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HOSPITAL BED CONVERTIBLE TO CHAIR

Filed Aug. 3, 1950

3 Sheets-Sheet 1

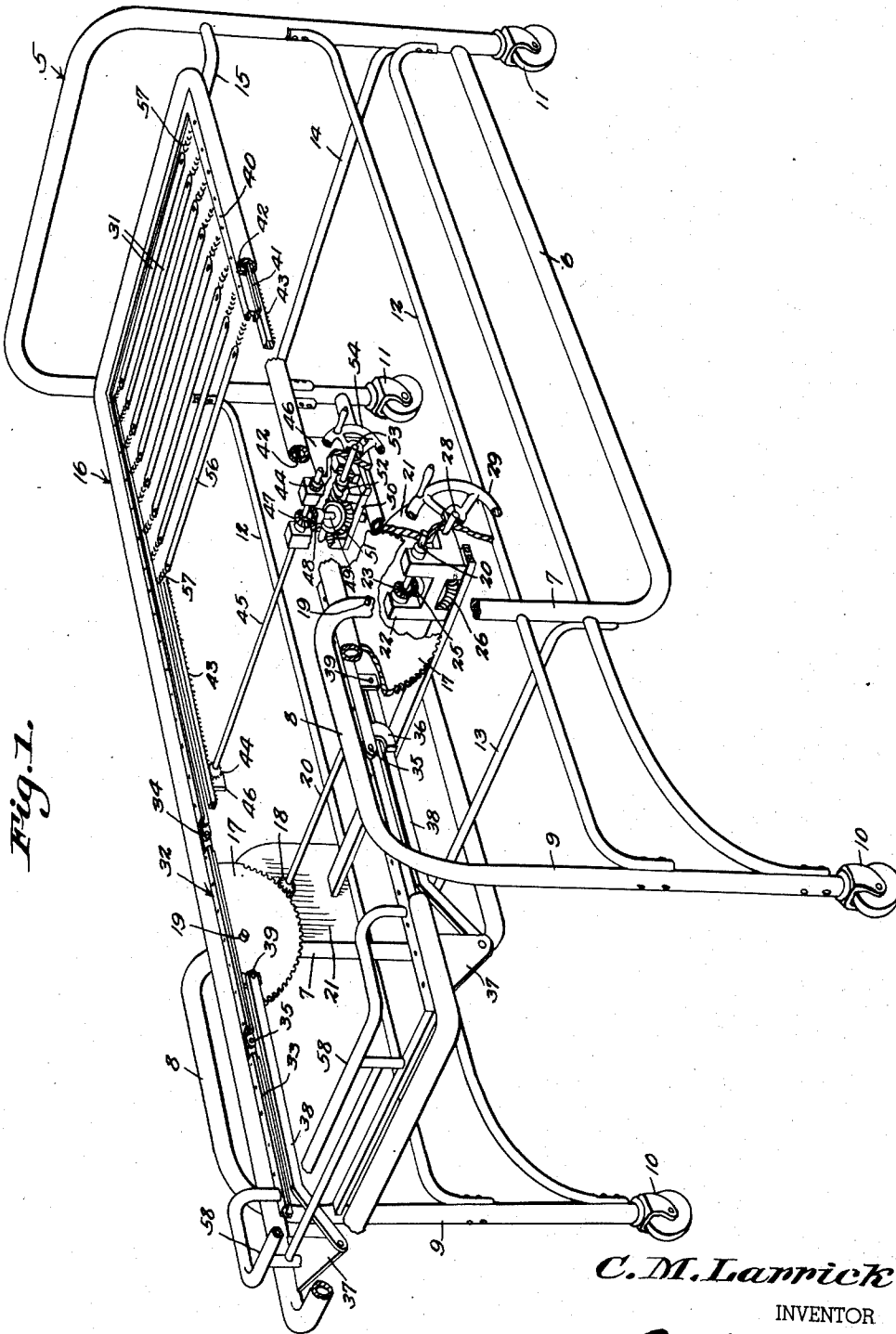


Fig. 1.

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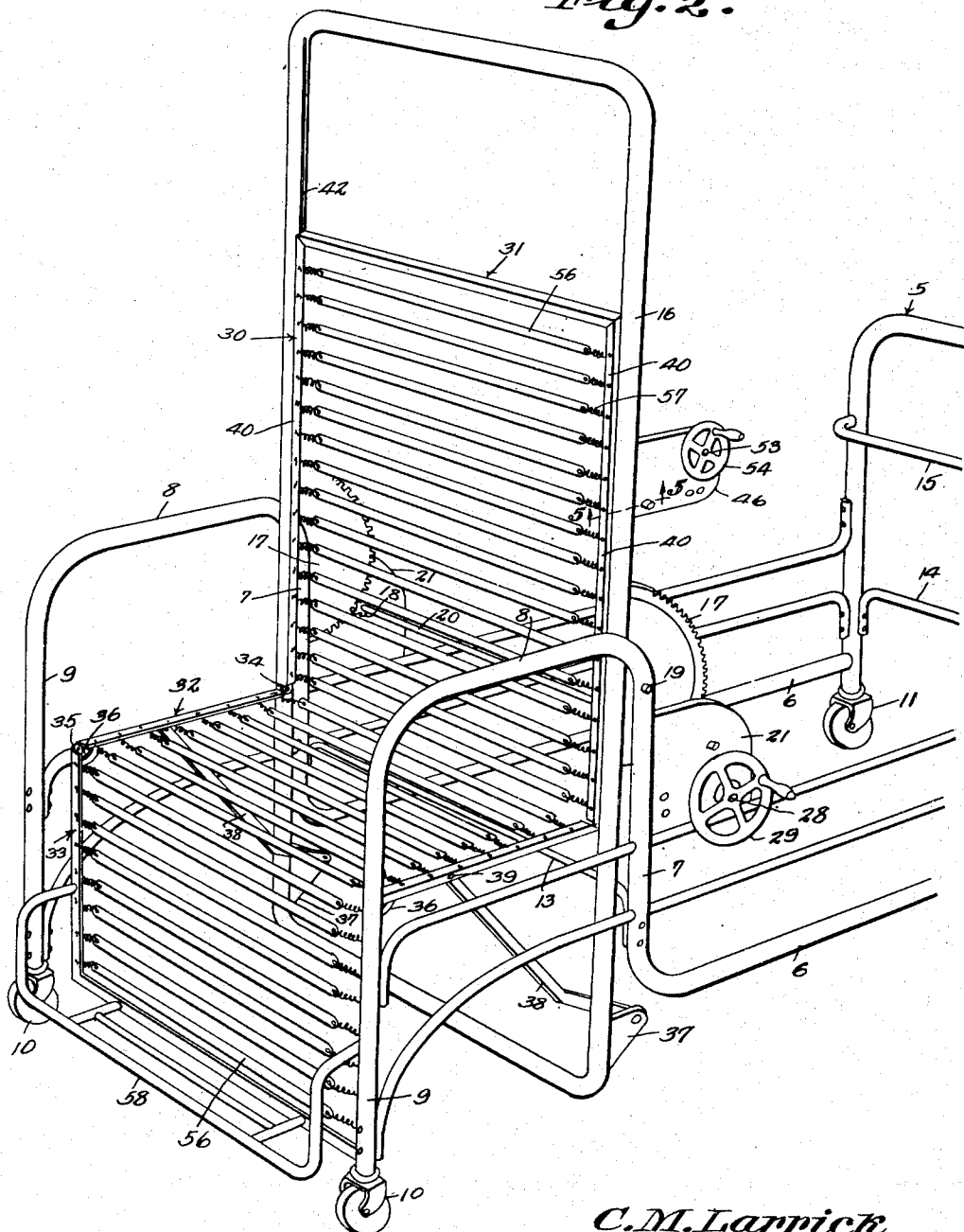
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Fig. 2.



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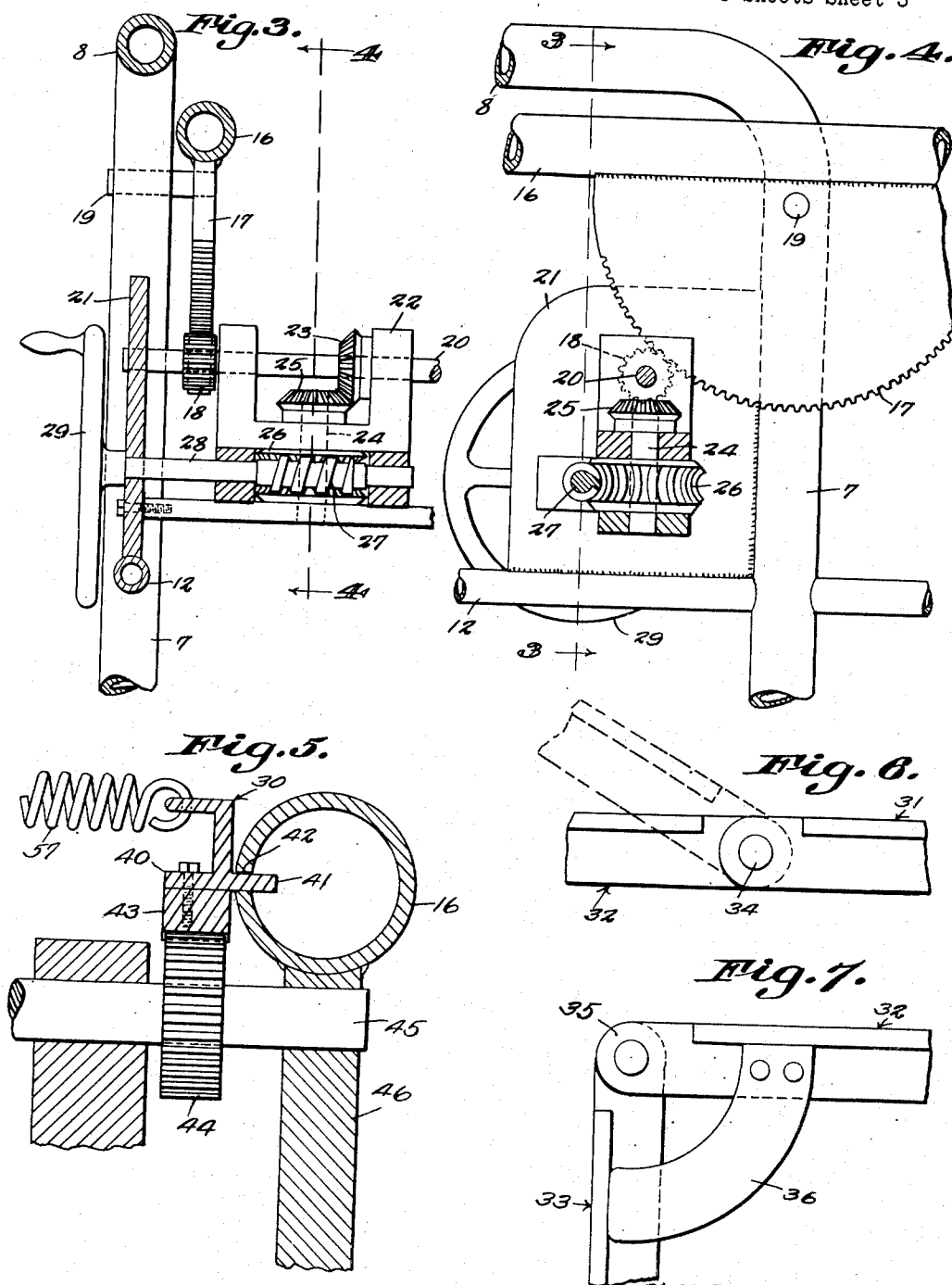
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HOSPITAL BED CONVERTIBLE TO CHAIR

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5 Claims. (Cl. 155-45)

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This invention relates to bed construction, and primarily to an improved hospital bed.

An important object of the invention is to provide a hospital bed embodying a stationary bed frame and a pivoted bed frame mounted thereon, means being provided for moving the pivoted bed frame to a vertical position so that a person may get into the bed by standing on the foot railing of the bed and tilting the pivoted frame rearwardly to either a horizontal or angular position with respect to the stationary frame, for the convenience of the person or patient.

Still another object of the invention is to provide a hospital bed of this character wherein the pivoted frame section includes a slidable slat section embodying pivoted frame sections which may be moved to provide a chair, so that a patient occupying the bed may be elevated and moved to a sitting position without being removed from the bed.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawings:

Figure 1 is a perspective view illustrating a bed constructed in accordance with the invention, portions of the bed frame being broken away illustrating the operating mechanism of the pivoted frame.

Fig. 2 is a perspective view illustrating the pivoted bed frame section as moved to a vertical position and the slat section which is slidably mounted thereon, moved to provide a chair at one end of the bed.

Fig. 3 is an enlarged sectional view taken on line 3-3 of Fig. 4 and illustrating the pivoted frame operating mechanism.

Fig. 4 is a sectional view taken on line 4-4 of Fig. 3.

Fig. 5 is a vertical sectional view taken on line 5-5 of Fig. 2.

Fig. 6 is a fragmental elevational view illustrating the pivotally connected sections of the slat frame.

Fig. 7 is a view illustrating a stop arm forming a part of the slat frame for restricting movement of one end of the slat frame with respect to the adjacent section.

Referring to the drawings in detail, the bed comprises a stationary frame which includes the head 5 and side rails 6, the side rails 6 having upwardly extended portions 7 that extend forwardly at 3 and downwardly at 9, providing chair arms the downwardly extended portions 9 constituting legs that are supplied with casters 10. Casters 11 are also extended into the ends of the

head section 5, so that the bed may be easily rolled from place to place.

Brace rods 12 are connected with the head 5 and downwardly extended portions 9, while the transverse brace rods 13 connect the upwardly extended portions 7 of the side rails 6 holding the side rails in spaced relation with respect to each other.

The brace rod 14 connects the vertical bars or legs of the head section 5 holding them spaced apart.

Extending inwardly from the head section 5 and disposed horizontally, is the supporting bar 15 that provides a rest for one end of the pivoted bed frame 16 of the bed, the pivoted bed frame 16 being rectangular in formation and of the desired length to provide a support for the mattress in the formation of the bed.

Secured to the bed frame 16, at points intermediate the ends of the side members thereof, are the plates 17 that have their outer edges curved in the arcs of circles and provided with teeth that mesh with the pinions 18 that form a part of the operating gearing. These plates 17 support the shafts 19 that extend laterally therefrom, the shafts passing through openings in the upwardly extended portions 7 of the side rails, whereby the bed frame 16 may be swung from a vertical to a horizontal position, or to any desired angular position between the limits of its vertical and horizontal positions, so that a patient lying thereon may be moved to various positions for comfort.

The pinions 18 are mounted on the horizontal shaft 20 that has its ends mounted in bearing openings formed in the plates 21 that extend rearwardly from the upwardly extended portions 7 of the side rails 6. The shaft 20 also extends through openings in the U-shaped bearing members 22 located at opposite sides of the frame, the shaft providing a support for the bevel pinions 23 that are secured thereto, the bevel pinions 23 being mounted between the arms of the U-shaped bearings 22. Extending through the bearings 22 are shafts 24 on the upper ends of which bevel pinions 25 are secured, the bevel pinions 25 meshing with the pinions 23 to transmit movement thereto. Secured on the shafts 24 are gears 26 that are in mesh with the worm gears 27 mounted on the shafts 28, which shafts 28 are supplied with wheels 29 that are rotated by the attendant in transmitting movement to the various gears and pinions for raising and lowering the pivoted bed frame 16. The side rails of the pivoted bed frame 16 are formed with slots extended longitudinally thereof, the slots being formed in the inner edges of the side rails of the bed frame 16.

The reference character 30 indicates a slidable slat frame that includes an upper slat section 31, a pivoted intermediate section 32 and a lower section 33, the sections being pivotally connected so that the slat sections may be moved to a posi-

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tion as shown by Fig. 2 of the drawings to provide a chair, when the bed frame 16 has been swung upwardly to its vertical position. The sections 31 and 32 are connected by the hinges 34, while the sections 32 and 33 are connected by the hinges 35, the sections 32 being provided with stop arms 36 that are curved forwardly to engage the lower section 33 and hold the lower section 33 in a vertical position with respect to the section 32 when the slat section has been moved to provide a chair.

Extending rearwardly from the bed frame 16 are ears 37 to which the arms 38 are connected, the arms 38 being pivotally connected with the rails of the intermediate section 32 to 39, so that after pivotal movement of the frame 16, the slat frame is moved to a position to provide a chair, the chair seat or intermediate section of the slat frame being supported by said arms 38.

The side rails 40 of the slat frame, are provided with ribs 41 extending longitudinally thereof, the ribs 41 operating in the slots 42 formed in the bed frame 16, so that the side rails 40 may slide longitudinally of the bed frame 16.

Secured along the lower sides of the side rails 40 of the slat frame, are rack bars 43 that engage the pinions 44 secured to the shaft 45 adjacent to the ends thereof, the ends of the shaft 45 resting in bearing openings in the plates 46 that are welded to the side rails of the bed frame 16. The shaft 45 is provided with pinions 47 that are engaged by pinions 48 that are secured to the upper ends of the shafts 49 that are operated in bearing plates 50, that are secured to the plate 46. These shafts 49 provide supports for the pinions 51 that are secured thereto, the pinions 51 contacting with the worm gears 52 secured to the operating shaft 53 on which the operating wheels 54 are secured. Thus it will be seen that due to this construction, the slat frame of the bed may be adjusted longitudinally of the bed frame 16.

Slats 56 extend across the slat frame, and have their ends connected to the side rails of the slat frame by coiled springs 57.

From the foregoing it will be seen that due to the construction shown and described, I have provided a hospital bed including a stationary bed frame, a pivoted bed frame mounted thereon adapted to swing from a horizontal to a vertical position and a slidable slat frame mounted on the pivoted bed frame on which the usual mattress is supported, the slat frame being so constructed and arranged that it may be swung to a position so that it will form a chair at one end of the hospital bed.

By moving the frame 16 to a vertical position, it is obvious that a person may stand on the foot rail 58, and the section 16 tilted inwardly on the stationary frame provides means for conveniently transferring an invalid from a wheel chair or the like, onto the bed.

Having thus described the invention, what is claimed is:

1. In a hospital bed, a stationary bed frame having a clearance at the foot thereof, a pivoted bed frame mounted within the stationary bed frame, one end of the pivoted bed frame being movable through the clearance at the foot of said stationary bed frame, means for tilting the pivoted bed frame to various angular positions within the stationary bed frame, a slat frame comprising pivotally connected sections mounted in said pivoted bed frame, operating means carried by the pivoted bed frame for moving said

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slat frame longitudinally within the pivoted bed frame, arms pivotally connecting the pivoted bed frame and slat frame, the arms effecting movement of the foot and intermediate sections of said slat frame providing a chair, as the slat frame is moved longitudinally.

2. In a hospital bed, a stationary bed frame including side rails, a bed frame pivotally mounted between said side rails and including side members having slots disposed longitudinally in the inner edges thereof, a slat frame embodying pivotally connected sections, ribs formed on one of said sections movable longitudinally within the slots of the side members, manually operated gearing for tilting the pivoted bed frame within the stationary bed frame, means for moving the slat frame longitudinally of the pivoted bed frame, and pivoted arms connected between the pivoted bed frame and one section of the slat frame operable to move one section of the slat frame forwardly providing a chair seat after said pivoted bed frame is swung vertically and as said slat frame is moved longitudinally.

3. In a hospital bed, a stationary bed frame including side rails, a pivoted bed frame mounted between said side rails and connected therewith, a sectional slat frame including upper and lower and intermediate slat sections slidably mounted on the pivoted bed frame, arms pivotally connected between the pivoted bed frame and intermediate slat section, said arms being operable in moving the intermediate section of the slat frame to a horizontal position providing a chair seat, when the slat frame is moved longitudinally of the pivoted frame in one direction, and after the latter is swung to vertical position.

4. In a hospital bed, a stationary bed frame, a pivoted bed frame mounted within the stationary bed frame, and connected to the latter at one end thereof a sectional flat frame mounted within said pivoted bed frame, means for swinging the pivoted bed frame to a horizontal or vertical position within the stationary bed frame, and means for sliding the slat frame longitudinally of the pivoted frame and projecting certain sections of the slatted frame away from said bed frame in providing a chair at one end of the stationary bed frame.

5. In a hospital bed, a stationary bed frame comprising side rails curved upwardly and downwardly at one end of the bed frame providing chair arms, a pivoted bed frame mounted between the side rails and being movable to a vertical position between said chair arms, a slat frame mounted within the pivoted bed frame, said slat frame embodying pivotally connected sections longitudinally movable in said bed frame and arms pivotally connected between said pivoted bed frame and one section of the slat frame, said arms operating to move the slat frame providing a chair seat between the chair arms when said pivoted bed frame has been swung upwardly and the slat frame has been moved longitudinally.

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