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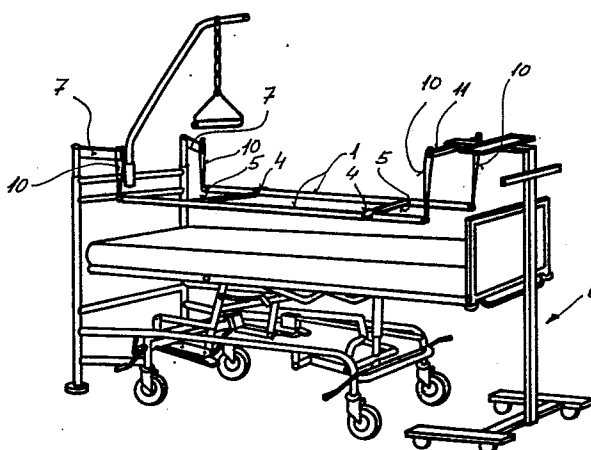
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⑤④ **An apparatus for the handling of patients.**

⑤⑦ The disclosure relates to an apparatus which consists of a divisible carrier unit (1, 2, 5), which may be suspended in brackets (7) disposed in the bed ends, or in brackets (11) which are free of the bed and may be disposed on a trolley (6).



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APPLICANT: NORDBERG, LARS
INVENTION: AN APPARATUS FOR THE HANDLING OF PATIENTS

TECHNICAL FIELD

The present invention relates to an apparatus for the handling of patients or the like, the apparatus displaying two first members, disposed on either side of the patient and arranged to be substantially
5 of the same length as the patient, these members being releasably connected by means of transverse, second members extending beneath the patient, the first members consisting of longitudinal tubes provided with carrier devices extending beneath the patient.

THE STATE OF THE ART

10 Within all forms of medical care, the handling of patients is related to relatively heavy work for the staff and, in particular, immobilised patients at, for example, intensive care units, orthopaedic wards and long-term care wards. A great number of the staff suffer from back complaints of a both temporary and lengthy nature. In order to fac-
15 ilitate this work, it is known in the art to use different types of lifting devices but these often require a considerable amount of fixed installation which is both complicated and expensive.

OBJECT OF THE INVENTION

The task forming the basis of the present invention is to realise
20 an apparatus which is both simple and relatively economical.

SOLUTION

This task is solved according to the present invention in that the apparatus disclosed by way of introduction is characterised in that the ends of the first members are releasably retainable in fixed or movable devices located at their ends, for example, bed ends or trolleys, so that it is possible to remove the bedding material beneath the patient while the patient rests on the carrier devices, and that the second members comprise at least one cross tube located at each end and extending between the longitudinal tubes for purposes of their interconnection, the first cross tube being fixed to the one longitudinal tube, while the second cross tube is fixed to the other longitudinal tube, the free end of the cross tube being in the form of a yoke and resting upon the opposing longitudinal tube. Straps are disposed at the ends of the longitudinal members for their anchorage. The fixed members comprise pivotal brackets extending from the bed ends. The movable members are trolleys with brackets which extend in over the bed ends. The trolleys are provided with adjustable brackets for forming a supporting substrate for the longitudinal members.

ADVANTAGES

As a result of the present invention, there will be realised an extremely simple and relatively economical apparatus for assisting in the handling of patients, primarily within the medical care sector. An apparatus according to the present invention may be disposed, for example, at patient bedsides, operating tables, treatment tables, X-ray tables etc. The apparatus according to the present invention as good as completely eliminates the heavy lifting work for staff, primarily of immobilised patients in intensive care units, orthopaedic wards, long-term care wards and so on. Thus, the care, hygiene and transport of patients will be facilitated.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

The present invention will be described in greater detail below with reference to the accompanying Drawings. Fig. 1 is a schematic perspective view of one embodiment of an apparatus according to the present invention. Fig. 2 is a schematic perspective view of a part of the apparatus of Fig. 1, partly modified. Fig. 3 is a schematic perspective view of a part of the embodiment illustrated in fig. 1. Fig. 4 is a

schematic view of substantially the same part as shown in Fig. 3, with one detail on a larger scale. Fig. 5 is a schematic perspective view of one part of the part illustrated in Fig. 3.

DESCRIPTION OF PREFERRED EMBODIMENT

5 As will be apparent from the accompanying Drawings, an apparatus according to the present invention consists of a support bar 1 on either side of a patient (not shown). The support bars 1 may suitably consist of tubes, which, at their ends, are suspended in brackets 7 and 11, by means of straps 10, the brackets are pivotally disposed on a bed end
10 of per se known type, while the bracket 11 is disposed on a trolley 6 which is placed at the opposite end of the bed. Naturally, the brackets 11 may also be disposed on the bed end, if desired. The tubes 1 are interconnected by means of the cross tube 5, as is more clearly apparent from Fig. 3. One end of the cross tubes 5 is each fixed to its tube 1, while
15 the opposite end of the cross tubes 5 is in the form of a yoke 4 which is intended to rest upon the opposite tube 1. In this manner, the weight of the patient will lock the tubes 1 and the cross tubes to one another. Each one of the tubes 1 displays support surfaces 2 (Fig. 5). The support surfaces 2 are releasably retained on the tubes 1 and may be moved
20 in beneath the patient and possibly retained by snap action on the tubes 1.

Once the tubes 1 are placed on either side of the patient, as shown in Fig. 1, and the yokes 4 have been rested on the opposite tube 1, the support surface 2 may be moved in beneath the patient, whereafter the
25 bed may be lowered so that the patient is suspended from the brackets 7 and 11 by the intermediary of the straps 10. In this manner, for example the bedstead bottom may be replaced and cleaned and the patient may also be given treatment.

The trolley 6 is U-shaped, as will be apparent from both Figs. 1
30 and 2, and extends in over the bed. Furthermore, the upper portion of the trolley may be provided with, for example, a tray 12 for accommodating accessories or for the placement of apparatuses such as ECG and TV.

If desired, a trolley 6 may be disposed at each end of the bed and
35 thereby the patient may be moved from and to the bed after lowering of the bedstead bottom. As an alternative to lowering the bedstead bottom,

the trolleys 6 may be operative to lift the brackets 11.

Thus, the trolley 6 may be provided with, for example, an apparatus for raising or lowering of the brackets 11, either manually or electrically or hydraulically. This possibility is illustrated in greater detail in Fig. 2 by means of, for example, a manual lifting device 9. Furthermore, the trolley may be provided with a so-called intensive care rail 13 for forming a retainer bracket for drip transfusion apparatuses and also other rail-borne equipment. Two trolleys of the type illustrated in Fig. 1 may very well be used for moving a stretcher formed by the parts 1 to 5 and, in such an event, a carrier 8 is provided which is pivotal to the position illustrated in Fig. 2.

The cross tubes 5 are suitably placed in such a manner that the patient's pillow rests on the one tube, while the popliteal spaces of the patient rest on the other tube. In this case, the second tube 5 is provided with some type of padding to protect the legs of the patient from injury.

The supporting surfaces 2 illustrated in Figs. 3 and 5 are laterally shiftable. Since the supporting surfaces are laterally shiftable, these may be placed where desired. The number of supporting surfaces 2 and their size are variable for optimal adaptation to each respective patient. A plurality of supporting surfaces 2 may be replaced by the fixed supporting surfaces 15 illustrated in Fig. 4, these displaying flexible plastic panels 16 which adapt to the contour and curvature of the body when being loaded by the weight of the patient. The plastic panels 16 extend throughout the entire length of the back or trunk of the patient.

The material used in the support surfaces is optional and, in conjunction with X-rays, the supporting surfaces may be manufactured of a carbon-fibre-reinforced plastic material, whereby the supporting surface will not appear on the X-ray film. Furthermore, the supporting surfaces may be manufactured from extruded plastic or from some form of aluminium profile. To prevent the transfer of heat from the patient to the supporting surfaces 2, these may be coated with a material of low thermal conductive capacity. Moreover, the supporting surfaces may be manufactured as disposable, once-over articles, whereby contamination from one patient to another will be avoided when the same supporting unit is used for several patients. The supporting surfaces 2 may be

provided with grooves on their outer edge for the anchorage of clamping devices which prevent the patient's arms from falling outside the supporting unit when the bedstead bottom is lowered.

The apparatus may very well be applied for placing a bedpan
5 beneath a patient, in that the straps 10 are provided solely between the tubes 1 and the brackets 7, whereafter the bedstead bottom is lowered so that the carrying or support unit is inclined and creates space for the insertion of a bedpan beneath the patient.

CLAIMS.

1. An apparatus for the handling of a patient or the like, the apparatus displaying two first members (1) disposed on either side of the patient and being substantially of the same length as the patient, the
5 members being releasably coupled by means of second, transverse, members (5) extending beneath the patient, said first members (1) consisting of longitudinal tubes (1) which display support surface-like devices (2) extending beneath the patient, c h a r a c t e r i s e d i n
t h a t the ends of said first members are releasably retainable in
10 movable devices (7, 11) located at their ends, for example bed ends or trolleys, so that it is possible to remove the bedding beneath the patient while the patient rests on said support surface forming device (2), a n d t h a t said second members consist of at least one cross tube (5) located at each end and extending between the longitudinal
15 tubes (1) for the purpose of their interconnection, the first cross tube being fixedly retained at one of the longitudinal tubes, while the second of said cross tubes is fixed to the second longitudinal tube, the free end of the cross tube being in the form of a yoke (4) and resting on the opposing longitudinal tube.
- 20 2. The apparatus as claimed in claim 1, c h a r a c t e r i s e d i n t h a t straps (10) are disposed at the ends of the longitudinal members for anchorage thereof.
3. The apparatus as claimed in claim 1, c h a r a c t e r i s e d i n t h a t said fixed members are pivotal brackets (7) extending from
25 the bed ends.
4. The apparatus as claimed in claim 1, c h a r a c t e r i s e d i n t h a t said movable members comprise a trolley (6) with brackets (11) which extend in over the bed ends.
5. The apparatus as claimed in claim 4, c h a r a c t e r i s e d
30 i n t h a t said trolleys display adjustable brackets (8) for forming a substrate for said longitudinal members (1).

Fig 1

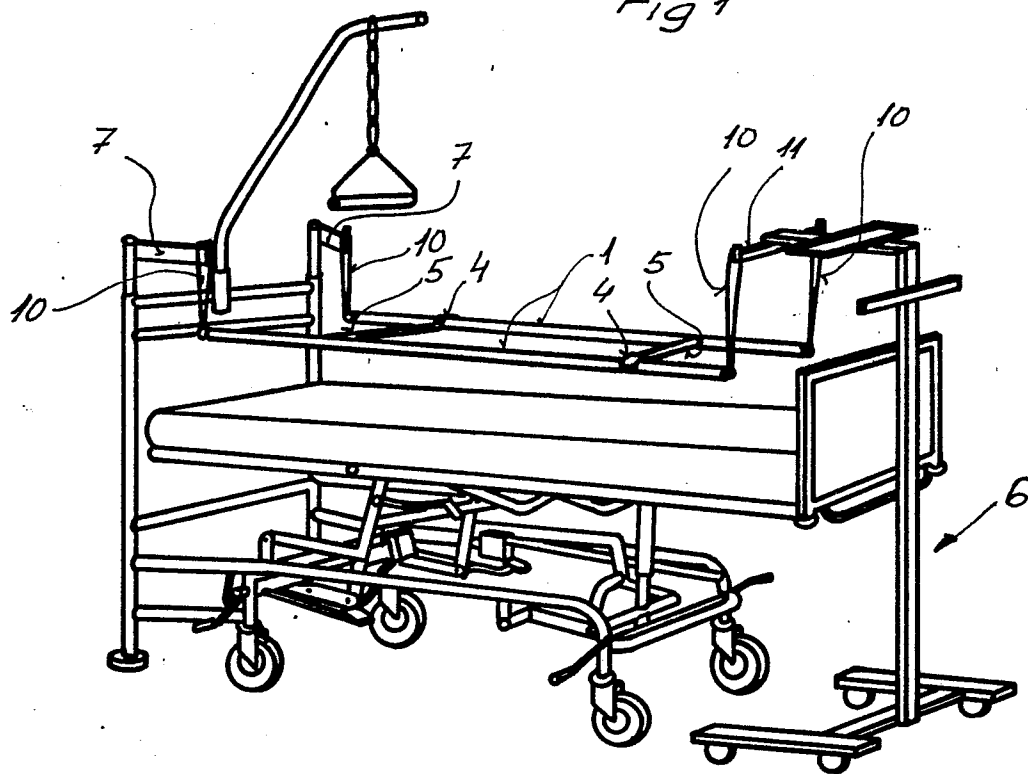


Fig 2

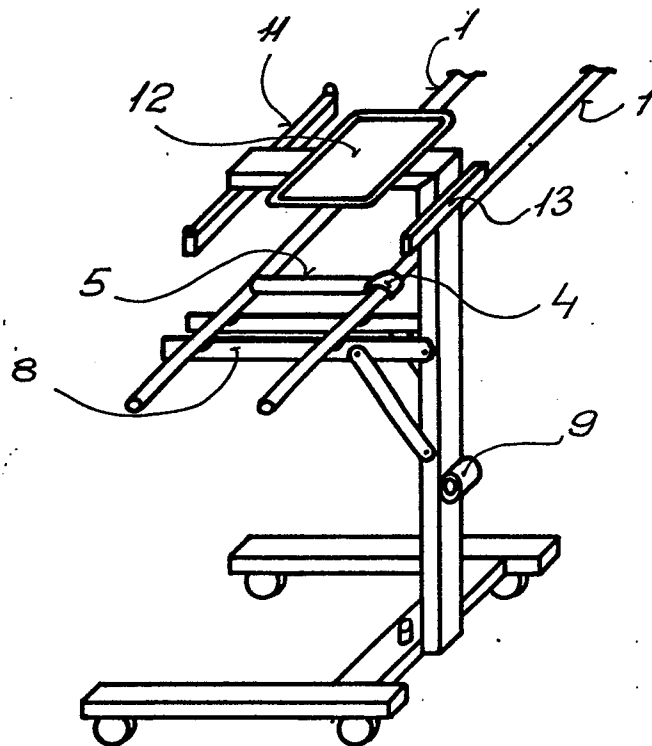
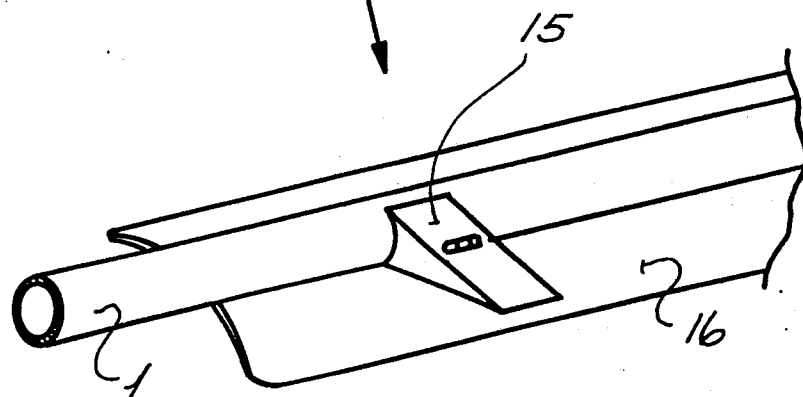
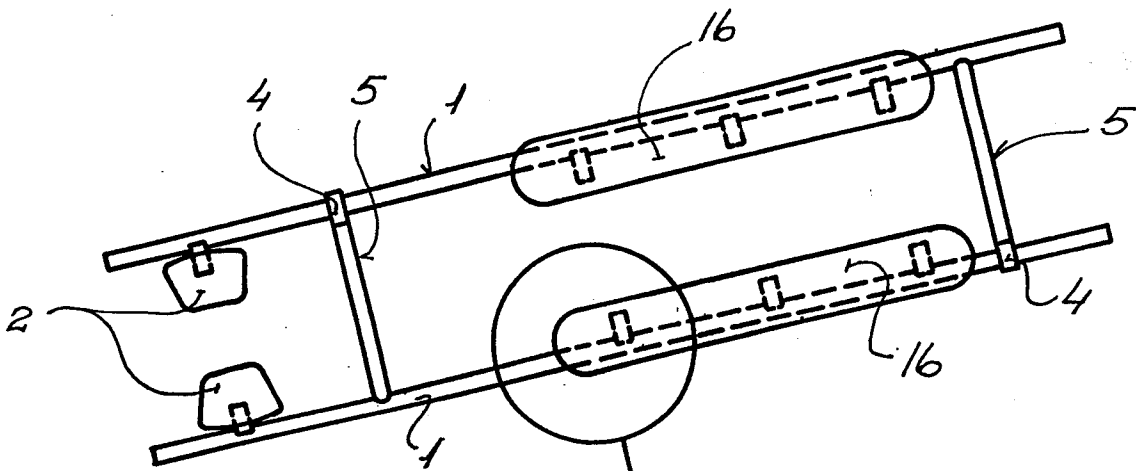
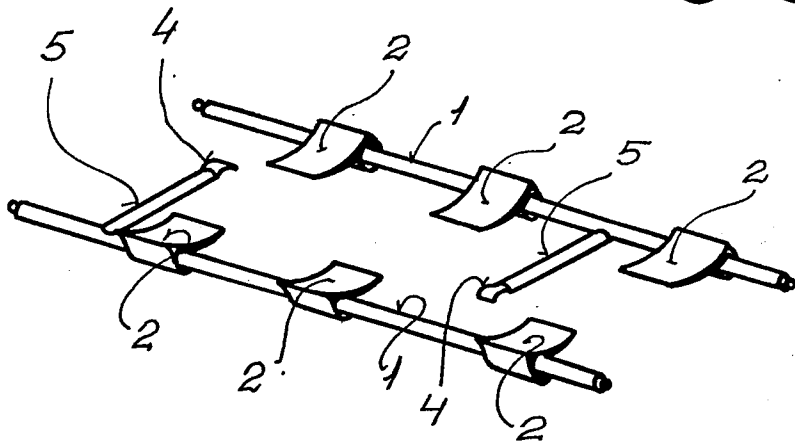
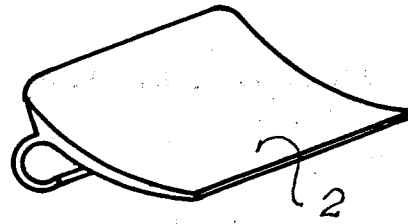


Fig 5





European Patent
Office

EUROPEAN SEARCH REPORT

0110851
Application number

EP 83 85 0298

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
A	US-A-1 588 573 (S.C. EDMISTON) * Page 1, lines 1-6; figure 1 *	1	A 61 G 7/10
A	--- US-A-1 610 467 (M.E. OVERSTREET) * Claim 1; figure 1 *	1	
A	--- US-A-3 653 079 (E.E. BOURGRAF et al.) * Column 3, lines 17-25; figure 2 *	1	
A	--- FR-A-1 319 338 (G.E. CASAL) * Figure *	1	
A	--- GB-A-1 270 150 (D.I. CAMPBELL) * Page 2, lines 13-17, 31-36; figures 1,2 *	5	TECHNICAL FIELDS SEARCHED (Int. Cl. ³) A 61 G 1/00 A 61 G 7/00
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 14-02-1984	Examiner CLOT P.F.J.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			