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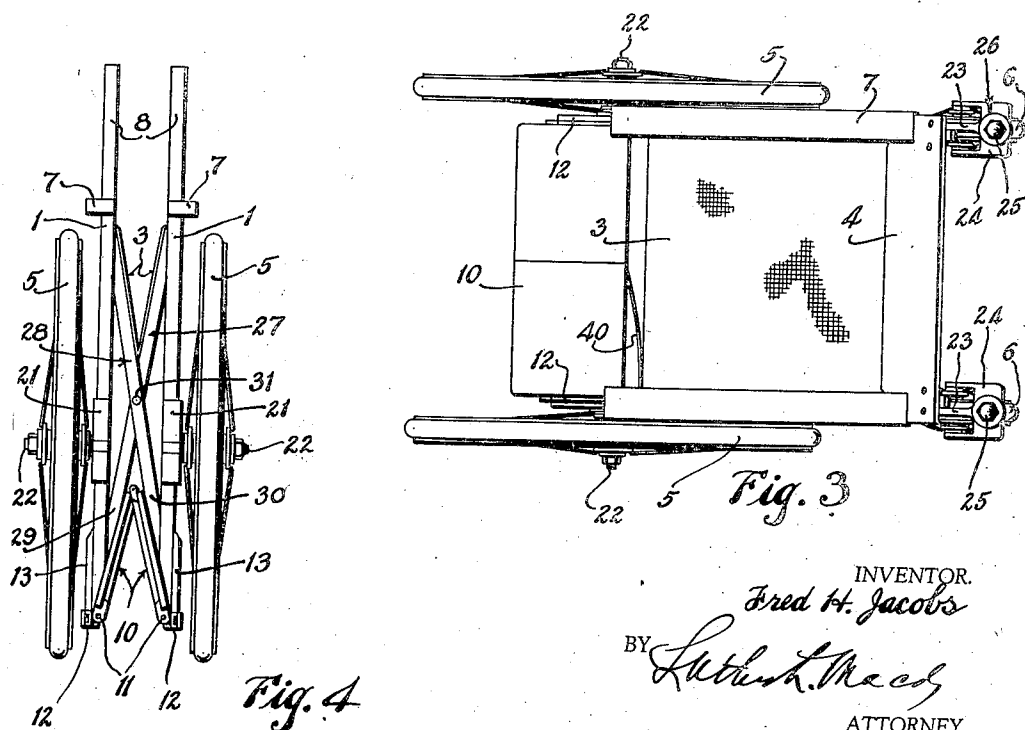
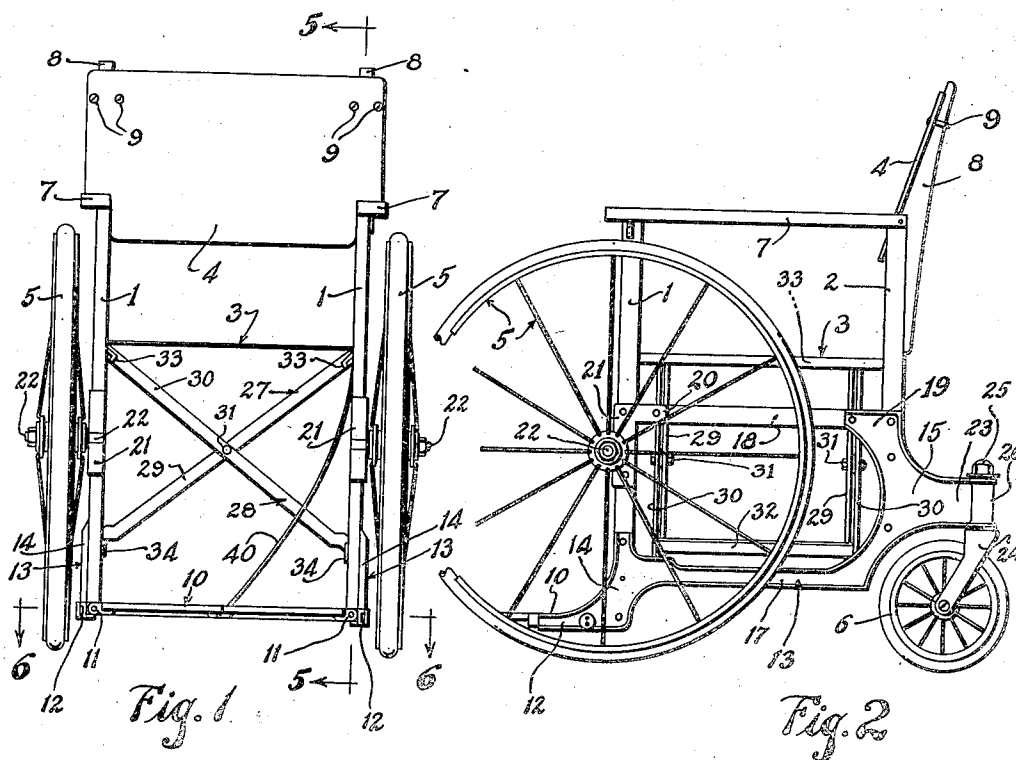
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COLLAPSIBLE CHAIR FOR INVALIDS

Filed July 5, 1935

2 Sheets-Sheet 1



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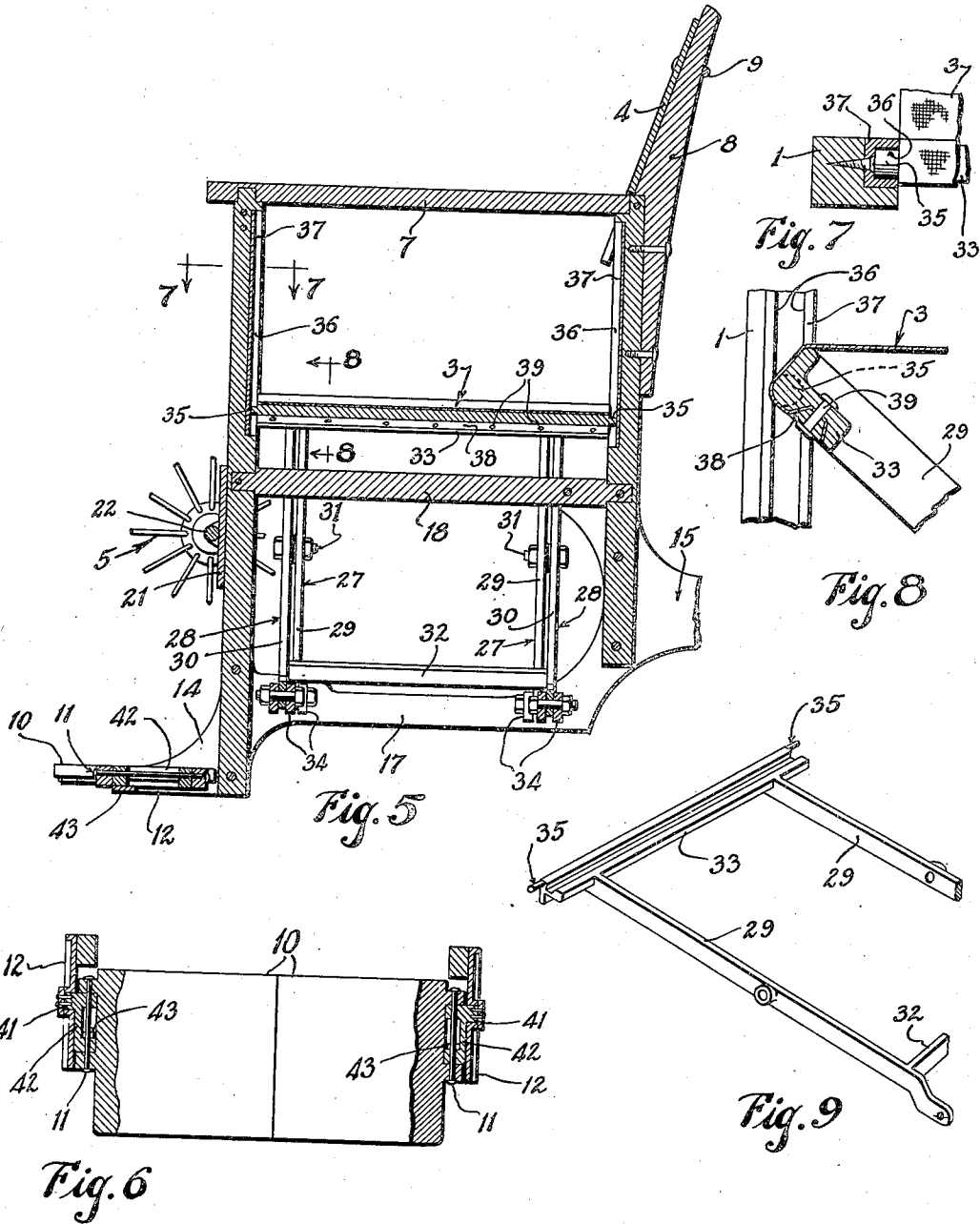
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COLLAPSIBLE CHAIR FOR INVALIDS

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2 Sheets-Sheet 2



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COLLAPSIBLE CHAIR FOR INVALIDS

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2 Claims. (Cl. 155—30)

My invention relates to and has for an object the provision of a durable, simple and efficient wheel chair for use by invalids and adapted to be laterally collapsed at will so as to occupy a minimum amount of space when not in use.

A further object is to provide a collapsible chair having large traction wheels at the front and a pair of independently adjustable pilot wheels at the rear of the chair forming a running gear so arranged as to place the center of gravity far enough toward the rear as to permit an occupant of the chair to bend forward in order to pick articles from the floor without upsetting the chair.

Another object is to provide a footboard disposed high enough above the floor and with its front edge within the peripheries of the traction wheels so as to prevent contact of the footboard with curbs and obstacles on a sidewalk or pavement and thereby enable an occupant to mount the curbs and run over obstructions with facility and ease.

A still further object is to provide a hinged footboard and means readily operable from a point at or near one of the side arms of the chair for collapsing the footboard when the chair is vacant and it is desired to collapse the same.

My invention also comprehends certain improved details of structure which will provide a maximum of rigidity, freedom from excessive wear, extreme comfort, and by the provision of a removable back and the disposition of the seat at an elevation at or about the level of a bed to provide means whereby an invalid may be easily moved upon the chair from a bed, or vice versa, or may recline partially on a bed and partially on the chair seat. Other objects may appear as the description progresses.

In the accompanying drawings I have shown a preferred form of chair, subject to modification, within the scope of the appended claims, without departing from the spirit of my invention.

In said drawings:

Fig. 1 is a front elevation of my improved chair extended for use;

Fig. 2 is a side elevation of the same;

Fig. 3 is a top plan view;

Fig. 4 is a front elevation with the chair laterally collapsed, as when the same is not in use;

Fig. 5 is a sectional elevation of the chair on line 5—5 of Fig. 1;

Fig. 6 is a sectional plan on line 6—6 of Fig. 1;

Fig. 7 is a fragmentary section on line 7—7 of Fig. 5;

Fig. 8 is a fragmentary section on line 8—8 of Fig. 5; and

Fig. 9 is a perspective view typical of the pantograph members.

Briefly described, my improved chair includes a frame embodying front legs or standards 1, 1, rear legs or standards 2, 2, a fabric seat 3, a removable back 4, front traction wheels 5, 5, and pilot wheels 6, 6, arranged substantially as shown in the drawings. At each side of the chair the front and rear legs or standards are connected by and support an arm rest 7, and the rear legs or standards 2 have slightly inclined extensions 8 secured to the upper portions thereof and adapted to removably support the back 4. Preferably the back 4 is formed of stiff material such as wood or metal and has a pair of staples 9, 9, attached thereto adapted to slide over the upper portions of the extensions 8 for holding the back in position and also serving to hold the sides of the chair in extended positions for use.

The front legs or standards 1, 1, are extended downwardly below the lower ends of the rear legs or standards 2, 2, so as to collapsibly support a footboard 10 at a point substantially above the floor or ground and with its front edge within the peripheries of the traction wheels 5, 5. Said footboard is formed of a pair of similar sections hinged together at points intermediate the sides of the chair and at their adjacent ends and additionally hinged at 11 to arms 12 extended forwardly from cast metal members 13 so that the two sections of the footboard may fold upwardly, as shown in Fig. 4, when the chair frame is collapsed and the sides are moved in the direction of each other.

The members 13 are provided at the front corners of the chair with portions 14 which are suitably attached to the legs or standards 1, and rear portions 15 which are attached to the rear legs or standards 2, as shown in Fig. 2. Members 13 on each side of the chair are formed with horizontal rails 17 which together with portions 14 and 15 form rigid frame members on the sides. The front and rear legs or standards on each side of the frame are further cross connected by means of transverse rails 18, the rear ends of which are attached to portions 19 of members 13, while the front ends thereof are attached to arms 20 of fixtures 21 secured to the front legs or standards.

The traction wheels 5, 5, are rotatably mounted on the fixtures 21, 21, on axles 22, 22, which extend outwardly from the fixtures. The pilot

wheels 6, 6, are rotatably mounted on vertical axes on rear extensions 23, 23, formed on the members 13, 13, by means of yokes 24, 24, which have trunnions 25, 25, held in bearings 26, 26, in the members 13, 13. It will thus be noted that each side of the chair is an independent rigid unit including a traction wheel 5 and a pilot wheel 6 having their peripheries tangent to a common horizontal plane with respect to the seat 3. The axis of the wheels 6 is forwardly of the seat while the axis of the pilot wheels is substantially rearwardly of the seat, thereby providing a center of gravity at a point near the transverse plane of the rear standards 2 so as to prevent the tipping of the chair forwardly when an occupant bends forwardly as when picking articles from the floor.

Opposite side frames of the chair are cross connected and braced by means of a pair of pantograph members 27 and 28 of rectangular skeleton form having upright stiles 29, 29, and 30, 30, respectively, which are pivotally connected at intermediate points 31, 31, lower transverse rails 32 and upper transverse rails 33. The lower ends of the upright stiles 29 and 30 in each case are pivotally attached to lugs 34, 34, etc. formed on or rigidly attached to the cast metal fixtures 13, while the upper rails 33 are slidable on the front and rear legs 1 and 2 as shown in Figs. 5 and 8. It will be noted that the upper rails 33 have trunnions 35, 35, at opposite ends thereof which are vertically slidable in grooves 36, 36, formed in metal channelled members 37, 37, attached to adjacent sides of the front and rear legs 1 and 2 of each side frame, so that when the sides of the chair are moved inwardly the upper ends of the braces 27 and 28 may slide upwardly on the legs.

Seat 3 is formed of canvas preferably and has its opposite ends attached to the upper rails 33, 33, of the members 27 and 28, as shown in Fig. 8, the outer face of the rail 33 being grooved to seat a cleat 38, in each case, and the ends of the fabric being clamped in the groove under the cleats and held by means of rivets or bolts 39. Thus as the chair is laterally collapsed the fabric seat 3 will fold inwardly, as shown in Fig. 4, and when extended the fabric will be held taut when the footboard 10 and the back 4 are positioned as shown in Fig. 1. It will be observed that the lower ends of the stiles 29 and 30 of members 27 and 28 are slightly offset outwardly so as to permit the complete folding of said members into a common plane when the chair is collapsed, member 27 being nested within the member 28.

The traction wheels 5 are of sufficient diameter that the peripheries will be disposed adjacent the arms 7 of the chair convenient to an occupant for propelling the chair by turning the wheels 5 by hand and the pilot wheels 6 are of sufficient diameter to readily surmount obstacles in their path and to facilitate the mounting of curbs and the like. The wheels 5 and 6 are provided with ball bearing journals as are also the yoke pins 25 of the pilot wheels.

It will be apparent that when the back 4 is positioned on the rear legs, as shown in Fig. 1 and the footboard 10 is depressed into extended position, the sides of the chair will be held spaced normally apart for use while the seat 3 is held taut. A chain or cord 40 is attached at its lower end to the rear edge of the footboard 10 at a point opposite the central hinge and has its upper end held on one of the legs of the chair so that

when said chair is to be collapsed, the back 4 is first removed and the footboard joint is broken by pulling upwardly on the chain or cord 40.

When the chair is laterally collapsed the sides are moved inwardly in the direction of each other until the legs of each side are almost if not quite in abutting positions, thereby requiring a minimum of space for the collapsed chair. This latter feature is important, particularly in hospitals and sanitariums where a large number of invalid chairs are maintained and renders it possible to store a great many chairs in a closet or in corridors against the walls without occupying too much space.

Footboard 10 may be folded upwardly on a horizontal axis as a unit by means of trunnions 41, 41, formed on the members 42, 42, which hold the hinge pintles 11, 11, as shown in Fig. 6, said trunnions being held in the arms 12, 12. When the footboard is depressed it rests against stops 43, 43, on the arms 12, 12. Thus, the footboard may be folded as shown in Fig. 4 and additionally folded inwardly as seen from the front in said figure on the trunnions so as to rest inwardly of the front legs 1, 1.

What I claim as new and desire to secure by Letters Patent, is:

1. A collapsible chair for invalids comprising a pair of side frames, each having a front leg and a back leg, rigid metal members mounted on said frames and comprising horizontal portions disposed between said legs, upright extensions on said horizontal portions for securing said member to the front and back legs of said frames, foot board supporting portions extending downwardly and then horizontally forward from said members, wheel supporting portions extending rearwardly and horizontally from points intermediate the upper and lower ends of certain of said upright extensions, a foldable footboard carried by said footboard supporting portions, traction wheels mounted on said front legs, wheels carried by said wheel supporting portions and foldable cross sections between said frames.

2. A collapsible chair for invalids comprising a pair of side frames, each having a front leg and a back leg, rigid metal members on said frames having horizontal portions between said legs, upright extensions on said members to which the front legs are secured, similar extensions on said member to which the rear legs are secured, footboard supporting portions extending downwardly and then forwardly from said horizontal portions, a foldable footboard carried by said last-named portions, a pilot wheel supporting portion extending rearwardly from a point intermediate the upper and lower ends of said last-named upright portions, traction wheels mounted on said front legs, connecting means between said side frames permitting the collapse and extension of said frames, means for holding said frames extended for use, said connecting means including a pair of skeleton frames pivotally connected at points intermediate their extremities and pivotally secured to the horizontal portions of said rigid side members at their lower extremities and slidably secured to said side frames at their upper extremities, and vertically disposed guides carried by said side frames and adapted to be engaged by the upper extremities of said skeleton frames.

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