

Jan. 24, 1950

S. DUKE

2,495,573

MOTOR ATTACHMENT FOR WHEEL CHAIRS

Filed Oct. 13, 1948

3 Sheets-Sheet 1

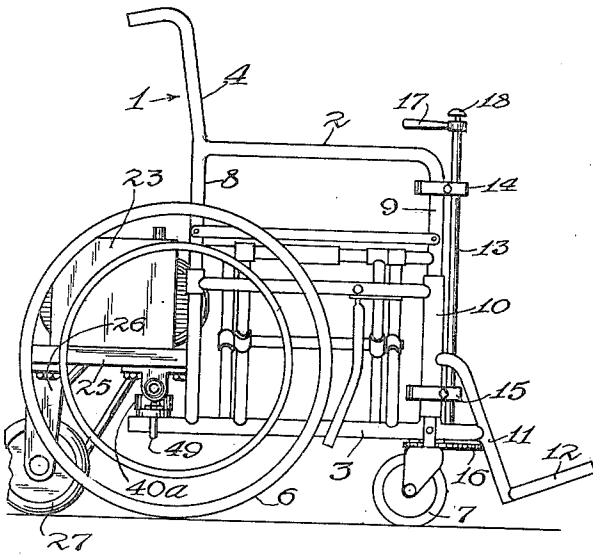


Fig. 1

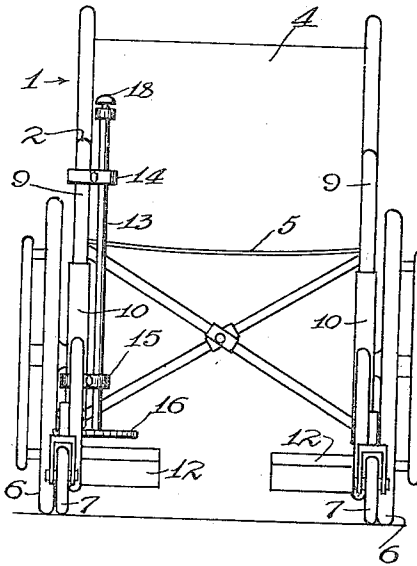


Fig. 2

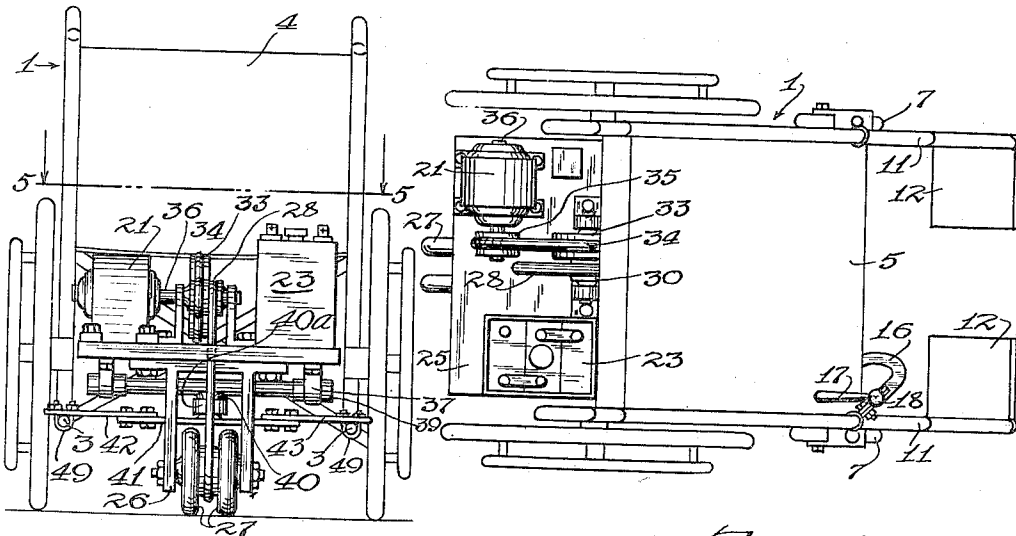


Fig. 3

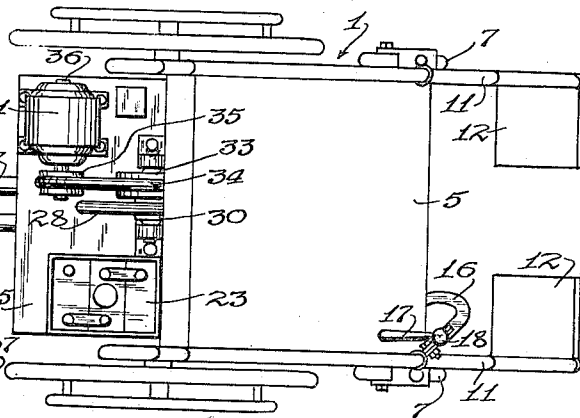


Fig. 4

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3 Sheets-Sheet 2

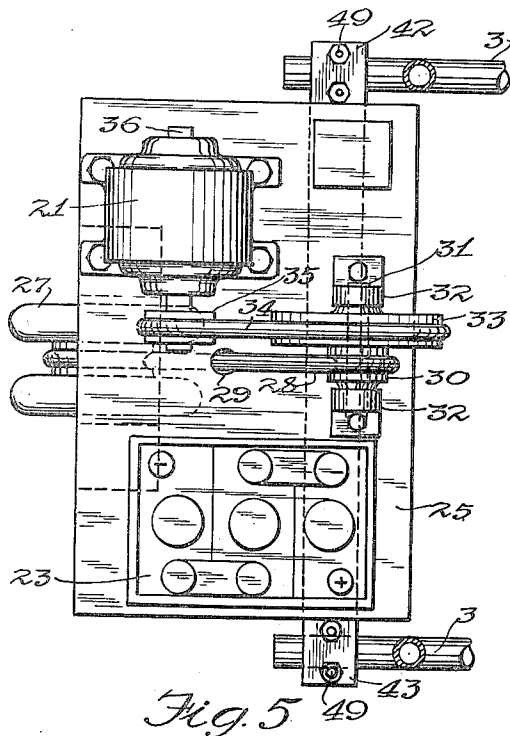


Fig. 5

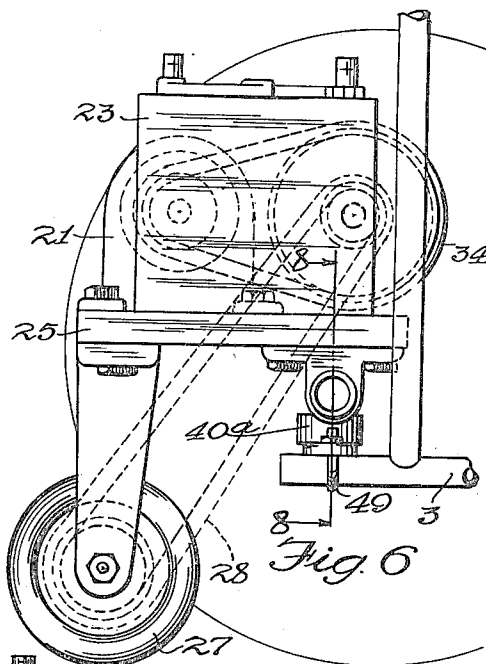


Fig. 6

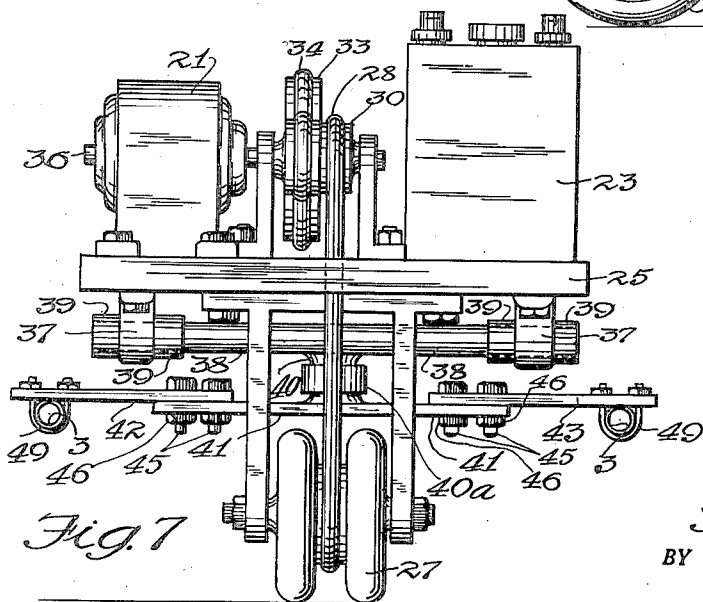


Fig. 7

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3 Sheets-Sheet 3

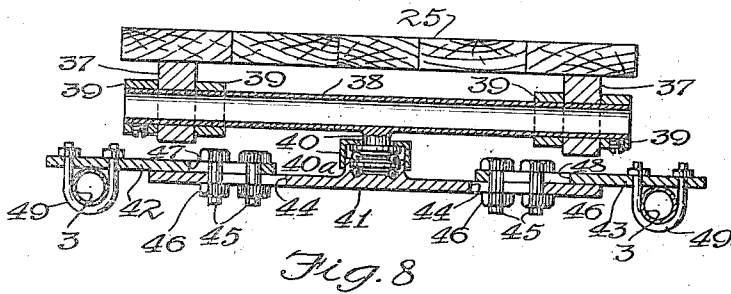


Fig. 8

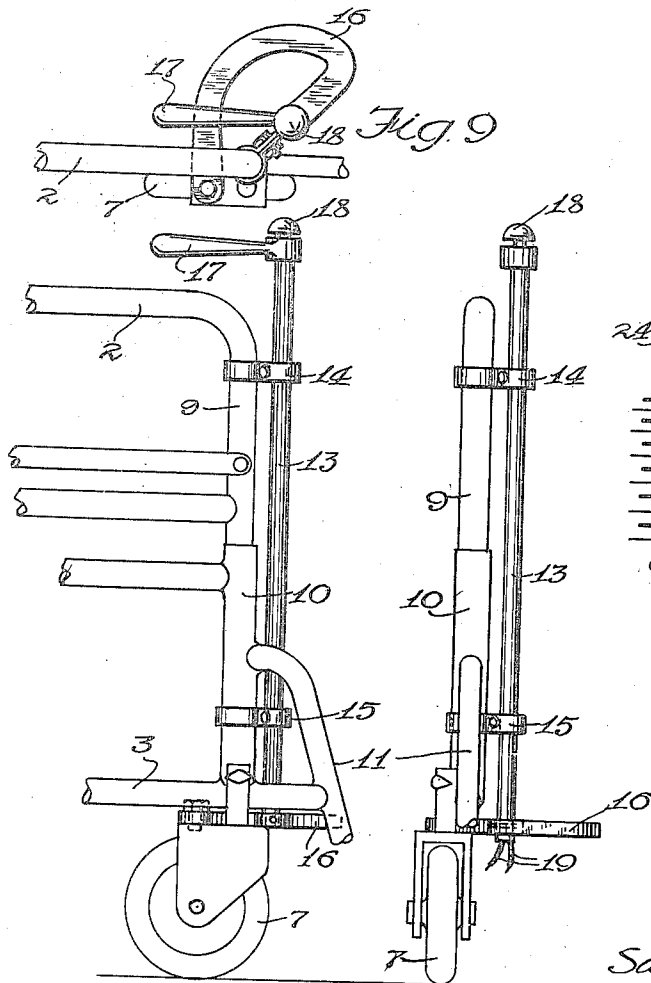


Fig. 10

Fig. 11

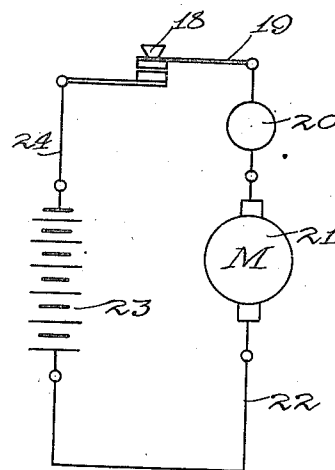


Fig. 12

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UNITED STATES PATENT OFFICE

2,495,573

MOTOR ATTACHMENT FOR WHEEL CHAIRS

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3 Claims. (Cl. 180—15)

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This invention relates to wheel chairs and more particularly to self-propelled wheel chairs. One object is to provide a motor attachment for wheel chairs that is readily applied to and as readily detached from the chair. A further object is to provide a self-propelled wheel chair, motor driven, that is readily started, speed controlled and guided in its movement with one hand providing a truly feather touch control that requires negligible effort on the part of the operator.

A further object is to provide a self-propelled wheel chair having easy riding qualities, that is adapted for indoor or outdoor use and in which the chair, preferably of the folding type, may be collapsed with motor detached and transported in an automobile and instantly assembled for use at the point of destination.

A further object is to provide a self-propelled wheel chair preferably operated by an electric motor serviced by a battery that may be readily charged from the house current. The instant propelling mechanism is designed for ready application to wheel chairs of practically any type but particularly adapted to the chair set forth in my United States Patent No. 2,354,949 granted August 1, 1944.

More specifically my invention resides in the arrangement and combination of parts and in the details of construction described in the specification and particularly pointed out in the appended claims. It is understood that I do not limit myself to the precise embodiment of the invention herewith as various changes may be made within the scope of what is claimed without departing from the spirit of the invention. I intend no limitations other than those imposed by the claims.

In the drawings:

Fig. 1 is a view in side elevation of the instant self-propelled wheel chair.

Fig. 2 is a view of the chair in front elevation.

Fig. 3 is a rear view of the chair shown in Fig. 1.

Fig. 4 is a top plan view of Fig. 1.

Fig. 5 is a plan view, enlarged, of the motor attachment showing its application, taken on the line 5—5 of Fig. 3.

Fig. 6 is a side elevational view of Fig. 5.

Fig. 7 is an end view of Fig. 5.

Fig. 8 is a fragmentary detail vertical sectional view taken through Fig. 6 on the line 8—8.

Fig. 9 is a fragmentary plan view of the starting and steering means and connections.

Fig. 10 is a side elevational view of Fig. 9.

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Fig. 11 is a front view of Fig. 10, and,

Fig. 12 is a diagrammatic view of the electric circuit.

The reference numeral 1 denotes the structure which includes upper and lower frame bars or tubes 2, 3, the back 4, seat 5, the rear wheels 6 and front wheels 7. The upper tubular frame members or chair arms 2 are connected to the lower members 3 by the rear frame bars 8 and front vertical frame bars 9 that telescopically engage the sleeves 10 to which the supports 11 are secured that carry the foot rests 12. A steering post 13 is connected by brackets 14, 15 respectively to a frame bar 9 and sleeve 10, said post 13 connected by link 16 to a front wheel 7, said post at its upper end provided with the operating or steering handle 17.

A control button 18 operatively carried by the post 13 is connected by electrical conductor 19 passing through the post to the starter 20 connected to the motor 21 connected by electrical conductor 22 to the battery 23 connected by the conductor 24 to the button 18 which when manually depressed slightly energizes the starter and when further depressed accelerates the motor. The motor 21 and battery 23 are mounted to the platform 25 having secured thereto the depending bracket 26 that carries the twin type rubber tired traction wheel 27 that is driven by the belt 28 passing through a perforation 29 in the platform to and about the sheave 30 fast upon transmission shaft 31 journaled in brackets 32 carried by the platform, a sheave 33 preferably larger than sheave 30 and also fast upon shaft 31 being connected by drive belt 34 to sheave 35 fast upon the motor shaft 36.

Depending from opposite ends of the platform are brackets 37, 37 that operatively support the rotary shaft 38 retained in adjusted position by the adjustable stop collars 39 on said shaft, said shaft formed with a depending stem 40 centrally disposed and connected by the ball bearing coupling 40a to the central section 41 of the adjustable sectional coupling 41, 42, 43, the section 41 formed near its ends with elongated slots 44 connected by bolts 45 and nuts 46 to the ends of the terminal coupling sections 42 and 43 formed respectively with the elongated slots 47, 48 receiving said bolts. The remote ends of the coupling terminal sections are connected by U-bolts 49 to the chair frame lower side members 3.

In operation the chair occupant may rest his arm upon the right side chair arm 2 while manually grasping the steering handle 17 and with one finger he may gently depress the but-

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ton 18 to start the motor and continue same in operation at the speed desired while guiding the chair, the motor through the connections to the traction wheel 27 impelling the chair over the floor or walk. The coupling sections 41, 42, 43 5 permit the application of the attachment to chairs of different widths and the ball bearing connection 40a and shaft 38 supported for rotary movement permit the attachment to readily follow the floor or walk topography with maximum 10 traction and without imparting appreciable jar or jolt to the chair. The connection of the attachment to the chair is solely by means of the U-bolts 49 engaging the frame bars 3 so that 15 application of the attachment to or detachment of same from the chair is very readily accomplished.

What is claimed is:

1. In a motor attachment for wheel chairs, a platform, a traction wheel supporting said platform, a motor upon said platform operatively 20 connected to said traction wheel, a rotary shaft secured to and depending from said platform, a sectional adjustable coupling, readily removable means for securing said coupling to the wheel 25 chair, a ball bearing connection between said rotary shaft and said coupling, and starting and control means for said motor secured to the chair in proximity to an occupant thereof, said means including a control button.

2. In a motor attachment for wheel chairs having steering means including a steering post and handle therefor, a platform, a traction wheel

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supporting said platform, a motor upon said platform operatively connected to said traction wheel, a rotary shaft secured to and depending from said platform, a coupling comprising central and terminal sections adjustably connected together, connection between said terminal sections and the chair, a ball bearing connection between said rotary shaft and said coupling, and starting and control means for said motor associated with said steering post, said means including a button on said handle.

3. In a motor attachment for wheel chairs, a platform, a traction wheel supporting said platform, a motor upon said platform operatively connected to said traction wheel, a rotary shaft operatively carried by and depending from said platform, a sectional coupling disposed below said rotary shaft, terminal sections of said coupling releasably secured to the chair, ball bearing connection between said rotary shaft and one section of said coupling, and starting and control means for said motor carried by the chair.

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REFERENCES CITED

The following references are of record in the file of this patent:

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