May 2, 1933. D. H. CALDEMEYER 1,907,177

ADJUSTABLE BACK FOR DAVENPORT BEDS

Filed June 8, 1931 2 Sheets-Sheet 1

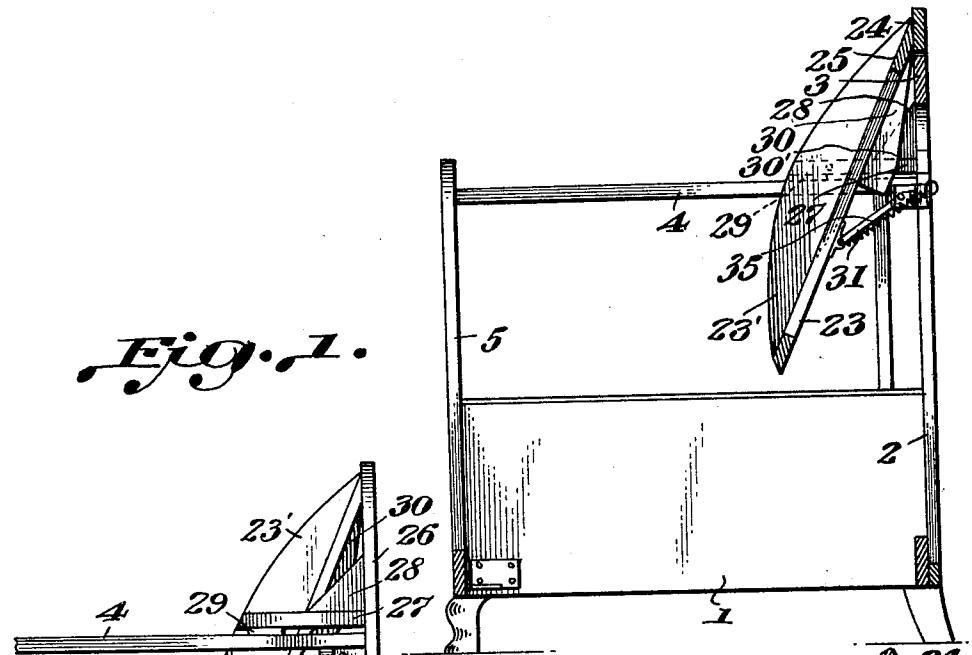


Fig. 1.

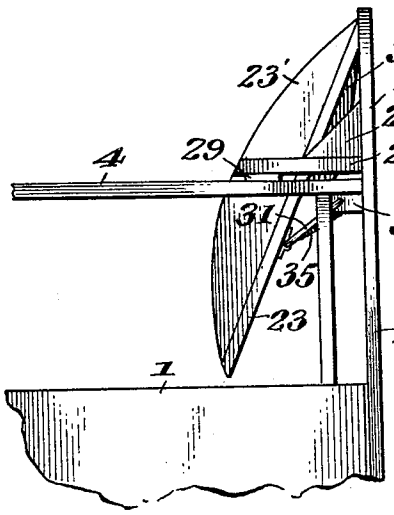


Fig. 2.

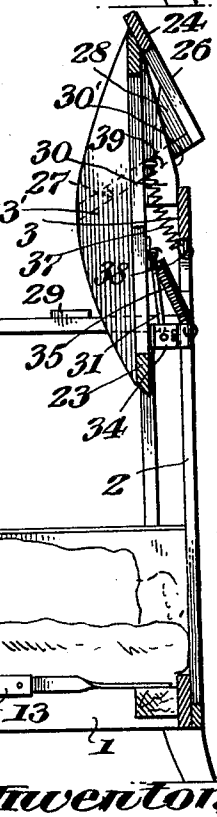


Fig. 3.

Inventor;
Daniel H. Caldemeyer
By Frank C. Gore Atty.

May 2, 1933. D. H. CALDEMEYER 1,907,177

ADJUSTABLE BACK FOR DAVENPORT BEDS

Filed June 8, 1931 2 Sheets-Sheet 2

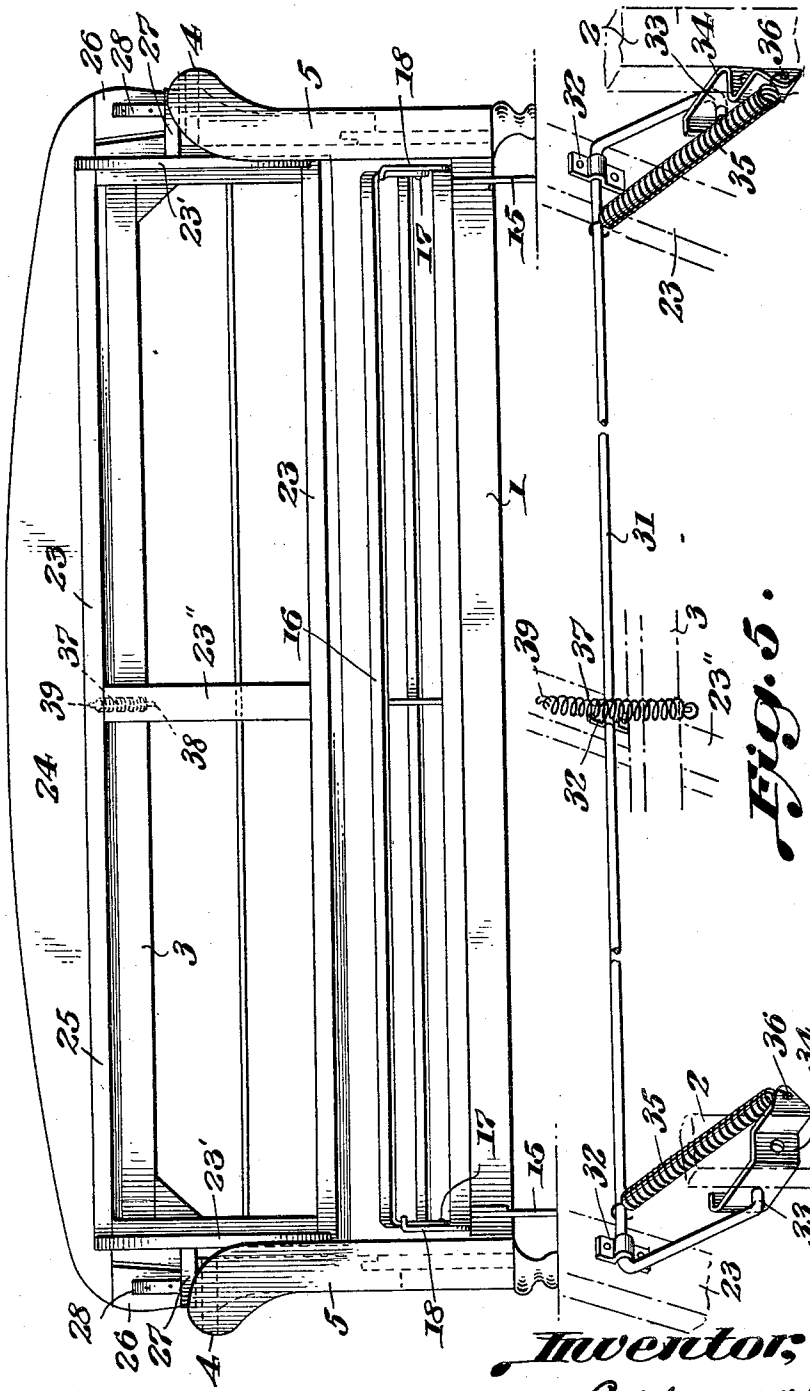


Fig. 4.

Fig. 5.

Inventor;
Daniel H. Caldemeyer
By Frank C. Gore Atty.

Patented May 2, 1933 1,907,177

UNITED STATES PATENT OFFICE

DANIEL H. CALDEMEYER, OF EVANSVILLE, INDIANA

ADJUSTABLE BACK FOR DAVENPORT BEDS

Application filed June 8, 1931. Serial No. 542,951.

This invention relates to that general class of davenport beds having adjustable backs.

The object of the invention is to provide an improved adjustable back for a davenport bed which may be swung upwardly and downwardly in a bodily combined shifting and rocking manner, out of the way of the person occupying the bed when the latter is extended for sleeping or reclining purposes, thereby affording additional space for the feet of the occupant, which would otherwise be occupied by the back, if it remained in its normal position.

The invention embodies improved means for mounting the back, whereby the back may be raised or lowered in a bodily shiftable and rocking fashion; improved spring means for facilitating the raising and lowering of the back and for holding the back in either its raised or lowered position and for preventing it from accidentally tilting forwardly when in raised position; and, generally, comprises the combination of mounting, retaining means, and positioning means included in the improvements which are hereinafter described and are shown in the accompanying drawings, in which:

Figure 1 is a fragmentary side elevation, showing the back in its normal, lowered position;

Fig. 2 is a vertical section, the back being in lowered position;

Fig. 3 is a vertical section, the back being raised and the bed being extended, illustrating by the outline of a person occupying the bed, how additional foot room is obtained when the back is raised;

Fig. 4 is a front elevation, the back being in its lowered position and the bed being shown extended; and

Fig. 5 is a detail rear perspective showing the mounting for the back and the springs.

To prevent obscuring of the parts pertaining to the present invention, all upholstery, cushions, and trimming is omitted from the drawings, and only so much of the extensible part of the bed is disclosed as will afford a clear understanding of the advantages of the improvements.

The frame of the bed appears at 1 and includes the main, stationary back 2, having the upper horizontal rail 3, and the arm rests 4, which are supported by the front pieces 5.

Any desired construction of extensible and foldable bed bottom sections may be used in connection with my improvements. I have illustrated, in a conventional manner, in Fig. 3, the general type of extensible and foldable bed shown in my Patent No. 1,591,608, July 6, 1926, wherein the walk-over or extensible and foldable bed bottom appears at 6, being carried by links 7, 8, which are pivoted, respectively, at 9 and 10 to the bottom and at 11 and 12 to the stationary section 13, which is carried by the frame 1.

Springs 14 co-operating with the section 13 and with the links 8, facilitate the movement of the walk-over section 6. This construction will be more clearly understood by reference to my Patent 1,591,608. The section 6 may be provided with foldable legs 15, as set forth in my Patent 1,591,608, or other legs may be used.

One of my present improvements resides in a head rest comprising a frame 16, which extends across the section 6 and is pivoted or hinged thereto at 17, enabling this head rest to be disposed as shown in Figs. 3 and 4 when the bed is to be used, or to be folded down on the section 6 when the bed is to be collapsed and the piece of furniture converted into a sofa. To sustain the head rest 16 in raised position so that it may be used as illustrated in Fig. 3, there are provided supports 18 pivoted at 19 to the section 6 and adapted to be disposed vertically beneath the head rest 16 to support it, as shown in Figs. 3 and 4, or folded down to permit the head rest 16 to be folded.

The pillow 20 used by the occupant 21, may be an ordinary pillow which rests on the frame 16, or, the frame 16 may be upholstered.

A mattress 22 is shown in a conventional manner, as resting upon the sections 6 and 13.

The frame of the adjustable back is shown at 23, this frame having a top piece 24 which normally rests on, and forms a vertical con-

tinuation of, the top rail 3 of the back 2, as shown in Fig. 1. The upper, front piece 25 of the adjustable back abuts the upper edge of the rail 3 when the back is in normal position, thus partly taking the pressure exerted by any one occupying the sofa.

The adjustable back is provided with vertical end pieces 26 which depend from the top rail 24 and lie in alignment with the upper part of the back 2 when the adjustable back is in normal position, as more clearly seen in Fig. 4. There are lateral rests or supports 27 which are connected by angle blocks 28 to depending end pieces 26 and are also fastened to said end pieces and to the ends 23′ of the back 23. When the adjustable back is in its normal position, the rests 27 are supported by the arms 4, small blocks 29 being provided on the arms to contact with the parts 27.

The entire back may be raised from the normal position shown in Figs. 1, 2 and 4 to that appearing in Fig. 2, when the bed is to be extended and used for reclining or sleeping purposes. As seen in Fig. 3, the raising of the adjustable back disposes it well above the person occupying the bed and thus clears the space immediately in front of the back 2 of the frame so that additional foot and leg space is provided which otherwise would not be available, thus adding to the comfort of the person occupying the bed and enabling him to stretch out.

The adjustable back 23 is adapted to be bodily swung as a unit from its normal position appearing in Figs. 1, 2 and 4 to the raised position shown in Fig. 3, or restored from the position shown in Fig. 3 to normal position. When in raised position, the adjustable back is arrested against further rearward movement by the contact of abutment blocks 30 with the front of the upper rail 3 of the fixed rear part 2 of the frame 1.

The adjustable back 23 is bodily carried by and rocks or swings upwardly and downwardly with a bail or rocker 31, Fig. 5, which is mounted in brackets or bearings 32, carried by the rear of the back or frame 23.

The bail has crank ends 33 which are journalled in metal brackets 34 secured to the rear vertical corner pieces of the fixed back 2. The contractile coil springs 35, which are engaged with the ends of the brackets 34 at 36 and with the horizontal part of the bail 31, are under considerable tension when the adjustable back is in its normal position, as shown in Figs. 1 and 2. The springs 35, when the back is in its lower position, tend to draw the bail 31 downwardly because the springs are then arranged past the dead center of the bail, said springs and the bail forming an angle with each other and consequently the springs, through the bail, hold the stop pieces or supports 27 down on the blocks 29 and the top rail 24 down on the upper piece 3 of the back frame 2.

There is another contractile coil spring 37, best seen in Figs. 3 and 5, which is connected to the under side of rail 3 at 38 and to the vertical center piece 23″ of the back 23 at 39. The spring 37 is loose, contracted, and has no effect in holding the adjustable back down when in the position shown in Figs. 1 and 2, as the springs 35 in connection with the bail 31, serve that purpose. However, when the adjustable back is raised to the position shown in Fig. 3, this action puts the spring 37 under considerable tension and said spring then materially supplements the contractile action of the springs 35 in holding the adjustable back in its raised position. It will be understood that when the adjustable back has been raised to the position shown in Fig. 3, the swinging of the bail 31 also disposes the springs 35 rearwardly of dead center relationship to the bail 31 and while said springs 35 are clearly contracted, nevertheless they exert a retaining action to hold the back in its raised position because of their pulling action on the bail.

The spring 37, however, being considerably stretched when the back is in raised position, this spring materially assists the springs 35 in retaining the back in raised position.

The rear edges of the blocks 30 have cams 30′, which wipe against the upper rail 3 of the back 2 when the adjustable back 23 is pressed upon, thus tilting the back 23 when it is to be lowered. This facilitates pushing down of the back 23 and the swinging of the bail 31 until the springs 35 have passed dead center, whereupon these springs snap the adjustable back down to lowered position until the back is arrested by the stops or members 27 engaging the blocks 29 on the arms 4.

It will also be understood that when the adjustable back 23 has been elevated sufficiently to bring the springs 35 above dead center relationship to the bail, the action of these springs will assist the operator in raising the back to its upper position.

When the back 23 is in the elevated position shown in Fig. 3, the action of the spring 37 insures the stability of the back and minimizes any accidental forward dropping or tilting thereof on the bail 31 because this spring is then under tension and is drawing rearwardly the upper part of the back and holding the blocks 30 against the rail 3.

What I claim is:

1. An adjustable back for davenport beds which is mounted for bodily swinging and tilting movements to dispose it in lowered position or in raised tilted position, the mounting means comprising a swinging bail which is hinged to the back between the

upper and lower parts thereof and bodily carries said back, means serving as an abutment for the back when it is in raised position, spring means for maintaining the back in raised or lowered position, and an additional spring means for holding the back against the abutment when said back is in raised position, thereby to prevent accidental tilting of the back.

2. An adjustable back for davenport beds which is solely mounted for bodily swinging and tilting movements to dispose it in raised or lowered position, means for maintaining said back in said positions, comprising a swinging bail, which bodily carries said back and constitutes the sole mounting for said back, said back also being tiltably or rockably mounted, and contractile coil springs co-operating with said bail, said springs being adapted to be swung by the back past "dead center" position during the movements of the back from lowered to raised position, or vice versa, thereby to maintain the back in said positions and to assist the operator in shifting the back, and other spring means co-operating with the back for minimizing any tendency of the back to swing forward when in its raised position.

3. An adjustable back for davenport beds which is solely mounted for bodily swinging and tilting movements to dispose it in raised or lowered position, means for maintaining said back in said positions, comprising a swinging bail, which bodily carries said back and constitutes the sole mounting for said back, said back also being tiltably or rockably mounted, contractile coil springs cooperating with said back, said springs being adapted to be swung by the back past "dead center" position during the movements of the back from lowered to raised position, or vice versa, thereby to maintain the back in said positions and to assist the operator in shifting the back, and additional spring means co-operating with the back, said additional spring means being inactive when the back is lowered and is rendered active when the back is raised, serving to hold the back in raised position.

4. A bodily swinging back for a davenport bed, said back being provided with means on which it is adapted to be raised or lowered, in combination with spring means for holding the back in its lowered position, and other spring means normally inactive when the back is lowered and which is rendered active when the back is raised, adapted for minimizing any tendency of the back to swing forward when in raised position.

5. A bodily swinging back for a davenport bed, said back being adapted to be raised or lowered, in combination with spring means for holding the back in its lowered position, other spring means normally inactive when the back is lowered and which is active when the back is raised, adapted for minimizing any tendency of the back to swing forward when in raised position, and a swinging bail hinged to the back between the upper and lower parts thereof which mounts said back for swinging upwardly or downwardly and for tilting.

6. In a davenport bed, the combination with a main frame and a fixed back therefor, of an adjustable back which is adapted to be raised or lowered, means mounting said adjustable back so that it may be raised or lowered and will swing during its movements, cam-means for tilting said back, and spring means for rendering said cam-means effective during the raising and lowering movements of the adjustable back.

7. In a davenport bed, the combination with a main frame and a fixed back, of a bodily shiftable, tiltably adjustable back which may be raised or lowered in relation to the fixed back, a swinging bail which bodily mounts the adjustable back on the fixed back for bodily shifting up and down when the bail is swung, spring means co-operating with the adjustable back, cam-means for causing the adjustable back to tilt when it is swung, said spring means causing the adjustable back to co-operate with the cam means and to hold the adjustable back in raised or lowered position.

In testimony whereof I affix my signature.

DANIEL H. CALDEMEYER.