March 15, 1932. D. R. COLLIER 1,849,073

CHAIR

Filed Jan. 18, 1929

Fig. 1.

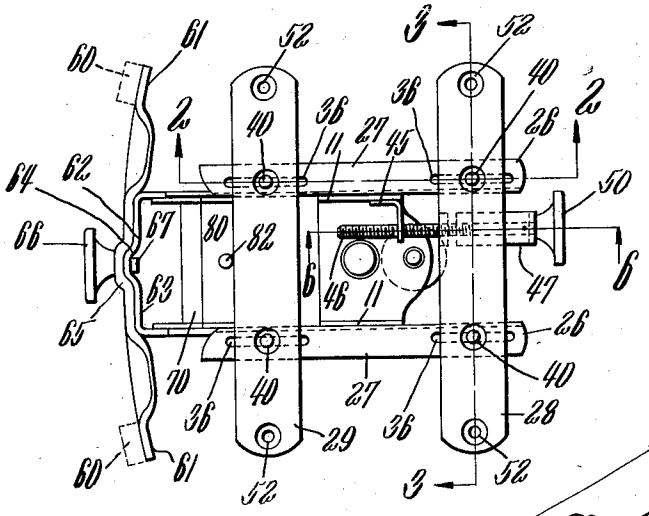


Fig. 2.

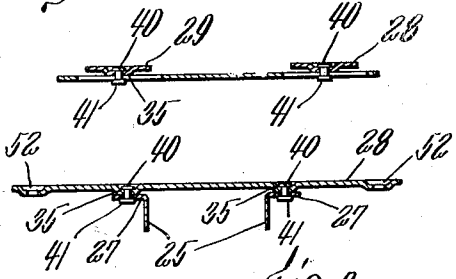


Fig. 3.

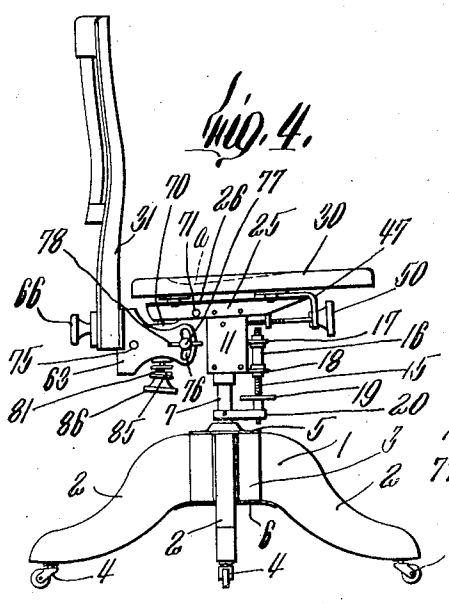


Fig. 4.

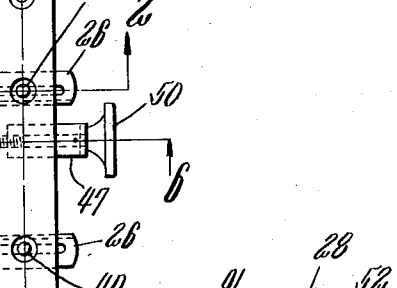


Fig. 7.

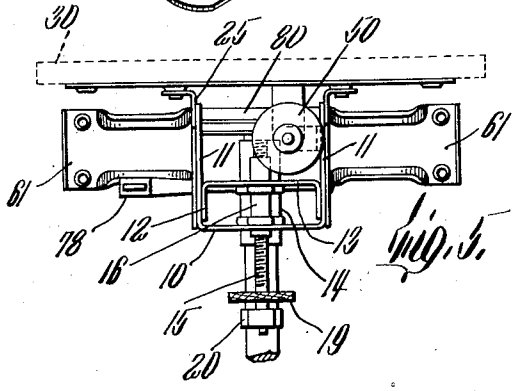


Fig. 5.

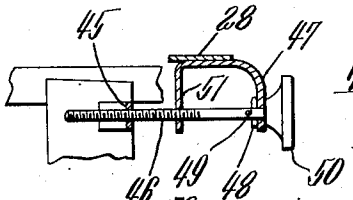


Fig. 6.

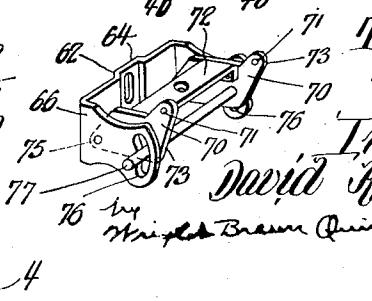


Fig. 8.

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UNITED STATES PATENT OFFICE

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CHAIR

Application filed January 18, 1929. Serial No. 333,298.

This invention relates to chairs, more particularly but without limitation to that type usually termed office chairs. The seat of such a chair is supported by a spindle from the central portion of a footed base and in accordance with the present invention means are provided by which the seat may be adjusted readily forwardly or rearwardly with reference to the back to suit the individual requirements of the occupant so that the chair may afford maximum comfort, more particularly when the seat has its upper face "shaped" or having depressed portions adjacent to its rear edge. Preferably also the back is adjustable as to height and angular relation to the seat. More particularly this invention relates to the chair iron in which the adjusting mechanism is incorporated.

For a more complete understanding of this invention, reference may be had to the accompanying drawings in which

Figure 1 is a top plan of the chair iron.

Figures 2 and 3 are detail sections on lines 2—2 and 3—3, respectively, of Figure 1.

Figure 4 is a side elevation of the chair.

Figure 5 is a front elevation of a portion of the chair iron.

Figure 6 is a detail section on line 6—6 of Figure 1.

Figure 7 is a perspective view partly broken away of one element of the chair iron but showing a modification.

Figure 8 shows in perspective the chair back support.

Referring to the drawings, at 1 is indicated a base of any suitable description for supporting the chair. As shown it is of a conventional type having four feet 2 extending outwardly from a central portion 3, the outer ends of these feet being provided with castors 4. To the portion 3 is fixed the chair iron. While this may be made in various forms, as shown a plate member 5 is supported on the upper face of the portion 3 and a somewhat similar plate member 6 is fixed to the under side of the portion 3, these plate members being joined by a suitable tubular bearing (not shown) within which is journaled the post 7. This post has mounted with capabiltiy of vertical adjustment thereon the seat and back supporting mechanism. As shown this comprises a substantially U-shaped frame piece 10 having upwardly extending side portions 11. Fitting between these side portions 11 are the down-turned side portions 12 of an inverted U-shaped member 13, these two U-shaped members serving to support a sleeve 14 within which the upper end of the post 7 is slidably received.

Suitable means may be provided for vertically adjusting the frame members 11 and 12 with reference to the post 7. As shown this comprises a screw 15 threaded in a sleeve 16 fixed to extensions 17 and 18 of the frame members 10 and 13. This screw 15 has a handwheel 19 by which it may be rotated and it is journaled at its lower end in a bracket arm 20 fixed to the post 7. To the upper end of the side pieces 11 are fixed vertical flanges 25 of angle members 26, the horizontal flanges 27 of which project away from each other as is shown best in Figures 1, 3 and 5. These angle members 26 serve to support elements 28 and 29 to which is fixed the seat 30. As shown by the dotted line *a* in Figure 4, this seat is provided with a depressed portion toward its rear end to conform somewhat to the contour of the body and the proper distance of this depressed portion from the chair back differs for different individuals, depending on size and weight and other pecularities of the individual. In accordance with this invention, therefore, the elements 28 and 29 are so supported that they may be adjusted bodily forwardly and rearwardly of the chair so that the position of the seat 30 with relation to the back 31 may be adjusted bodily in accordance with the requirements of the individual who is to occupy the chair, this adjustment more particularly taking care of the differences in size and weight of different individuals.

In order that such adjustment may be effected, the elements 28 and 29 are adjustable lengthwise of the members 26 and in order that the bearings of the elements 28 and 29 on the members 26 may be easily and satisfactorily produced, it is preferable to depress the metal of the elements 28 and 29 to form downwardly extending bosses as at 35 which

may ride on the upper face of the flanges 27 of the members 26 and bridge over opposite sides of slots 36 through these flanges 27. In order to hold the elements 28 and 29 assembled with the members 26, rivets or other suitable fastening means, as at 40, may have their upset ends seated in the depressions formed on the upper faces of the elements 28 and 29 by the formation of the bosses 35, these fastening elements passing through the slots 36 and having heads 41 on the under sides of the flanges 27.

Means may also be provided by which the seat may be moved forwardly or rearwardly and held in any desired adjusted position. To this end one of the elements 28 or 29 (herein shown as the element 28) may be provided with means for moving it lengthwise of the members 26, the chair seat 30 being fixed to both these elements, causing both to be moved in unison. As shown, to the inner face of one of the portions 11 is fixed an angle bracket 45 within which is threaded a screw 46. This screw is journaled in a bracket 47 fixed to the under face of the element 28 and projecting downwardly therefrom so that the bearing portion 48 therein may be in axial alinement with the hole through the bracket 45 in which the screw 46 is threaded. Any suitable means such as a washer and cotter pin, as at 49, may be employed to prevent forward motion of the screw 46 relative to the bracket 47 and a handwheel 50 on the forward end of the screw 46 by which this screw may be rotated prevents rearward movement of the screw relative to this bracket. If desired the bracket 47 may have its rear end prolonged and extended downwardly at 51 to form a supporting bearing for the screw 46 so as to hold the member 47 more firmly. By rotating the handwheel 50, the element 28 may be moved forwardly or rearwardly as desired and through the attachment of the seat 30 to the elements 28 and 29, the element 29 is also moved similarly. The elements 28 and 29 are shown as provided with end openings 52 for the reception of screws to fix them to the seat.

In connection with the forward and rearward adjustment of the seat it is also desirable that the back shall be adjustable also and as shown herein such adjustment is provided. The back 31 has side upright bars 60 which may be fixed to opposite ends of a bar 61. As shown this bar 61 is vertically adjustable along the base portion 62 of a U shaped frame member 63. In order to insure against lateral tilting the central part of the base portion 62 is rearwardly offset to form an upright guiding rib 64 and the central portion of the bar 61 is rearwardly offset to fit thereon as at 65. The bar 61 may be fixed in vertically adjusted position by tightening the hand nut 66 which is threaded onto the rear end of a bolt 67 which extends through a slot in the portion 64 and through an opening in the portion 65, this construction per se, however, forming no part of the present invention. The side portions of the member 63 embrace opposite sides of an inverted U shaped member 70 which is pivoted to and between the members 26 as at 71. As shown in Figure 8 the member 70 may be formed in three parts consisting of a central element 72 having downwardly turned end flanges secured to the inner faces of end elements 73. The members 63 and 70 are pivoted together as at 75 and the member 63 provided with an arcuate slot 76 on each side through which extends a bolt 77 having a wing nut 78 at its outer end. By this means the angular relation between the back and the member 70 may be adjusted. The member 70 may be spring supported under adjustable tension from a plate member 80 bridging the rear ends of the members 27, for this purpose a bolt 81 being suspended by its head 82 centrally from the plate 80, this bolt extending through the horizontal web of the member 70 beneath which bears the upper end of a coil spring 85, the lower end of which is supported on an adjusting hand nut 86. This mounting of the back for pivotal and spring adjustment is old in the art and per se forms no part of the present invention. It is, however, of utility in combination with the forward and rearward adjustment of the seat.

In Figure 7 a modified construction is shown in which instead of using rivets 40 to fix the elements 28 and 29 to the members 26, these elements such as 28 and 29 have portions struck therefrom as at 90 to underlie the flanges 27 of the members 26 beneath the downwardly struck portions 91 at the margins of the portions 90 which act as bearing bosses on the upper faces of the members 26.

From the foregoing description of certain embodiments of this invention, it should be evident to those skilled in the art that various changes and modifications might be made without departing from the spirit or scope of this invention as defined by the appended claims.

I claim:

1. A chair iron comprising spaced side members having outwardly turned slotted flanges at their upper ends, a pair of seat supporting elements having depending bosses spaced to ride on said flanges, means extending from said bosses through said slots for securing said elements and members together for sliding movement of said elements lengthwise of said slots, a bracket fixed to one of said members, a screw threaded through said bracket parallel to said flanges, and an element movable axially with said screw secured to one of said elements.

2. A chair iron comprising spaced side members having outwardly turned slotted

flanges at their upper ends, a pair of seat supporting elements having depending bosses spaced to ride on said flanges, means extending from said bosses through said slots for securing said elements and members together for sliding movement of said elements lengthwise of said slots, a bracket fixed to one of said members, a screw threaded through said bracket parallel to said flanges, an element movable axially with said screw secured to one of said elements, and means carried by said spaced side members for pivotally supporting a chair back.

3. A chair iron comprising a U shaped support having its side members upwardly extended, angle members secured to the upper edges of said side members with a flange of each arranged in a common plane, a chair spindle secured to the lower end of said support, spaced elements slidably secured to said flanges and to which a chair seat may be secured, and means for adjusting one of said elements lengthwise of said flanges.

4. A chair iron comprising a U shaped support having its side members upwardly extended, angle members secured to the upper edges of said side members with a flange of each arranged in a common plane, a chair spindle secured to the lower end of said support, spaced elements slidably secured to said flanges and to which a chair seat may be secured, means for adjusting one of said elements lengthwise of said flanges, and means secured to said angle members for supporting a chair back.

5. A chair iron comprising a U shaped support having its side members upwardly extended, an inverted U shaped member bridging said side members, a sleeve supported between the bases of said support and bridging members, a chair spindle on which said sleeve is slidably carried, outwardly extending flange members at the upper edges of said side members, and a chair seat adjustably supported on said flange members.

In testimony whereof I have affixed my signature.

DAVID R. COLLIER.