Feb. 9, 1932. L. LARSEN 1,844,130

ADJUSTABLE RECLINING BACK

Filed March 8, 1929

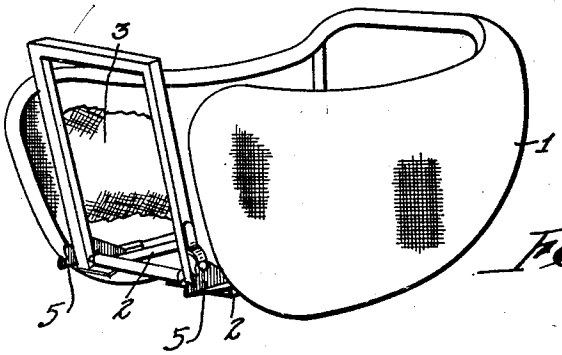

Fig. 1.

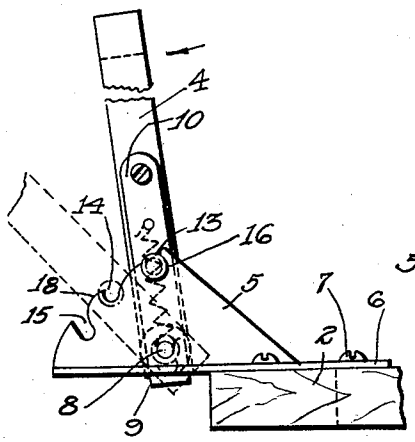

Fig. 2.

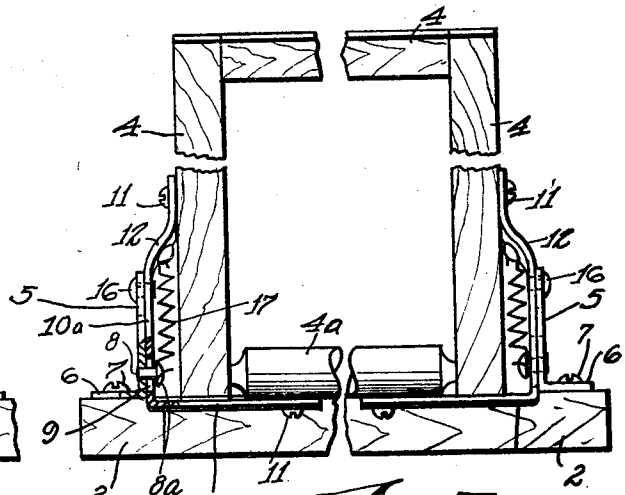

Fig. 3.

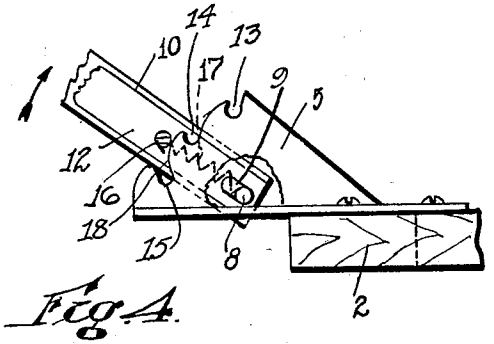

Fig. 4.

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UNITED STATES PATENT OFFICE

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ADJUSTABLE RECLINING BACK

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The present invention relates to an adjustable reclining back for use in connection with baby carriages, chairs, and the like, and has for its object to provide means whereby the back may be readily adjusted to the desired angle of inclination.

The invention is particularly characterized by the fact that adjustment of the back is secured without the use of levers, rods, or other extraneous members, the locking means by which the back is held at any given angle being released by merely shifting the back with respect to its pivotal axis. The above and other advantageous features of the invention will hereinafter more fully appear with reference to the accompanying drawings, in which,—

Fig. 1 is a perspective view of a baby carriage body provided with an adjustable reclining back rest mounted in accordance with the present invention.

Fig. 2 is a view in side elevation of the back rest showing on an enlarged scale the details of the combined hinge and locking device.

Fig. 3 is a view in front elevation of the parts shown in Fig. 2.

Fig. 4 is a fragmentary view showing the manner of raising the back rest.

Like reference characters refer to like parts in the different figures.

Referring first to Fig. 1, the invention is shown embodied in a baby carriage, although it is obvious that the invention may also be utilized in a chair, or any other similar article in which it may be desired to vary the inclination of the back with respect to the seat. The portion of the baby carriage shown comprises a body, or basket 1, providing longitudinal frame members 2, 2 which extend beyond the open end of the basket 1 and provide means for adjustably supporting a back rest 3 in the space between the side walls of the basket 1. As best shown in Fig. 3, the back rest 3 consists of a suitable frame from which the covering has been removed and the side pieces 4 of this frame are connected to the basket frame members 2 by means of a pair of combined hinge and locking devices which form the subject matter of the present invention.

As best shown in Figs. 2 and 3, each basket frame member 2 carries an upwardly projecting hinge plate 5 secured to the frame member 2 by means of a foot portion 6 and screws 7. The hinge plate 5 provides a fixed pivot pin 8 which is received freely in a slot 9 provided at the lower end of one leg 10*a* of an L-shaped bracket 10. The legs 10*a* and 10*b* of each bracket are secured to one side piece 4 and the lower cross bar 4*a* of the frame of the back rest 3 by means of screws 11, and the vertical leg 10*a* of the bracket 10 is bent as indicated at 12 to space the head 8*a* of the pivot pin 8 away from the lower end of the side piece 4.

The hinge plate 5 extends beyond the end of the basket frame member 2 and the forward edge thereof is provided with a number of notches 13, 14 and 15. The notch 13 is located almost directly above the pivot pin 8 so that when a stud 16 carried by the bracket leg 10*a* is received in the notch 13, the back rest 3 will be supported in a nearly vertical position, as shown in full lines in Fig. 2. The stud 16 is adapted to be yieldingly maintained in the notch 13 by means of a spring 17, one end of which is secured to the pivot pin 8 while the other end is secured to the leg 10*a* at the point 12 where the bracket 10 is bent away from the side piece 4.

When the stud 16 is seated in the notch 13 it is obvious that the back rest 3 will be firmly supported in a nearly vertical position, for the notch 13 is deep enough to fully seat the stud 16 and the spring 17 resists any tendency for the stud to unseat itself from the notch 13. Consequently, the back rest 3 is firmly held against any tendency to turn in either direction about its pivotal axis.

When it is desired to change the inclination of the back rest 3, it is only necessary to pull the back rest 3 upwardly in a direction away from its pivotal axis, whereupon the springs 17 will yield and the studs 16 will be moved clear of the notches 13. This bodily lifting of the back rest 3 is permitted by the elongated slots 9 in the brackets 10 which receive the pivot pins 8, the slots 9 being long

enough to permit the studs 16 to be fitted entirely clear of the notches 13. After pulling upwardly on the back rest 3, it may be turned downwardly about the pivot pins 8 to bring the studs 16 into engagement with the notches 14, as indicated in dotted lines in Fig. 2, or with the lower notches 15. Upon releasing the back rest, the springs 17 will serve to hold the studs 16 in their new position, the notches 14 and 15 being deep enough to fully receive the studs 16 and prevent backward movement of the rest 3. Thus the back rest 3 is adapted to be firmly supported at several different angles of inclination, depending upon the number of notches in the hinge plates 5.

When it is desired to move the back rest 3 forward from its support in the notches 14 or 15 back to a substantially vertical position in the notches 13, it is only necessary to exert a relatively slight turning force on the back rest in a clockwise direction as viewed in Fig. 4, whereupon the studs 16 will ride up cam surfaces 18 joining opposite sides of the notches 13 and 15 with the middle notch 14. These surfaces 18 are so formed that a turning moment imparted to the back rest 3, in a clockwise direction, will cause the studs 16 to be moved away from the pivots 8, thereby shifting the whole back rest 3, until the studs 16 are received in the next higher notch, the slots 9 permitting this shifting of the back rest frame. Thus when the back rest 3 has been moved into engagement with the lower notches 15, it can be quickly turned to the upper position determined by the notches 13, by a substantially continuous turning movement. The cam surfaces 18 however are so formed that the notches 13 and 14 fully seat the studs 16, so that movement of the back rest in a counterclockwise direction is prevented effectively, until the frame 4 is pulled away from the axis to unseat the studs 16.

From the foregoing then, it is apparent that by the present invention there is provided an extremely effective means for supporting the pivoted back of a baby carriage or chair at different angles of inclination, it being possible to readily vary the angle of inclination by merely exerting a force on the back itself and without necessitating the operation of any levers or other members extraneous to the hinge itself. The back is also firmly supported against any force tending to lower it, while at the same time it may be readily moved from a lower to a higher position. In other words, while the back is effectively locked in any position, it may be readily raised by merely turning it about its axis, whereas the entire back must be pulled away from this axis in order to lower it.

I claim:

1. In a device of the class described, the combination with a body open at one end and a back support pivotally mounted within the open end of said body, of a pair of hinge plates carried by said body, a pair of brackets carried by opposite edges of said support with portions thereof bent away from said support to fit between said hinge plates, fixed pivots projecting inwardly from said hinge plates slidably received in slots provided in said brackets, pins projecting outwardly from said brackets receivable in notches provided on said hinge plates to maintain said back support in different angular positions on said body, and springs located in the spaces between said brackets and the sides of said back support for maintaining said bracket pins in said notches, each spring being connected at its ends between a fixed pivot and its associated bracket.

2. In a device of the class described, the combination with a body open at one end and a back support pivotally mounted within the open end of said body, of a pair of hinge plates carried by said body, a pair of brackets carried by opposite edges of said support with portions thereof bent away from said support to fit between said hinge plates, fixed pivots projecting inwardly from said hinge plates slidably received in slots provided in said brackets, pins projecting outwardly from said brackets receivable in notches provided on said hinge plates to maintain said back support in different angular positions on said body and springs located in the spaces between said brackets and the sides of said back support for maintaining said bracket pins in said notches, each spring being connected at its ends between a fixed pivot and its associated bracket and the notches on said hinge plates being so formed as to positively prevent turning of said back support away from said body and being joined by inclined surfaces adapted to withdraw said pins from said notches against the pull of said springs upon turning said back support in the opposite direction about its axis.

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