Aug. 25, 1953 D. R. JOHNSON 2,649,901

CHAIR STRUCTURE

Filed Oct. 31, 1952

Fig. 1.

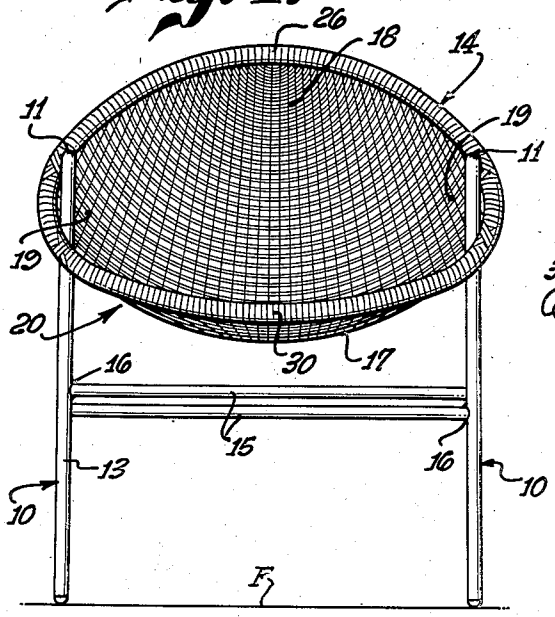


Fig. 2.

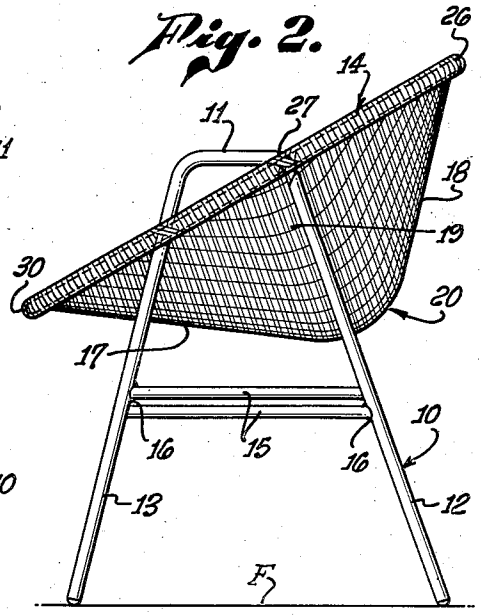


Fig. 4.

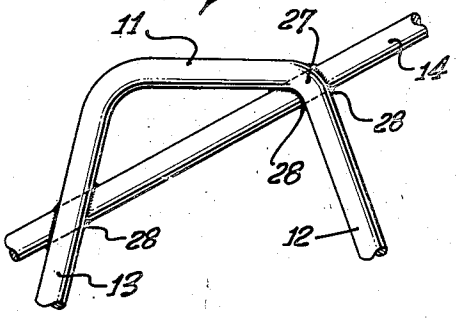


Fig. 3.

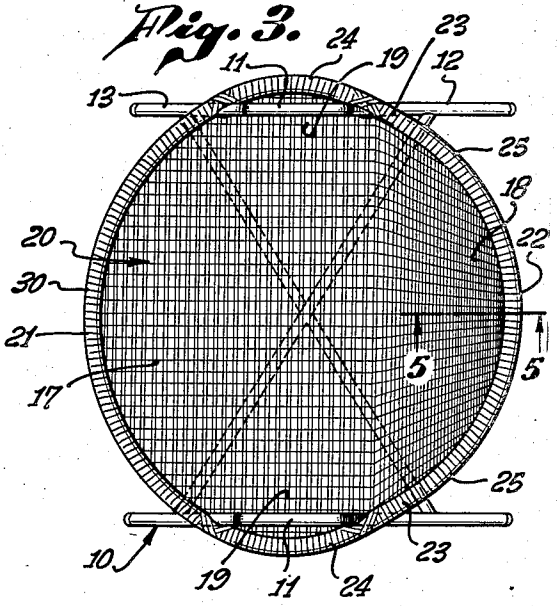
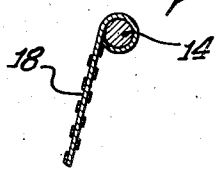


Fig. 5.



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Patented Aug. 25, 1953

2,649,901

UNITED STATES PATENT OFFICE

2,649,901

CHAIR STRUCTURE

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Application October 31, 1952, Serial No. 317,959

4 Claims. (Cl. 155—194)

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The present invention relates to chair structures, and the like.

An object of the present invention is to provide a chair construction which is comparatively simple, and yet strong and sturdy.

Another object of the invention is to provide a chair construction embodying a single member which serves to support the bottom, back and side portions of the seat.

A further object of the invention is to provide a chair construction, in which a single diagonally disposed member interconnects the supporting sides of the chair frame, so as to make the entire structure rigid, the diagonal member also functioning as a support for the bottom, back and side portions of the seat.

This invention possesses many other advantages, and has other objects which may be made more clearly apparent from a consideration of a form in which it may be embodied. This form is shown in the drawings accompanying and forming part of the present specification. It will now be described in detail, for the purpose of illustrating the general principles of the invention; but it is to be understood that such detailed description is not to be taken in a limiting sense, since the scope of the invention is best defined by the appended claims.

Referring to the drawings:

Figure 1 is a front elevational view of a chair embodying the invention;

Fig. 2 is a side elevation of the chair, as seen from the right of Fig. 1;

Fig. 3 is a top plan view of the chair structure;

Fig. 4 is an enlarged fragmentary elevational view disclosing the manner of attaching the diagonal seat supporting portion of the frame to the side members of the frame;

Fig. 5 is a fragmentary cross-section taken along the line 5—5 of Fig. 3.

The chair structure illustrated in the drawings includes a pair of spaced apart and opposed side frame members 10, 10, each of which is of generally inverted V-shaped form. Each side member may be made from a single piece of metallic tubing, and includes an intermediate upper arm rest portion 11, from which an inclined rear upright portion or leg 12 inclines downwardly in a rearward direction, the lower end of the leg being adapted to rest upon a floor F. The arm rest portion 11 also merges into a front upright portion or leg 13 which is inclined in a downward and forward direction, the terminal of this leg also being adapted to rest upon the floor F. The side frame structures 10, 10 on both sides of the chair may be identical. As disclosed most clearly in Fig. 1, they lie in generally vertical planes, although, of course, they could be inclined to some extent with respect to each other, if desired.

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The side frame members are secured rigidly in spaced relation with respect to each other by an upper ring or annular member 14 that will be described hereinafter, and also by a pair of cross members 15, 15, which are disclosed as extending diagonally between the side frame members 10, 10. Thus, one of the cross members or diagonal braces 15 will extend from a front leg 13 of one side frame member 10 to the rear leg 12 of another side frame member. The other cross member or diagonal brace 15 will extend from the rear leg 12 of the first-mentioned side frame member to the front leg 13 of the other side frame member 10. The diagonal braces cross each other in the manner shown most clearly in Fig. 3, and preferably lie in substantially horizontal planes at a suitable midpoint along the length of the front and rear legs 13, 12. The ends of the diagonal braces or cross-members 15, 15 are secured to the respective legs 12, 13 in any suitable manner, as by use of welding material 16.

The chair frame is made more rigid by providing another bracing and supporting member 14 between the side frame members 10, 10. This particular supporting member also functions as the support for the bottom 17, back 18 and side portions 19 of a seat 20 suspended therefrom. Thus, the member 14 is in the form of a ring that may be made of tubular metal, this ring being of generally ovate form. The forward and rearward portions 21, 22 of the ring lie on the arcs of circles, which may have different radii of curvature, these forward and rearward portions being interconnected by relatively straight portions 23. As disclosed most clearly in Fig. 3, each relatively straight portion 23 may extend from a point 24 approximately midway of the armrest portion 11 of each side frame structure 10 to the rear curved portion 22, which commences at a point 25 approximately 45 degrees from a vertical plane passing through both armrest portions and at right angles thereto.

The diagonal ring member 14 is disclosed as extending on the outside of the upper portions of the side frame members 10, 10, the diagonal ring being inclined in a forward and downward direction. Its uppermost end 26 is disposed at the rear portion of the structure and substantially above the armrest portions 11. The ring engages each side frame member 10 at approximately the juncture or corner 27 of the armrest portion 11 and the rear leg 12, inclining in a downward and forward direction, to engage each inclined front leg member 13 a short, although substantial, distance below the armrest portion 11.

The diagonal ring member 14 is integrated to the side frame members 10, 10, as by the use of welding material 28. The points of welding are disclosed as being at the corners 27 between the

armrest portions 11 and the rear legs 12 of the side frame members, and also at the front leg portions 13 a substantial distance below the armrests 11. Of course, depending upon the angle of inclination of the diagonal ring member 14 to the horizontal, the points of attachment between the ring and each side frame member 10 may vary. As disclosed in the drawings, the diagonal ring 14 makes an angle of approximately 35 degrees to the horizontal, but this angle may be varied, without departing from the invention.

The diagonal ring 14 lies in a single plane and serves to support the chair seat 20. As disclosed in the drawings, the chair seat is of woven, basket-like construction and is suspended from the diagonal ring 14. Thus, the seat includes the back portion 18, which merges into the bottom 17 of the seat. The basket-like construction also provides the side members 19, 19 that interconnect the back and bottom portions, these side members 19 and the back portion 18 supporting the chair bottom 17 from the diagonal member 14. The forward portion of the chair bottom 17 is carried directly by the front portion 30 of the diagonal ring itself, which is disposed substantially below the level of the armrests 11. Instead of a woven-basket-like construction of the seat 20, it could be made of other materials that are suitably shaped, to provide comfort to the person sitting in the chair. Regardless of the material, the diagonal ring would support the entire seat construction and serve as the support for its back, sides and bottom portions, as well as providing lateral support and restraint to a person sitting in the chair.

It is, accordingly, apparent that the diagonal ring 14 serves as a cross-member or brace between the side frame members 10, 10 of the chair structure, and that it also serves as a support for the various portions of the seat 20. The inclination of the diagonal ring in a forward and downward direction enables the seat to be suspended therefrom, the rear portion 26 of the ring being disposed sufficiently above the bottom 17 of the seat to enable a substantial backrest 18 to be suspended from the rear portion 22 of the ring. The front portion 30 of the ring, due to the inclination of the latter in a downward and forward direction, is disposed at the proper height, to provide the forward edge of the bottom 17 of the seat, enabling a person to readily place himself on and remove himself from the seat.

The inventor claims:

1. In a chair: a pair of spaced substantially U-shaped side frame members; a substantially annular frame member encompassing and rigidly secured to the upper portions of said side frame members and extending forwardly and rearwardly of said side frame members, said substantially annular member being inclined in a downward and forward direction and lying substantially in a single central plane, the uppermost rear end of said substantially annular member being disposed substantially above the upper ends of said side frame members and the lowermost front end of said substantially annular member being disposed substantially below the upper ends of said side frame members; and a flexible support secured to and freely suspended from points throughout the periphery of said substantially annular member defining back, bottom and side portions.

2. In a chair: a pair of spaced substantially U-shaped side frame members, each member having an upper armrest portion and front and rear leg portions depending and diverging from said armrest portion; a substantially annular frame member encompassing and welded to each side frame member adjacent the juncture between said rear leg portion and armrest portion and to the front leg portion substantially below said armrest portion, said substantially annular frame member being inclined in a downward and forward direction and lying substantially in a single central plane, the uppermost rear end of said substantially annular member being disposed substantially above said armrest portions and the lowermost front end of said substantially annular member being disposed substantially below said armrest portions; and a flexible support secured to and freely suspended from points throughout the periphery of said substantially annular member defining back, bottom and side portions.

3. In a chair: a pair of spaced substantially U-shaped side frame members; a substantially annular frame member encompassing and rigidly secured to the upper portions of said side frame members and extending forwardly and rearwardly of said side frame members, said substantially annular member being inclined in a downward and forward direction and lying substantially in a single central plane, the uppermost rear end of said substantially annular member being disposed substantially above the upper ends of said side frame members and the lowermost front end of said substantially annular member being disposed substantially below the upper ends of said side frame members; and a support carried by and suspended from said substantially annular member to define back, bottom and side portions.

4. In a chair: a pair of spaced substantially U-shaped side frame members; a substantially annular frame member encompassing and rigidly secured to the upper portions of said side frame members and extending forwardly and rearwardly of said side frame members, said substantially annular member being inclined in a downward and forward direction and lying substantially in a single central plane, the uppermost rear end of said substantially annular member being disposed substantially above the upper ends of said side frame members and the lowermost front end of said substantially annular member being disposed substantially below the upper ends of said side frame members; and a support secured to and suspended from points throughout the periphery of said substantially annular member defining back, bottom and side portions.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
D. 168,212	Cicchelli	Nov. 18, 1952
232,496	Heywood	Sept. 21, 1880
2,207,025	Rison	July 9, 1940
2,464,995	Roth	Mar. 22, 1949
2,512,353	Magaldino et al.	June 20, 1950
2,521,339	Burn	Sept. 5, 1950
2,600,944	Victor	June 17, 1952
2,622,663	Burd	Dec. 23, 1952

FOREIGN PATENTS

Number	Country	Date
994,932	France	Aug. 14, 1951

OTHER REFERENCES

Popular Mechanics Magazine, January 1945, page 41.