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2,642,864

AMBULATORY TRACTION SPLINT FOR OSTEAL DEFORMITIES

Filed Nov. 13, 1951

2 Sheets-Sheet 1

Fig. 1

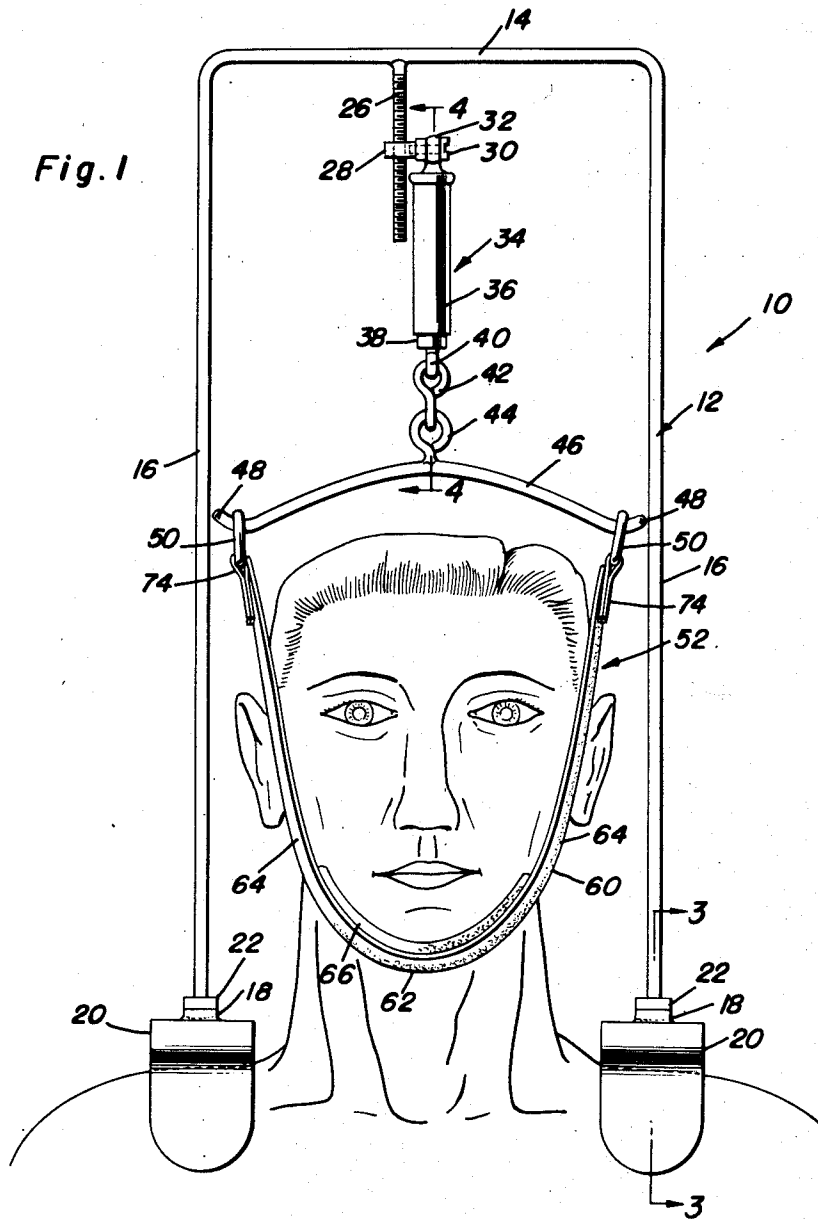
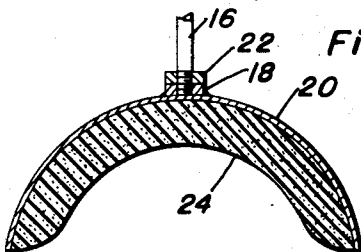


Fig. 3



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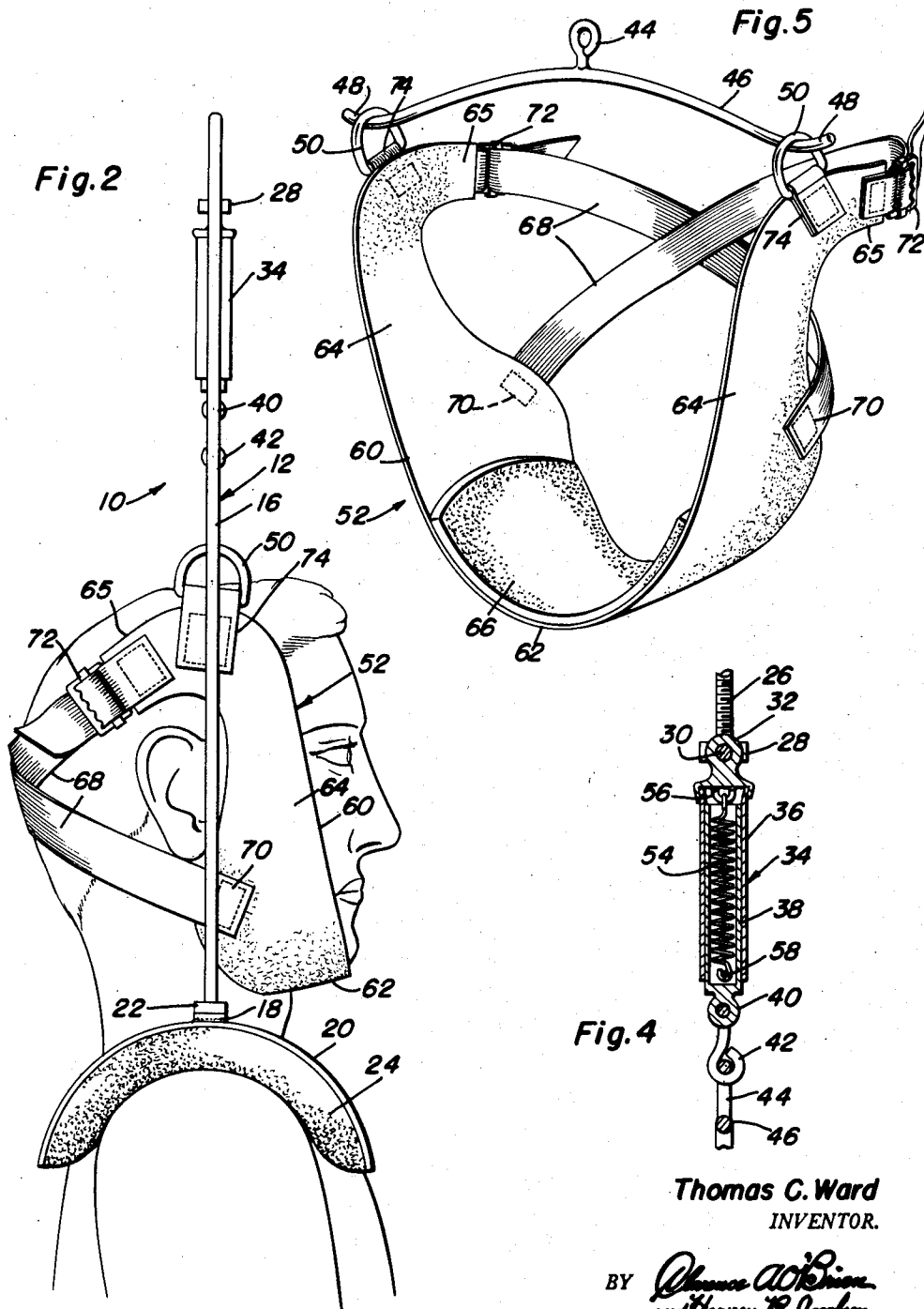
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UNITED STATES PATENT OFFICE

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AMBULATORY TRACTION SPLINT FOR
OSTEAL DEFORMITIES

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2 Claims. (Cl. 128—75)

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This invention relates to new and useful improvements and structural refinements in orthopedic braces and the principal object of the invention is to provide an apparatus of the character herein described which, in the nature of a traction splint, may be conveniently and effectively employed in the treatment of persons suffering from fractures, dislocations and other ailments affecting the neck and spinal column, without the necessity of the patient being bed ridden or otherwise stationed in an immobile position.

The expression "orthopedic" as used herein is employed broadly to designate corrective means for osteal deformities of the neck and spinal regions, and some of the important features of the invention reside in its convenient adjustability for supporting the head in proper relation to the neck and spine.

Some of the advantages of the invention lie in its simplicity of construction, in its efficient and dependable operation and in its adaptability to economical manufacture.

With the above more important objects and features in view and such other objects and features as may become apparent as this specification proceeds, the invention consists essentially of the arrangement and construction of parts as illustrated in the accompanying drawings, in which:

Figure 1 is a front elevational view of the invention in use;

Figure 2 is a side elevational view thereof;

Figure 3 is a fragmentary sectional detail, taken substantially on the plane of the line 3—3 in Figure 1;

Figure 4 is a fragmentary sectional detail, taken substantially on the plane of the line 4—4 of Figure 1, and

Figure 5 is a perspective view of the head engaging harness and cross bar used in the invention.

Like characters of reference are employed to designate like parts in the specification and throughout the several views.

Referring now to the accompanying drawings in detail, the invention consists of a brace which is designated generally by the reference character 10 and embodies in its construction an inverted, substantially U-shaped frame 12, including a bight portion 14 and a pair of side portions 16, the lower extremities of the latter being screw threaded in suitable nuts 18 which are suitably secured to arcuate shoulder pads 20. Suitable lock nuts 22 are provided on the screw threaded portions of the side members 16 in abutment with the nuts 18, and the pads 20 may be equipped

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at the under side thereof with lining of cushioning material 24 so that the entire frame 12 may be supported in position on the shoulders of a user, with the bight portion 14 being disposed substantially above the head, as shown.

A screw threaded stud 26 is rigidly secured to and depends from the bight portion 14 and carries an adjustable nut 28, the latter being provided with a lateral projecting stud 30 on which is positioned an eye 32 at the upper end of a combined suspension and tensioning member 34. This member includes an outer tubular casing 36 to which the eye 32 is affixed in the nature of a cap, while a tubular inner member 38 is slidably telescoped in the outer member 36 and is provided at its lower extremity with an eye 40. The latter is connected by a link 42 to an eye 44 provided intermediate the ends of an arcuate cross bar 46, the latter having upturned end portions 48 to engage suspension eyes 50 attached to a head engaging harness 52.

Referring again to the construction of the member 34, it will be noted that the inner section 38 thereof contains a tension spring 54 which is connected at its upper end to an eye 56 provided at the underside of the eye member 32 on the outer section 36, while the lower end of the spring 54 is anchored to a transverse pin 58 in the section 36, whereby the spring urges the two telescoped sections into a contracted relation. In other words, the spring urges the cross bar 46 and the harness 52 upwardly relative to the frame 12, thus urging the head of the wearer upwardly relative to the shoulders, substantially as shown.

The head engaging harness 52 comprises a substantially U-shaped sling 60 including a chin receiving bight portion 62 and a pair of upwardly extending side portions 64, the latter having rearwardly turned upper extremities 65. The bight portion 62 is provided with a pad 66, while a pair of crossed straps 68 are disposed at the back of the sling and are secured at one end thereof to intermediate regions of the portions 64, as at 70. The other ends of the straps are connected by adjustable buckles 72 to the extremities 65. Upper regions of the portions 64 are equipped with loops 74 having the eyes 50 attached thereto.

It is to be noted that by tightening the straps 68 in the buckles 72 the patient's head and neck may be flexed, and by loosening the straps the head and neck may be hyper-extended.

It is to be noted that the combined suspension and tensioning member 34 will urge the head receiving harness upwardly relative to the frame 12, and in addition to this resilient tensioning action, the entire device may be preadjusted by

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simply rotating the nut 28 on the stud 26, so as to raise or lower the entire member 34 and harness 52 in relation to the frame.

It is believed that the advantages and use of the invention will be readily understood from the foregoing disclosure and accordingly, further description thereof at this point is deemed unnecessary.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that minor changes in the details of construction and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

Having described the invention, what is claimed as new is:

1. An orthopedic brace of the character described, comprising an inverted U-shaped frame adapted to be supported solely by the shoulders and extend above the head of a user, shoulder engaging pads provided at the lower ends of said frame, a screw-threaded stud depending from the bight portion of the frame and coplanar therewith, a nut adjustable longitudinally on said stud, a laterally projecting pin on said nut, an elongated suspension member attached at one end

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thereof to said pin and including a pair of slidably telescoped sections and resilient means for sliding the same together, a cross bar connected intermediate its ends to the other end of said suspension member, and a head engaging harness connected to said cross bar.

2. The device as defined in claim 1 together with upturned end portions provided on said cross bar, said head engaging harness including a substantially U-shaped sling and a pair of suspension eyes provided at the top of opposite sides of said sling, said eyes being removably positioned on the respective upturned end portions of said cross bar.

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