Dec. 15, 1953 G. J. OZENNE 2,662,585

SEAT WITH ADJUSTABLE BACK REST

Filed June 10, 1949

Fig. 1.

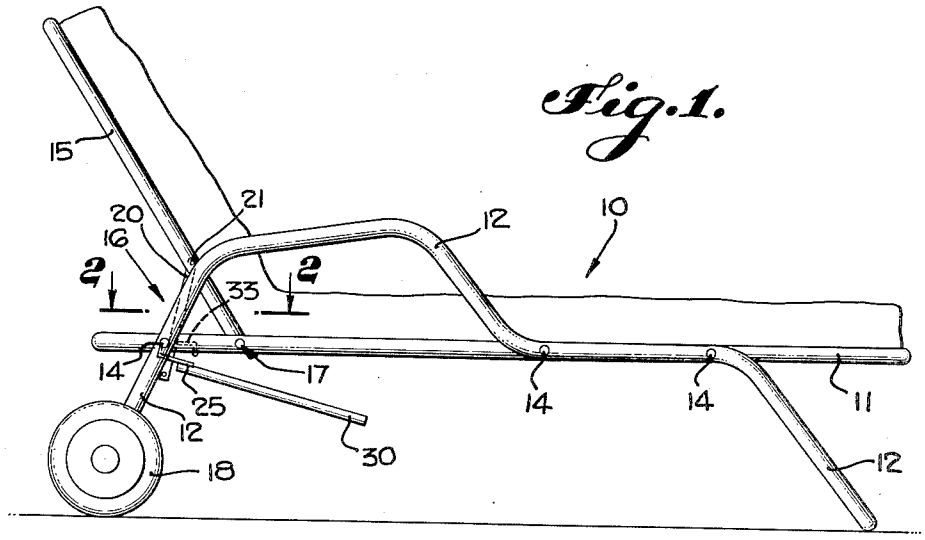


Fig. 2.

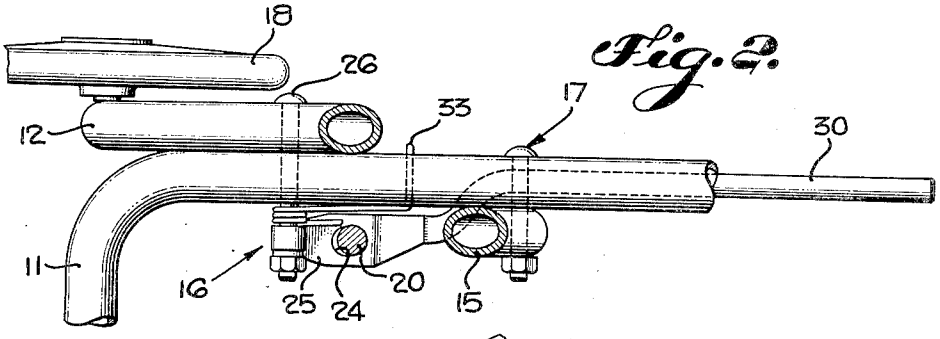
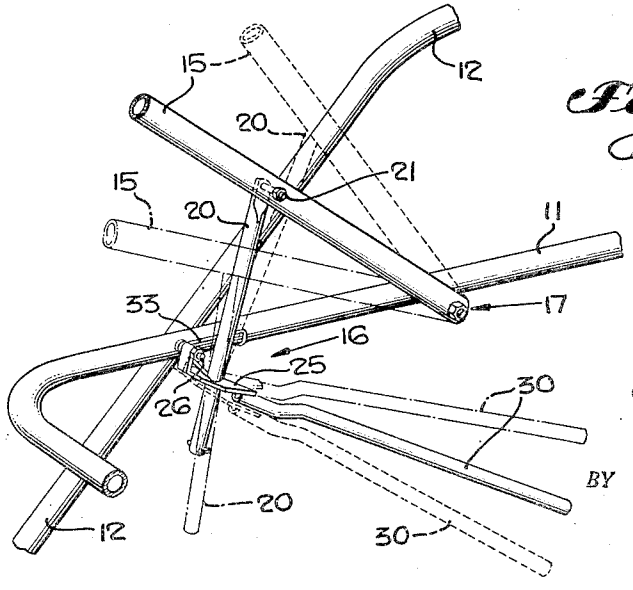


Fig. 3.



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SEAT WITH ADJUSTABLE BACK REST

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3 Claims. (Cl. 155—162)

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The present invention relates to an improved adjusting mechanism for adjusting the back rests of lawn chairs, chaise longues, and the like.

An object of the present invention is to provide an improved back rest adjusting mechanism which securely locks the back rest of a lawn chair or chaise longue in any one of continuously adjustable positions characterized by the fact that the person on such chair or chaise longue may conveniently make such adjustment.

Another object of the present invention is to provide an improved adjusting mechanism having the features mentioned in the preceding object, and also with the additional feature that there is a follow-up action resulting from the movement of the back rest while it is being adjusted which gives a very natural feel to the related movements of the lock release handle associated with such mechanism and the back rest.

Another object of the present invention is to provide an improved mechanism of this character, characterized by its simplicity and ease of construction in accordance with present-day mass production methods and processes, and which may be installed alike on existing chairs and lounges as well as in new constructions.

A specific object of the present invention is to provide an improved back rest adjusting mechanism having a lock release handle conveniently accessible to a person on the associated lounge or chair, the position of such handle being related to the position of the back rest in such a manner that a follow-up action results. In other words, a user may soon become accustomed to the position which the back rest will assume after he has moved the release handle to a corresponding position.

The features of the present invention which are believed to be novel are set forth with particularity in the appended claims. This invention itself, both as to its organization and manner of operation, together with further objects and advantages thereof, may be best understood by reference to the following description taken in connection with the accompanying drawings in which:

Figure 1 is a view in side elevation of a lawn chair having mounted thereon the back rest adjusting and locking mechanism embodying features of the present invention,

Figure 2 is a sectional view taken substantially on the line 2—2 of Figure 1, and

Figure 3 is a perspective view showing the manner in which the mechanism is mounted on the back rest and bed frame to achieve important results flowing from the present invention, and with the back rest and operating handle shown in the different positions they assume when the back rest is adjusted.

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Referring to the drawings, there is shown therein a lawn chair 10 comprising a bed frame or seat portion 11 and a support frame 12 which is conveniently fastened to the bed frame 11 on opposite sides thereof by bolts, rivets or the like at the places indicated by the reference numeral 14 and which provide a pair of arm rests. Pivotally mounted at 17 on the bed frame 11 is the back rest 15 which is locked in different adjusted positions with respect to the bed frame 11 and support 12 by the novel mechanism having the general reference numeral 16 embodying features of the present invention.

The lawn chair is supported forwardly by the downwardly bent legs of the support frame 12 contacting the ground, and at the rear of the lawn chair the support frame 12 is bent downwardly to rotatably support the ground engaging wheels 18.

The adjusting and locking mechanism 16 comprises simply what I term a shaft 20 pivotally supported at its upper end on the pivot pin 21, which passes through and is supported on the back rest member 15, which may be of tubing. This shaft 20 passes through a slightly enlarged hole 24 in the plate 25, which is pivotally mounted on the pivot pin 26 passing through and affixed to the bed frame member 11. This plate 25 has welded thereto a control lock and release handle 30 which extends generally forwardly and downwardly with respect to the lawn chair, and substantially along the left side thereof in a conveniently accessible position for operation by a person reclined on the lawn chair.

This apertured plate 25 is preferably biased downwardly in the clockwise direction in Figures 1 and 3 by a torque spring 33 having one of its ends passing through an aperture in the plate 25 and bent to engage the underside of the plate 25, and with the other end of the spring 33 disposed underneath and contacting the underside of the tubing comprising the bed frame 11, it being noted that an intermediate portion of such wire spring 33 is coiled around the pivot pin 26.

The nature of the connection between the shaft 20 and the plate 25 is a frictional one and results from a binding of the shaft 20 in the slightly enlarged hole 24 in the plate 25. When the plane of the plate 25 is perpendicular to the axis of the shaft 20, the shaft 20, of course, is free to move through the apertured plate 25.

However, when the plane of the plate **25** is out of quadrature with respect to the axis of the shaft **20**, the shaft **20** binds in the apertured plate **25** to thereby lock the attached back rest **15** in a definite corresponding locked position. The continuance of this locked condition is assured by the torque spring **33** which tends to move the plate **25** into further binding or locking position. Assuming that it is desired to lower the back rest **15** to a lower position, it is simply necessary to raise the handle **30** upwardly, in which case the shaft **20** is free to move downwardly through the apertured plate **25**; but, while the back rest **15** is thus lowered, the angularity of the shaft **20** changes with respect to the plane of the plate **25**, and this change in angularity is such that the shaft again will lock into the apertured plate **25**, unless, of course, the handle **30** is moved to compensate for the resulting angularity of the shaft **20**.

It is quite apparent, from the inspection of Figure 3, that there is a definite correlation between the position of the back rest **15** and the corresponding position of the handle **30** for any given locked position of the back rest **15**, so that a user may readily become accustomed to the amount of movement to be imparted to the handle **30** to produce the desired inclination of the back rest **15**. In other words, the back rest **15** "follows up" the movement of the control handle **30**.

While the particular embodiments of the present invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from this invention in its broader aspects and, therefore, the aim in the appended claims is to cover all such changes and modifications as fall within the true spirit and scope of this invention.

I claim:

1. In a chair or lounge of the character described, a horizontal frame member, a friction member pivotally mounted on said frame member, a back rest pivotally mounted on said frame member, a shaft having one of its ends pivotally mounted on said back rest with the body of said shaft passing through a friction aperture in said friction member pivotally mounted on said frame, and a manually operable lever rigidly attached to said friction member and extending below a side of said frame member where it is conveniently accessible to an occupant of said chair or lounge to change its position to break the frictional connection between said shaft and said friction aperture, said friction member and attached lever being movable to different positions corresponding to different adjusted positions of said back rest whereby said lever follows the motion of said back rest and the position of the lever serves as an indication of the position of the back rest, said attached lever extending forwardly of the pivoting axis of said friction member whereby said lever is required to be moved upwardly to allow said back rest to descend.

2. In a chair or lounge of the character described, a horizontal frame, a back rest pivotally mounted on said frame, an apertured friction plate pivotally mounted on said frame, a cooperating shaft passing through said friction aperture and having one of its ends pivotally connected to said back rest, a torque spring having one of its ends abutting said frame and the other one of its ends abutting said friction plate to normally bias said friction plate in engagement with said shaft passing therethrough, and a manually operable handle connected to said friction plate and extending below a side of said frame member where it is conveniently accessible to an occupant of said chair or lounge to move said friction plate out of engagement with said shaft passing therethrough, said friction plate and attached handle being movable to different positions corresponding to different adjusted positions of said back rest whereby said handle follows the motion of said back rest and the position of said handle serves as an indication of the position of the back rest, and said handle extending forwardly of the pivoting axis of said friction plate and movable upwardly to allow said back rest to lower.

3. In a chair or lounge of the character described, a generally rectangular horizontal frame comprising a seat portion, a support frame having a ground engaging member and an arm rest, a back rest, means pivotally supporting said back rest on said seat portion, a friction member, means pivotally supporting said friction member on said seat portion, the last mentioned means comprising a fastening bolt which passes through said seat portion and said support frame, a shaft having one of its ends pivotally mounted on said back rest with the body of said shaft passing through a friction aperture in said friction member, a manually operable lever rigidly attached to said friction member and extending forwardly along and below said seat portion, where it is conveniently accessible to an occupant of said chair or lounge to change its position to break the frictional connection between said shaft and said friction aperture, said friction member and attached lever being movable to different positions corresponding to different adjusted positions of said back rest, whereby said lever follows the motion of said back rest and the position of the lever serves as an indication of the position of the back rest, said attached lever extending forwardly of the pivoting axis of said friction member whereby said lever is required to be moved upwardly to allow said back rest to descend.

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