

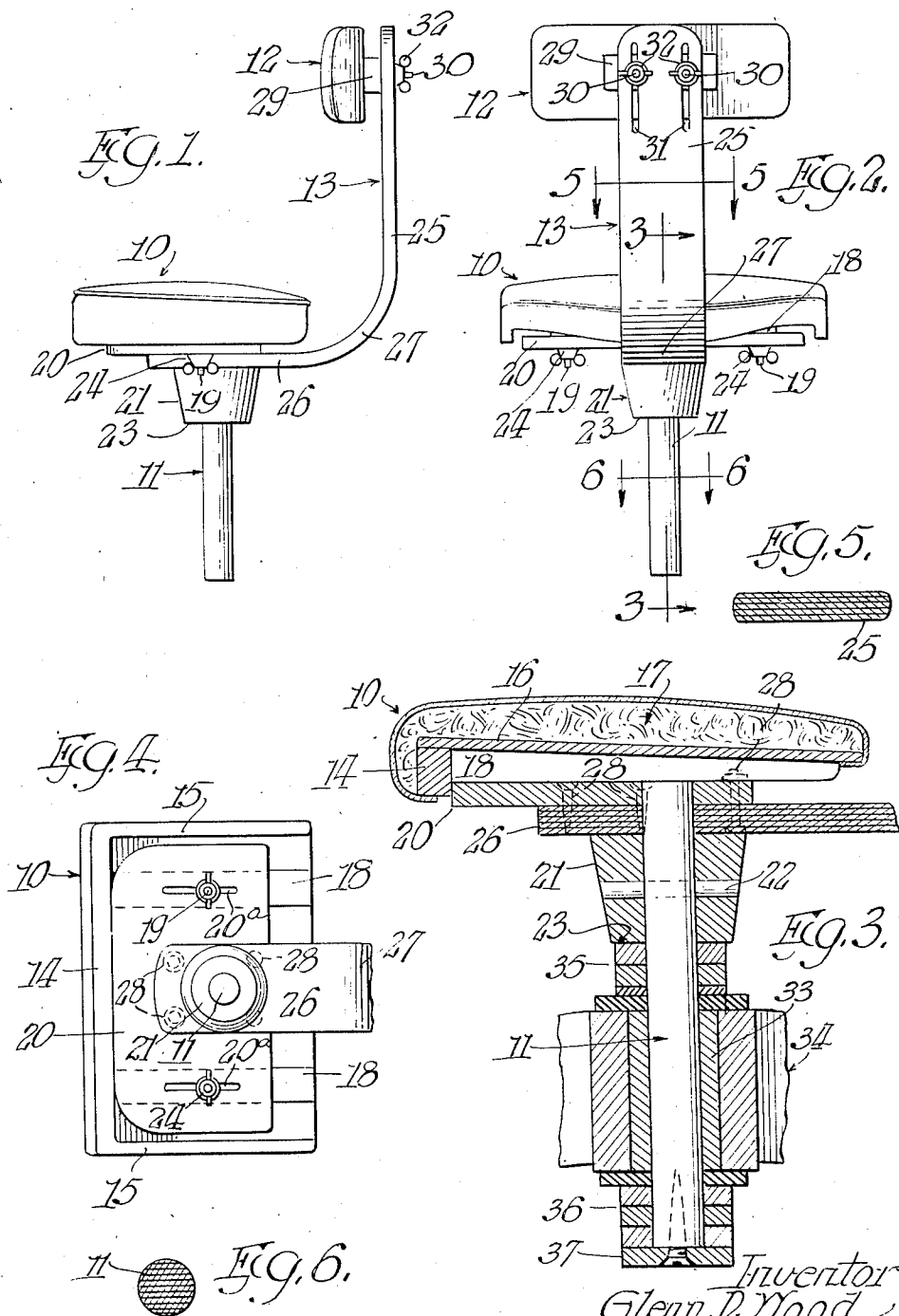
Dec. 5, 1944.

G. D. WOOD

2,364,261

CHAIR

Original Filed July 7, 1942



Inventor  
Glenn D. Wood  
By Arthur W. Nelson Atty.

## UNITED STATES PATENT OFFICE

2,364,261

## CHAIR

Glenn D. Wood, Elkhart, Ind., assignor to Posture Research Corporation, Elkhart, Ind., a corporation of Indiana

Original application July 7, 1942, Serial No. 450,003. Divided and this application April 23, 1943, Serial No. 484,141

4 Claims. (Cl. 155—157)

This invention relates to improvements in chairs and it consists of the matters herein illustrated and described and more particularly pointed out in the appended claims. The present application is a divisional one, as the subject matter thereof was first illustrated and described in my co-pending application, Serial No. 450,003, filed July 7, 1942.

The present invention relates more particularly to an assembly for an office and similar chair and which assembly, in general, includes a seat and a supporting spindle therefor, together with a back rest and associated supporting member.

In office chairs of this kind, as heretofore made, the spindle was of metal and carried a metal spider at its top end to support the seat. The member for supporting the back rest also was made of metal. Thus, such an assembly was quite heavy and required a considerable amount of machine work and labor, all of which was reflected in the ultimate price of the chair.

One of the objects of the present invention is to provide a seat, spindle and back rest assembly for an office or similar chair wherein the parts are so formed and correlated that they may be made substantially entirely of wood and yet be light in weight, but strong and rigid and relatively inexpensive to produce.

Another object of the invention is to provide in an assembly of this kind a novel back rest supporting member made of a piece of bent wood having some flexibility in one direction and which is so fastened at one end to a wooden seat and spindle as to be securely held in place thereon in a manner preventing relative movement therebetween.

The above mentioned objects of the invention, as well as others, together with the several advantages thereof, will more fully appear as the specification proceeds.

In the drawing:

Fig. 1 is a view in side elevation of a seat, back rest and spindle assembly for chairs embodying the preferred form of the invention.

Fig. 2 is a view in rear elevation of the assembly appearing in and on the scale of Fig. 1.

Fig. 3 is a vertical front to rear sectional view, on an enlarged scale, through the improved assembly as taken on the line 3—3 of Fig. 2 and also illustrates a part of the hub of the base of the chair in which the spindle is journaled.

Fig. 4 is a bottom plan view of the parts of the assembly appearing in Fig. 1.

Fig. 5 is a horizontal detail sectional view, on the scale of Fig. 3, through the vertical part of the back rest supporting member as taken on the line 5—5 of Fig. 2 and more particularly shows the laminated or plywood structure of said member.

Fig. 6 is a horizontal detail sectional view through the seating supporting spindle, substantially on the scale of Fig. 3, as taken on the line 6—6 of Fig. 2 and more particularly shows the laminated or plywood structure of the spindle.

Referring now in detail to that embodiment of the invention illustrated in the drawing, 10 indicates the seat of the assembly, 11 indicates the supporting spindle or post thereof and 12 indicates a back rest that is adjustably mounted upon the upper end of a supporting member 13 as will later appear.

The seat includes a rectangular wooden body that comprises a front rail 14, side rails 15—15 and a top panel 16 covered by suitable upholstery 17. On the underside of the panel is a pair of laterally spaced wooden cleats 18 that extend from the front to the rear thereof and anchored midway in each cleat is a bolt 19.

The spindle 11 is cylindrical in cross section and is turned down from a piece of laminated wood or plywood as appears from the transverse cross section through said spindle in Fig. 6. The top end of said spindle fits in a hole provided therefor in a seat supporting spider 20. This spider, which is also made of wood, fits within the wooden body of the seat as appears in Fig. 4 and engages toward its lateral margins with the cleats 18—18. A part of the upper portion of the spindle 11 extends through a cylindrical wooden block 21 that is spaced below the spider 20 and said block is fixed to the spindle by a cross pin or dowel 22 as best shown in Fig. 3. The bottom surface of said block 21 is flat and forms a thrust bearing face 23 for the assembly as will later appear.

The spider 20 is provided with forwardly and rearwardly extending slots 20a, spaced in accordance with the lateral spacing of the bolts 19 so that the threaded ends of said bolts will extend therethrough, one through each slot. Said threaded ends of the bolts receive wing nuts 24 whereby the seat may be clamped to the spider. By loosening said wing nuts, the seat as a whole may be adjusted forwardly or rearwardly upon the spider within limits permitted by the slots 20a. The structure just above mentioned best appears in Fig. 4.

The back rest supporting member 13 is made from a piece of laminated wood or plywood bent into substantially an L shape to include an upright portion 25 and a horizontal portion 26 connected together by a curved knee or portion 27 as best appears in Fig. 1. The piece of laminated wood or plywood, from which the supporting member 13 is made, is wider than it is thick and the laminations or plies thereof extend the width thereof as appears in Fig. 5. As shown in Fig. 4, the width of the member 13 approximates the

diameter of the upper end of the block 21. The curved corner or knee 27 of said member is made on a substantial radius and is capable of some flexing to provide a limited back and forth yielding of the upright portion 25 under proper pressure thereagainst by the occupant.

The forward portion of the horizontal part 26 of the back rest supporting member is disposed between the spider 20 and the block member 21 as best shown in Fig. 3 and a hole is provided in said part 26 for the passage of a part of the spindle 11 therethrough. The spider 20 and said part 26 of the back rest supporting member are secured together by screws and bolts 28. As the upper end portion of the spindle extends through said back rest supporting member part 26 and the spider 20, they are all secured together and form a rigid assembly.

The back rest 12 has a horizontal block 29 secured to its rear face and in this block are anchored laterally spaced bolts 30. The threaded ends of said bolts extend through associated vertical slots 31 in the top end part of the upright portion 25 of the back rest supporting member 13. Suitable wing nuts 32 are applied to the threaded ends of the bolts 30 that extend through and beyond said slots and these nuts are disposed upon the rear side of said upright portion 25. By loosening said nuts, it is apparent that the back rest member 13 may be adjusted upwardly or downwardly within limits as provided by the slots 31. By tightening said nuts, the back rest is secured in the adjusted position.

When the assembly above described is mounted upon the base of the associated chair as described in the before mentioned application, of which the present application is a division, the spindle extends through the hub 33 of the base of the chair, only a part 34 of which appears in Fig. 3. Suitable washers 35-36 surround parts of the spindle 11 above and below the hub. The washers 35 act as elements to receive the thrust imposed upon them by the block member 21. The washers 36 function as spacing elements between a retaining member 37 fastened to the bottom extremity of the spindle and the hub 33 of the base 34.

It is apparent from the foregoing that substantially all of the assembly described is made of wood, the only metal parts being a few conventional screws, bolts and nuts. However even though made of wood, the parts are so formed, correlated and secured together as to provide a rigid but light weight seat, back rest and spindle assembly that will give trouble-free service over a long period of time. It is pointed out that that part of the spindle 11 below the bearing surface 23 of the block 21 may be either impregnated or coated with a suitable lubricant whereby it may turn relatively easy in the hub 33 of the base 34 without squeaking. Being made of laminated wood or plywood, the grain of the wood plies is so disposed that the size and shape of the spindle is maintained within reasonable limits and is amply strong to resist breaking strains.

While in describing the invention, I have referred in detail to the form, construction and arrangement of the parts making up the assembly, the same is to be considered only in the illustrative sense so that I do not wish to be limited thereto except as may be specifically set forth in the appended claims.

I claim as my invention:

1. In a chair, the combination of a seat supporting member, a bent wood back rest supporting member wider than it is thick and including a generally upright portion and a generally horizontal portion connected thereto by a curved knee of such radius as to be capable of some flexing, said horizontal portion being engaged with and fixed to the underside of said seat supporting member, a supporting spindle having an upper portion passing through said horizontal portion of the back rest supporting member and operatively engaged with the seat supporting member, and an enlargement on said spindle below and coacting with said seat supporting member in confining said horizontal portion of the back rest supporting member therebetween.

2. In a chair, the combination of a seat supporting member, a back rest supporting member made from a piece of laminated wood wider than it is thick and bent to provide a generally upright portion and a generally horizontal portion connected thereto by a curved knee of such radius as to be capable of some flexing, the laminae of said piece of wood extending in the direction of the width and length of said portions and knee, said horizontal portion being engaged with and fixed to the underside of said seat supporting member, a supporting spindle having an upper portion passing through said horizontal portion of the back rest supporting member and operatively engaged with the seat supporting member, and an enlargement on said spindle below and coacting with said seat supporting member in confining said horizontal portion of the back rest supporting member therebetween.

3. In a chair, the combination of a seat supporting member, a bent wood back rest supporting member wider than it is thick and including a generally upright portion and a generally horizontal portion connected thereto by a curved knee of such radius as to be capable of some flexing, said horizontal portion being engaged with and fixed to the underside of the seat supporting member, a supporting spindle of laminated wood with the laminae extending in the direction of the length of the spindle, the upper portion of the spindle passing through said horizontal portion of the back rest supporting member and operatively engaged with the seat supporting member, and an enlargement on said spindle and coacting with said seat supporting member in confining said horizontal portion of the back rest supporting member therebetween.

4. In a chair, the combination of a wooden seat supporting member, a bent wood back rest supporting member wider than it is thick and including a generally upright portion and a generally horizontal portion connected thereto by a curved knee of such radius as to be capable of some flexing, said horizontal portion being engaged with and fixed to the underside of said seat supporting member, a wooden supporting spindle having an upper portion passing through said horizontal portion of the back rest supporting member and operatively engaged with said seat supporting member, and a wooden enlargement fixed to the spindle below and coacting with said seat supporting member in confining said horizontal portion of the back rest supporting member therebetween.

GLENN D. WOOD.