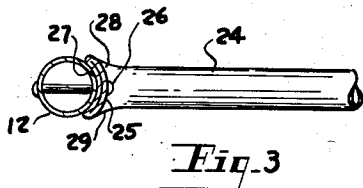
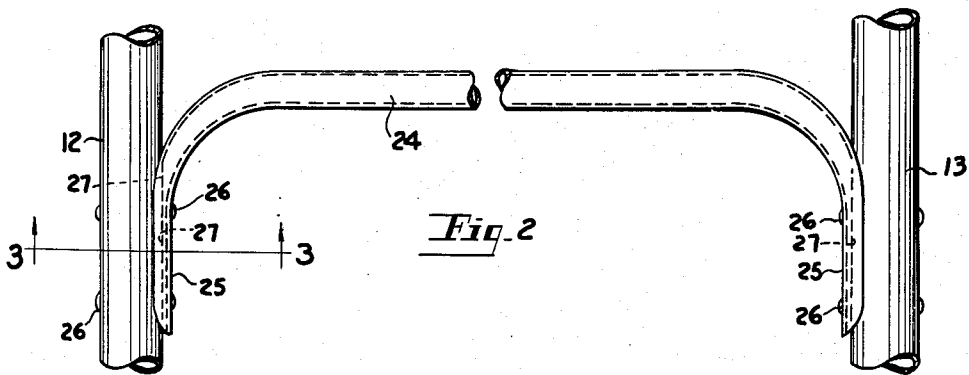
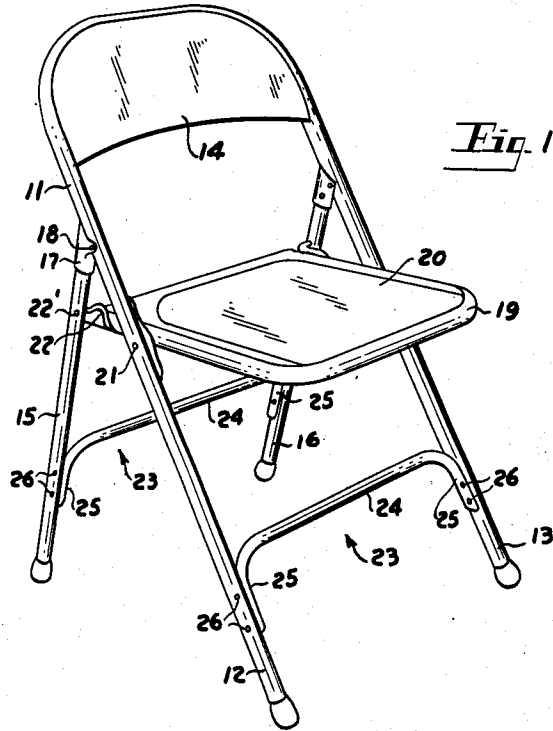


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FOLDING CHAIR BRACE

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FOLDING CHAIR BRACE

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1 Claim. (Cl. 155—197)

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This invention relates to chair constructions and more particularly to folding chairs which include at least a pair of spaced legs.

Heretofore particularly in folding chair constructions the front and rear pairs of legs have been reinforced by a rod or cross brace whose end portions project through corresponding opposed transverse openings in said legs, with the outer ends of such cross brace beveled over or otherwise riveted to the legs.

It is the object of the present invention to provide a novel cross brace construction for a pair of such legs in connection with the folding chairs wherein a cross brace of tubular construction is employed, being of substantial U-shape, with the upwardly turned end portions of said cross brace engaging the surface of said legs and being respectively secured to said legs as by a plurality of rivets, or by welding if desired.

It is the further object of this invention to provide a cross brace construction to thereby increase the rigidity of the relationship between the pairs of legs interconnected and to prevent possible side play of the legs relative to each other.

It is the further object of this invention to provide a novel U-shaped cross brace construction which is inexpensive to manufacture and which is more effective for the purpose intended than constructions heretofore known.

These and other objects will be seen from the following specification and claim in conjunction with the appended drawing in which:

Figure 1 is a perspective view of a folding chair embodying applicant's novel cross brace construction.

Figure 2 is a fragmentary broken away front view of the chair legs illustrating said cross brace construction; and

Figure 3 is a fragmentary section taken on line 3—3 of Figure 2.

It will be understood that the above drawing illustrates merely a preferred embodiment of the invention and that other embodiments are contemplated within the scope of the claim hereafter set out.

Referring to the drawing the folding chair construction generally includes the tubular U-shaped frame element 11 whose lower ends terminate in the parallel spaced legs 12 and 13, there being a suitable concave backrest 14 positioned within the upper portion of said frame.

Parallel spaced tubular legs 15 and 16 form the rear legs of the folding chair and have at their upper ends the brackets 17 which are pivotally

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joined at 18 to the chair frame element 11 upon opposite sides thereof.

Hollow tubular seat frame 19 with seat 20 is pivotally mounted on its opposite sides at points 21 to front legs 12 and 13 respectively, with the rear portions of said seat cooperatively engaging the brackets 22 which are joined to rear legs 15 and 16 at 22' and which project forwardly therefrom, and which are adapted to limit the downward pivotal movement of seat frame 19 to the position shown. The front ends, not shown, of brackets 22 are pivotally joined to frame 19.

The cross brace construction which forms the inventive portion of the present application generally indicated at 23 includes the hollow tubular U-shaped element 24 whose respective up-turned ends 25 are positioned adjacent and in engagement with corresponding interior portions of legs 12 and 13 and are secured thereto by the rivets 26. It is contemplated that elements 25 could be welded.

In the preferred embodiment of the invention rivets 26 extend through brace elements 25 and through corresponding openings in the walls of the tubular legs 12 and 13 as shown in Figure 2. It is contemplated that if desired, that said end elements 25 could be immovably secured in any other convenient manner.

Referring to Figures 2 and 3 it will be seen that the end elements 25 of said cross brace have been pressed together and arcuately formed providing the outer concave leg engaging portion 27, and the corresponding arcuate inner wall member 28 which is in substantial registry with portion 27.

By so forming said end elements 25 it is apparent that the same are in cooperative registry with inner surface portions of the respective legs 12 and 13 and therefore provide a highly effective means of joining cross brace 23 to said leg.

The arcuate outer wall portion 27 extends substantially throughout the corresponding upright portion of end elements 25 so that there is an effective surface engagement between said elements and the inner wall portions of legs 12 and 13.

Consequently by this construction cross brace 23 is secured at its ends at a plurality of points to the respective legs 12 and 13 to provide for extra rigidity of said cross brace and the legs to which it is connected.

It will be noted further than in the formation of the cross brace end elements 25 the metal has been flowed or formed to provide the portions 29 which project transversely outward beyond the diameter of cross brace portion 24 thereby in-

creasing the effective surface area of the portions 27 which engage legs 12 and 13 and which are immovably secured thereto by rivets 26.

Heretofore cross-braces employed in folding chair constructions normally consisted in the use of a single transverse rod which inter-connected a pair of front or rear chair legs, with the respective ends of such rods projecting through corresponding transverse openings formed through said legs. It was then necessary to spin over or otherwise rivet the outer end portions of such rod in order to immovably secure same to said legs.

The disadvantage of this construction resided in the fact that the chair legs were weakened by such transverse openings at the very point where additional strengthening could well be used. It was found also that even with this type of cross-brace, there was still a tendency for the legs, when under certain stresses, to twist or otherwise bend. The crossbar was not therefore fully effective for accomplishing the purpose of rigidly maintaining a definite space relationship between the chair legs. Furthermore, this type of construction was expensive.

The present construction which employs a tubular cross-brace which becomes actually a strengthening member and reinforces the legs to resist torsional stresses or bending. A minimum amount of steel is employed in the tubular construction which does not exceed the amount of steel heretofore employed in the rigid cross-brace, and by this tubular construction, greater strength and rigidity is achieved. The tubular construction is much less expensive and is light weight.

In the present disclosure the downwardly extending end portions of the U-shaped cross-brace are pressed inwardly or partially flattened, however, it is contemplated that the tubular cross-section could be maintained for accomplishing applicant's purpose.

Applicant's cross-brace is furthermore distinctly ornamental in appearance as the tubular construction thereof corresponds to the general tubular construction of the chair legs. Furthermore the down-turned ends of the cross-

brace are formed as to blend substantially into the interior longitudinal surfaces of the legs.

It has been found that while the old type of leg-reinforcing bar would not effectively secure the legs rigidly under certain conditions, it has been found that the present construction is entirely effective for this purpose. The chair is greatly reinforced and will resist the maximum stresses. Furthermore, in the present construction, there are no sharp edges, which is particularly an advantage over the old type.

It is contemplated also that the cross-braces for the folding chair legs may be moved upwardly or downwardly from the position shown in the drawings as desired for the particular use to which the chairs are to be put.

Having described my invention reference should now be had to the claim which follows for determining the scope thereof.

I claim:

In a folding chair having a pair of spaced interconnected tubular legs of circular cross-section, a hollow tubular cross brace interconnecting said legs and consisting of a straight elongated element of circular cross-section interposed between said legs at right angles thereto with its ends down-turned normally thereof, in abutting engagement with and extending along opposed interior surface portions of said legs for a portion of their length, opposed side walls at said ends being pressed together and arcuately formed to cooperatively register with said interior leg portions, the width of said surface engagement being greater than the diameter of said cross brace, and means immovably securing said ends to said legs.

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