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E. F. RIES
THERAPEUTIC DEVICE

3,063,445

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2 Sheets-Sheet 1

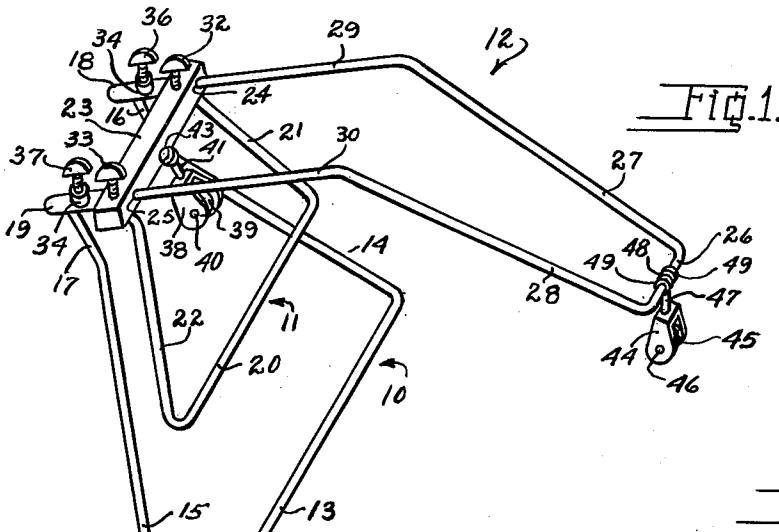


FIG. 1.

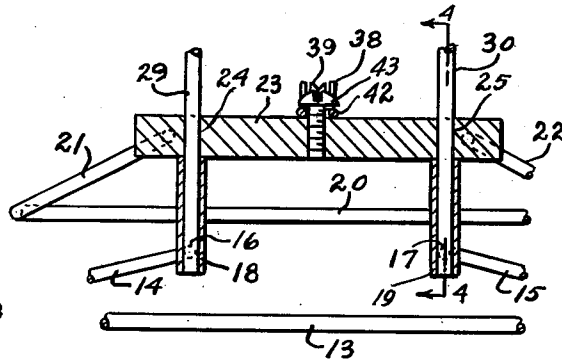


FIG. 2.

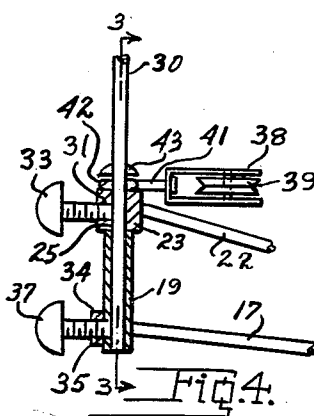


FIG. 3.

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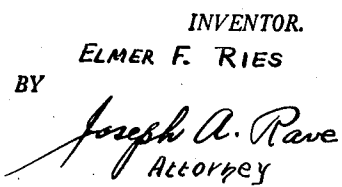
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THERAPEUTIC DEVICE

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3,063,445

THERAPEUTIC DEVICE

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6 Claims. (Cl. 128—75)

This invention relates to improvements in a therapeutic device, more particularly to a supporting bracket for supporting a traction weight in the treatment of patients.

In the traction treatment of patients it is sometimes necessary that the traction pull be vertically of the patient, as when sitting, or that the traction pull be horizontal, as when the patient is lying. In applying the vertical pull use is frequently made of a door while when the horizontal pull treatment is employed use is made of a bed. In either case a supporting bracket is required to align the pulling element with the body and which pulling element has secured to its other end the weight, or spring, or other device, that supplies the pulling force.

It is the principal object of the present invention to provide a supporting bracket for supporting the weight and aligning the pull with the patient regardless of whether said pull is in a vertical or a horizontal direction.

Another object of this invention is the provision of a bracket for accomplishing the foregoing object which is economical to produce while extremely efficient in use.

Another object of this invention is the provision of a traction weight support that can be readily adjusted to accommodate vertical or horizontal pull as desired yet which bracket is in and of itself extremely light in weight and simple of adjustment.

Other objects and advantages of the present invention should be readily apparent by reference to the following specification considered in conjunction with the accompanying drawings forming a part thereof and it is to be understood that any modifications may be made in the exact structural details there shown and described, within the scope of the appended claims, without departing from or exceeding the spirit of the invention.

In the drawings:

FIG. 1 is a perspective view of the traction weight supporting bracket adjusted and adapted for supporting a weight for exerting a vertical pull.

FIG. 2 is a perspective view of the traction weight supporting bracket of FIG. 1 arranged and adapted to effect a horizontal pull.

FIG. 3 is an enlarged fragmentary sectional view through a portion of the bracket as seen from line 3—3 on FIG. 4.

FIG. 4 is a fragmentary sectional view through the bracket as seen from line 4—4 on FIG. 3.

FIG. 5 is an enlarged fragmentary sectional view of the bracket as seen from line 5—5 on FIG. 6.

FIG. 6 is a side elevational view of the traction weight supporting bracket mounted for vertical pull.

FIG. 7 is a side elevational view of the traction weight supporting bracket mounted to effect a horizontal pull.

Throughout the several views of the drawings similar reference characters are employed to denote the same or similar parts.

As illustrated in the drawings the traction weight supporting bracket of the present invention is made substantially in its entirety from relatively small diameter rod or wires but the bracket may be made from other material without exceeding the purview of the present invention.

In general the bracket of the present invention com-

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prises a base member 10 with which cooperates a clamping member 11 and which base member and clamping arm have extending therefrom a supporting arm 12. The parts are so designed and connected with one another that the clamping member 11 and base 10 are adjustable with respect to one another to enable them to adequately clamp devices of varying thickness between them, and the said parts are so designed that the supporting arm 12 may be adjusted toward and from the clamping member and base as well as arranged in reverse positions with respect thereto.

The base 10, specifically, comprises a frame including a body member 13 of considerable length, with respect to the dimension of the other member, and which body member 13 has at each of its opposite ends an arm, respectively, 14 and 15 which converge for the major portion of their length, thereby providing a base substantially triangular in plan. The arms 14 and 15 at their free ends are provided with relatively short finger portions, respectively, 16 and 17 which are parallel with one another. At the outer or free ends of the said finger portion 16 and 17 each is provided with a hollow sleeve, respectively, 18 and 19. The connection of the fingers 16 and 17 with their sleeves 18 and 19 may take any suitable or desirable form, preferably, welding.

The clamp member 11, similar to the base member 10, is formed of metal rod or wire and on the whole is substantially identical, triangular, in plan to the said base member 10 except of considerably less area and with said clamp member 11 including a body portion 20 from the opposite ends of which rearwardly and convergently extend arms 21 and 22 and which arms have their inner ends parallel to one another and in abutment with and secured to a rectangular block 23. The said arms 21 and 22 are connected or secured to the block 23 in any suitable or desirable manner preferably by welding. The block 23 is provided inwardly of each end thereof with a bore, respectively, 24 and 25.

The supporting arm 12 is, again, formed of wire or rod material of a relatively small diameter and comprises a forward body portion 26 of a short length, as compared with the lengths of the clamp member and base body portions, respectively, 20 and 13. The supporting arm body portion 26 is provided at each of its ends with an arm 27 and 28 which diverge from one another for a portion of their length and are provided with angular parallel portions 29 and 30. The arms 29 and 30 have a normal spacing of their axes substantially equal to the spacing of the axes of the bores 24 and 25 in the block 23.

In practice the supporting arm 12 through its arms 29 and 30 holds the clamp member 11 and base 10 in their relative clamping position and it will be noted from FIGS. 3, 4, 6 and 7 that the clamp member 20 is biased toward or inclines toward the base 10 for thereby insuring a secure clamp between these parts as will presently be made clear.

In order to hold or secure the clamp member 11 and base 10 in their operative clamped positions the block 23 is provided with a pair of tapped apertures 31 which have axes at right angles to and intersect the bores 24 and 25 with said tapped apertures respectively receiving a thumb screw 32 and 33 respectively impinging on the arms 29 and 30 disposed in said bores 24 and 25. In order to secure the base 10 to the support arms 29 and 30 each of the base member sleeves 18 and 19 has projecting therefrom a boss 34 each provided with a tapped aperture 35 and respectively receiving thumb screws 36 and 37.

From the foregoing it will be noted that the parts, namely, the base 10, the clamp member 11 and the support arm 12 are secured to one another in adjustable positions through the thumb screws 32 and 33 and 36 and 37 impinging on the supporting arms 29 and 30 after

the said support arms have been passed through the aligned bores in the block 23 and sleeves 18 and 19.

The block has secured to it substantially at its lengthwise mid-point a pulley which consists of a substantially U-shaped housing 38 having interiorly thereof a pulley wheel 39 rotatable on an axle 40 and which axle is carried by the arms of the U-shaped housing 38. The said pulley housing 38 has a rotatable connection with the inner end of a mounting spindle 41 which has at its outer end an eye 42 receiving the threaded portion of a screw 43 whose head is of a greater area than the spindle eye 42. The said pulley is a well known commercial device and has movement about axes at right angles to one another, namely, the axis of the spindle 41 and the axis of the threaded portion of the screw 43, whereby critical alignment of the parts is not essential to the efficient operation of the pulley wheel 39.

A similar pulley assembly is mounted on the body member 26 of the support arm 12 and with said pulley including a U-shaped housing 44 for a pulley wheel 45 rotatably mounted on an axle 46 carried by the housing arms. Again the housing 44 has a rotatable connection with the end of a supporting axle 47 whose outer end is formed as an eye 48 and rotatably mounted on the supporting arm body member 26. Any suitable or desirable means may be employed for securing the pulley assembly on the supporting arm body portion 26, that is, secure or restrain the pulley from moving axially of the said body portion, that shown in the drawings consisting of securing a washer 49 on each side of the pulley eye 48.

The parts when utilized for exerting a vertical pull are arranged as illustrated in FIG. 1 or in FIG. 6 and the base 10 and clamp member 11 are adjusted with respect to one another and to include or embrace a suitable support, such as a door 50. The support arm 12 is arranged to be outwardly and downwardly projecting and through which arrangement the pulley wheels 45 and 39 of said support arm 12 and clamp member block 23 are spaced from one another with the said clamp member block pulley substantially adjacent the support or door 50. A suitable cable, rope, flexible member, or the like, 51 is arranged between the said pulleys and with the portion of said rope or cable adjacent the support door 50 having secured thereto a traction weight 52 while the other end of said flexible member 51 is secured to a harness (not shown) attached to a patient being under treatment by the weight 52. The weight 52 may take any suitable or desirable form generally being in the form of a fabric bag adapted to hold sand and with said bag having at its upper end a handle 53 through which it is connected to the flexible member 51.

With the parts as arranged in FIGS. 2 and 7 a horizontal pull may be applied to the patient. In this instant the base 10 and clamp member 11 have secured between them a portion of the bed, the mattress, for example, 54 and in this instant the supporting arm 12 is reversed from the showing in FIG. 6, namely, has the portions 27 and 28 of its arms outwardly and upwardly extending so that its pulley wheel 45 is outwardly of the bed for correspondingly positioning the weight. It is believed obvious from the foregoing description that the flexible member or rope 51 has the weight 52 at one end thereof while its other end is connected to a suitable harness attached to a patient on the mattress 54 and neither of which patient or harness is illustrated in the drawings.

From the foregoing it is believed now obvious that there has been provided a traction weight support bracket utilizable for providing a vertical or a horizontal traction pull and which bracket is extremely simple of construction, light in weight, and readily and conveniently adjustable for use as desired.

What is claimed is:

1. In a device of the class described the combination

of a base substantially triangular in plan and formed of metal circular in cross-section and including a body portion with converging arms at the ends of the body portion and with said arms at their free ends each including a length parallel with one another, a bored sleeve at the free end of each of said parallel portions of said arms, a clamp member overlying the base including at one end a block, said block having formed therethrough inwardly of each of its opposite ends an aperture aligned, respectively, with a base sleeve, a support arm including spaced apart parallel arm portions with each arm portion inserted, respectively, through an aligned clamp member block aperture and base sleeve, means securing said base sleeves and clamp member block to said inserted parallel portions of the support arm, and spaced apart means carried by said support arm and one of said clamp member and base for supporting a flexible member.

2. In a device of the class described the combination of a base substantially triangular in plan and formed of metal circular in cross-section and including a body portion with converging arms at the ends of the body portion and with said arms at their free ends each including a length parallel with one another, a bored sleeve at the free end of each of said parallel portions of said arms, a clamp member overlying the base including at one end a block, said block having formed therethrough inwardly of each of its opposite ends an aperture aligned, respectively, with a base sleeve, a support arm including spaced apart parallel arm portions with each arm portion inserted, respectively, through an aligned clamp member block aperture and base sleeve, said support arm upwardly of its parallel portions including a portion upwardly and angularly thereof, means securing said base sleeves and clamp member block to said inserted parallel portions of the support arm, and spaced apart means carried by said support arm at the upper end of its upward and angular portion and one of said clamp member and base for supporting a flexible member.

3. In a device of the class described the combination of a base substantially triangular in plan and formed of metal circular in cross-section and including a body portion with converging arms at the ends of the body portion and with said arms at their free ends each including a length parallel with one another, a bored sleeve at the free end of each of said parallel portions of said arms, a clamp member overlying the base including at one end a block, said block having formed therethrough inwardly of each of its opposite ends an aperture aligned, respectively, with a base sleeve, a support arm including spaced apart parallel arm portions with each arm portion, inserted, respectively, through an aligned clamp member block aperture and base sleeve, said support arm upwardly of its parallel portions including a portion upwardly and angularly thereof, means securing said base sleeves and clamp member block to said inserted parallel portions of the support arm, a pulley at the upper end of the support arm angular upward portion, and a second pulley carried by said clamp member block and with said pulleys laterally spaced with respect to one another.

4. In a device of the class described the combination of a base substantially triangular in plan and formed of metal circular in cross-section and including a body portion with converging arms at the ends of the body portion and with said arms at their free ends each including a length parallel with one another, a bored sleeve at the free end of each of said parallel portions of said arms, a clamp member overlying the base including at one end a block, said block having formed therethrough inwardly of each of its opposite ends an aperture aligned, respectively, with a base sleeve, a support arm including spaced apart parallel arm portions with each arm portion inserted, respectively, through an aligned clamp member block aperture and base sleeve, said support arm upwardly of its parallel portions including a portion upwardly and angularly thereof,

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thumb screws carried by the base sleeves and clamp member block for impinging on and securing the support arm parallel portions in the clamp member block apertures and base sleeves, a pulley at the upper end of the support arm angular upward portions, and a second pulley carried by said clamp member block and said pulleys laterally spaced with respect to one another.

5. In a device of the class described the combination of a base, a clamp member, said base and clamp member each formed of metal circular in cross-section in form of wire or a metal rod and each including a forward body portion with converging arms at the ends of the body portions, said base converging arms and clamp member converging arms each having substantially parallel portions at their inner ends, said base arms parallel portions each including a sleeve, said clamp member arms parallel portions being secured to a block, said block having formed therein inwardly of each of its ends an aperture respectively in axial alignment with the clamp member sleeves, a supporting arm including spaced apart portions disposed in the clamp member block apertures and base member sleeves, means for securing said supporting arm parallel portions and the clamp member and base to one another, said supporting arm including a portion above its parallel portions upwardly and angularly inclining with respect to said parallel portions, and spaced apart means on said supporting arm and one of said clamp member and base spaced from one another for supporting a flexible member.

6. In a device of the class described the combination of a base, a clamp member, said base and clamp member each formed of metal circular in cross-section in form of wire or a metal rod and each base and clamp member

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being triangular in plan and each including a forward body portion with converging arms at the ends of the body portions, said base converging arms and clamp member converging arms each having substantially parallel portions at their inner ends, said base arms parallel portions each including a sleeve, said clamp member arms parallel portions being secured to a block, said block having formed therein inwardly of each of its ends an aperture respectively in axial alignment with the clamp member sleeves, a supporting arm including spaced apart portions disposed in the clamp member block apertures and base member sleeves, means for securing said supporting arm parallel portions and the clamp member and base to one another, said supporting arm including a portion above its parallel portions upwardly and angularly inclining with respect to said parallel portions, and spaced apart means on said supporting arm and one of said clamp member and base spaced from one another for supporting a flexible member, including a pulley carried by the upper end of the said supporting arm upwardly and angularly inclined portion and a second pulley on said clamping member block.

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