RESTRAINING DEVICE FOR BEDRIDDEN PERSONS

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ABSTRACT OF THE DISCLOSURE

An elongate belt having fastening means at each end for releasably securing the same to the side frames of a bed is provided with a pair of longitudinally spaced transverse supports. Opposite end portions of the supports are secured to the belt but have respective medial portions thereof free of attachment to the belt. A separate elongate wrist-strap is provided for each support and has one of its ends secured to the respective support with the longitudinal axis of the wrist-strap extending generally longitudinally of the belt. The wrist-straps are adapted to be looped around a person's wrists with each wrist-strap being looped between its respective support and the belt such that the wrist-straps are of generally convoluted form and means are provided for releasably securing a first portion of each wrist-strap remote from the respective support in overlapping relation to a second portion of the same wrist-strap more closely adjacent the respective support than the said first portion.

Restraining devices are widely used for restraining the torso, arms and/or other limbs of bedridden persons, such as geriatric or surgical patients who, because of senility, pain, delirium or insanity, might otherwise inflict injury upon themselves or others or interfere with a surgeon while he is performing an operation. Emergency situations sometimes arise in which an attendant must apply a restraining device to an otherwise unrestrained bedridden patient as quickly as possible without subjecting the patient to undue discomfort. To my knowledge, prior art forms of restraining devices have one or more deficiencies which either encumber the application thereof to a bedridden patient or make them unduly uncomfortable to the patient, or they are expensive to manufacture.

It is heretofore an object of this invention to provide a restraining device which is simply and economically constructed and has relatively few parts, and with which a patient may be quickly, safely, securely and comfortably strapped to a bed without the necessity of restraining the mobility of the patient's head and legs.

It is a more specific object of this invention to provide a restraining device of the character described including an elongate bed strap having longitudinally spaced wrist-straps so mounted thereon that they can be looped about a patient's wrists and upon themselves in a convoluted manner, and wherein means are provided for easily and effectively securing the overlapping portions of the looped wrist-straps together.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds, when taken in connection with the accompanying drawings, in which:

FIGURE 1 is a perspective view of a preferred embodiment of the restraining device of the instant invention secured to a bed and extending across the torso of a reclining patient, with the wrists of the patient bound by the wrist-straps of the restraining device;

FIGURE 2 is an enlarged fragmentary perspective view of a portion of the restraining device, particularly illustrating how a corresponding wrist-strap is looped upon itself in a convoluted manner in effecting securement of a patient's wrist to the restraining belt;

FIGURE 3 is an enlarged perspective view looking at the outer surface of the restraining belt removed from the bed;

FIGURE 4 is a perspective view looking at the opposite side of the restraining or bed belt from that shown in FIGURE 3; and

FIGURE 5 is a fragmentary view similar to FIGURE 2, with the corresponding wrist-strap broken away to better illustrate the corresponding support therefor and a preferred manner of attaching the support to the bed belt.

Referring more specifically to the drawings, the restraining device of the present invention comprises an elongate bed belt or restraining belt broadly designated at 10 and having fastening means, in the form of pliable fastening tapes or straps 11, 12 at opposite ends of the belt for releasably securing the restraining belt 10 to the side frames 13 of a bed 14. Restraining belt 10 includes an elongate outer panel or body 16 of substantially inelastic pliable material, such as duck material or other woven fabric, which has substantial inherent stability against stretch or use. The outer panel 16 is provided with a body-engaging or inner facing 17 of resilient sponge-like material to present a soft, yieldable, friction surface to the patient's body and which prevents slippage of the belt when it is secured across the torso of a patient reclining upon the bed 14 as shown in FIGURE 1. Also, the resilient nature of the inner facing 17 is such as to provide a comfortable yielding surface to the portion of the belt 10 engaging the torso of the patient.

It is preferred that the body-engaging facing 17 covers substantially the entire inner surface of outer panel 16 and that the facing 17 is formed of closed cell polyurethane foam adhesively or otherwise suitably bonded to the inner surface of panel 16. A binder strip 20 may be secured about the entire perimeter of belt 10. It is preferred that the belt 10 is about 4 to 6 inches wide and has a length of about 3½ to 5 feet; i.e., the same as the width of the bed 14 with which it is to be used. Opposite ends of belt 10 may be rounded substantially as shown in FIGURES 1, 3 and 4, and the proximal ends of the fastening tapes 11, 12 may be secured to the outer surface of the outer panel 16, adjacent opposite ends of belt 10, as by means of stitches 30, 30', the stitches of which may extend through both panel 16 and the inner facing 17.

The restraining device also comprises a pair of pliable wrist-straps 25, 25' whose longitudinal axes extend generally longitudinally of bed strap 10. Wrist-straps 25, 25' are of substantially less width than the width of bed strap 10, and their distal end portions are suitably secured, as by stitching 26, 26', to medial portions of respective transverse supports 27, 27' which are spaced apart from each other and have their respective opposite end portions suitably secured to the outer panel 16 of belt 10, as by stitching 30, 30', the stitches of which may extend through both the outer panel 16 and the facing 17. Transverse supports 27, 27' may be made from any suitable material such as woven fabric, plastic, metal, metal covered with fabric, leather, etc. Duck material is preferred however.

It is important to note that substantial medial portions of transverse supports 27, 27' are free of attachment to belt 10 so that wrist-straps 25, 25' may be easily looped between the respective transverse supports 27, 27' and the outer panel 16 of belt 10. For use with most adult patients, the transverse supports 27, 27' may be spaced apart from each other about 17 to 20 inches and are preferably spaced equidistantly from opposite ends of belt 10.
3 The wrist-straps may be constructed in a manner similar to that described for the belt; i.e., the wrist-straps 25, 25' are formed of outer panels 32, 32' of substantially pliable material, such as duck material or other woven textile fabric, and the outer panels 32, 32' are provided with respective wrist-engaging facings 33, 33' of resilient sponge-like material, preferably in the form of closed-cell polyurethane foam adhesively or otherwise suitably bonded to the inner surfaces of the inelastic panels 32, 32'.

Each wrist-strap may be about 2½ inches wide and about 16 inches long so as to be looped around a patient's wrist and between the respective support 27, 27' and belt 10 such that each wrist-strap may then be of convoluted form. Accordingly, suitable means are provided for releasably securing a first portion of each wrist-strap remote from the respective support in overlapping relation to a second portion of the same wrist-strap more closely adjacent the respective support than said first portion. To this end, it is preferred that a so-called "Velcro"-type of fastening means is employed in which strips of textile pile material 36 are secured to the inner surfaces of the respective wrist-straps 25, 25' adjacent the free ends thereof, as by suitable stitching, and wherein a hook strip 37 is suitably attached to the outer surface of each wrist-strap 25 adjacent the end thereof which is secured to the corresponding support 27 or 27'. By way of example, each of the fastening strips 36, 37 of the wrist-straps 25, 25' may be of a length approximately one-third of the length of the respective strap, preferably in the form of closed cellular pile strips 36 terminates a short distance (about one to two inches) from the free end of the respective wrist-strap so as to provide a pull tab on the free end of each wrist-strap 25, 25' when the pile strips 36 are in full contacting engagement with the respective hook strips 37.

4. A restraining device for bedridden persons comprising an elongate belt having fastening means at each end for releasably securing said belt to the side of a bed, a pair of transverse supports spaced apart from each other and having their respective opposite end portions secured to said belt, but having their medial portions free of attachment to said belt, a separate elongate wrist-strap for each support and having one end portion secured to the respective support with the longitudinal axes of said wrist-straps extending generally longitudinally of said belt, said wrist-straps being adapted to be looped around a person's wrists with each wrist-strap being looped between its respective support and said belt such that the wrist-straps are of convoluted form, and means for releasably securing a first portion of each wrist-strap remote from the respective support in overlapping relation to a second portion of the same wrist-strap more closely adjacent the respective support than said first portion.

5. A restraining device according to claim 1, wherein said belt is formed with an outer surface of textile fabric of substantial inherent stability against stretch in use and wherein at least that portion of the length of the inner surface of said belt which is adapted to engage a patient's body is provided with a facing of resilient sponge-like material bonded to the inner surface of said textile fabric.

6. A restraining device according to claim 1, wherein each of said transverse supports is formed of a woven textile material of substantial inherent stability against stretch in use, and wherein at least those portions of the inner surfaces of said wrist-straps are connected to said facing of resilient sponge-like material bonded to the textile material of the respective wrist-straps.

7. A restraining device according to claims 1, 2 or 3, in which said means for releasably securing a first portion of each wrist-strap in overlapping relation to a second portion thereof comprises means forming a napped surface on one face of each wrist-strap and plurality or hook-shaped fiber elements secured to and projecting from the opposite face of each respective wrist-strap with the disposition of the napped surface and the hook-shaped fiber members of each wrist-strap being such that the hook-shaped fiber members grippingly engage the respective napped surfaces when each respective wrist-strap is looped between its respective support and the belt in convoluted form around a person's wrists.

8. A restraining device according to any one of claims 1, 2 or 3, in which said fastening means at each end of said belt comprises at least one elongate pliable tape having one end secured to each respective end portion of said belt whereby said tapes may be tied to the side frames of the bed.

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