjustment being retained by tightening the set screw 21.

The upper part of the rod 56 has a rigid inboardly projecting stabilizing arm or bracket 57 curved to conform generally to the convex bottom of the shelf 40 and freely engageable therewith. The purpose of the bracket 57 is to prevent the shelf 40 from dropping if the clamp elements 49 and 52 are loosened more than necessary and to assist in angular adjustment of the shelf 40 by preventing binding due to inboard or outboard tilting of the shelf 40, while the clamp assembly is loosened.

I claim:

1. Transfusion apparatus comprising a longitudinally elongated vertical frame, said frame having an inboard side, hook means projecting beyond the inboard side of the frame for removably securing the inboard side of the frame against the outboard side of bed frame side members, a limb shelf having a depending rod, means mounting said rod on an intermediate part of said frame to turn on a vertical axis and to be raised and lowered with respect to said frame with said shelf occupying a position above said frame, means for retaining said rod in adjusted position, means supporting said limb shelf at the inboard side of said frame from the upper end of said rod and enabling tilting of said shelf endwise in either direction, said hook means comprising fixed lower hooks spaced longitudinally on the lower part of said frame, and a vertically and laterally adjustable upper hook positioned between said lower hooks.

2. Transfusion apparatus comprising a longitudinally elongated vertical frame, said frame having an inboard side, hook means projecting beyond the inboard side of the frame for removably securing the inboard side of the frame against the outboard side of bed frame side members, a limb shelf having a depending rod, means mounting said rod on an intermediate part of said frame to turn on a vertical axis and

to be raised and lowered with respect to said frame with said shelf occupying a position above said frame, means for retaining said rod in adjusted position, means supporting said limb shelf at the inboard side of said frame from the upper end of said rod and enabling tilting of said shelf endwise in either direction, said mounting means comprising a vertical tube in which said rod is slidably and rotatably inserted, and said retaining means comprising a set screw threaded through said tube to engage said rod therein.

3. Transfusion apparatus comprising a longitudinally elongated vertical frame, said frame having an inboard side, hook means projecting beyond the inboard side of the frame for removably securing the inboard side of the frame against the outboard side of bed frame side members, a limb shelf having a depending rod, means mounting said rod on an intermediate part of said frame to turn on a vertical axis and to be raised and lowered with respect to said frame with said shelf occupying a position above said frame, means for retaining said rod in adjusted position, means supporting said limb shelf at the inboard side of said frame from the upper end of said rod and enabling tilting of said shelf endwise in either direction, said hook means comprising fixed lower hooks spaced longitudinally on the lower part of said frame, and a vertically and laterally adjustable upper hook positioned between said lower hooks, said upper hook having a bolt projecting outboardly therefrom, a vertical cross member on said frame formed with a vertically elongated slot through which said bolt projects with said upper hook engaging the inboard side of said cross member, and a handwheel nut on said bolt adapted to be tightened against the outboard side of said cross member to hold said upper hook in a vertically adjusted position along said slot.

4. Transfusion apparatus comprising a longitudinally elongated vertical frame, said frame having an inboard side, hook means projecting beyond the inboard side of the frame for removably securing the inboard side of the frame against the outboard side of bed frame side members, a limb shelf having a depending rod, means mounting said rod on an intermediate part of said frame to turn on a vertical axis and to be raised and lowered with respect to said frame with said shelf occupying a position above said frame, means for retaining said rod in adjusted position, means supporting said limb shelf at the inboard side of said frame from the upper end of said rod and enabling tilting of said shelf endwise in either direction, said hook means comprising fixed lower hooks spaced longitudinally on the lower part of said frame, and a vertically and laterally adjustable upper hook positioned between said lower hooks, said upper hook having a bolt projecting outboardly therefrom, a vertical cross member on said frame formed with a vertically elongated slot through which said bolt projects with said upper hook engaging the inboard side of said cross member, and a handwheel nut on said bolt adapted to be tightened against the outboard side of said cross member to hold said upper hook in a vertically adjusted position along said slot, said supporting means comprising a pair of clamp elements secured respectively to said limb shelf and said rod, a bolt on one of said clamp elements traversing the other element on which said elements can turn relative to each other to adjust the endwise tilt of said limb shelf, and a nut on said bolt for

clamping said clamp elements fixedly together.

5. Transfusion apparatus comprising a longitudinally elongated vertical frame, said frame having an inboard side, hook means projecting beyond the inboard side of the frame for removably securing the inboard side of the frame against the outboard side of bed frame side members, a limb shelf having a depending rod, means mounting said rod on an intermediate part of said frame to turn on a vertical axis and to be raised and lowered with respect to said frame with said shelf occupying a position above said frame, means for retaining said rod in adjusted position, means supporting said limb shelf at the inboard side of said frame from the upper end of said rod and enabling tilting of said shelf endwise in either direction, said hook means comprising fixed lower hooks spaced longitudinally on the lower part of said frame, and a vertically and laterally adjustable upper hook positioned between said lower hooks, said upper hook having a bolt projecting outboardly therefrom, a vertical cross member on said frame formed with a vertically elongated slot through which said bolt projects with said upper hook engaging the inboard side of said cross member, and a handwheel nut on said bolt adapted to be tightened against the outboard side of said cross member to hold said upper hook in a vertically adjusted position along said slot, said supporting means comprising a pair of clamp elements secured respectively to said limb shelf and said rod, a bolt on one of said clamp elements traversing the other element on which said elements can turn relative to each other to adjust the endwise tilt of said limb shelf, and a nut on said bolt for clamping said clamp elements fixedly together, said rod having a stabilizing arm projecting inboardly therefrom beneath and loosely engageable with the under side of said limb shelf at a point intermediate the ends of said limb shelf.

6. Transfusion apparatus comprising a longitudinally elongated vertical frame, said frame having an inboard side, hook means projecting beyond the inboard side of the frame for removably securing the inboard side of the frame against the outboard side of bed frame side members, a limb shelf positioned in spaced relation with respect to said frame and mounted on said frame for rocking movement about a horizontal axis, for swinging movement about a vertical axis, and for raising and lowering movement.

7. Transfusion apparatus comprising a longitudinally elongated vertical frame, said frame having an inboard side, hook means projecting beyond the inboard side of the frame for removably securing the inboard side of the frame against the outboard side of bed frame side members, a limb shelf positioned in spaced relation with respect to said frame and mounted on said frame for rocking movement about a horizontal axis, for swinging movement about a vertical axis, and for raising and lowering movement, and means for retaining said shelf in an adjusted position of rocking movement, and means for retaining said shelf in an adjusted position of swinging movement and of raising and lowering movement.

8. Transfusion apparatus comprising a longitudinally elongated vertical frame, said frame having an inboard side, hook means projecting beyond the inboard side of the frame for removably securing the inboard side of the frame against the outboard side of bed frame side members, a limb shelf positioned in spaced relation with respect to said frame and mounted on said frame for rocking movement about a horizontal axis, for swinging movement about a vertical axis, and for raising and lowering movement, and means for retaining said shelf in an adjusted position of rocking movement, and means for retaining said self in an adjusted position of swinging movement and of raising and lowering movement, and a rod mast having one end supported in said frame and having the other end spaced from said shelf and provided with means for dependingly supporting a transfusion material container therefrom.

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