Nov. 23, 1943. H. W. BELL 2,335,140

FOLDING STRETCHER

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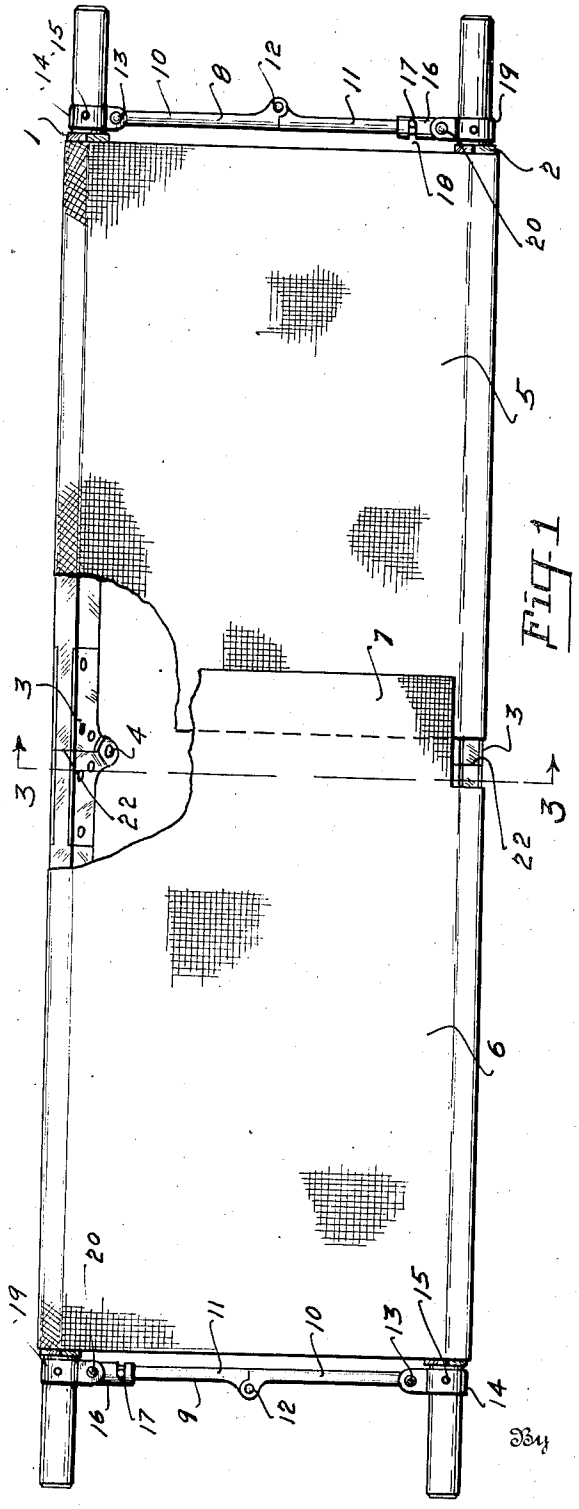


Fig. 1

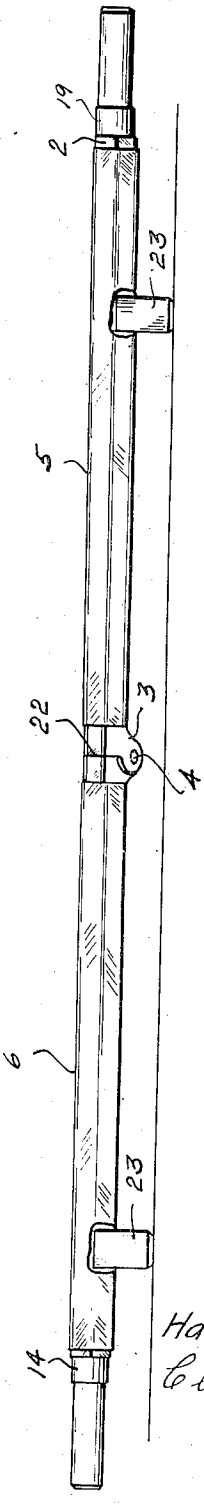


Fig. 2

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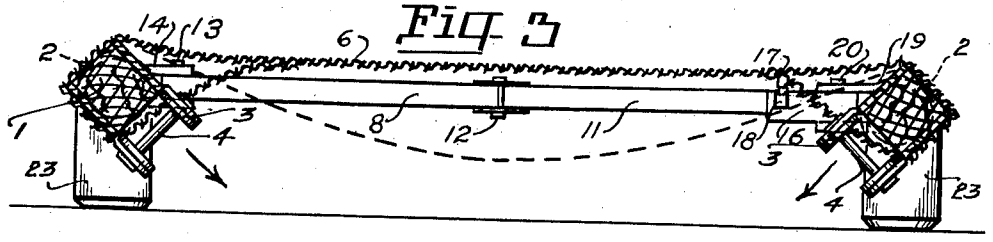
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Fig 3



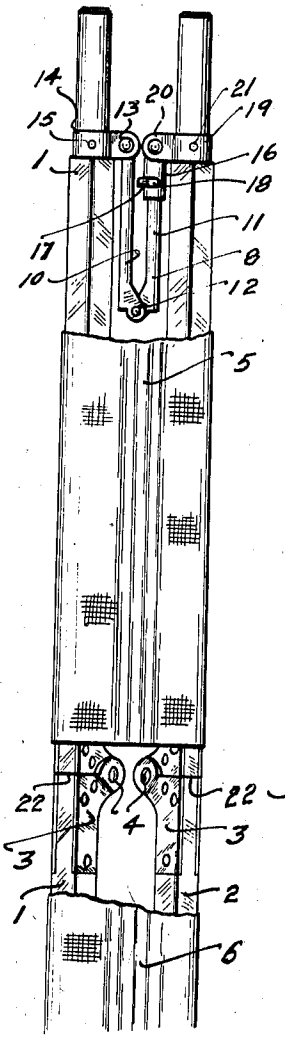


Fig 4

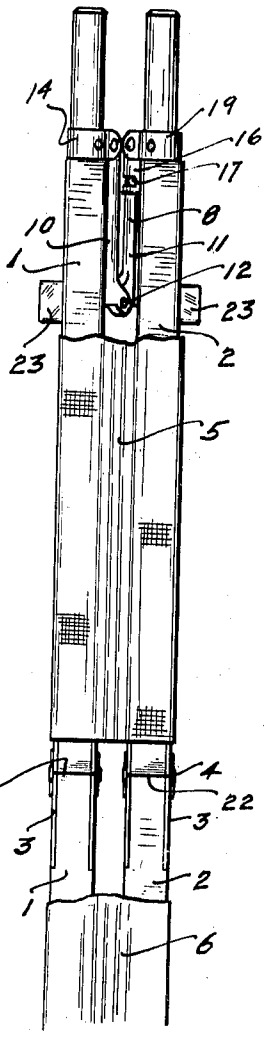


Fig 5

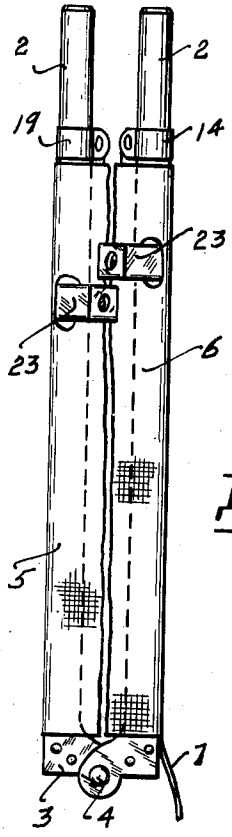


Fig 6

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2,335,140

FOLDING STRETCHER

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Application March 7, 1942, Serial No. 433,709

4 Claims. (Cl. 5—82)

This invention relates to stretchers and particularly to the type of stretchers that can be folded.

The primary object of the invention is to provide a folding stretcher whose hinged portion is self-locking and self-supporting against the downward strain of the weight of the patient.

The side bars of the stretcher, when extended in carrying position, have the axis of their hinges at an angle to a horizontal line transverse the stretcher. By arranging the axis of the hinges in this manner the downward weight of the load and the inward pull of the webbing of the stretcher will be carried by the abutting ends of the hinges, and will not require any transverse bracing between the side bars, which is most desirable, saving time in folding and unfolding the stretcher.

A further provision is made for conveniently folding the end cross supports and providing within these cross supports means for aligning the side bars of the stretcher so that the axis line of the hinges will be in line with one another, permitting the folding of the stretcher. All of this action being accomplished without disconnecting any of the parts of the stretcher, and being done from either end of the stretcher in the folding operation.

These and other incidental objects will be apparent in the drawings, specification and claims to follow.

Referring to the drawings:

Figure 1 is a plan view of my new and improved stretcher in carrying position, parts broken away for convenience of illustration.

Figure 2 is a side view of Figure 1.

Figure 3 is a sectional view, taken on line 3—3 of Figure 1, looking in the direction indicated, and illustrating the primary object of my invention.

Figure 4 illustrates the folding position of my new and improved stretcher.

Figure 5 shows an advanced position of Figure 4.

Figure 6 shows my new and improved stretcher completely folded.

In the drawings:

The side bars of the stretcher are indicated by numerals 1 and 2. These bars are hinged midway their length by hinges 3. The axis 4 of the hinges are positioned approximately 45 degrees to a horizontal line running transverse of the stretcher, best illustrated in Figures 1 and 3. The object of which will be described later.

The usual cross webbing is illustrated at 5 and 6, having a flap 7 for bridging the hinged section of the stretcher. Spreader bars 8 and 9 space the side bars 1 and 2 apart stretching the webbing 5 and 6 tightly therebetween. The spreader bars consist of two arms 10 and 11, connected together by the hinged portion 12 at their inner ends, the outer end of the bar 10 is pivotally connected at 13 to the clip 14, which is keyed to the side bar at 15 to prevent turning. The outer end of the bar 11 is revolvably mounted within the hub 16, and is held therein by the pin 17 working within the slot 18. The hub 16 is pivotally connected to the clip 19 at 20. The clip 19 is prevented from turning by suitable fastening means, as pin 15.

Referring to Figure 4, when it is desired to fold the stretcher the side bars 1 and 2 are brought together by buckling the spreader bars 8 and 9, as shown. It will be noted that the axis of the hinges 3 are at an angle to a line running transverse the stretcher, and while in this position it would be impossible to fold the stretcher to the position shown in Figure 6. The spreader bar 11, as stated before, is rotatably mounted within the hub 16. This will permit the aligning of the side bars, as shown in Figure 5, by the action of the bar 11 turning within the hub 16 at the same time the retaining pin 17 will rotate in the slot 18, permitting the axis of the hinge 3 to align themselves with one another.

The object of having the axis of the hinges 3 at an angle to a line running transverse of the stretcher is best explained by referring to Figure 3. The downward pressure of the weight being carried causes the abutting ends 22 to hold the side bars in alignment, and at the same time the inward pull of the webbing 5 and 6 will be offset by the abutting ends 22 of the hinge so that the hinge itself becomes a self-locking brace for the side bars, requiring no cross brace between the side bars at the hinged point. This is one of the highlights of the invention, making it impossible to fold the stretcher accidentally when the spreader bars 8 and 9 are adjusted, and no intermediate braces being needed.

Suitable supporting legs 23 are provided for supporting the stretcher, these supporting legs are offset on either end of the stretcher, so as to permit folding, as shown in Figure 6.

I do not wish to be limited to the exact construction as shown, as other forms of mechanical equivalents may be used, still coming within the scope of the claims to follow.

What I claim is:

1. In a stretcher a pair of side bars supporting

a body carrying member, said side bars each being intermediately hinged for folding with the axes of the folding pivots arranged at an inclination to intersect above the longitudinal center line of the body carrying member, spreader bars connecting the side bars and each provided with an intermediate hinge for moving the side bars to and from one another, the spreader bars each being of two pivotally connected arms and the outer end of one arm of each bar having two pivotal connections with a side bar, one of said connections being at right angles to its axis and the other about its axis, and the later pivotal connection securing limited rotation of the side bars relative to one another when said side bars are in immediate proximity with each other.

2. In a stretcher, a pair of side bars supporting a body carrying member, said side bars being intermediately hinged for folding with the axes of the folding pivots arranged at an inclination to intersect above the longitudinal center line of the body carrying member, folding spreader bars pivotally connected between the side bars, and a second pivotal connection between each spreader bar and one of said side bars securing limited rotation of the side bars relative to one another when said side bars are in immediate proximity with each other thereby aligning the aces of the intermediate hinges of the side bars.

3. In a stretcher, a pair of side bars supporting a body carrying member, said side bars being intermediately hinged for folding with the axes of the folding pivots arranged at an inclination to intersect above the longitudinal center line of the body carrying member, folding spreader bars pivotally connected between the side bars, and construction securing limited rotation of the side bars relative to one another when said side bars are in immediate proximity with each other for the purpose of aligning the axes of the intermediate hinges of the side bars.

4. A stretcher including intermediately hinged side bars for folding upon a transverse axes, folding spreader bars pivotally connected between the side bars, and construction securing limited rotation of the side bars relative to one another when said side bars are in immediate proximity with each other for the purpose of aligning the axes of the intermediate hinges of the side bars.

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