

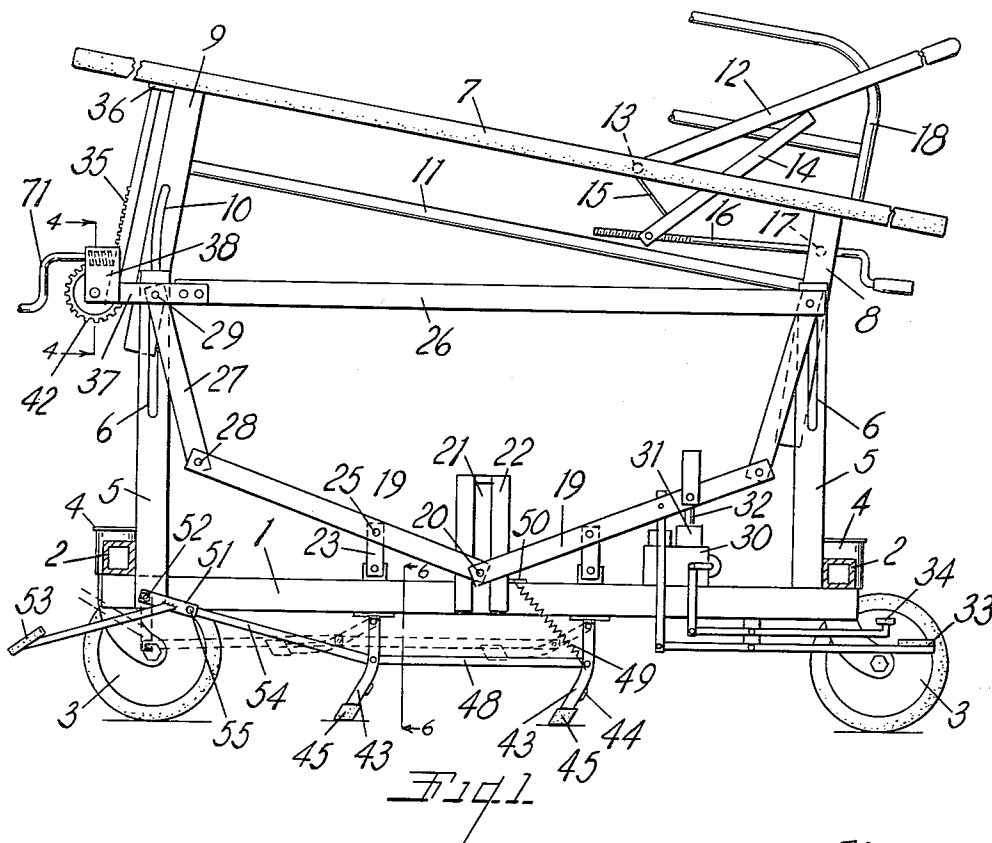
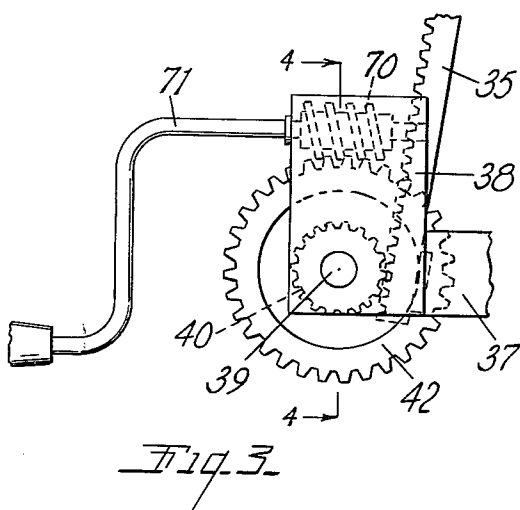
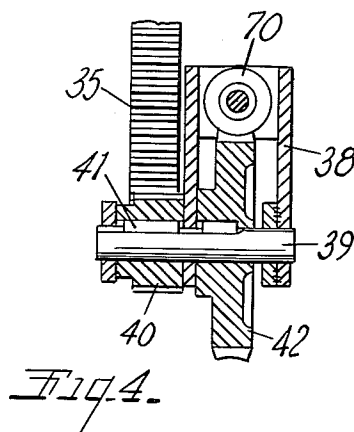
Aug. 28, 1962

P. C. TABBERT
HOSPITAL STRETCHER

3,050,745

Filed Nov. 21, 1960

2 Sheets-Sheet 1



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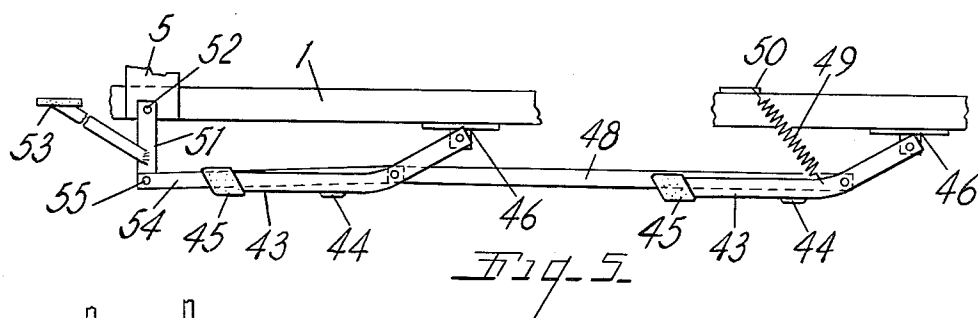
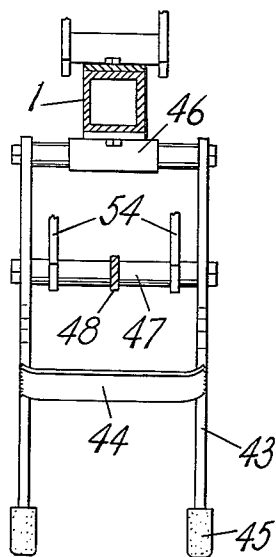
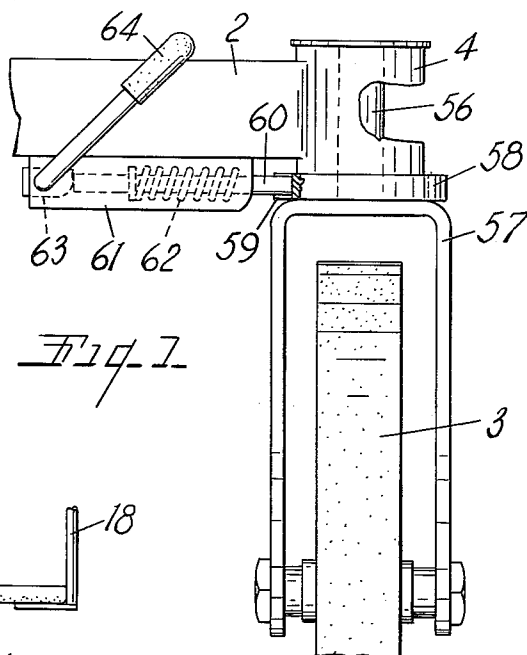
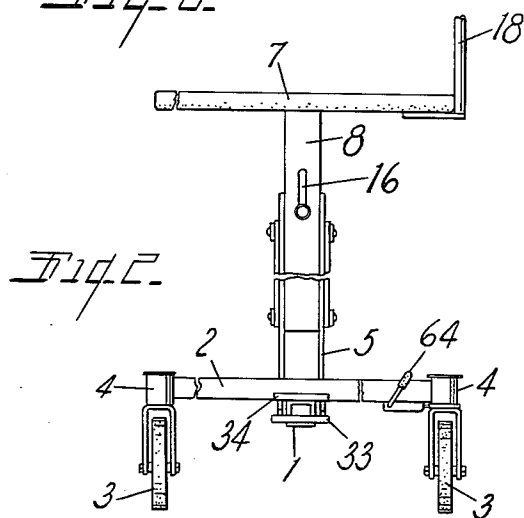
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2 Sheets-Sheet 2



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3,050,745

HOSPITAL STRETCHER

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9 Claims. (Cl. 5—86)

This invention relates to a hospital stretcher. The main objects of this invention are—

First, to provide a wheeled hospital stretcher which is relatively simple in structure and has a wide range of adjustability and requires little manual effort to operate.

Second, to provide a stretcher which has a wide range of adjustment in which the platform is supported for vertical and tilting adjustment, the adjustment being easily accomplished when the stretcher is in use.

Third, to provide a wheeled stretcher with means for anchoring it in its adjusted positions.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims. A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

FIG. 1 is a fragmentary side elevational view partially in vertical section of a stretcher embodying my invention with the platform shown in one elevated tilted position, anchoring legs being shown in actuated position.

FIG. 2 is a fragmentary end elevational view viewed from the right of FIG. 1.

FIG. 3 is an enlarged fragmentary side elevational view viewed from the left side of FIG. 4, illustrating certain details of the platform adjusting means.

FIG. 4 is a fragmentary view on a line corresponding to line 4—4 of FIGS. 1 and 3.

FIG. 5 is a fragmentary side elevational view with the anchoring legs in retracted position.

FIG. 6 is an enlarged fragmentary view on a line corresponding to line 6—6 of FIG. 1.

FIG. 7 is a fragmentary end elevational view illustrating means for locking the spindle of one of the caster wheels against rotating movement.

The embodiment of my invention illustrated includes certain features of the stretcher illustrated in my application for Letters Patent, Serial No. 848,063, filed October 22, 1959, now Patent No. 3,026,542. It should be understood that in practice a housing is provided which encloses the operating means for raising and lowering the stretcher. The carriage of the embodiment of my invention illustrated comprises the elongated centrally disposed longitudinal body member 1 and cross members 2 fixedly mounted on the ends thereof, see FIGS. 1 and 2. The caster wheels 3 are provided with bearings 4 mounted on the ends of the cross members 2. Uprights 5 are centrally disposed and project upwardly from the carriage frame and are provided with longitudinal or vertically extending slots 6 of substantial length.

The platform 7 is provided with downwardly projecting posts 8 and 9, the post 9 having a curved slot 10 therein. These posts are connected by the strut 11 and the platform is provided with an adjustable backrest 12 pivoted at 13 and adjustably supported by the strut 14 swingably mounted on the links 15 and adjustably supported by the manually manipulated screw 16. This screw is rotatively supported by the swivel bearing 17. Desirably the platform is provided with guard rails 18 which are collapsibly mounted thereon. This adjustment of the back or head rest and these guard rails form no part of this invention and further detailed description thereof seems unnecessary.

The means for supporting and vertically tilting the platform comprise the adjustable support members 19

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which are pivotally connected at their inner ends by the pivot 20 which is slidably engaged with the vertical slot 21 in the guide 22, which is centrally positioned and projects upwardly from the body member 1. These support members 19 are tiltably supported by the links 23 pivotally connected at their lower ends to the frame member 1. The upper ends of these links 23 are connected to the support members 19 by pivots 25. A cross bar 26 extends between the uprights 5 and is connected to the members 19 by the links 27 pivoted to the support members at 28 and pivotally connected to the cross bar at 29. The pivots 29 engage the vertical slots 6.

In the embodiment illustrated the platform is raised and lowered by a hydraulic unit designated generally by the numeral 30, which includes a pump cylinder 31 and piston rod 32, being connected to one of the members 19 as is illustrated in FIG. 1. The foot means for operating the pump includes the pedal 33 and release means is operated by the pedal 34. This mechanism is described in my application for patent hereinbefore referred to, and therefore is not described or illustrated in further detail.

There are many conditions in hospital uses where it is desirable to tilt the platform. The embodiment of my invention illustrated includes the rack 35 which is fixedly mounted on the platform at 36 to project downwardly at the outer side of and in parallel relation to the post 9. The crosspiece 26 has an end portion 37 which projects beyond the post 9 and has a bracket 38 on the outer end thereof provided with a spindle 39 to which the gear 40 is fixedly connected by the spline indicated at 41, see FIG. 4. The worm gear 42 is also secured to the shaft 39 and the manually actuated worm 70 is mounted on the bracket 38, see FIGS. 1, 3 and 4, to coact with the worm gear 42 and is provided with a manually operated crank 71. This provides means by which the stretcher can be tilted even when occupied, with relatively little manual effort, and it is retained in its adjusted position without the necessity of any locking means other than the adjusting means described.

It is frequently desirable to secure the stretcher in an adjusted position and that is accomplished by the laterally spaced pairs of legs 43 which are connected by the crosspiece 44 and are desirably provided with rubber feet 45. These legs are pivotally mounted on the hangers 46 secured to the underside of the longitudinal frame member 1, one pair of legs being disposed at each side of the center thereof, as shown in FIG. 1. The legs also have crosspieces 47 disposed above their brace members 44, and pairs of legs are connected by the links 48 extending between these crosspieces. The legs are held in their retracted position, as illustrated in FIG. 5 by means of the coil spring 49, which is connected to the frame member 1 at 50 and to the legs. An actuating lever 51 is pivotally mounted at 52 on the frame and is provided with a foot piece 53 and connected to the legs by means of the link 54 which is pivotally connected to the lever at 55 and to the crosspiece of the adjacent pair of legs, as illustrated in FIG. 6. These legs are of such length relative to the diameter of the wheels that they sustain a substantial amount of the weight of the stretcher when they are in erected position and in engagement with a surface over which the stretcher may be translated on its wheels, see FIG. 1. It is not desirable that the entire load be on the legs, but that such portion of the load be on the legs as to prevent travel of the stretcher on its wheels.

In FIG. 7 I illustrate means for locking at least one of the caster wheels so that its spindle cannot rotate. This is a desirable feature to facilitate guiding the stretcher. This feature of the invention is illustrated in FIG. 7, in which the spindle 56 of the wheel yoke 57 is provided with a hub portion 58, having a recess-like keeper 59 with

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which the bolt 60 may be engaged when the wheel is adjusted to a predetermined position as shown in FIG. 7. The bolt 60 is slidably mounted in a bracket 61 disposed under the frame piece 2 and slidably receiving the bolt which is provided with a retracting spring 63 and is actuated to engaging position by the actuating cam 63 provided with a hand piece 64.

I have illustrated and described my invention in a highly practical embodiment thereof. I have not attempted to illustrate or describe other modifications or adaptations as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described the invention, what is claimed as new and desired to secure by Letters Patent is:

1. A hospital stretcher comprising a carriage frame including a centrally disposed longitudinal body member and cross members at the ends thereof, wheels mounted on the said cross members, uprights having vertical slots therein mounted on said carriage frame at the ends and centrally thereof, a platform having downwardly projecting posts disposed in overlapping guided relation to said uprights, one of said posts having a longitudinally extending arcuate slot therein, means for supporting and vertically and tiltably adjusting said platform comprising adjustable support members pivotally connected at their inner ends, supporting links for said support members pivotally connected thereto and pivotally mounted on said longitudinal body member, means for vertically guiding the inner ends of said support members, a crossbar, links connecting the outer ends of said support members to said crossbar, the upper ends of said connecting links and said crossbar having guiding engagement with said slots in said uprights, said crossbar projecting at one end thereof beyond the post having the curved slot therein, manually operated means for adjusting said support members and supporting them in their adjusted positions and for controlling the return movement thereof, a downwardly projecting rack mounted on said platform at the outer side of and in parallel relation to said post having the curved slot therein, a first gear mounted on the projecting end of said crossbar in meshing engagement with said rack, a worm gear disposed axially of and connected to said first gear, and a manually actuated worm rotatably mounted on said crossbar in coacting relation to said worm gear.

2. A hospital stretcher comprising a carriage, uprights having vertical slots therein mounted on said carriage, a platform having downwardly projecting posts disposed in overlapping guided relation to said uprights, one of said posts having a longitudinally extending arcuate slot therein, means for supporting and vertically and tiltably adjusting said platform comprising adjustable support members pivotally connected at their inner ends, supporting links for said support members pivotally connected thereto and pivotally mounted on said carriage, means for vertically guiding the inner ends of said support members, a crossbar, links connecting the outer ends of said support members to said crossbar, the upper ends of said connecting links and said crossbar having guiding engagement with said slots in said uprights, said cross bar projecting at one end thereof beyond the post having the curved slot therein, manually operated means for adjusting said support members and supporting them in their adjusted positions and for controlling the return movement thereof, a downwardly projecting rack mounted on said platform at the outer side of and in parallel relation to said post having the curved slot therein, a first gear mounted on the projecting end of said crossbar in meshing engagement with said rack, a worm gear disposed axially of and connected to said first gear, and a manually actuated worm rotatably mounted on said crossbar in coacting relation to said worm gear.

3. A hospital stretcher comprising a carriage frame including a centrally disposed longitudinal body member

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and cross members at the ends thereof, wheels mounted on the said cross members, uprights having vertical slots therein mounted on said carriage frame at the ends and centrally thereof, a platform having downwardly projecting posts disposed in overlapping guided relation to said uprights, one of said posts having a longitudinally extending arcuate slot therein, means for supporting and vertically and tiltably adjusting said platform comprising adjustable support members pivotally connected at their inner ends, supporting links for said support members pivotally connected thereto and pivotally mounted on said longitudinal body member, means for vertically guiding the inner ends of said support members, a crossbar, links connecting the outer ends of said support members to said crossbar, the upper ends of said connecting links and said crossbar having guiding engagement with said slots in said uprights, means for adjusting said support members, a downwardly projecting rack mounted on said platform, a first gear mounted on said crossbar in meshing engagement with said rack, a worm gear connected to said first gear, and a manually actuated worm rotatably mounted on said crossbar in coacting relation to said worm gear.

4. A hospital stretcher comprising a carriage, uprights having vertical slots therein mounted on said carriage, a platform having downwardly projecting posts disposed in overlapping guided relation to said uprights, one of said posts having a longitudinally extending arcuate slot therein, means for supporting and vertically and tiltably adjusting said platform comprising adjustable support members pivotally connected at their inner ends, supporting links for said support members pivotally connected thereto and pivotally mounted on said carriage, means for vertically guiding the inner ends of said support members, a crossbar, links connecting the outer ends of said support members to said crossbar, the upper ends of said connecting links and said crossbar having guiding engagement with said slots in said uprights, means for adjusting said support members, a downwardly projecting rack mounted on said platform, a first gear mounted on said crossbar in meshing engagement with said rack, a worm gear connected to said first gear, and a manually actuated worm rotatably mounted on said crossbar in coacting relation to said worm gear.

5. A hospital stretcher comprising a carriage, uprights mounted on said carriage, a platform having downwardly projecting posts disposed in guiding relation to said uprights, means for supporting and vertically and tiltably adjusting said platform mounted on said carriage and comprising support members pivotally connected at their inner ends, supporting links for said support members pivotally and adjustably mounted on said carriage, a crossbar, links connecting said crossbar to said adjustable support members, said crossbar having guided engagement with said uprights, means for adjusting said support members and supporting them in their adjusted positions and for controlling the return movement thereof, a rack mounted on said platform to project downwardly therefrom, means for supportingly adjusting said rack mounted on said crossbar and including a worm gear drivingly associated with said rack, and a manually actuated worm mounted on said crossbar in coacting relation to said worm gear.

6. A hospital stretcher comprising a carriage, uprights mounted on said carriage, a platform having downwardly projecting posts disposed in guiding relation to said uprights, means for supporting and vertically and tiltably adjusting said platform mounted on said carriage and comprising support members pivotally connected at their inner ends, supporting links for said support members pivotally and adjustably mounted on said carriage, means for simultaneously adjusting said support members, a crossbar, links connecting said crossbar to said adjustable support members, said crossbar having guiding engagement with said uprights, a rack mounted on said platform

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to project downwardly therefrom, and means for supportingly adjusting said rack including a manually operated reversible gear drivingly associated with said rack.

7. A hospital stretcher comprising a carriage frame including a centrally disposed longitudinal body member and cross members at the ends thereof, wheels mounted on the said cross members, uprights mounted on said carriage frame at the ends and centrally thereof, a platform having downwardly projecting posts disposed in overlapping guided tiltable relation to said uprights, one of said posts having a longitudinally extending arcuate slot therein, means for supporting and vertically and tiltably adjusting said platform comprising a crossbar having guiding engagement with said uprights, means for vertically adjusting said crossbar, said crossbar projecting at one end thereof beyond the post having the curved slot therein, a downwardly projecting rack mounted on said platform at the other side of and in parallel relation to said post having the curved slot therein, a first gear mounted on the projecting end of said crossbar in meshing engagement with said rack, a worm gear disposed axially of and connected to said first gear, and a manually actuated worm rotatably mounted on said crossbar in coacting relation to said worm gear.

8. A hospital stretcher comprising a carriage, uprights mounted on said carriage, a platform having downwardly projecting posts disposed in overlapping guided tiltable relation to said uprights, one of said posts having a longitudinally extending arcuate slot therein, means for supporting and vertically and tiltably adjusting said platform comprising a crossbar having guiding engagement with said uprights, means for vertically adjusting said crossbar, a downwardly projecting rack mounted on said platform, a first gear mounted on the projecting end of said crossbar in meshing engagement with said rack, a worm

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gear disposed axially of and connected to said first gear, and a manually actuated worm rotatably mounted on said crossbar in coacting relation to said worm gear.

9. A hospital stretcher comprising a carriage frame including a centrally disposed longitudinal body member and cross members at the ends thereof, wheels mounted on the said cross members, uprights mounted on said carriage frame at the ends and centrally thereof, a platform having downwardly projecting posts disposed in overlapping guided tiltable relation to said uprights, one of said posts having a longitudinally extending arcuate slot therein, means for supporting and vertically and tiltably adjusting said platform comprising a crossbar having guiding engagement with said uprights, means for vertically adjusting said crossbar, means for tiltably adjusting said platform including a rack depending therefrom, a worm gear supportedly connected to said crossbar and operatively connected to said rack, and a manually actuated worm mounted on said crossbar in coacting relation to said worm gear and constituting means in coaction therewith to adjustably support said platform.

References Cited in the file of this patent

UNITED STATES PATENTS

862,414	Roberts	July 5, 1906
1,633,638	Jarvis et al.	June 28, 1927
1,866,696	Birman	July 12, 1932
2,707,794	Kramcsak	May 10, 1955
2,905,952	Reichert et al.	Sept. 29, 1959
2,941,626	Heiden	June 21, 1960
2,945,242	Heiden	July 19, 1960

FOREIGN PATENTS

207,039	Austria	Jan. 11, 1960
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