April 21, 1925. 1,534,796

W. A. McCOLLOUGH

ADJUSTABLE CHAIR

Filed Sept. 10, 1923 2 Sheets-Sheet 1

Fig. 1.

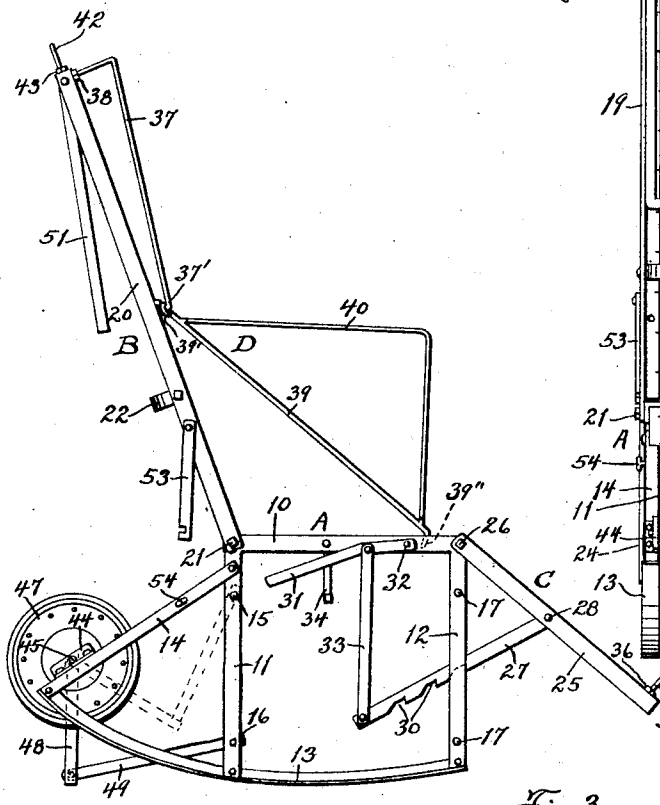


Fig. 2.

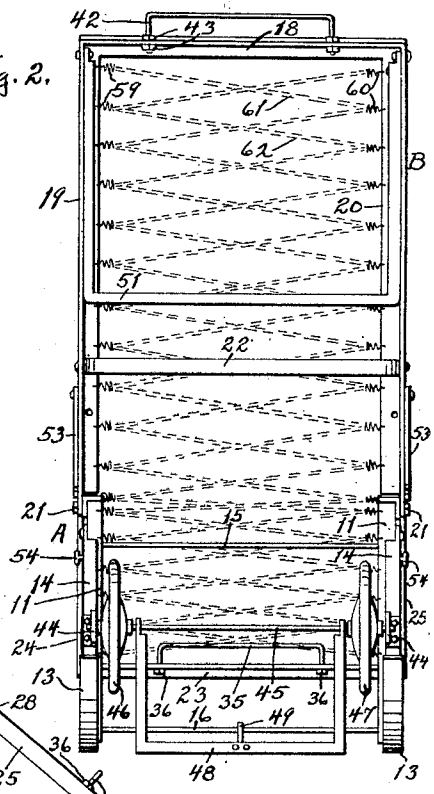
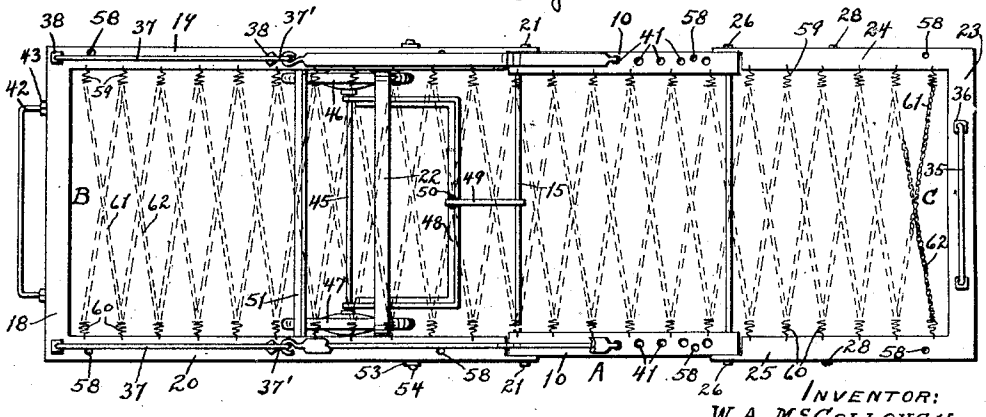


Fig. 3.



INVENTOR:
W. A. McCOLLOUGH
By Earl M. Sinclair
Atty.

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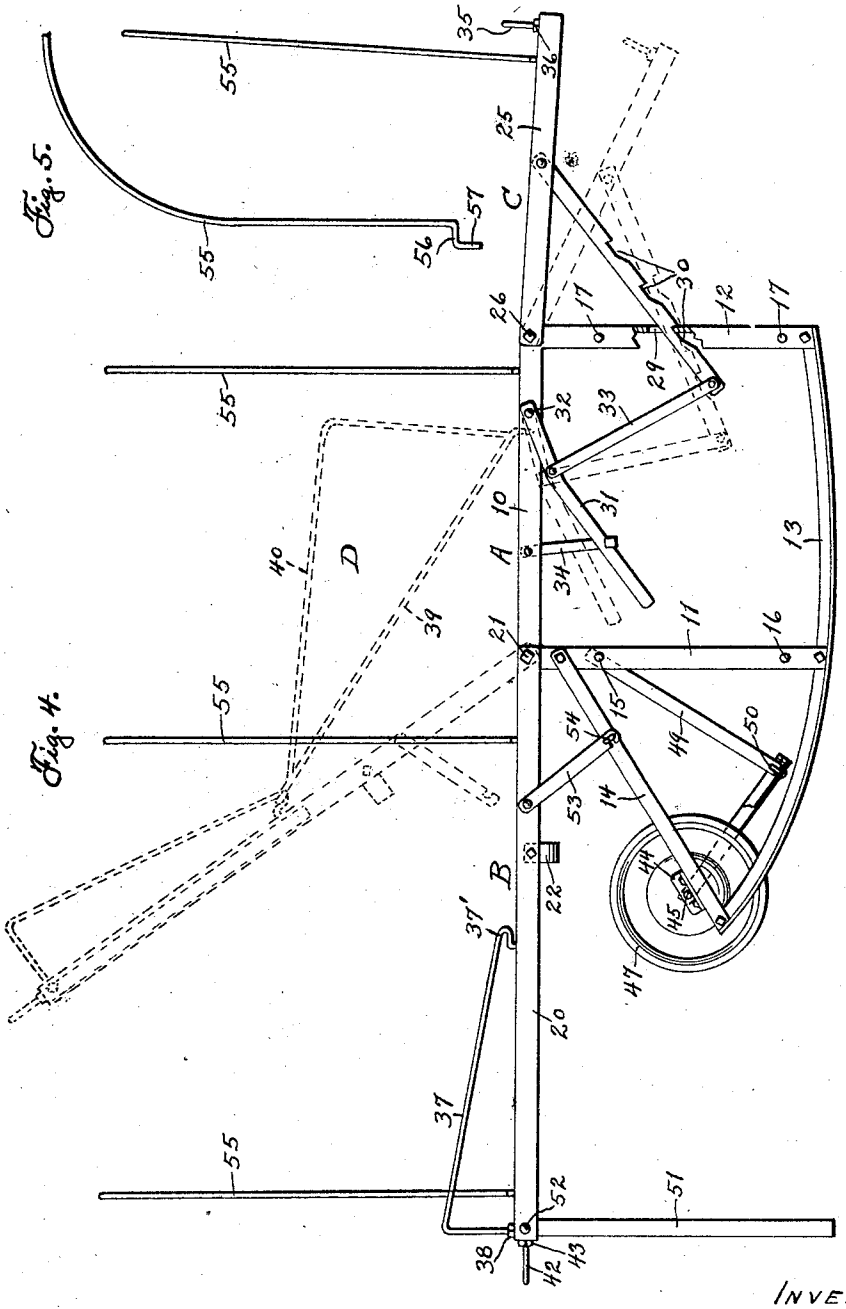
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Fig. 5.

Fig. 4.



INVENTOR:
W. A. McCOLLOUGH
By Earl M. Sinclair
Atty.

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UNITED STATES PATENT OFFICE.

WILLIAM A. McCOLLOUGH, OF WEBSTER CITY, IOWA.

ADJUSTABLE CHAIR.

Application filed September 10, 1923. Serial No. 661,877.

To all whom it may concern:

Be it known that I, WILLIAM A. McCOLLOUGH, a citizen of the United States of America, and resident of Webster City, Hamilton County, Iowa, have invented a new and useful Adjustable Chair, of which the following is a specification.

An object of this invention is to provide an improved construction for a chair which may be employed or used as a rigid reclining chair, a rocking chair, or a couch, and which has various adjustments as to inclination of back and foot supports when used as either type of chair.

A further object of this invention is to provide an improved easy chair which may also be converted into a wheel chair to facilitate transporting a patient therein.

A further object of this invention is to provide improved means for adjusting and releasing a foot support.

A further object of this invention is to provide improved means for adjusting the back of a reclining chair.

A further object of this invention is to provide improved means for supporting the back of an adjustable chair in horizontal position to convert the chair into a couch.

A further object of this invention is to provide a chair having a pair of wheels normally out of contact with the supporting surface, but so arranged that the chair may be tilted bodily to bring said wheels into contact whereby the chair and its occupant may readily be transported from place to place.

A further object of this invention is to provide an adjustable chair of simple and strong construction, and to facilitate the adjustment of the various members and the conversion of the device to its various uses.

With these and other objects in view, my invention consists in the construction, arrangement and combination of elements hereinafter set forth, pointed out in my claims and illustrated by the accompanying drawing, in which—

Figure 1 is a side view illustrating my improved chair arranged for use as a rigid reclining chair. Figure 2 is a rear view of the same. Figure 3 is a plan view showing the device converted into a couch. Figure 4 is a side elevation, on an enlarged scale, illustrating in solid lines the use of the device as a couch and in dotted lines showing it converted into a rocking chair. Figure 5 is a view of a portion of one of the arches used to support a canopy over the couch.

In the construction of the device as shown there are employed three principal members, portions or sections; a body or seat portion A, an adjustable back portion B and an adjustable foot support C, the two latter members being pivotally and adjustably mounted respectively on the rear and forward margins of the body or seat portion A. Each of these sections is composed of angle and flat metal bars, connected by bolts and rivets, and some round rods also are employed.

The main or seat section A is composed of two lengths of angle iron arranged in parallel position and bent to yoke form to produce spaced side bars 10 in substantially horizontal position, and legs 11, 12 extending downwardly therefrom. Fixed to the lower ends of the pairs of legs, and extending rearwardly beyond the rear legs 11, are curved rockers 13, which may well be formed of T-bars, and braces 14 are fixed rigidly to upper end portions of the legs 11 and extend rearwardly and downwardly and are rigidly connected to rear end portions of said rocker bars. The legs 11—11 are connected transversely by an upper cross rod 15 and by a lower cross rod 16, and the legs 12—12 are similarly connected by upper and lower cross-rods 17.

The back portion B is formed of an angle iron bent to yoke shape to produce a top bar 18 and side bars 19, 20, and the outer flanges of said side bars overlap, at their lower ends, the side bars 10 of the seat frame, and are pivotally connected thereto by means of bolts 21. The side bars 19, 20 of the back frame preferably are rigidly connected transversely, between their ends, by means of a rearwardly or downwardly arched truss brace 22, as said back section is relatively long as compared with the other sections.

The foot support C is composed of a single length of angle iron bent to yoke form or U-shape to produce a lower cross bar 23 and side bars 24, 25, and the outer flanges of said side bars overlap, at their upper ends, the side bars 10 of the seat frame, and are pivotally connected thereto by means of bolts 26. Adjustable braces 27, two in number, are pivotally connected by bolts or rivets 28 to intermediate portions of the side bars 24, 25 and extend rearwardly and down-

wardly through slots 29 formed vertically in the forward flanges of the legs 12 of the seat frame, (see Fig. 4). The adjustable braces 27 are formed with a series of notches 30 by means of which they have adjustable connection with the legs 12 at the lower ends of the notches 29, whereby the foot support C may be variously adjusted in inclined positions. Releasing levers 31 are pivoted at their forward ends by rivets 32 on the outer faces of the side bars 10 of the seat frame, and are pivotally connected, intermediate of their ends, to rear ends of the adjustable braces 27 by means of links 33. Upward draft on the rear ends of the levers 31, as by a patient or other person, has the effect of raising the rear ends of the adjustable braces 27 so that the notches 30 are released from holding engagement with the slotted legs 12, whereupon the leg and foot support C is free to fall by gravity to substantially vertical position against the front of the seat frame. Downward movement of the levers 31 is limited by stop hooks 34 depending from the side bars 10 of the seat frame. An arched foot rod 35 has its ends extended through the upper flange of the cross-rod 23 of the foot support C, and said rod is threaded at its ends and has lock nuts 36 mounted thereon.

Arched side rods 37 are mounted on the forward faces of the side bars 19, 20 of the back frame B, have their ends threaded and extended through the forward flanges of said bars, and held by lock nuts 38. The arched side rods 37 terminate at their lower ends in loops 37'. Arms D for the chair are composed of rods 39 and bars 40, the latter being bent to substantially right-angled shape and the rods 39 are secured thereto to form the hypotenuses of such right angles. The arms D serve not only as arm rests for the occupant of the chair, but also as a means for adjusting and holding the back member B in various inclined positions relative to the seat A. The rods 39 extend at their ends beyond the ends of the bars 40, at their upper ends being formed with outturned hooks 39' adapted to engage in the loops 37' of the side rods, and at their lower ends being formed with downturned studs 39'' adapted to engage selectively in a series of holes 41 formed in longitudinally spaced relation in the side bars 10 of the seat frame. Two of the positions which the back member B may assume are illustrated in Figures 1 and 4, and others are possible dependent upon the number and spacing of the holes 41 and the engagement of the lugs 39'' therein, it being understood that the arms D on opposite sides of the chair must occupy similar positions at a given time in order to hold the back member B in correct position. An arched top rod 42 is mounted on the cross-bar 18 of the back frame B, has its ends threaded and extended through the upper flange of said bar and held by lock nuts 43.

Brackets 44 are fixed to the upper or rear faces of the rigid braces 14 and a cross-rod 45 is carried by said brackets, near the rear ends of said braces. Wheels 46, 47 are pivotally mounted on end portions of the rod 45, and are adapted for engagement with the supporting surface at times for transporting the chair and its occupant if any. A yoke 48 is formed of an angle bar and has its ends pivoted on the rod 45 adjacent and between the wheels 46, 47, thus preventing inward movement of the wheels on the rod. The closed end of the yoke 48 is adapted to depend from the rod 45 at times, as shown in Figure 1, into contact with the supporting surface, to prevent rocking movement of the chair on the rockers 13, thus converting it into a rigid chair. The yoke 48 is held in this position by means of a latch rod 49, pivoted on an eye 50 (Fig. 4) carried by the central portion of the yoke, said latch rod being notched at its free end for engagement with the lower cross-rod 16 at the rear of the seat frame. At other times the notched latch rod 49 may be caused to engage the upper cross-rod 15 of the seat frame, as shown in Figure 4 and by dotted lines in Figure 1, thus raising the yoke 48 from contact with the supporting surface and converting the device into a rocking chair. In the former position the wheels 46, 47 are positively supported in spaced relation to the supporting surface, and in the latter position the balance of the chair is such that they are normally above the supporting surface. An attendant, however, by grasping the upper portion of the back member B, may tip the chair rearwardly until the wheels 46, 47 contact the supporting surface, and balancing on said wheels, the chair and occupant may be easily transported from place to place thereon.

At times the device may be converted into a couch by placing the back member B in horizontal position as a continuation of the seat, as shown in Figure 4 in solid lines. At such times the foot support C may also be placed in substantially horizontal position as shown if desired, the last notch 30 of the braces 27 being employed for its support in this position. The free end of the back member B is supported by means of a yoke 51 formed of angle iron bar, having the ends of its legs pivoted by bolts 52 or rivets to the side bars 20 near the upper cross bar 18. The legs of the yoke 51 are of substantially the same length as the legs 11, 12 of the seat frame, and the closed end of the yoke is adapted to contact the supporting surface and form a support for the head end of the couch. Latch bars 53

are pivoted on the side bars 19, 20 and are notched at their free ends for engagement with studs 54 carried by the rigid braces 14, thus lending rigidity to the device when used as a couch, and preventing accidental disarrangement of the adjustment as such. When the yoke 51 is not employed as a support for one end of the couch, it may be folded within and practically hidden by the angle bars composing the side bars 19, 20 of the back member B, it being shown in Figure 1 as moved nearly to such position. When the device is converted into a couch the arms D preferably are entirely removed, by first disengaging the lugs 39'' and then releasing the hooks 39' from the loops 37' by outward movement of the arm through an arc.

I have provided means for supporting a canopy, of canvas or netting, over the device when converted into a couch. Such supporting means comprises a plurality of arches 55 (Fig. 4 and Fig. 5), in this instance four in number. Each arch 55 has its end portions bent outwardly to form feet 56 and then turned downwardly again to form lugs 57 adapted to engage in holes 58 (Fig. 3) formed in the side bars 10, 10, 19, 20, 24 and 25 of the respective frames. The feet 56 rest on the horizontal flanges of the side bars and the arches are held in upright position across the couch, in spaced relation to each other.

It will be noted the three members, A, B and C, form a frame of three sections, which may be arranged in three different planes or in substantially the same plane, said frame being closed at its sides by the side bars 10, 10, 19, 20, 24 and 25 and at its ends by the top bar 18 and the bottom bar 23. Any suitable type of flexible or resilient supporting means or bed bottom may be provided for the frame thus formed, which supporting means or bed bottom preferably is continuous from end to end of the frame and may be flexed at the joints between the sections of the device. In this instance I have illustrated for this purpose a plurality of coil springs 59, 60 arranged at opposite sides of the frame, being secured to the various side bars as by hooking their ends through small holes in the inturned flanges of said bars. Two chains, 61, 62, are employed to connect the springs 59, 60 transversely of the bed or chair on inclined lines, each chain having one end connected to the first spring on one side, extending across to the second spring on the opposite side, and thence alternately on inclined lines to the opposite end of the frame. The inner ends of the springs 59 and 60 may be hooked into links of the chains 61, 62. By this means a comfortable resilient support is provided, which is of uniform resilience in all parts and yields readily at any position where weight is applied. The yielding support or bed bottom and frames may be covered by any suitable material, such as a pad or light mattress, and the same is held against undue slippage by the arched rods 35, 39 and may be tied to the arched rod 42 at the top.

I claim as my invention—

1. An adjustable and convertible chair, comprising a seat frame, rockers on and extending rearwardly from said seat frame; a back member pivotally connected with said seat frame, means for adjustably holding said back member in inclined relation to said seat frame, a foot support pivotally connected to the forward portion of said seat frame, means for adjustably holding said foot support in inclined relation to said seat frame, wheels pivotally mounted on the rear portion of said seat frame and normally out of contact with the supporting surface, a yoke pivoted on said seat frame adjacent said wheels, the lower end of said yoke adapted for contact with the supporting surface at times, and means to hold said yoke in adjusted position.

2. An adjustable chair, comprising a seat frame, a foot support pivotally connected with the forward portion of said seat frame, notched braces pivoted at one end on said foot support and adapted for adjustable connection with said seat frame, levers suitably fulcrumed on said seat frame and links pivoted to said levers and having pivotal connections with the free ends of said notched braces, whereby the latter are released from their holding position by oscillation of said levers.

3. An adjustable chair, comprising a seat frame, a back member pivotally connected therewith, loops carried by said back member, and removable arm rests each having a substantially horizontal member and an inclined member rigidly connected therewith and formed at its upper end with a hook adapted for engagement with one of said loops, said seat frame being formed with series of holes the inclined members of said arm rests being formed at their forward ends with vertical studs adapted for selective engagement in said holes.

4. An adjustable chair, comprising a seat frame, a back member pivotally connected therewith, the side rails of said back member being composed of inwardly facing angle bars, and a yoke formed of angle bars pivoted at the upper end of said back member, the lower end of said yoke being adapted for engagement with the supporting surface at times to hold said back member in substantially horizontal position, said yoke being foldable at other times within the angles of the side bars of said back member.

5. An adjustable and convertible chair, comprising a seat frame formed of spaced

angle bars bent to yoke form whereby spaced side rails and downwardly extending legs are provided, rods transversely connecting said legs in pairs, rockers rigidly mounted on and extending rearwardly from said legs, rigid braces connecting upper ends of the rear legs with rear ends of said rockers, a cross-rod rigidly connecting the rear end portions of said rigid braces, wheels journaled on said cross-rod and adapted for contact with the supporting surface at times, a yoke pivoted on said cross-rod between said wheels, the lower end of said yoke being adapted for contact with the supporting surface at times to prevent rocking on said rockers, and a notched latch bar pivoted on said yoke and adapted for selective engagement with the rods connecting rear legs of said seat frame.

Signed at Webster City, in the county of Hamilton and State of Iowa, this 5th day of July, 1923.

WILLIAM A. McCOLLOUGH.