

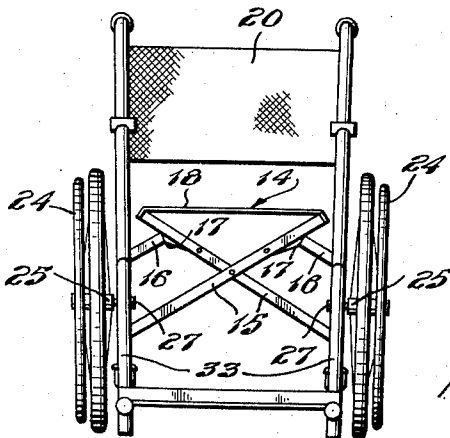
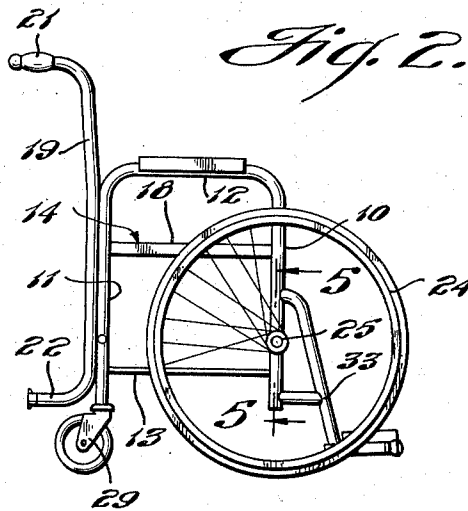
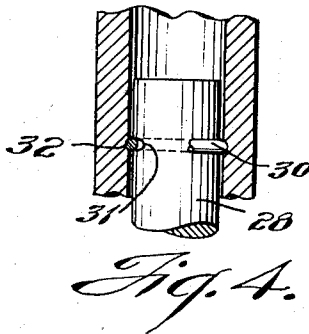
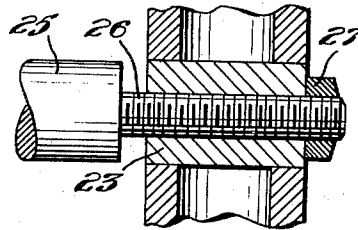
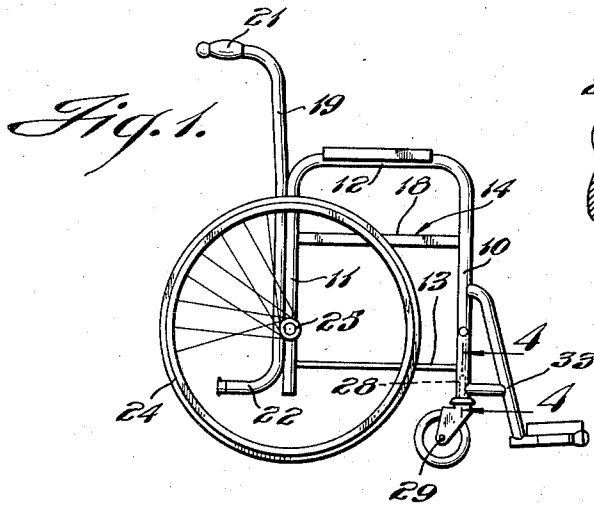
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2,561,616

CONVERTIBLE WHEEL CHAIR

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CONVERTIBLE WHEEL CHAIR

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3 Claims. (Cl. 155-30)

1

This invention relates to a convertible wheel chair. A primary object of the invention is to provide an improved wheel chair wherein the large drive wheels conventionally employed and the caster wheels likewise conventionally employed may be optionally mounted on either the front or rear legs of the chair.

Heretofore wheel chairs have been constructed of two generally prevailing types. In one of these types the large drive wheels are mounted permanently on the rear legs of the chair and the caster wheels mounted on, or adjacent, the front legs of the chair. In the other of these types the relative positions of the drive wheels and the caster wheels are reversed. Because of these conventional arrangements of the drive wheels and caster wheels respectively it has been generally customary for wheel chair manufacturers to manufacture and keep in stock both types. Furthermore, a purchaser of a chair of one type, desiring to alter or shift the position of the drive wheels for any reason, is unable to do so due to the permanent mounting of the wheels on their respective legs.

By means of the present invention it is possible for a wheel chair manufacturer to manufacture a single type or style of wheel chair and keep it in stock. At the time of sale or delivery the drive wheels may be optionally mounted on either the front or back legs and the caster wheels can likewise be optionally mounted on those legs which are not utilized by the drive wheels. In some instances wheel chairs are desirable that have no drive wheels but, instead, four caster wheels, and the present construction permits the wheel chair to be readily converted so as to avoid the use of the drive wheels and use four caster wheels if this is desired. These changes in converting the chair from one style to another can be accomplished either at the time of sale or delivery, or at any time thereafter by the purchaser or user of the chair.

With the foregoing and other objects in view which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figure 1 is a view in side elevation of the improved chair illustrating the chair as having the drive wheels mounted on the rear legs thereof and the caster wheels on the forward legs thereof;

Fig. 2 is a similar view illustrating the wheel chair as having been converted so as to have the drive wheels forwardly;

2

Fig. 3 is a view in front elevation of the chair;

Fig. 4 is a vertical section taken substantially upon the line 4-4 on Fig. 1 to illustrate a detail of construction; and

Fig. 5 is a partial view in vertical section taken substantially upon the line 5-5 on Fig. 1 to illustrate a detail of construction.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, the improved wheel chair consists essentially of two opposed side frames. Each side frame is preferably constructed of hollow tubing bent to provide a vertical front leg 10 and a substantially vertical rear leg 11. These legs are connected at their upper ends by arm rest providing portions indicated at 12. Their lower ends may be connected and braced such as by rungs 13. A collapsible seat 14 connects the side frames to permit them to be moved towards each other to collapse the chair and, while the construction of this collapsible seat may vary greatly, the seat illustrated consists merely of front and rear X braces 15 pivoted at their lower ends to the legs 10 and 11 and pivoted braces 16 which, when the X braces are extended, provide shoulders 17 engageable with the under sides of the upper ends of the X braces to limit their extending movement. A fabric seat 18 connects longitudinally extending bars at the upper ends of the X braces.

Handles 19 are rigidly secured to the rear sides of the rear legs 11 and extend upwardly therefrom. A fabric back rest 20 connects these handles and when the chair is in extended position the back rest is substantially taut to provide a back for the chair. Handle grips 21 may be mounted on the upper ends of these handles and, in the preferred form of construction, the handles incline rearwardly from the upper ends of the rear legs 11 so that the back rest 20 is slightly inclined. The lower ends may be bent rearwardly, as at 22, to provide foot rests by which the chair and the occupant may be tilted in traversing curbs or other inequalities.

In the front and rear legs 10 and 11 there are welded or otherwise rigidly secured internally threaded thimbles 23. These are located at approximately the same elevation intermediate the top and bottom ends of these legs. The drive wheels 24 are equipped with axles 25 having threaded extensions 26 that may be screwed into these thimbles and locked in position therein such as by lock nuts 27. The lower ends of the legs 10 and 11 are left open so as to receive the stems 28 of caster wheels 29. Preferably these

stems are equipped with split expansion rings 30 disposed in grooves 31 on the stems and which may expand into shallow grooves 32 in the bottoms of the legs 10 and 11 so as to releasably hold the caster wheels in their respective legs.

It will be appreciated that any other suitable mounting means may be employed for detachably mounting the drive wheels 24 on either of the legs 10 or 11 and that any other means for detachably mounting the caster wheels 29 on the legs may likewise be employed. 33 indicates a conventional type of foot rest that may be optionally mounted on the front legs 10.

From the above described construction it will be appreciated that the frame and seat of the chair may be constructed of a single design and kept in stock as such. At the time of sale or delivery, if the purchaser desires the drive wheels attached to the front legs 10 and the caster wheels 29 attached to the rear legs 11, the drive wheels may be mounted, using the thimbles 23 on the front legs, and the caster wheels may be inserted in the open lower ends of the rear legs 11. On the other hand, if it is desired to convert the wheel chair to have the drive wheels on the rear legs and the caster wheels on the front legs, the axles of the drive wheels may be detached from the front legs and applied to the rear legs and the caster wheels applied to the open lower ends of the front legs. In this form of construction the seat 18 is preferably constructed perfectly horizontal instead of having a rearward inclination or slope. Consequently, regardless of which position for the drive wheels and castor wheels is selected, the seat will retain its proper position. If it is desired to eliminate the drive wheels and employ four caster wheels, additional caster wheels may be substituted for the drive wheels and inserted in the open lower ends of any of the legs.

Various changes may be made in the details of construction without departing from the spirit and scope of the invention as defined by the appended claims.

We claim:

1. An invalid's chair comprising a pair of similar side frames each of which includes a front leg and a rear leg, means connecting the frames for holding them in spaced relation to each other, each of said legs having an axle-receiving device, said devices being similar in construction and located at the same level with respect to the lower ends of said legs, a pair of drive wheels of the same diameter, an axle projecting from each of the drive wheels, the axle-receiving device of one leg of each side frame detachably receiving one of said axles, said axles being interchangeably mountable in said devices, a pair of caster wheels similar in construction to each other, each caster wheel having a yoke with a stem projecting therefrom, the lower portions of the legs having formations similar to each other and adapted to receive the stems interchangeably, said stems

being detachably secured one in the formation of the other leg of each of said side frames.

2. An invalid's wheel chair comprising a pair of similar side frame each of which includes a front leg and a rear leg, means connecting the frames for holding them in spaced relation to each other, axle-receiving devices on each of the legs intermediate the top and bottom thereof and which are similar in construction to each other, all lying in the same horizontal plane, a pair of drive wheels of the same diameter, an axle projecting from each of the drive wheels, the axle-receiving device on one leg of each side frame detachably mounting one of said axles, a pair of caster wheels similar in construction to each other, each caster wheel having a yoke with a stem thereon, the bottoms of the legs being downwardly open and being formed similarly to each other and adapted to receive the stems, and means detachably securing the stem of a caster wheel in the downwardly opened bottom of the other leg of each of the side frames.

3. An invalid's wheel chair comprising a pair of side frames each of which includes a front leg and a rear leg, means connecting the frames for holding them in a spaced relation to each other, internally threaded thimbles mounted one on each of the legs intermediate the top and bottom thereof, and said thimbles lying in the same horizontal plane, a pair of drive wheels of the same diameter, an axle projecting from each of the drive wheels, said axles having threaded extensions receivable in any of the threaded thimbles and detachably secured one in the threaded thimble of one leg of each side frame, a pair of caster wheels similar in construction to each other, each caster wheel having a yoke with a stem thereon, means at the bottoms of the legs similar in construction to each other adapted to interchangeably receive the stems, and to detachably secure the stems in each of said means, a stem of a caster wheel being secured in the means at the bottom of the other leg of each side frame.

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