

May 29, 1934.

J. J. ETTINGER

1,961,119

INVALID HOIST AND CARRIER

Filed Oct. 2, 1931

3 Sheets-Sheet 1

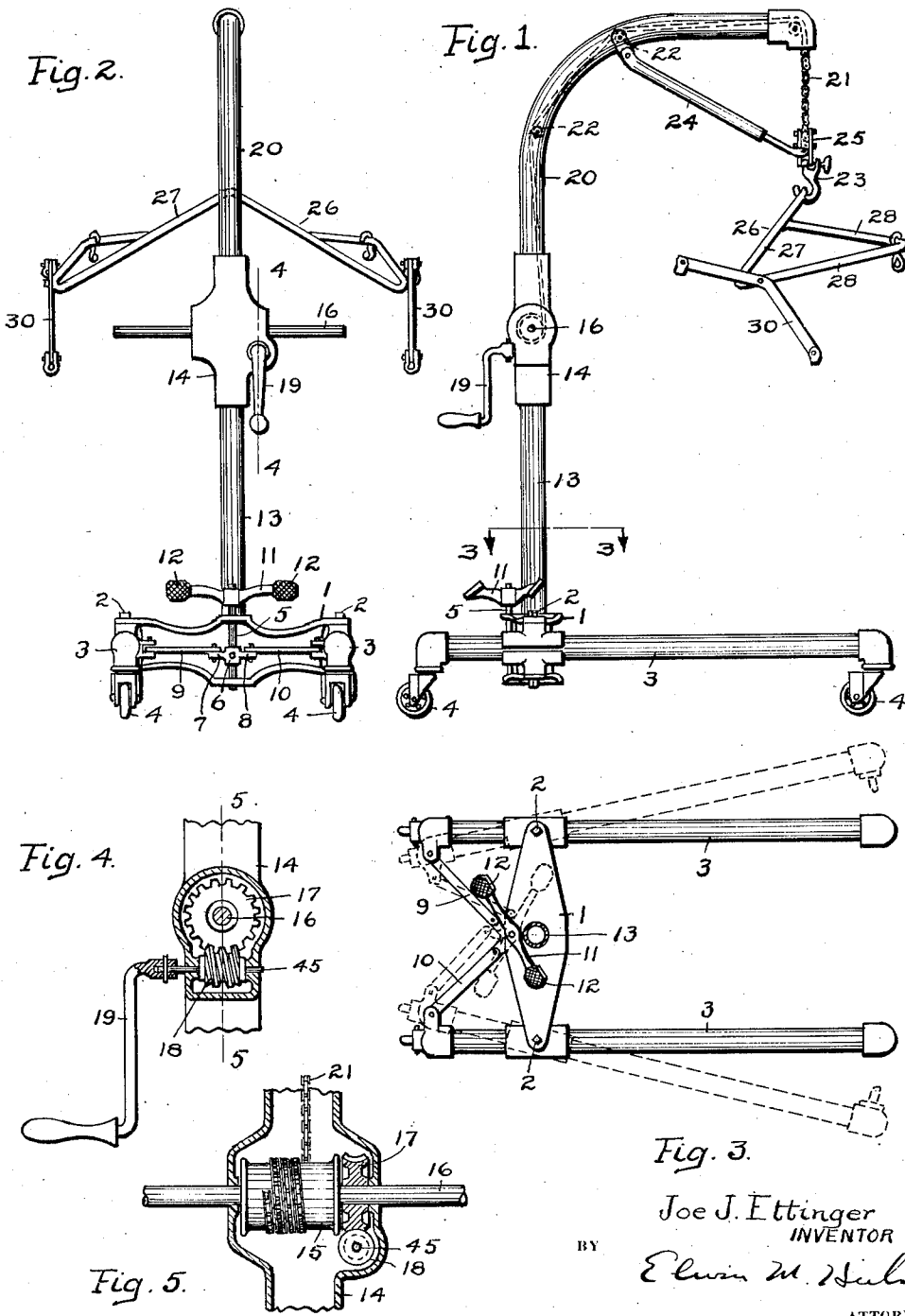


Fig. 3.

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3 Sheets-Sheet 2

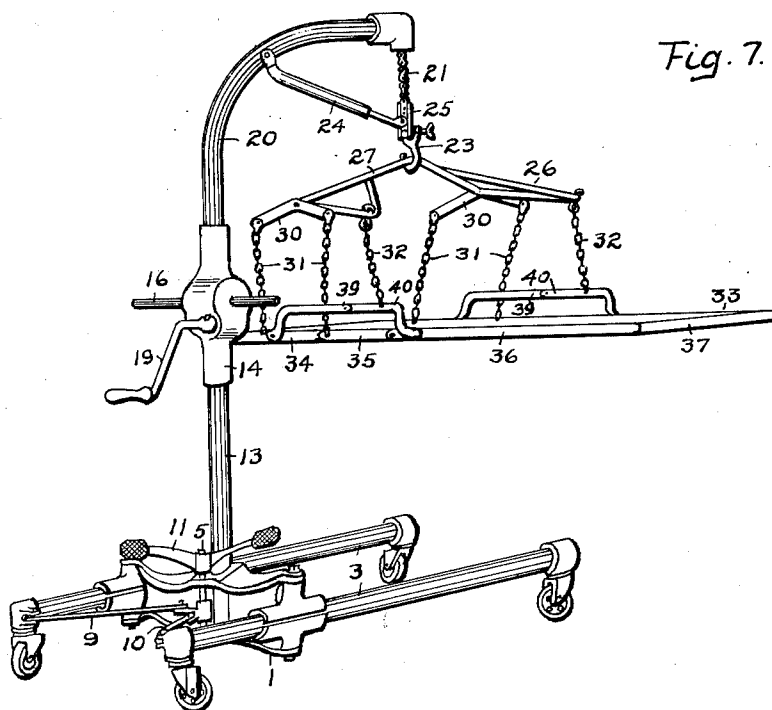


Fig. 7.

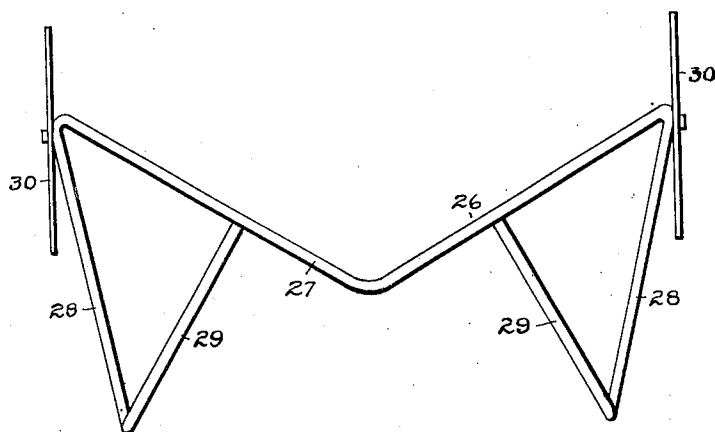


Fig. 6.

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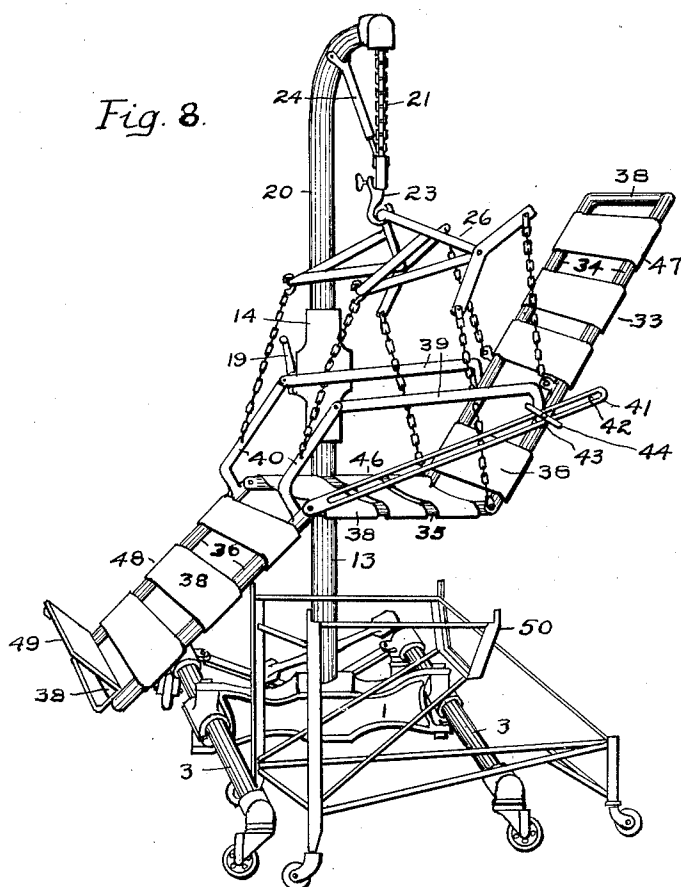
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INVALID HOIST AND CARRIER

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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

1,961,119

INVALID HOIST AND CARRIER

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Application October 2, 1931, Serial No. 566,505

3 Claims. (Cl. 5—89)

The invention relates to hoists and carriers or supports for handling helpless invalids.

It is frequently a difficult task to handle a helpless invalid, such as to remove him from a bed or operating or X-ray table or to place him thereon. This is especially true where the patient is a large person or one having considerable weight.

The object of my present invention is to provide novel means by which an invalid may be readily raised from or lowered to any object adapted to support him and by which he may be supported for transportation to any desired point.

Another object is to provide a novel portable hoist with novel means for supporting an invalid while he is suspended by the hoist. Other objects and advantages will appear hereinafter.

The invention consists in the novel form, combinations and arrangements of parts hereinafter described and illustrated in the accompanying drawings, in which drawings

Figure 1 is a side elevational view of the hoist; Fig. 2 a rear end elevational view of the hoist; Fig. 3 a cross-section on line 3—3 of Fig. 1; Fig. 4 a cross-section on line 4—4 of Fig. 2; Fig. 5 a cross-section on line 5—5 of Fig. 4; Fig. 6 a plan view of the supporting frame; Fig. 7 a perspective view of the hoist supporting the convertible cot and Fig. 8 a perspective view of the hoist supporting the cot as converted into a chair suspended over a carrier or wheeled frame.

Referring to the illustrative embodiment of the invention the hoist comprises a base member 1, to the opposite ends of which are pivoted at 2 two horizontal members or arms 3 having the casters 4 mounted at their opposite ends. A rock shaft 5 is vertically mounted on the base member 1 and a sleeve 6 is secured to the shaft from which project two levers 7, 8 at selected angles. The links 9, 10 are pivoted to the levers and to the rear ends of the base arms 3. A lever 11 is secured at its central point to the shaft 5 and carries the foot engaging members 12 at its opposite ends. The levers 7, 8 and the links 9, 10 are so arranged that when the left end of the lever 11 is moved forwardly the shaft 5 is rocked to cause the links 9, 10 to draw the rear ends of the base arms 3 toward each other and to cause the forward ends of said arms to swing laterally outward as shown in broken lines in Fig. 3. The links 50 and the levers 7, 8 also limit the movement of the base arms. When the arms are swung outwardly the space between the outer ends of the longer portions thereof is materially widened so that a relatively wide base is presented on one side 55 of the base member 1 upon which the device is

supported when operated as a hoist or in transporting a patient. When the arms 3 are parallel the device may be moved through a door opening or passageway and this parallel relation of the arms is accomplished by moving the lever 11 in a direction opposite to that previously described.

A standard or mast is mounted on the base and is preferably formed of a pipe or tube 13 fixed at its lower end in the base and its upper end is fixed in a housing 14 in which a drum 15 is mounted. A shaft 16 supports the drum in the housing and its opposite ends project from the housing to form handles by which to facilitate the movement of the hoist from place to place. A worm gear 17 secured to the shaft 16 meshes with a worm 18, the shaft 45 of which worm projects through the housing and is connected to a crank 19. A second portion of the standard or mast is formed by a pipe or tube 20 the lower end of which is secured to the housing and communicates with the interior thereof. The upper portion of the pipe or tube 20 is preferably curved upwardly and forwardly so that its upper end overhangs the space between the longer portions of the arms 3, the overhang being sufficient to provide ample space forwardly of the vertical portion of the standard or mast to accommodate the carrier hereafter described.

A draft member 21, such as a chain or other suitable member, is connected to the drum 15 and extends through the pipe or tube 20, the member being passed over suitable idler pulleys 22 disposed in the pipe or tube 20. A swivel hook 23 is secured to the free end of the chain or other draft member 21 and a brace 24 is secured to the pipe or tube 20 and to the base 25 of the hook 23 to prevent rotation or twisting of the draft member.

A frame 26 is adapted to be engaged on the hook 23. This frame is of novel construction in that it is self balancing on the hook 23. As shown in Figs. 1 and 6, the frame 26 is formed of an upwardly inclined V-shaped member 27 having its lower ends connected to or merged into converging side members 28 which form an acute angle with the cross member 27, and the side members 28 are connected to or merge into the converging members 29 which extend upwardly to and are secured to the cross member 27, the convergence of the members 29 being in a direction opposite to that of the side members 28. At the corners between the cross member 27 and the side members 28 are pivoted the bars 30, the pivotal points being midway the length of the

bars and said bars being somewhat V-shaped. The chains 31 are attached to the opposite ends of the bars 3 and other chains 32 are attached to the members 28 or 29 at suitable points, as at the angles between the members 28 and the members 29. These chains are attachable to the carrier or cot 33 or other device adapted to support an invalid.

The carrier 33 is an advantageous support for an invalid. It comprises a preferably rectangular marginal frame formed in three hinged sections; that is: each side rail of the cot is formed in three sections 34, 35, 36, the intermediate member 35 being hinged to each of the other two members. The rail members 34 and 36 are connected by the end members 37 respectively. Suitable cross members 38 are suitably attached to the opposite side rail members, and such may be belts or straps. If desirable one end of each cross member may be detachable to facilitate passing the said members under the patient when it is desired to place him on the carrier.

The end sections of the carrier are braced at each side by the angular side bars 39, 40, the bar 39 being secured at a suitable point to the rail member 34 and the bar 40 being secured at a suitable point to the rail member 36. The opposed ends of the bars 39, 40 are pivoted together. A longitudinally slotted bar 41 is pivoted to the member 36 and the slot 42 therein receives a bolt 43 in the side member 34 upon which bolt a suitable nut 44 is engaged to lock the bar to the member 34 in any longitudinally adjusted position of the bar thereon.

Since the three sections of the carrier are hinged together they may be adjusted to form a chair, the intermediate section 46 forming the seat, the head section 47 forming the back and the remaining section 48 forming the leg supporting part of the chair. A foot rest 49 may be attached to the lower end of the section 48.

The chair form of the carrier may be supported on the wheeled support 50 which is preferably formed so that the base arms 3, or at least one of the arms, may pass under it in order to properly position the chair with the patient therein on the support. When the chair is placed on the wheeled support the chains 31, 32 are disconnected from the chair.

What I claim is:

1. A device of the class described comprising a frame formed of two side members, an upwardly arched cross-member connecting corresponding ends of the side member, the opposite ends of the side members being bent to engage with the cross-member and a patient carrier-suspending member on the side members and including rocking members mounted on said side members.

2. A device of the class described comprising a frame formed with two side members, an upwardly arched cross member connecting corresponding ends of the side members and rearwardly inclined relatively to said ends, the opposite ends of said side members being extended forwardly, inwardly and upwardly and engaged with the cross member and patient carrier-suspending members on the frame.

3. A device of the class described comprising a frame formed with two opposite side members, a V-shaped cross-member connecting corresponding ends of the side members, the angle of the cross-member being above the plane of the side members and rearwardly of said corresponding ends, the opposite ends of the side members being extended inwardly and upwardly and secured to the cross-member and patient carrier suspending members on the frame, some of which are connected to rock bars pivoted to the side members.

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45	120
50	125
55	130
60	135
65	140
70	145
75	150