

[54] CHAIR

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[51] Int. Cl. **A47c 1/02**

[58] Field of Search..... **297/DIG. 7, 85, 69, 297/271, 270**

[56] **References Cited**

UNITED STATES PATENTS

3,352,601 11/1967 Cycowicz..... 297/85

3,287,059	11/1966	Rosmarin.....	297/271 X
3,099,487	7/1963	Knabusch et al.	297/69 X
3,475,051	10/1969	Crawford.....	297/69
3,537,747	11/1970	Rogers, Jr.....	297/85

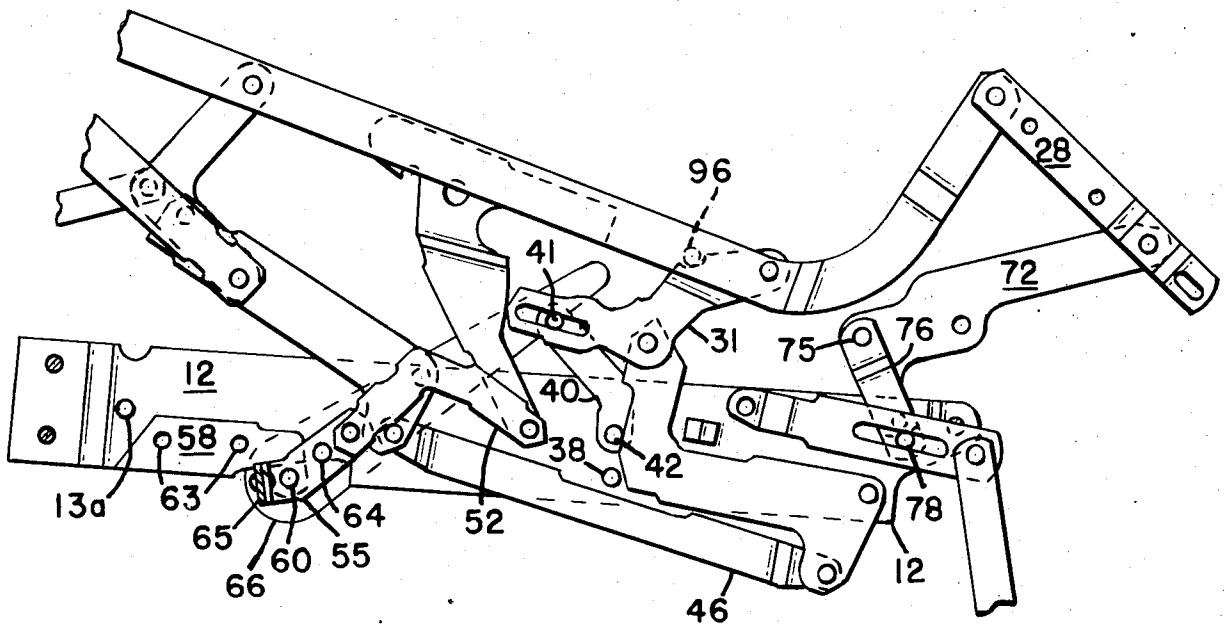
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[57]

ABSTRACT

A footrest equipped rocker-recliner chair having a linkage mechanism actuatable to, alternatively, lock the reclining mechanism of the chair in non-reclining position with the footrest collapsed wherein the chair is capable of to and fro rocking movement, or release the reclining mechanism to allow the chair to be reclined, the footrest extended, and to and fro rocking movement of the chair blocked.

8 Claims, 3 Drawing Figures



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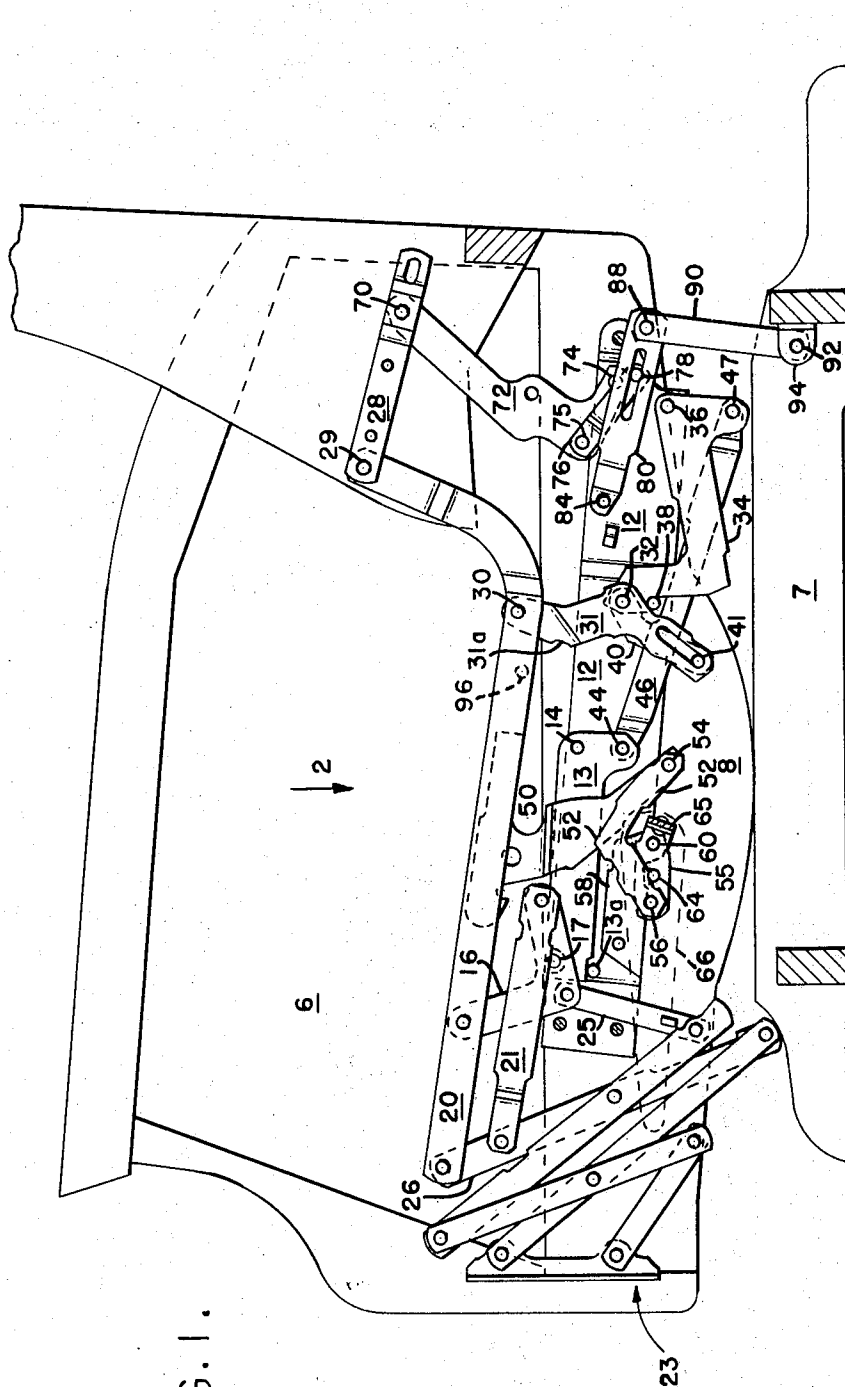
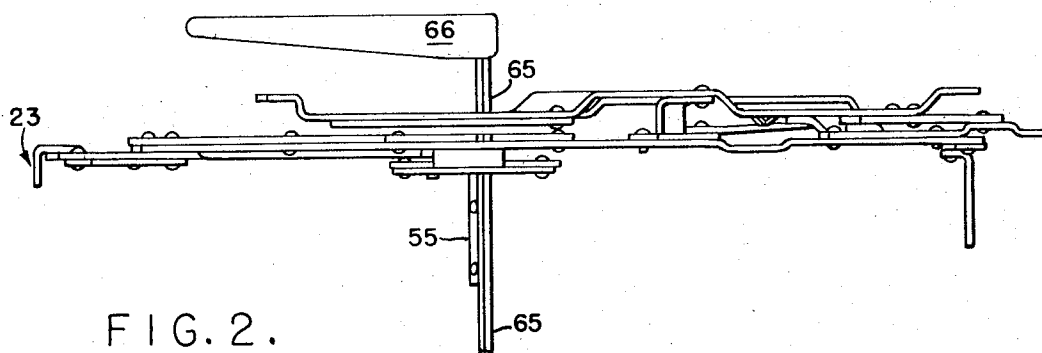
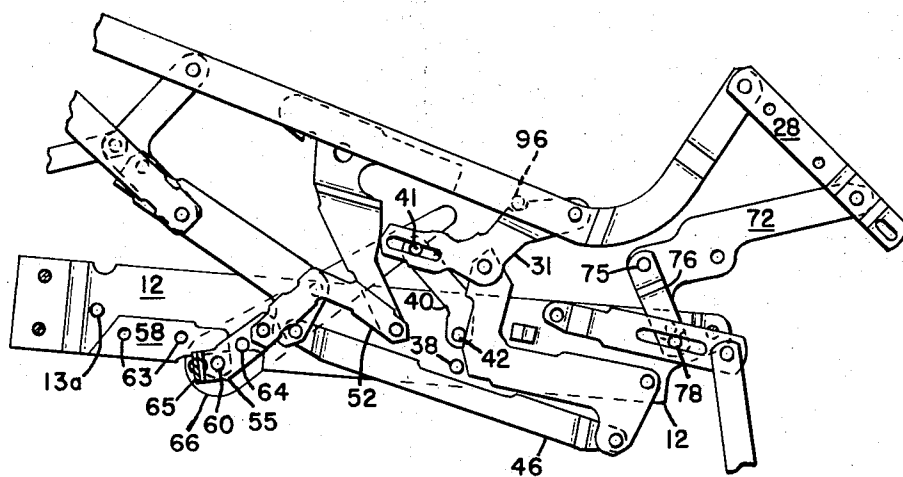


FIG. 1.

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CHAIR

The present invention relates to rocker-recliner chairs of the type wherein the chair may function as a rocking chair or a reclining chair and wherein, in each mode of operation, the other mode of operation is blocked. That is, ideally a chair of this type contains a suitable blocking mechanism to prevent the reclining mode of operation when the chair is being used as a rocker, and prevent the rocking mode of operation when the chair is moved to a reclining position.

This invention, therefore, has as its principal object the provision of a rocker-recliner having a well functioning and effective mechanism which, in a first position, will block reclining movement of the chair and allow rocking movement of the chair, and in a second position will allow reclining movement of the chair and block rocking movement.

The above and further objects, and the entire scope of applicability of the present invention, will become apparent from the detailed description herein given. It should be understood, however, that the instant detailed description and illustrations are given by way of illustration only, and, while indicating a preferred embodiment of the invention, it is not given by way of limitation, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from such detailed description.

FIG. 1 is a view of the rocker-recliner of the present invention showing the chair in the normal upright "at rest" position wherein it is neither rocked or reclined. The view is taken along a plane paralleling the front to back longitudinal centerline of the chair and looking in a direction from the longitudinal centerline of the chair toward the right side of the chair.

FIG. 2 is a plan view of a portion of the structure shown in FIG. 1.

FIG. 3 is a view similar to FIG. 1 showing a portion of the mechanism of FIG. 1 in a reclined, non-rocking position.

Those skilled in the art will appreciate that it is conventional in the art to which this invention relates to provide each side of a reclining chair or rocker-recliner with a linkage mechanism, each of which is substantially a mirror image of the other and, keeping this in mind, I illustrate and describe only the mechanism carried at the right side of the chair, that is, the side of the chair which would be at the right side of an occupant seated in the chair.

The chair of the invention comprises the customary side frame members such as the right side frame member 6 suitably mounted on and connected to a platform base 7 through the medium of rocker cams such as the cam 8.

Secured to the right side frame member is a main mounting bracket 12. A crank carrier link 13 is pivoted on the bracket 12 by means of a pivot member 14. The forward end of the crank carrier link 13 rests on a stop 13a carried by the main mounting bracket 12. A bell crank 16 is pivotally mounted on the crank carrier link 13 by means of a pivot member 17, the bell crank 16, in turn, being pivotally connected at its ends to a seat mounting link 20 and an ottoman control link 21. The ottoman control link 21 controls, in a manner hereinafter described, the movement of an ottoman or footrest assembly generally indicated by an arrow 23 and carried at the front portion of the chair and operatively

connected to the linkage assembly by a pair of ottoman links 25 and 26, which links are pivotally connected to the crank 16 and seat mounting link 20, respectively, by pivot members 25a and 26a.

The seat mounting link 20 extends rearwardly and upwardly, and its rear end is pivotally connected to a back mounting link 28 by means of a pivot member 29.

Intermediate its ends, the seat mounting link 20 is pivotally connected by a pivot member 30 to a rear carrier link 31. The rear carrier link 31 is pivotally connected by a pivot member 32, to the forward end of a rear carrier arm 34 which, in turn, is pivotally mounted on the main mounting bracket 12 by means of a pivot member 36. The rear carrier arm 34 has an upper forwardly extending projection resting on a stud 38 secured to the main mounting bracket 12.

A pin carrying sequence link 40 carrying a pin 41 is pivotally connected to the main mounting bracket 12 by a pivot member 42. The pin 41 cooperates with a slot formed in a lower extension of the rear carrier link 31.

A downwardly extending arm of the aforementioned crank carrier link 13 is pivotally connected by a pivot member 44 to the forward end of a connecting link 46, which link 46, has its rearward end pivoted to a downwardly extending arm of the rear carrier arm 34 by means of a pivot member 47.

A seat pivot plate 50 is rigidly secured to the seat mounting link 20. This plate 50 has an extension which extends downwardly and rearwardly and at its lower end is connected to a seat drive link 52 by a pivot member 54. The seat drive link 52 has two arms and, at the end of its forwardly extending arm, this link 52 is pivotally connected to a crank member 55 by means of a pivot member 56. The crank member 55 is, in turn, pivoted to a torque plate 58 by a pivot member 60, the torque plate being secured to the main mounting bracket 12 by fastening members 62 and 63.

The crank member 55, it will be noted, carries a pin 64 and extends rearwardly (FIG. 1) from its pivotal connection 56 with the seat drive link 52, and at its rear end makes an abrupt right angle turn to extend from the right side linkage towards the left side linkage (not shown). This angled portion is secured to a crank actuating and connecting member 65 which extends across the space between the right side linkage of FIG. 1 and the left side linkage (not shown), where the crank actuator is connected to the left side linkage.

The crank actuator 65 extends through an opening in the right side chair frame member and has a suitable handle 66 affixed thereto. The crank actuator 65 does not extend through the left side frame member.

The back mounting link 28 extends rearwardly from its pivotal connection 29 to the seat mounting link 20. This mounting link 20 is pivotally connected by means of a pivot member 70 to a downwardly and rearwardly extending back carrier link 72. The back carrier link 72 is pivoted at its rear end to the main mounting bracket 12 on a pivot member 74.

Pivotally connected to the back carrier link 72 on a pivot member 75 is a support blocking link 76. The blocking link 76 carries a pin 78 at one end, which pin 78 cooperates with a slot formed in a rocker control link 80 pivoted to the main mounting bracket 12 by means of a pivot member 84.

At its hind end the control link 80 is pivoted by a pivot member 88 to a support link 90 which link 90 has

a pivotal connection 92 to a bracket 94 attached to the platform base 7.

The customary upholstered seat, foot, and back supports are provided on the seat mounting link 20, the ottoman 23, and the back mounting link 28, and the chair may be suitably upholstered as desired.

As above mentioned, the chair is in the "at rest" position in FIG. 1. In this position, the footrest extending and seat and back reclining linkage are locked against movement due to the fact that in order for the chair to be reclined and the footrest extended it is necessary for the seat mounting link 20 to move rearwardly and the bell crank 16 and the rear carrier link 31 to rotate in a clockwise direction about their pivots 17 and 32, respectively, thereby lifting the ottoman link 25 to extend the ottoman structure under control of the ottoman control link 21. It will be recalled, however, that the seat mounting link 20 is rigidly secured to the seat pivot plate 50. Thus, if the seat pivot plate 50 is rendered immobile relative to the main mounting bracket 12, so too will the seat mounting link 20 as well as the crank 16 and rear carrier link 31 be rendered immobile.

The seat pivot plate is rendered immobile relative to the main mounting bracket 12 by means of an over-center lock actuated by the handle 66 as now described.

When the chair is in an upright position the handle 66 is pushed forward (counterclockwise in FIG. 1) as far as it will go. Such movement causes the actuator rod 65 and crank member 55 to rotate similarly counterclockwise about the pivot member 60. Such counterclockwise movement of the crank member 55 imparts, through the connecting pivot member 56, a counterclockwise rotational movement to the drive link 52 about its pivotal connection 54 with the seat pivot plate 50, such movement continuing until an undersurface, shown as a notched undersurface, of the drive link 52 engages the stop member 64 carried on the crank member 55, thereby preventing further counterclockwise movement of the handle 66. The above described counterclockwise movement of the drive link 52 places the pivot member 54 and 56 in an overcenter orientation relative to the pivot member 60, and, so long as the pivot members 54 and 56 remain so oriented relative to the pivot member 60, any attempted rearward movement of the seat pivot plate 50 will be prevented, since any rearward force applied to the pivot member 54 will not allow the drive link 52 to rotate clockwise about the pivot member 60 until the pivots 54 and 56 are moved out of their over-center orientation relative to the pivot member 60.

Thus, it will be appreciated that when the handle 66 is rotated counterclockwise to the position of FIG. 1 the chair is prevented from going into a reclining position, and so long as the handle is not rotated clockwise from its FIG. 1 position the chair can be rocked to and fro, as hereinafter described, with the footrest, seat, and back maintaining their positions relative to each other as shown in FIG. 1.

When it is desired to recline the chair from its FIG. 1 position, it is merely necessary to grasp the handle 66 and rotate it slightly clockwise from its FIG. 1 position to release the lock, and thereupon apply the usual rearward force to the back of the chair. Such action causes, initially, the pivot 56 to move clockwise about the pivot 60 to release the over-center lock and then, as the back pressure is applied, the seat mounting link 20 will shift

rearwardly and cause the bell crank 16 and rear carrier link 31 to rotate clockwise. This movement continues until the rear carrier link has rotated a distance clockwise sufficient to cause a surface 31a on the link 31 to engage a stop member 96 carried on the seat mounting link 20, whereupon the chair is in what is commonly termed its TV or intermediate reclining position. This position, i.e., the TV position, is not shown in the drawings but is similar to the position of FIG. 2 of U.S. Pat. No. 3,352,601 issued to Izchak Cycowicz on Nov. 14, 1967 for a chair, and which disclosure is incorporated herein for a fuller understanding.

After reaching the TV position above described, the chair may then be moved to what is commonly termed a full-recline position by applying further rearward pressure against the back whereupon, inter alia, the crank carrier link 13, the rear carrier arm 34, and the sequence link 40 are caused to rotate clockwise about the pivots 14, 36, and 42, respectively, until as the rear carrier link 31 rises with the forward end of the arm 31, holding action of the slot formed in the rear carrier link 31 acting on the pin 41 carried by the sequence link 40, inhibits continued clockwise rotation of the rear carrier arm 34, whereupon the linkage assembly assumes the position of FIG. 3.

To return the chair from reclined position to its "at rest" position of FIG. 1, the occupant may do so by a procedure the reverse of that described above, and when the chair is in its non-reclined upright position, the reclining linkage mechanism may be locked by rotating the handle 66 counterclockwise until the drive link 52 abuts the stop 64 as above described.

When it is desired to utilize the chair as a rocking chair, starting with the chair in the FIG. 1 position, the chair occupant may rock the chair by, for example, applying foot pressure against the supporting floor surface and such action will tend to rock the chair in the normal manner. The chair rocks by means of the cooperating action of the rocker cams 8 on the base 7 and, as the chair rocks, the linkage mechanism remains in the FIG. 1 position with the exception that the links 76, 80, and 90 rotate about their pivots 75, 84, and 88, respectively, with the pin 78 sliding in the slot formed in the link 80, and, of course, since the handle operated over-center lock is locked during such rocking motion, there will be no tendency for the chair to open up toward the reclined position.

During rocking movement of the chair it is necessary that the pin 78 be free to slide in the slot formed in the control link 80, and with the mechanism in the FIG. 1 position, such cooperating action of the pin 78 and the slot formed in the link 80 is possible. Rocking action of the chair is blocked upon the reclining movement, above described, due to the fact that as the chair reclines from its FIG. 1 position, the back carrier link 72 rotates clockwise about its pivot 74 carrying with it the pivot 75. Such clockwise movement of the pivot 75 imparts to the locking link 76 a generally clockwise movement to place the locking link 76 in such a position that sliding movement of the pin 78 in the slot formed in the link 80 will be prevented. Thus when the chair is reclined, it is blocked against rocking movement.

Although in the illustrated embodiment I have shown my invention in connection with what is commonly termed a "lounger," that is, a reclining chair of the type wherein the angle between the seat and back changes during a portion of reclining movement, I wish it to be

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understood that the invention would be equally applicable to a chair of the "rester" type, that is, a chair of the type wherein the back and seat are rigidly connected and wherein the angle between the seat and back does not change during reclining movement.

Having thus described my invention, I claim:

1. A rocker-recliner chair including a base, a chair frame mounted on said base carrying seat and back means for rocking and reclining movement, a linkage assembly, said linkage assembly including means actuable upon reclining movement of said chair frame to block rocking movement of said chair, and including hand actuable means to lock said chair in a non-reclining position and thereby block reclining movement of said chair during rocking movement of said chair said hand actuable means including a pair of links pivotally interconnected between said seat means and said frame, said pair of links constructed and arranged to form an over center locking means upon actuation thereof to couple said seat means to said frame to render said seat immovable relative to said frame, wherein said pair of links includes a first L-shaped link and a second substantially straight link.

2. A reclining chair including a chair frame comprising a pair of side members, a linkage assembly carried on said chair frame, movable footrest, seat, and back members carried on said linkage assembly and movable from an upright position to a reclined position, hand actuable means operatively connected between said chair frame and linkage assembly to interfere with movement of said linkage assembly relative to said chair frame, said hand actuable means operable to lock said chair in a non-reclined position and including a

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pair of links pivotally interconnected between said seat member and said frame, said pair of links constructed and arranged to form an over center locking means upon actuation thereof to couple said seat member to said frame to render said seat immovable relative to said frame, wherein said pair of links includes a first L-shaped link and a second substantially straight link.

3. The invention of claim 1 wherein said first and second links are pivoted to each other.

4. The invention of claim 3 wherein said second link carries stop means intermediate its ends, said stop means abutting a portion of said first link when said first and second links are in operative position to block reclining movement of said chair.

5. The invention of claim 4 wherein one of said pair of links is fixedly attached to a shaft extending through said chair frame, and including handle means carried on said shaft for hand manipulation of said shaft to thereby engage said locking means.

6. The invention of claim 2 wherein said first and second links are pivoted to each other.

7. The invention of claim 6 wherein said second link carries stop means intermediate its ends, said stop means abutting a portion of said first link when said first and second link are in operative position to block reclining movement of said chair.

8. The invention of claim 7 wherein one of said pair of links is fixedly attached to a shaft extending through said chair frame, and including handle means carried on said shaft for hand manipulation of said shaft to thereby engage said locking means.

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