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MECHANISM IN WHEELED HOSPITAL BEDS FOR RAISING AND
LOWERING THE SUPPORTING WHEELS
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Fig. 2.

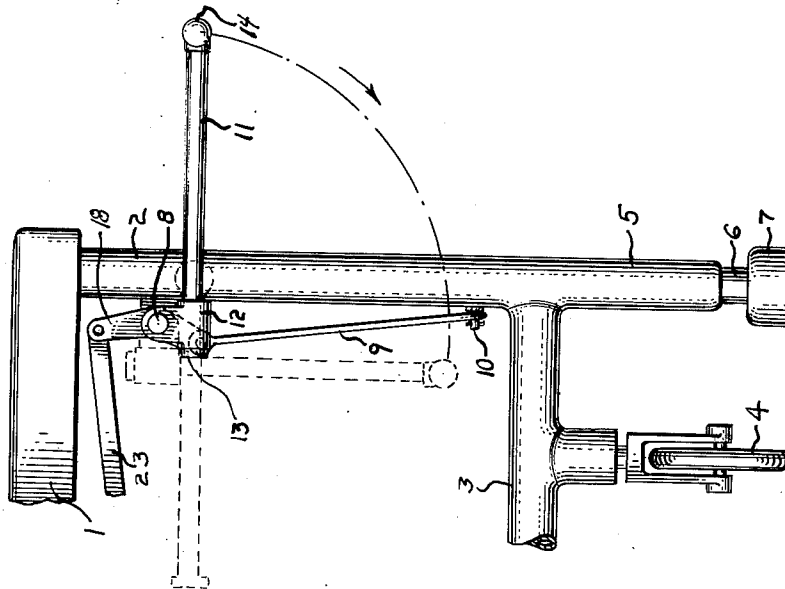
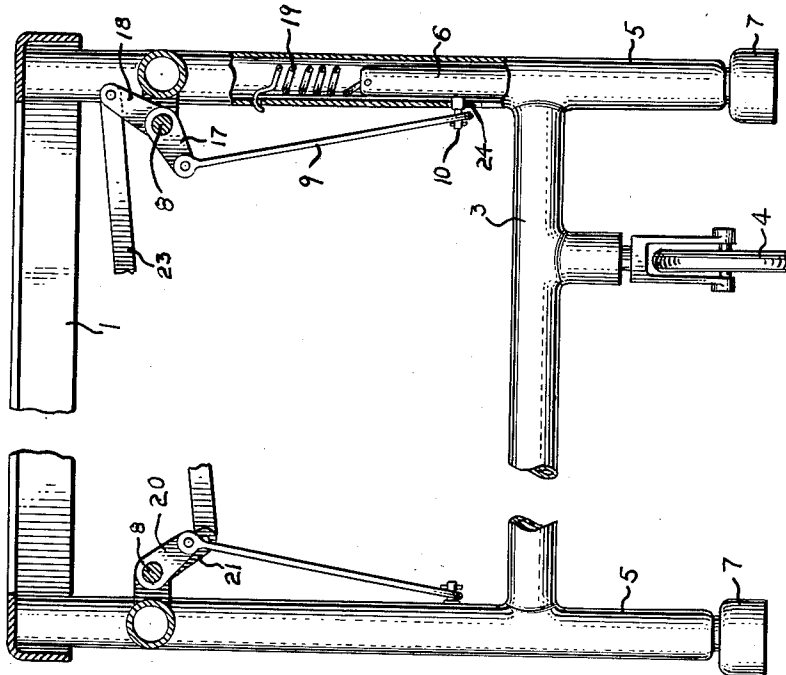


Fig. 1.



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MECHANISM IN WHEELED HOSPITAL BEDS FOR RAISING AND LOWERING THE SUPPORTING WHEELS

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Claims priority, application Sweden March 25, 1954

1 Claim. (Cl. 5—328)

This invention relates to a mechanism for wheeled hospital beds for raising and lowering the supporting wheels.

The primary object of the invention is to provide a mechanism of the kind referred to in such wheeled hospital beds as have vertically movable uprights at the corners of the bed subframe, said uprights being connected together by means of a lever system and adapted when moved into their lower end positions to raise the supporting wheels from the floor. The invention is substantially characterized by the fact that the lever system comprises a single operating arm attached thereto and adapted when swung upwardly to move the uprights downwards into their lower end positions in which they are adapted to be locked, and that said operating arm is adapted when swung downwardly to move the uprights out of said locking position, spring means included in the mechanism being adapted to raise the uprights so that the supporting wheels will engage with the floor.

Further objects and features of the invention will become apparent from the following description, reference being had to the accompanying drawings in which:

Figure 1 is a vertical elevation partly in section of a hospital bed to which the present invention is to be applied; and

Figure 2 is a vertical elevation of part of the head portion of a hospital bed which is equipped with an embodiment, chosen by way of example, of the mechanism according to the present invention.

The mattress carrying frame of the hospital bed is designated 1 and the bed subframe is designated 2, four supporting wheels 4 being mounted for swivel motion at the transverse stays 3 of the bed subframe. The legs 5 located at the corners of the bed subframe 2 are tubular. Vertically movable in the legs 5 are uprights 6 having at their lower ends feet 7 and connected at their upper ends with pull springs 19 which tend to move the uprights 6 to their upper end positions in which the feet 7 bear against the lower end surfaces of the legs 5.

Like the hospital bed described in Swedish Patent 120,964 and copending patent application Serial No. 441,864, filed July 7, 1954, the hospital bed according to the present invention comprises a lever system having two horizontal shafts 8 extending longitudinally of the bed and mounted for rotation at the inner sides of the legs 5, according to the embodiment shown. Said shafts 8 which are so united with each other by means of a link system 18, 21, 23 that they can be given a uniform opposed rotation are provided adjacent the legs 5 with arms 17 and 20 which are hingedly connected by means of a link 9 with a pin 10 on each upright 6. The pins 10 project from the uprights 6 in the direction towards the longitudinal median plane of the bed and pass through longitudinal slots 24 provided in the legs 5.

To one of the shafts 8 there is attached an operating arm 11, and when said operating arm 11 is actuated the shafts 8 are caused to rotate. When the operating arm 11 is swung from the vertical position shown by dash lines to the horizontal position the arms mounted on said

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shafts 8 are swung past the position in which said arms and the links 9 constitute direct prolongations of each other, whereby the arms and thus the entire lever system is locked as a result of one or more of the arms bearing against an abutment which can be constituted by the bed subframe 2 proper. In this position the feet 7 are all in engagement with the floor, whereas the supporting wheels 4 are raised. This position is maintained, until the operating arm 11 is actuated again by giving it a downward impulse so that the arms are moved out of the locking position and the springs move the uprights 6 to their upper end positions in which the top surfaces of the feet 7 bear against the lower end surfaces of the legs 5.

According to the embodiment shown one of the rotary shafts 8 is provided with a sleeve 12 arranged at right angles thereto and in which the operating arm 11 is movable. In order that the operating arm 11 may be retained in the sleeve 12 it has abutments 13 and 14 at its ends, and said abutments are intended to cooperate with the two end surfaces of the sleeve 12. By the arrangement of the sleeve 12 the operating arm 11, when not in use, can be located inside the frame 2 and it is therefore never in the way.

As appears from the above, the operating arm 11, the mounting point of which always follows the movement of the hospital bed, is to be moved from below and upwards when the bed is to be raised, and from above and downwards when the bed is to be lowered. This is of importance since a natural movement is obtained thereby.

While the invention has been described with reference to the embodiment shown in the drawing it must not be considered as limited thereto, since many modifications can be resorted to within the scope of the appendant claim.

What I claim and desire to secure by Letters Patent is:

In a wheeled hospital bed having a mattress frame with vertically movable uprights at the corners thereof which in their lowermost position are adapted to lift said frame and the wheels thereon from the floor, said bed further having a rotary shaft mounted thereon lengthwise of said frame and adjacent thereto and levers and linkages connecting said shaft to said uprights, that improvement comprising a sleeve fixed to said shaft with the axis of the sleeve perpendicular to the shaft, an operating arm slidably mounted in said sleeve and having abutments at its ends retaining it in said sleeve, said sleeve fixed on said shaft so that when the axis thereof is in a horizontal position, the links connected to said uprights and the levers connecting said links to said shaft are out of alignment and said levers are held against said frame by the weight of the bed acting on said shaft to urge said levers and links further out of alignment, and the uprights are in the extended position, and movement of said operating arm downwardly to the position in which the axis of said sleeve is in the vertical position moves said links and levers through the position in which they are aligned, and spring means urging said uprights upwardly toward said frame, whereby upward movement of said operating arm lifts the wheels from the floor by moving said uprights to their downwardly extended and locked position and downward movement of said operating arm starts upward movement of said uprights.

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