June 22, 1954 W. A. SCHWARTZ 2,681,455

CARRIER FOR INVALIDS COMBINING HORIZONTAL AND CHAIR SUPPORTS

Filed April 5, 1952 2 Sheets-Sheet 1

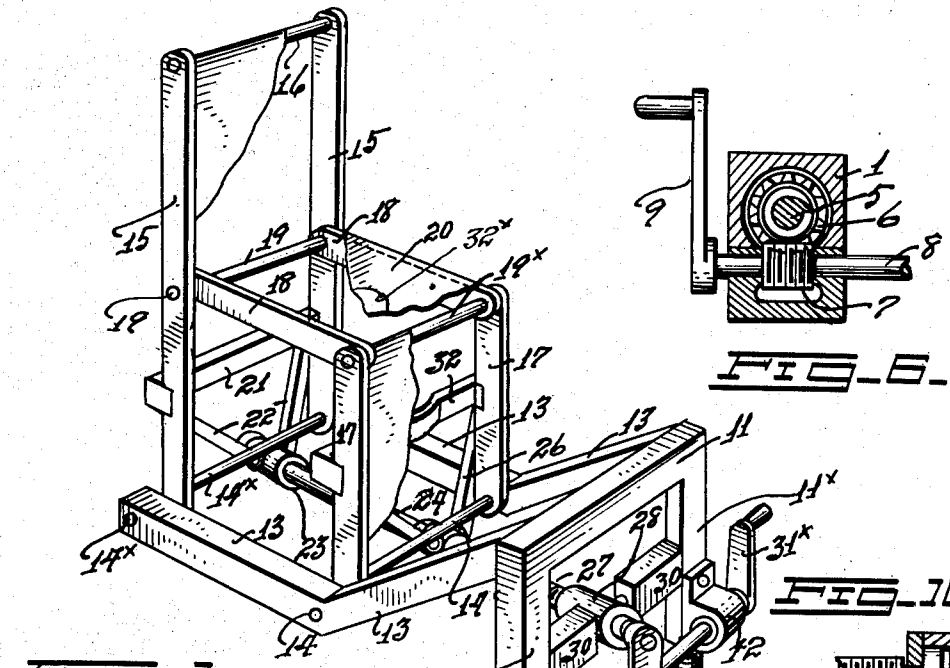


FIG. 1.

FIG. 6.

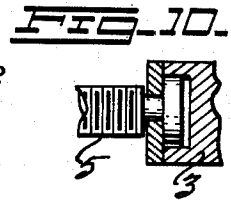


FIG. 10.

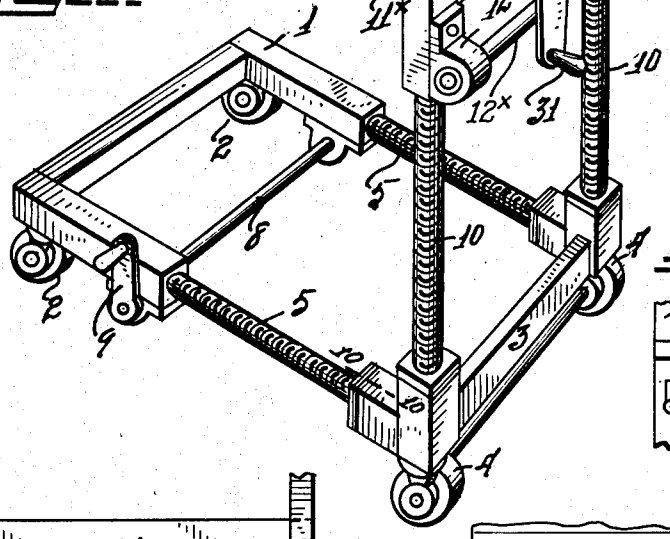
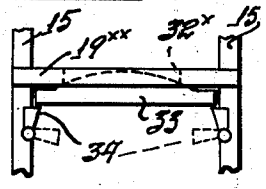


FIG. 8.



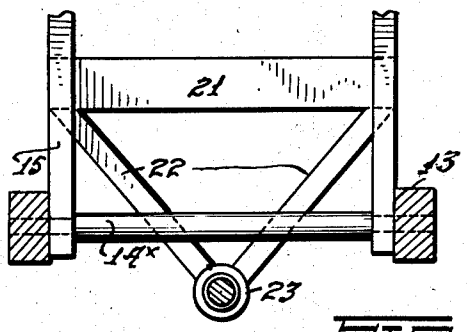


FIG. 7.

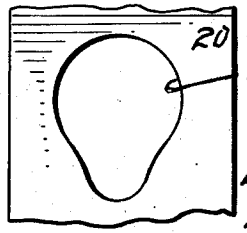


FIG. 9.

INVENTOR.
William A. Schwartz
By W. Lee Holmes
ATTORNEY.

June 22, 1954

W. A. SCHWARTZ

CARRIER FOR INVALIDS COMBINING HORIZONTAL AND CHAIR SUPPORTS

2,681,455

Filed April 5, 1952

2 Sheets-Sheet 2

FIG. 2.

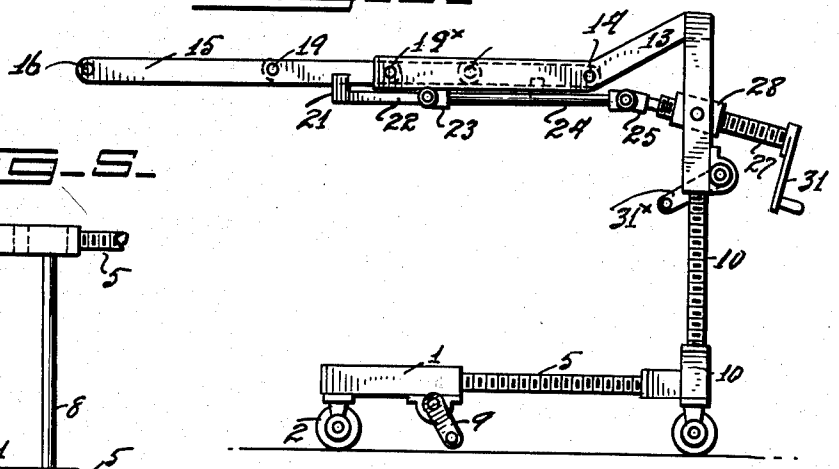


FIG. 5.

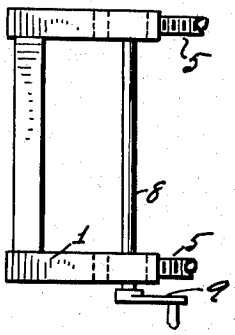


FIG. 4.

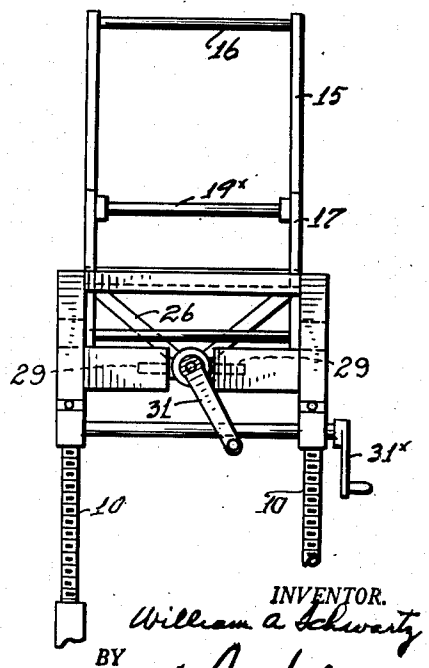
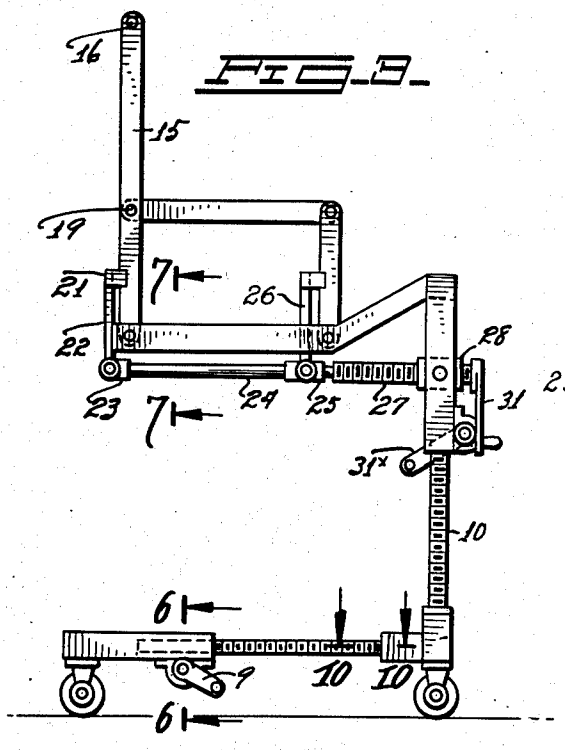


FIG. 3.



INVENTOR.
William A. Schwartz
BY
H. Lee Helms
ATTORNEY.

Patented June 22, 1954

2,681,455

UNITED STATES PATENT OFFICE

2,681,455

CARRIER FOR INVALIDS COMBINING HORIZONTAL AND CHAIR SUPPORTS

William A. Schwartz, New York, N. Y.

Application April 5, 1952, Serial No. 280,741

2 Claims. (Cl. 5—86)

1

The object of the present invention is to provide an effective and sturdy device for receiving a bed patient in substantially horizontal position, and incorporating means for elevating the patient into an upright sitting position, the carrier element having a double function, being capable of adjustment vertically and being movable on a wheeled adjustable frame to a position alongside or over a bed and therefrom to any desired position exterior of the bed. The patient-supporting element may be moved downwardly to any desired position, and to such position that the patient is on a wheel chair provided by the assembly.

The invention will be described with reference to the accompanying drawings, in which

Fig. 1 is a perspective view showing an embodiment of the invention partly broken away as to a covering material for the chair element.

Fig. 2 is a view in side elevation with the chair element dropped and horizontal to provide a stretcher-like support.

Fig. 3 is a view similar to Fig. 2 with the chair element in position for use as such.

Fig. 4 is a fragmentary front elevation.

Fig. 5 is a fragmentary plan view showing the rear portion of the wheeled supporting frame.

Fig. 6 is a transverse section on the line 6—6 of Fig. 3.

Fig. 7 is a transverse vertical section on the line 7—7 of Fig. 3.

Fig. 8 is a fragmentary view showing the manner of filling an opening in the seat of the chair by means of a movable pad and pad frame.

Fig. 9 is a plan view of a suitable sheet area of the chair cover.

Fig. 10 is a horizontal section on the line 10—10, Fig. 1.

Referring to the drawings, I have shown a wheeled frame consisting of a bottom rear frame member 1 having wheels 2 and a bottom front frame member 3, also provided with wheels 4. The two frame members are connected by threaded shafts 5 in such manner that an internally threaded worm wheel 6 (Fig. 6) at each side of frame member 1 may be operated by worm gears 7 on a shaft 8 through the rotation of a crank 9. Thus a worm wheel and worm gear is provided for each of the two threaded shafts 5. Rotation of the crank 9 will move the frame members 1 and 3 apart or bring them together depending upon the direction of rotation, i. e., whether clockwise or counterclockwise.

It will be understood that threaded shafts 5 are held against endwise movement relatively to

2

frame member 3, as shown in Fig. 10, and are free to move inwardly of the parallel arms of frame member 1.

Rising from frame member 3 are two rigidly held spiral toothed or rack shafts 10, each of which carries the depending arm 11X of a top frame 11. Carried in the bracket housings 12 on frame 11 are worms or gears (not shown) on shaft 12X (Fig. 1) which gears engage the teeth or rack surfaces of shaft 10 and thereby are adapted to move frame 11 in an upward or downward movement when handle 31X is rotated.

Carried by frame 11 are two cantilever arms 13 which at their forward areas are preferably inclined as shown in Fig. 1, for purposes hereinafter to be described. Supported by the cantilever arms are two bottom pivot rods 14, 14X. Pivot rod 14X enters apertures formed in two elongated parallel rear arms 15 which are connected, as by the cross-rods 16, 19, to form a rigid support in either down or upright position. Carried by pivot rod 14 are two front arms 17 which are mutually connected to form a strong supporting member in either upright or horizontal position. Arms 15 and 17 are pivotally connected by horizontal seat arms 18 on a top pivot rod 19 carried by the arms 15 and on a pivot rod 19X carried by the arms 17. The entire assembly just described provides a chair which when in upright position, may be covered with strong flexible covering material as indicated at 20. This chair is held in upright position, and is moved into horizontal patient-supporting position, by the following instrumentalities:

Secured in fixed position to the rear of arms 15 is a cross-bar 21 having struts 22 which are pivoted in turn to a swivel housing 23 on shaft 24 which leads to a second swivel housing 25 (Fig. 2). Pivoted to the latter are struts 26 which lead upwardly for connection with a cross-bar 32 carried at the rear of the pivotally mounted arms 17. The front end of swivel housing 25 receives the head (not shown) of a threaded shaft 27 mounted in a threaded sleeve 28 which is pivoted at each side, as indicated at 29 (Fig. 4) to carrier blocks 30 fixed on the parallel arms 11X of frame 11. Threaded shaft 27 carries a crank 31.

When crank 31 is rotated counter-clockwise, at the position of the elements shown in Fig. 1, shaft 24 will be moved forwardly and because of its pivoted connections with arms 15 and 17 will push the arms down to horizontal position, that position being shown in Fig. 2, collapsing the chair into a flat or pallet carrying member. Reverse movement of the shaft 27 will raise the chair

element to the position of Fig. 1, carrying with it the patient.

That portion of the chair cover 20 at the seat may be apertured similar to a toilet seat and for that purpose, as indicated at 32X, Fig. 1, and Fig. 8. In the latter figure, the equivalent of pivot rod 19X, Fig. 1, is shown as a rigid bar 19XX, the frame for which is pivoted, having an aperture at 32X which can be filled by the rounded top cushion of a filler member 33 which can be latched in position by pivoted latch bars 34, the latter being movable out of latching position to enable quick downward removal of the seat filler member 33. At this point a bed pan can be positioned for use.

It will be seen that my device provides a means of elevating a bed patient into an upright, sitting position, as if he were in a chair, particularly in the case of chronic patients, many of whom are bed-fast, and most of whom are helpless.

When these patients have to move their bowels, they must be rolled on a side, and the pan slipped under them. Their physiologic functions are performed in a very unphysiologic position. For cardiac patients, the strain is dangerous. From other standpoints it is uncomfortable and unsatisfactory.

For elderly people, who constitute the bulk of chronic patients, the constant supine position is dangerous. To get them in and out of bed, for their sake, involves heavy lifting by two or three aides.

In use, the device is wheeled up to the foot of the bed, and is rolled forward till the frame arms 11X lie against the footboard of the bed; the base will then be almost entirely underneath the bed. The patient is then rolled on his side and onto the pallet provided by the members in the position of Fig. 2.

The device can (after the patient has been elevated), be moved away from the bed, the chair can be raised into position and then moved downwardly to normal wheel chair position, the base can be shortened, by gears, and the patient is then on a wheel-chair. He can then be moved about.

In replacing the patient on the bed, the procedure is simply reversed.

It will be understood that various modifications may be made in the form and arrangement of the elements shown in the embodiment described without departure from the spirit of the invention. Thus, for clarity of illustration I

have shown the various frame members in the form of bars, whereas in practice they preferably will be tubular to lessen weight and afford more attractive appearance.

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

1. A carrier for invalids and in combination with a carrier frame, a chair frame adapted to be collapsed from normal chair relationship to flat pallet-frame form and means for operating the same, said chair frame consisting of a first and front normally vertical pair of arms pivoted to said carrier frame at the top portion thereof and rising upwardly therefrom, a second and rear normally vertical pair of arms of greater length than the first pair and spaced therefrom, said last-named arms rising upwardly from and being pivoted to said carrier frame, a normally horizontal pair of spaced arms pivotally connecting the second set of arms at a median area thereof and the first set of arms at the tops thereof, and an endwise movable holding and actuating rod connected to one set of said vertical chair frame arms and means for imparting endwise movement to said rod.

2. A carrier for invalids, constructed in accordance with claim 1, in which the carrier frame consists of a base frame section having supports for contacting with the floor, an intermediate section consisting of vertical parallel shaft-like members and an upper section movable vertically on said shaft-like members and rigidly supported thereby, said upper section being provided with spaced cantilever carrying arms to which the chair frame is pivoted, said cantilever arms overhanging the base frame section.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,094,117	Butler	Apr. 21, 1914
1,280,108	Perrin	Sept. 24, 1918
1,700,088	Smith et al.	Jan. 22, 1929
1,782,406	Bureau	Nov. 25, 1930
2,595,651	Feist	May 6, 1952

FOREIGN PATENTS

Number	Country	Date
7,858	Great Britain	Apr. 2, 1909