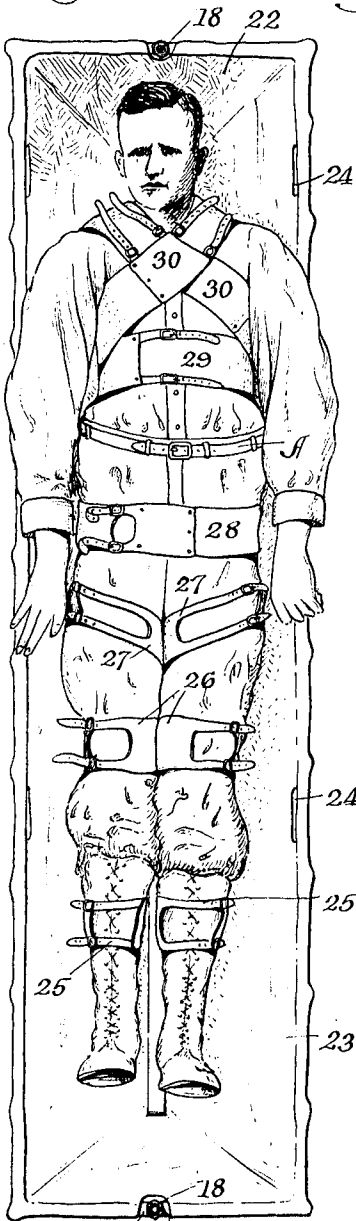


J. L. BOARDMAN.
 STRETCHER.
 APPLICATION FILED DEC. 7, 1917.

1,270,107.

Patented June 18, 1918.
 2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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J. L. Mauliff

Fig. 4.

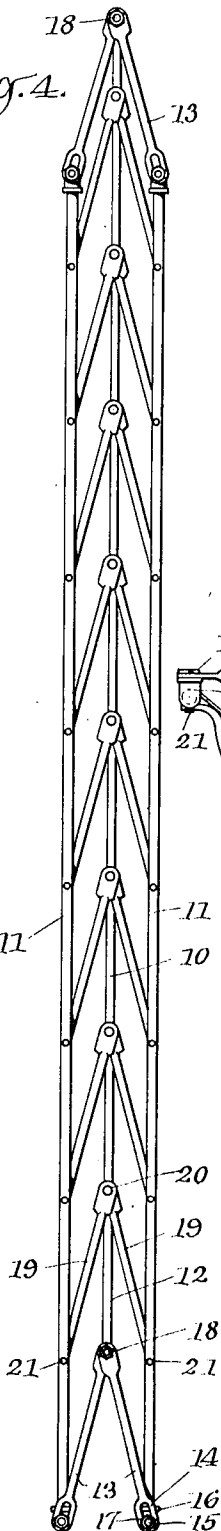


Fig. 5.

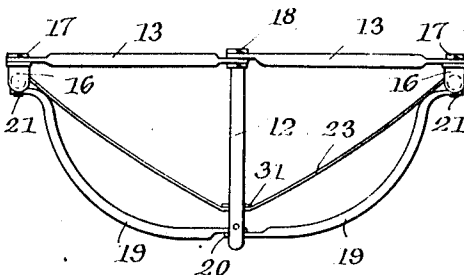
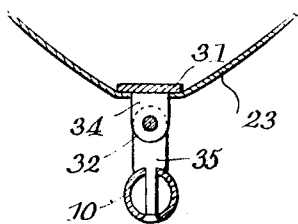


Fig. 6.



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2 SHEETS--SHEET 2.

Fig. 2.

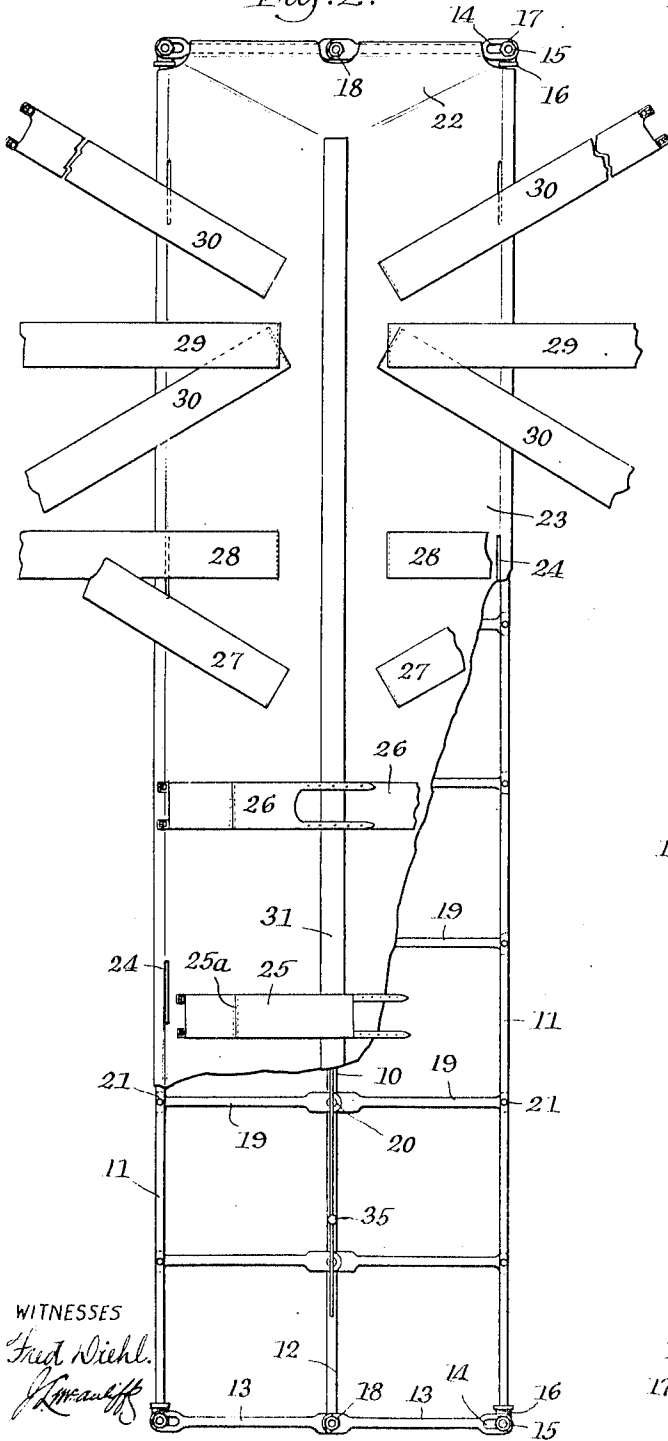
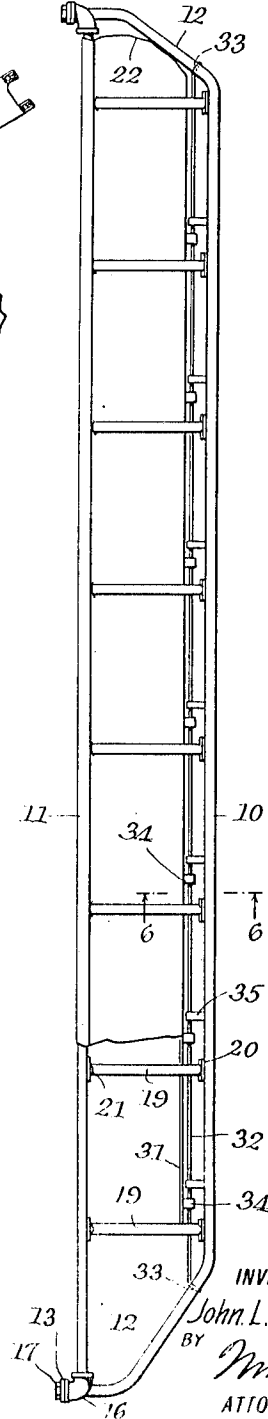


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN LATSON BOARDMAN, OF BUTTE, MONTANA.

STRETCHER.

1,270,107.

Specification of Letters Patent. Patented June 18, 1918.

Application filed December 7, 1917. Serial No. 206,047.

To all whom it may concern:

Be it known that I, JOHN L. BOARDMAN, a citizen of the United States, and a resident of Butte, in the county of Silverbow and State of Montana, have invented a new and Improved Stretcher, of which the following is a full, clear, and exact description.

My invention relates to a stretcher for transporting injured or disabled persons and more particularly relates to a stretcher adapted for the transportation of persons injured or disabled in mines and quarries.

It may be stated generally that the transportation of a disabled person from the depths of a mine or quarry over rough and mountainous country, up and down ladderways, stairways, steep embankments and the like, has long been a serious problem and taxes the resourcefulness of those engaged in such work.

An object of the present invention is to provide a stretcher possessing adequate strength and durability while light and inexpensive and adapted to be assembled into compact form when not in actual use.

A further important object is to provide a stretcher of the indicated character embodying means to effectively strap the injured person in position and support him with the minimum discomfort as well as to provide a frame having protecting elements to guard the person on the stretcher against injury by contact with adjacent walls or objects.

A further object is to provide a stretcher of such a character that the injured person may be handled with the maximum ease and comfort and be slid or dragged on the stretcher up or down shafts, stairways, ladders, and steep embankments and may be suspended in midair by a derrick, for example, and all without the slightest danger of injury.

Reference is to be had to the accompanying drawings forming a part of this specification in which similar reference characters indicate corresponding parts in all the views, it being understood that the drawings are merely illustrative of one example of the invention.

Figure 1 is a plan view of a stretcher constructed in accordance with my invention, showing the manner in which an injured person is strapped thereon;

Fig. 2 is a plan view of the stretcher with

parts broken away and showing the straps in the open position;

Fig. 3 is a side elevation with parts broken out;

Fig. 4 is a plan view of the framework of the stretcher showing the same in partially collapsed form;

Fig. 5 is an end view of the stretcher;

Fig. 6 is a detail in transverse section on an enlarged scale to be hereinafter referred to, the section being taken on the line 6-6, Fig. 3.

In carrying out my invention in accordance with the illustrated example, a central longitudinal frame member 10 is provided which may be in the form of a tube or bar of suitable cross section and longitudinal side bars 11 elevated above the bar 10. The central bar 10 has upwardly extending ends 12 and at the ends of the frame cross bars 13 are employed, secured at their outer ends to the side bars 11 and at the center to the terminals of the ends 12 of the central rod 10. The end bars 13 are articulated, being in two sections and pivotally connected to the terminals of the ends 12 as at 18. The end bars 13 have a slot and pin connection with the side bars 11 for which purpose there are shown slots 14 in the bars 13 through which studs 15 extend from elbows 16 on the bars 11, nuts 17 on the said studs completing the connection. The central bar 10 constitutes a runner on which the frame may be drawn.

Connecting the depressed runner bar 10 with the side bars 11 are a series of transverse bars or ribs 19 articulated at the center and pivoted as at 20 to the said bar 10, the said ribs curving from the connection outwardly and upwardly to a pivotal connection as at 21 with the side bars 11. By the described construction it will be seen that the frame may be expanded as in Figs. 1, 2, 3 and 5 or collapsed into compact form as in Fig. 4, whereby to be conveniently carried or to occupy the minimum space.

A canvas 23 covers the frame and is suitably secured at its side edges to the side bars 11, the end portions 22 or head and foot of the canvas extending upwardly to a connection with the cross bars 13. Slots or openings 24 are formed in the canvas along the sides to afford handholds for carrying the stretcher.

To securely strap the injured person as

indicated in Fig. 1 to the stretcher, there are provided near the bottom of the stretcher, leg straps 25 on said canvas and suitably secured thereto as by a line of stitching 25^a, said straps being adapted to embrace the legs of the person below the knees. Similar straps 26 are provided on the stretcher and suitably secured to the canvas for strapping the legs separately above the knees. Straps 27 are adapted to embrace the legs obliquely below the groin while a strap 28 is adapted to embrace the body at the groin. A breast strap 29 is provided and adjacent to the same shoulder straps 30 to pass beneath the arm pits and across the right and left shoulders. The respective straps are provided with suitable buckles or equivalent fastening means. The letter A, Fig. 1, indicates the trousers belt.

I provide means to restrain or stay the canvas at the depressed bottom, along approximately a central line, the illustrated means for the purpose being as follows: At the inside of the stretcher, that is to say, the upper surface of the canvas or equivalent flexible material, a longitudinal strip 31 is provided and below the canvas a longitudinal rod or bar 32 extends and is suitably secured at its ends to the central runner bar 10 as at 33. The strip 31 is stayed by suitable supports engaging the rod 32, there being shown in the present example, keepers 34 as best seen in Fig. 6 which restrain said strip 31 while permitting a limited play relative to the rod 32 so that there may be a slight yielding or longitudinal motion of the strip 31 and the bottom of the canvas relatively to the rod 32. Vertical stays or standards 35 are provided extending upwardly from the central bar 10 embracing the rod 32. To suspend the stretcher at the head thereof from a derrick or the like in hoisting or lowering the injured person, the hoist rope may be hooked or otherwise made fast to the end 12 of the runner at the head of the stretcher.

With the described arrangement the runner bar 10, side bars 11, end bars 13 and ribs 19 all coact to protect the person on the stretcher from contact with adjacent objects when the stretcher is hauled along the ground or moved over inclined surfaces, as well as when being raised or lowered while suspended. At the same time the manner of strapping the injured person to the canvas and the means for suspending and staying the canvas insure the maximum comfort to the injured person while maintaining him in position on the stretcher without liability of his slipping, falling, or being moved in such a way as to cause further injury or suffering.

The improved results arise largely from the staying of the canvas along the depressed central line in addition to the se-

cured side edges, whereby the supporting surfaces presented by the canvas at each side of the depressed central line sustain the strapped occupant above the staying elements, and this while utilizing the staying elements to prevent discomforting swaying of the canvas.

I would state in conclusion that while the illustrated example constitutes a practical embodiment of my invention; I do not limit myself strictly to the mechanical details herein illustrated, since manifestly the same can be considerably varied without departure from the spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A stretcher including a frame presenting longitudinal side elements, a rigid, depressed, longitudinal central frame member, flexible supporting material secured along its side edges to said side elements, and means connecting said material along the median line thereof with said depressed member of the frame to stay the supporting material along the depressed central line thereof, elevated above the said depressed frame member, said stay means permitting limited lateral sway of the said material along said elevated median line, relatively to the said depressed frame member.

2. In a stretcher, a frame presenting longitudinal side bars, a depressed central longitudinal runner bar, transverse members pivotally connecting said side bars and runner bar, flexible supporting material connected along its side edges with the side bars, and means to stay the said flexible material along a longitudinal central line above the runner bar.

3. A stretcher including a depressed frame, flexible supporting material secured at its side edges to the frame, and means coacting with the depressed portion of the frame for restraining the flexible material approximately at the median line thereof, said means including members secured to the supporting material, upwardly extending members secured to said depressed frame portion and longitudinally disposed pivot means connecting said members on the supporting material with the upwardly extending members on the material.

4. In a stretcher, a frame and flexible supporting material thereon, said frame including longitudinal side bars, a depressed longitudinal runner bar presenting upwardly extending ends, articulated end bars connected at their articulation with the runner bar and pivotally connected at their outer ends with the side bars, and articulated transverse ribs pivotally connected at their articulation with the runner bar and pivotally connected with the side bars.

5 5. In a stretcher, a frame and flexible supporting material thereon, said frame including longitudinal side bars to which the flexible material is secured along its side edges, a depressed runner bar, means connecting
10 the runner bar and side bars, a longitudinal strip on the flexible material at the upper surface above the runner bar, and means acting to tie said strip to the runner bar.

10 6. In a stretcher, a frame and flexible supporting material thereon, said frame including longitudinal side bars to which the flexible material is secured along its side edges, a depressed runner bar, means connecting
15 the runner bar and side bars, a longitudinal strip upon the flexible material at the upper surface above the runner bar, a longitudinal rod rigid with the runner bar and disposed

between said runner bar and said strip beneath the flexible material, and means connecting said strip and rod. 20

7. In a stretcher, a frame presenting a rigid, depressed longitudinal member, depressed flexible supporting material in the frame, means connecting said material along
25 the median line thereof with said depressed frame member and permitting lateral sway of the material along its median line relatively to said rigid member, and strap elements to strap an injured person on the
30 stretcher, said strap elements being secured to said supporting material at opposite sides of the depressed portion thereof independently of the frame members.

JOHN LATSON BOARDMAN.