Oct. 26, 1943. C. B. VISNESS ET AL 2,333,062

FOLDING STRETCHER

Original Filed June 5, 1939

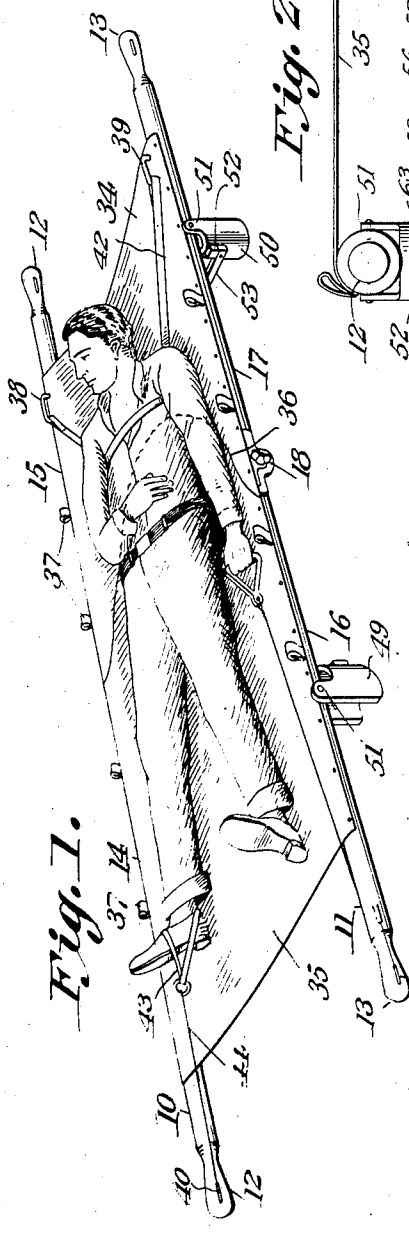


Fig. 1.

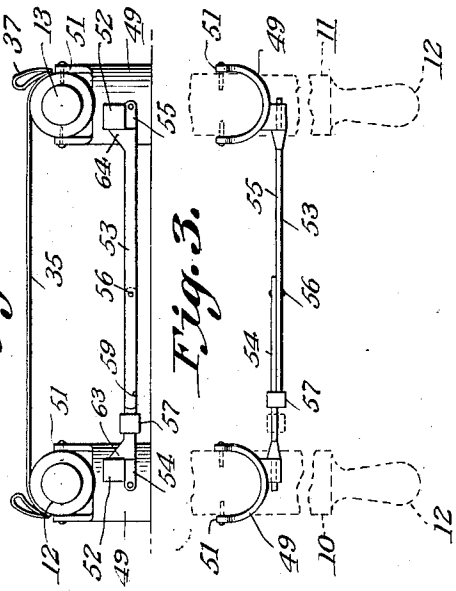


Fig. 2.

Fig. 3.

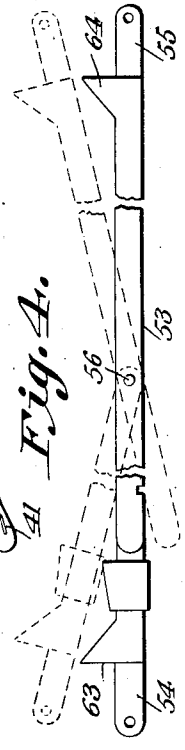


Fig. 4.

Fig. 5.

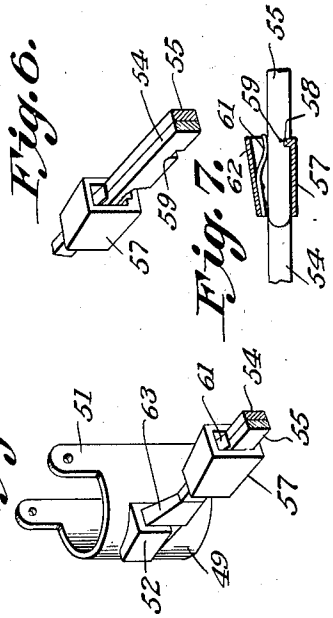


Fig. 6.

Fig. 7.

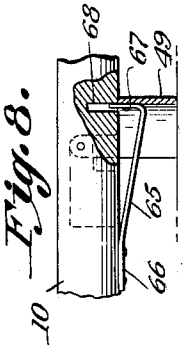


Fig. 8.

Carl B. Visness,
Charles C. Carpenter,
INVENTORS

BY Victor J. Evans & Co.

ATTORNEYS

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FOLDING STRETCHER

Carl B. Visness and Charles C. Carpenter, Grand Forks, N. Dak.

Original application June 5, 1939, Serial No. 277,560. Divided and this application February 24, 1942, Serial No. 432,130

5 Claims. (Cl. 5—82)

Our invention relates broadly to stretchers and more particularly to the collapsible type of stretcher or litter employed in the handling and care of the ill or maimed.

An important object of our invention is the provision of a stretcher that is collapsible in its nature to permit the same to be folded into a compact unit when not in use.

Another object of our invention is to provide a stretcher that includes means to permit tractive stresses to be applied to an injured patient to relieve his suffering and to prevent his injuries from being aggravated during his transportation for adequate medical care.

Still another object of our invention is to provide a stretcher that may be quickly and expeditiously converted from a folded to an extended position.

A further object of our invention is to provide a stretcher that is light and simple in construction and inexpensive to manufacture.

In the drawing, forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a perspective view, showing parts broken away, of a stretcher constructed in accordance with our invention,

Figure 2 is an end elevation thereof,

Figure 3 is a top plan view of one of the spreader bars embodying a part of our invention,

Figure 4 is a side elevation of one of the spreader bars,

Figure 5 is a perspective view illustrating the manner in which the spreader bars are attached to the legs of our device and showing the same in the locked extended position,

Figure 6 is a perspective view of the spreader bar showing the manner in which the locking element is released,

Figure 7 is a vertical longitudinal sectional view of Figure 6,

Figure 8 is a vertical longitudinal sectional view showing the means of locking the legs in their lowered position.

In the accompanying drawing, wherein for the purpose of illustration, is shown a preferred embodiment of our invention, the numerals 10 and 11 designate side members composed of longitudinal aligned sections 14, 15, 16 and 17, hinged together at 18. The specific construction is covered by our application, Serial No. 277,560, filed June 5, 1939, which has resulted in Patent No. 2,276,256, issued on March 10, 1942, and this being a divisional application thereof.

The sections 15 and 17 are joined by a piece of canvas fabric, or the like; 34, either longitudinal edge of which is securely fastened thereto to hold the same in spaced parallel relation, and the sections 14 and 16 are joined by a similar piece of fabric 35, secured thereto in the same manner and formed with a tab 36, which overlaps the fabric 34 when the sections are in the extended position, as illustrated in Figure 1. The fabric covering for the stretcher is formed in two sections to permit a taut supporting surface to be effected at all times when the sections of the side member are in the extended position, and to permit the same to be easily moved to the folded position. The looped eyelets 37 are secured to the outer edges of the side members 10 and 11 at spaced intervals therealong and comprise means for attaching bandages or straps.

It is frequently necessary, when transporting an injured person, that certain members, such as an arm or leg, be held in a particular position, and when this is necessary straps may be wrapped around the injured member and secured to the looped eyelets 37 to hold the said member against accidental displacement.

The side members 10 and 11 are provided at their outer ends with handle portions 12 and 13, with slots 40 and 41 therein. These side members are also provided with staples 38 and 39, to which may be attached a strap 42, adapted to pass under the arms of the patient. A halter 43 is fitted to the foot of the patient and is connected by a cord 44 and may be attached to the slots in the handle.

Supporting pairs of legs 49 and 50 are semicircular in cross section, and are formed with upwardly extending tabs 51 pivotally attached to opposite sides of the supporting members 10 and 11 in a manner whereby they may be folded upwardly into close fitting oppressed relation with the side members. Suitable spreader bars 53 are interposed between the pairs of legs 49 and 50 and the opposite ends thereof are secured to the legs. The spreader bars are formed in two sections, 54 and 55, pivotally connected by the rivet 56, or the like, and a sleeve 57 is slidable thereon and formed with an inwardly extending protuberance 58 adapted to be received within the recess 59 in the inner end of the section 55. A leaf spring 60 is positioned within the sleeve 57 and with the end 61 thereof normally resiliently engaging the upper face of the section 54. The sleeve is of substantially trapezoidal formation in elevation in a manner whereby the larger end 62 thereof may be depressed towards the sections against the resilient action of the spring 61

to permit the protuberance 58 to be received within the recess 59, and when the sleeve is released the resilient action of the spring will hold the said sleeve in locked engagement within the recess. The stops 63 and 64 are formed on the sections 54 and 55, respectively, to normally abut against the inner faces of the lugs 52 on the pairs of legs 49 and 50. The leaf springs 65 have the ends 66 riveted, or otherwise secured, to the underside of the side members 10 and 11, and have the free ends 67 thereof bent inwardly and received within the vertical slots 68. The spring 65 is normally angularly disposed with respect to the side members so that the free ends 67 thereof will abuttingly engage the inner faces of the legs to hold the same in the open position. If the ends 67 of the springs are manually depressed within the slots 68, the legs will be freely movable to the closed position illustrated by the dotted lines in Figure 8.

When it is desired to fold the stretcher, the protuberances 58 of the spring pressed sleeves 57 on the spreader bars are moved out of engagement with the recesses 59, and the leaf springs 65 are depressed within the slot 63 to permit the legs to be folded into close fitting engagement with the under side of the side members 10 and 11. The spreader bars may then be folded to bring them in touching relation to the side bars and the sections 14, 15, 16 and 17 may be folded one upon the other. The fabric sections 34 and 35 are wrapped around the device to hold the same in a small compact unit.

It may thus be seen that the device may be easily and expeditiously converted from the folded to the extended position, or vice versa, and that, when it is in the extended position, the fabric will be held in a taut condition to prevent the injured person from contacting the spreader bars 53. The stops 63 and 64 of the spreader bar will abut the lugs 52 on the legs to prevent lateral weaving of the stretcher and the leaf spring 65 will firmly engage the inner faces of the legs to hold the same in the extended position.

It is to be understood that the form of our invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the size, shape and arrangement of parts may be resorted to without departing from the spirit of our invention, or the scope of the appended claims.

Having thus described our invention, we claim:

1. In a collapsible stretcher, the combination of a pair of side members composed of two sections hinged for folding one upon the other, fabric covers carried by the said sections, supporting pairs of legs pivotally mounted adjacent the ends of the side members, said legs being semicircular in cross section to permit the same to be folded into close fitting oppressed relation with the said side members and having lugs, and collapsible spreader bars pivotally carried by the supporting legs and having stops to abuttingly engage the lugs.

2. A collapsible stretcher having elongated cylindrical side members, legs comprising semicircular sections, one end of the sections being provided with upstanding tabs pivoted to the members at opposite sides thereof, whereby the legs may be folded to lie snugly against the members or extended to move the pivoted end thereof into abutting relation therewith, and a leaf spring carried by the members adjacent each of the legs, the said springs normally extending angularly from the members and having inturned free ends engaging the inner faces of the legs when the said legs are in the extended position and adapted to be accommodated within recesses in the side members when the legs are moved to the folded position and to be retained therein by the said legs.

3. In a collapsible stretcher, the combination of a pair of side members composed of two sections hinged for folding one upon the other, fabric covers carried by the said side members, supporting pairs of legs pivotally mounted adjacent the ends of the side members and formed with lug elements having a horizontal and a vertical face, foldable spreader bars pivotally carried by the supporting legs below the said lugs, said bars being formed with lateral extensions, whereby movement of the bars to an extended position will move the pivoted ends thereof into engagement with the horizontal faces of the lugs and the said lateral extensions into engagement with the vertical faces of the lugs, and a spring sleeve slidable on the spreader bars and adapted to enclose the pivoted portions thereof and to be detachably held in locked engagement therewith.

4. In a stretcher having a pair of side members, a plurality of support legs pivotally connected in transversely opposed pairs to the side members for folding in a plane parallel with the side members, a stop lug on one side of each leg, a spreader bar having its outer end pivotally connected to the leg of one side member, a complementary spreader bar having its outer end pivotally connected to the transversely opposed leg and its inner end pivotally connected to the medial portion of the first mentioned spreader bar, a spring pressed sleeve slidably mounted on the said bars for releasably locking the same in extended spreader position, and a laterally extending projection on the outer end of each bar disposed to abut the lug on the leg when the bars are in spreader arrangement.

5. In a stretcher having a pair of side members, a plurality of support legs pivotally connected in transversely opposed pairs to the side members for folding in a plane parallel with the side members, a stop lug on one side of each leg, a spreader bar having its outer end pivotally connected to the leg of one side member, a complementary spreader bar having its outer end pivotally connected to the transversely opposed leg and its inner end pivotally connected to the medial portion of the first mentioned spreader bar, a spring pressed sleeve slidably mounted on the said bars for releasably locking the same in extended spreader position, a laterally extending projection on the outer end of each bar disposed to abut the lug on the leg when the bars are in spreader arrangement, and a leaf spring secured to each side member in longitudinally extending position adjacent each leg disposed to releasably hold the leg in supporting position and retractable for folding the leg thereover in collapsed position.

CARL B. VISNESS.
CHARLES C. CARPENTER.