Feb. 5, 1935. R. WARD 1,990,357

INVALID BED CONSTRUCTION

Filed April 17, 1933 2 Sheets-Sheet 1

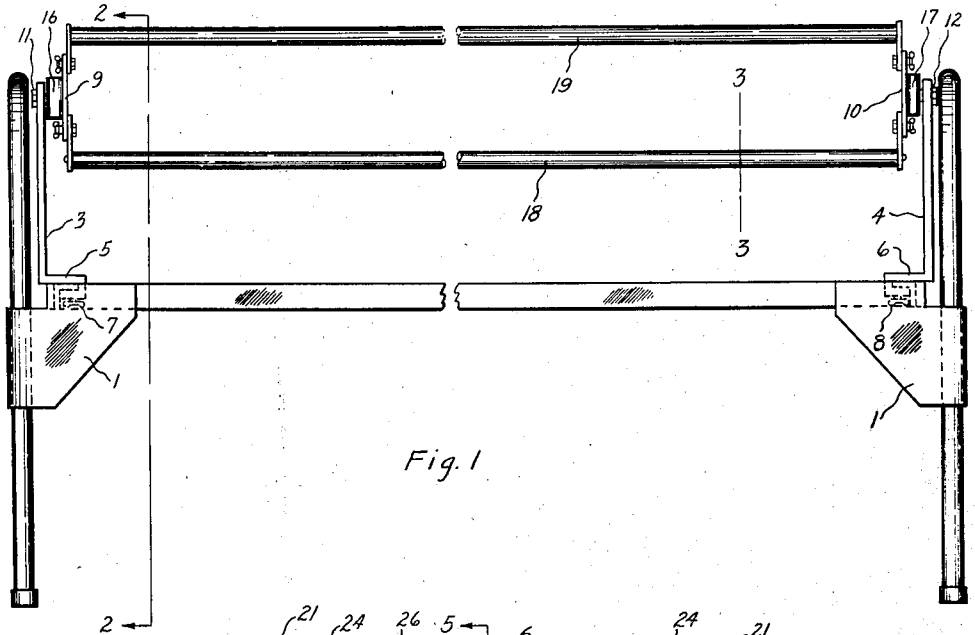

Fig. 1

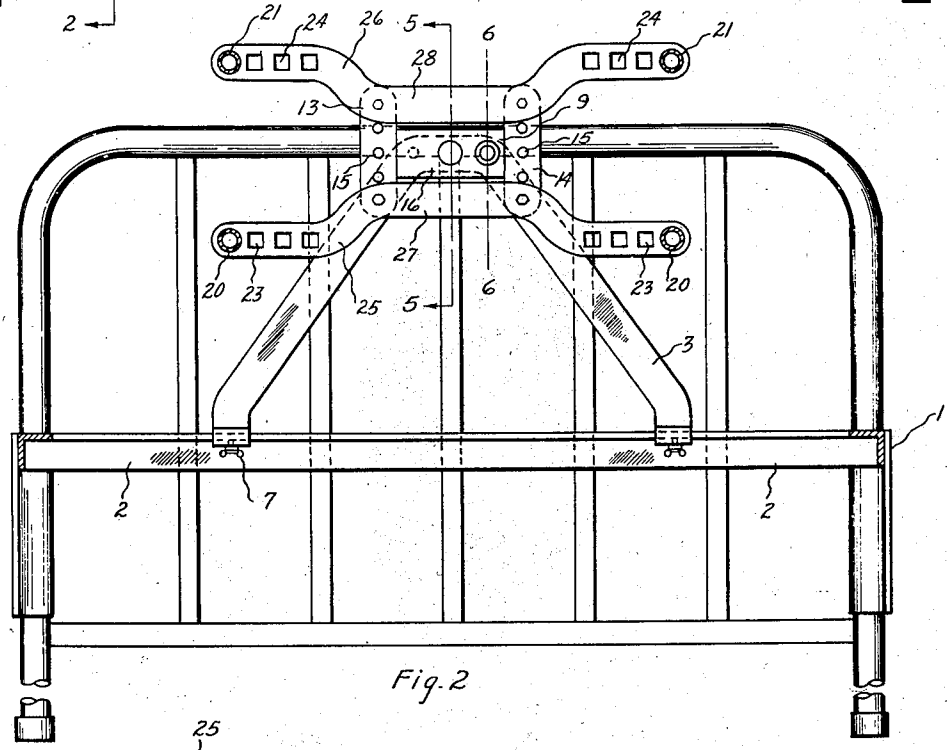

Fig. 2

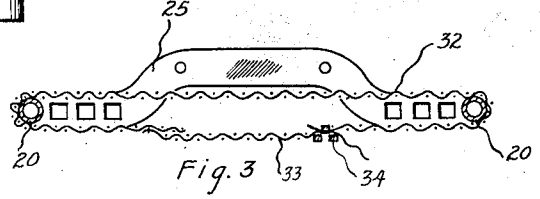

Fig. 3

Inventor
Rollie Ward
by Fenwick & Beaman
Attorney

Feb. 5, 1935. R. WARD 1,990,357

INVALID BED CONSTRUCTION

Filed April 17, 1933 2 Sheets-Sheet 2

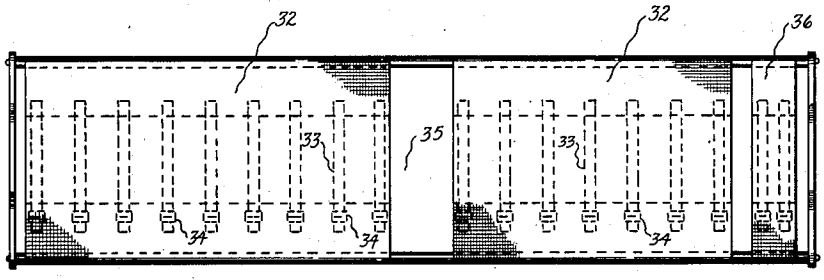

Fig. 4

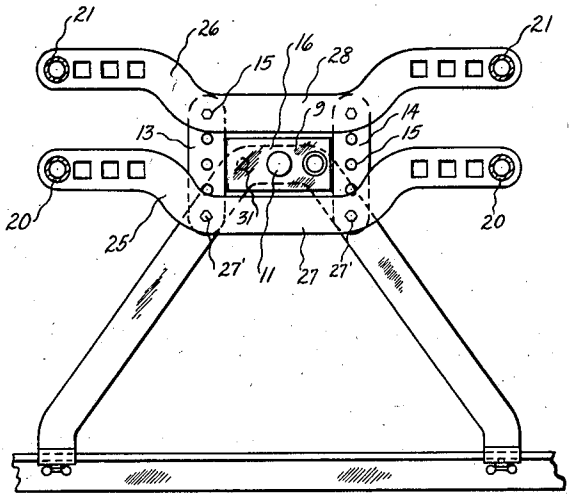

Fig. 8

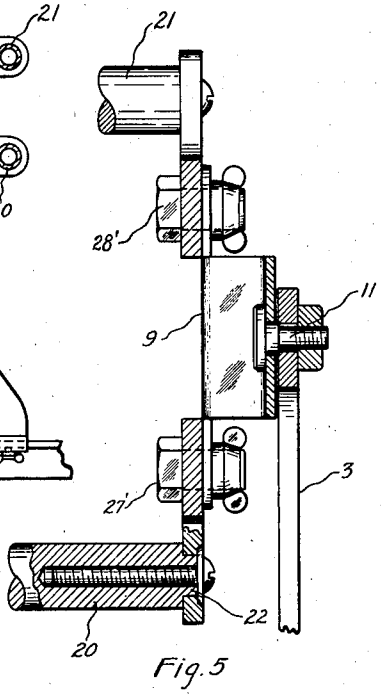

Fig. 5

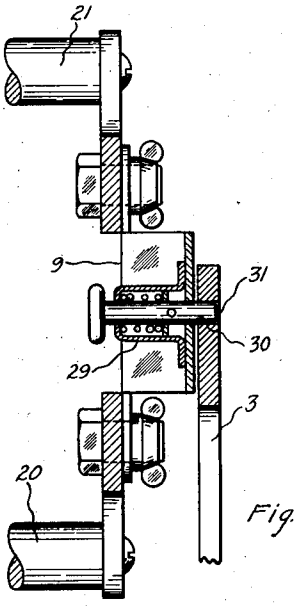

Fig. 6

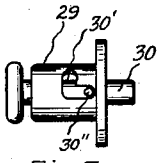

Fig. 7

Inventor
Rollie Ward
by Lawrence S. Beaman
Attorney

Patented Feb. 5, 1935 1,990,357

UNITED STATES PATENT OFFICE

1,990,357

INVALID BED CONSTRUCTION

Rollie Ward, Jackson, Mich., assignor of one-half to John W. Speck, Jackson, Mich.

Application April 17, 1933, Serial No. 666,408

6 Claims. (Cl. 5—61)

The present invention relates to improvements in invalid and hospital beds of the type permitting the position of the invalid to be reversed or changed and the bed clothing to be changed without manually lifting or shifting the invalid thus obviating pain and injury to the invalid which results from such handling as well as lightening the burden of the person caring for the invalid.

It is the primary object of the invention to provide a structure of the above type which comprises an auxiliary framework which is readily adapted to the conventional bed frame, relatively inexpensive, and is effective in its operation.

A further object is to provide rotatably turning and supporting frames for the invalid which may be readily manipulated by one person.

Other objects and advantages reside in the novel features of construction and combination and arrangement of parts as will be more fully related. The invention is clearly defined and pointed out in the claims.

In the accompanying drawings, wherein a preferred form of the invention is disclosed by way of illustration,

Fig. 1 is a broken side elevation of a bed frame with the improvement attached.

Fig. 2 is a cross sectional view taken on line 2—2 of Fig. 1 with the supporting fabric removed from the frames for clarity.

Fig. 3 is a cross sectional view taken on line 3—3 of Fig. 1 showing the manner the fabric is suspended from the side rails.

Fig. 4 is a plan view of one of the supporting and turning frames.

Fig. 5 is a cross sectional view taken on line 5—5 of Fig. 2.

Fig. 6 is a cross sectional view taken on line 6—6 of Fig. 2.

Fig. 7 is a detailed view of the releasable locking mechanism.

Fig. 8 shows a modified arrangement of the turning and supporting frames.

Generally considered, the present invention comprises vertically disposed inverted V-shaped end members which are adapted to be removably secured to the conventional bed frame. Bracket members are pivoted from the apex of the end member from which, what might be termed the permanent invalid supporting frame, is supported at the ends. This frame is removably and adjustably bolted or otherwise secured to the bracket members. When it is desired to change the position of the invalid from his back to his stomach or vice versa, for example, or to change the bed clothing, a temporary or turning frame is laid upon the invalid and secured to the bracket members. With the invalid confined between the two frames, the bracket members and frames are rotated as a unit to transfer the invalid to the temporary frame. The permanent frame can now be removed and the bed clothing which was beneath the invalid changed. In effect the temporary frame may become the permanent frame and the invalid may repose upon the same in a changed position thus avoiding bed sores and the like which result when the invalid is in such a condition as to prohibit manual changing and reversing of the invalid's position. Releasable locking members are preferably employed to retain the supporting frames in a horizontal plane when the frames are not being rotated.

Having reference to the drawings, reference character 1 designates a conventional bed frame having transverse frame members 2 upon which the bed springs are normally supported. The auxiliary framework from which the supporting and turning frames are supported comprises vertically disposed inverted V-shape end members 3—4. These members are preferably provided with feet portions 5—6 which are adapted to embrace the frame member 2; being removably attached by thumb screws 7—8. H-shaped brackets 9—10 are pivoted upon stub shafts 11—12 supported in the members 3—4. These brackets have upright portions 13—14 each provided with a plurality of correspondingly spaced apertures 15 and are offset inwardly of the end members 3—4 and integral cross portions 16—17.

The turning and supporting frames 18—19 which may be termed permanent and temporary frames, respectively, for clarity of description, consist of side rails 20—21 having squared ends as at 22 which may be secured in any one of a series of apertures 23—24 located in the frame members 25—26. Preferably the frame members 25—26 have dropped centrally portions in order to reduce the dimension of the brackets 9—10 to a minimum and at the same time adequately space the frames 18—19. As shown in Fig. 5, readily insertable and removable bolts 27'—28' with winged nuts are employed to removably secure the frame members 25—26 to the brackets 9—10. To releasably lock the brackets 9—10 against being rotated, manually operated catches 29 are supported upon the brackets 9—10 having spring stressed plungers 30 which are adapted to engage holes 31 located in the end members 3—4. As illustrated, the holes 31 are located to lock the frames 18—19 in horizontal positions. However, if desired, a series of holes may be provided

in the members 3—4 to incline the supporting frames to rest the invalid or to provide drainage. In order to permit the invalid to be manipulated by one person, a notched slot 30' and coacting pin 30'' located on the plunger 30 is provided to hold the latter in an inoperative position upon being withdrawn and rotated.

The supporting and turning frames 18—19 are preferably duplicates and interchangeable structures. For actually supporting the invalid, strong duck fabric is preferably employed. The fabric 32 is stretched between the side rails 20—21 and secured in position through straps 33 and buckles 34 located on the underside. Through adjustment of the strap and buckle arrangements the side rails may be adjusted along the members 25—26 to adjust the width of the frames 18—19. Obviously other types of supporting surfaces may be employed within the scope of my invention and it is not my intention to be limited to the structure shown. As shown in Fig. 4, the supporting surface is arranged in sections spaced at 35 to receive a bed pan or the like. Preferably the section of supporting fabric at 36 is independent of the remaining sections in order that it may be individually adjusted to give more spacing between the frames for the invalid's head or may even be removed at the time of turning.

In Fig. 8, the dropped bottom portions 27—28 of the frame members 25—26 are shown similarly disposed from the bracket 9. In this manner the permanent frame is elevated to facilitate care of the invalid. Also, this arrangement permits the supporting frames to be but slightly spaced to accommodate a very small thin individual.

Having reference to Fig. 1, prior to the turning operation, the invalid is supported upon the frame 18, upon his back, for example. The frame 19, which is normally removed from the structure, is then laid upon the invalid and secured to the brackets 9—10 by the bolts 28'. With a suspended web of fabric as 32 used as a supporting surface in the frames 18—19, the central area of the frames 18—19 will be slightly deflected by the body of the invalid with the result that the side rails 20—21 are insufficiently spaced to permit the body of the invalid to pass between during the turning operation; the invalid being substantially enveloped by the two frames. With the frame 19 in position and the locking plungers 30 withdrawn and held out of locking position, the frames 18—19 are readily rotated as a unit positioning the frame 19 below the frame 18 and transferring the invalid upon the frame 19 upon his stomach. The upper frame may now be removed and the bed clothing which was formerly beneath the invalid changed. The invalid in the changed position may continue to repose upon what was formerly the upper frame until such time as an additional change in position is advantageous.

It will be readily apparent from the foregoing description, that an invalid appliance has been provided which is readily adapted to the conventional bed frame. Furthermore, the appliance is relatively compact and inexpensive and may be easily operated by one person.

Although the invention is disclosed as attachable to a bed frame, the features of the turning and supporting frames may be advantageously employed in a permanent unitary supporting framework. However, in most cases the ability to adapt the turning frames to a bed frame is desired.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. In an invalid appliance, the combination with a bed having transverse frame members located inwardly from the ends thereof, of an auxiliary framework removably supported upon said frame members, said framework comprising vertically disposed inverted V-shaped end members supported upon and removably secured to said transverse frame members, rotatable H-shaped brackets positioned upon stub shafts supported in the apices of said end members and passed centrally through the cross portions of said H-shaped brackets, parallel turning and supporting frames between which the invalid is adapted to be received for reversing his position, said frames comprising side rails and end rails, said end rails having horizontally extending outer portions and offset central portions, means for adjustably and removably supporting said turning and supporting frames above and below the axis of rotation of said H-shaped brackets, said means including removable fastening means securing said offset portions at selectable positions along the parallel portions of said H-shaped brackets to vary the spacing between said turning and supporting frames, means for adjusting said side rails along the outer portions of said end rails to vary the width of said frames, surfaces attached to said side rails for supporting the invalid, said turning and supporting frames being rotatable as a unit about said stub shafts, and means for locking said frames in a horizontal position.

2. In an invalid appliance, the combination with a bed having transverse frame members located inwardly from the ends thereof, of an auxiliary framework removably supported upon said frame members, said framework comprising vertically disposed inverted V-shaped end members supported upon and removably secured to said transverse frame members, rotatable H-shaped brackets positioned upon stub shafts supported in the apices of said end members and passed centrally through the cross portions of said H-shaped brackets, parallel turning and supporting frames between which the invalid is adapted to be received for reversing his position, said frames comprising side rails and end rails, said end rails having horizontally extending outer portions and offset central portions, means for adjustably and removably supporting said turning and supporting frames above and below the axis of rotation of said H-shaped brackets, said means including removable fastening means securing said offset portions at selectable positions along the parallel portions of said H-shaped brackets to vary the spacing between said turning and supporting frames, surfaces attached to said side rails for supporting the invalid, said turning and supporting frames being rotatable as a unit about said stub shafts, and means for locking said frames in a horizontal position.

3. In an invalid appliance, the combination with a bed having transverse frame members located inwardly from the ends thereof, of an auxiliary framework removably supported upon said frame members, said framework comprising vertically disposed inverted V-shaped end members supported upon and removably secured to said transverse frame members, rotatable brackets positioned upon stub shafts supported in the apices of said end members, parallel turning and supporting frames between which the invalid is adapted to be supported for reversing his posi-

tion, said frames each consisting of side rails and end rails, said end rails having horizontally extending outer portions and inwardly directed offset central portions, means for adjustably and removably supporting said turning and supporting frames above and below the axis of rotation of said brackets, said means including removable fastening means securing said offset portions at selectable spaced points upon opposite sides of said axis of rotation to said brackets, to vary the spacing between said frames, means for adjustably securing said side rails along the outer portion of said end rails to vary the width of said frames, surfaces attached to said frames for supporting the invalid, said frames being rotatable as a unit about the stub shafts and between said end members to transfer the invalid from one of said frames to the other, and means for locking said frames against rotation.

4. In an invalid appliance, the combination with a bed frame, of an auxiliary framework removably supported upon said bed frame, said framework comprising vertically disposed inverted V-shaped end members supported upon said bed frame and removably secured thereto inwardly from the ends thereof, rotatable brackets positioned upon stub shafts located in the apices of said end members, parallel turning and supporting frames between which an invalid is adapted to be supported and transferred from one frame to the other to reverse his position, means for adjustably and removably securing said turning and supporting frames above and below the axis of rotation of said brackets, said means including removable fastening means for attaching said frames at selectable positions above and below the said axis of rotation to said brackets, to vary the spacing between said frames, said frames being rotatable as a unit, and means for locking said frames against rotation.

5. In an invalid appliance, the combination with a supporting framework, of members rotatably supported upon said framework, spaced parallel supporting and turning frames rotatably supported at opposite ends by said members and adapted to be rotated as a unit to transfer from one frame to the other an invalid received therebetween to reverse his position, said frames comprising side and end rails, said end rails having horizontally extending outer portions and centrally located downwardly directed offset portions, and means for removably and adjustably securing the offset portions of said end rails to said members upon opposite sides of the axis of rotation to space said frames.

6. In an invalid appliance, the combination with a supporting framework of supporting means rotatably mounted on opposite ends thereof, spaced parallel supporting and turning frames, each having end and side rails, secured to said supporting means by said end rails and adapted to be rotated as a unit to transfer from one frame to the other an invalid received therebetween to reverse his position, portions of said end rails being in the plane of said side rails along which the latter may be adjusted to vary the width of said frames, the portions of said end rails secured to the supporting means being removably secured to said supporting means upon opposite sides of the axis of rotation, and out of the plane of said side rails to space said frames, and supporting surfaces located between said frames.

ROLLIE WARD.