Jan. 20, 1959 F. F. SCHLIEPHACKE 2,869,618

RECLINING CHAIRS

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FIG. 2.

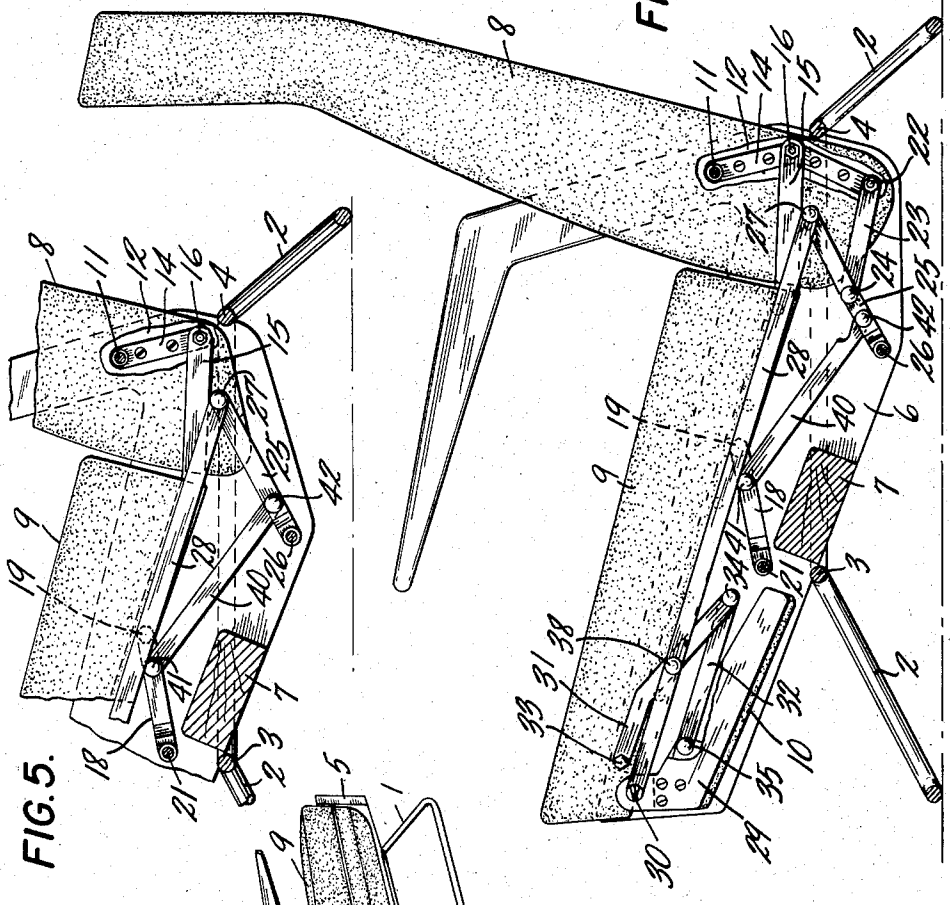
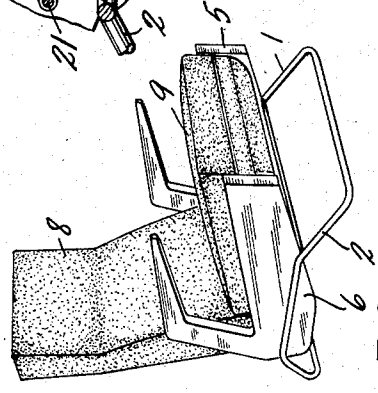


FIG. 5.

FIG. 1.



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RECLINING CHAIRS

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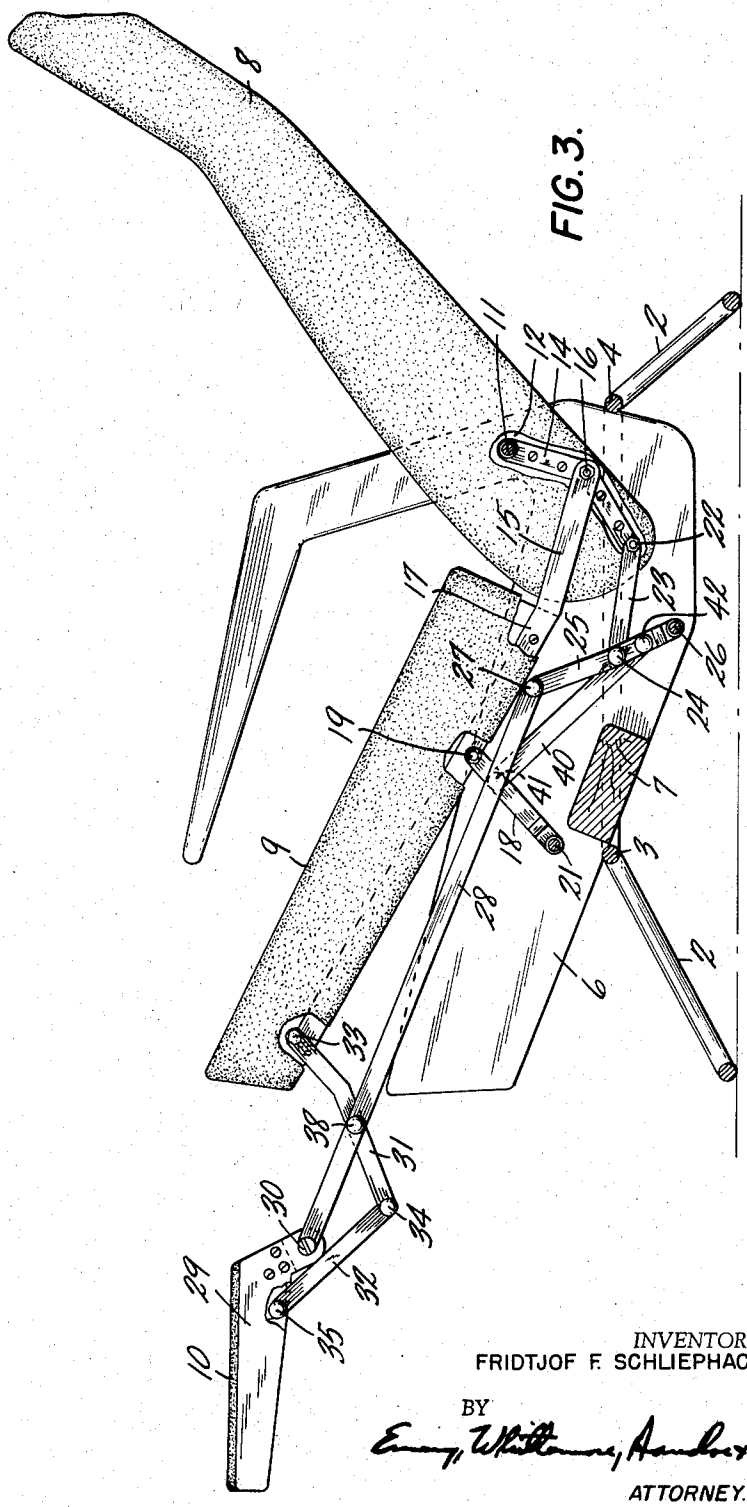


FIG. 3.

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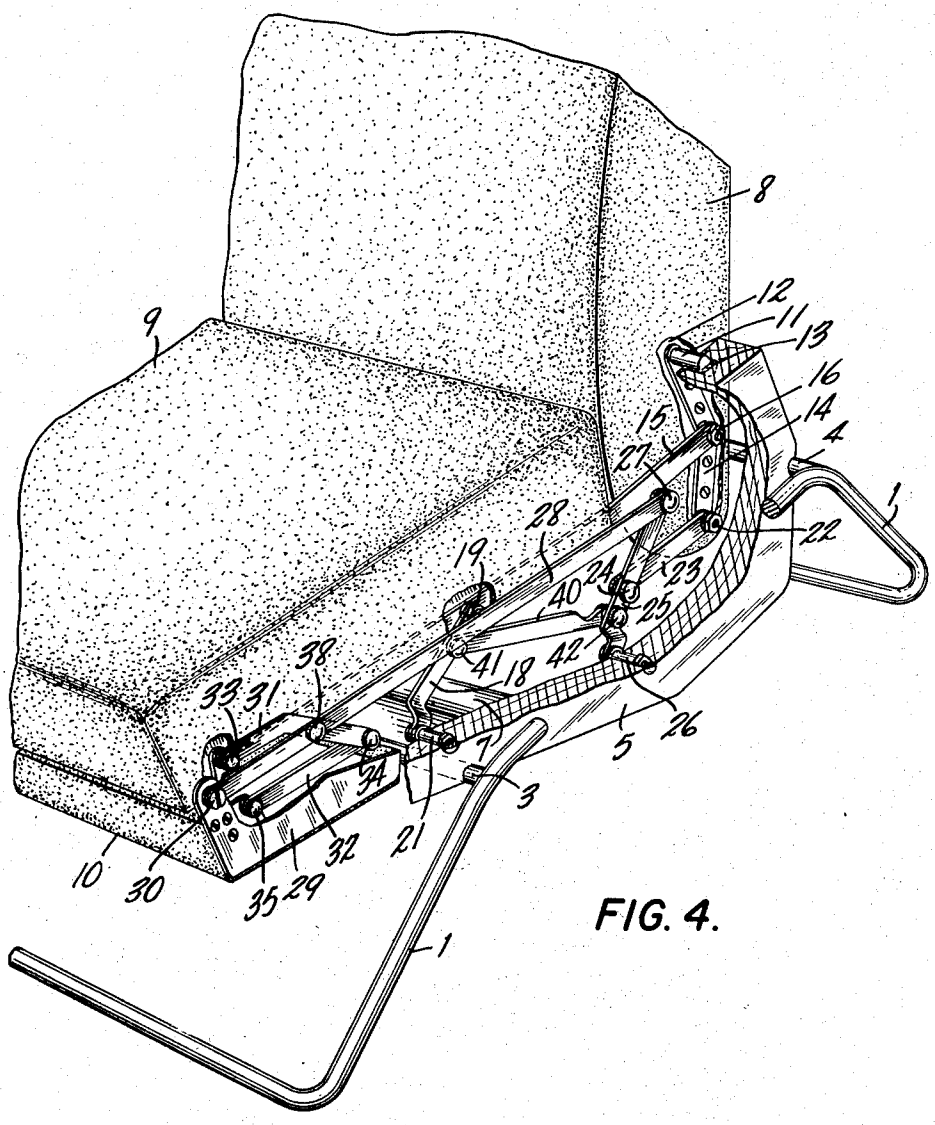


FIG. 4.

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RECLINING CHAIRS

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Application July 5, 1957, Serial No. 670,004

6 Claims. (Cl. 155—106)

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 present 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 having a light, graceful appearance.

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 perspective view of the chair.

Figure 2 is a side elevation, one side frame of the chair being broken away, the chair being shown in upright position.

Figure 3 is a similar view showing the chair in reclining position.

Figure 4 is a perspective view, one side frame being broken away, the chair being shown in upright position.

Figure 5 is a fragmentary side elevation of a modified form of chair, the chair being shown in upright position.

Referring to the drawings, the base frame comprises pairs of legs 1, 2 tied together transversely by cross bars 3, 4 to form a supporting cradle for the side frames 5, 6 which are rigidly secured thereto. The side frames may be rigidly connected by a cross frame 7. The legs 1, 2 and cross bars 3, 4 may conveniently be made of suitable structural metal shapes such as rods or tubing, and the side frames 5, 6 and cross frame 7 may conveniently be made of wood or metal, upholstered or not, as desired. The cradle and side frames together form a base frame unit supporting the movable parts of the chair as hereinafter described.

The movable parts of the chair include a backrest 8, a seat 9, and a leg rest 10. Each of these movable parts may be of any desired type of standard construction, upholstered, or not, as desired. As shown, each of these movable 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 said parts are duplicated on the other side of the chair.

The backrest 8 is pivotally mounted on the side frames 5, 6 by means of a pivot pin 11 mounted in the backrest side frame 12 and extending into socket 13 in the side frame. Also rigidly mounted on the backrest side frame 12 is a bar 14 which extends downwardly from the pin 11 for pivotal connection to the free end of bar 15 by means of pivot pin 16. Bar 15 is rigidly mounted on seat frame 17 and extends rearwardly therefrom for connection to pivot pin 16.

The seat 9 is pivotally connected to a guide link 18 by means of pivot pin 19 extending through the bar 15. One end of the guide link is pivotally mounted on the side frame 5 by means of pivot pin 21, so that, as the chair is moved to reclining position, the rearward swinging motion of the backrest, acting through the bars 14 and 15, acting as levers, moves the seat forwardly, swinging the guide link 18 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 seat slightly, while at the same time increasing its angle of slope toward the rear.

The leg rest 10 is supported to swing on the front end of the seat 9 as hereinafter described, and means are provided for actuating the leg rest from the backrest, so that as the backrest swings backwardly to reclining position, the leg rest is moved to leg supporting position. For this purpose, the bar 14 is extended downwardly below the pivot pin 16 to receive a pivot pin 22, pivotally connected to one end of link 23, the other end of which is pivotally connected to an intermediate portion of connecting lever 25 by pivot pin 24. Lever 25 is pivotally mounted at one end on side frame 5 by pivot pin 26, and is pivotally connected at its other end by pivot pin 27 to one end of lever 28.

Lever 28, which may be referred to as the leg rest actuating lever, is pivotally connected at its other end to leg rest side frame 29 by pivot pin 30, so that as the lever 28 is moved forwardly by swinging motion of connecting lever 25, the leg rest 10 is also moved forwardly. At the same time, the leg rest is swung through an angle of about 170° from its position beneath the seat on leg rest supporting lever 31. One end of lever 31 is pivotally connected to seat frame 17 by pivot pin 33, and the other end of said lever is connected to one end of link 32 by pivot pin 34. The other end of link 32 is pivotally connected to the leg rest by pivot pin 35. Levers 28 and 31 are pivotally connected at points intermediate their ends by pivot pin 38.

Means are provided for operatively connecting the link 18 to lever 25, such means comprising the connecting link 40 pivotally connected to link 18 by pivot pin 41 and pivotally connected to lever 25 by pivot pin 42. The connecting link 40 may be provided with a notch 43 to engage the pivotal connection 24 when the chair is moved to reclining position as shown in Fig. 3 to act as a stop to limit further reclining movement.

In the upright position of the chair, as illustrated in Figs. 1, 2 and 4, the backrest is tilted slightly backwardly from a 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 located beneath the seat, and is almost entirely concealed from view. In the reclining position of the chair, as illustrated in Fig. 3, the backrest is tilted backwardly, as shown, and the seat is moved forwardly and upwardly while the angle of slope is increased slightly. 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 **11**, levers **14** and **15** move the seat forwardly, causing the lever **18** to swing on fixed pivot **21**, which, in turn, raises the level of the seat somewhat. At the same time, the downward extension of lever **14**, acting through link **23**, swings the lever **25** forwardly on fixed pivot **26**, which motion, in turn, moves the actuating lever **28** forwardly. This motion, in turn, being transmitted through lever **31** and link **32** causes the leg rest to swing on pivot **30** to the position illustrated in Fig. 3. 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 pressing backwardly against the side frames to relieve the backward pressure of the body against the backrest. As the upright poistion is resumed, the rearward motion of the seat and the lever **18**, acting through the link **40** and levers **25** and **28**, restores the leg rest to its original position beneath the seat. In the upright position, moreover, the weight of the occupant transmitted through lever **18**, and again acting through link **40** and levers **25** and **28** tends to hold the leg rest in fully retracted position.

In the modified form illustrated in Fig. 5, the link **23** has been omitted, thus permitting the backrest to be shortened as shown. In this case, as the backrest swings backwardly on the pivot **11**, levers **14** and **15** move the seat forwardly, as before, causing the lever **18** to swing on pivot **21** as before. In this case, however, it is solely the motion of the lever **18**, transmitted through connecting link **40** which swings the lever **25** forwardly on pivot **26** to move the actuating lever **28** forwardly to actuate the leg rest. Likewise, in resuming upright position, it is solely the motion of the lever **18**, transmitted through connecting link **40** which swings the lever **25** rearwardly to move the actuating lever **28** rearwardly to restore the leg rest to its position beneath the seat.

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. A reclining chair comprising a base unit having opposed, spaced side frames, a backrest located between said side frames and movably mounted thereon, a seat located between said side frames and operatively connected to said backrest and movable therewith, a guide link pivotally connected to said seat and pivotally mounted on an opposed side frame, said guide link supporting and guiding said seat as it moves with respect to said side frames, a leg rest mounted to swing on the forward end of said seat, and means operatively connected to said backrest to swing said leg rest to a position in advance of said seat when said backrest is tilted backwardly, with respect to said side frames, said means including a leg rest actuating lever pivotally connected to said leg rest, a connecting lever pivotally connected to said actuating lever and pivotally mounted on an opposed side frame, and a connecting link pivotally connected to said guide link and to said connecting lever.

2. A reclining chair as claimed in claim 1 in which said connecting link is connected to said guide link at a point intermediate its ends and is connected to said connecting lever at a point between its ends.

3. A reclining chair as claimed in claim 1 in which said means includes a link pivotally connected to said connecting lever and pivotally connected to said backrest.

4. A reclining chair as claimed in claim 1 in which said means includes a link pivotally connected to said connecting lever and pivotally connected to said backrest and, in which said pivotal connection to said connecting lever engages said connecting link in the reclining position of the chair as a limit stop.

5. A reclining chair comprising a base unit having opposed, spaced side frames, a backrest located between said side frames and pivotally mounted on said side frames, a seat located between said side frames, a bar rigidly connected to said seat extending rearwardly therefrom and pivotally connected to said backrest at a point below the point where said backrest is mounted on said side frames, whereby said seat is moved forwardly when said backrest is tilted backwardly on said side frames, a guide link pivotally connected to said seat and pivotally mounted on an opposed side frame, said guide link swinging forwardly and supporting and guiding said seat as it moves forwardly, a leg rest mounted to swing on the forward end of said seat, said leg rest being normally located beneath said seat between said side frames, means operatively connected to said backrest to swing said leg rest to a position in advance of said seat when said backrest is tilted backwardly with respect to said side frames, said means including a leg rest actuating lever pivotally connected to said leg rest, a connecting lever pivotally connected to said actuating lever and pivotally mounted on an opposed side frame, and a connecting link pivotally connected to said guide link and to said connecting lever.

6. A reclining chair as claimed in claim 5 in which said means includes a link pivotally connected to said connecting lever and pivotally connected to said backrest.

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