Feb. 13, 1940. H. D. CROY 2,190,401

CHAIR

Filed Feb. 21, 1939 2 Sheets-Sheet 1

Fig. 1.

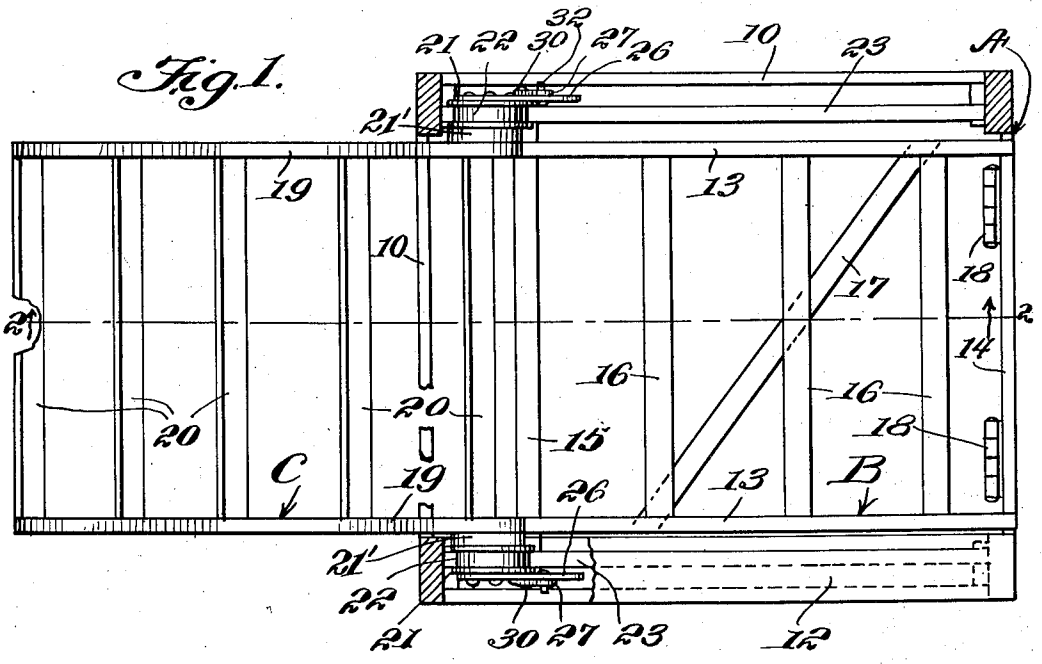


Fig. 2.

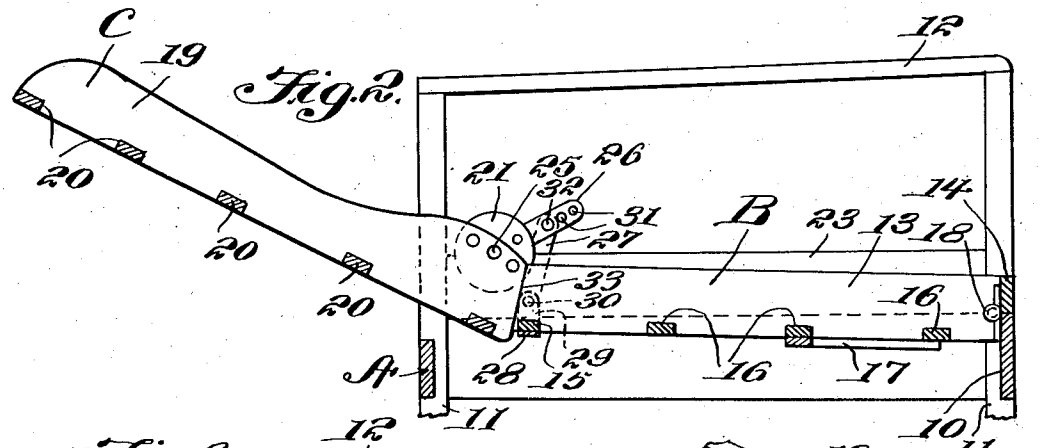


Fig. 3.

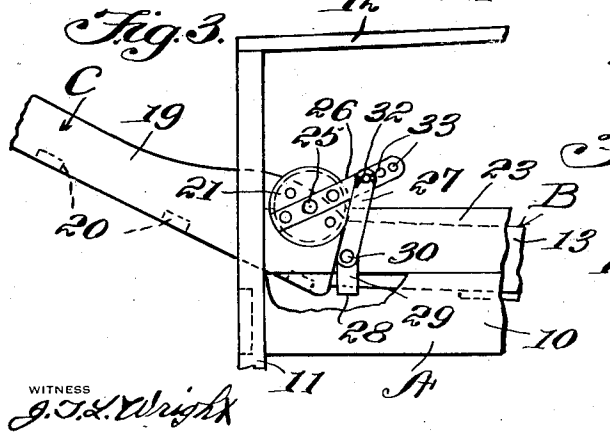
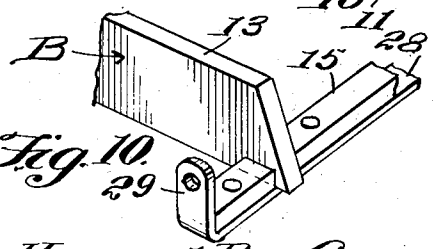


Fig. 10.



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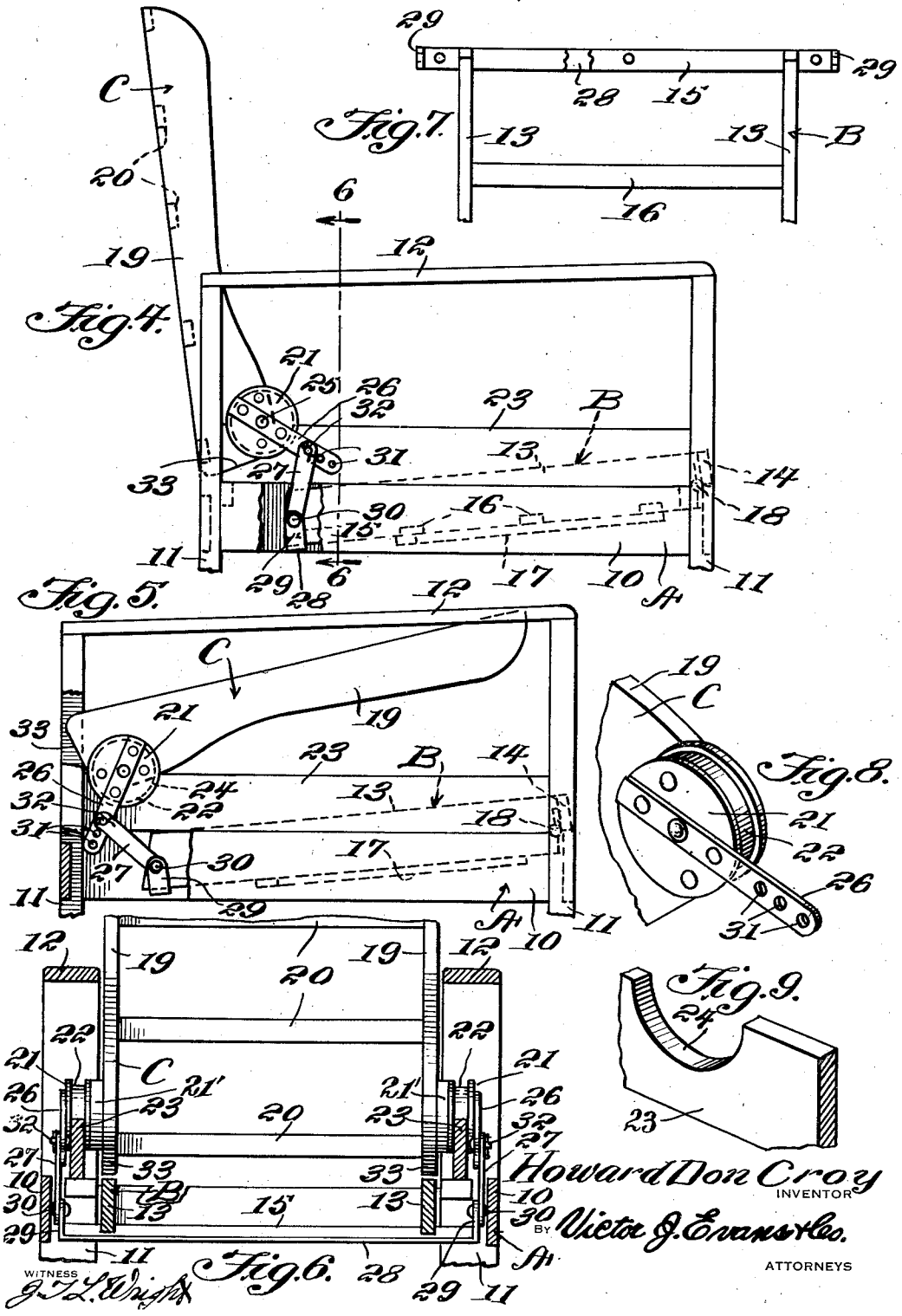
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CHAIR

Filed Feb. 21, 1939 2 Sheets-Sheet 2



Patented Feb. 13, 1940

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UNITED STATES PATENT OFFICE

2,190,401

CHAIR

Howard Don Croy, Marshall, Mich.

Application February 21, 1939, Serial No. 257,759

5 Claims. (Cl. 155—116)

The invention relates to a chair and more especially to an adjustable reclining chair or the like.

The primary object of the invention is the provision of a chair of this character, wherein the seat and back of the same are susceptible of adjustment for converting the chair for lounging purposes, the adjustment being automatically had, particularly when an occupant is seated or using the chair.

Another object of the invention is the provision of a chair of this character, wherein the seat thereof is supported for vertical swinging movement while the back is susceptible of vertical swinging movement, these being interconnected in a manner to assure automatic adjustment of the chair and the sustaining of the seat and back in the selected adjusted position, the adjustment being for comfort to an occupant of the chair.

Another object of the invention is the provision of a chair of this character, wherein the back is susceptible of a wide range of adjustment and can be brought into a position to render the chair compact for the easy handling thereof, particularly when moving the same from one locality to another and also the seat of the chair in conjunction with the back will be automatically adjusted to suit an occupant for lounging or otherwise.

A still further object of the invention is the provision of a chair of this character, wherein on the automatic adjustment thereof the seat will not be protruded from the supporting frame of such chair and thereby avoiding discomfort on the occupancy of the same.

A still further object of the invention is the provision of a chair of this character, wherein the back and seat cooperate with each other in a manner to assure easy adjustment without excessive labor on the part of the user of the chair and for the automatic adjustment of both the seat and the back.

A still further object of the invention is the provision of a chair of this character, which is simple in its construction, thoroughly reliable and efficient in operation, sturdy in its setup, being strong and durable, and inexpensive to manufacture.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings, which disclose the preferred embodiment of the invention and pointed out in the claims hereunto appended.

In the accompanying drawings:

Figure 1 is a plan view partly in section of a chair constructed in accordance with the invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1 looking in the direction of the arrows.

Figure 3 is a fragmentary side elevation.

Figure 4 is a view similar to Figure 3 showing the back and the seat of the chair in a different adjusted position.

Figure 5 is a view similar to Figure 4 showing a further adjustment of the seat and back.

Figure 6 is a sectional view taken on the line 6—6 of Figure 4 looking in the direction of the arrows.

Figure 7 is a fragmentary plan view of a portion of the seat.

Figure 8 is a perspective view of one of the connections between the seat and the back of the chair.

Figure 9 is a fragmentary perspective view of a bearing socket for such connection shown in Figure 8.

Figure 10 is a fragmentary perspective view of one portion of the seat section of the chair.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, the chair constituting the present invention comprises a stationary main frame A, an adjustable seat B and an adjustable back C, respectively. The main frame A is, of course, portable for changing the chair from one locality to another and also for transportation purposes. This main frame A involves a foundation framing 10, in this instance provided with legs 11 and side arms 12, respectively.

The adjustable seat B includes opposite side rails 13, a front rail 14, a rear cross slat 15, a plurality of intermediate cross slats 16 and a brace 17 diagonally disposed to the latter. The front rail 14 through hinges 18 connected with the framing 10 at the front thereof and with the said rail renders the said seat B vertically swingable within the framing 10, the front lower corners of the side rails 13 being suitably notched to clear the rail 10 in the movement of the said seat. This seat B is cushioned or otherwise built for comfort to an occupant thereof, the cushioning and upholstery of such seat being not shown.

The back C comprises the side pieces 19 and cross slats or braces 20 fixed thereto. This back C can be cushioned or otherwise built for comfort, the cushioning and upholstery thereof being

not shown. Fixed to the side pieces 19 of the back C adjacent to the lowermost ends thereof at the outer side of the same are disk-like wheels 21, each being peripherally channeled or grooved at 22, while formed in the side bars 23 fixed in the framing 10 and adjacent to the rear end of said framing are substantially half circular bearing sockets 24 for accommodating the wheels 21, the latter being turnably interfitted with the said side bars 23 by the peripheral channels or grooves 22 to avoid lateral displacement of the said wheels 21 when engaged in the bearing notches 24 therefor. These wheels 21 are fixed spaced from the side pieces 19, the spacers for the said wheels being indicated at 21' while the rails at 23 are socketed at 24 for the rotatable seating of the wheels 21 in these sockets so that the seat back will swing vertically.

The wheels carry crank arms 26 rigid therewith and to which are pivotally connected links 27, these being also pivotally connected to a hanger yoke 28 fixed to the under side of the seat B at its rear end. The hanger yoke 28 at opposite ends is formed with upstanding ears 29 for the pivotal connection at 30 therewith of the links 27. The crank arms 26 are provided with spaced holes 31 selectively engageable by the separate pivots 32 for the adjustable pivotal connection of the links 27 with said arms.

On the lowering of the seat B, the back C is raised automatically and vice versa. When the back C is pressed upon to bring it to a reclining position, the seat B automatically raises, the automatic action for the raising of the back C being had by depressing the seat B.

By adjustment of the links 27 through the selective pivotal connection with the crank arms 26, the throw of the seat and back of the chair can be varied.

The side rails 13 of the seat B at their rear ends constitute abutments for the ends 33 next thereto of the side pieces 19 of the back C so as to limit the reclining disposition of the said back C under automatic adjustment of both the seat and the back.

The back C counterbalances the seat B and vice versa, particularly on the occupancy of the chair.

When the chair is occupied and the occupant is seated on the seat B, the back automatically rises until meeting the back of the occupant and by pressure of the back of the occupant on this back C, the latter can be brought to the desired reclining position and thus automatic adjustment of the chair takes place.

What is claimed is:

1. In a chair, a vertically swingable seat, a vertically swingable back, turning wheels supported adjacent the juncture of the seat and back and having fixed connection with said back, crank arms fixed with the wheels and having linkage connection with said seat, and means for adjustably connecting the linkage with said crank arms.

2. In a chair, a vertically swingable seat a vertically swingable back, turning wheels supported adjacent the juncture of the seat and back and having fixed connection with said back, crank arms fixed with the wheels and having linkage connection with said seat, means for adjustably connecting the linkage with said crank arms, and a supporting frame swingably carrying the seat and having bearing surfaces supporting the said wheels.

3. In a chair, a vertically swingable seat, a vertically swingable back, turning wheels supported adjacent the juncture of the seat and back and having fixed connection with said back, crank arms fixed with the wheels and having linkage connection with said seat, means for adjustably connecting the linkage with said crank arms, a supporting frame swingably carrying the seat and having bearing surfaces supporting the said wheels, and side arms formed with the supporting frame and carried above the swinging seat.

4. In a chair, a vertically swingable seat a vertically swingable back, turning wheels supported adjacent the juncture of the seat and back and having fixed connection with said back, crank arms fixed with the wheels and having linkage connection with said seat, means for adjustably connecting the linkage with said crank arms, a supporting frame swingably carrying the seat and having bearing surfaces supporting the said wheels, and side arms formed with the supporting frame and carried above the swinging seat, the said wheels having peripheral grooves coacting with the bearing surfaces of the supporting frame for eliminating lateral thrust of said wheels.

5. In a chair, a vertically swingable seat, a vertically swingable back, turning wheels supported adjacent the juncture of the seat and back and having fixed connection with said back, crank arms fixed with the wheels and having linkage connection with said seat, means for adjustably connecting the linkage with said crank arms, a supporting frame swingably carrying the seat and having bearing surfaces supporting the said wheels, side arms formed with the supporting frame and carried above the swinging seat, the said wheels having peripheral grooves coacting with the bearing surfaces of the supporting frame for eliminating lateral thrust of said wheels, and a hanger yoke fitted to the seat and secured to the linkage connection with the crank arms.

HOWARD DON CROY.