MANUAL AND AUTOMATICALLY PROJECTIBLE HEADREST

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This invention relates to a new and improved headrest for chairs particularly of the low-back type which are provided with reclining mechanism so that the occupant may either sit up or recline at his ease merely by moving backwardly against the backrest of the chair which is capable of tilting or pivoting to the rear. This invention contemplates the provision of an automatically adjustable headrest which is moved upwardly into operative position to support the head of the occupant upon moving the chair backrest to the rear and this invention also at the same time contemplates a mechanism whereby the occupant of the chair may project the headrest manually even without utilizing the rearward inclination of the backrest as aforesaid, whereby the headrest is selectively manually or automatically operable to support the head of the occupant of the chair at will, etc.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

Fig. 1 is a view in side elevation with parts removed and in section showing the mechanism of the invention; Fig. 2 is a view in rear elevation with parts removed looking in the direction of the arrow 2 in Fig. 2 or Fig. 1; Fig. 3 is a detail view illustrating the headrest extended; Fig. 4 is a detail view showing the driving rod in latched position; Fig. 5 is a view similar to Fig. 4 showing the driving rod removed; and Fig. 6 is a view in side elevation illustrating the position of the manually operable actuator for the headrest.

Referring first to Fig. 1, the chair comprises the usual upholstered arm frames generally indicated at 10 and of course the chair also includes stationary framework such as indicated at 12, 14, etc. On the member 14 for instance there may be pivotally mounted a plate 16 which supports a seat 18 in turn supporting a backrest member 20. Other constructions may be used while still utilizing the present invention. For instance, the backrest 20 might be separate from seat 18 and pivot in and of itself relative to frame members 10, 12 and 14, this being a variation well known in the art.

In any event, this invention contemplates a pivotable framework guide member generally indicated at 22 having upper and lower spaced flanges as at 24, these flanges being apertured for slidably guiding a driving rod member 26. This rod member is provided with an indentation or cap 28 at the lower end thereof and is adapted to be held in position by a latching spring finger 30 fastened as at 32 to the frame member 22.

At its upper end, driving rod member 26 extends upwardly beyond the upper flange 24 passing therethrough, and is pivotally secured as for instance at 34 to a link 36 in turn secured to a parallel bar linkage mechanism which is here indicated at 38 and 40. This mechanism may be as shown and described in Patent No. 2,884,992 issued May 5, 1959, or it may be of any other new and useful construction such as for instance the flip-over type disclosed in copending application Serial No. 720,620 filed March 11, 1958. In any event, this parallel bar mechanism 38, 40 projectably and movably supports the headrest 42 which is adapted to be projected from a concealed position within the backrest 20 as shown in Fig. 1, to an exposed position as in Figs. 3 and 5 for use by the occupant of the chair.

Between the pivot-point 34 and the upper flange 24 shown in Fig. 1, there is provided a compression spring 44 which constantly tends to project driving rod member 26 upwardly in a direction to in turn project the headrest 42 from the Fig. 1 position to the Fig. 3 position, but the driving rod member 26 is normally held against this action by spring finger catch 30 as will be clear.

The spring allows some motion between rod 26 and the headrest without causing any motion of the latter.

In the operation of the chair, when the occupant leans back against the backrest 20, the same will tend to tilt in a counterclockwise direction about the axis of bracket 16. When this happens, the pivot guide frame member 22 also pivots in the same direction, being pivoted to the fixed frame members 10 as on a rod 48. Guide 22 is not fixed to the backrest but pivots with it due to the connection between rod 26 and linkage 34 and 36. This being the case, the driving rod member 26 moves upwardly with respect to the backrest and actuates parallel bar linkage members 38, 42 to project the headrest 42 to the position shown in Fig. 6. The linkage mechanism is shown in Fig. 3 and illustrates the headrest in its uppermost position. In Fig. 3, however, the backrest 20 has not been tilted back, but is still upright as in Fig. 1.

This result is obtained by the use of a square portion on the rod 48 as clearly shown in Figs. 4 and 5. The spring finger catch 30 in finger 4 is shown in position to hold the rod 26 when the spring finger 30 is flat against a flat side of the square portion of the rod 48. However, if this rod be rotated 45° as shown in Fig. 5, the spring finger 30 is retracted due to the projection of the corner of the square rod at 50 and this action releases rod 26 whereupon the spring 44 or any other spring of like nature forces rod 26 relatively upwardly, thus actuating the linkage mechanism 38 and 40 as above described in order to project the headrest 42.

Rod 48 may be actuated manually by either of a pair of handles as illustrated at 52, see Figs. 2 and 6, and these may be placed in convenient location for operation by the occupant of the chair so that he can project the headrest at any time desired without leaning back in the chair.

It is wished to be emphasized that in this case the occupant of the chair may at his will cause projection of the headrest by manipulation of the rod 48; but on the other hand, when the headrest is concealed as in Fig. 1, he can also project the headrest merely by leaning back in the chair as above described, and therefore this case presents a combined automatic or selectively manually actuated headrest of the character described.

Having thus described our invention and the advantages thereof, we do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what we claim is:

1. A reclining chair comprising a stationary frame, a backrest swingably mounted thereon for disposition between sitting and reclining positions thereof, said backrest having a smooth continuous forward surface and a cavity centrally located at the rear surface thereof, a headrest movably mounted in said cavity for substantial concealment therewithin or for projection upwardly and forwardly relative to said backrest for disposition in useful relationship therewith, means for projecting said headrest from concealed to useful condition automatically upon rearward swinging of the backrest from a sitting
toward a reclining position or selectively upon manual actuation thereof, said means comprising a pair of parallel levers mounted on the backrest at corresponding ends and connected to the headrest at the opposite ends thereof, a driving member mounted in said backrest, said driving member comprising an elongated rod, a connection between one end of said elongated rod and at least one of said parallel levers, a resilient spring normally urging said rod in an upward direction so as to project said headrest, a manually operable latch for the rod holding the same downwardly in headrest-concealed position against the action of the spring, said rod being swingable with the backrest and causing projection of the headrest when the backrest is so swung without actuation of the latch, and means for releasing said latch so that the rod will project said headrest under influence of said spring regardless of the position of the backrest.

2. The reclining chair recited in claim 1 wherein said latch is located in said stationary frame and including a guide frame member for said rod, said guide frame member being pivoted on said frame and connected to said backrest for pivoting motion therewith carrying the rod bodily therewith.

References Cited in the file of this patent

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