No. 808,785. PATENTED JAN. 2, 1906.

O. B. THOMPSON.

INVALID LIFT.

APPLICATION FILED JULY 28, 1904.

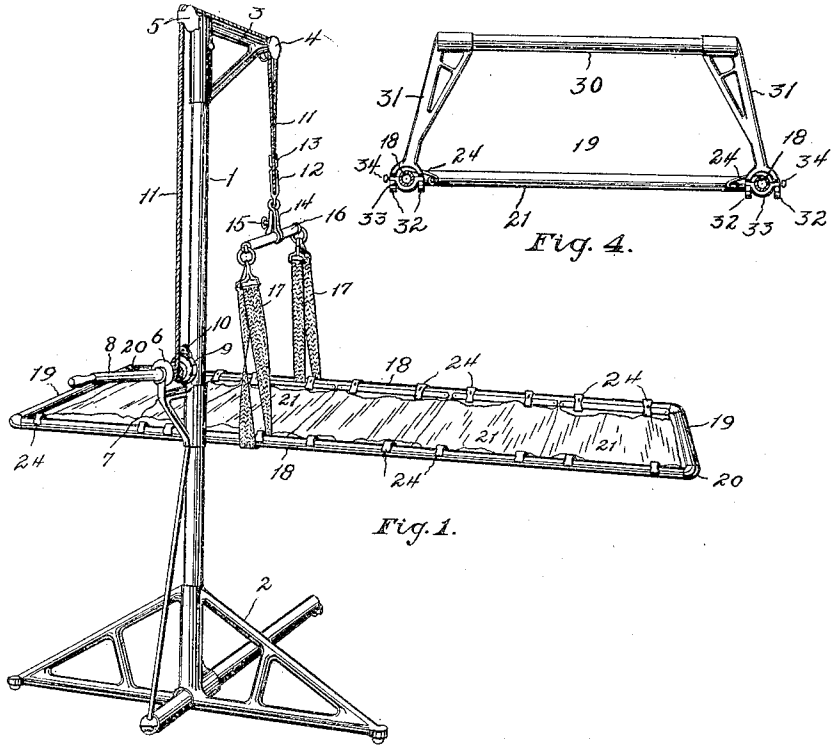


Fig. 1.

Fig. 4.

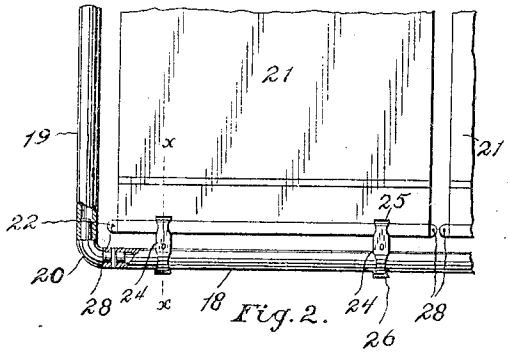


Fig. 2.

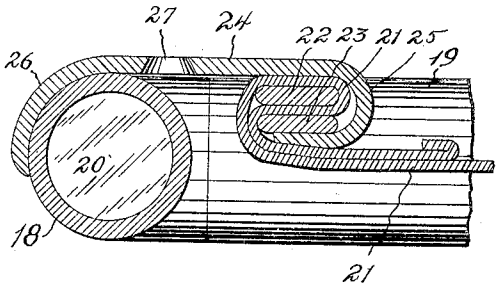


Fig. 3.

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INVALID-LIFT.

No. 808,785. Specification of Letters Patent. Patented Jan. 2, 1906.

Application filed July 28, 1904. Serial No. 218,516.

To all whom it may concern.

Be it known that I, ORRIN B. THOMPSON, a citizen of the United States, residing at Jersey, in the county of Licking and State of Ohio, have invented a certain new and useful Improvement in Invalid-Lifts, of which the following is a specification.

My invention relates to a new and useful improvement in invalid-lifts.

The object of the invention is to provide an easily-manipulated lifting device of superior construction whereby the patient may be readily and expeditiously moved.

Another object resides in the special arrangement and construction of the stretcher-bottom, which comprises a plurality of independently-adjustable fabric sections.

Finally, the object of the invention is to provide a device of the character described that will be strong, durable, and efficient and simple and comparatively inexpensive to manufacture.

With the above and other objects in view the invention consists of the novel details of construction and operation, a preferable embodiment of which is described in the specification and illustrated in the drawings, wherein—

Figure 1 is a perspective view of my complete device. Fig. 2 is a partial plan view of one corner of the stretcher, showing the stretcher-frame broken away to illustrate the joint thereof. Fig. 3 is a detail enlarged partial transverse section of the stretcher, taken on line *x x* of Fig. 2, showing the manner of securing the sections to the frame; and Fig. 4 is a detailed elevation of a modified form of supporting means for the stretcher.

In the drawings the numeral 1 designates a suitable angular crane, which is supported upon a triangular base 2. The crane is provided with a laterally-extending fixed bracket 3, which supports the idle sheaths 4 and 5. Midway the height of the crane a winding-spool 6 is supported by a bracket 7 and is provided with a crank 8 and a ratchet 9. A pawl 10, pivoted upon the crane, engages with the ratchet of the spool, so as to hold the same in position. A lifting rope or cable 11 is fixed at one end to the spool and passed up over the sheath 5, across and down over one side of the sheath 4, which is double, through a pulley 12, thence up again and over the other side of the double sheath 4 and down to the pulley 12, to the upper center of which the end is secured by means of a clamp 13. The pulley supports a clamp 14, composed of two pivoted members which are controlled by a hand-screw 15. The clamp at its lower end engages a transverse bar 16, from which are suspended suitable straps 17, which pass around the side rails 18 of the stretcher-frame. Although I have shown the bar 16 and the straps 17, I may use in lieu thereof a yoke-shaped bar 30, provided at its ends with rigidly-attached hangers 31, formed with bifurcated hooks 32 at their lower ends and engaged along its horizontal portion by the clamp 14. Curved sockets 33, in which the side rails 18 rest, are pivotally supported in the hooks 32. Set-screws 34 are provided on the sockets for securing them to the side rails. Such an arrangement greatly braces and strengthens the whole structure. By manipulating the screw 15 the clamp may be loosened, so as to slide the same along the bar 16, and thus should the patient lie to one side of the stretcher his weight may be equalized by moving the said clamp along the bar 16 and tightening the same at the balancing-point. The stretcher may be readily raised by turning the crank 8, the pawl 10 engaging with the ratchet 9 to hold the stretcher at the desired height. In order to lower the stretcher, the pawl 10 is swung upward and backward, so that its point will not engage with the ratchet-teeth, thus allowing the stretcher to be lowered to the desired position, where it may be held by again throwing the pawl into contact with the ratchet. Of course it will be understood that in operating the device the extended end of the stretcher is always supported upon the bed or other suitable place.

The essential feature of the invention lies in the construction and arrangement of the stretcher-bottom. The stretcher comprises the side rails 18 and the end rails 19, which are suitably joined by corner-pieces 20, riveted to the side rails 18, as shown in Fig. 2, and so arranged as to be disengaged from the end rails 19, whereby the stretcher-frame may be knocked down and compactly stored away. The bottom consists of a plurality of fabric sections 21, for which purpose toweling or the like may be used. The sections at each end are passed under, around, over, and between and then under two metallic binding-strips 22 and 23. Hooks 24 are formed with looped ends 25, which are engaged around the ends of the sections and the binding-strips, so as to engage the strips 23 upon their under sides, as clearly shown in Fig. 3. It will be readily discernible that when the sections are secured

in the manner described and shown it is impossible for them to slip and that their ends are held securely between the strips in the looped ends of the hooks. The hooks 24 are formed at their forward ends with curved portions 26, shaped so as to fit the contour of the side rails, over which they are engaged. An opening 27, formed in the shank of the hook 24, is adapted to receive a suitable wrench, which may be engaged with the hook for forcing the curved portion 26 over the side rail 18, which may be necessary when it is desired to put considerable tension upon the sections 21. Of course it is to be understood that the hooks and binding-strips are arranged upon the opposite ends of each section, preferably two hooks to the section, and that after engaging the curved portions 26 of the hooks on one side over the rails 18 the hooks on the opposite side are engaged by forcing the curved portions 26 thereof over the opposite side rail. Thus the section 21 will be stretched taut and supported therebetween. The binding-strips may be provided at each end with registering apertures 28, through which a suitable cord may be passed and knotted, thus securing the strips together and preserving their contact with the end of the section when the hooks are disengaged from the side rails and the section is allowed to hang suspended from one side of the stretcher-frame. Such conditions will arise when it is desired to obtain access to any certain portion of the patient's body. This may be readily accomplished by disengaging the hooks at one end of one of the sections from the side rail and allowing the same to drop down and hang, or if it be desired the section may be entirely removed by disengaging the curved portions of the hooks 26 from the side rails at each end of the section, which leaves an opening in the stretcher-bottom where the section has been removed. If it should be desired, a single sheet or length of fabric might be used in lieu of the sections, as the strips 22 and 23 might be readily engaged therewith, as shown in Fig. 3, and supported by the hooks 24. It is to be observed that by passing the ends of the fabric around and between the strips, as clearly shown in Fig. 3, it is impossible for the body of the fabric or the ends to slip through the strips and that when once secured the fabric is fixedly held against displacement irrespective of the weight sustained by the sections. It is apparent that the tension of each section may be varied by disengaging the clamped end from the looped portion 25 of the hook 24 and slipping the fabric between the clamping-strips. If considerable of the section end is passed between the strips when the hook is again engaged therewith, the forcing of the curved end 26 over the side rail will stretch the fabric and place the same under tension. It is obvious that the amount of tension will depend upon the length of stretch given to the section when the hook is engaged with the side rail. Attention is called to the fact that it is merely necessary to adjust one end of the fabric, as the other end having been once adjusted need not be changed, thus obviating extra labor.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an invalid-lift, the combination with a raising device and a supporting-frame connected to the raising device, of a plurality of cloth bottom sections disposed across the frame, strips about which the opposite ends of the sections are folded, and means engaged about the strips and folded ends of the sections for connecting the same to the sides of the frame and placing the sections under tension.

2. In an invalid-lift, the combination with a raising device and a supporting-frame connected to the raising device, of a plurality of cloth bottom sections disposed across the frame, strips about which the opposite ends of the sections are folded, and hooks engaged about the strips and folded ends of the sections for connecting the same to the sides of the frame and placing the sections under tension.

3. In an invalid-lift, the combination with a raising device and a supporting-frame connected to the raising device, of a plurality of cloth bottom sections disposed across the frame, non-flexible strips about which the opposite ends of the cloth sections are folded, and hooks formed to receive the strips and folded ends of the sections and adapted to engage over the sides of the supporting-frame so as to stretch the sections across the same.

4. In an invalid-lift, the combination with a raising device and a supporting-frame connected to the raising device, of a plurality of cloth bottom sections disposed across the frame, strips about which the opposite ends of the cloth sections are folded, the said strips adapted to be engaged with the sections at different points so as to vary their length between their folded portions, and means engaged about the strips and folded ends of the sections for connecting the same to the sides of the supporting-frame.

5. In an invalid-lift, the combination with a supporting-frame, a textile bottom section disposed across the frame, and means for supporting one end of the section from the frame, of means for supporting the opposite end of the section from the frame comprising a strip about which the said end portion of the section is closely folded, and a supporting device having one end snugly engaged about the folded end of the section and the strip and its opposite end in engagement with the frame.

ORRIN B. THOMPSON.

In presence of—
A. L. PHELPS,
M. B. SCHLEY.