Aug. 29, 1939. R. C. CAPRON 2,171,251

INVALID'S BED-CHAIR

Filed Oct. 26, 1936

Fig. 1.

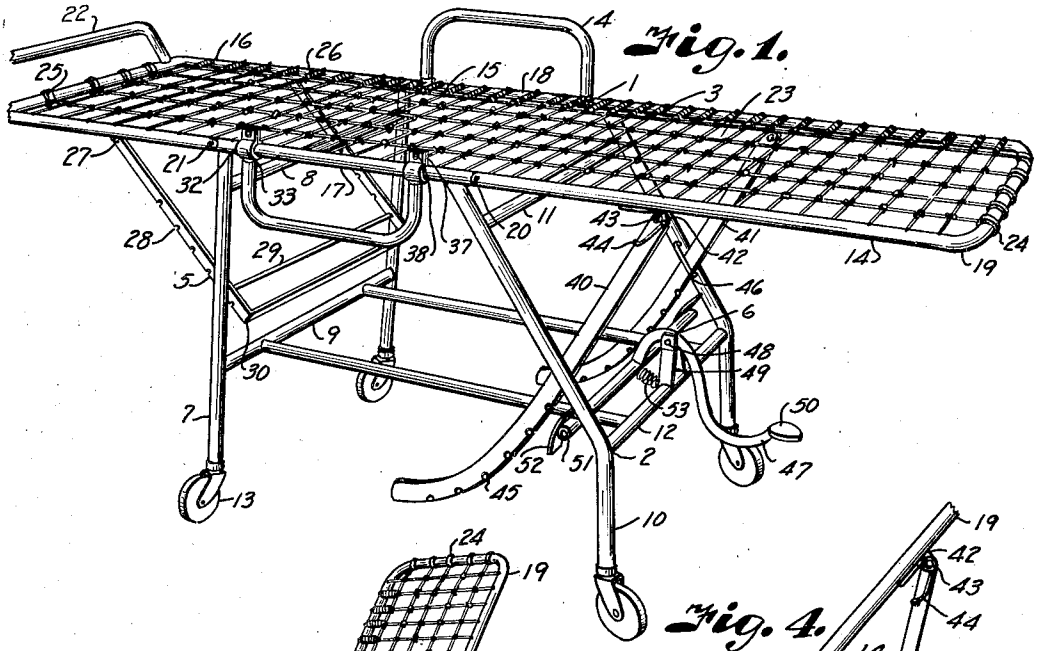


Fig. 2.

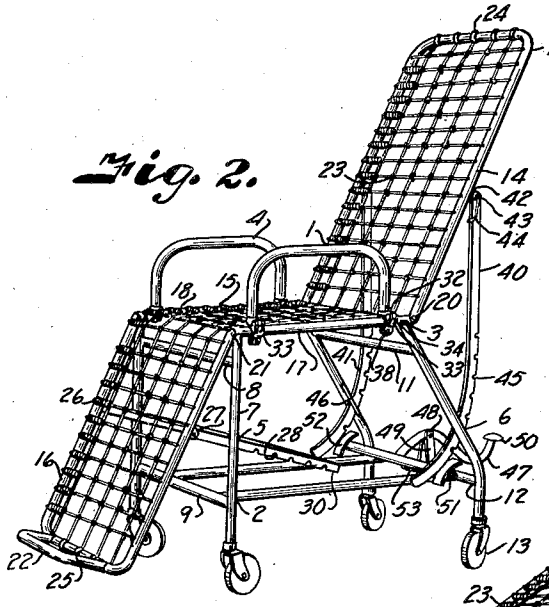


Fig. 4.

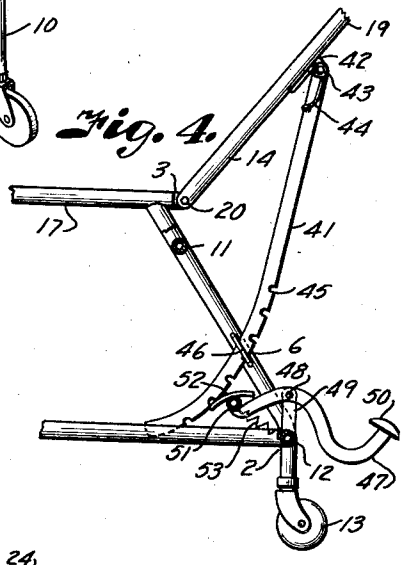


Fig. 3.

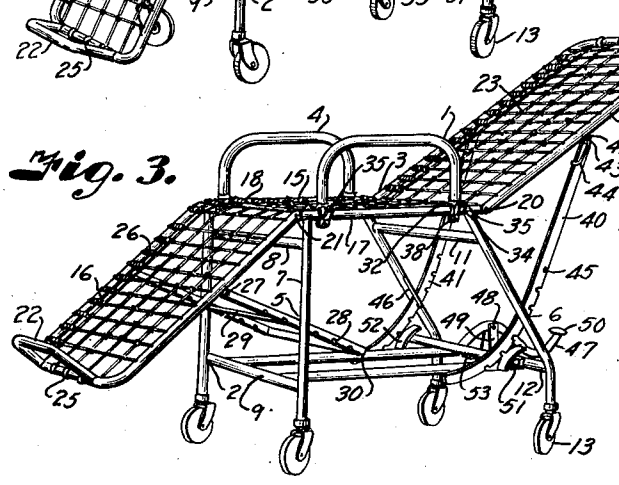
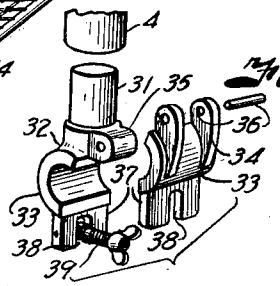


Fig. 5.



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UNITED STATES PATENT OFFICE

2,171,251

INVALID'S BED-CHAIR

Ralph C. Capron, Ottawa, Kans.

Application October 26, 1936, Serial No. 107,519

1 Claim. (Cl. 155—28)

This invention relates to invalids' bed-chairs and more particularly to novel devices for facilitating converting the invention from a bed to a chair and vice versa.

In the care of invalids, it is frequently desirable to move them from room to room in a hospital or home, and this is often difficult due to the injury or affliction from which the invalid or patient is suffering.

The principal objects of the present invention are to provide a convertible bed-chair which, when in the form of a bed, is of the same height as a hospital bed and may be moved alongside thereof in such a manner that an invalid may be transferred from the bed to my improved convertible bed-chair and vice versa by a draw sheet without the necessity of being lifted; to provide adjusting devices for converting the invention from a bed to a chair; and to provide movable arms on the bed-chair whereby the inconvenience of lifting the invalid thereover may be avoided without loss of the chair features.

In accomplishing these and other objects of the present invention, I have provided improved details of structure, the preferred form of which is illustrated in the accompanying drawing, wherein:

Fig. 1 is a perspective view of a convertible bed-chair embodying the features of the present invention, showing my invention in the form of a bed.

Fig. 2 is a perspective view illustrating the bed-chair of Fig. 1 converted into chair form.

Fig. 3 is a view similar to Fig. 2 showing my convertible bed-chair at the angle of adjustment intermediate that normally required of a bed or a chair.

Fig. 4 is a vertical cross section through the back rest and rear portion of the frame, particularly illustrating one of the back adjusting arms and the actuating foot pedal therefor.

Fig. 5 is a detail perspective view of the mountings for the movable arms of the seat portion of my invention.

Referring more in detail to the drawing:

1 designates an invalid's convertible bed-chair embodying the features of the present invention which generally includes a standard or frame 2, an adjustable body rest 3, movable arms 4, a leg portion adjusting bracket 5 and a back rest portion adjusting mechanism 6.

The frame 2 includes front vertical members 7, which are spaced apart by horizontal cross bars 8 and 9, and rear legs 10 extending vertically from the floor to a point substantially equal to the height of the cross bar 9, the legs 10 being then extended forwardly and upwardly to the horizontal plane of the upper ends of the vertical leg members 7. Horizontal cross bars 11 and 12 are provided for spacing legs 10 to align with the front leg members, and casters 13 are provided at the bottom of the respective legs for rolling or supporting the frame the casters constituting wheels of sufficient diameter to prevent jarring of the bed-chair when rolled thereon.

Mounted on the upper ends of the frame leg portions is the body rest 3 which consists of a back rest section 14, a seat portion 15 and a leg and foot rest portion 16.

The seat portion 15 comprises a pair of longitudinal bars 17 and 18 welded or otherwise secured to the upper ends of the frame leg members. The back rest portion 14 includes a U-shaped frame 19 formed from a bar similar to the bars 17 and 18 and joined at its ends to the bars 17 and 18 by a cross bolt 20 extending through aligned openings in the bars.

The leg rest portion 16 comprises a U-shaped bar similar to the bar 19 which is joined to the forward ends of the bars 17 and 18 by a cross bolt 21 mounted in aligned openings at the ends of the bar 16 and in the forward ends of the bars 17 and 18, the sections 14 and 16 being movably mounted relative to the seat portion 15 by means of the bolts 20 and 21 which hinge the back and leg sections to the seat section. A foot rest 22 is provided at the lower end of the leg section which extends at right angles thereto and retains the bedding and invalid from slipping forwardly off the body rest when the invention is used as a chair.

The interior portion of the body rest bounded by the bars 16, 17, 18 and 19 is provided with an interwoven spring 23 which is suitably secured longitudinally of the bars and wrapped on the ends thereof as at 24 and 25 to form a firm support for a mattress or the like upon which an invalid may lie, coil springs 26 being provided along one side of the woven spring to make the spring more resilient for enhancing the comfort of an invalid on the body rest.

The leg portion adjusting bracket 5 is formed by bending a bar into substantially U-shape and attaching the ends thereof intermediate the longitudinal ends of the bar 16, as at 27, the sides of the bar 5 being notched, as at 28, for engaging over a cross bar 29 fixed to the vertical legs 7 of the frame. It is apparent that the end 30 of the bar 5 may be raised to release the

bar 29 from the notches of bar 5 for adjusting the leg rest to any desired angle.

The side arms 4 on the seat portion consists of U-shaped bars, or tubes, the ends of which are adapted to be sleeved over preferably cylindrical lugs 31 of arm mountings 32, the ends of the arms seating on annular flanges at the base of the lugs 31. The arm mountings 32 are secured in position on the side rails of the seat portion by means of body portions 33, each consisting of substantially semi-cylindrical mating bearing or collar portions, which are removably secured together by mating ears 34 and lugs 35 having aligned openings for the passage of a pin 36 to hinge the bearing portions together. The lower ends of the bearing portions are provided with downwardly extending flanges 37 having aligned slots 38 for the passage of a retaining device 39 pivotally mounted in the slot of one bearing portion and preferably having a thumb nut, it being apparent that the retaining device may be swung into the aligned slot of the mating bearing portion and the nut threaded down to engage the outer side of the flange for clampingly securing the arm mountings to the side rails of the seat portion.

The back portion 19 is provided intermediate its side ends with adjusting arms 40 and 41, one of which is particularly shown in Fig. 4. The upper ends of the bars are mounted in ears 42 welded or otherwise secured to the bar 19 by headed pins 43. Torsion springs 44 mounted on the pins 43 are also provided for the arms 40 and 41, the ends of springs respectively engaging the bar 19 and the forward edge of the arms for forcing the arms downwardly and rearwardly. The arms are curved forwardly at their lower portions and are provided with notches 45 on the rear faces thereof. The notches are engageable with the lower ends of brackets 46. The brackets 46 are preferably formed of rods of substantially C-shape, through the body portions of which the curved arms may be extended, and they are of a less diameter than the notches, their ends being suitably mounted on the legs 10 to retain the back rest in position at any desired angle.

In order to facilitate adjustment of the back rest, I provide a lever member such as the foot pedal 47 which is hingedly mounted as at 48 on an upright bracket 49 suitably fixed to the cross member 11. The foot pedal 47 is preferably of S-shape to present an upwardly extending foot pressure portion 50 and a downwardly extending terminal in front of the hinge point 48 for mounting a horizontal cross piece 51. Arcuate shaped shoes 52 are provided at the ends of the cross piece 51 to underlie the arms 40 and 41 in such a manner that pressure on the foot portion 50 pivots the pedal to force the shoes forwardly and upwardly to unseat the arms 40 and 41 from engagement with the brackets 46 so that the back rest portion may be quickly and easily adjusted to any desired position by merely raising and lowering same. A coil spring 53 is also provided having its ends respectively mounted on the cross pieces 50 and 11 to normally retain the foot pedal out of engagement with the back rest adjusting arms.

In operating my convertible bed-chair, the arms 4 may be removed or the retaining devices 39 may be loosened by unscrewing the thumb nuts and the arms pivoted outwardly and downwardly to secure a plane surface for the seat portion of the bed-chair, it being apparent that the arms may be replaced as desired by merely reversing the operation. The bed-chair in the form shown in Fig. 1 is then moved alongside a bed in which an invalid is reclining. The invalid may then be transferred from the bed to bed-chair by means of a draw sheet without the necessity of lifting the invalid due to the fact that the beds are of the same height. The convertible bed-chair may then be moved to any desired locality by merely rolling the castered frame, the frame and body rest preferably being of a width to enable its passage through an ordinary doorway. The foot portion 16 is unlatched as shown in Figs. 2 or 3, by lifting the bar 5 which permits the portion 16 to be lowered to any desired angle for effecting a comfortable position for the invalid, the notches 28 being selectively engageable over the cross bar 29 to retain that position.

The back rest may thereafter be released from engagement with the brackets 46 by merely stepping on the foot pedal and raising the back portion to a position which is comfortable for the invalid, the springs 44 forcing the notches of the arms into engagement with the brackets 46 to retain the back rest portion in position.

It is apparent that the operations may be reversed to reconvert the chair to a bed for returning the invalid to a conventional bed when the occasion arises.

What I claim and desire to secure by Letters Patent is:

An invalids' bed-chair of the character described including a wheeled frame of a width adapting it for passage through an ordinary doorway, said frame consisting of a plurality of connected upright and horizontal members, said upright members being of sufficient height to position the horizontal members substantially in the horizontal plane of a hospital bed, the wheels on said frame being of sufficient diameter to prevent jarring of the bed-chair when rolled thereon, relatively adjustable body rest sections on said frame, and arms on said horizontal members of the frame foldable from upright to lowered position to allow transfer of an invalid from a hospital bed to said bed-chair while in reclining position.

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