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3,419,002

TRACTION DEVICE

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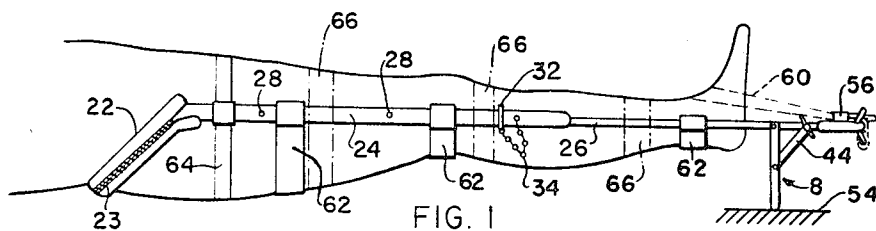


FIG. 1

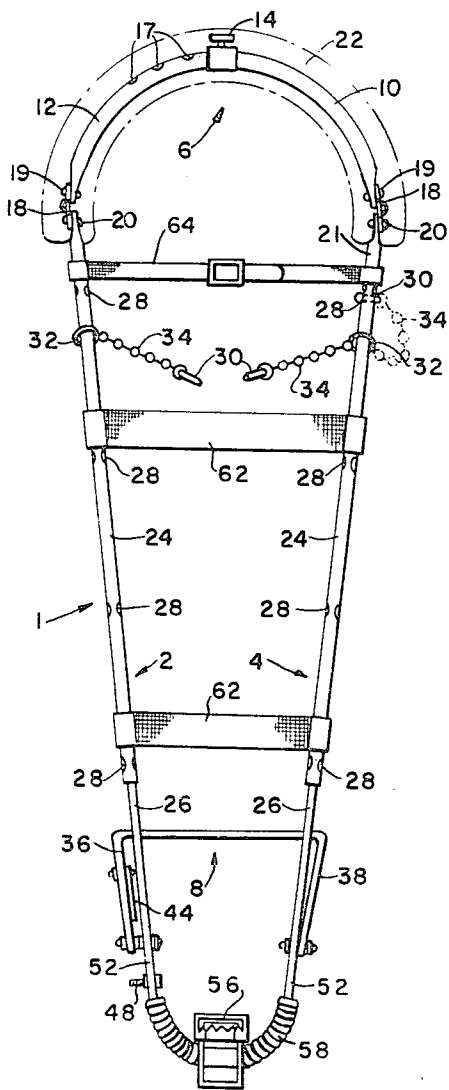


FIG. 2

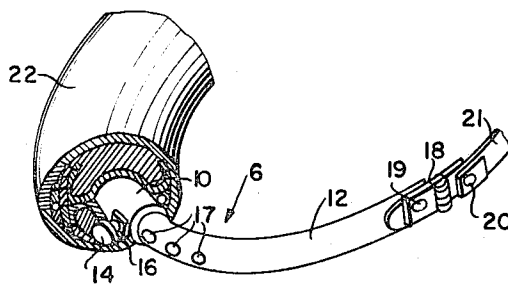


FIG. 3

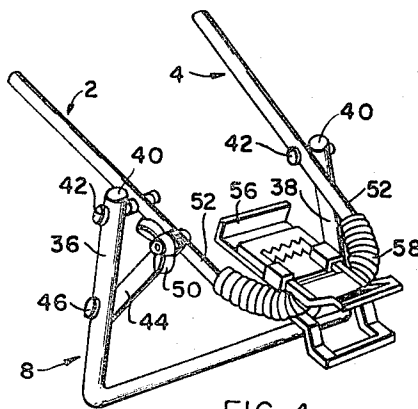


FIG. 4

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TRACTION DEVICE

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9 Claims. (Cl. 128-85)

ABSTRACT OF THE DISCLOSURE

A splint for mending broken bones or limbs which includes a pair of extensible side arms which are connected at one end by an adjustable arcuate member and at the other end by a stanchion member, the arcuate member made of a pair of telescoping tubular members with tightening means to maintain the two members at an adjustable set position, the arcuate member being removably enclosed within a padded casing to enable its removal.

This invention relates generally to traction devices and more particularly to a new and improved splint for mending broken bones in arms and legs.

More specifically, the invention is directed to the provision of an extensible splint which may be readily adjusted to accommodate limbs of various sizes and to comfortably hold the limb before, during and after the broken bone is restored to its pre-fractured position.

Accordingly, and consonant with the foregoing, the instant invention has for an object the provision of a traction device which can be readily adjusted and immediately utilized in the early stages of rescue work.

Another object of the present invention is to provide a device of the foregoing character which is highly suitable in the treatment of leg fractures and which includes means for precluding the leg against lying uncomfortably on the ground.

A further object of this invention resides in the provision of a leg splint which is adjustable to fit any size thigh and leg length.

Another object of the present invention is to provide a device in accordance with the foregoing which includes elastic cushioning means along the length thereof to thereby effectuate comfort and embracement of the leg being supported thereby.

Still another object of the instant invention is to provide a leg splint including buckle means at one end thereof to facilitate securement of an ankle harness thereto.

Another general object of the present invention is to provide a device of the described character which will be simple in structure, economical of manufacture, easily and quickly applied and highly effective in use.

Other objects and advantages of the instant traction device will be set forth hereinafter and in part will be obvious herefrom, or may be learned by practice of the invention, the same being realized and attained by means of the structure defined and pointed out in the appended claims.

The accompanying drawings referred to herein and constituting a part hereof, illustrate one embodiment of the invention, and together with the description, serve to explain the principles of the invention.

FIGURE 1 is a side elevation view of the traction device as applied to the leg, the stanchion means being shown supporting the leg above the ground;

FIGURE 2 is a plan elevational view of the device per se;

FIGURE 3 is a fragmentary enlarged perspective view of the adjustable arcuate member showing the cross-section of the padded casing which is removably secured thereabout; and

FIGURE 4 is a fragmentary enlarged perspective view of the stanchion and buckle members.

Referring now in detail to the present preferred embodiment of the invention illustrated in the accompanying drawings, FIGURE 2 shows the leg splint designated generally by numeral 1.

More specifically, the splint includes a pair of side arms generally designated by numerals 2 and 4, a thigh-engaging arcuate member designated generally by numeral 6 which is mounted between the upper ends of said side arms, and a stanchion member designated generally by numeral 8 and which is connected to said side arms adjacently of and between the lower ends thereof as shown. Said stanchion member, as illustrated in FIGURES 1 and 4, serves to support the lower end of the splint spacedly with respect to a supporting surface to thus prevent the leg from contacting the ground.

With reference now to FIGURE 3 the arcuate member 6 will be seen to comprise larger and smaller telescopically arranged tubular members 10 and 12, respectively, tubular member 12 being slidably disposed within tubular member 10. Tightening screw 14, when manipulated by the user, acts to positively secure members 10 and 12 against movement, stem 16 of said screw being registrable with any of apertures 17 to assure such positive securement. Hinge members 18 connect said arcuate member to the upper ends 21 of said side arms. The hinges are fixed at 19 where they are attached to the reduced ends of said arcuate member 6 and are pivotable at 20 where they are attached to the reduced ends of said side arms. Accordingly, the aforesaid telescopic arrangement and pivotal connections afforded by said hinges enable said arcuate member to be selectively adjusted to fit any size thigh in the manner illustrated in FIGURE 1 of the drawings. After the desired size adjustment of said arcuate member has been accomplished, padded casing 22 is positioned around said arcuate member and zipper closure element 23 is drawn closed to thereby secure the casing around said arcuate member as shown.

Side arms 2 and 4 each comprise a pair of tubular members 24 and 26, said members 26 being slidable within respective members 24. As shown in FIGURES 1 and 2, each side arm is provided with a plurality of spaced apertures 28, said apertures extending through tubular members 24 and 26. Accordingly, it will be appreciated that the apertures of each tubular member of a side arm will be in registry or alignment at predetermined relative positions of members 24 and 26. Pin members 30, when inserted within any aligned pair of apertures of respective side arms 2 and 4 will preclude said tubular members against relative movement to therefore secure said members in the desired extensible relative positions. Said pin members, in the embodiment shown, are each attached to a ring member 32 via a flexible connective chain 34, said ring members being arranged annularly about a side arm and being slidably secured thereto.

The stanchion member 8, shown in detail in FIGURE 4 of the drawings will be observed as being generally U-shaped of configuration and including a pair of oppositely disposed leg portions 36 and 38, the free end 40 of each leg portion being pivotally connected to a respective side arm, rivets 42 as shown or other suitable fastening device being usable for such purpose. A brace member 44 is pivotally connected at 46 to leg 36, the other end of said brace member being removably securable to threaded stud 48, wing-headed nut 50 being utilized to secure said brace member to said stud. Thus, when the brace member is secured to the stud in the aforescribed and illustrated manner, the stanchion member 8 will be retained substantially perpendicularly with respect to said side arms to thereby support said side

arms at the lower ends 52 thereof spacedly with respect to a surface 54. Further, when said brace member 44 is detached from the side arm, said stanchion member can be moved to a position of substantial parallelism with respect to said side arms as shown in FIGURE 2, such folded position being advantageous during carrying or storage of the splint device.

A buckle member 56 is secured to arcuate lower end portion 58, said buckle member being provided to facilitate securement of strap 60 to the lower end of the splint, said strap being thereby securable at one end to the ankle of the victim and at the other end to the lower end of the splint. When thus secured, the tautness of the strap may be adjusted to occasion realignment of the fracture and to minimize the danger of possible further damage which may otherwise occur if the broken bone were not held against movement.

Elastic cushions 62 are provided transversely of said side arms and are slidably secured thereto to permit advantageous placement to thereby afford maximum comfort to the injured person.

Thigh strap 64 is provided proximately of the padded arcuate member and functions to secure the upper end of the splint to the upper portion of the limb as shown in FIGURE 1. Additional straps 66 may be used in the conventional manner to secure the leg to the splint along the entire length thereof.

Although the preferred embodiment of the traction device has been described, it will be understood that within the purview of this invention various changes may be made in the forms, details, proportion and arrangement of parts, the combination thereof and mode of operation, which generally stated consists in a device capable of carrying out the objects set forth, as disclosed and defined in the appended claims.

What is claimed is:

1. A splint for mending broken bones or limbs, comprising a pair of spaced, adjustably extensible side arms, an adjustable arcuate member mounted between one of the ends of said side arms, said arcuate member being comprised of first and second tubular members, one of said members being slidably receivable within the other of said members, tightening means, said means being adjustable to enable selective positioning of said first member with respect to said second member and to enable restraint of relative movement between said members, and a stanchion member connected to said side arms adjacently of and between the other ends thereof, said stanchion member being adapted to support said other ends spacedly with respect to a supporting surface.

2. A splint as set forth in claim 1 wherein said stanchion member is pivotally connected to said side arms whereby it may be moved to a position substantially normal with respect to said side arms and to a position of substantial parallelism with respect to said side arms.

3. A splint as set forth in claim 1 wherein said extensible side arms are each comprised of a pair of tubular members one member of each pair being slidable within the other member of said each pair, each side arm having a plurality of spaced apertures extending there-through whereby both tubular members of each said pairs are provided with said apertures, respective apertures of each said pairs being capable of alignment when respective tubular members are disposed in predetermined extensible relative positions, and pin members being receivable within said aligned apertures to preclude said tubular members against relative movement.

4. A splint for mending broken bones or limbs, comprising a pair of spaced adjustably extensible side arms,

said extensible side arms being each comprised of a pair of tubular members one member of each pair being slidable within the other member of said each pair, each side arm having a plurality of spaced apertures extending therethrough whereby both tubular members of each said pairs are provided with said apertures, respective apertures of each said pairs being capable of alignment when respective tubular members are disposed in predetermined extensible relative positions, pin members being receivable within said aligned apertures to preclude said tubular members against relative movement, said pin members each being attached to a ring via a flexible connective element, said ring being arranged annularly of a side arm and being slidably secured thereto, an adjustable arcuate member mounted between one of the ends of said side arms, and a stanchion member connected to said side arms adjacently of and between the other ends thereof, said stanchion member being adapted to support said other ends spacedly with respect to a supporting surface.

5. A splint as set forth in claim 2 wherein said stanchion member is U-shaped of configuration and includes a pair of opposing legs, each leg having a free end which is pivotally connected to a respective side arm, and a brace member pivotally connected at one end thereof to a leg, the other end of said brace member being securable to a side arm to thereby retain said stanchion member perpendicularly with respect to said side arms.

6. A splint as set forth in claim 1 wherein said arcuate member is hingedly connected to said one of the ends of said side arms.

7. A splint as set forth in claim 1 wherein a buckle member is attached to said other ends of said side arms, said buckle member being adapted for securing a strap attached to the limb of the user.

8. A splint as set forth in claim 1 wherein a plurality of elastic cushions extend transversely between said spaced extensible side arms.

9. A splint for mending broken bones or limbs, comprising a pair of spaced, adjustably extensible side arms, an adjustable arcuate member mounted between one of the ends of said side arms, said arcuate member being removably enclosed within a padded casing, said padded casing including zipper closure means to enable removal and securement of said casing around said arcuate member, and a stanchion member connected to said side arms adjacently of and between the other ends thereof, said stanchion member being adapted to support said other ends spacedly with respect to a supporting surface.

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U.S. Cl. X.R.

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