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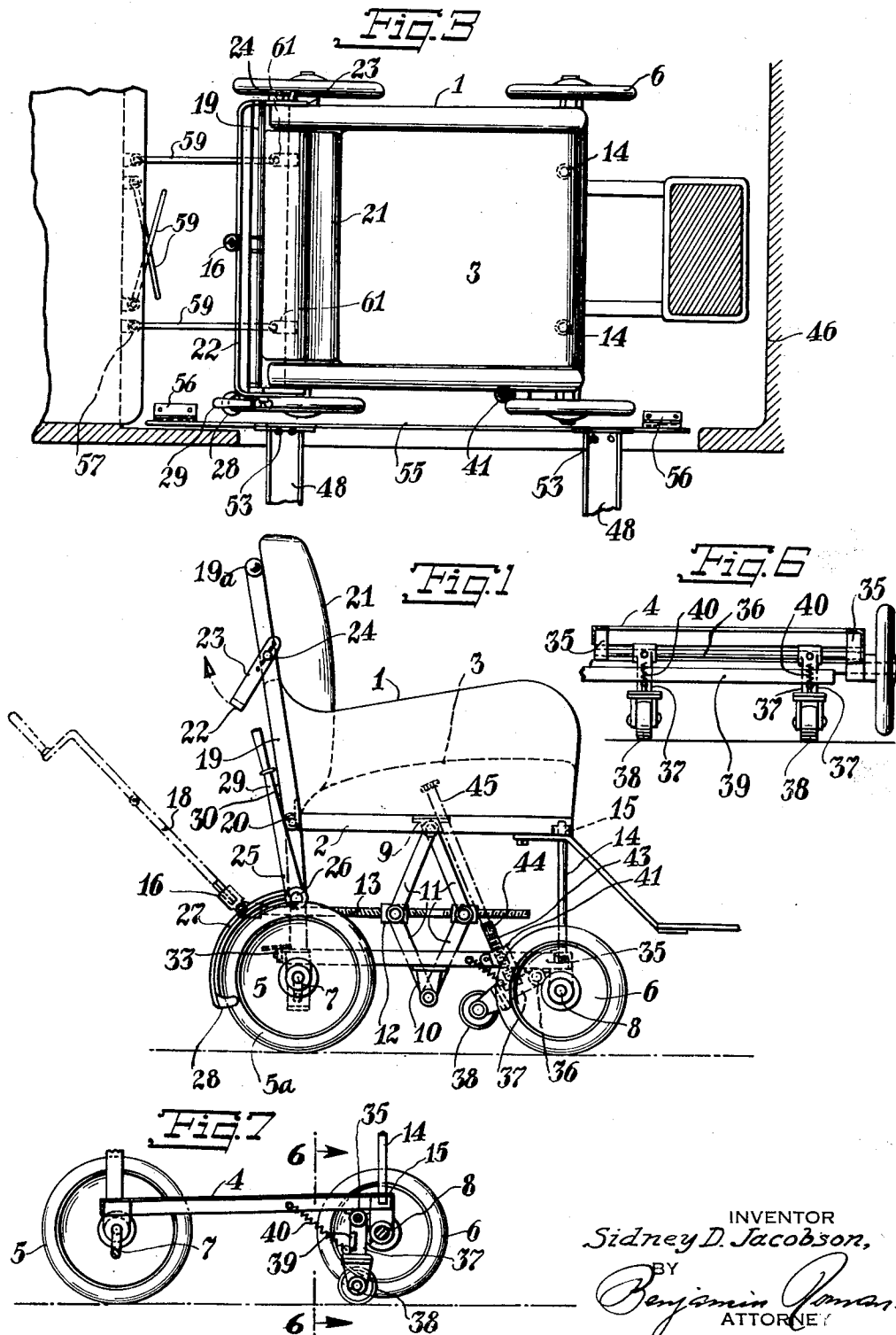
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INVALID CHAIRS

Filed Nov. 5, 1937

2 Sheets-Sheet 1



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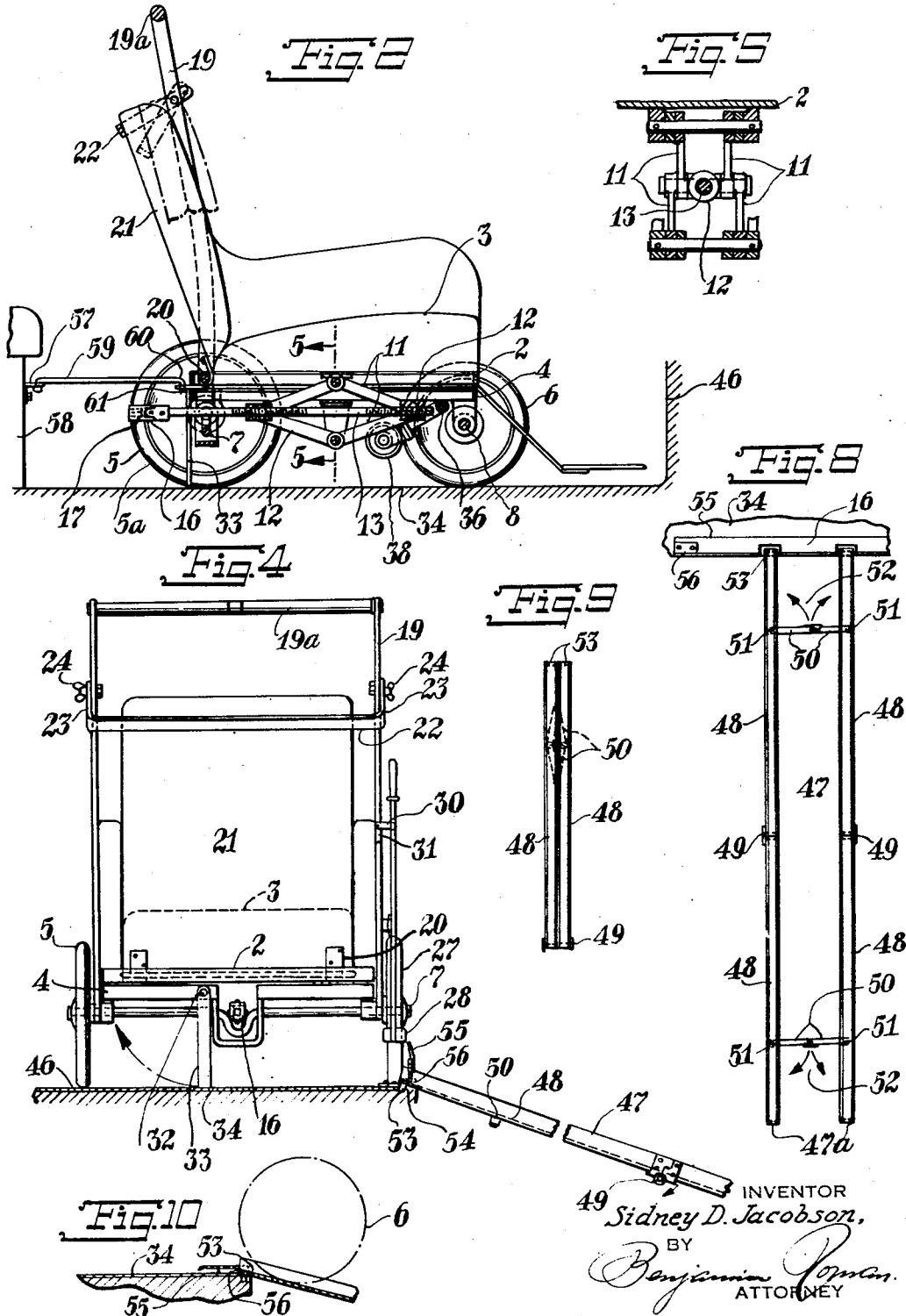
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INVALID CHAIR

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2 Claims. (Cl. 155—30)

This invention relates to a wheeled invalid chair. A serious disadvantage of this kind of chair at the present time is that in modern motor cars, all of which have little head-room, it is impossible to place it in the automobile, due to the low ceilings of the latter, with the result that the invalid either has to forego riding in a car or is obliged to acquire a used old fashioned automobile which is provided with a high ceiling, or he may have to obtain at great cost a specially built automobile. If an invalid chair were made sufficiently low for use in the automobile it would be impracticable for street or home uses, such as eating at a table.

The principal object of my invention, therefore, is to remedy the above mentioned disadvantages, and to provide a wheeled invalid chair which may be lowered for use in the automobile, wherein the invalid may ride with utmost comfort, and yet may be raised for use at a table, making it an improved all-purpose invalid chair, usable within the automobile, in the street, as well as in the home.

Additional objects of the invention are to provide a wheeled invalid chair with means for placing it into and removing it from the automobile, means for elevating and lowering the chair for the same purpose, adjustable means for securing the chair to the automobile, means to prevent accidental rearward tilting of the chair which might occur from lurching of the automobile, means to provide the chair with casters to facilitate proper positioning in the automobile, and means for the lateral retention of the chair in the car.

Other objects and advantages will hereinafter appear.

In the accompanying drawings,

Fig. 1 shows a side elevation of the wheeled invalid chair of the invention, as it appears when in elevated state while outside of the automobile.

Fig. 2 is a side elevation of the chair, showing it as it appears when placed in the automobile.

Fig. 3 is a plan view of the chair shown in Figs. 1, 2.

Fig. 4 is a rear end elevation of the chair, as shown in Fig. 2.

Figs. 5, 6, 7 are views showing details of the wheeled invalid chair.

Fig. 8 is a plan view of the device utilized for the placing of the chair into and removing it from the automobile.

Fig. 9 is a view showing the device illustrated in Fig. 8, as it appears when in collapsed state out of use.

Fig. 10 is a fragmentary view showing parts of the invention.

The wheeled invalid chair 1, Fig. 1, is provided with an upper framing 2 for its seat 3 and a lower framing 4 for carrying the rear wheels 5 and front wheels 6, said wheels being mounted upon axles 7, 8 respectively, which are secured as shown to the framing 4. To fittings 9, 10, secured to the framings 2, 4 respectively are pivoted series of parallelogram levers 11, Figs. 1, 5, that are in turn pivoted to nuts 12, through which is threaded a right-and-left power-screw 13 as shown. Rotation of the screw 13 in one direction causes the nuts 12 to approach each other and operates the levers 11 to elevate the framing 2, while rotating it in an opposite direction operates said parts oppositely to lower the framing 2 as shown in Fig. 2. The framing 2 is guided in its vertical movement by rods 14 secured to frame 4 passing through sockets 15 forming part of the framing 2. As the screw 13 is situated quite low above the ground, Fig. 2, its manipulation is facilitated and rendered convenient by providing its terminal with a universal coupling 16 having a socket 17 adapted to receive a usual operating crank shown by the dash and dot lines 18, Fig. 1. An upright framing 19 secured upon the framing 4 has pivotally joined thereto at 20 a chair-back 21, and a transverse bar 22 is provided with arms 23 that are pivoted to said framing by means of wing-screws 24. When the seat 3 and back 21 are in elevated state, the latter rests against the cross-bar 19a of framing 19, Fig. 1, but when said seat and back are in their lowered condition the latter may be inclined rearwardly and rested against the transverse bar 22, as shown in Fig. 2. As the bar 22 with its arms 23 may be set to various inclinations, by loosening and retightening of the wing screws 24, the chair-back 21 may be thereby conveniently inclined at varying degrees, as illustrated by the dash and dot lines, Fig. 2. The vehicle is braked by means of a lever 25 fulcrumed at 26 to framing 19 having an arm 27 provided with a fork 28 for engaging the tire 5a, and an operating arm 29 is swingable about pivot 26 to apply and release said braking fork 28. A latch 30 pivoted at 31, Fig. 4, to framing 19 may be swung to wedge against the lever-arm 29 to hold it as shown in Fig. 1 to maintain the braking fork 28 in applied state in engagement with the tire 5a, while swinging said latch backwardly out of the path of lever-arm 29, then throwing the latter forwardly, and returning the latch 30 against its rear will maintain the vehicle in unbraked condition, as shown in Fig. 2.

Provision is made in the following manner to prevent possible accidental turning over of the invalid chair rearwardly, about its rear wheels 5. To the rear of the base framing 4 is pivoted at 32 a leg 33, which may be maintained in horizontal inoperative state, as shown in Fig. 4, or it may be swung about its pivots 32 to a vertical disposition in contact with the supporting floor 34, as illustrated by the dash and dot lines. When, therefore, the leg 33 is set to extended operative condition its engagement of the floor 34 will avoid rearward upsetting of the invalid chair, which may be caused by undue backward lurch or a combined rearward and upward thrust upon the forward portion of the vehicle.

The following provision is resorted to for enabling lateral swinging and correct placement of the forward part of the invalid chair, relatively to such narrower compass of movement of its rear part, the requirement of which will be hereinafter seen, such manipulation being normally very difficult, due to the traction of its front wheels 6 with the supporting floor. In hangers 35 secured to the base framing 4 is journaled a shaft 36, on which are keyed legs 37 equipped with universal wheels or casters 38, Fig. 6, and a flat bar 39 is secured to both of said legs, where-with they may be swung about the journals of said shaft to an elevated inoperative disposition, as shown in Fig. 1, or to an operative vertical state in contact with the supporting floor as shown in Fig. 7. Springs 40 joined to the legs 37 and the framing 4 normally maintain them in the inoperative disposition shown in Fig. 1. To the framing 4 is secured a fitting 41 having an inclined tapered bore 42, through which is threaded a force-screw 43 in a direction toward the bar 39, said screw having a socket 44 adapted to receive the keyed terminal of an operating rod 45. When the key-rod 45 is inserted in socket 44 and turned the screw 43 is advanced longitudinally against the bar 39, and the legs 37 are thereby swung downwardly to vertical disposition, whereupon the casters 38 gain the floor, the forward part of the chair is slightly elevated, and its forward wheels 6 are caused to clear the floor. The forward part of the chair may be thereupon swung laterally and freely moved about, by virtue of the castered supporting legs 37, to meet with the above mentioned requirement. When it is desired to restore the front wheels 6 into traction with the floor the rod 45 may be rotated backwardly to retract the screw 43 and permit the springs 40 to elevate the legs 37.

For placing the invalid chair 1 into the automobile 46, there is provided a trackway 47 consisting of two pairs of rails 48 hinged to each other at 49 and held in parallelism by two pairs of links 50, each of which is hinged thereto at 51 and to each other at 52. The terminals of rails 48 are provided with pins 53 adapted to engage socket holes 54 formed in the floor 34 of the automobile, whereby the trackway 47 may be thus disposed operatively in inclined state, Figs. 8, 4, 10, 3, with said pins anchored to the automobile and the opposite terminals 47a of the trackway resting upon the sidewalk. By utilizing this trackway the invalid chair may be pushed thereover, its wheels 5, 6 riding in its channeled rails 48, and the chair may be thereby placed onto the floor 34 of the automobile, as shown in Fig. 2. The trackway 47 may be then collapsed to the compacted condition shown in Fig. 9, by swinging back its links 50 and swinging the pairs

of rails 48 about their hinges 49, and the entire trackway may be then conveniently stored away in the automobile until again required for removal of the invalid chair therefrom.

A flat rail 55 is provided upon the automobile floor 34 along its marginal edge and is held thereto by means of hinges 56, whereby it may be dropped flat against said floor as shown in Fig. 10 or disposed uprightly as shown in Fig. 4. When the invalid chair is ridden over the trackway 47 onto the automobile floor 34 the rail 55 is laid flatly against said floor out of the way, but after the chair is in the car the rail 55 is disposed to upright operative state to guard the chair against accidental tripping off the floor 34. Within the automobile 46, and hinged at 57 to a fixed part 58 thereof, are provided a plurality of pairs of links 59 of varying lengths having hooked ends 60 adapted to interlock with socket holes 61 formed in the framing 4, to thereby anchor the chair against longitudinal movement forwardly or backwardly, as illustrated in Figs. 2, 3.

When it is desired to place the invalid chair within the automobile, it is first lowered from the normal position shown in Fig. 1 to that in Fig. 2, by utilizing the crank 18 to rotate the power-screw 13 through universal coupling 16. Then the trackway 47 is extended and erected in the condition in Fig. 8, in engagement with the edge of the automobile floor, and the invalid chair is ridden thereover and onto the floor 34. The guard rail 55 is then swung to upright operative state about its hinges 56, to prevent accidental tripping of the chair off the floor 34. Then the key rod 45 may be utilized to dispose the castered legs 37 vertically upon the floor, to permit lateral disposition of the chair within the car and to bring its locking socket holes 61 to an accurate alignment with the hooks 60 of a selected pair of links 59, for anchoring the chair to the latter. The key rod 45 may be then rotated backwardly to elevate the legs 37 and restore the front wheels 6 into traction with the floor 34. And finally the chair back 21 may be adjusted by the screws 24 to any desired inclination. In addition the arm leg 33 may be operatively extended to obviate accidental tilting of the chair backwardly, and another pair of the links 59 may be substituted for anchoring the chair, to adjustably position it longitudinally nearer or farther from the windshield, in accordance with the needs of the invalid. The trackway 47 may be then removed, collapsed, and stowed away, whereupon the automobile with the invalid chair therein is then ready for driving.

It will be evident that with all of the above provisions the driving and stopping of the car may be carried on with complete comfort and safety for the invalid, inasmuch as the chair is maintained efficiently against any longitudinal or lateral displacement, and accidental rearward tilting thereof is prevented, under any conditions or sudden jerks or lurching of the car. Also, when the car reaches its destination, the chair and the invalid therein may be as readily and conveniently removed from the automobile, by re-erecting the trackway 47, dropping the guard-rail 55, unhooking the links 59, lifting the leg 33, and disposing the castered legs 37 vertically to aid in the lateral handling of the vehicle and then elevating them again. The chair may be then ridden off the automobile floor 34 and over the inclined tracks 48 to the sidewalk, and the seat

3 may be raised to normal height. The extent of the lowering of the seat 3 and its frame 2 is such that the chair with the invalid can be accommodated in any type of the present day low celled automobile.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

- 10 1. A wheeled invalid chair for placement and use in an automobile and for removal therefrom for other uses, comprising a low lying wheeled frame, a seat frame above said wheeled frame, elevating mechanism comprising a plurality of
15 extensible links having a wide range of adjustability connected to said seat frame, bracket means connecting said links to said wheeled frame below said wheeled frame whereby said seat
20 frame may be brought to a lowered position upon and in contact with said wheeled frame for use in an automobile, and the range of adjustability

of said links providing for raising said seat frame to normal chair height to form a wheeled chair for other uses outside an automobile.

2. A wheeled invalid chair for placement and use in an automobile and for removal therefrom 5 for other uses, comprising a low lying wheeled frame, a seat frame above said wheeled frame, elevating mechanism comprising a plurality of extensible links having a wide range of adjust- 10 ability connected to said seat frame, bracket means connecting said links to said wheeled frame substantially in the plane of the axes of the wheels of said wheeled frame whereby said seat frame may be brought to a lowered position upon and in contact with said wheeled frame 15 for use in an automobile, and the range of adjustability of said links providing for raising said seat frame to normal chair height to form a wheeled chair for other uses outside an auto-
mobile. 20

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