May 5, 1931. W. C. YENTSCH 1,804,299

COMBINED LIFTING AND TRANSPORTING DEVICE

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Fig. 1.

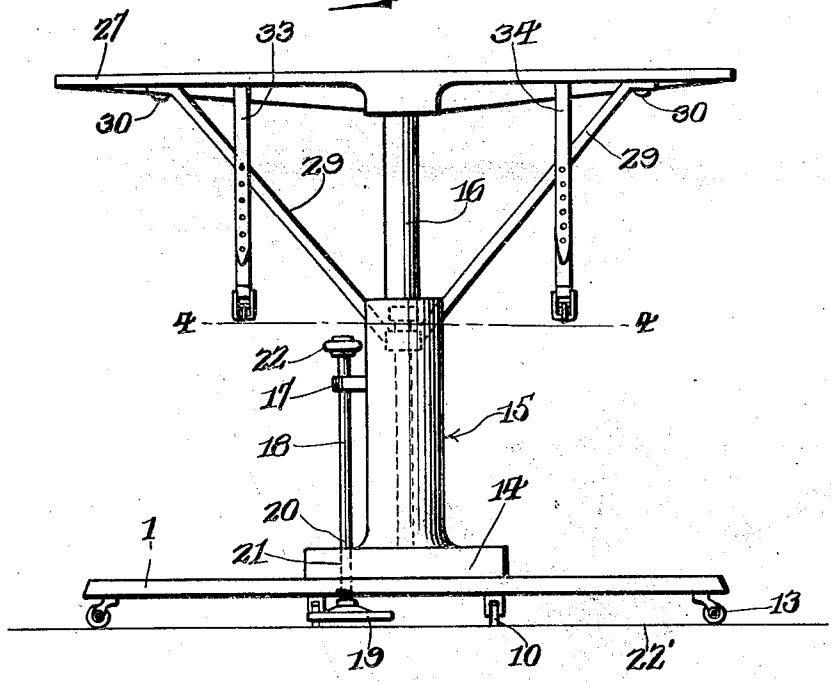
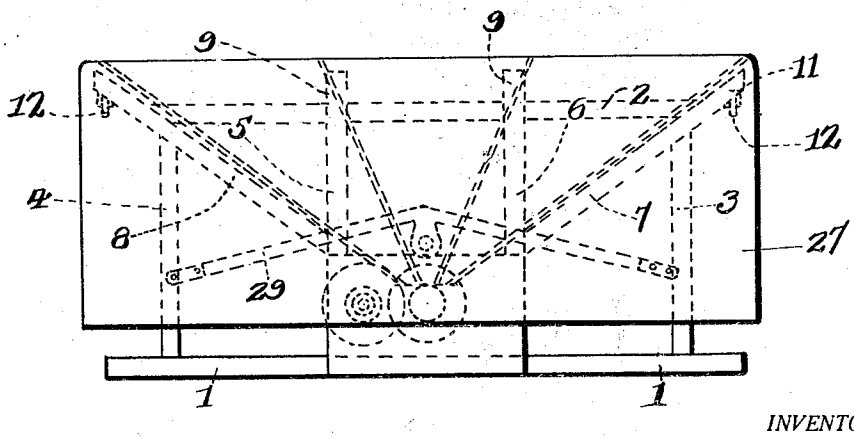


Fig. 2.



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Fig. 3.

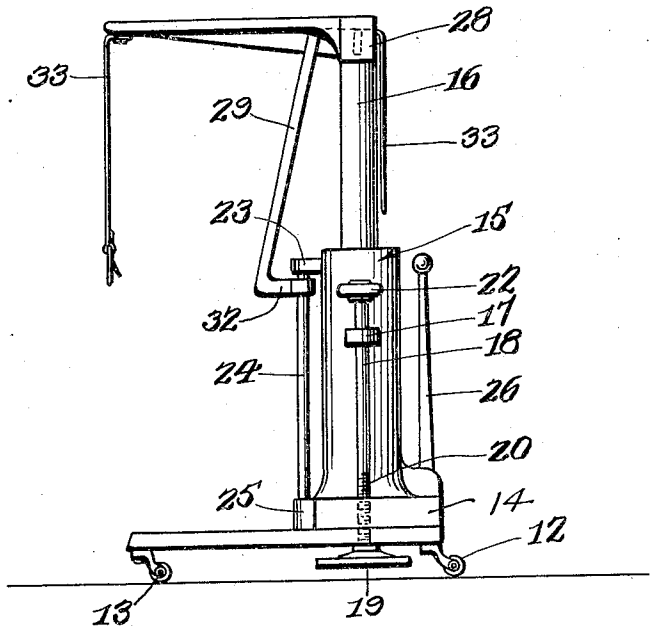
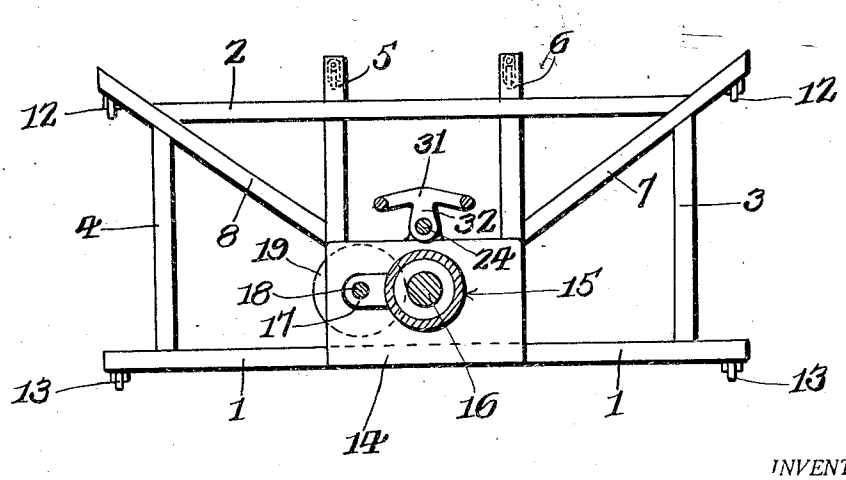


Fig. 4.



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UNITED STATES PATENT OFFICE

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COMBINED LIFTING AND TRANSPORTING DEVICE

Application filed August 5, 1929. Serial No. 383,589.

This invention relates to a combined lifting and transporting device designed primarily for use in hospitals, but it is to be understood that a device, in accordance with this invention may be employed in any connection for which it may be found applicable, and the invention has for its object to provide, in a manner as hereinafter set forth, a device of the character referred to for respectively lifting and transporting a bed containing a patient or an operating table with the patient thereon to any point desired.

A further object of the invention is to provide, in a manner as hereinafter set forth, a device of the character referred to so constructed and arranged to enable the patient to be raised to a point to be conveniently slid off from a bed or other carriage upon an operating table.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a combined lifting and transporting device for the purpose referred to which is simple in its construction and arrangement, strong, durable, compact, thoroughly efficient in its use, conveniently operated for elevating a bed or other carriage upon which a patient is arranged, readily assembled, and comparatively inexpensive to set up.

With the foregoing and other objects in view the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described, and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which fall within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:

Figure 1 is a side elevation of a combined lifting and transporting device in accordance with this invention.

Figure 2 is a top plan view of the table forming an element of the device extended.

Figure 3 is an end view of the device with the table element thereof in extended position.

Figure 4 is a sectional plan.

A combined lifting and elevating device in accordance with this invention includes a carriage comprising a frame consisting of a pair of spaced, parallel, longitudinal side bars 1, 2, the former being of greater length than the latter, a pair of end bars 3, 4 of less length than the side bars and connecting the ends of the bar 2 to the bar 1 adjacent the ends of the latter, a pair of spaced, parallel, intermediate bars 5, 6, each connected at one end to the side bar 1 at a point between its transverse center and one end thereof and further connected intermediate its ends to the side bar 2 at a point between the transverse median of the latter and one end thereof. The intermediate bars 5, 6 project from the side bar 1. The frame further includes a pair of oppositely extending, inclined brace bars 7, 8 and each of which is connected to an intermediate bar at a point between the bars 1, 2 and extends over the point of joinder between an end bar and the bar 2 and projects outwardly from such point of joinder.

The portions of the bars 5, 6 which project from the bar 2 are indicated at 9 and each of said portions carries at its free end a castor 10. The portions of the bars 7, 8 which project beyond the end bars of the bar 2 are indicated at 11 and the outer end of each of such portions is provided with a castor 12. Each end of the bar 1 has connected therewith a castor 13.

Secured upon the bars 5, 6 in proximity to the bar 1 is the base 14 of a hydraulic jack 15, the latter being vertically disposed. The ram of the jack 15 is indicated at 16 and is of a length to normally project above the upper end of the cylinder of the jack.

The jack 15 has connected therewith a laterally extending combined guide and keeper 17 through which extends a vertically adjustable brake rod 18, the latter having its lower end provided with a brake shoe 19. The rod 18 at its lower portion is peripherally threaded as at 20 for engagement with the threaded wall of an opening 21 formed in the base 14 and disposed vertically of the latter. The upper end of the rod 18 carries an operating handle or hand grip 22. The

rod 18 and shoe 19 provide a brake device for engagement with the floor 22′ to arrest the movement of the carriage and for retaining the latter stationary when desired.

The cylinder of the jack 15, near its upper end, is formed with a laterally disposed bracket 23 into which is secured the upper end of a combined retainer and guide rod 24, the latter having its lower end anchored to the base 14, as at 25. The rod 24 is spaced from the cylinder of the jack and the function of the rod 24 will be hereinafter referred to.

A handle for operating the jack 15 is indicated at 26. The jack 15 is of known construction. The ram or plunger 16 is fixed at its upper end to a table 27, the latter being provided with a suitable casting, as indicated at 28 to receive the upper end of the ram or plunger 16. The casting 28 is positioned in close proximity to one side edge of the table 27 and further substantially centrally thereof. The table 27 is bodily carried with the jack or plunger 16, whereby when the latter is elevated or lowered the table 27 will be carried therewith. The table is of rectangular contour and will be preferably of a size substantially half the size of a single bed. For the purpose of maintaining the table 27 extended with respect to the carriage a pair of oppositely extending holding rods 29 are employed and each of which has its upper end fixedly secured as at 30 to the lower face of the table and have their lower ends merge into each other as at 31 and extending from the point of mergence is a coupling piece 32 which is slidably mounted on the rod 24 below the bracket 23. The rod 24 provides a guide for the coupling piece 32 when the ram or plunger 16 is vertically shifted and owing to the arrangement of the coupling piece with respect to the rods or bars 29 the table 27 is prevented from tilting, as, if it attempts to tilt a binding action will be set up between the coupling piece 32 and the rod 24.

Secured to the table 27 transversely of the lower face thereof is a pair of spaced straps 33 which can be employed for coupling the table 27 to the bed or coupling the patient to the bed and with the bed removably connected to the table.

It is thought the many advantages of a combined lifting and transporting device, in accordance with this invention, can be readily understood, and although the preferred embodiment of the invention is as illustrated and described, yet it is to be understood that changes in the details of construction can be had which fall within the scope of the invention as claimed.

What I claim is:

1. In a combined lifting and transporting device, the combination of a carriage, a table arranged in superposed spaced relation with respect to the carriage, an elevating and lowering means for the table including a vertically movable part and an upstanding stationary part, the former extending into the latter, said vertically movable part having its upper end fixed to the bottom of the table between the longitudinal median and the rear edge of the table, said stationary part being fixed to said carriage, a vertically disposed guide rod connected to and spaced from said stationary part, a pair of oppositely disposed, upwardly extending, rearwardly inclined holder rods having their upper ends fixed to said table forwardly of the rear edge of the latter, and a coupling piece integral with the lower ends of said holder rods and slidably mounted on said guide rod and coacting with the said guide and holder rods to maintain the table in parallelism with respect to the carriage.

2. In a combined lifting and transporting device, the combination of a carriage, a table arranged in superposed spaced relation with respect to the carriage, an elevating and lowering means for the table including a vertically movable part and an upstanding stationary part, the former extending into the latter, said vertically movable part having its upper end fixed to the bottom of the table between the longitudinal median and the rear edge of the table, said stationary part being fixed to said carriage, a vertically disposed guide rod connected to and spaced from said stationary part, a pair of oppositely disposed, upwardly extending, rearwardly inclined holder rods having their upper ends fixed to said table forwardly of the rear edge of the latter, a coupling piece integral with the lower ends of said holder rods and slidably mounted on said guide rod and coacting with said guide and holder rods to maintain the table in parallelism with respect to the carriage, and vertically disposed braking means slidably and threadedly connected with said stationary part, arranged adjacent to said guide rod and extending below said stationary part and through said carriage.

3. A combined lifting and transporting device comprising a carriage, a table arranged in superposed spaced relation with respect thereto, an elevating and lowering means for the table including a vertically movable part and an upstanding stationary part, the former extending into the latter, said vertically movable part having its upper end fixed to the bottom of the table between the longitudinal median and rear edge of the table, said stationary part being fixed to said carriage, a vertically disposed guide rod connected to and spaced forwardly from said stationary part, and means fixed to the table at two points forwardly of its rear edge and slidably mounted on said guide rod and coacting with the latter to maintain the table in parallelism with respect to the carriage.

4. A combined lifting and transporting device comprising a carriage, a table arranged

in superposed spaced relation with respect thereto, an elevating and lowering means for the table including a vertically movable part and an upstanding stationary part, the former extending into the latter, said vertically movable part having its upper end fixed to the bottom of the table between the longitudinal median and rear edge of the table, said stationary part being fixed to said carriage, a vertically disposed guide rod connected to and spaced forwardly from said stationary part, means fixed to the table at two points forwardly of its rear edge and slidably mounted on said guide rod and coacting with the latter to maintain the table in parallelism with respect to the carriage, and a vertically disposed braking means threadedly engaging with a portion of said stationary part, having its upper portion slidably connected to said stationary part exteriorly of the latter and its lower end extending below said stationary part and normally elevated with respect to the support on which the carriage travels.

5. In a combined lifting and transporting device, the combination of a rectangular carriage having a series of spaced rollers at the front side thereof and a pair of spaced rollers at the rear side thereof, a rectangular table arranged in superposed spaced relation with respect to said carriage and having its rear side arranged in advance of the rear side of the carriage and its forward side projected beyond the forward side of the carriage, an elevating and lowering means for the table including a vertically movable part and an upstanding stationary part, the former extending into the latter, said stationary part terminating at its lower end in a base, said stationary part and vertically movable part of said means being arranged at the transverse median of the carriage and forwardly of the rear side of the latter, said vertically movable part having its upper end fixed to the bottom of the table between the longitudinal median and rear side of the table, said base being fixed to said carriage, a vertical guide rod connected to and spaced forwardly from said stationary part, and means fixedly secured at two points to said table forwardly of its rear side and slidably mounted on said guide rod and coacting with the latter to maintain said table in parallelism with respect to said carriage.

6. In a combined lifting and transporting device, the combination of a rectangular carriage having a series of spaced rollers at the front side thereof and a pair of spaced rollers at the rear side thereof, a rectangular table arranged in superposed spaced relation with respect to said carriage and having its rear side arranged in advance of the rear side of the carriage and its forward side projected beyond the forward side of the carriage, an elevating and lowering means for the table including a vertically movable part and an upstanding stationary part, the former extending into the latter, said stationary part terminating at its lower end in a base, said stationary part and vertically movable part of said means being arranged at the transverse median of the carriage and forwardly of the rear side of the latter, said vertically movable part having its upper end fixed to the bottom of the table between the longitudinal median and rear side of the table, said base being fixed to said carriage, a vertical guide rod connected to and spaced forwardly from said stationary part, means fixedly secured at two points to said table forwardly of its rear side and slidably mounted on said guide rod and coacting with the latter to maintain said table in parallelism with respect to said carriage, and a vertically disposed braking means extending through and having threaded engagement with said base and having its upper portion slidably connected to said stationary part.

In testimony whereof, I affix my signature hereto.

WILLIAM C. YENTSCH.