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L. E. GOENEN ET AL

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CHAIR

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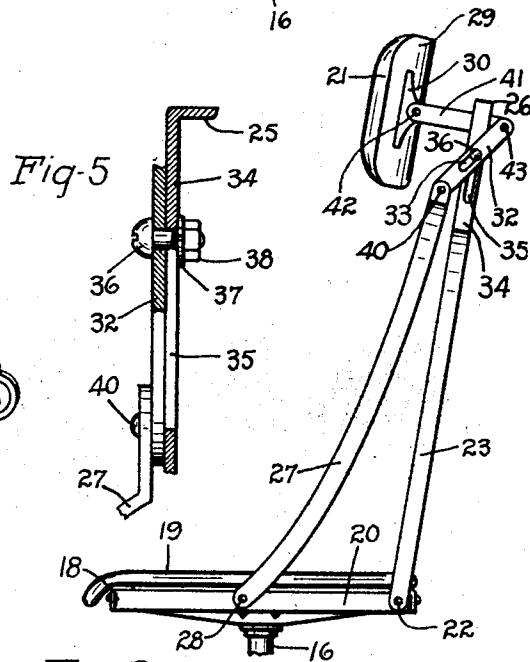
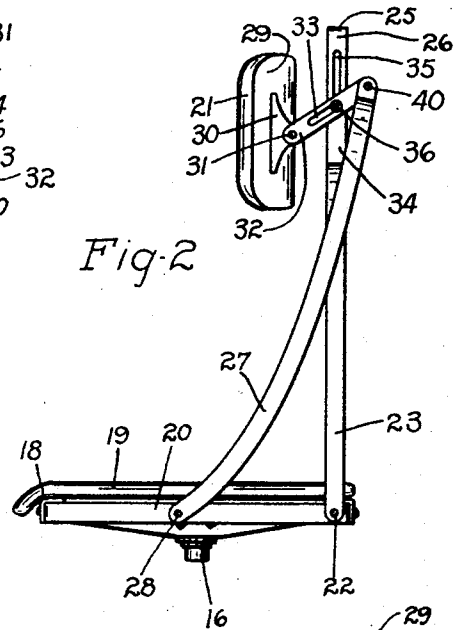
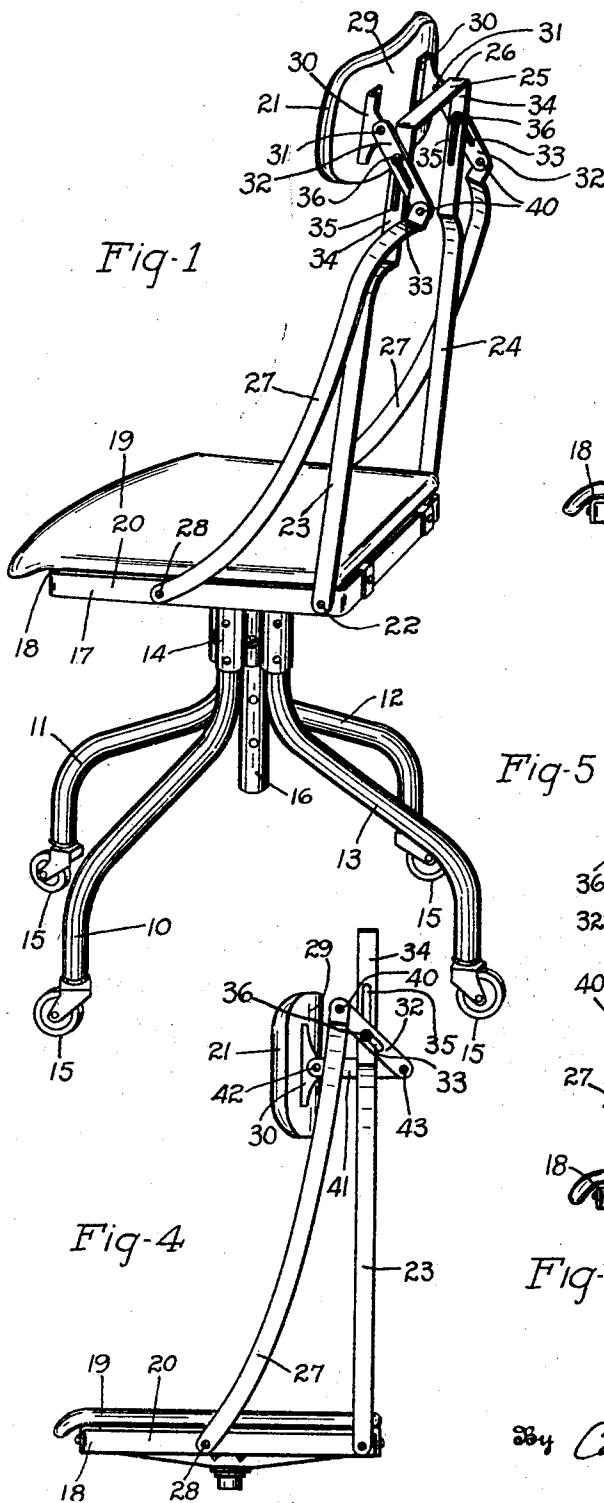


Fig. 5

Fig. 3

Fig. 4

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UNITED STATES PATENT OFFICE

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CHAIR

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Our invention relates to chairs and particularly to chairs having adjustable back rests, and has for its object to provide a chair in which the back rest may be simultaneously
5 adjusted in an up and down direction and in a back and forth direction, or in which the chair may be independently adjusted in either an up and down direction or a back and forth direction.

10 Another object of the invention resides in providing a seat with a frame pivoted thereto and in mounting an elongated member transversely of said frame, said back rest being pivoted to said member at one end thereof.

15 Another object of the invention resides in adjustably mounting said member for sliding movement longitudinally with respect to said member and longitudinally with respect to said frame, said member being pivotally connected with said frame.

20 Another object of the invention resides in providing a brace and in pivotally connecting said brace with said seat and with the other end of said member.

25 An object of the invention resides in forming said frame and member with longitudinal guides and in pivotally connecting said member and frame together in a manner to permit of independent sliding adjustment of
30 said member and frame relative to one another along either of said guides.

A still further object of the invention resides in constructing said guides in the form of slots extending through said member and
35 through said frame, and in passing a bolt jointly through both of said slots to permit of the individual adjustment of said member and frame with regard to one another along either or both of said slots.

40 Other objects of the invention reside in the details of construction thereof, and in the novel combination and arrangement of parts hereinafter illustrated or described.

In the drawing:

45 Fig. 1 is a perspective view of a chair illustrating an embodiment of our invention and showing the back rest in one of its adjusted positions.

50 Fig. 2 is a side elevational view of the seat and back rest of the chair shown in Fig. 1

illustrating the back rest in another of its adjusted positions.

Fig. 3 is a view similar to Fig. 2 of a modification of the invention showing the back rest in one of its adjusted positions.

Fig. 4 is a view similar to Fig. 3 showing the same chair with the back rest in another of its adjusted positions.

Fig. 5 is a longitudinal sectional detail view of the structure shown in Figs. 1 and 2 for
60 attaching the back rest to the seat frame.

In the adjustment of chairs employing adjustable back rests, it is sometimes desirable to be able to adjust the back rest simultaneously in both an up and down direction and in a back and forth direction. At other times it is desirable to adjust the back rest independently in these several directions. The instant invention provides a device whereby the back rest may be simultaneously or inde-
70 pendently adjusted, as desired.

For the purpose of illustrating the application of our invention, we have shown in Fig. 1 a chair A of ordinary construction which comprises four legs 10, 11, 12 and 13
75 attached to a suitable crown block 14 and flaring outwardly therefrom. These legs may have secured to the ends thereof caster wheels 15, which serve the usual purposes. In the crown block 14 is mounted a standard 16 which carries a seat indicated in its entirety at 18. This seat comprises a seat supporting structure 17 to which the standard 16 is attached and which carries a cushion 19 of any desired type. The seat supporting
80 structure 17 may be of any desired construction which, in the form of chair shown, includes two side members 20 to which the supports for the back rest proper are attached.

In conjunction with the seat 18 we employ a back rest 21 which is adapted to be simultaneously or independently adjusted in an up and down direction or in a back and forth direction with respect to the seat proper and which is adapted to be oscillated to vary the
85 angularity thereof. This back rest is supported as follows: To the rearward ends of the side members 21 and the seat support 17 are pivotally connected by means of rivets 22 two spaced uprights 23 and 24 which, in the
90 95 100

form shown in Fig. 1, are connected together by means of a tie bar 25 to form a U-shaped frame structure indicated in its entirety at 26. In addition to the uprights 23 and 24 we employ two braces 27 which are pivoted to the side members 20 of the seat support 17 intermediate the ends thereof by means of rivets 28, which braces extend upwardly toward the upper portions of the uprights 23 and 24 and which are connected to the back rest 21 in a manner to be presently described.

The back rest 21 has attached to the back 29 thereof two brackets 30 which have pivoted to them by means of rivets 31 two elongated levers or bars 32. These bars are formed with longitudinal slots 33 and extend transversely of the upper ends 34 of the uprights 23 and 24. The upper ends of said uprights are similarly constructed with longitudinal slots 35 extending in an up and down direction with respect to the seat proper. Two bolts 36 pass through the corresponding slots 33 and 35 and serve to hold the members 32 pivotally and adjustably connected to the portions 34 of the uprights 23 and 24 for individual or joint slidable adjustment along either of the slots 33 or 35. The said bolts are preferably provided with lock washers 37 and which are engaged by burrs 38 screwed upon the ends of the same which serve to hold the parts in locked position.

The braces 27, as previously stated, extend upwardly from the seat 18 and terminate in ears 39 which are pivoted by means of rivets 40 to the ends of the bars 32 situated opposite the rivets 31. This construction ties the frame braces and back rest together to form a rigid construction when the bolts 36 are tightened. Back and forth movement of the frame 26 when bolts 36 are loosened causes the members 32 to oscillate about the bolts 36 as pivots due to the connection of the said braces 27 with the outer ends thereof, whereby simultaneous adjustment of the back rest in two directions may be had.

The use of the device is as follows: On partially loosening the burrs 38 the members 32 are permitted to pivot upon the bolts 16 as pivots. By grasping the cross-bar 25 of the frame structure 26 and moving the entire frame structure in a back and forth direction, adjustment of the back rest 41 with respect to the forward edge of the seat 18 may be effected. Due to the connection of the braces 27 with the members 22 back and forth movement of the frame 26 causes a corresponding up and down movement of the members 32 which are pivoted to said braces. This has the effect of simultaneously moving the back rest 21 in an up and down direction and moving the same in a back and forth direction.

As long as sufficient friction is exerted through the lock washers 37 the members 32 remain in their previous positions and pivot

about the bolts 36 so as to produce the simultaneous adjustment of the back rest in the two directions. If additional adjustment of the back rest is desired in any particular direction, the members 32 may be moved longitudinally along the slots 33 of said members to vary the back and forth adjustment, or the same may be moved bodily along the slots 35 to vary the up and down adjustment. Upon again tightening the burrs 38 of bolts 36, the back rest 21 may be locked in any of its adjusted positions. The various adjustable positions of the back rest 21 possible with the particular form of the invention are almost unlimited. Two of the extreme positions of the back rest are respectively shown in Figs. 1 and 2, the adjustment in Fig. 1 being for a tall occupant and that in Fig. 2 for a short occupant.

The device shown in Figs. 3 and 4 differs only from the device in Fig. 1 in that brace 27 and the back rest 21 are connected to the opposite ends of the members 32 from which the same were connected to said members in the other form of the invention. This necessitates the attachment of the brackets 30 of back rest 21 to said members through links 41 which are pivoted to said brackets through rivets 42 and secured to said members through rivets 43. In this device additional up and down adjustment of the back rest may be had through the swinging of the link 41 about the pivot 43.

Our invention is particularly advantageous in that a practical and useful chair is formed in which the back rest may be adjusted to occupy substantially any desired position with respect to the seat proper within the range of movement of the supporting structure therefor. The chair is extremely handy in that the adjustments may be quickly made where accuracy is not desired by simultaneously adjusting the back rest in an up and down direction and in a back and forth direction. Our invention also permits of independently adjusting the back rest in the two directions so as to cause the same to fit the occupant in a manner to give the greatest support and comfort to the user. The chair can be constructed out of ordinary bar metal at a nominal cost and is extremely rigid and substantial in construction.

Changes in the specific form of our invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of our invention.

Having described our invention, what we claim as new and desire to protect by Letters Patent is:

1. A chair comprising a seat, a frame connected to said seat, elongated members extending across said frame, a back rest connected to said members at corresponding ends

thereof, means for guiding said members for movement across said frame and for pivoting said members relative to said frame, and means forming anchors pivoted to the other
5 ends of said members and to said chair.

2. A chair comprising a seat, a frame pivoted to said seat and extending upwardly therefrom, a back rest, adjusting means connected to said back rest, means for pivotally
10 and longitudinally adjustably connecting said adjusting means to said frame and bracing means connected to said adjusting means and to said seat.

3. A chair comprising a seat, a frame pivoted to said seat, a back rest, a pair of members connected to said back rest, means for pivotally and longitudinally adjustably connecting said members to said frame and a pair of braces connected to said members and
15 to said seat.

4. A chair comprising a seat, a frame pivoted to said seat, a pair of vertically extending guides formed on said frames, a pair of elongated members, longitudinal guides
20 formed on said members, means cooperating with said guides for pivotally and adjustably supporting said members upon said frame in any of the adjusted positions thereof with respect to said frame, a back rest connected to said members and braces pivoted to said seat
25 and to said members.

5. A chair comprising a seat, a frame pivoted to said seat, said frame having a pair of vertical slots, one on each side thereof, a pair
30 of members extending across the slotted portions of said frame, said members each having a longitudinal slot, bolts passing jointly through the slots in said members and in said frames for connecting said members to said
35 frame, a back rest attached to said members and braces pivoted to said seat and pivoted to said members.

6. A chair comprising a seat, a frame pivoted to said seat, a pair of elongated members extending across said frame, a back rest connected to said members at one end of each
40 thereof, a pair of braces pivoted to said seat and to said members at the other ends thereof, means for pivotally connecting said members to said frame and means for guiding said
45 members for transverse adjustment relative to said frame.

In testimony whereof we have affixed our signatures to this specification.

55 LEO E. GOENEN.
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