Dec. 10, 1929. M. E. ROE 1,739,260

INVALID CHAIR

Filed May 12, 1926 2 Sheets-Sheet 1

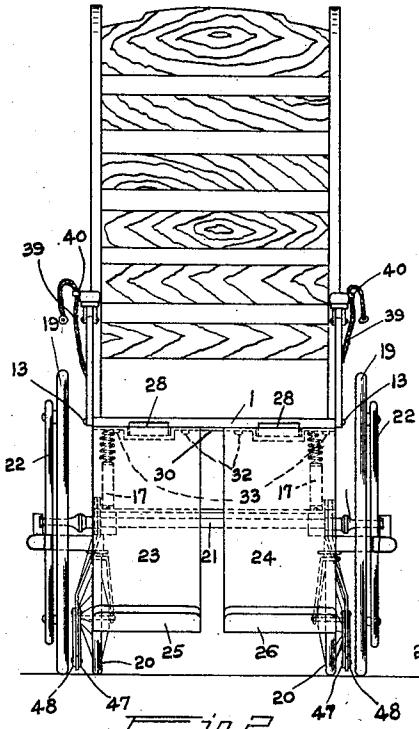


Fig. 2

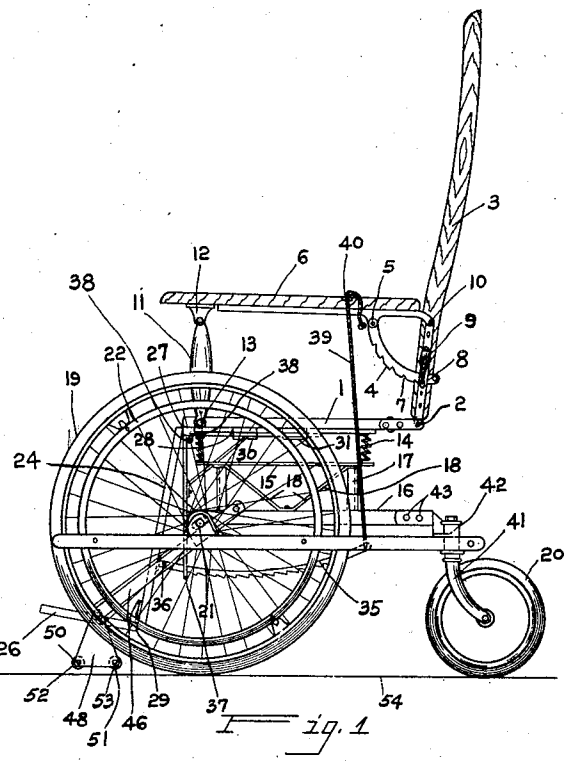


Fig. 1

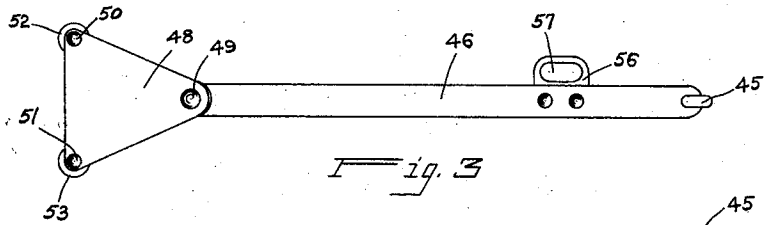


Fig. 3

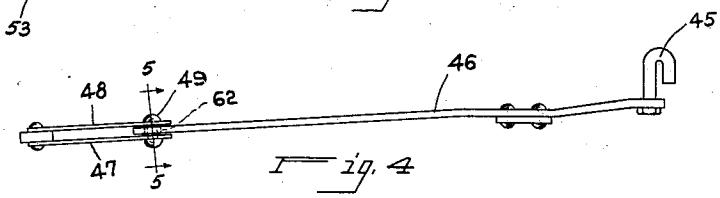


Fig. 4

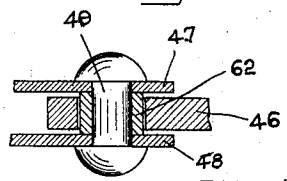


Fig. 5

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INVALID CHAIR

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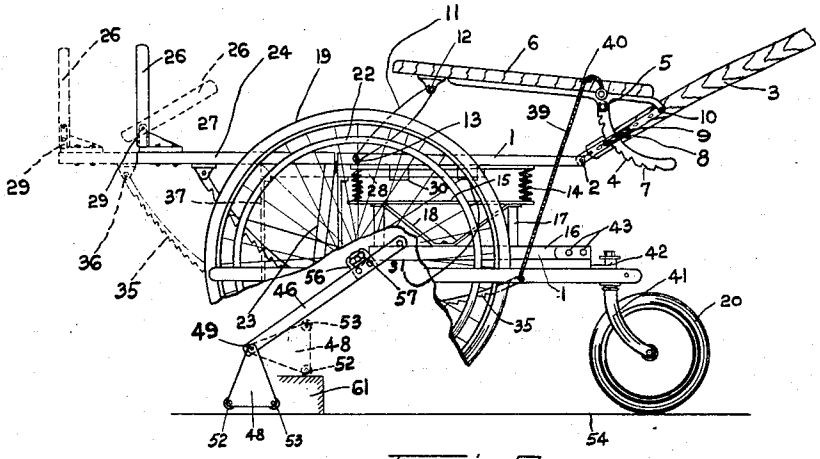


Fig. 6

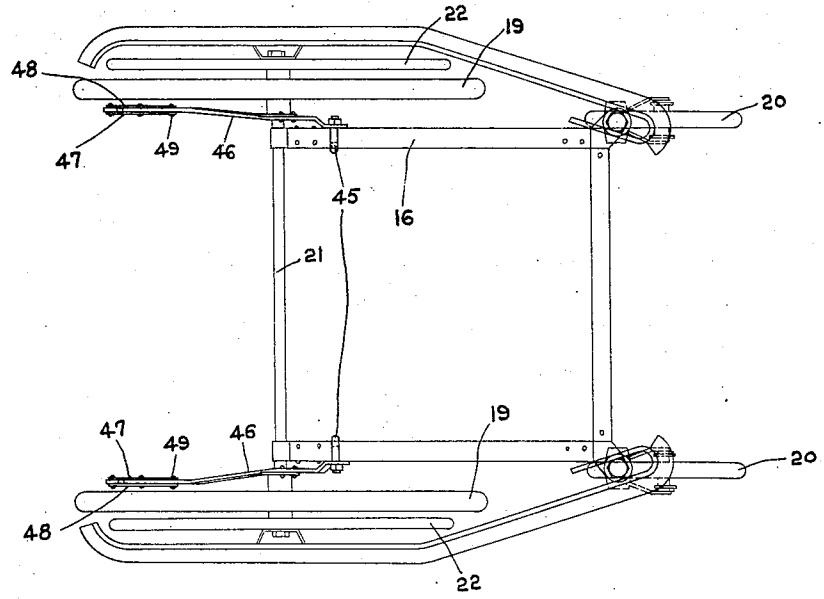


Fig. 7

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UNITED STATES PATENT OFFICE

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INVALID CHAIR

Application filed May 12, 1926. Serial No. 108,499.

My invention relates to invalid chairs and relates more particularly to invalid chairs of the type of employing two transversely aligned forward wheels and a third trailing wheel.

An object of my invention is to provide an invalid chair of the above type which will not readily tilt when the weight of the rider is shifted forwardly, so that its center of gravity is forward of the two transversely aligned vehicle wheels.

Another object of my invention is to provide an improved means for preventing forward tilting of the vehicle without interfering with the free and ready egress or admission of the rider from and to the chair.

Another object of my invention is to provide a chair of the above type, wherein the above advantages may be secured, and in which the leg rests are adjustable to permit the patient using the chair to recline therein.

Another object of my invention is to secure each and any of the aforesaid objects in a chair of the divided leg rest type, wherein the two leg rests may be individually adjusted towards or from reclining position.

Other objects of my invention and the invention itself will be apparent from reference to the following description of an embodiment of my invention, and in which description reference will be had to the accompanying drawings forming a portion of this specification.

Referring to the drawings:

Fig. 1 shows a chair embodying my invention in side elevational view and with the back and leg rests in upright sitting position;

Fig. 2 shows a front elevational view of the embodiment of Fig. 1;

Fig. 3 shows an elevational view of an anti-tilting bracket device comprised in the chair of the foregoing;

Fig. 4 shows a plan view of the same;

Fig. 5 shows an elevational view on the line 5—5 of Fig. 4;

Fig. 6 shows a side elevation of portions of the chair of my invention and showing one of the two leg rests thereof and the back in reclining position and the non-tilting bracket in side elevation, applied thereto; and

Fig. 7 shows a top plan of the same.

Referring now to all of the figures of the drawings, in all of which like parts are designated by like reference characters, at 1, I show a chair seat to which, at 2, is pivoted a back 3, which may be rotated about the pivot 2 to incline the back rearwardly from the position shown in Fig. 1 to a position more nearly approaching the horizontal, such as that illustrated in Fig. 6 and to any of which positions the back may be firmly held by means of the toothed sector 4 pivoted at 5 to an arm 6 of the chair, and into the notches 7 of which sector a detent 8 is adapted to enter by virtue of the movement of a handle 9, which may be moved from a position wherein it enters a selected one of the notches. The arm 6 is pivotally connected at its two ends with the back 3 at 10, adjacent its rear end, and to the arm brace 11 at the pivot 12, adjacent its forward end, the arm brace being pivotally connected at 13 with the seat 1, near the forward part of the seat. The pivots 10, 12 and 13 are provided for the purpose of enabling the arm brace 11 and the arm 6 to yield in response to a rearward tilting of the back 3, such as may be accomplished, as illustrated in Fig. 6. The seat and the parts carried thereon are spring mounted on the chair chassis springs 14 supporting the seat on a metal frame, comprising frame elements 15, and which in turn are carried upon the chassis frame 16 by supports 17 and braced by brace elements 18. The chassis frame 16 is carried between a pair of wheels 19 which are relatively large in diameter and mounted each at opposite ends of an axle 21. Annular hand rails 22 are, as illustrated, preferably affixed thereto for the purpose of manually propelling the vehicle. A pair of leg rests 23 and 24, having foot boards 25 and 26, respectively, pivoted at their lower ends at 29, are hinged at 27 to slidable leg rests

supporting boards 28, and which are adapted to be telescoped under the seat 1 within the straps 30 and 31. The straps 30 and 31 are secured by bolts, such as 32 and 33, to the bottom surface of the seat 1, and having depressed slideway portions for the reception of the sliding boards 28, which may be reciprocated within such slideways. By telescoping the boards 28 through the slideways provided for the purpose, the leg rests may be advanced or withdrawn from a more forward to a less forward position relative to the seat. This feature is of a special advantage whenever the leg rests take a relatively elevated and horizontal position, as illustrated in Fig. 6.

A toothed sector 35 hinged at 36 to the rear face of each leg rest board, is adapted to hold the leg rest board in its elevated position, the teeth thereof engaging in a slot in the supporting strap 37, which is rigidly secured to the board 28 by bolts, such as shown at 38. The sector 35 may be lifted from its leg rest sustaining position by means of the cord 39 affixed to its lower end and extended to a position 40 at a side arm of the vehicle. Preferably one of these cords will be provided for each leg rest supporting sector.

The rear wheels 20 are carried between the forks 41 of a swiveling fork mechanism, the upper end of the fork having a stem extending within a cylindrical head 42 which is rigidly secured to the rear end of the chassis frame 16 by bolts 43.

Rigidly secured to the forward part of the vehicle frame and disposed adjacent the axle 21 and wheels 19 of the vehicle, are a pair of brackets 45. Depending from the brackets 45 and inclined forwardly of the vehicle are a pair of bars 46 which are secured at their upper ends to the main frame 16 of the vehicle, by the brackets. Pivotally mounted on the bars 46 are a pair of swinging triangular pendants 47 and 48, and secured to the rod by a pin 49 each end of which is upset to fasten the same in position. The lower portions of the pendants are secured together by pins 50 and 51 which hold the pendants in spaced relation to each other and have a pair of rollers 52 and 53 journaled thereon adapted to engage the ground or floor 54 when the chair is tilted slightly forward. The pendants will swing back automatically on the pivot 49 in the position such as is shown at Fig. 6, whenever the vehicle is advanced up a stairs step such as that shown at 61, but is prevented from rotating beyond a position as illustrated in Fig. 6, wherein the roller 52 is capable of being lifted a distance somewhat in excess of the height of an ordinary stairs step. This is accomplished because the roller 53 would engage the bar 46 if an attempt were made to rotate the pendant to a more elevated position. The bar 46 forming a stop for the pendant prevents overturning of the vehicle by forward tilting thereof whenever the pendant is in the position shown in dotted lines in Fig. 6.

Preferably riveted to the bar 46 intermediate its ends and adjacent the axle 21 is a plate 56 provided with an elongated slot 57 through which the axle 21 passes. The plate 56 resting upon the axle causes the bar 46 to be projected forwardly in a downward direction and has its slot elongated to permit the bar 46 to be advanced between the frame and wheels forwardly to vary its angular inclination whenever the bracket 45 is forced to slide along the frame side bar 16 to accomplish such purpose.

Fig. 5 shows the method of spacing the plates 47 and 48 by means of a spacing ring 62 so as to effect a loose swivelling action of the pendant upon the end of the bar.

Preferably one of the non-tilting brackets are mounted on each side of the chair between the wheels 19 and frame 16.

The non-tilting bracket is especially advantageous when the rider leans forward or when the rider is entering or leaving the vehicle and steps upon the foot boards. By so placing the wheels 52 and 53 with their supports in the longitudinal medial plane of the vehicle, on both sides of leg rests, I am enabled to prevent tilting of the vehicle. At the same time, I so place the non-tilting means where it will not interfere with the patient entering and leaving the chair.

It will be noted that one of the leg and foot rests can be independently raised of the other leg and foot rest, as best shown in Fig. 6, by means of the toothed sectors 35 and the associated parts.

Having thus described my invention in a single embodiment, I am aware that numerous and extensive departures may be made from the embodiment herein illustrated and described, but without departing from the spirit of my invention.

I claim:

1. In a vehicle of the class described, the combination with a chair and vehicle chassis, of a pair of anti-tilters therefor, one end of each of the said anti-tilters secured to the chair frame and depending downwardly and forwardly therefrom, a pair of pendants pivotally supported each from one of the anti-tilters at its lower end, and a roller supported by each of said pendants in advance of the wheels of the vehicle.

2. In a vehicle of the class described, the combination with a reclining chair and wheel base, of a pair of anti-tilters, one end of each of the said anti-tilters detachably secured to the side frames of the vehicle and extending downwardly and forwardly thereof, a pair of pendants pivoted to the lower end of the anti-tilters and supported adjacent the ground in an advanced position of the wheels

of the vehicle, said pendants each having a pair of rollers journaled therein.

3. In a vehicle of the class described, the combination with a chair and vehicle chassis, of a pair of anti-tilters therefor, said members comprising shafts bolted to the vehicle frame and having a slotted bracket through which the axle of the vehicle passes to support said shafts in various adjusted positions, one end of each of the said anti-tilters secured to the chair frame and depending downwardly and forwardly therefrom, a pair of pendants pivotally supported each at the lower end of a different one of the anti-tilters, a pair of rollers supported by said pendants in advance of the wheels of the vehicle.

4. In an invalid chair having a pair of forwardly disposed parallel, large propelling wheels and a trailing wheel, of an anti-tilting mechanism for the chair, comprising a non-pivotal extension thereof, a pendant pivoted to said non-pivotal extension and projecting to a point forwardly of the line of engagement of the two large wheels with the surface upon which the vehicle is placed and to the rear of a vertical plane tangent to the forward peripheral portions of said wheels, said pendants adapted to contact with the supporting surface to prevent overturning of the vehicle in a forward direction whenever the vehicle is inclined toward an overturning position about the axle for the said large propelling wheels.

5. In an invalid chair having a pair of forwardly disposed parallel, large propelling wheels and a trailing wheel, of an anti-tilting mechanism for the chair, comprising a portion projecting to a point forwardly of the line of engagement of the two large wheels with the surface upon which the vehicle is placed and to the rear of a vertical plane tangent to the forward peripheral portions of said wheels, said extension adapted to contact with the supporting surface to prevent overturning of the vehicle in a forward direction whenever the vehicle is inclined toward an overturning position about the axle for the said large wheels, a foot rest for the vehicle disposed between the forward portions of the wheels and having its weight supporting portion disposed substantially in the vertical plane of the supporting surface engaging portion of said extension.

6. In an invalid chair, the combination with a seat and a foot rest suspended from the seat and disposed forwardly thereof, of a pair of large chair supporting and propelling wheels disposed at the two sides of the chair and rotating about axes disposed substantially in the vertical plane of the forward portion of the chair seat, and an anti-tilting element projecting from frame of the chair and secured thereto at a point adjacent the wheel axle, said point being disposed in a vertical plane to the rear of the vertical plane tangent to the forward peripheral portions of the wheels, said foot rest having its major weight supporting portion disposed to the rear of the last mentioned vertical plane, and a trailer supporting wheel for the chair disposed to the rear of the said pair of wheels.

7. In an invalid chair, the combination with a seat and a foot rest suspended from the seat and disposed forwardly thereof, of a pair of large chair supporting and propelling wheels disposed at the two sides of the chair and rotating about axes disposed substantially in the vertical plane of the forward portion of the chair seat, and an anti-tilting element projecting from frame of the chair and secured thereto at a point adjacent the wheel axles, said point being disposed in a vertical plane to the rear of the vertical plane tangent to the forward peripheral portions of the wheels, said foot rest having its major weight supporting portion disposed to the rear of the last mentioned vertical plane, and a trailer supporting wheel for the chair disposed to the rear of the said pair of wheels, said anti-tilting element comprising a lowermost portion pivoted to and depending from the main body portion thereof and comprising a pair of supporting surface contacting parts, one of said parts being disposed more forwardly than the other part.

8. In a vehicle of the class described, the combination of a chair and vehicle chassis, a pair of supporting wheels, an axle upon which the wheels are mounted, and an anti-tilter therefor, supporting means projecting laterally of said anti-tilters having a slot therein, said slot adapted to receive the axle projected therethrough to provide for adjustment of the anti-tilter, a securing means adjacent the upper end of the anti-tilter adapted to secure the same to the chassis, and a pendant pivoted to the lower end of the anti-tilter.

9. In a vehicle of the class described, the combination of a chair and vehicle chassis, a pair of supporting wheels, and axle upon which the wheels are mounted, and an anti-tilter therefor, supporting means projecting laterally of said anti-tilter intermediate the ends thereof having a slot therein, said slot adapted to receive the axle projected therethrough to provide for adjustment of the anti-tilter, a securing means adjacent the upper end of the anti-tilter adapted to secure the same to the chassis, and a pendant pivoted to the lower end of the anti-tilter, said pendant supporting a pair of rollers in advance of the ground engaging portions of the wheels of the vehicle, and normally out of contact with the supporting surface.

In testimony whereof I hereunto affix my signature this 16th day of April, 1926.

MAYO E. ROE.