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L. GOTTFRIED ETAL

3,069,202

BABY CHAIR WITH INCLINING BACK

Filed Jan. 16, 1962

FIG. 1.

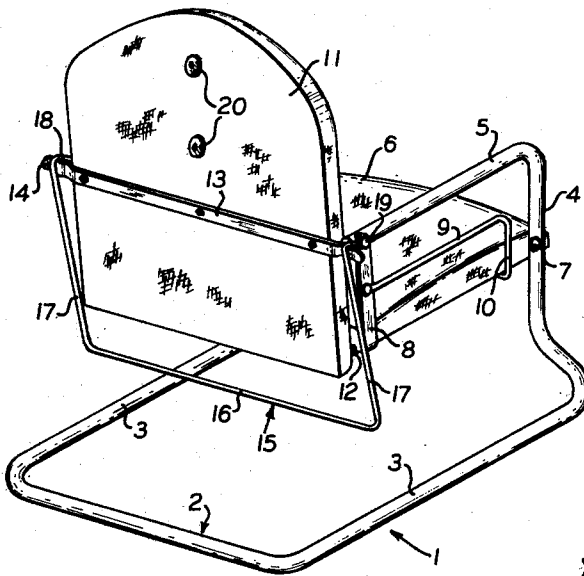


FIG. 3.

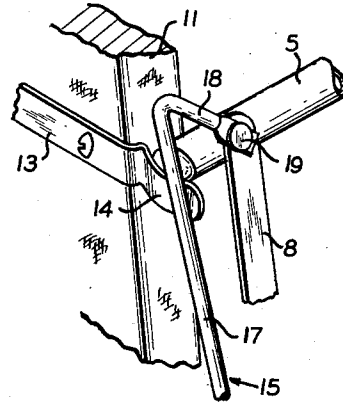


FIG. 4.

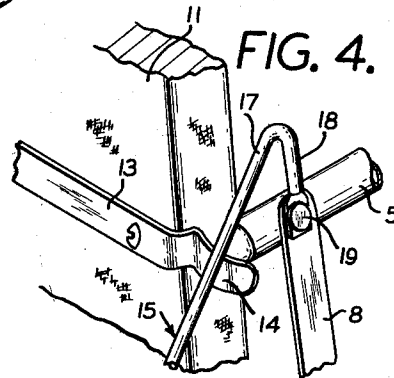


FIG. 2.

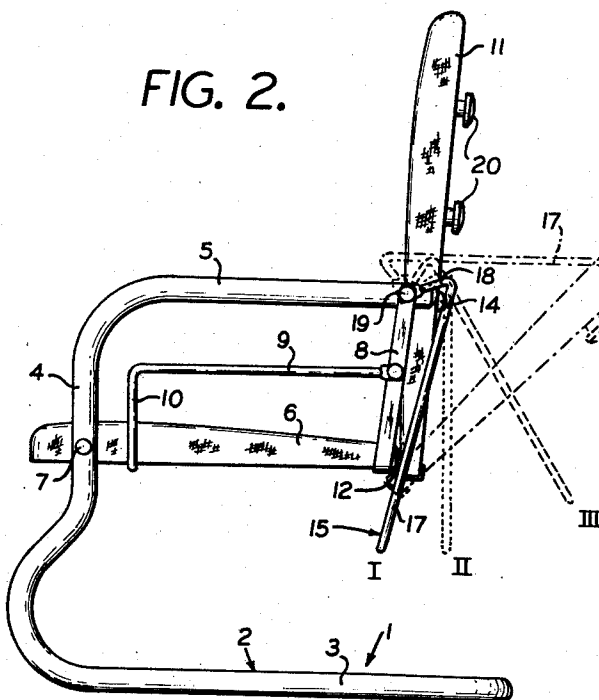
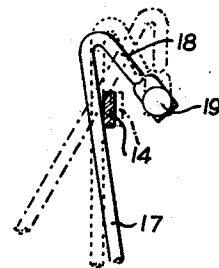


FIG. 5.



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BABY CHAIR WITH INCLINING BACK

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2 Claims. (Cl. 297—355)

The present invention relates to a baby chair having an inclining back, and in particular to such arrangement in which the back of the baby chair can be secured in a plurality of angular positions.

A baby chair is known which comprises a tubular frame supporting a seat and a back, in which the back is pivotally secured to the rear end of the seat, so that the back may assume any one of a plurality of inclined positions. In order to maintain the back in its normal upright position, a U-shaped frame member is pivoted to the rear end of a seat and the back of the baby chair is equipped with a cross bar, the straight end portions of which engage the upper portion of the U-shaped frame member and, thereby, retain the back normally in upright position. It has been found, however, that the U-shaped frame member, as it is used now, releases the back to an unexpected rearward movement upon exerting rearward pressure on the back and in such case, the child falls backwards.

It is, therefore, one object of the present invention to provide a baby chair having an inclinable back which includes means for retaining the back in its upright position or upon changing the position of the back retaining means the back can be set into any one of a plurality of inclined positions.

It is yet another object of the present invention to provide a baby chair having an inclinable back in which the back has at its rear face a substantially horizontally disposed cross bar which is equipped with curved end portions extending beyond the lateral ends of the back and a U-shaped member is hingedly connected to the main frame of the chair, the U-shaped frame member having a horizontally disposed base and upwardly disposed leg members, the ends of which are bent over to form a bent end portion, which is disposed at an acute angle towards the leg members. The end of the bent end portions is pivotally secured to the main frame member, whereby the curved end portions of the cross bar cross and engage the upper end of the upwardly directed leg members in such manner that at first the curved end portions are urged to a forward motion before a rearward angular movement of the back can be obtained.

With these and other objects in view, which will become apparent in the following detailed description, the present invention will be clearly understood in connection with the accompanying drawings, in which:

FIGURE 1 is a rear perspective view of a baby chair designed in accordance with the present invention;

FIG. 2 is an end view of the baby chair shown in FIG. 1;

FIG. 3 is a fragmentary perspective view of the back in connection with the frame retaining the back in upright position;

FIG. 4 is a fragmentary perspective view of the combination shown in FIG. 3, however, the parts being shown in a changed position; and

FIG. 5 is a fragmentary side view of the back indicating diagrammatically the relative movements of the back and of the frame.

Referring now to the drawing, the baby chair comprises a tubular frame 1 including a U-shaped base 2 including lateral leg members 3, upwardly extending members 4 and horizontally disposed members 5 extending rearwardly from the upper end of the upwardly extending members 4. A seat 6 is disposed between and intermediate the ends of

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the upwardly extending members 4 and secured to the latter by any suitable means, as a screw bolt 7.

A vertical bar 8 is secured to and extends downwardly from the rear portion of the horizontally disposed members 5 and the lower end of the vertical bar 8 is bent horizontally towards the seat 6 and is secured to the bottom face of the seat 6, whereby the latter is additionally supported by the frame 1.

A horizontally disposed bar 9 extends forwardly from the vertical bar 8 and is bent downwardly at its front end to form a vertical part 10, the lower end of the latter being bent again horizontally inwardly towards the seat 6 to be secured to the bottom face of the latter.

A back 11 is secured to the rear end of the seat 6 by means of a hinge 12, which permits inclination of the back 11 to any one of a plurality of angularly spaced apart positions, as shown in FIG. 2 of the drawing.

A horizontally disposed cross-bar 13 is secured to the back face of the back 11 and has forwardly curved end portions 14 which are adapted to be engaged by portions of a U-shaped holding frame 15 which retains the back 11 in the upright position, as well as in several inclined positions.

The U-shaped holding frame 15 has a horizontally disposed base 16 and two arms 17 projecting upwardly and having the upper ends bent downwardly to form an acute angle (FIG. 4) between the upwardly extending portion 17 and the bent down portion 18. The free end of the latter is pivotally secured to the horizontal portions 5 by means of a bolt 19, so that the U-shaped frame 15 can be turned upwardly about the bolts 19 constituting the turning axis, as shown in FIG. 2 of the drawing, where the U-shaped frame 15 is shown in full lines in position I, in dotted lines in position II, in dashed lines in position III and in dot-dashed lines in position IV, the arms 17 assuming a substantially horizontally position in the position IV.

The back 11 has at least two bolts 20 which are secured to the center of the back face of the back 11 in a vertically spaced apart arrangement. As shown also clearly in FIG. 2 of the drawing, upon turning upwardly the U-shaped frame 15 the back 11 can be shifted into an inclined position and retained at different angles relative to the upright position thereof by engagement of the base 16 of the frame 15 with a corresponding bolt 20.

It has been found that upon exerting appreciable rearward pressure against the back 11, the U-shaped frame 15, as provided in the known structures, is released for a turning movement and the child falls backwards. In accordance with the present invention, the free end of the arms 17 engages the curved end portions 14 of the cross bar 13 in its position II in such manner that in order to shift the back 11 from its upright position to an inclined position, due to the turning of the frame 15 by a relative cam operation between the arms 17 and the curved end portions 14, the latter are pushed forwardly at first through a dead center, before the back 11 with its cross bar 13 and its curved end portions 14 can start its rearward movement, which forward movement of the curved end portions 14 is schematically shown in FIG. 5 of the drawing. Due to the required slight forward movement of the curved end portions 14 of the cross bar 13, a self-locking of the back 11 is brought about, which is released after the frame 15 passes through dead center in its rearward and upward swinging movement.

The normal back-retaining position I of the frame 15 and of the curved end portions 14 is shown in full lines in FIG. 5, where for the purpose of better demonstration the curved end portions 14 of the cross bar 13 are given in cross section. In order to shift the back 11 from its upright position into an inclined position, the frame 15 is

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turned upwardly and while the arms 17 of the frame 15 were in engagement with the lower rear edge of the curved end portions 14 during the upright position I of the block 11, during the opening movement of the frame 15 at first the engagement with the lower rear edge of the curved end portions 14 is abandoned and for a short time the axis of the arms 17 will assume a position parallel to the rear face of the curved end portions 14, which position II is also shown in dotted lines in FIG. 5. Upon further upward turning of the frame 15 the arms 17 start engagement with the upper rear edge of the curved rear portions 14, and due to the small radius of turning the last-mentioned engagement point, the curved end portions 14 are forced to perform a short forward movement, at the same time abutting the rear end face of the horizontally disposed members 5, during which the engagement point slides along the front face of the arms 17, thereby extending slowly the radius between the pivot point of the frame 15 and the mentioned engagement point until the position III is reached, shown in dashed lines, whereupon the rearward movement of the back 11 can start in order to assume a position at any desirable angle.

While we have disclosed one embodiment of the present invention, it is to be understood that this embodiment is given by example only and not in a limiting sense, the scope of the present invention being determined by the objects and the claims.

We claim:

1. In a chair,
 - a frame comprising a supporting base and two upwardly directed portions extending from said base,
 - two horizontally disposed portions extending from the upper end of said upwardly directed portions in rearward direction,
 - a seat partially supported by and disposed between said upwardly directed portions of said frame,
 - a back hingedly secured to the rear end of said seat,
 - a first bar member extending downwardly from each of said horizontally disposed portions of said frame and

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spaced apart from the side edge of said seat and bent horizontally towards and secured to said seat, a second bar member extending forwardly from an intermediate point of said first bar member and then bent in downward direction spaced apart from said side edge of said seat, to be bent again in horizontal direction towards and secured to said seat,

a horizontal cross bar secured to the rear of said back, said horizontal cross bar having curved end portions extending beyond the lateral edges of said back and abutting the rear end face of said horizontally disposed portions, when said back is in upright position, a U-shaped member having a horizontal base part and two arms projecting from said base part,

the free end of said arms being bent to form end portions disposed at an acute angle towards said arms and hingedly secured to the rear end of said horizontally disposed portions of said frame and engaging said end portions,

said U-shaped member being swung upwardly to permit said back to be shifted from its upright position to an inclined position and said arms of said U-shaped member engaging at first the bottom rear edge, then the rear face and finally the upper rear edge of said curved end portions of said cross bar, whereby said curved end portions perform at first a forward movement relative to the main portion of said cross bar to join thereafter the rearward movement of said cross bar with said back, and holding means secured to the rear face of said back and engaging selectively said horizontal base part of said U-shaped member.

2. The chair, as set forth in claim 1, wherein said holding means comprises

a plurality of bolts extending rearwardly from the back face of said back, and said base part of said U-shaped member abutting selectively one of said bolts to retain said back in any one of a plurality of inclined positions.

No references cited.