

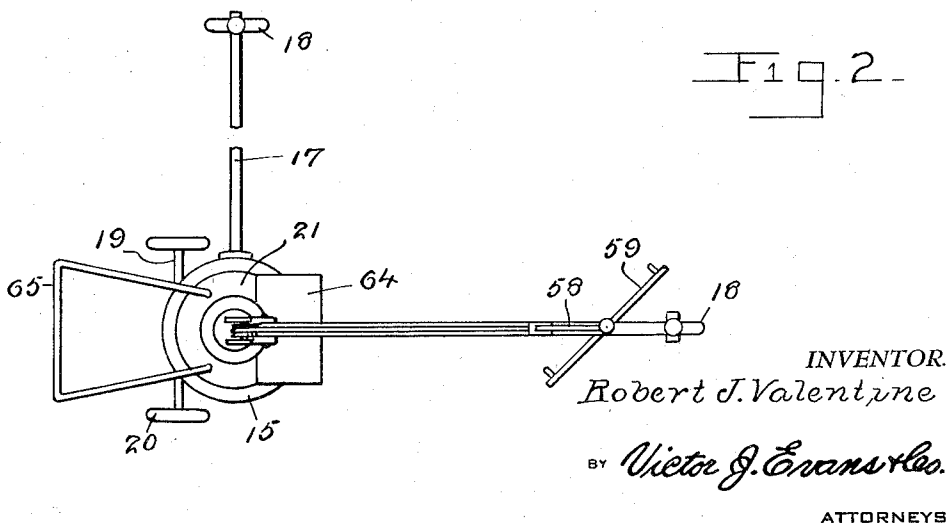
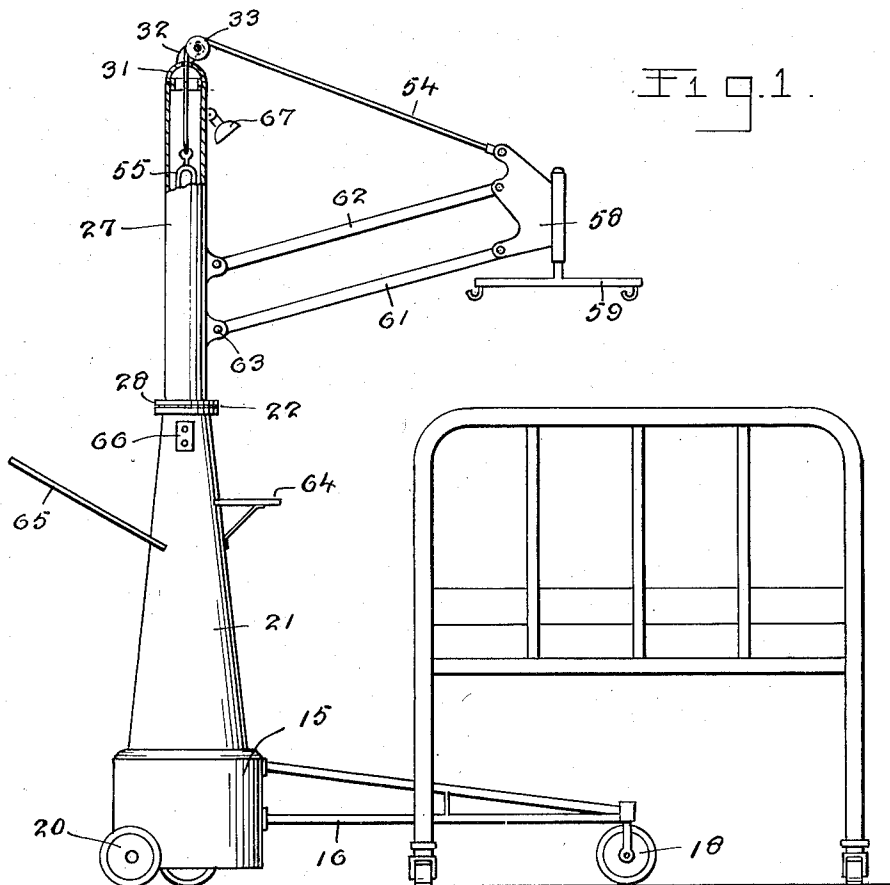
Aug. 28, 1951

R. J. VALENTINE
PATIENT LIFTING DEVICE

2,565,536

Filed Oct. 30, 1947

3 Sheets-Sheet 1



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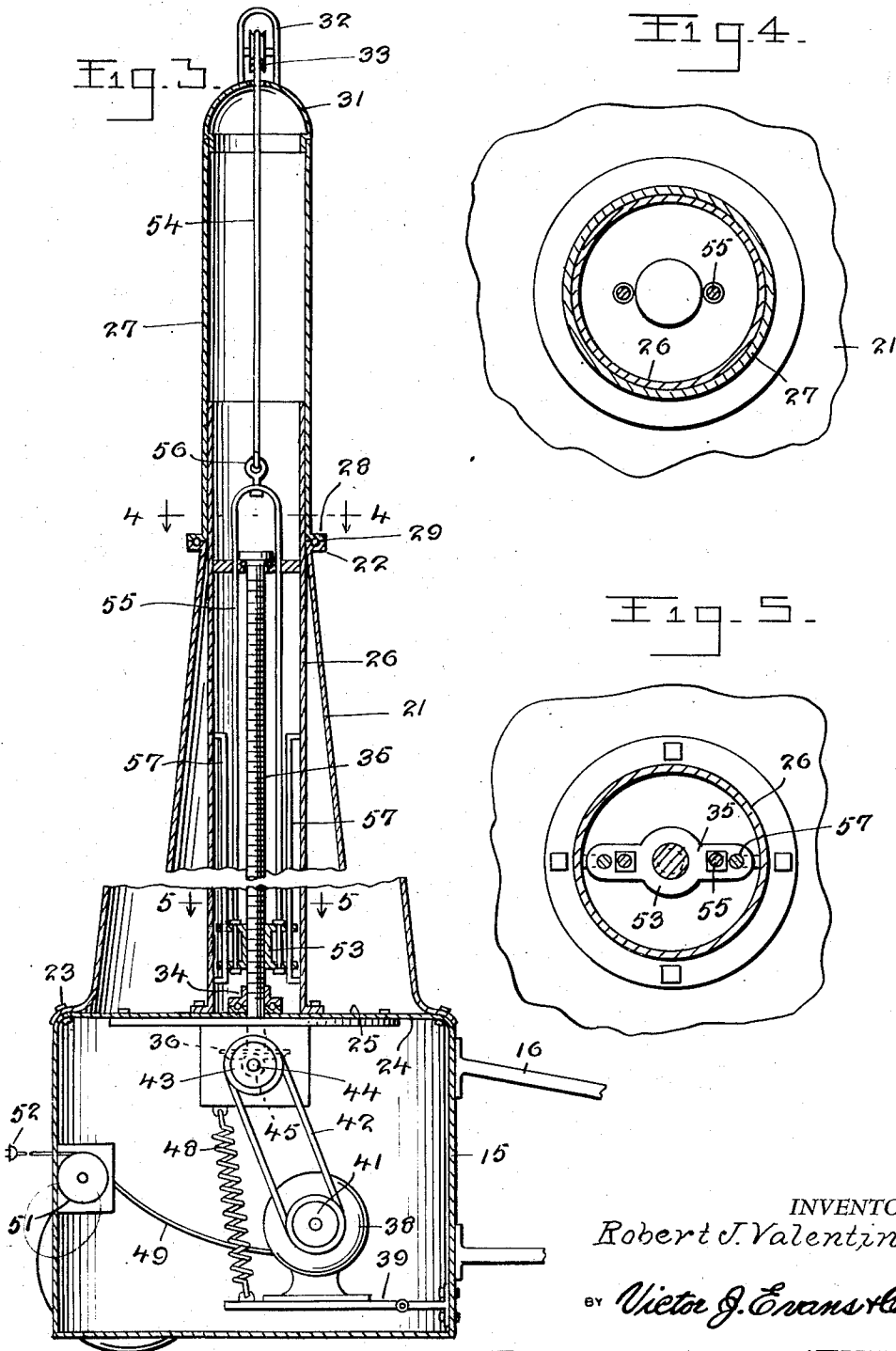
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3 Sheets-Sheet 2



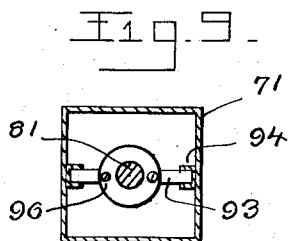
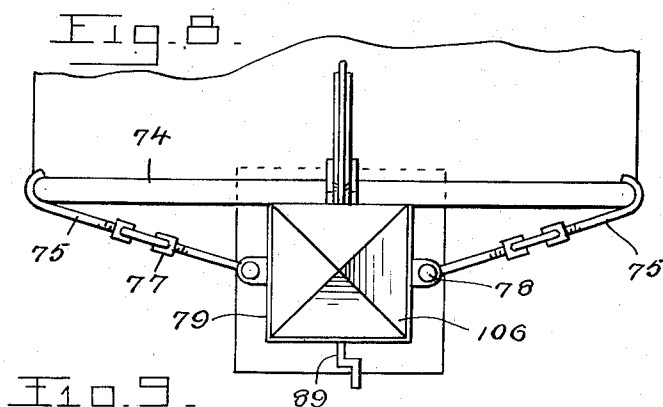
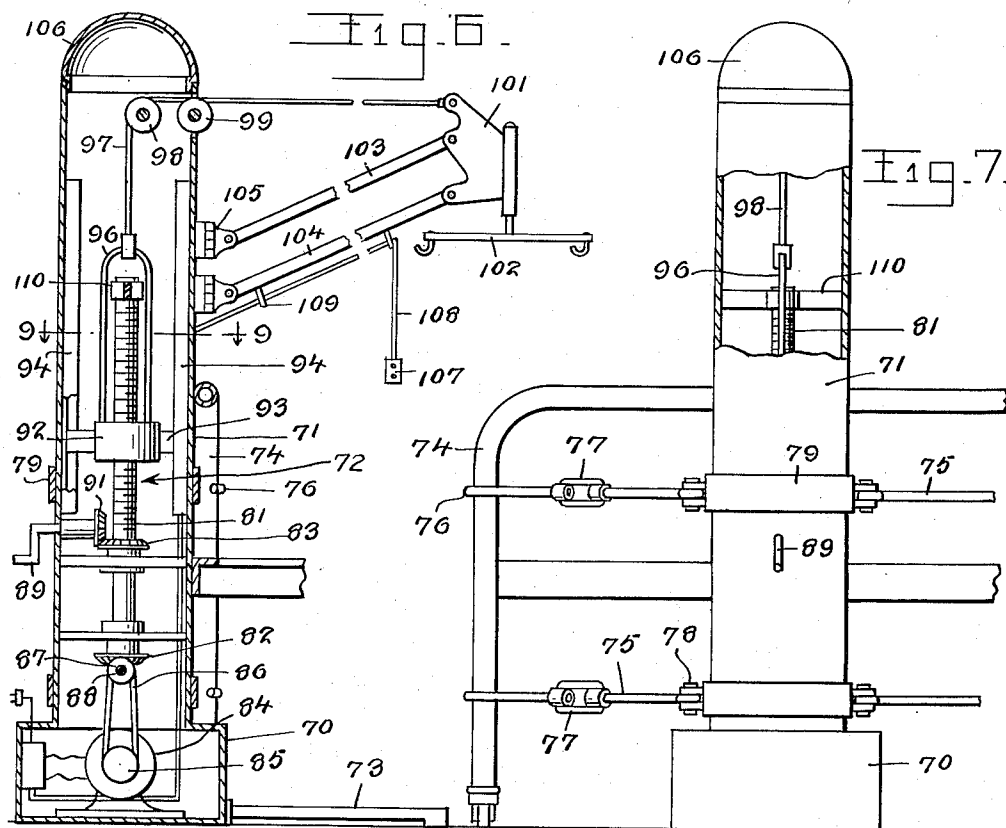
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UNITED STATES PATENT OFFICE

2,565,536

PATIENT LIFTING DEVICE

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3 Claims. (Cl. 5—84)

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This invention relates to a patient lifting device for hospitals and private use.

It is an object of the present invention to provide a lifting device which is portable and can be extended over a bed to receive a patient and wherein there is a simple control for effecting the operation of the hoisting mechanism therein so that no manual effort is required to operate the hoist.

Other objects of the present invention are to provide a patient lifting device for use in hospitals which is of simple construction, portable, inexpensive to manufacture, easy to manipulate, and efficient in operation.

For a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which

Fig. 1 is a side elevational view of the patient lifting device embodying the features of the present invention extending to a lifting position over a bed,

Fig. 2 is a top plan view of the device,

Fig. 3 is an enlarged cross-sectional view, in elevation, taken through the center of the device,

Figs. 4 and 5 are respectively transverse sectional views taken on lines 4—4 and 5—5 of Fig. 3,

Fig. 6 is a cross-sectional view, in elevation, of a modified form of my lifting device which is adapted to be attached to the bed post,

Fig. 7 is a fragmentary end elevational view of the device shown in Fig. 6,

Fig. 8 is a top plan view of the form of the invention shown in Fig. 6,

Fig. 9 is a transverse sectional view taken on line 9—9 of Fig. 6.

Referring now to the Figures 1 to 5, 15 represents a base from which is extended radially and angularly disposed from one another wheel frames 16 and 17 having supporting wheels 18 thereon. The base 15 is supported on a two wheel truck 19 having wheels 20. Extending upwardly from the base is a pedestal housing 21 having a top flange 22. The bottom of the pedestal is flanged and fastened to the base by fastening bolts 23. The base 15 has a top 24 to which is secured a strengthening plate 25. Extending upwardly from the top 24 of the base and through the pedestal housing 21 is a sleeve 26. This sleeve 26 extends above the top flange 22 and serves as an axial support for a top sleeve 27 having a bottom flange 28 connected with the flange 22 by ball bearings 29 so that the top sleeve 27 is free to rotate. A cap 31 is fixed to the upper end of

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the sleeve 27 and has a pulley bracket 32 with a pulley 33 therein. On the top 24 of the base 15 is a vertical thrust bearing 34 for supporting a threaded operating shaft 35 which extends into the base 15 and has a bevel gear 36 thereon. The operating shaft 35 is driven by an electric motor 38 mounted on a hinged supporting plate 39 within the base 15. The motor has a pulley pinion 41 which connects through a belt 42 to a pulley 43 on a shaft 44 having a bevel pinion 45 meshing with the bevel gear 36. A spring 48 supports the motor plate 39 and the motor 41. A cable 49 is extended about a reel 51 and may be connected through a plug 52 with a wall receptacle. On the shaft 35 is an operating member 53 which will be adjusted up or down depending upon the direction of rotation of the motor 38 to extend or retract lifting cable 54 connected through a U-shaped member 55 with the member 53. The cable 54 connects with the U-shaped member 55 through an eye swivel 56 so as to permit the turning of the sleeve 27. Guide rods 57 are provided on the inner side of the sleeve 26 for guiding the vertical movement of the member 53. The cable 54 connects with a bracket 58 from which there depends a hook member 59 on which a sling can be supported. This sling will be extended about the patient. The bracket 58 is connected by parallel links 61 and 62 to the side of the top sleeve 27. These links are hinged to brackets 63. The pedestal housing 21 has a tray 64 and a rearwardly extending U-shaped handle 65 for moving the device about. On the upper end of the pedestal housing 21 is a control switch 66 for controlling the operation of the motor. At the upper end of the top sleeve 27 is an electric member 67. To set up the device over a bed the same is pushed toward the bed so that its frames are extended thereunder as shown in Fig. 1. The bracket 58 with the hook structure 59 will be disposed thereover and in vertical alignment with the patient.

Referring now to Figs. 6 to 9, there is shown a modified form of the invention. A base 70 has an upwardly extending housing 71 in which is disposed operating mechanism 72. The base 70 has legs 73 extending from one side of the same. The housing 71 is attached to the bed frame 74 by adjustable links 75 having hook formations 76 adapted to fit around the bed frame. The links 75 have a turn buckle 77 and are pivotally connected as indicated at 78 to bands 79 secured to the housing 71. When the turn buckles are tightened the lifting device is tightly clamped to

the bed frame. Vertically supported in the housing 71 is an operating screw 81 having bevel gears 82 and 83 thereon. The screw 81 will be operated by an electric motor 84 having a pulley pinion 85 connected by a belt 86 with a pulley 87 on a shaft 88 having a gear meshing with the bevel gear 82. By turning crank 89 the screw 81 can be rotated through the connection of a bevel gear 91 on crank 89 and bevel gear 83 on the shaft 81.

On the screw 81 is a block 92 which can be elevated or lowered within the housing 71. The block 92 has projections 93 extending into guides 94.

Extending upwardly from the block 92 is a U-shaped member 96 to the upper end of which is connected a lifting cable 97 extending over pulleys 98 and 99 at the top of the housing 71 and connected externally thereof with a bracket plate 101 having a hook structure 102 to which a supporting sling may be connected. The bracket 101 is supported by parallel links 103 and 104 on hinged brackets 105. These brackets 105 permit the parallel arms to swing to the right or left for the purpose of removing the patient from the bed and out of vertical alignment therewith. The top of the housing 71 has a cap 106 thereon. A control switch 107 is secured to a cord 108 which is suspended from projections 109 depending from the lower parallel link 104. The upper end of the shaft 81 is supported in a bracket 110.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

I claim:

1. A patient lifting device comprising a base, an upstanding housing on the base, parallel links connected to the housing for vertical adjustment, a bracket on the outer ends of the parallel links

and means thereon for the attachment thereto of a supporting sling for the patient, a cable extending inwardly from the bracket and over the upper end of the housing and downwardly thereinto, a member mounted for adjustment within the housing, means for connecting said cable to said member, an operating screw extending upwardly through said member, means for rotating said screw to adjust said member, and means for securing the upstanding housing to a bed frame comprising a band fitted about the exterior of the upstanding housing and links having hooked formations thereon adapted to be extended about the vertical post portions of the bed frame and including a turn buckle for effecting a tight connection of the device with the bed frame.

2. A patient lifting device as defined in claim 1 and said means for operating the screw comprising an electric motor, a pulley extending from the motor, and bevel gears connected to the shaft and operable by said pulley belt, and switch control means on the housing at an elevation accessible to the operator.

3. A patient lifting device as defined in claim 1 and hinged brackets for connecting the inner ends of the parallel links to the housing to permit the same to be pivoted from left to right as well as vertically and with respect to the housing.

ROBERT J. VALENTINE.

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