Jan. 18, 1938. B. R. SMITH 2,105,510

CHAIR

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Fig. 1.

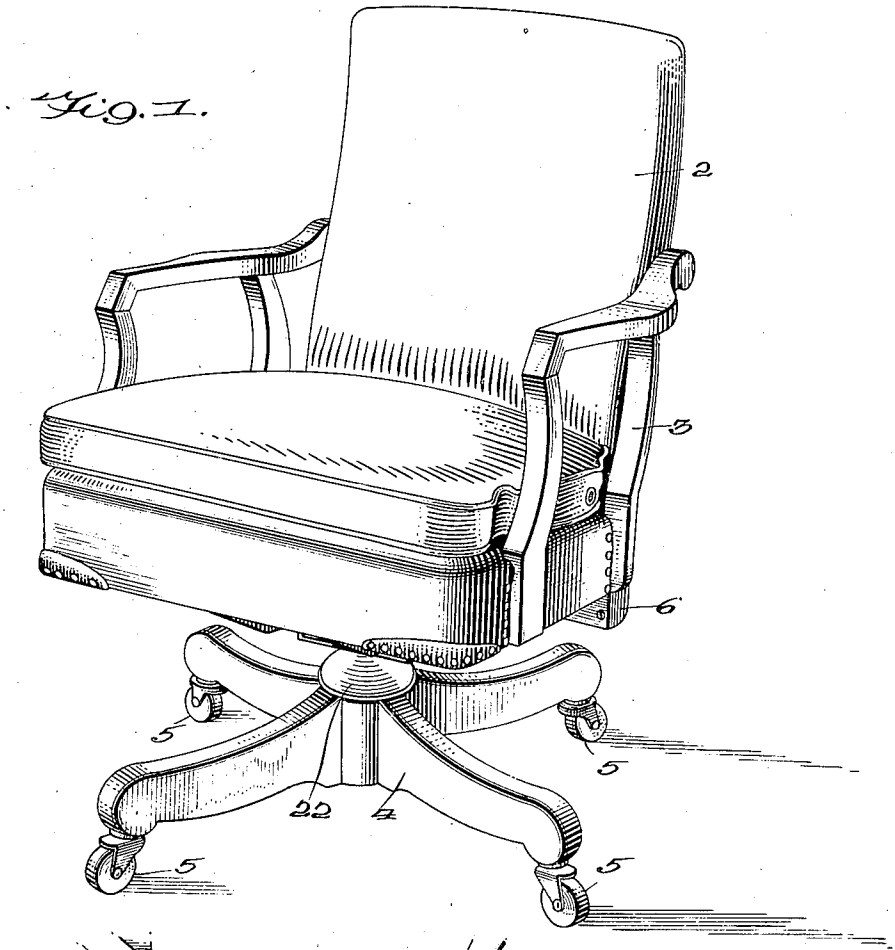
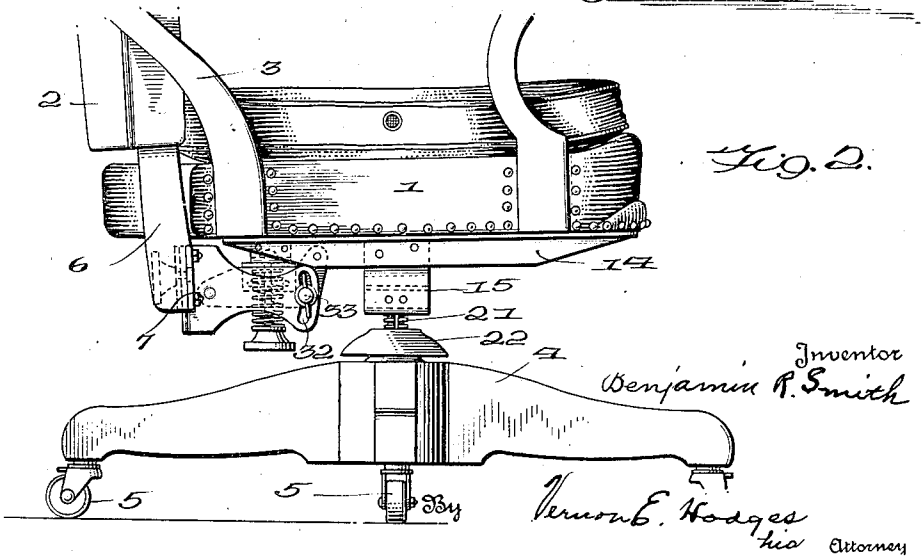


Fig. 2.



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CHAIR

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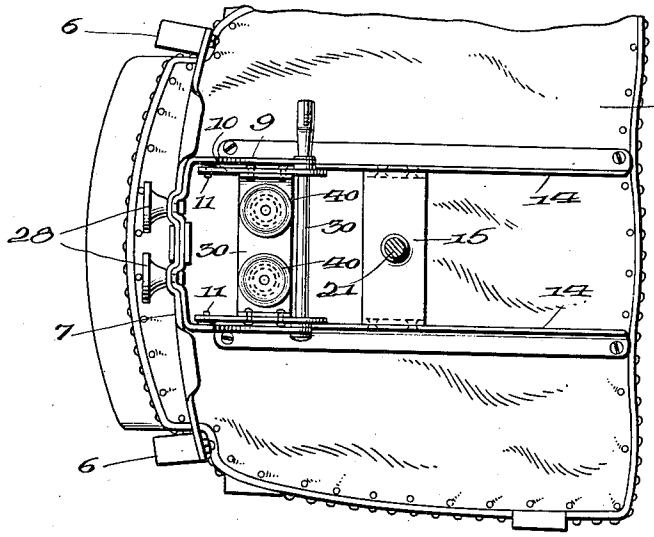


Fig. 3.

Fig. 6.

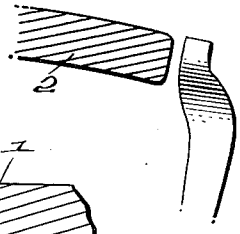


Fig. 4.

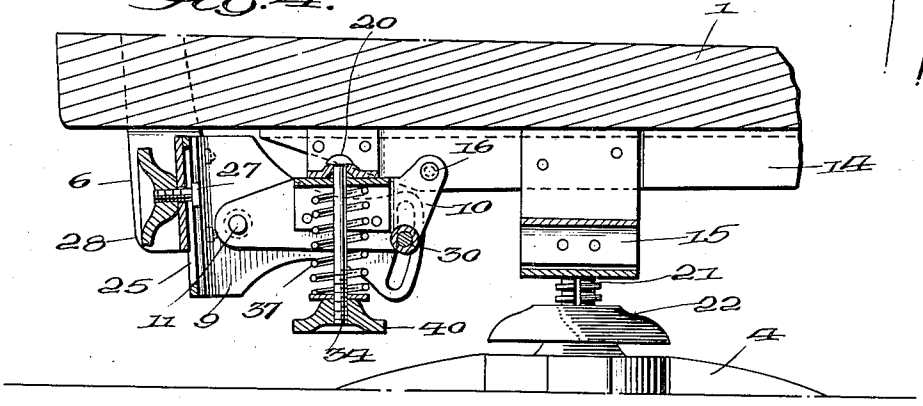
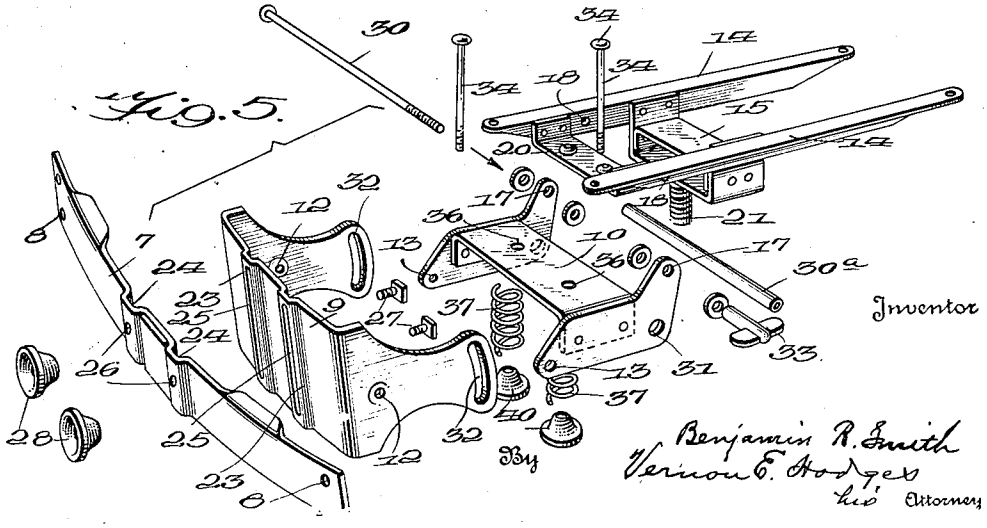


Fig. 5.



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2,105,510

UNITED STATES PATENT OFFICE

2,105,510

CHAIR

Benjamin R. Smith, Owensboro, Ky.

Application March 2, 1935, Serial No. 9,087

2 Claims. (Cl. 155—157)

My invention relates to an improvement in chairs.

The object is to provide a chair which will greatly add to the comfort of the occupant by providing a back which will yield readily to the pressure of the person sitting in the chair, whether the posture be more or less erect or partly inclined backwardly.

This chair may be made in various forms, although for illustration a swivel chair is used.

The chair consists of a seat and arms erected therefrom, and a back hingedly connected with the seat and wholly independent of the arms, although normally resting between the rear ends of the arms.

My invention consists in other details for tensioning and adjusting the back with respect to the seat.

In the accompanying drawings:

Fig. 1 is a view in perspective;

Fig. 2 is a fragmentary side elevation;

Fig. 3 is a bottom plan view;

Fig. 4 is a longitudinal sectional detail showing the parts somewhat enlarged;

Fig. 5 is an exploded view in perspective showing the various elements of which the connecting and adjusting parts of the chair are composed; and

Fig. 6 is a fragmentary horizontal section to show the disconnection of the chair back and arms.

The numeral 1 represents the seat; 2, the back; and 3, the arms. These may be in various forms and designs, and with the base 4 which is mounted on casters 5, these elements constitute the essential elements of a chair.

My improvement consists in a hinged and adjustable connection between the lower portion of the back and the chair seat, these elements constituting the sole connection between back and seat, that is to say the arms and back are preferably intended to be wholly independent of each other in this particular form of chair, which in the form selected for illustration happens to be a swivel chair.

The lower end of the back terminates in extensions 6. A bar 7 extends across from one extension to the other, and the ends of this bar are securely bolted to the extensions through the holes 8 provided for that purpose.

Two brackets 9 and 10 are pivotally connected together by means of bolts 11 extending through the registering holes 12 and 13 of the brackets 9 and 10, respectively, and the bracket 10 is pivotally connected to parallel bars 14, which latter are rigidly held together by cross-head 15 and brace 20, and which parallel bars are secured to the lower side of the seat as shown in Fig. 3, and which bracket 10 is connected with the parallel bars by means of bolts 16 extending through the holes 17 in bracket 10 and holes 18 in the parallel bars.

The particular chair illustrated being of the swivel chair type, the seat and base are connected by the usual screw 21 and the adjusting means 22.

Three separate adjustments are provided:

First.—The back may be raised or lowered with respect to the seat, and this adjustment is accomplished by the following simple means. Vertically-disposed runners 23 are formed in the bracket 9, if of sheet-metal by crimping the latter, and these runners are fitted to and adjustable in the grooves 24 similarly formed in the cross-bar 7.

The runners 23 are provided with slots 25 extending throughout their length, and the grooves 24 are provided with holes 26, and the bolts 27 extend through these slots 25 and the holes 26, and the nuts 28 are screwed thereon securing the cross-bar 7 and bracket 9 securely together after the back is adjusted to the proper height by the bolts 27 sliding through the slots 25.

Second.—A second adjustment is provided to regulate the tilt or inclination of the back with respect to the seat, and this is provided by means of a bolt 30 which extends through the oppositely located holes 31 in the sides of bracket 10 and the slots 32 in bracket 9. A spacing sleeve 30*a* is sleeved around the bolt 30 and fits between the sides of bracket 10 in which the holes 17 are located. This tilt of the back is permitted by loosening the wing-nut 33 on bolt 30, setting the back to the required position, and then fixing this adjustment by tightening the nut 33 on the bolt 30. In other words, this adjustment virtually amounts to an adjustment of the brackets 9 and 10 with respect to each other, and by virtue of this adjustment the back may be adjusted to a substantially reclining position.

Third.—The third adjustment is to the tension of the back, and this is through the bolts 34 which extend through the holes 35 in the brace 20 and holes 36 in bracket 10, stiff springs 37 encircling these bolts 34 and hand-nuts 40 are screwed on the lower ends of these bolts 34 to regulate the tension of the springs 37 to afford the required stiffness to the back.

Thus a chair is provided which may be made in a variety of styles, grades and forms in which seat and back are hingedly connected irrespective of arms which may or may not be used, and

the hinging connection between back and seat provides three separate adjustments, one for lifting and lowering the back, more or less vertically, with respect to the seat; another, for regulating the inclination of the back with respect to the seat; and the third, for tensioning the back to determine its yieldability to the back pressure of the occupant of the chair.

I claim:

1. In a chair, the combination of side bars for supporting a seat and having a cross-brace therebetween, a bracket having sides pivoted at their forward ends to said side bars, said bracket having a transverse brace underlying the cross-brace, bolts extending through the cross-brace and transverse brace and having nuts on the lower ends thereof, springs interposed between said nuts and the transverse brace for resiliently maintaining said bracket in normal position relative to the side bars, a second bracket having a back and side arms, said side arms being pivoted intermediate their ends to the rear ends of the sides of the first-mentioned bracket, said side arms having slots in the forward ends thereof, a bolt extending through said slots and through the sides of the first-mentioned bracket for holding the second bracket in adjusted position relative to said first-mentioned bracket, the back of the second bracket having upwardly extending ribs thereon, each of said ribs having a longitudinal slot therein, a transversely extending back-supporting bar having upwardly extending grooves therein receiving the ribs of the back of the second bracket, and bolts extending through the slots and through the bar for adjustably securing said bar to the second bracket.

2. In a chair, the combination of side bars for supporting a seat and having a supporting standard connected with an intermediate portion thereof, said side bars having a cross-brace therebetween, a bracket having sides pivoted at their forward ends to said side bars at a point spaced rearwardly of the point of connection of the standard, said bracket having a transverse brace underlying the cross-brace, a bolt extending through the cross-brace and transverse brace and having a nut on the lower end thereof, a spring interposed between said nut and the transverse brace for resiliently maintaining said bracket in normal position relative to the side bars, a second bracket having a back and side arms, said side arms being pivoted intermediate their ends to the rear ends of the sides of the first-mentioned bracket, said side arms having slots in the forward ends thereof, a bolt extending through said slots and through the sides of the first-mentioned bracket for holding the second bracket in adjusted position relative to said first-mentioned bracket, the back of the second bracket having an upwardly extending rib thereon, said rib having a longitudinal slot therein, a transversely extending back-supporting bar having an upwardly extending groove therein receiving the rib of the back of the second bracket, and a bolt extending through the slot and through the bar for adjustably securing said bar to the second bracket.

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