

Nov. 26, 1963

D. SACKS  
STRETCHER

3,111,687

Filed Sept. 19, 1961

2 Sheets-Sheet 1

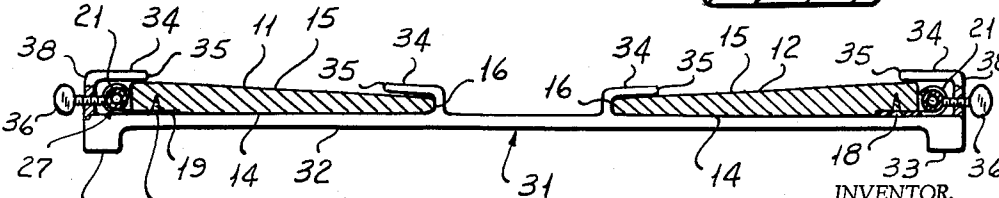
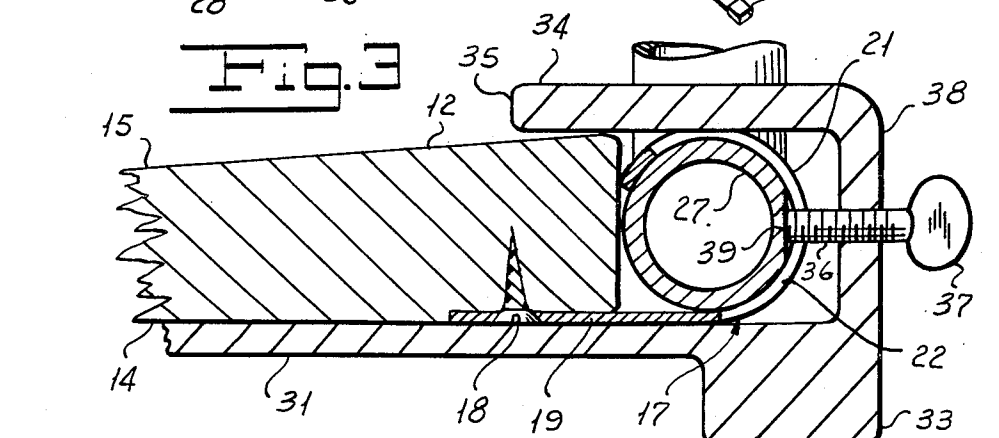
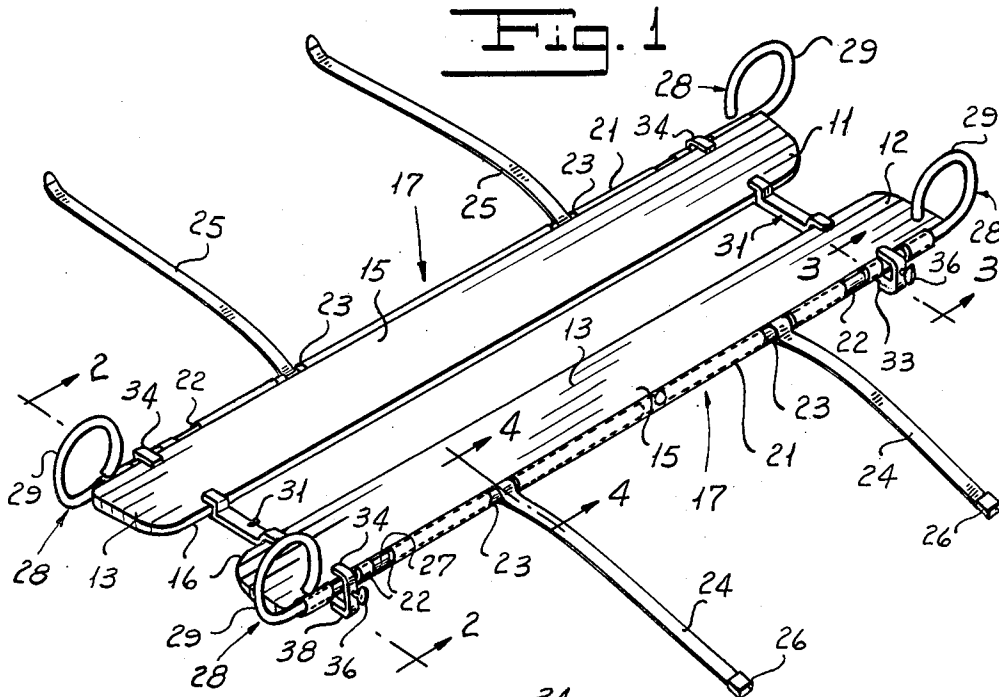


Fig. 2

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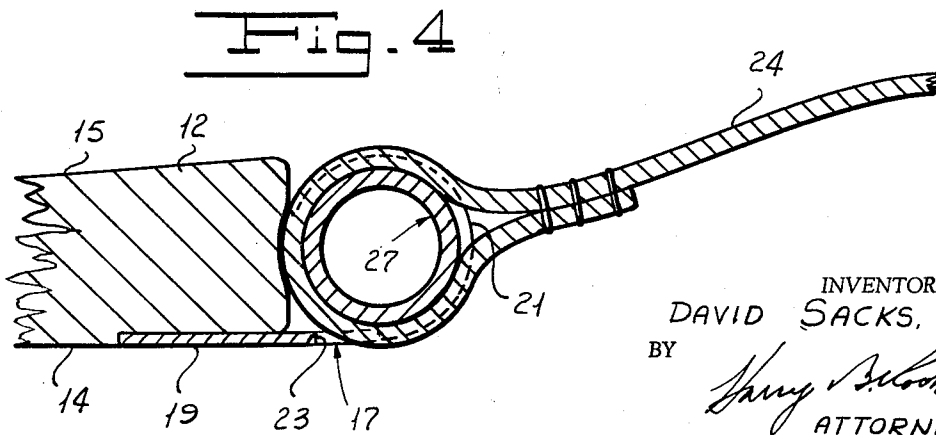
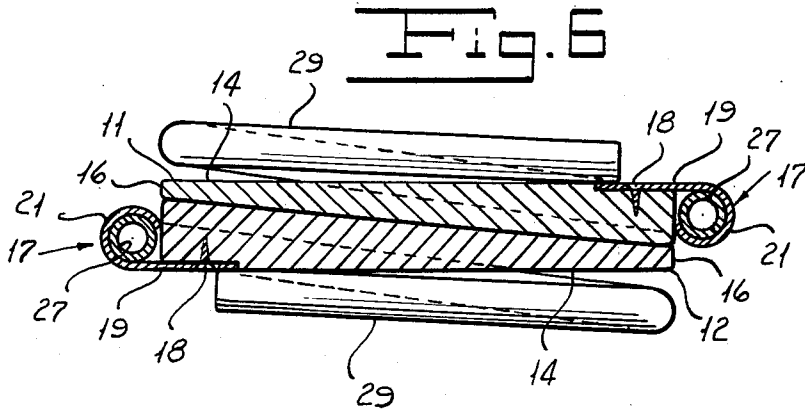
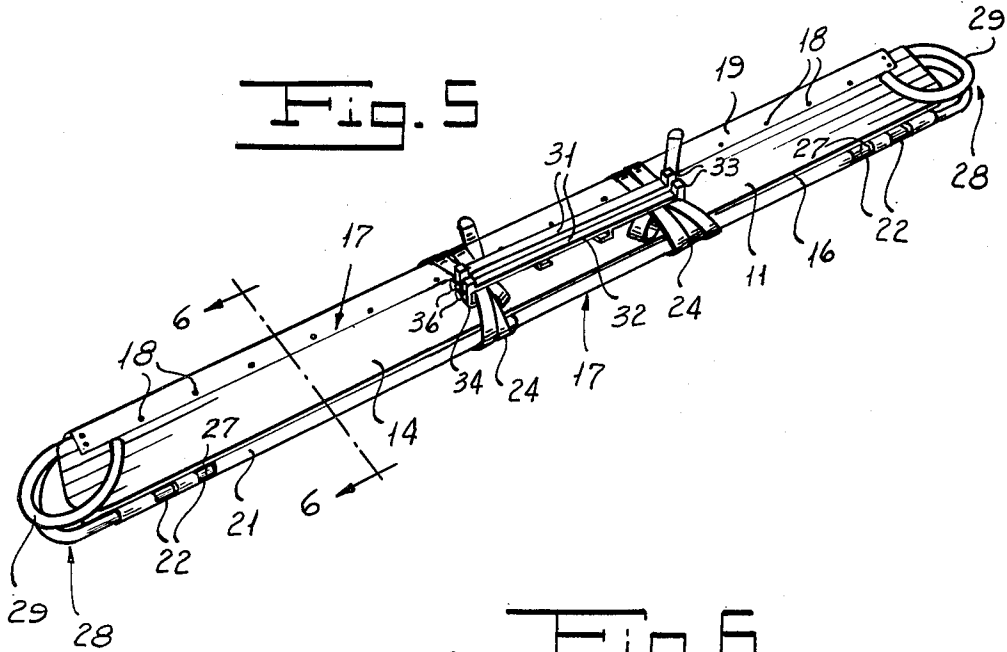
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2 Sheets-Sheet 2



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1

3,111,687  
**STRETCHER**  
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 Filed Sept. 19, 1961, Ser. No. 139,095  
 10 Claims. (Cl. 5—82)

This invention relates to carriers or stretchers for carrying disabled persons and, more particularly, to an improvement over that described and claimed in my Patent No. 2,715,737, dated August 23, 1955.

Another object of my invention is to provide a stretcher which can be built up under a patient while lying prone on the ground or other supporting surface, causing a minimum of disturbance, which stretcher can readily and comfortably support the patient during transportation, and which can then, with the patient thereon, be conveniently placed upon a bed or the like, and disassembled, thereby gently transferring the patient to the bed.

Another object of my invention is to provide a stretcher desirably with sloping, body-bearing panels which can be separately maneuvered over the ground, accommodating themselves to its shape when being inserted under a patient, and which is provided with looped or arcuate handles, adjustable to either upstanding or panel-overlying positions.

A further object of my invention is to provide a stretcher which can be easily assembled for use or disassembled for storage.

A still further object of my invention is to provide a stretcher with adjustable looped or arcuate handles.

These and other objects and advantages will become apparent from the following detailed description when taken with the accompanying drawings. It will be understood that the drawings are for purposes of illustration and do not define the scope or limits of the invention, reference being had for the latter purpose to the appended claims.

In the drawings, wherein like reference characters denote like parts in the several views:

FIGURE 1 is a perspective view of an assembled stretcher embodying my invention.

FIGURE 2 is an enlarged transverse, sectional view on the line 2—2 of FIGURE 1, in the direction of the arrows.

FIGURE 3 is a further enlarged, fragmentary transverse sectional view on the line 3—3 of FIGURE 1, in the direction of the arrows.

FIGURE 4 is a transverse sectional view to the scale of FIGURE 3 but on the line 4—4 of FIGURE 1, in the direction of the arrows.

FIGURE 5 is a perspective view, corresponding generally to FIGURE 1, but showing the stretcher disassembled and with the parts superimposed for storage.

FIGURE 6 is a transverse sectional view on the line 6—6 of FIGURE 5, in the direction of the arrows.

Referring to the drawing in detail, a stretcher or carrier embodying my invention and as illustrated comprises a pair of elongated, rigid panels 11 and 12 of wood, plastic or other suitable material. Each panel may be made of laminated hard wood and consist of a plurality of planks 13, cemented or otherwise suitably fastened together. Each panel may have a flat, normally horizontal under surface 14, as viewed in FIGURES 2, 3 and 4 and its top surface, adjacent at its outer edge, may be parallel to the bottom surface. The remainder of the top surface 15 is desirably sloped as illustrated down from its other edge to provide a tapered or beveled cross-section, as viewed in

2

FIGURES 2, 3, 4 and 6, the sloping being continued to an inner relatively sharp or narrow edge 16.

The outer edge portion of each panel has secured thereto a split tubular rail 17, as by means of screws or the like 18 which pass through corresponding apertures in a flat or lower edge portion 19 of each rail 17. Said edge portions extend inwardly beyond the tubular or hollow cylindrical portions 21 thereof, to underlie the adjacent edge portions of the panels to which connected. These rails 17 are desirably formed of spring metal, such as steel, may be copper and chromium plated, and their arcuate portions 21 are notched out as indicated at 22 to receive desired handle means.

Intermediate the notched end portions 22, they are further notched out as indicated at 23 to receive the patient-securing straps 24 and 25. The straps 24 at one side of the stretcher are provided with safety buckles 26, while those 25 at the other side have end portions which can be connected with said buckles.

Each end of each rail 17 snugly, turnably and adjustably receives the stem portion 27 of a handle member 28. The handle members 28 are desirably assembled with their rails 17 prior to securing the latter to their panels 11 and 12. Each handle member 28 is desirably of tubular steel plated with copper and chromium. It has an outer arcuate or approximately circular hand grip or stirrup portion 29 extending from its stem portion 27 and beyond the corresponding rail 17. Said handle grip portions 29 are adapted to be adjusted to position the handle at or between those positions illustrated in FIGURES 1 and 5, respectively.

The panels 11 and 12 are when in use to be connected together at their end portions as by a pair of rigid, desirably metal collars or trusses 31 which are similar to one another. Each truss is desirably made of heat-treated aluminum and has an elongated body portion 32 terminating in depending legs or feet 33. This feature of supporting feet allows for bandaging or splinting without moving the patient. Panel connecting portions 34 normally upstand from the upper surface of each truss and terminate in two pairs of fingers 35. One pair of fingers adjoins each panel and the fingers of the same pair are directed toward one another to respectively, slidably and telescopically receive one end portion of a panel.

The inner fingers 35, as viewed in FIGURE 2, for example, are closer to the truss body portion 32 if the panels are tapered as illustrated. In any event all of these fingers are positioned the proper distance from the truss body portions and from each other so as to snugly overlie the inner edge portions of the panels and the carrying rails and outer edge portions of said panels.

Clamping means, as in the form of set or thumb screws 36, are desirably provided with flat heads 37 for manual manipulation. They are threadably connected to the outer normally vertical walls 38 of the panel-connecting portions 34. They are thus turnable to pass through the corresponding slots 22 in the rails 17 to tightly engage the stem portions 27 of the handles 28. Each stem portion desirably has a flattened or notched portion 39, engageable by the inner end of a set screw 36, when the looped portions 29 are upstanding as viewed in FIGURE 1, to securely hold these portions in that position when the stretcher is in use.

The rigid trusses 31 are each adapted to respectively, slideably and telescopically receive one end portion of each panel and the rails 17 secured thereto. The handles 28 and rails 17 are desirably assembled prior to attach-

3

ment to the panels 11 and 12 and the trusses 31 are then slipped over the end portions of the properly placed panels and connected rails, when the hand grip portions 29 are turned down to the position illustrated in FIGURE 5, so that the outer fingers 35 will clear said portions. The handle portions may then be swung up to the position of FIGURE 1, and the panels 11, 12 and stems 27 of the handle portions 23 tightened into position, as represented in FIGURE 3, by turning on the set screws 36.

The strap sections 24 and 25 may be connected to the inner portions of the stems 27 by passing them through the slots 23 around said inner portions and stitching, riveting, or otherwise connecting the looped-through end portions with the adjacent portions of the straps, as represented in FIGURE 4. The trusses 31, in addition to tying the panels 11 and 12 together, also reinforce the stretcher laterally and serve to support the panels off the ground by virtue of their feet 33, as shown in FIGURES 2 and 3.

When it is desired to transport a patient who is, for example, lying on the ground or floor, the disassembled stretcher is placed with one panel at each side of the patient with the long, narrower edge at each panel directed toward the patient. Each panel is then slid, or otherwise manipulated, until both panels are under the body of the patient. The preferred shape of the panel and the fact that it is not connected with other parts at this time facilitates such handling. When the opposed narrow edges of the panels are in properly spaced position to be received beneath the fingers 35 of the trusses 31, said trusses are slipped over the opposite ends of the panels and their rails 17 while the hand-grip portions 29 are turned down and moved to the position of FIGURE 1.

The hand grip portions 19 of the handles 18 may then be raised, as from the position of FIGURE 5 to that of FIGURE 1. The patient's feet may then be inserted in the hand-grip portions 29 at the foot of the stretcher, if it is intended to tilt or raise the head end thereof, and the set screws 36 tightened to hold the hand-grip portions in that position. The patient is then strapped to the assembled stretcher by the strap sections 24 and 25 and is then ready for transportation. At the point of destination, the stretcher with the patient strapped thereon is placed on a bed or the like. The stretcher is then disassembled, by first loosening straps, removing the patient's feet from the portions 29, loosening the set screws 36, swinging down the respective hand-grip portions 29 so as to allow the trusses 31 to clear said portions, then removing the trusses from the panels 11 and 12, and finally moving the panels outwardly from beneath the patient.

From the foregoing disclosure it will be seen that I have devised a stretcher which I call a "non-traumatic" carrier. It can be used with practically no disturbance to the injured in transporting them from the position in which found. It will be understood that any bodily disturbance to a patient with a broken back, neck or internal injuries can result in further complications, paralysis or even death.

My carrier is applied to the patient instead of the patient to the carrier. It is rigid and safe, supporting the entire body of the patient. By virtue of its use extra hospitalization time, due to improper handling, can be avoided. With it a patient can be placed in or taken out of bed with very little effort. When on the carrier the patient can be X-rayed. It can while tilted be slid along a floor on the lower of the hand grips or stirrups 29. It is especially useful on elevators, helicopters, narrow stairways and trains, as well as in manholes, storage tanks and other narrow passages. In one embodiment of my invention, the overall length of the carrier is 6' 8" and the overall width 18", with a total assembled weight of twenty-five pounds.

I claim:

1. A stretcher comprising two rigid elongated panels, split tubular rails each having a flat edge portion under-

4

lying and secured to one edge portion of one of said panels, four handle members each having a stem snugly, turnably and adjustably received in one end portion of one of said rails, each handle member also having an arcuate hand grip portion extending from the corresponding stem beyond the corresponding rail end, a connecting means at each end of the stretcher within which fits one end portion of each rail and the corresponding end portions of said panels, and means associated with each connecting means to releasably engage the stems of said handle members and hold them in adjusted position while tightening the panels in said connecting means.

2. A stretcher as recited in claim 1, wherein the connecting means are two similar rigid end trusses with elongated body portions to transversely underlie said panels when said panels are disposed parallel to one another and laterally spaced.

3. A stretcher as recited in claim 2, wherein there are connecting portions upstanding from the upper surface of the body of each truss, and terminating in two pair of fingers, one adjoining each panel.

4. A stretcher as recited in claim 3, wherein the fingers of the respective pairs are directed toward one another to respectively slideably and telescopically receive one end portion of each panel and snugly overlie the inner and outer edge portions and carried rails of said panels.

5. A stretcher as recited in claim 3, wherein there are set screws associated with said connecting portions to engage the stems of said handle members and hold them in adjusted positions while tightening the panels in said trusses.

6. A stretcher as recited in claim 5, wherein the stems have flat end portions which are engageable by said set screws when the hand-grip portions are upstanding from the panels, to hold said grip portions firmly in that position.

7. A stretcher as recited in claim 1, wherein there are straps respectively connected to the stems of said handle members and connectable to one another across a patient lying on said stretcher to hold said patient in place.

8. A stretcher as recited in claim 7, wherein the split tubular rails are notched to respectively receive said straps and the set screws.

9. A handle construction for a stretcher that includes a rigid panel, comprising a split tubular rail having a flat edge portion secured to one edge portion of said panel, a handle member comprising a cylindrical stem portion snugly rotatably mounted in said tubular rail and also having a hand grip portion extending laterally from said stem beyond one end of the rail and the corresponding end of the panel, said hand grip portion upon rotation of said stem portion in the tubular rail being adapted selectively to overlie the panel or extend in a plane approximately perpendicular to the plane of the panel.

10. A stretcher comprising two rigid elongated panels, split tubular rails each having a flat edge portion underlying and secured to one edge portion of one of said panels, four handle members each having a stem snugly, turnably and adjustably received in one end portion of one of said rails, each handle member also having an arcuate hand grip portion extending from the corresponding stem beyond the corresponding rail end, two similar rigid end trusses with elongated body portions to transversely underlie said panels when said panels are disposed parallel to one another and laterally spaced, panel connecting portions upstanding from the upper surface of the body of each truss and terminating in two pairs of fingers, each finger adjoining one panel and the fingers of the respective pairs being directed toward one another to respectively slidably and telescopically receive one end portion of each panel and snugly overlie the inner and outer edge portions of the panels and the corresponding rails of said panels, a set screw associated with each connecting portion to engage the stem of the corresponding

**5**

handle member and hold the handle member in adjusted position while tightening the panels in said trusses, whereby said panels may be laid flat on a supporting surface in parallel relation to each other with their adjacent edges in juxtaposed but spaced relation and then slid beneath a person to be carried, after which said trusses may be slid over said handle members and the corresponding end portions of said panels and rails to firmly connect said panels together, and then the set screws may be tightened on said stems to hold said handle members in desired adjusted position.

5

10

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