Sept. 7, 1965 H. STOLLENWERK 3,204,256

PATIENT SECURING BELTS FOR STRETCHERS

Filed Dec. 10, 1963

Fig. 1

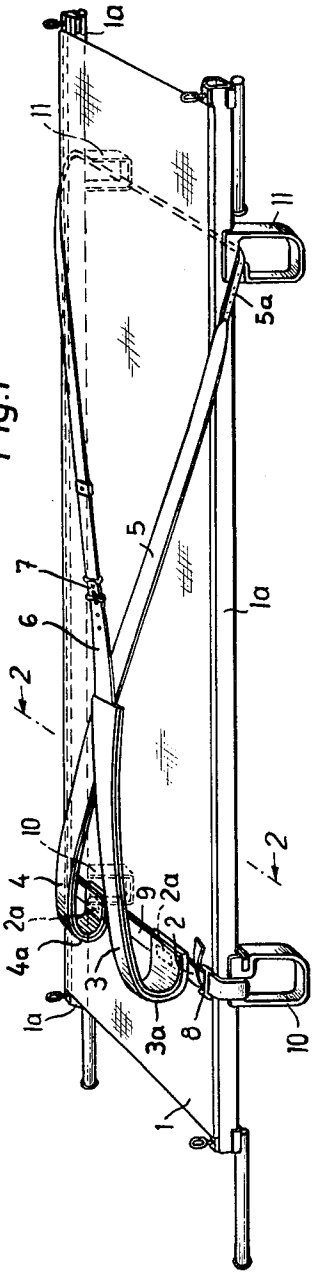
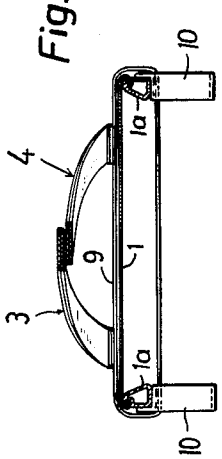


Fig. 2



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PATIENT SECURING BELTS FOR STRETCHERS

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6 Claims. (Cl. 5—82)

The present invention relates to a securing belt for the securing of patients on a stretcher for transportation in vehicles, in particular aircraft, and also of the type disclosed in the copending application of Hans Stollenwerk, filed July 23, 1963, Serial No. 297,132.

In the known arrangement of securing belts for securing patients on a stretcher, it is found that the person strapped on the stretcher has insufficient freedom for movement and yet is nevertheless not adequately secured against longitudinal displacement. Since the person lying on the stretcher is generally a person who is ill or injured, it is furthermore necessary that the patient should be secured as gently as possible but nevertheless firmly.

According to the present invention there is provided a securing belt for the securing of a person on a stretcher for transportation in vehicles, in particular aircraft, the belt including a retaining strap, which is adapted to be engaged transversely about the stretcher, and two shoulder belts attached to the retaining strap and adapted to be arranged over the shoulders of a person when positioned on the stretcher, the shoulder belts having elongated end portions, one of which is longer than the other so that, in use, said longer end portion can intersect the other end portion over the person positioned on the stretcher, and is adapted to pass about the underside of the stretcher and have its free end detachably secured to said end portion.

The shoulder belts disposed about the shoulders secure the patient against undesired displacement in the forward direction. The person lying on the stretcher is free from any kind of securing extending in the transverse direction. The ends of the belts intersecting on the upper side of the said person, retain the person adequately on the stretcher and at the same time allow him the greatest possible degree of freedom of movement. The securing belt has, for the securing of the patient, only a single connecting point disposed expediently approximately at the height of the middle part of the patient. After release of the connecting point, the other shoulder belt also becomes sufficiently free to ensure that there will be no impediment to the raising of the person from the stretcher. At the point of intersection of the belts, there is no connection and the intersecting belts are able to adopt varying positions, depending on the size of the person. The securing belt according to the invention permits adaptation of the position of the individual sides or ends to the height and bulk of the person to be strapped to the stretcher, so that the formation of pressure point or the like is avoided. The person lying on the stretcher is retained strapped down in an effective manner and also in such manner that he has the maximum freedom for movement.

For a better understanding of the invention, and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawing, in which:

FIG. 1 shows a perspective view of one embodiment of the securing belt constructed in accordance with the present invention; and

FIG. 2 is a cross-section taken on line 2—2 of FIG. 1.

In the drawing, the securing belt has a retaining strap

2 which extends transversely of a stretcher 1 and to which are connected, in spaced relationship, two shoulder belts 3 and 4 which are intended to be laid over the shoulders of a person disposed on the stretcher. The shoulder belts may be secured to the retaining strap 2 as by stitching as at 2^a or otherwise attached thereto.

The stretcher 1 includes side rails 1^a with the stretcher 1 suitably secured thereto at its opposite longitudinal edges. The said shoulder belts have elongated end portions 5 and 6 of different length, the elongated end portion 5 extending from the shoulder belt 4 has a greater length than the extension 6 and is guided at the foot end of the stretcher below the said foot end and connected on the upper side of the stretcher with the shorter elongated end portion 6.

Each side rail 1^a carries at the head and foot end of the stretcher depending supporting frame feet 10 and 11, respectively, the retaining strap 2 passing through the head frame feet 10 while the shoulder belt extension 5 passes through the frame feet 11 at the foot end of the stretcher, the frame feet 11 holding the foot end of the extension portion 5^a in a transverse position beneath the stretcher. The terminal ends of the strap portions 5 and 6 are detachably connected together in known manner. The transversely extending retaining strap 2 is guided, at the height of the shoulders, about the stretcher 1 by the frame feet 10 and can be secured by a clamping buckle 8. The retaining strap 2 has a neck web 9 which is padded in a suitable manner. A corresponding padding is also provided on the shoulder belts 3 and 4. The shoulder belts may be made of hemp and are preferably provided with a foam-material padding which may be covered with cotton material. The elongated end portions 5 and 6 preferably consist of belts made from plastic fibers. The portion 5^a of the end 5 which is guided around the frame feet 1 may consist of a material which resists traction forces and which is flexible and pliable. Suitable for this purpose, for example, is a leather band or a member made from leather or plastic material. Curved portions 3^a and 4^a of the shoulder belts 3 and 4 are stiffened so that the shoulder belts do not collapse and subject the shoulders to unnecessary pressure from above when the securing belt is fixed. The securing belt forms one piece together with the retaining strap. The shoulder belts 3 and 4 or the end portions 5 and 6 are disposed loosely and displaceably one above the other at the point of intersection.

The securing of the padded neck web 9 to the retaining strap 2 can be effected by sewing. In all, only two buckles or closure means require to be operated. In order to release the person lying on the stretcher, it is only necessary to release the rapid closure means 7 and to correspondingly loosen the ends which have become free.

While there is herein shown and described the preferred embodiment of the invention, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

What is claimed is:

1. A securing belt for securing a person on a stretcher for transportation, comprising in combination a stretcher frame, the stretcher frame including head and foot ends, a retaining strap extending transversely around the head end of the stretcher frame and detachably connected thereto, two shoulder belts attached to the retaining strap adapted to be engaged over the shoulders of a person on the stretcher, extended ends on the shoulder belts being of unequal lengths with the longer end intersecting the shorter end portion over a person on the stretcher, the longer end passing beneath the stretcher at the foot end thereof and detachably secured to a free end of the shorter portion above the stretcher by a detachable connection.

2. A securing belt as in claim 1, wherein a padded neck

web is carried by the retaining strap and padded portions are provided on the shoulder belts for body contact.

3. A securing belt for securing a person on a stretcher for transportation, comprising in combination a stretcher frame, the stretcher frame including head and foot ends, a retaining strap extending transversely around the head end of the stretcher frame and detachably connected thereto, two shoulder belts attached to the retaining strap adapted to be engaged over the shoulders of a person on the stretcher, extending ends of the shoulder belts being of unequal lengths with the longer end intersecting the shorter end over a person on the stretcher with the longer end passing beneath the stretcher at the foot end thereof and detachably secured to a free end of the shorter portion above the stretcher, the extended ends of the shoulder straps being formed of plastic fibers, and a reinforced covering being provided for the portion of the longer end of the shoulder strap passing beneath the stretcher.

4. A securing belt as in claim **1**, wherein a padded neck web is carried by the retaining strap and padded portions are provided on the shoulder belts for body contact, the extended ends of the shoulder straps being formed of plastic fiber, and a reinforced covering being provided for the portion of the longer end of the shoulder strap passing beneath the stretcher.

5. A securing belt as in claim **1**, wherein the detachable connection between the ends of the shoulder strap extensions includes a buckle.

6. A securing belt as in claim **1**, wherein the portions of the shoulder straps that engage the shoulders of a person have arcuately stiffened portions.

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