Feb. 6, 1951 R. G. MILLER 2,540,133

ADJUSTABLE HOSPITAL BED

Filed July 3, 1947

2 Sheets-Sheet 1

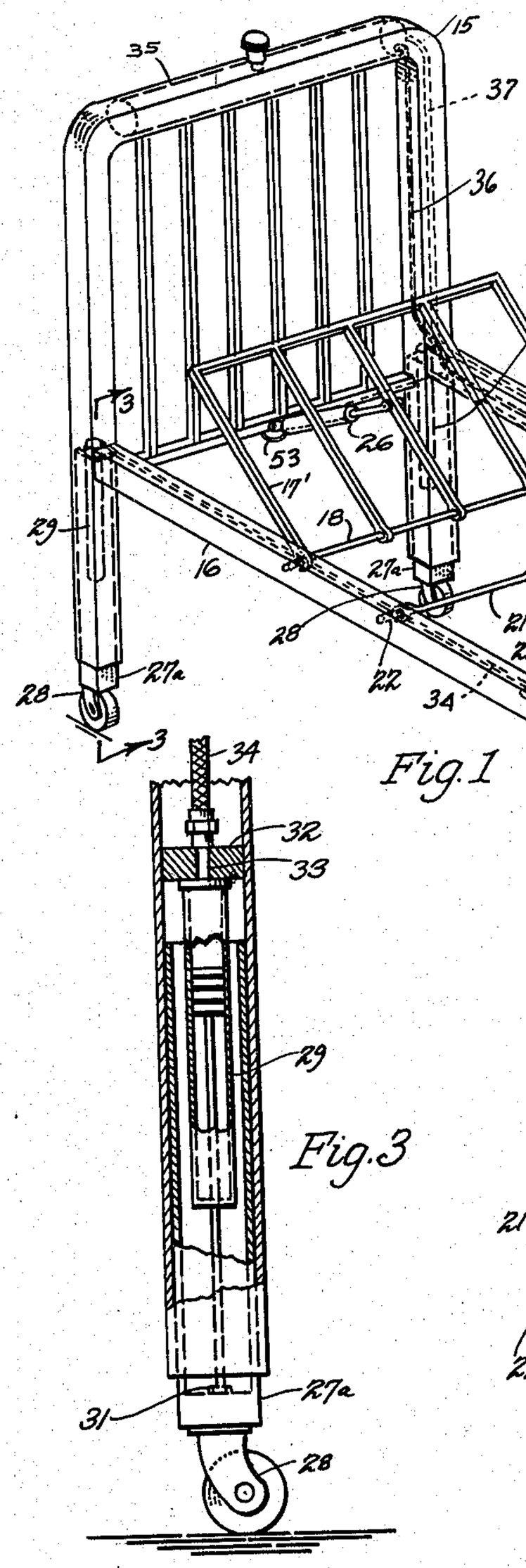

Fig. 1

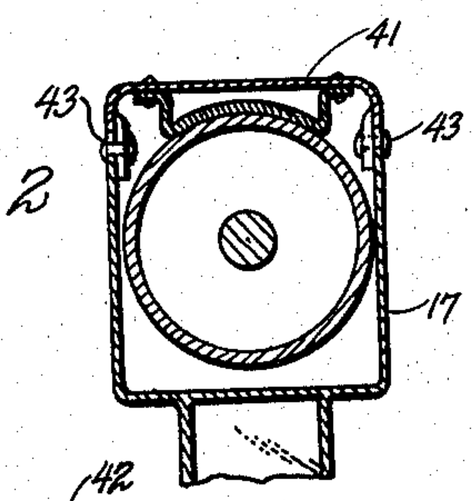

Fig. 2

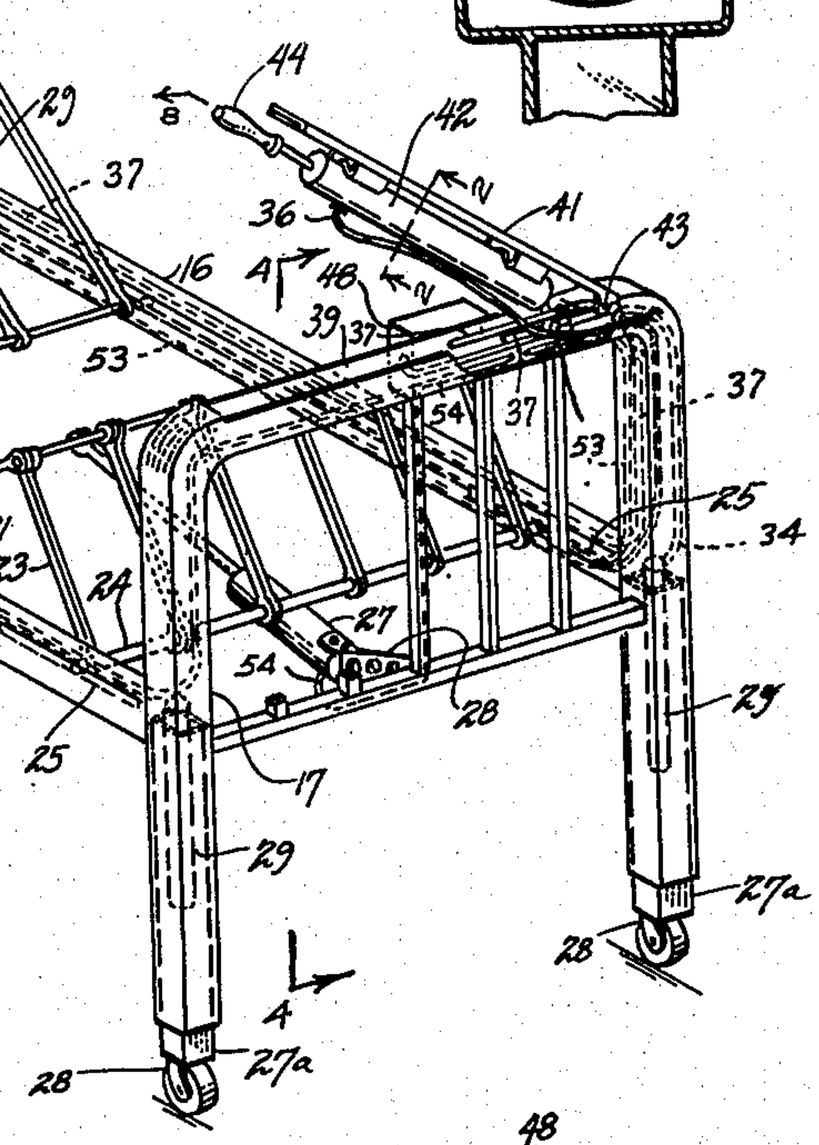

Fig. 3

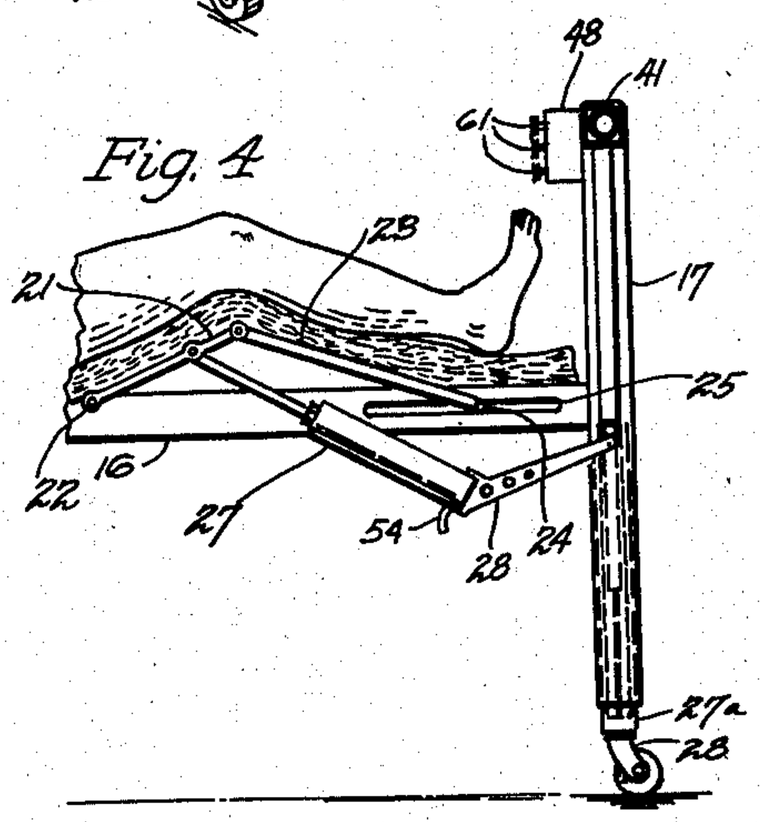

Fig. 4

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Feb. 6, 1951 R. G. MILLER 2,540,133

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Filed July 3, 1947 2 Sheets-Sheet 2

Fig. 5

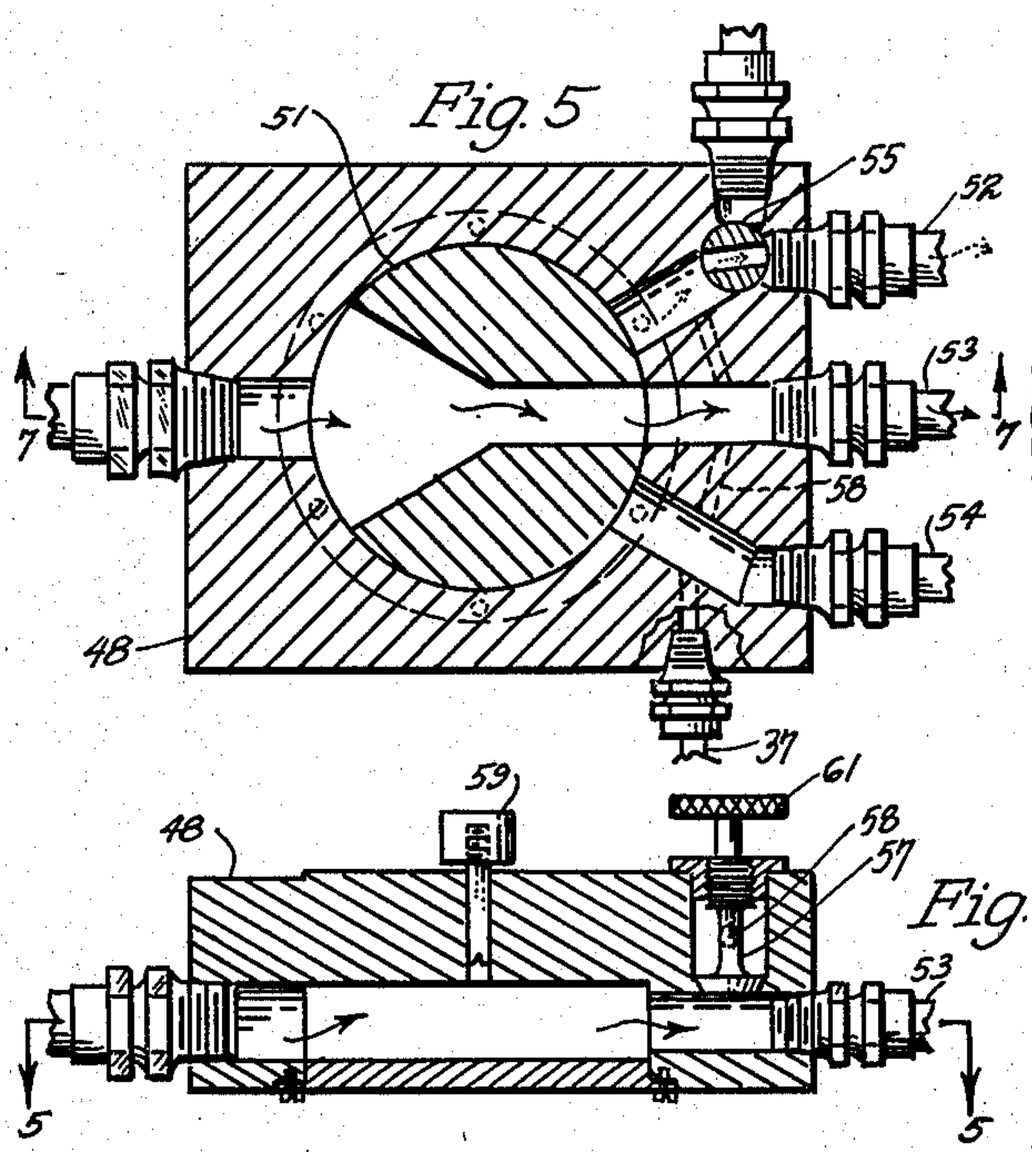


Fig. 6

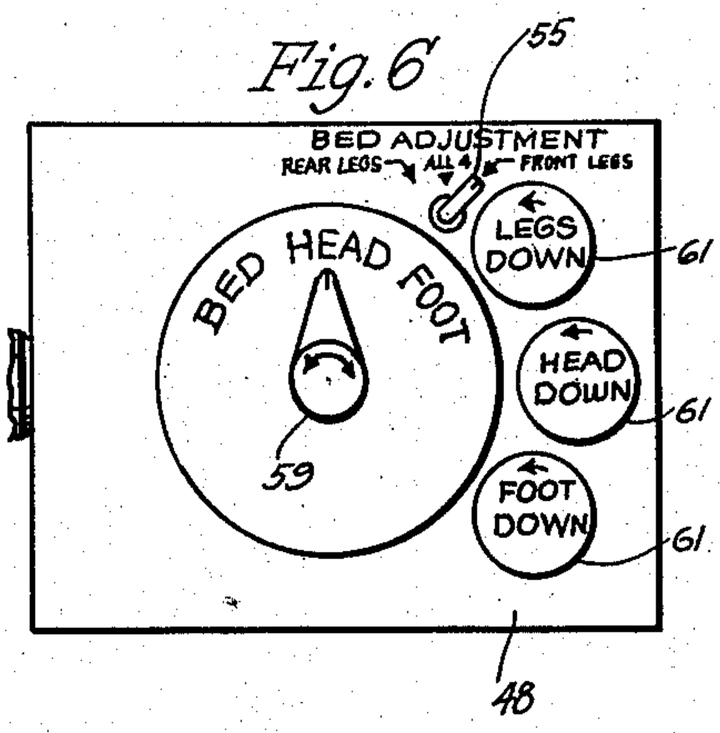


Fig. 7

Fig. 8

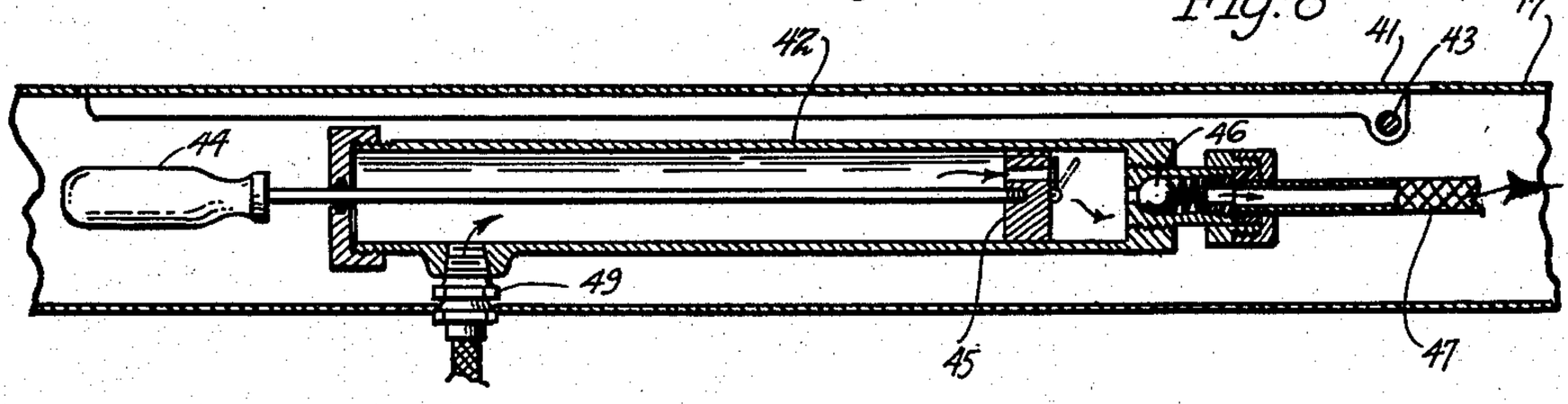
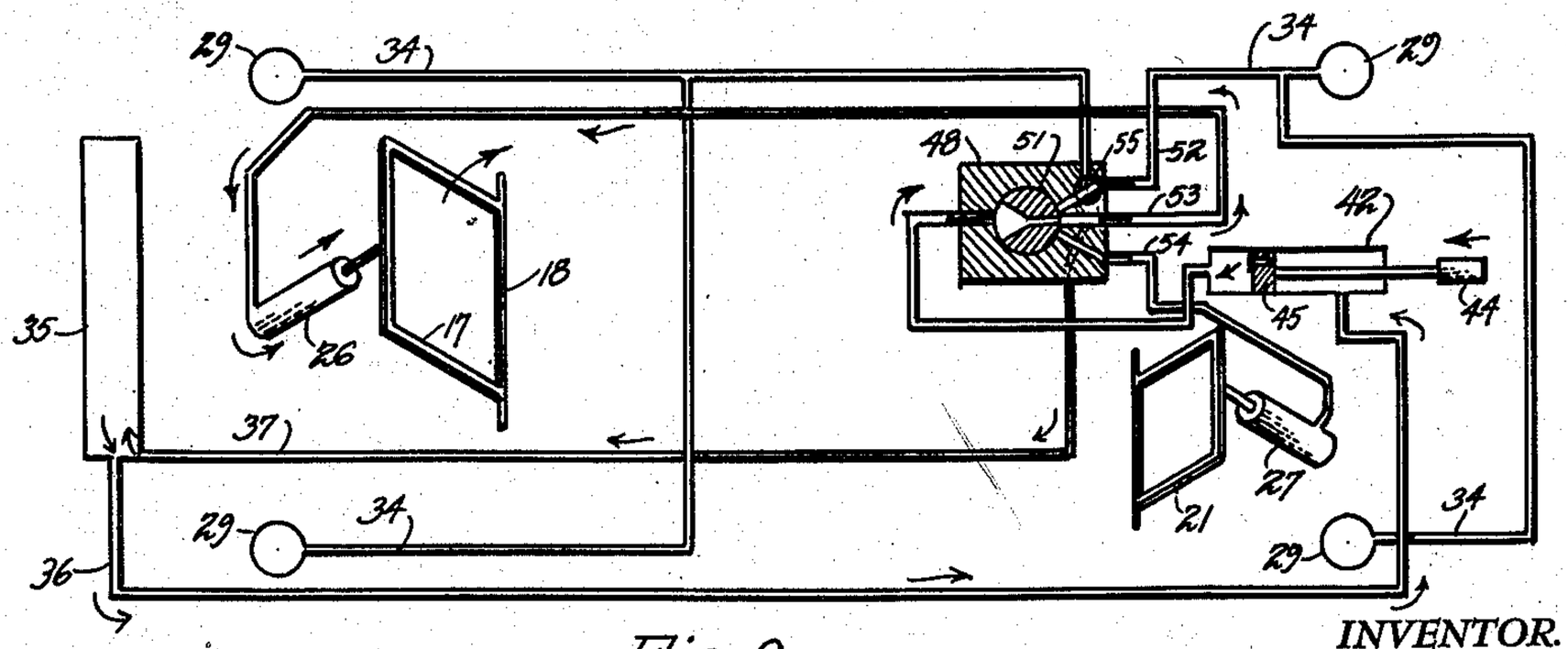


Fig. 9



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ADJUSTABLE HOSPITAL BED

Roy G. Miller, Tacoma, Wash.

Application July 3, 1947, Serial No. 758,783

3 Claims. (Cl. 5—69)

1

This invention relates to an adjustable hospital bed.

It is an object of the present invention to provide an adjustable hospital bed whereby the head portion and the leg portion of the bed can be raised together or separately or wherein the bed itself can be elevated by a single pump device and by fluid actuated devices connected respectively for operation with the bed parts and with a valve arrangement for effecting either simultaneous operation of the bed parts or the operation at different times.

Other objects of the present invention are to provide an adjustable hospital bed device wherein the pump part and the reservoir for the fluid will be incorporated in the bed structure itself and out of view and wherein the adjustable bed is of simple construction, inexpensive to manufacture and efficient in operation.

For other objects and 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 perspective view of my hospital bed with the pump device raised for operation and wherein the top and bottom portions of the bed have been raised.

Fig. 2 is an enlarged transverse cross-sectional view taken generally on line 2—2 of Fig. 1, and through the pump structure.

Fig. 3 is an enlarged fragmentary view of one of the legs with portions broken away to show the interior construction thereof and the interior of the fluid actuating device.

Fig. 4 is a fragmentary and cross-sectional view taken on line 4—4 of Fig. 1.

Fig. 5 is a cross-sectional view of the control device and taken generally on line 5—5 of Fig. 7.

Fig. 6 is a front face view of the control device.

Fig. 7 is a longitudinal cross-sectional view of the control device taken on line 7—7 of Fig. 5.

Fig. 8 is an enlarged longitudinal cross-sectional view taken through the pump and its supporting structure and on line 8—8 of Fig. 1.

Fig. 9 is a diagrammatic view of the hydraulic system.

Referring now to the figures, 15 represents the head piece of my bed. This head piece has side rails 16 connected to the same and on the rear ends of the side rails there is connected a foot piece 17. These pieces are formed of metal tubing in the usual manner. The side rails 16 are of solid metal and have a head rest 17' pivotally connected between the same by a shaft 18. A leg rest 21 is pivotally connected between the side

2

rails 16 as indicated at 22. The bottom portion 23 has a shaft 24 having ends extending into guide slots as indicated at 25. A fluid actuator 26 is extended between the head or back rest 17' and the head piece 15. A fluid actuating device 27 is connected to the leg rest to raise and lower the same. The bottom end of the fluid operated device 27 is anchored to a bracket 28 on the bottom piece 17.

In each leg of the head and bottom pieces, as shown in Fig. 3, there is provided an adjustable member 27*a* having a caster wheel 28*a* thereon. This member 27*a* is adjustable in and out of the leg. Within the leg there is fixed a fluid actuating device 29 connected as indicated at 31 to the adjustable member 27*a*. The upper end of the fluid actuated device abuts a stop 32 having an opening 33 therein for communication with the fluid actuated device 29. Fluid under pressure is delivered to the opening 33 by a hose connection 34. Each of the legs have a similar construction and are operated in unison to effect a complete raising of the bed. In the top of the head piece 15 is a reservoir supply tank 35 which has an outlet line 36 and an inlet line 37.

On the bottom piece 17 there is formed an opening across the top of the same as indicated at 39 adapted to be closed by a cover 41 having a pump 42 connected to the bottom face of the same. The cover 41 is hinged as indicated at 43 to the top of the piece 17 and to render the pump available for operation by movement of its handle 44, the cover 41 is lifted to expose the handle 44.

The pump 42 has a piston 45 and a one way ball valve 46 past which fluid is forced for communication through a hose 47 to a control valve 48 mounted on the top of the bottom piece 17. The outlet 36 from the reservoir 35 is coupled to the pump 42 as indicated at 49.

The control valve 48 has a valve member 51 which can be rotated to deliver fluid under pressure to any one of hoses 52, 53 or 54 connected respectively to fluid operated devices in the bottom piece, the head rest device 26, or the leg rest device 27. By turning a small valve element 55, the legs on the head piece can be raised independently of the legs on the rear or bottom piece.

When it is desired to lower any of the pieces or rests, any one of valves 57 can be raised to permit the return flow of fluid through passage 58 to the return pipe 37 connected to the reservoir. The valve element 51 can be adjusted by a hand knob 59.

The valves 47 have knobs 61 bearing appropriate legends.

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. An adjustable hospital bed comprising a head piece with legs thereon, a bottom piece with legs thereon, said pieces connected together by side rails, fluid operated devices in each of the legs of the head and bottom pieces, a head rest pivoted between the side rails, a fluid operated device for operating said head rest to raise and lower the same, a leg rest extending between the side rails, a fluid operated device for raising and lowering the leg rest, and fluid pressure supply means connected with the fluid operated devices to effect the operation of the same, said fluid pressure supply means including a selective control valve whereby either the legs of the respective pieces can be extended or the head and leg rests can be adjusted.

2. An adjustable bed as defined in claim 1 and said selective control including means for raising either the legs of the head piece alone or the legs of the bottom piece alone.

3. An adjustable bed comprising head and bottom upright pieces, side rails connecting the head

and bottom pieces together, adjustable parts connected to the bed for adjustment relative thereto, one of said pieces being formed of hollow construction with an opening therein, fluid operating means connected to the adjustable part to adjust the same, fluid pressure supply means for the fluid operated member including a pump adapted to be operated by hand, said pump adapted to be confined within the opening in the one piece, a cover extending over the top of the opening and said pump secured thereto to be drawn out of the opening as the cover is lifted, said cover serving when lowered to confine the pump within the opening.

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