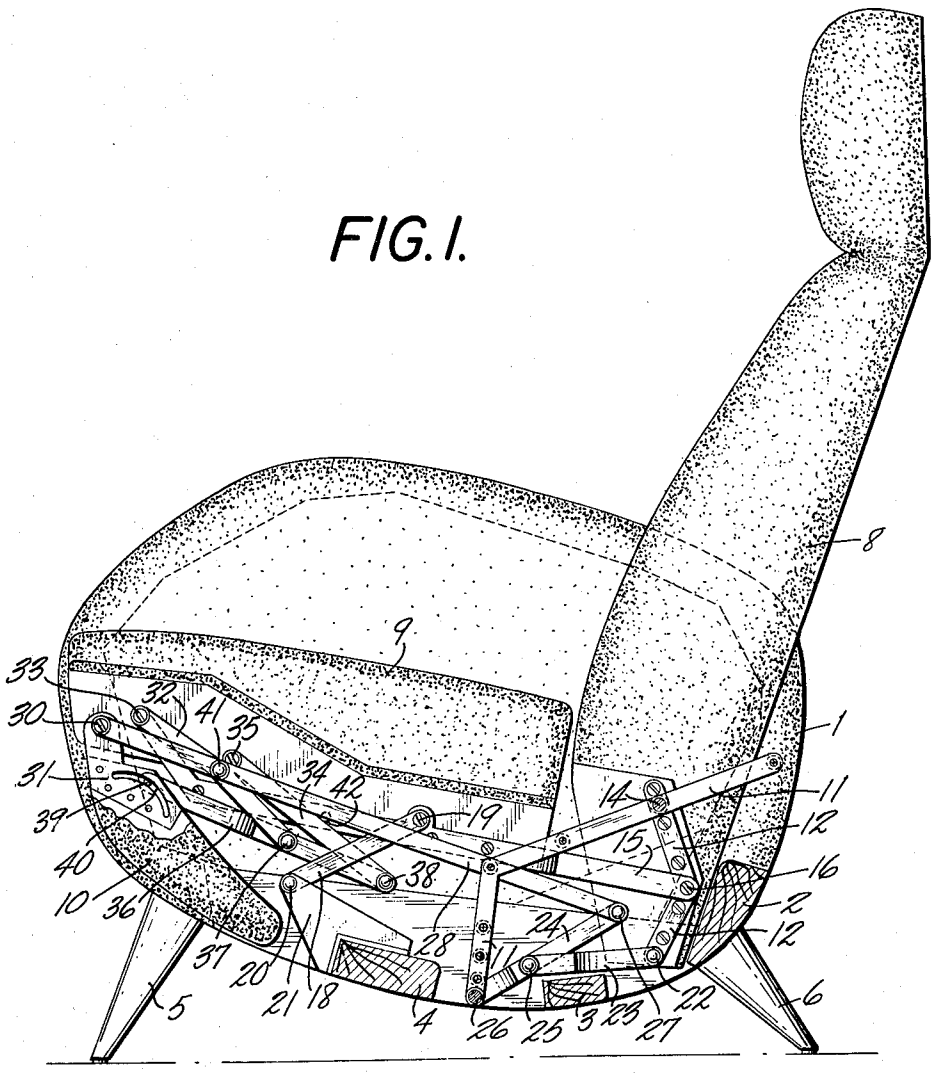
Oct. 17, 1961 F. F. SCHLIEPHACKE 3,004,791

RECLINING CHAIRS

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FIG. 1.



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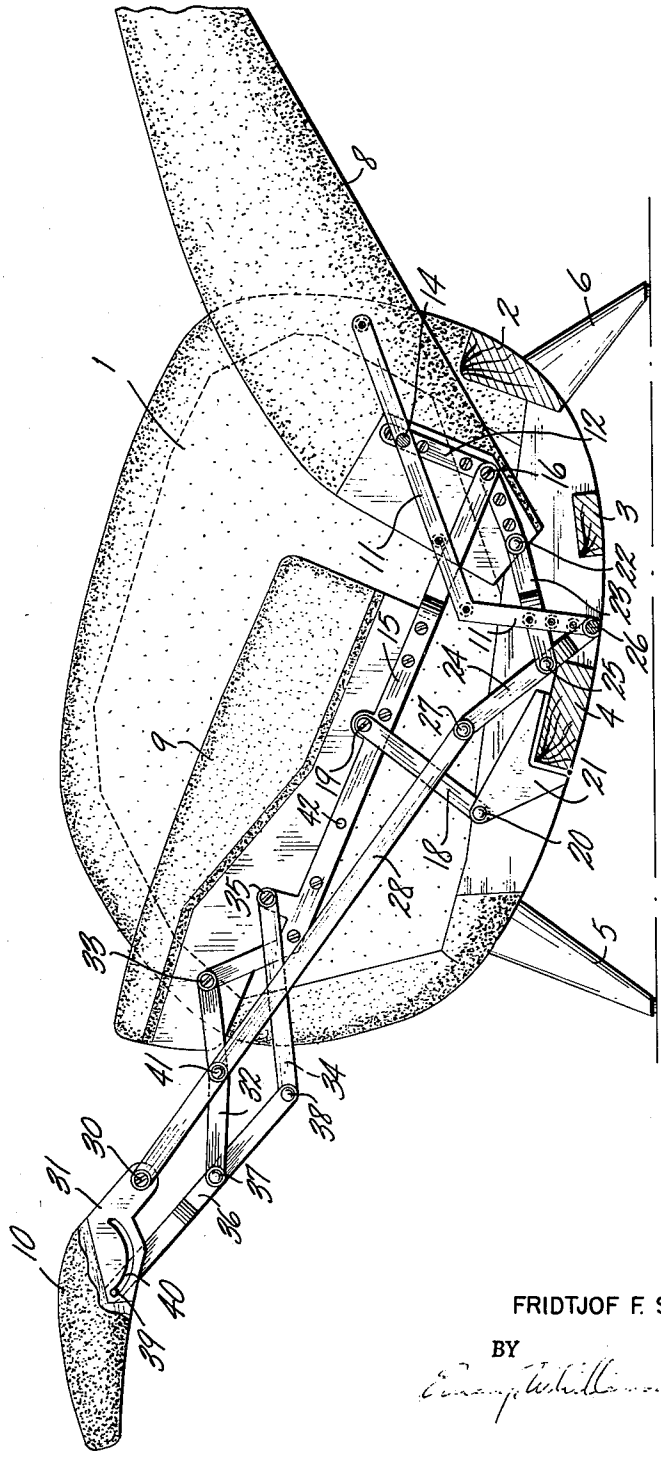


FIG. 2.

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RECLINING CHAIRS

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3 Claims. (Cl. 297—85)

This invention relates to chairs and pertains particularly to reclining chairs having a backrest, a seat, and a leg rest, all supported on a base frame and movable with respect to said base frame and with respect to each other to assume a reclining position.

It is an object of the present invention to provide a reclining chair in which the backrest, seat and leg rest, when moved to reclining position, support the body of the occupant in a relaxed, comfortable position.

It is a further object of the invention to provide a construction in which the operative connections between the parts of the chair are such as to permit a compact arrangement of parts adapted to conform to modern styling.

It is a further object of the present invention to provide a construction in which, in the upright position of the chair, the leg rest is located beneath the seat and is substantially concealed from view, and in which, in the reclining position of the chair, the leg rest is swung downwardly, forwardly and upwardly to a position in advance of the seat.

Other objects and advantages of the invention will appear hereinafter.

A preferred embodiment of the invention selected for purposes of illustration is shown in the accompanying drawings, in which:

FIGURE 1 is a side elevation of the chair, one side frame being broken away, the chair being shown in upright position.

FIGURE 2 is a similar view, showing the chair in reclining position.

Referring to the drawings, the base frame unit comprises two spaced, parallel side frames, only one of which, designated by reference numeral 1, is shown in the drawings. The other side frame is identical. The side frames are tied together by cross frames 2, 3 and 4 which are rigidly connected thereto. The frame is supported on front legs 5 and rear legs 6 rigidly connected to the side frames. The side frames, cross frames and legs may be made of wood or metal, as desired, and the side frames may be upholstered, or not, as desired.

The movable parts of the chair include a backrest 8, a seat 9, and a leg rest 10. Each of these parts may be of any desired type of standard construction, upholstered, or not, as desired. As shown, each of these parts is an upholstered type, in which the upholstery is mounted on a suitable supporting frame. In the following description, the operative connections between the movable parts will be described with respect to only one side of the chair, it being understood that the said parts are duplicated on the other side of the chair.

A metal bar 11 having two angularly disposed legs is rigidly mounted on the inside face of each of the side frames in any suitable manner, as by means of screws, the said bars serving to add strength and rigidity to the side frames and also to provide certain fixed pivot points on the side frames as hereinafter described.

Another metal bar 12 having two angularly disposed legs is rigidly mounted on each of the side faces of the backrest 8 in any suitable manner, as by means of screws. The said bar adds strength and rigidity to the lower portion of the backrest and also provide certain pivot points as hereinafter described.

Thus, the backrest 8 is pivotally mounted on the side

frames 1 by means of the pivot pin 14 extending through the bar 11 and the bar 12 and providing a fixed pivot on which the backrest may swing from upright to reclining position, and vice versa. Also, the seat is pivotally connected to the backrest by means of a metal bar 15 rigidly mounted on each of the side faces of the seat in any suitable manner, as by means of screws, the said bars extending rearwardly from the seat and being pivotally connected to bar 12 and the backrest by pivot pin 16.

The seat 9 is also pivotally connected to a guide link 18 by means of pivot pin 19 which extends through bar 15. The link 18, in turn, is pivotally connected to the frame unit by pivot pin 20 which extends through bracket 21 mounted on the cross frame 4, so that, as the chair is moved to reclining position, the rearward swinging movement of the backrest, acting through the bars 12 and 15, acting as levers, moves the seat forwardly, swinging the guide link forwardly to the position shown in FIG. 2. In doing so, the guide link 18 guides and supports the seat, the action being such as to raise the level of the front end of the seat while lowering the level of the rear end of the seat, thereby increasing its angle of slope toward the rear.

The lower end of bar 12 is pivotally connected to one end of link 23 by pivot pin 22, and the other end of said link is pivotally connected to an intermediate portion of lever 24 by pivot pin 25. Lever 24 is pivotally mounted at one end on the side frame by pivot pin 26 which extends through bar 11. The other end of lever 24 is pivotally connected by pivot pin 27 to one end of an actuating lever 28.

The actuating lever 28, so referred to because it serves as the leg rest actuating lever, is pivotally connected to the leg rest by means of pivot pin 30 which extends through a metal plate 31 rigidly mounted on the side of the leg rest. The leg rest is also connected to the actuating lever 28 by a link and lever system as follows. Link 32 is pivotally mounted on the seat by means of pivot pin 33 extending through the forward end of bar 15. A second link 34 is also pivotally mounted on the seat by means of pivot pin 35 extending through the bar 15 at a point spaced rearwardly from the pivot pin 33. Links 32 and 34, in turn, are pivotally connected to a lever 36 by pivot pins 37 and 38, respectively, and the forward end of the lever 36 carries a pin 39 which extends into the cam slot 40 in the plate 31 to provide a lost-motion connection between the lever 36 and the leg rest. The pivot pin 33 which connects the link 32 to the seat is located above the actuating lever 28, and the pivot pin 37 which connects the link 32 to the lever 36 is located below the actuating lever 28, and at the point where the link 32 crosses the actuating lever, it is pivotally connected thereto by pivot pin 41. Thus, as the actuating lever 28 moves forwardly, the links 32 and 34 swing forwardly, moving the lever 36 forwardly to swing the leg rest on its pivot 30. As shown, the cam slot 40 is curved, but it may be shaped as desired to bring the leg rest to the desired level in the reclining position of the chair.

If desired, a stop pin 42 may be mounted on the side of the seat 3 in position to engage the upper edge of the link 34 when the chair is in upright position in order to provide support for the seat.

In the upright position of the chair, as illustrated in FIG. 1, the backrest is tilted slightly backwardly from vertical position, and the seat slopes slightly downwardly from front to back in order to provide a comfortable seated posture for the occupant. In this position, the leg rest is retracted beneath the seat, and is almost concealed from view. In the reclining position, as illustrated in FIG. 2, the backrest is tilted backwardly, as shown, and the seat is moved forwardly. As the seat is moved forwardly, the forward end is moved upwardly

while the rear end is moved downwardly, thus increasing the angle of slope. At the same time, the leg rest has been swung downwardly, forwardly and upwardly to a position to support the legs of the occupant.

The shift from upright to reclining position may be brought about whenever one sitting in the chair in its upright position exerts backward pressure against the backrest by shifting the weight of the body or by pressing forwardly against the side frames of the base unit, or both. As the backrest swings backwardly on the fixed pivot 14, the levers 12 and 15, acting through pivot 16, move the seat forwardly, causing the guide link 18 to swing forwardly on fixed pivot 20, guiding and supporting the seat and increasing its rearward slope. At the same time, the lever 12, acting through link 23, swings the lever 24 forwardly on fixed pivot 26, which motion, in turn, moves the actuating lever 28 forwardly. The forward motion of the actuating lever 28 has two results. First, it moves the pivot 30 of the leg rest forwardly to a position in advance of the seat. Second, through actuation of the links 32 and 34 and the lever 36, and through motion of pin 39 in the cam slot 40, it swings the leg rest downwardly, forwardly and upwardly to the position shown in FIG. 2. In the upright position of the chair, as shown in FIG. 1, the pin 39 is located intermediate the ends of the cam slot. As the chair is moved to reclining position, the pin 39 moves first in one direction in the cam slot, i.e. forwardly as seen in FIG. 1, and then moves in the other direction to the other end of the cam slot as shown in FIG. 2. This arrangement is necessary in order to permit the leg rest to be located beneath the seat in the upright position of the chair, and to swing through a wide angle in moving to reclining position.

If, now, it is desired to resume upright position, it is only necessary to exert slight downward pressure on the leg rest, accompanied, if desired, by leaning forwardly and pressing backwardly against the side frames to relieve the backward pressure of the body against the backrest.

It will be understood that the invention may be variously modified and embodied within the scope of the subjoined claims.

I claim as my invention:

1. In a reclining chair having a support, a backrest pivotally mounted on said support for reclining movement thereon, a seat operatively connected with said backrest, and a leg rest, an improved leg rest actuating and control linkage which comprises a leg rest actuating lever having its rear end operatively connected to said backrest and extending forwardly beneath said seat to a point near the front of the seat, said leg rest being pivotally mounted on the front end of said actuating lever, two links pivotally mounted on said seat at spaced points, one of said links being pivotally connected to said actuating lever and a connecting lever pivotally connected with both of said links, said connecting lever having a lost motion connection with said leg rest.

2. A reclining chair as claimed in claim 1 in which said lost-motion connection comprises a pin on said lever and a cam slot on said leg rest.

3. A reclining chair as claimed in claim 1 in which said leg rest is located beneath said seat in the upright position of the chair, and in which said lost-motion connection comprises a pin on said lever and a cam slot on said leg rest, said pin being located intermediate the ends of said cam slot in the upright position of the chair and moving first in one direction and then in the other direction in said cam slot as the chair is moved from upright to reclining position.

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