

May 25, 1954

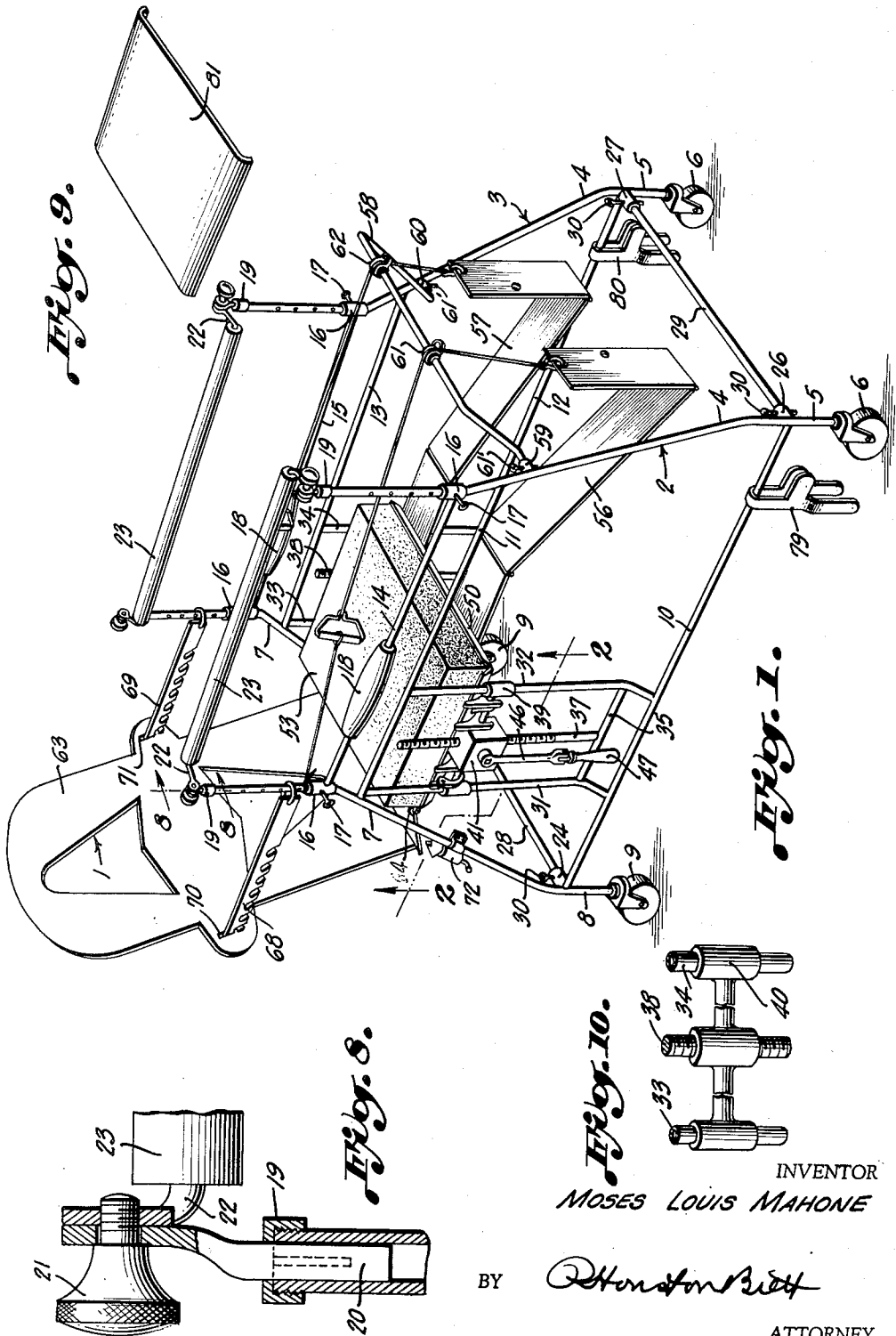
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2,679,283

INVALID CHAIR

Filed Dec. 30, 1950

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

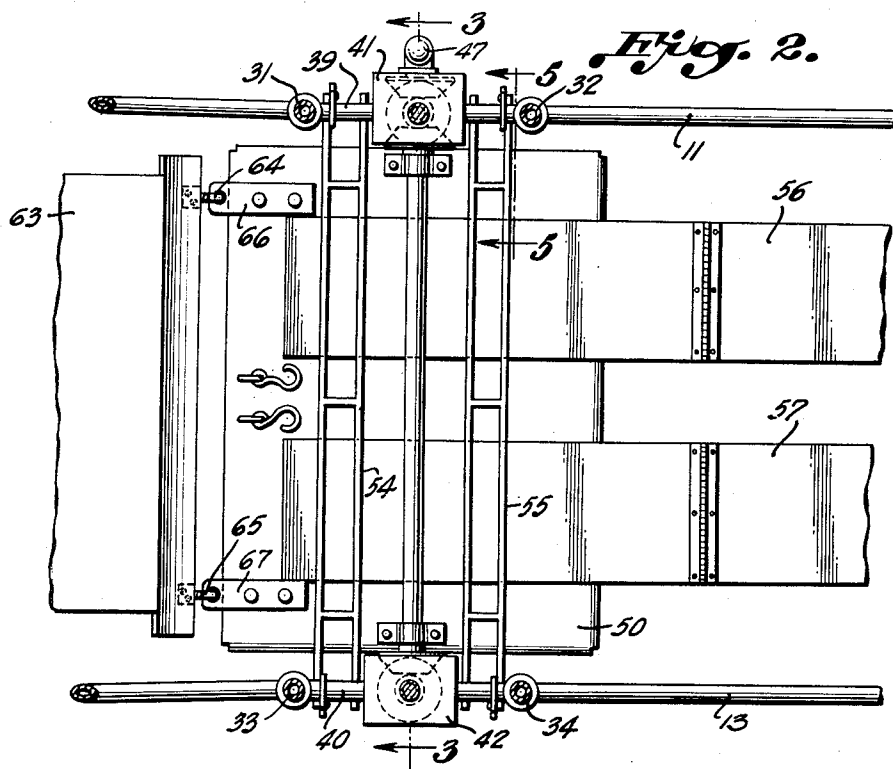


Fig. 6.

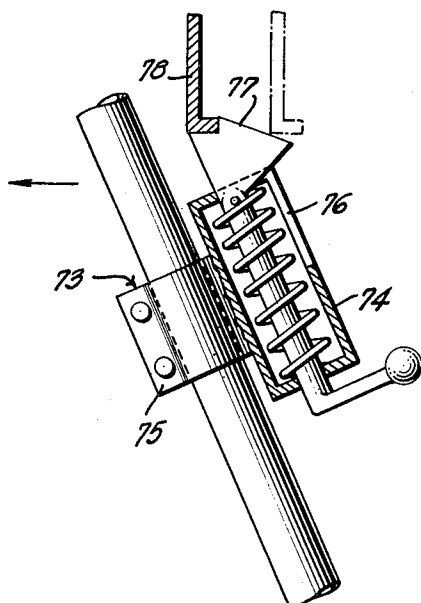
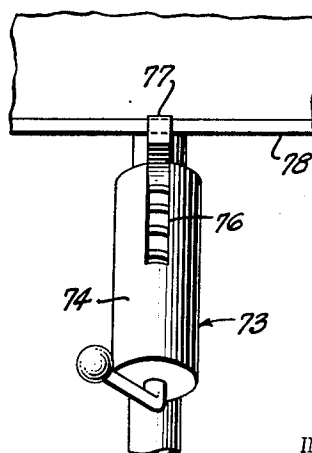


Fig. 7.



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Fig. 3.

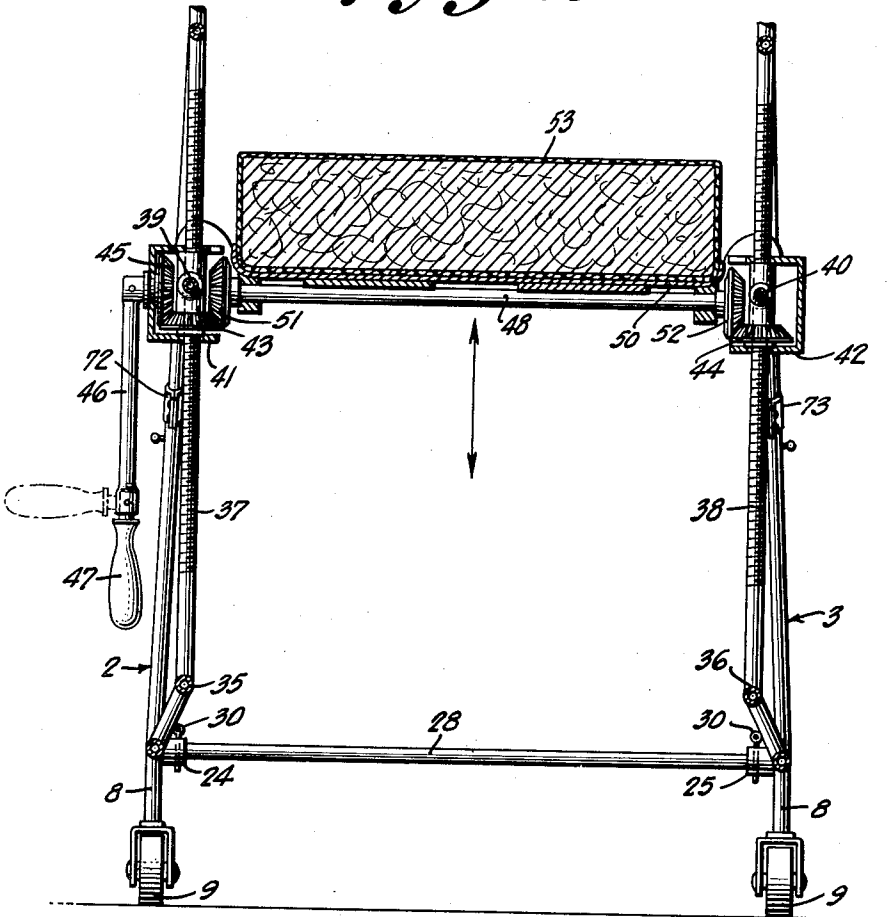


Fig. 4.

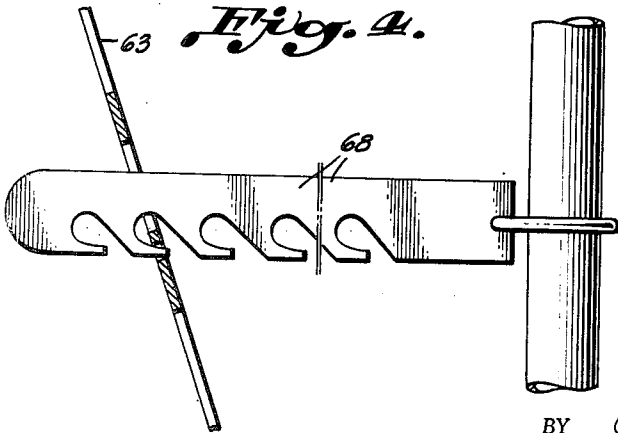
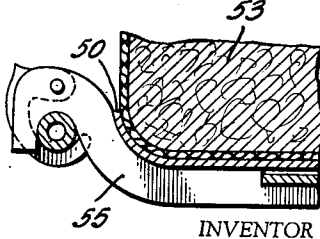


Fig. 5.



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INVALID CHAIR

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4 Claims. (Cl. 155—30)

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This invention relates to improvements in invalid chairs, and more particularly to such chairs adapted for utilization by persons who find walking difficult. By the provision of such a chair, hereinafter more fully described, such people are enabled to move about unaided and to exercise their leg muscles. Furthermore, persons who are confined to bed are enabled to get from their bed into the chair with the least possible inconvenience.

One of the objects of this invention is the provision of a chair that may be latched to a bed and the back removed to permit a person to move or be moved from the bed into the chair without being lifted.

Another object of this invention is the provision of a chair having an adjustable seat which may be elevated or lowered to permit a person to move on or off said seat to or from an adjacent seat or support.

A further object is a chair provided with crutch supports to permit or aid a person in walking.

Other objects and features will more fully appear from the following description and accompanying drawings, in which:

Fig. 1 is a perspective view of the chair;

Fig. 2 is a basal sectional view along lines 2—2 of Fig. 1;

Fig. 3 is a vertical sectional view along lines 3—3 of Fig. 2;

Fig. 4 is a sectional view of the back latching means;

Fig. 5 is a sectional view along lines 5—5 of Fig. 2;

Fig. 6 is a side sectional view of bed-locking means;

Fig. 7 is a frontal perspective of Fig. 6;

Fig. 8 is a sectional view along lines 8—8 of Fig. 1;

Fig. 9 is a perspective of a table or tray; and

Fig. 10 is a perspective of a bar.

Referring to the drawings, a chair 1 consists of a pair of sides or side-frames 2—3. Each of the sides are formed by front posts 4 terminating in legs 5 to the basal ends of which are respectively secured casters 6, and rear posts 7 terminating in legs 8 to the basal ends of which are secured casters 9. The front and rear posts of each side are secured in spaced relation to each other by bars 10—11; 12—13. The front and rear posts are hollow and constructed of any suitable material; but preferably tubular metal such as aluminum or the like which is light in weight. The upper ends of each post are provided with pairs of apertures and bars 14—15 55

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have respectively secured to each of their ends a tubular T 16; each T being provided with pairs of apertures which are adapted to register with the apertures in the posts. The T members are 5 mounted upon the front and rear posts in slidable fashion and pins 17 register with said T and post apertures to maintain bars 14—15 at a desired height. The latter bars are provided with grips 18 which may be mounted thereon in 10 slidable fashion so that a person may place the grips at any desired point on said bars.

The upper ends of front and rear posts are tapered, slotted and threaded as clearly shown in Fig. 8. Nuts or caps 19 are respectively mounted 15 on each post in threadable fashion, and legs 20 are respectively disposed in the ends of said posts and secured against displacement by said caps. The legs project upwardly from the posts and are provided with holes through which pass threaded 20 shanks of bolts 21. Supports 22 are U-shaped in fashion and at their ends have threaded apertures that respectively engage the shanks of bolts 21, and the supports may be rotated to a position desired by a person so that they may be 25 properly positioned and secured against movement and thereby accommodate the arm pits of a person.

The supports are provided with pads 23 thereby affording greater comfort to a person. Sockets 24—25 and 26—27 are respectively secured near 30 the basal portion of said front and rear posts and bars 28—29 respectively engage sockets 24—25 and 26—27 which are secured thereto by pins 30 registering with apertures in said sockets and bars; thereby securing said sides in spaced relation to each other.

Braces 31—32; 33—34 (Fig. 1) are respectively secured to bars 10—11; 12—13 in spaced relation to each other.

Respectively secured to braces 31—32; 33—34 are cross-bars 35—36 which likewise have secured thereto guides 37—38 which are threaded a greater portion of their length. Bars 39—40 are each provided with three hollow tubes (Fig. 10) 45 in spaced relation to each other. The outside tubes respectively engage and rest upon braces 31—32; 33—34; while the central tubes likewise ride upon or over guides 37—38. A pair of boxes 41—42 are provided with apertures through which pass the guides as clearly shown in Fig. 3. The boxes house the central tubes and their basal portions respectively rest upon gears 43—44 in said boxes; said gears being respectively mounted in threadable fashion on the guides.

A gear 45 is journaled in box 41 and its axle

has secured thereto a shank 46 to which is pivotally connected a handle 47. An axle 48 (Fig. 2) is secured in brackets 49 connected to the basal portion of a seat 50. Upon each end of said axle is fixed gears 51—52 that respectively mesh with gears 43—44. It is obvious that when gear 45 is actuated it rotates gear 43 which turns gear 51, axle 48, gear 52 and gear 44. Gears 43—44 are thereby caused to ride up or down said threaded guides and likewise move bars 39—40 which cause the seat to move up or down. A cushion 53 may be placed upon the seat for purposes of comfort and ease of sitting.

Brackets 54—55 (Fig. 2) are secured to the basal portion of said seat and in spaced relation thereto. Each of the ends of said brackets extend beyond the sides of the seat and terminate in hooks which rest upon bars 39—40. Locking means may be provided upon said hooks to secure the seat to said bars, as clearly shown in Fig. 5. A pair of limb supports 56—57 are respectively hinged at two points thus dividing each support into three parts. The inner sections of each support are disposed upon said brackets as clearly shown in Fig. 2. The middle sections are for leg supports while the outer or end sections are adapted for foot rests. To each of said foot rests a hook engages an aperture therein, and each hook is attached to a cord or chain.

A U-bar 58 has each of its ends respectively disposed in sockets 59—60 and said bar is secured in fixed position by pins 61' which pass through apertures in said sockets and bar.

Rollers 61—62 are mounted upon bar 58 in slidable fashion and are adapted to accommodate the cords, the free ends of which have handles secured thereto so that a person grasping the handles and pulling upon and paying out the cords may move the supports to exercise the legs, feet and limb joints of a person. The handles may be fastened in any desired position to maintain the supports in similar manner. A chain may be used instead of cords and the links locked in keys on said pulleys which is well known to the art.

A back 63 (Figs. 1—2) is provided with hooks 64—65 that respectively engage brackets 66—67 secured to the base of said seat. Latch bars 68—69 have respectively in each of their ends, rings which ride over and anchor in slidable fashion to rear posts. The latch bars are provided with teeth and engage and pass through slots 70—71 in said back. It will be noticed that the teeth of said latch bars terminate in angular fashion and their tips engage orifices below the slots to retard vertical displacement of said bars with respect to the back.

When the back is adjusted to the desired position the bars are latched upon said back as shown in Fig. 1.

Spring locks 72—73 (Figs. 1—6) each consisting of a casing 74 mounted upon a bracket 75 secured in adjustable fashion to each of the rear posts. A slot 76 in each casing accommodates a latch 77 from which extends a shank provided with a handle outside said casing. A spring is housed in the casing which tends to force the latch therefrom. When the latches engage a bedrail 78 the latter rides over the surface of the latch forcing it down until the rail engages the notch on said latch, at which time the spring forces the latch upwardly and thereby locking the same to the rail.

Wheel guides 79—80 (Fig. 1) are respectively mounted upon bars 10—12 and are adapted to

snap upon the front legs and maintain the casters in a fixed position so a steady and fixed course of the chair may be maintained.

A tray or desk 81 may be placed upon bars 14—15 so that the person seated in the chair may utilize it as a writing table, or for eating, etc.

It is thought obvious that the chair may be disassembled for packing and easily assembled for use by simply removing the various pins from the bars that engage each of the sides; lifting the seat and removing the back and U-bar in the front.

The leg and foot supports, when not in use may be folded under the seat and the foot supports having apertures therein secured to a pair of hooks fixed to the base of said seat as shown in Fig. 2. When it is desired to remove the patient from the chair to another place the seat is raised or lowered to the level of the place where the patient or person is to be seated and the back removed and patient slid from the seat to adjacent resting place.

It is also obvious that the person may use the bars as crutches and walk with aid of the structure supporting means.

It is also thought obvious that the gears secured to the axle on the seat always go with the latter and when the seat is placed in proper position the gears mesh with their companions in the boxes.

This invention is not to be restricted to the particular structure shown in the drawings, as for instance, the front and rear posts may be so straightened as to be substantially at right angles to bars 10—12.

Having described this invention, what is claimed is:

1. In an invalid chair of the character described, adapted to be propelled by an attendant and which may be latched to a bed and the back thereof adjusted or removed to permit the invalid or patient to move or be moved to and from the bed into the chair without being lifted, the combination consisting of a frame comprising a pair of front posts connected by a front horizontal bar, a pair of rear posts connected by a rear horizontal bar, a pair of horizontal side bars on each side of the frame secured to the front and rear posts for holding said posts in spaced relation to each other, a pair of vertical parallel brace rods at each side of the frame respectively secured to the pairs of horizontal side bars, and arranged in juxtaposition to each other, a horizontal seat between said pairs of brace rods mounted thereon for vertical slidable adjustment, a pivotal back for the seat adapted to be raised and lowered for the accommodation of the patient transported, latch bars secured to the rear posts and detachably connected to the back for holding the same in adjusted position, and a pair of limb supports hinged to the front edge of the said seat to accommodate the limbs of said patient, spring locks mounted on the rear sides of the rear posts and provided with latches for engaging a bed rail and thereby locking said chair to the bed rail.

2. In an invalid chair of the character described, adapted to be propelled by an attendant and which may be latched to a bed and the back thereof adjusted or removed to permit the invalid or patient to move or be moved to and from the bed into the chair without being lifted, the combination consisting of a frame comprising a pair of front posts connected by a front horizontal bar, a pair of rear posts connected by a rear hori-

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zontal bar, a pair of horizontal side bars on each side of the frame secured to the front and rear posts for holding said posts in spaced relation to each other, a pair of vertical parallel brace rods at each side of the frame respectively secured to the pairs of horizontal side bars, and arranged in juxtaposition to each other, a horizontal seat between said pairs of brace rods mounted thereon for vertical slidable adjustment, a pivotal back for the seat adapted to be raised and lowered for the accommodation of the patient transported, latch bars secured to the rear posts and detachably connected to the back for holding the same in adjusted position, and a pair of limb supports hinged to the front edge of the said seat to accommodate the limbs of said patient, a U-bar horizontally disposed and adjustably secured between the front posts, and pull cords passing over said bar and secured to the front ends of the limb supports so as to be operated by the patient or invalid for changing the position of the limbs.

3. In an invalid chair of the character described, adapted to be propelled by an attendant and which may be latched to a bed and the back thereof adjusted or removed to permit the invalid or patient to move or be moved to and from the bed into the chair without being lifted, the combination consisting of a frame comprising a pair of front posts connected by a front horizontal bar, a pair of rear posts connected by a rear horizontal bar, a pair of horizontal side bars on each side of the frame secured to the front and rear posts for holding said posts in spaced relation to each other, a pair of vertical parallel brace rods at each side of the frame respectively secured to the pairs of horizontal side bars, and arranged in juxtaposition to each other, a horizontal seat between said pairs of brace rods mounted thereon for vertical slidable adjustment, a pivotal back for the seat adapted to be raised and lowered for the accommodation of the patient transported, latch bars secured to the rear posts and detachably connected to the back for holding the same in adjusted position, and a pair of limb supports hinged to the front edge of the said seat to accommodate the limbs of said patient, the front posts and the rear posts terminating upwardly in vertical parallel extensions, a horizontal bar at each side of the frame vertically adjustably mounted and secured between the parallel extensions of companion front and rear posts, and grips slidable along said bars for appropriate use of the invalid or patient.

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4. In an invalid chair of the character described, adapted to be propelled by an attendant and which may be latched to a bed and the back thereof adjusted or removed to permit the invalid or patient to move or be moved to and from the bed into the chair without being lifted, the combination consisting of a frame comprising a pair of front posts connected by a front horizontal bar, a pair of rear posts connected by a rear horizontal bar, a pair of horizontal side bars on each side of the frame secured to the front and rear posts for holding said posts in spaced relation to each other, a pair of vertical parallel brace rods at each side of the frame respectively secured to the pairs of horizontal side bars, and arranged in juxtaposition to each other, a horizontal seat between said pairs of brace rods mounted thereon for vertical slidable adjustment, a pivotal back for the seat adapted to be raised and lowered for the accommodation of the patient transported, latch bars secured to the rear posts and detachably connected to the back for holding the same in adjusted position, and a pair of limb supports hinged to the front edge of the said seat to accommodate the limbs of said patient, the front posts and the rear posts terminating upwardly in vertical extensions, a U-shaped support at each side of the frame horizontally disposed and rotatably adjustably secured between the upper ends of the vertical extensions of companion front and rear posts, whereby the supports may be rotated to a position to properly accommodate the arm pits of the patient on the chair seat.

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