

March 26, 1940.

L. CHRISTENSEN

2,194,998

INVALID'S BED UNIT

Filed Sept. 7, 1938

2 Sheets-Sheet 1

Fig. 2

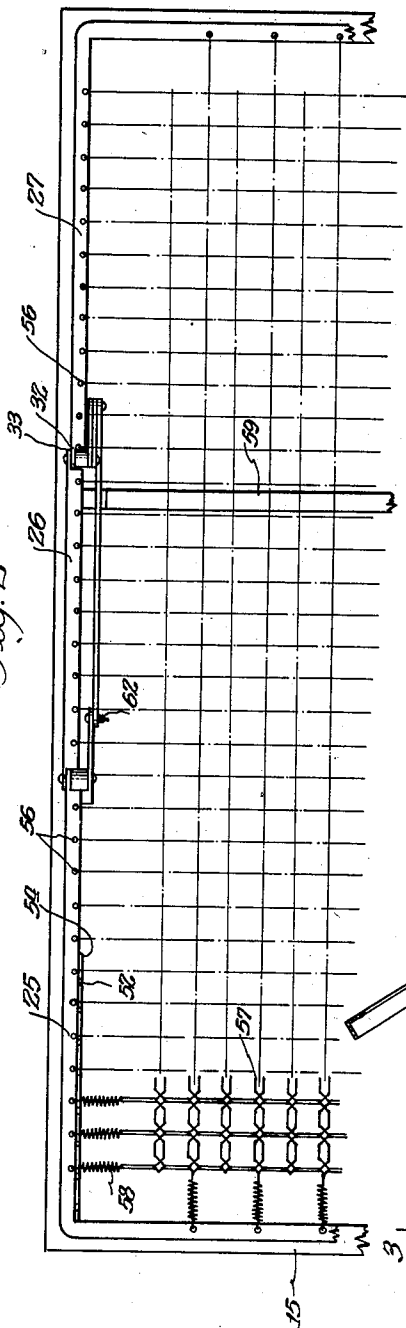
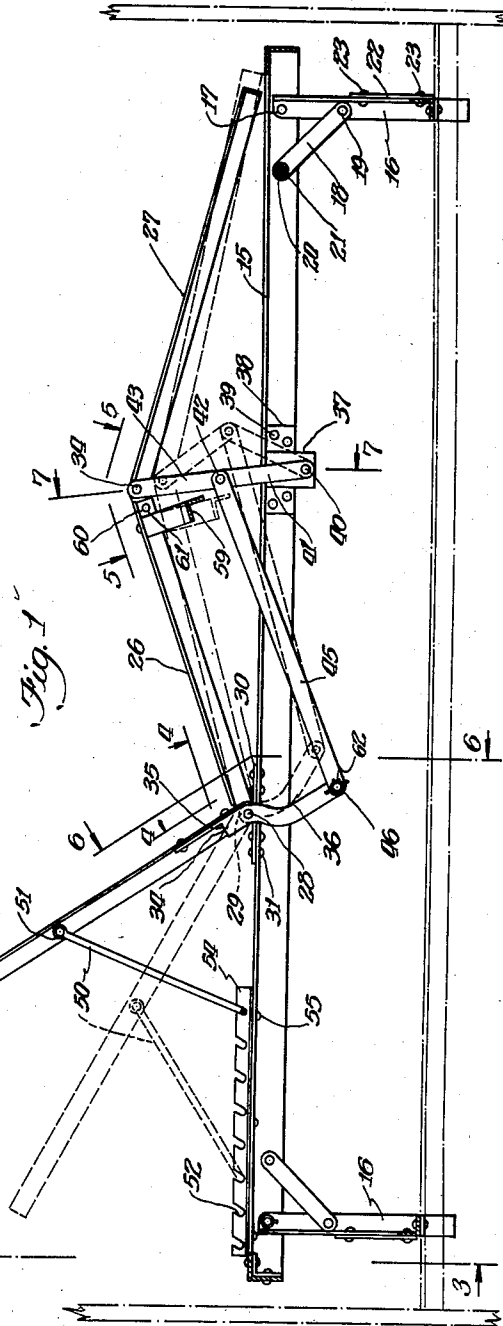


Fig. 1



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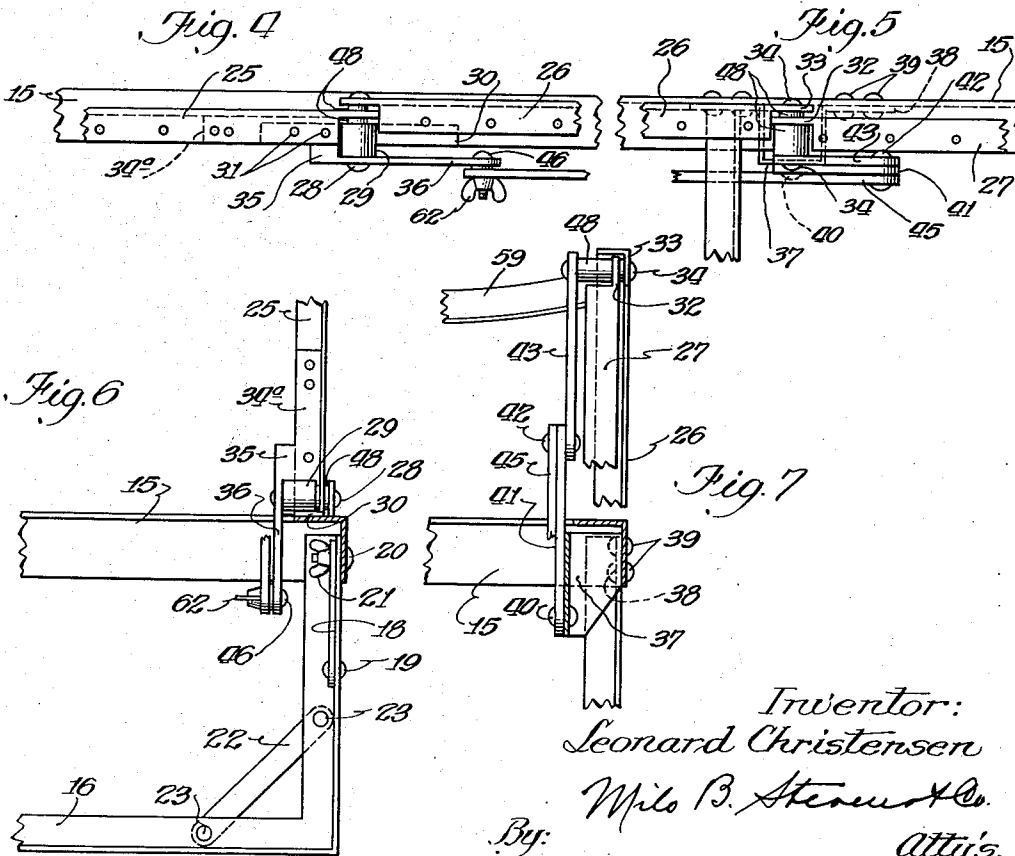
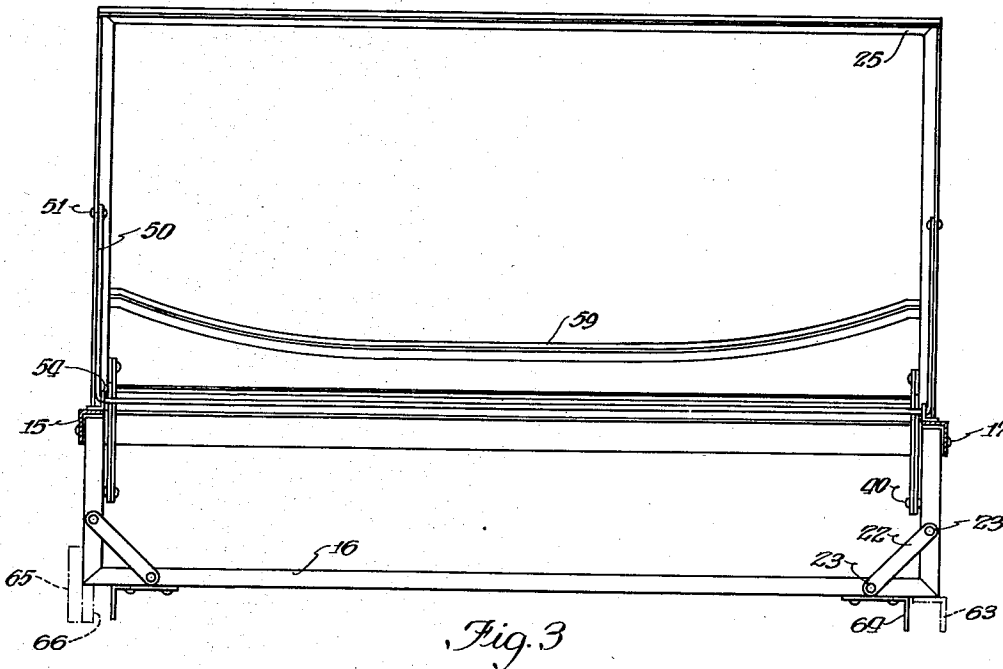
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UNITED STATES PATENT OFFICE

2,194,998

INVALID'S BED UNIT

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tenth to Morris Webster Buckborough, South
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Application September 7, 1938, Serial No. 228,837

3 Claims. (Cl. 5-69)

My invention relates to beds for invalids, and has for its main object to provide an unit which is mountable over any bed to serve in the nature of a hospital or invalid's bed, whereby to make a bed of this kind available for home use.

A further object of the invention is to provide an unit of the above nature which contains means to accommodate the occupant in different positions.

A still further object of the invention is to provide an unit of the above nature which is of light steel construction and skeleton form, whereby to be handily carried, mounted or removed.

Another object of the invention is to design the novel unit along lines of compactness in order that it may be folded into flat form for convenient storage or shipment.

An additional object of the invention is to construct the novel unit with few and simple parts, in order that the same may be economical to manufacture and therefore available to people of limited means.

With the above objects in view, and any others which may suggest themselves from the description to follow, a better understanding of the invention may be had by reference to the accompanying drawings, in which—

Fig. 1 is a side elevation of the unit, showing its application to a bed and a change of position by means of dotted lines;

Fig. 2 is a top plan view of one side portion of the unit as positioned for bed use;

Fig. 3 is a section on the line 3-3 of Fig. 1, showing the application of the unit to bed rails of different styles;

Fig. 4 is a fragmentary view on the line 4-4 of Fig. 1, with the parts swung apart to substantially horizontal positions; and

Figs. 5, 6 and 7 are, respectively, fragmentary views on the lines 5-5, 6-6 and 7-7 to Fig. 1.

Frequently patients who no longer require hospital care should continue their convalescence in the comfort of a hospital bed; or, it is advisable in many cases to give invalids or semi-invalids such comfort at home. In either case, an accommodation of this kind also places the patient at a height for better approach or service by a nurse or attendant. It is for these reasons that I have devised the novel unit, in order that the same may be available in cases where the particular comfort and service are needed or recommended.

In accordance with the foregoing, the unit is primarily formed with a base frame 15 which is of angle steel and oblong form and is somewhat shorter than the standard bed, so as to be mountable within the same as suggested in Fig. 1.

The base frame 15 is supported near its ends by a pair of U-shaped angle frames 16, the upper ends of these being attached inside the base

frame by means of loose rivets 17. The end sections of the frames 16 are also braced from the base frame 15 by diagonal links 18, the lower ends of these being attached by loose rivets 19 and the upper ends carrying screw-studs 20 which extend outwardly through holes in the base frame 15 to receive securing wing nuts 21. Thus, when the latter are removed the links 18 may be separated from the base frame side and the supporting frames 16 folded in to nest within the base frame. The supporting frames 16 also have diagonal braces 22 in their lower corners, as shown in Figs. 3 and 6, these braces being secured to the frame sections by tight rivets 23.

The base frame 15 is designed to carry an assembly for supporting the occupant, such assembly being composed of a head section 25, a middle section 26 and a foot section 27. Fig. 1 shows by means of full lines that the sections are arranged to support the occupant in seated position. Dotted lines in the same figure show the positions of the sections altered to afford the occupant a reclining position, and it is possible to extend the sections even further to assume a continuous position on the base frame 15 to form a horizontal bed.

The section 25 is of angle steel and tri-lateral form, and each of its side portions is pivoted at the bottom on a cross pin 28 carried by a bearing 29 having an extended base 30 which is riveted at 31 over the corresponding side rail of the base frame 15.

The section 26 is composed of laterally spaced angle bars extended at one of their ends to pivot on the pins 28. The section 27 is a tri-lateral angle frame. The side portions terminate with extensions 32 which overlap similar extensions 33 of the contiguous ends of the section 26 to receive pivot pins 34 as connections.

The section 25 receives reinforcing pieces 34a at the bottom, such pieces being offset inwardly as indicated at 35 to lie alongside the bearings 29 and perforated for the passage of the pivot pins 28. The pieces 34 are extended beyond the pivot pins with arms 36.

At a point substantially below the pivot pins 34, the sides of the base frame 15 carry inward boxes 37 applied to the said frame by means of side extensions 38 which are riveted to the frame at 39. The boxes provide supports along their inner sides in the form of loose rivets 40 for the application of the lower ends of a pair of links 41. The upper ends of these links are attached by means of loose rivets 42 to an upper pair of links 43, and the upper ends of these are mounted on the loose rivets 34. A pair of long arms 45 are connected with the lower ends of the arms 36 by means of loose screw-studs 46; and the opposite ends of the arms 45 are connected to the rivets 42 of the links 41 and 43. It will now be

apparent that the down swing of the section 25 to the dotted line position—as indicated in Fig. 1—will impel the arms 45 in a forward direction to break the links 41 and 43 as shown and lessen the prominence of the angle between the sections 26 and 27. Likewise, the further depression of the section 25 will procure the folding of the links 41 and 43 to the extent of alining the three sections to form a bed. The pins 28 and 34 carry ring washers 48 between the pivoted parts to ease their action.

A U-shaped prop 50 is provided for the section 25 in order to station the same at a number of points of inclination. The ends of the prop are pivotally secured on rivets 51 carried by the section 25, while the lower portion of the prop is adapted to be deposited in any one of a series of notches 52 formed in racks 54 secured by rivets 55 upon the sides of the base frame 15. The notches 52 are inclined in rearward direction, so that the prop will set itself at any point to which the section 25 is raised. Of course, when this section is to be lowered, the prop is manually raised out of the racks 54.

The sections 25, 26 and 27 are formed with rows of apertures 56 along the top for the application of a suitable bed spring 57 by means of coil springs 58. The bed spring thus fills the entire support formed by the sections 25, 26 and 27 and folds or unfolds with the same. In order that the spring may not draw unduly on the sides of the section 26, these are connected by an angle spacer 59 formed with terminal bends 60 which are riveted at 61 to the said sides.

Usually, a convalescing patient will sit up with the knees in the bent position to be comfortable. However, in some instances the position prescribed is with the knees bent and the body in a lying position. The novel unit is suitable for such an adjustment by the presence of wing nuts 62 on the screw-studs 46. Thus, the wing nuts 62 may be removed to uncouple the arms 45 from the arms 36, this action permitting the frame section 25 to be lowered to the horizontal position. The sections 26 and 27 will remain in the poised position or slightly below the same, as the links 41 and 43 will have a tendency to break in the rearward direction and so meet the spacer 59 as a stop. The removal of the connection 62 also makes possible placing the back section in raised position and allowing the middle and foot sections to rest in flat or horizontal alinement to serve as supports in cases of fractured hips or legs.

It will be evident from the above description that I have provided an unit of skeleton construction for the purpose specified and of a nature to form a superstructure for any bed. To adapt the unit to a bed having angle rails, such as indicated at 63 in Fig. 3, it is only necessary to rest the bottom frames 16 upon the said rails as shown. The frames 16 carry angle pieces 64 near their ends to form stops in relation to the bed rails 63 and prevent the unit from shifting sideways. In the case of a wooden bed having side rails indicated at 65 with slat bearers 66, the bottom frames 16 are simply set in the corner formed between the rails and bearers, as shown. It is understood that beds are made of standard widths, and that the width of the unit will be calculated to correspond. The length of the unit is such as to enable the full extension of the supporting sections; and it follows that the ends of

the bed will form guards for the unit in case it receives a movement or urge lengthwise.

The novel unit, although adjustable to various positions as described to secure the desired position or degree of comfort for the occupant, is simply handled or manipulated; also, its raised position places the occupant at a height suitable for treatment or service by a nurse or attendant, following hospital practice in this respect. Yet, the unit is easily foldable to form a compact and relatively light assembly, which is easy to pack and convenient to store or ship. Further, it is apparent that the parts and mechanical nature of the unit are simple and easy to understand or manipulate by the average person. Finally, the material and construction of the unit are of a nature to make its production economical and its sales price suitable for people of average means.

While I have described the invention along specific lines, various minor changes and refinements may be made without departing from the principle of the invention, and I desire to consider all such changes and refinements as coming within the scope and spirit of the appended claims.

I claim:

1. An invalid's bed unit comprising an open base frame with a longitudinal series of supports carried by the frame and comprising head, medial and foot sections pivoted to each other, means affixing the pivot between the head and medial sections to the frame, an extension of the head section beyond the pivot, a first short link pivotally connected to the pivot connecting the medial section with the foot section, a second short link pivoted on the frame below the pivot joining the medial and foot section, pivot means connecting the free ends of said links together, an arm pivotally connected at one end to said pivot means and at the other end removably and pivotally connected to the free end of said extension.

2. An invalid's bed unit comprising a base frame, a head, medial and foot section pivotally connected in series, means securing the pivot between two adjacent sections to said frame, one of said two adjacent sections having an extension beyond its pivot, a toggle linking said frame and the other section pivot, an actuator arm connecting said extension and the break-joint of the toggle, and a transverse brace on one section having a stop portion adjacent said toggle preventing reverse breaking thereof.

3. An invalid's bed unit comprising a base frame having a head section, a medial section pivoted thereto at one end, and a foot section pivoted to the opposite end of the medial section, said head and foot sections being tri-lateral and the medial section being bi-lateral and having open ends, means securing the pivots between the head and the medial sections to said frame, and said head section having an extension beyond its pivot, a toggle connecting said frame and the pivot between the foot section and adjacent end of the medial section, an actuator arm connecting said extension to the break-joint of the toggle, and said medial section having its sides connected by dependent transverse braces disposed adjacent said toggle and providing stop means therefor preventing reverse breaking thereof.

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