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J. I. WINICK
RECLINING CHAIRS

3,057,658

Filed May 8, 1959

2 Sheets-Sheet 1

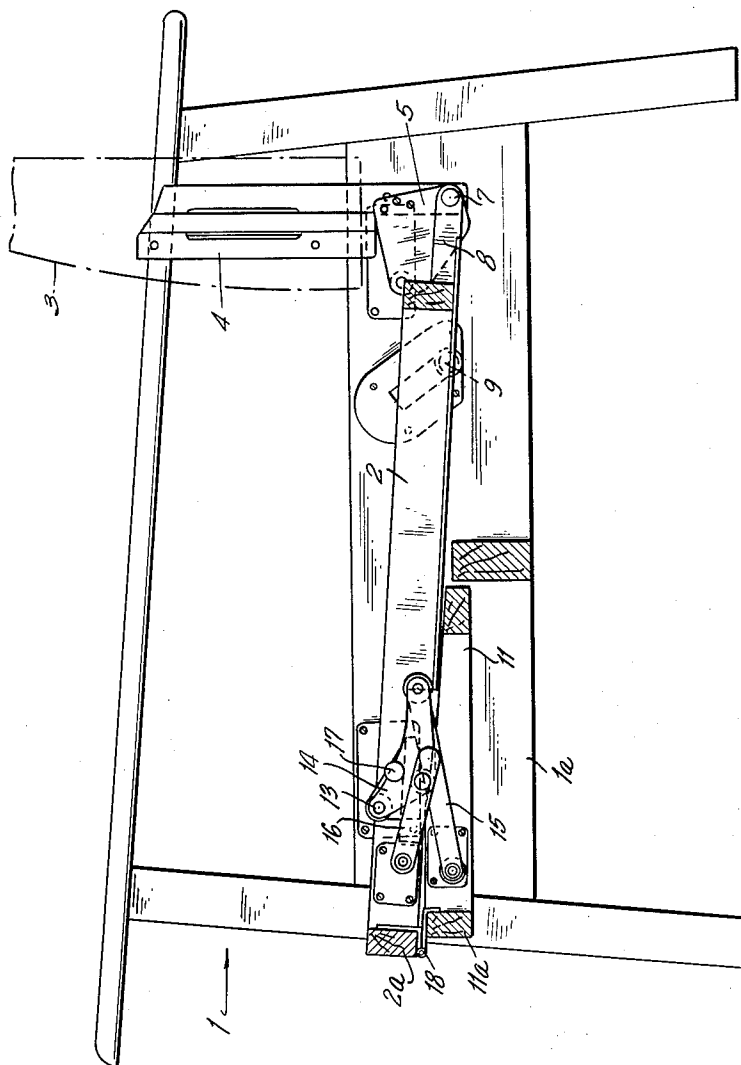


FIG. 1

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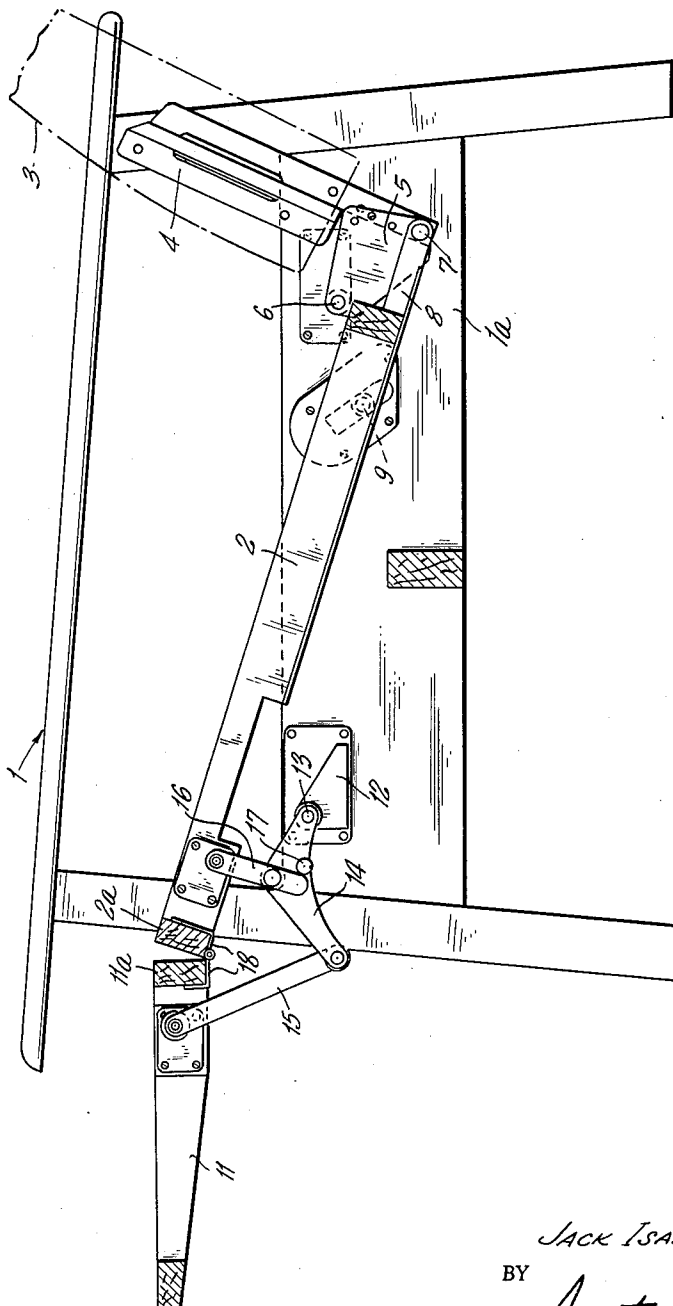


FIG. 2

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3,057,658

RECLINING CHAIRS

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Claims priority, application Great Britain May 9, 1958
2 Claims. (Cl. 297—88)

This invention relates to reclining chairs of the kind in which the tilting of the chair back is accompanied by a tilting of the chair seat, the invention being particularly applicable to fireside and other chairs open below the seat.

In chairs of this kind, it is known to provide a legrest which is normally accommodated beneath the front end of the seat and is swung to an operative position forward of the seat when the chair is set to a reclining position, and it is the general object of the present invention to provide supporting and actuating means for a legrest of this character, which are positive in action, which provide a rigid support for the legrest when in the extended position and which is wholly or substantially invisible in use.

According to the invention a reclining chair of the kind referred to comprises a legrest hingedly attached to the front end of the seat such that it can be swung from a position below the seat to a projected position forward of the seat, a toggle linkage extending between a point of attachment on the legrest and a point of anchorage on the chair frame, and an actuating link forming a connection between the seat and one of the toggle levers and operable upon movement of the chair to the reclining position to extend the toggle linkage and swing the legrest to the operative position.

Reference will now be made to the accompanying drawings which illustrate by way of example the application of the invention to a form of reclining chair disclosed in our patent specification in Great Britain No. 794,138. In the drawings

FIG. 1 is a sectional view of the chair structure prior to upholstering and showing the chair in the non-reclining position, and

FIG. 2 is a similar view showing the chair in the fully reclined position.

It is to be understood that the mechanism shown in the drawings is in practice duplicated, one set being provided at each side of the chair, but as the two mechanisms are similar only one set will need to be described and illustrated. In the drawings, the side frame structure of the chair is indicated generally at 1 and includes a fixed side rail 1a, the side rail of the seat being shown at 2 whilst the movable chairback is indicated at 3. The back 3 is attached to and supported by an angled metal strip 4, a plate 5 fixed to the lower end of said metal strip being pivotally mounted at its forward and upper end on a pin 6 carried by the fixed side rail 1a. Pivotally attached to the plate 5 at a point 7 rearwardly of and below the level of the pivot pin 6 is an angle section strip 8 secured to the underside of the seat side rail 2, said strip carrying a roller 9 riding in a slotted guide 10 on the side rail 1a whereby rearward tilting of the back 3 produces a forward displacement of the seat and an upward tilting at the front end thereof.

For the purpose of the present invention the legrest, the side rail of which is shown at 11, is hingedly attached in the region of its rear lower edge to the front lower edge of the seat frame such that when not in use it may fold flat against the underside of the front end of the seat. Fixed to the frame side rail 1a near its forward end is a bracket 12 carrying an anchorage pin 13 upon which is pivoted one end of a toggle linkage 14, 15 the other end of said linkage being attached to the legrest at

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a short distance from the hinge connection of the legrest to the seat. An actuating link 16 is pivotally attached at one end to the seat at a short distance from the forward end thereof, and intermediate its end to the toggle lever 14, this connection being at approximately the mid point in the length of said lever. A stud 17 is fixed to the toggle link 14 in a position such that it is engaged by the free end of the actuating link as the legrest approaches the fully extended position and the mechanism operates as follows:

With the chair in the erect position the toggle is in the folded condition shown in FIG. 1. As the chair is moved to the reclining position, the seat is displaced forwardly and upwardly and the actuating link 16 swings the toggle linkage 14, 15 around the anchorage pin 13 and simultaneously extends the toggle to bring the legrest to the operative position. The use of a toggle linkage for moving the legrest has the advantage that it provides an accelerated movement of the toggle as it is folded, so ensuring that the legrest is closed up tightly beneath the forward end of the seat. On the other hand, with the chair in the fully reclined position with the occupant's weight on the back and rear end of the seat producing an upward thrust at the front end of the seat, the engagement of the free end of the actuating link 16 with the stud 17 causes link 16 and link 14 to act as a rigid entity and thus transmit this upward thrust more positively through the toggle link 15 to the legrest.

Preferably, the linkage is located on the inside of the seat frame so that it is normally invisible, the bracket 12 carrying the anchorage pin 13 being cranked so as to space the pin the required distance from the fixed side rail 1a. Another feature which enhances the appearance of the chair is the method of attaching the legrest to the seat. As shown, a hinge 18 is used having leaves of unequal length, and preferably of angular form to embrace the cross bars 2a, 11a of the seat and legrest respectively, the arrangement being such that, when the legrest is in the underslung or inoperative position, it is set back from the front edge of the seat and is thus less obvious.

It will be understood that the invention resides in the legrest actuating linkage and that alternative means may be employed for interconnecting the seat and back and producing the desired tilting movements thereof. For example, the invention is equally applicable to the alternative action disclosed in our aforesaid patent specification in Great Britain No. 794,138, namely that in which pins at the point of hinge connection between the seat and the back and at a higher point on the back ride in inclined and vertical slots respectively in the fixed frame, although in this arrangement it is necessary to ensure that the said slots do not limit downward movement of the pins as full weight or leverage is required on this end of the seat when tilted to hold the legrest in the raised position.

I claim:

1. A reclining chair comprising a support, a body-supporting means including a seat and back-rest adapted to be mounted on said support for movement from a sitting position to a reclining position, means mounting said back-rest on said support for reclining movement about a back-rest pivot, means mounting said seat on said back-rest at a seat pivot spaced below said back-rest pivot for forward and upward inclining movement in response to said reclining movement of said back-rest, a leg-rest disposed beneath said seat in a retracted underslung position substantially parallel to said seat, means hingedly mounting said leg-rest on the forward end portion of said seat for swinging movement from said retracted underslung position to an elevated leg-supporting position forwardly of said seat, and actuating means operatively con-

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nected to said leg-rest and operable in response to said inclining movement of said seat for moving said leg-rest to said elevated leg-supporting position, said actuating means including a first link pivotally mounted adjacent one end on said support, a second link pivotally connected to said first link adjacent the other end thereof and to said leg-rest at a point spaced from the hinged mount of said leg-rest on said seat, and an actuating link pivotally mounted on said seat and pivotally connected to an intermediate point on said first link, said actuating link being carried forwardly and upwardly by said forward and upward inclining movement of said seat to turn said first link in a forward direction thereby moving said leg-rest forwardly with said seat and into said elevated leg-supporting position.

2. A reclining chair comprising a support, a body-supporting means including a seat and back-rest adapted to be mounted on said support for movement from a sitting position to a reclining position, means mounting said back-rest on said support for reclining movement about a back-rest pivot, means mounting said seat on said back-rest at a seat pivot spaced below and rearwardly of said back-rest pivot for forward and upward inclining movement in response to said reclining movement of said back-rest, a leg-rest disposed beneath said seat in a retracted underslung position substantially parallel to said seat, a leg-rest pivot hingedly mounting said leg-rest on the forward end portion of said seat for swinging movement

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from said retracted underslung position to an elevated leg-supporting position forwardly of said seat, and actuating means operatively connected to said leg-rest and operable in response to said inclining movement of said seat for moving said leg-rest to said elevated leg-supporting position, said actuating means including a first link pivotally mounted at one end on said support, a second link pivotally connected to the other end of said first link and to said leg-rest at a point spaced from and rearwardly of said leg-rest pivot, and an actuating link pivotally mounted on said seat and pivotally connected to an intermediate point on said first link, said actuating link being carried forwardly and upwardly by said forward and upward inclining movement of said seat to turn said first link in a forward direction thereby moving said leg-rest forwardly with said seat and into said elevated leg-supporting position.

References Cited in the file of this patent

UNITED STATES PATENTS

2,893,472	Repaich	July 7, 1950
2,943,670	Hoffman	July 5, 1960

FOREIGN PATENTS

149,468	Germany	Mar. 10, 1904
621,484	France	Feb. 7, 1927
874,950	Germany	June 18, 1953