Aug. 19, 1952 J. B. O'CONNOR 2,607,399

METAL FOLDING CHAIR

Original Filed July 22, 1946

Fig. 1.

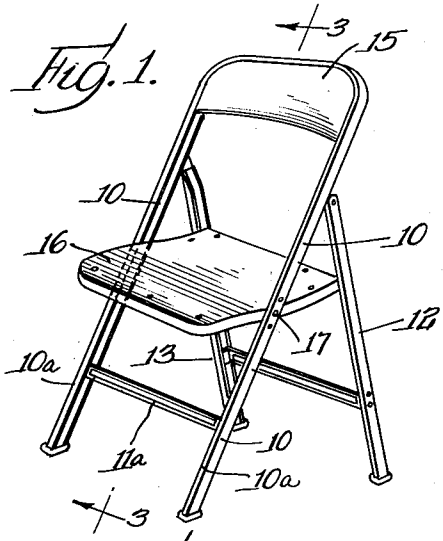


Fig. 2.

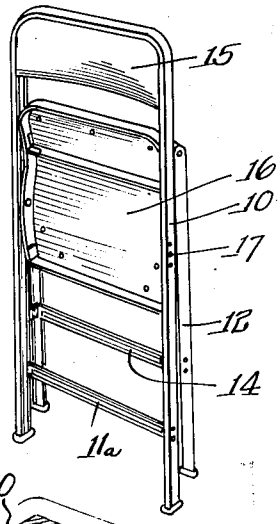


Fig. 3.

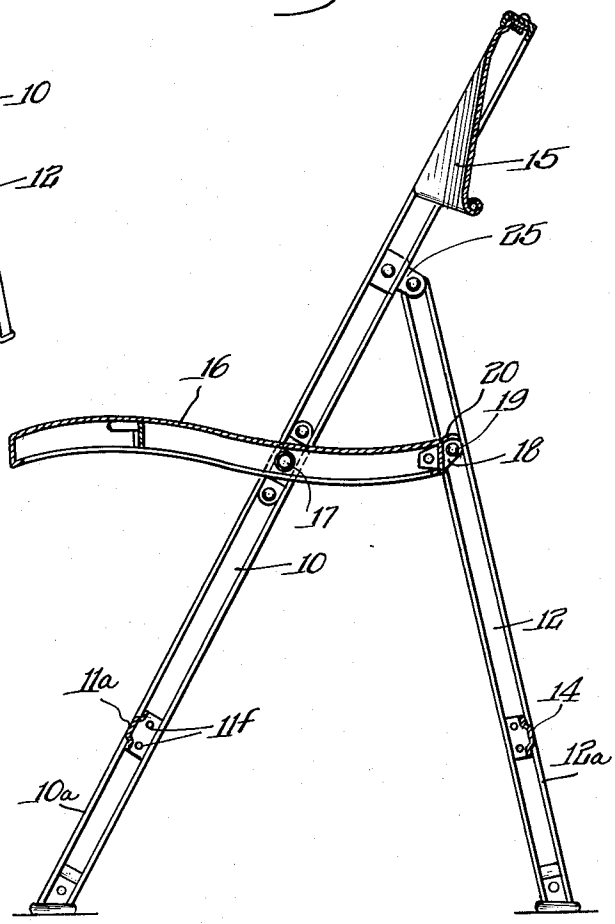
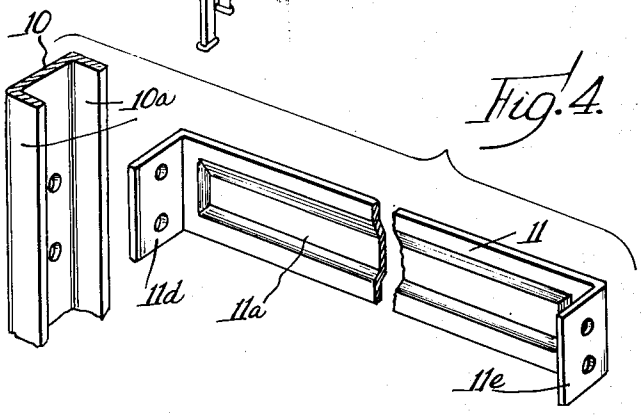


Fig. 4.



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METAL FOLDING CHAIR

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2 Claims. (Cl. 155—142)

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This invention relates to a new and improved construction for chairs, and more particularly to chairs of the metal frame type.

One of the main objects of the present invention is to provide a metal chair, preferably of the folding type, which is rugged, comfortable, and has the leg portions thereof suitably braced to provide a rigid supporting framework for the chair.

Another object of the invention resides in providing a simple type of cross brace construction for interconnecting the lower portions of the front and rear legs of the chair to rigidify the same.

These and other objects of invention will be apparent from a perusal of the following specification when taken in connection with the accompanying drawing, wherein:

Figure 1 is a perspective view of a chair embodying the cross brace of the present invention;

Figure 2 is a view showing the chair in folded position;

Figure 3 is an enlarged detailed view of the chair shown in Figure 1; and

Figure 4 shows details of the cross bracing and the channel bar into which the cross brace is rigidly fixed.

The present application is a division of my copending application Serial No. 685,427, filed July 22, 1946, Patent No. 2,458,095 of January 4, 1949.

Referring now to the drawings, and particularly to Figures 1, 2 and 3, the chair in general comprises a main frame formed from a metal channel bar bent into U-shape and suitably braced. The frame member provides two opposed front channel bars 10, each channel bar including an intermediate wall and parallel integral flanges 10*a* and 10*b*.

The lower portions of the channel bar 10 form front legs for the chair and the lower portions of these front legs are braced by a cross brace 11.

As shown in the drawing, the front cross bracing member 11 comprises a length of relatively heavy strip sheet metal forming a strip-like body in which a central panel portion 11*a* thereof is bent forwardly substantially into the plane of the outer face of the front flange 10*a* and wherein the portions of the strip above and below the panel 11*a* are bent or disposed rearwardly of and substantially within the plane of the rear face of the front flange 10*a* of the channel member 10. In addition, the two end flanges 11*d* and 11*e* of this cross brace 11 are bent at right angles to the intermediate portions of the brace 11. The brace is preferably of such length that the length of these bent ends is substantially equal to the

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width of the channel of the leg member 10 so as substantially to fill and fit within the width of the channel between the flanges 10*a* and 10*b* thereof. These normally bent integral end portions 11*e* and 11*d* are preferably riveted as at 11*f* to the intermediate wall portion of the channel front leg 10 by means of two rivets. By means of this construction the lower ends of the legs are rigidified by a brace which has no tendency to turn since the normally bent end flanges 11*d* and 11*e* fit snugly between the parallel flanges 10*a* and 10*b*, and with the outer faces of the bent ends lying snugly against the intervening intermediate wall portion of each leg 10, the rivets holding the brace in position.

A pair of shorter channel bars 12 and 13 of cross section similar to that of the front U-shaped frame 10 are provided as rear prop legs for the chair, except that the channel portion of the rear cross brace 14 is extended outwardly substantially in the plane of the rear face of the rear flange 12*a*, and the upper and lower edge portions of this cross brace 14 are disposed forwardly and within the plane of the front face of this rear flange 12*a*. The lower portions of these legs are thus connected by the cross brace 14.

The rear legs 12 and 13 are pivotally secured at their upper ends to the channel members 10 and together form a rear support frame or rear leg structure for the chair. A sheet metal back 15 is secured to the U-channel 10 at the upper end thereof, and a preferably sheet metal seat 16 is pivotally secured to the frame by pivots 17. In addition, each rear corner of the seat is provided with a projection 18, each carrying a lug 19 slidable within the associated rear channel bar and each channel bar carries a stop 20 for limiting the upward movement of the associated lug. The lower ends of the channel bars 10, 12 and 13 carry attachable feet, affording a firm and solid support construction for the chair.

The front and rear cross braces 11 and 14 provide rigidifying or bracing means for the lower portion of the legs, and their specific construction provides resistance to flexing or bending, and also improves the appearance of the chair. The paneling effect is more pleasing than a flat surface at this point and is more resistant to bending. The particular construction is important because occasionally an occupant stands upon these braces, and the braces as thus constructed afford a maximum resistance to this type of strain in that the braces are held from turning within the channeled members by means of the conformation of the bent ends 11*d* and 11*e* snugly fitting within the channel members, as

hereinbefore described, and riveted in place as at *11f*.

It is apparent that many widely different embodiments of this invention may be made without departing from the spirit and scope thereof, and therefore it is not intended to be limited except as indicated in the appended claims.

Having thus described the invention, what is new and desired to be secured by Letters Patent is:

1. In a chair construction including a frame providing a pair of front legs, a pair of rear prop legs connected to said frame, each leg being of channel-shaped formation to provide flange-like walls connected by an intermediate side wall with the flange-like walls of one of the legs of each pair projecting transversely of the chair toward the flange-like walls of the other leg of the pair, the combination of a bracing member for each pair of legs and including a strip-like body having a panel portion offset outwardly of the chair and lying substantially flush with the outer surface of the adjacent flange-like wall of each chair leg for increasing resistance to twisting thereof and having end portions disposed within the channels and substantially contiguous with the inner surface of the flange-like wall disposed outwardly of the chair on each leg, said bracing member including end flanges disposed at right angles to the body and directed toward the opposite flange-like walls disposed inwardly of the chair on each leg and being substantially contiguous and coextensive with the width of the intermediate walls of the corresponding pair of legs to reinforce the same, and fastening means for securing the bracing member to the chair legs.

2. In a folding chair construction including a frame having a pair of front legs, a pair of rear legs having the upper ends thereof pivotally connected to upper portions of the front legs, each leg being of channel-shaped formation to provide flange-like walls connected by an intermediate side wall with the flange-like walls of one of the legs of each pair projecting transversely of the chair toward the flange-like walls of the other leg of the pair, each flange-like wall presenting a flat inner surface disposed substantially at right angles to the inner surface of the intermediate side wall, and a forwardly projecting seat pivoted intermediate the ends thereof to an intermediate portion of the front legs and having the rear end thereof provided with means slidably mounted in the channel-shaped rear legs for reinforcing the intermediate portions of both the front and rear legs; the combination of a bracing member for each pair of legs located toward the lower ends thereof, each bracing member including a strip-like body having flat end portions disposed within the channels and each in contiguous planar contact with the inner surface of the adjacent flange-like wall disposed outwardly of the chair on each leg for strengthening the same by resisting twisting, said bracing member also including flat end flanges disposed at right angles to the flat end portions and directed toward the opposite flange-like wall disposed inwardly of the chair on each leg and being in planar surface contact with the adjacent intermediate wall of a corresponding leg to further reinforce the same and resist twisting thereof, and fastening means for securing said flanges to the chair legs.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,675,577	Rosenthal	July 3, 1928
1,704,712	Silverman	Mar. 12, 1929
1,730,916	Cable	Oct. 8, 1929
1,789,295	Bauer	Jan. 20, 1931
1,800,107	Schmitt	Apr. 7, 1931
1,857,326	Patterson	May 10, 1932
2,261,588	O'Connor	Nov. 4, 1941
2,356,793	O'Connor	Aug. 29, 1944
2,364,093	O'Connor	Dec. 5, 1944
2,364,647	O'Connor	Dec. 12, 1944
2,458,095	O'Connor	Jan. 4, 1949