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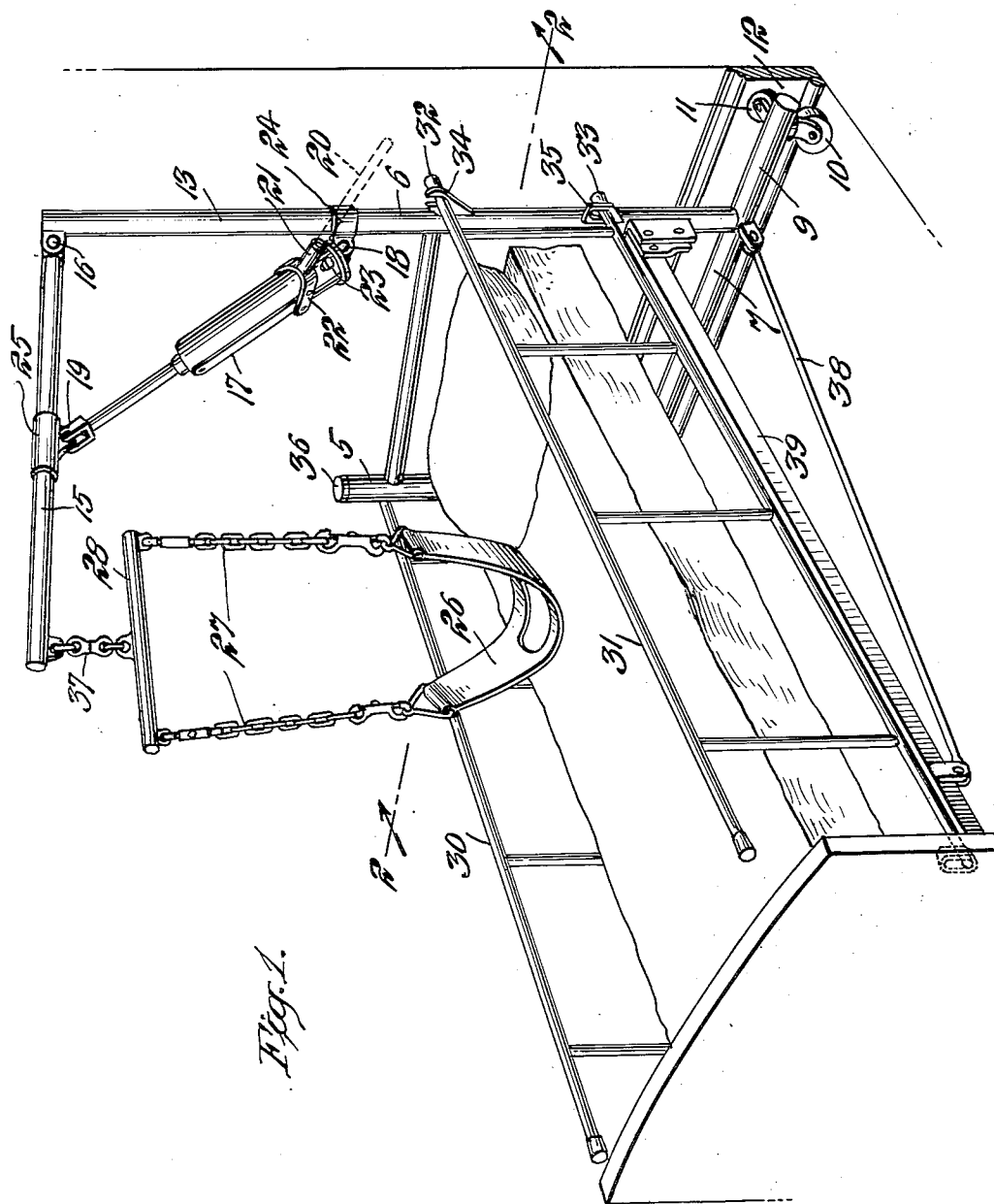
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BED HAVING MEANS FOR LIFTING HELPLESS OCCUPANT

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2 Sheets-Sheet 1



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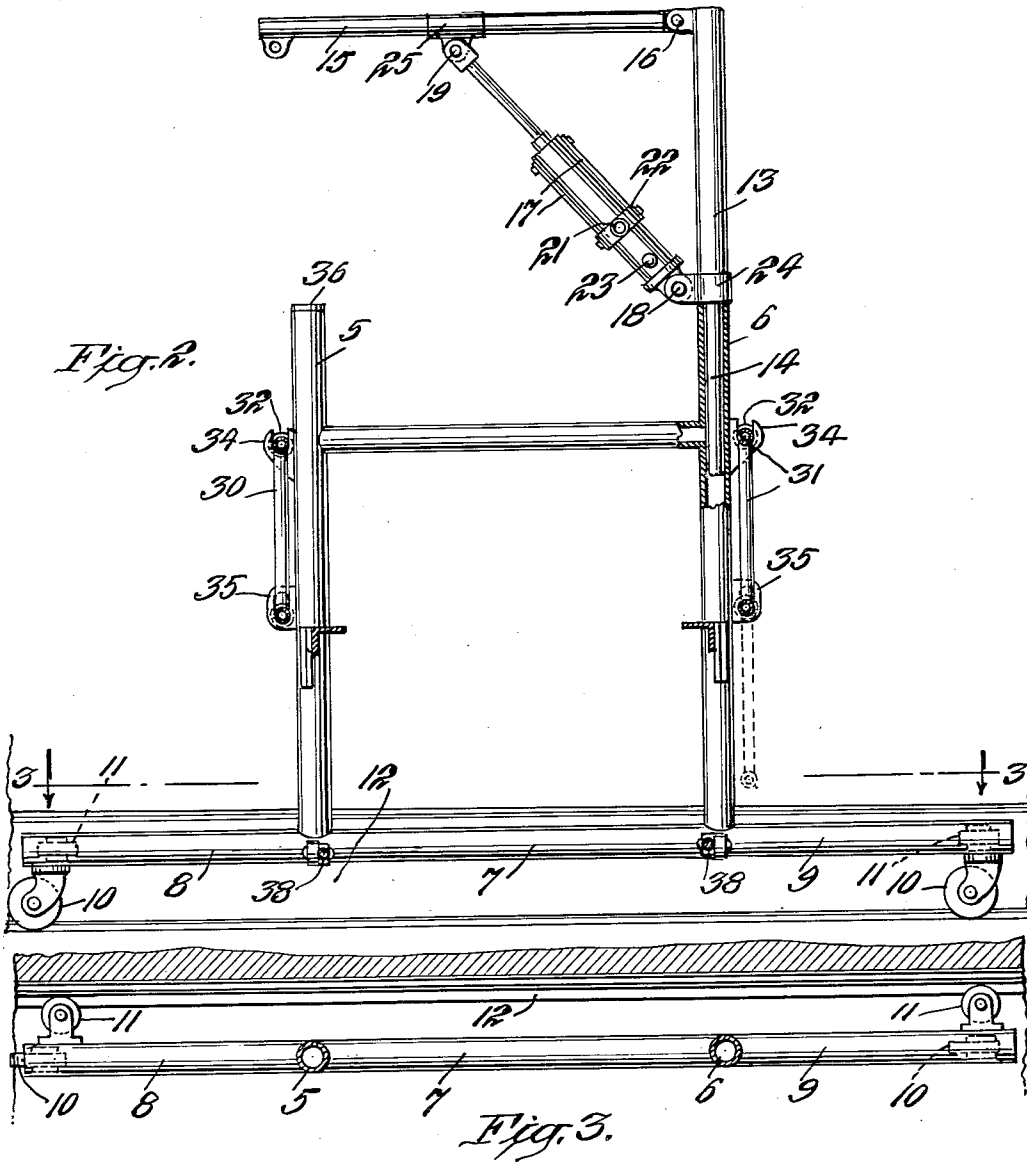
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BED HAVING MEANS FOR LIFTING HELPLESS OCCUPANT

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1 Claim. (Cl. 5—87)

The invention herein disclosed relates to bed constructions and the main object of the invention is to incorporate in the bed structure a practical form of hoist for lifting and transporting a helpless occupant of the bed.

Special objects of the invention are to provide means for safely and comfortably lifting, supporting and transferring a patient from one position or place to another, as from the bed to a chair at the side of the bed and vice versa.

Other important objects are to combine the bed and hoist mechanism in a way which will not be objectionable as to appearance and so that such mechanism when not in use may be swung to an inconspicuous, out-of-the-way position.

Also, it is a purpose of the invention to construct the bed so that a side may be quickly let down to clear the way for transferring a patient from bed to chair or back from the chair to the bed, and all this without any danger of overturning the bed structure.

Other desirable objects attained by the invention, and the novel features of construction, combinations and relations of parts through which the purposes of the invention are accomplished are further set forth and will appear in the course of the following specification.

The drawings accompanying and forming part of the specification illustrate a present commercial embodiment of the invention. Structure, however, may be modified and changed as regards the immediate illustration, all within the true intent and scope of the invention as hereinafter defined and claimed.

Fig. 1 in the drawings is a broken perspective view of the bed showing the crane in a patient-lifting position over the center of the bed;

Fig. 2 is a broken cross-sectional view as on substantially the plane of line 2—2 of Fig. 1;

Fig. 3 is a horizontal sectional view on substantially the plane of line 3—3 of Fig. 2.

The frame of the bed is of special construction having tubular corner posts 5 and 6 of sufficient strength and proper height to carry the swinging crane structure.

While only two such posts have been shown, at the head of the bed, it will be understood that these crane supporting corner posts may be provided at all four corners or possibly just at the foot of the bed, or at just three corners or possibly at just a single corner, depending on services to which the beds are to be put.

Another distinguishing feature of the bed frame is that the base of the bed is extended laterally to overcome any tipping tendencies and positively prevent any overturning possibility in the aforesaid swinging movement of the loaded crane.

Specifically in the illustration the two head posts 5, 6 are shown as mounted on a supporting cross bar 7 extended laterally at opposite sides at 8, 9, beyond the posts and sufficiently beyond the sides of the bed to positively overcome any overturning tendency from any outwardly swinging movement of the loaded crane. These

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side extensions of the supporting base are shown as casters at 10 and as carrying rollers or casters 11 at the back to operate as guards engageable with a base-board 12 to prevent digging or jamming into a wall surface in the moving of the bed from one position to another.

This same outrigger or extended base construction may be provided at the opposite end of the bed if the bed is constructed for use of lifting cranes at that end of the bed.

The crane is shown as made up of a tubular mast or post 13 having a rod 14 secured in the lower portion of the same and extended for pivotal engagement in the bed post, as shown in Fig. 2, and a projecting arm or boom 15 pivoted to the head of the mast at 16 and a power jack 17 pivoted to the foot of the mast at 18 and pivoted to the top to the midportion of the boom at 19.

The jack 17 may be of conventional design and be of the screw type, hydraulic, pneumatic or electric.

In the illustration a hydraulic jack is indicated, operable by a removable hand lever 20, Fig. 1, which can be applied over the stock 21 of the pump lever 22, this jack being of the automatic holding type and controlled by a valve 23 for lowering purposes.

The lower or supporting pivot 18 for the jack is shown as carried by sleeve 24 which may be adjustably clamped over the lower end portion of the crane post 13, and the upper pivot 19 is shown carried by a sleeve 25 which may be adjustably secured lengthwise on the boom 15 thus to provide ability for varying the throw and lift of the boom.

The support for the patient may vary in character.

A simple form of sling is illustrated at 26 suspended by chains 27 from a bar 28 flexibly suspended from the end of the boom. It will be appreciated that this supporting structure may vary quite widely, depending on the condition of the patient, handling requirements and other factors.

A further feature of the bed illustrated is that it is provided with drop sides 30, 31 which can be lowered to enable a patient to be swung out over the edge of the bed without obstruction.

These sides are shown as having upper and lower parallel rods 32, 33 arranged for the upper rods to drop into open top hooks 34 and the lower rods to ride in vertically slotted brackets 35 on the sides of the bed posts.

Fig. 2 shows how these side members will normally be securely held by the upper hooks 34 and lower slotted brackets 35, the broken lines at the right showing how when a side is lifted to clear the top rail of hooks 34, it may then be swung outward on the lower rail as a pivot and drop down out of the way below the mattress level.

When the crane is not in use it may be swung back out of the way against a wall at the head of the bed or it may be removed from the rest of the bed structure by simply lifting it up out of the supporting corner post. The tops of these hollow bed posts, when such posts are not in service, may be closed by suitable, easily removable, ornamental caps or covers 36.

Instead of a single lifting crane mounted usually at the head of the bed, two or more cranes may be slipped into position in the hollow corner posts and also possibly be used at the foot of the bed for raising or supporting the lower limbs.

While hydraulic jacks, because of their self-contained unitary construction, may be preferred it is contemplated that other forms of power jacks may be used and be either hand operated or motor driven. In the case of a motor driven unit it may be controlled by push-buttons or the like within reach of the individual on the bed, or be controlled by a nurse or other attendant. In any

event, the invention provides for the safe and comfortable handling of an invalid or otherwise helpless individual by one person and the safe carrying of an individual from the bed to a position off at the side of the bed and from there back into supported relation on the bed.

The invention is of particular value in temporarily lifting and supporting a patient while changing sheets and the like. The drop sides are a great convenience, providing safety for the patient in repose and, when lowered, enabling clear movement of patient to and from the bedside.

The combination bed with lifting crane incorporated is of simple, rugged construction, consisting of few, simple parts and one which can be produced at relatively low cost. The supporting means for the occupant may be in the form of a sling, hammock, stretcher or other such device suited to lifting a patient either bodily or partially, as circumstances require.

The flexible suspension preferably includes a swivel, as indicated at 37, so that the patient may be readily swung around to different positions.

The head post is braced, in the illustration, by a strut 38 extending from the cross-bar 7 at the foot of the head post to the frame bear 39 near the foot of the bed. This strengthens the post against any tendency to tilt or yield under a heavy load.

What is claimed is:

An invalid bed having a built-in but removable power crane for lifting the occupant of the bed and comprising a bed frame having spaced hollow corner posts open at the upper ends and an elongated horizontal cross bar on which the lower ends of said corner posts are supported and extended laterally beyond said corner posts and provided at the outwardly extended ends with floor engaging casters for supporting said corner posts against tipping or overturning forces, said bed frame having guards at the sides of the same for protection of an occupant on the bed, the power crane unit removably and

rotatably associated with said bed frame and comprising a mast removably and rotatably seated in the open upper end of one of said corner posts, a boom pivotally connected at one end with the upper end of said mast, occupant supporting means suspended from the other end of said boom and a power jack interposed in inclined relation between said mast and boom, pivotally connected at its lower end with the mast at a point adjoining the upper end of the bed post and pivotally connected at its upper end with an intermediate portion of the boom and means releasably supporting said guards in elevated protective position at the sides of the bed and whereby upon use of the crane for lifting, lowering or shifting the occupant over onto or away from the bed, said guards may be lowered to clear the way for the free movement of the occupant supported by the crane.

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