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SURGICAL SPLINT

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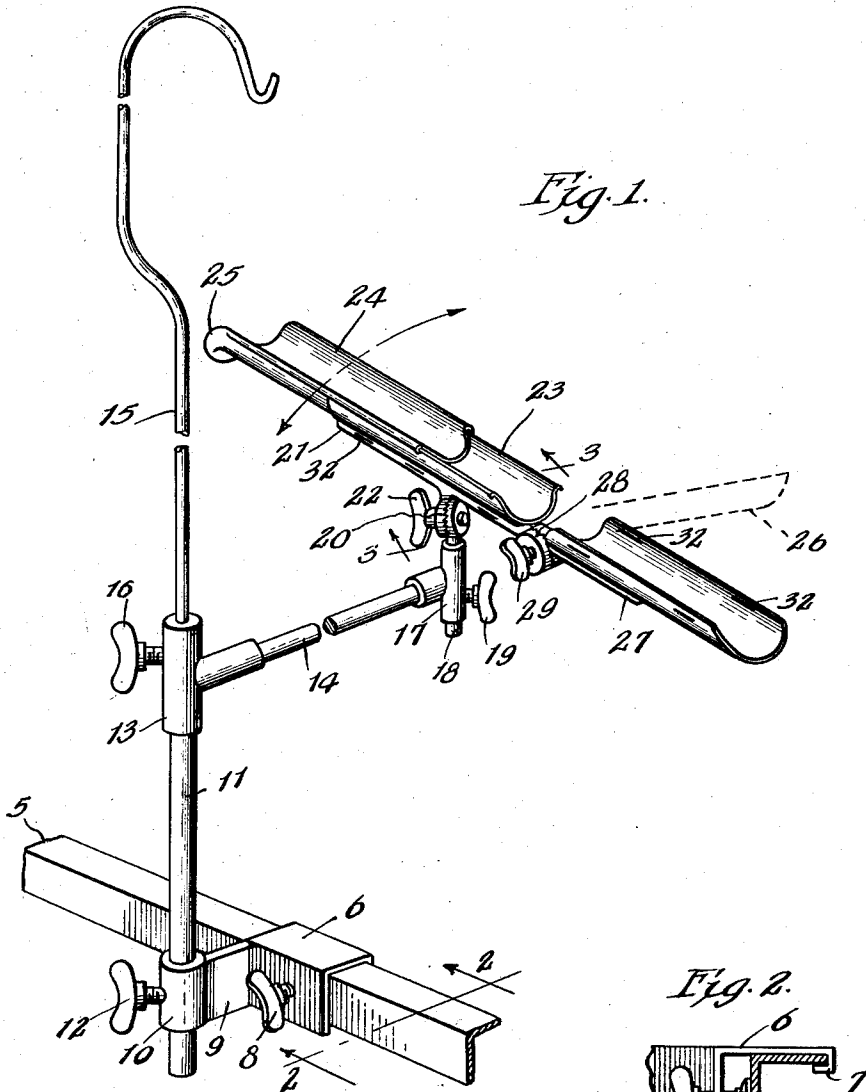


Fig. 1.

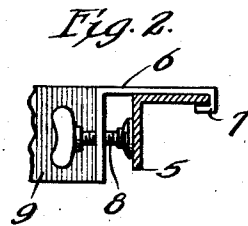


Fig. 2.

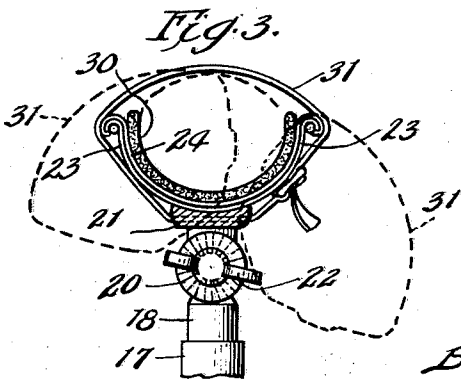


Fig. 3.

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SURGICAL SPLINT

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3 Claims. (Cl. 128—88)

My invention relates to a surgical appliance and more particularly to a splint for holding a limb in rigid position.

Numerous devices have heretofore been designed for maintaining an arm or a leg rigid when it is desired to prevent use or movement of the limb. Most of these prior structures, because of their special arrangements do not permit the patient to assume a comfortable position. During injection of fluid into a vein of a patient for the purpose of feeding or otherwise, (known to the medical profession as venoclysis), it is desirable that the needle or hypodermic shall remain in an injected position for a considerable period of time, frequently for several days. Under such circumstances it is of utmost importance that the patient shall remain quiet and in a prone position during the venoclysis, i. e., the continuous administration of a fluid in a vein. As a result, the arm or leg which has been held in a fixed position becomes numb and causes irritation and discomfort to the patient.

The appliance which I have invented permits of the ready adjustment of the splint to any position into which the human arm or leg may be moved in a natural manner. In this way the attendant may from time-to-time alter the adjustment of the splint in order to ease the patient. My splint is constructed in a manner that permits it to be bodily moved transverse to its axis in a somewhat rotative direction with respect to the axis of the sleeves, or one sleeve may be swung by a hinging movement with respect to the other sleeve, or the two sleeves may be turned on a vertical pivot and substantially transverse to their axis. In addition to the foregoing, provision is made so that one of the sleeves of the splint is formed telescopic so that it may be adjusted longitudinally to fit different lengths of limbs and it is provided at its outer extremity with a curved seat where the arm pit may be rested.

Numerous objects and advantages are attained by my invention herein disclosed, among which may be mentioned that the device is novel in construction; it is dependable in use; it is easy to manipulate; it is made of sturdy parts so that it will withstand hard usage; it is neat in appearance; and it is capable of being economically manufactured so that it may be sold to the user for a reasonable retail price.

All of the foregoing, as well as other objects and advantages, will be apparent to persons skilled in the art after the construction and operation of my invention is understood from the

following description. I prefer to accomplish all of these objects and to practice my invention in substantially the manner hereinafter fully described and as more particularly pointed out in the claims. I now make reference to the accompanying drawing that forms a part of this specification, and in this drawing I have shown a typical or preferred form in which my surgical splint may be made.

In the drawing:

Figure 1 is a view in perspective showing my surgical splint mounted on the side rail of a bed.

Figure 2 is a detail view on line 2—2 of Fig. 1 looking at the clamp in the direction indicated by the arrows.

Figure 3 is a transverse section on line 3—3 of Fig. 1 looking in the direction of the arrows.

The side rail 5 of the bed is shown as an L-shaped angle-metal strip but it will be understood it may be of any other cross-section. The clamp which anchors my appliance to the side rail consists of a body portion 6 of L-shape section the horizontal flange of which extends across the bed rail and is provided with an angular downward and inwardly turned extension 7 in the form of a hook to engage the horizontal flange of the rail shown in Fig. 2. The vertical flange of the clamp has a threaded aperture to receive the threaded shank 8 of headed clamp bolt that has its inner end engaged with the vertical flange of the bed rail 5. A short web 9 extends outwardly from the bed of the clamp and is provided at this outer end with a cylindrical collar 10 that is hollow and is disposed with its axis vertical and to receive the upright standard or main support 11 that is adjustably mounted and rotatively in said collar and is held in its adjusted position by a thumb screw 12.

The post 11 is hollow and its upper end is provided with a T-shaped coupling 13 the short lateral stub of which receives the adjacent end of a horizontal arm 14 and the vertical main portion of which receives the lower end of the bottle or jar carrier 15 for the fluid that is adjustably mounted vertically in the coupling 13 and post 11 by a thumb screw 16.

The outer free end of horizontal arm 14 is provided with a vertically disposed socket or holder 17 in which a short post 18 is adjustably mounted. The post 18 may be adjusted vertically and rotatably in the socket and it is maintained stationary in its adjusted position by a thumb screw 19. The semi-circular sleeves or splints are supported by this post in a manner that permits them

being moved in a more or less rotative manner transverse to their axes. This is accomplished by providing facing clamp members 20 of circular disk-like form that are disposed side-by-side in face contact with each other. One of said clamp disks is preferably formed integral with the upper end of the short post 18 while the other clamp member is preferably a pendent part of an elongated bar 21 connected to and supporting one of the splint members. The opposing faces of the clamp members are provided with radial serrations or teeth adapted to interfit each other and they are urged against each other by a thumb screw 22 engaged axially through them. As seen in Fig. 3 the clamp members are disposed in a plane transverse to the axis of the sleeves or splints which permits the latter to be bodily moved transverse to their axis on the thumb-screw 22 as a pivot, as shown in dotted lines in Fig. 3 which positions the splint to one side or other of the post 18.

The main splint 23 which receives the upper part of the limb is substantially semi-circular in cross-section and has the bar 21 secured to its underside in any desired manner. The longitudinal edges of this splint 23 are turned under as detailed in Fig. 3 to telescopically mount an extension portion 24 of the splint. This extension 24 has its longitudinal edges turned under and around the edges of the splint member 23 to permit sliding movement of the extension 24 thereon for the purpose of elongating the splint to accommodate it to the lengths of the limbs of the different patients. The free outer end portion of the extension portion 24 is flared laterally and downwardly in an outward direction to provide a seat 25 in which the arm pit of the patient may be comfortably placed when the splint is applied to an arm, thus avoiding a sharp angle terminal on the extension which would ordinarily irritate the patient.

There is a second splint member 26 in the form of a semi-circular sleeve that has a bar 27 secured to its underneath portion. This splint member 26 is adapted to be secured to and support the forearm of the patient and by an articulated connection with the main splint member may be moved independent thereof. The articulation may be of any desired construction, but I prefer to employ a clamp device 28 similar to the clamp device 20 hereinbefore described. One of the disk-like parts of this clamp is formed integral with the adjacent end of the bar 21 on the bottom of the splint member 23 and the other member of the clamp is similarly formed on the adjacent end of the bar 27 of splint member 26. The facing portions of the clamp 28 are urged toward each other by a thumb screw 29 so that the serrations on the opposing faces of the clamp are interengaged with each other and prevent relative movement. The axes of the splint members align with each normally, and the member 26 carrying the forearm on account of its hinged mounting is adapted to be moved in a substantially up and down direction similar to the action at the elbow or knee joint of the limb.

Suitable pads 30 of sponge rubber or the like are placed in the concave portions of the splint members and the limb is secured in position by means of straps, tapes or the like 31 that are passed around the arm and splint members and inserted through slot 32 in the edges of the splints or made transversely through the bars 21 and 27. When the patient's limb is thus secured in place it may be tilted to one side or the other

post 18 as shown in Fig. 3 and in any of these positions the splint 26 may be adjusted to move the lower arm or lower leg to an angle with respect to the upper portion of the limb.

When the appliance structure is clamped to the bed rail 5 its height may be adjusted by proper positioning of the standard 11 which may be moved up or down with respect to the clamp 6 and rotated in the collar or sleeve 10 to dispose the horizontal arm 14 in a position most desirable to seat the limb in the splints. Minor adjustments may be made by turning the post 18 in the holder or adjusting it up or down therein. It will be seen that the patient's limb thus is capable of adjustment, while held in the splint in any position it might naturally assume if not secured to the splint. It has been found that even a slight adjustment, either rotative or angular, will ease the patient for a considerable period of time and these adjustments may be easily made at frequent intervals so that it will tend to keep the patient in a quiet state during the time a venoclysis is being administered.

What I claim is:

1. An adjustable rest for immobilizing a limb during administration of venoclysis, said rest embodying end-to-end bars; a clamp structure connecting the proximate ends of said bars and adapting said bars for hinging movement with respect to each other; semi-cylindrical sleeves extending flat along the respective bars and secured thereto; a main support mounted on a rigid base and adapted for both vertical and rotative adjustment; an arm disposed lateral to said main support and movable therewith; an auxiliary support on said arm adapted for vertical adjustment with respect to said arm and also rotatable upon its own axis; and a second clamp structure connecting said auxiliary support to one of said bars and adapting said bars and the sleeves thereon for movement in a direction transverse to the hinging movement provided by said first-named clamp structure.

2. An adjustable rest for immobilizing a limb during administration of venoclysis, said rest embodying end-to-end bars; a clamp structure connecting the proximate ends of said bars and adapting said bars for hinging movement with respect to each other; semi-cylindrical sleeves extending flat along the respective bars and secured thereto; an extensible member co-acting with and adapted to elongate one of said sleeves; a main support mounted on a rigid base and adapted for both vertical and rotative adjustment; an arm disposed lateral to said main support and movable therewith; an auxiliary support on said arm adapted for vertical adjustment with respect to said arm and also rotatable upon its own axis; and a second clamp structure connecting said auxiliary support to one of said bars and adapting said bars and the sleeves thereon for movement in a direction transverse to the hinging movement provided by said first-named clamp structure.

3. An adjustable rest for immobilizing a limb during administration of venoclysis, said rest embodying end-to-end bars; a clamp structure connecting the proximate ends of said bars and adapting said bars for hinging movement with respect to each other; semi-cylindrical sleeves extending flat along the respective bars and secured thereto, one of said sleeves having an outwardly flared end portion extending away from the axis of the respective sleeve; a main support mounted on a rigid base and adapted for both vertical

and rotative adjustment; an arm disposed lateral
to said main support and movable therewith; an
auxiliary support on said arm adapted for verti-
cal adjustment with respect to said arm and also
5 rotatable upon its own axis; and a second clamp
structure connecting said auxiliary support to

one of said bars and adapting said bars and the
sleeves thereon for movement in a direction
transverse to the hinging movement provided by
said first-named clamp structure.

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