Feb. 6, 1934. J. SILVERMAN 1,945,574

FOLDING CHAIR

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Fig. 1

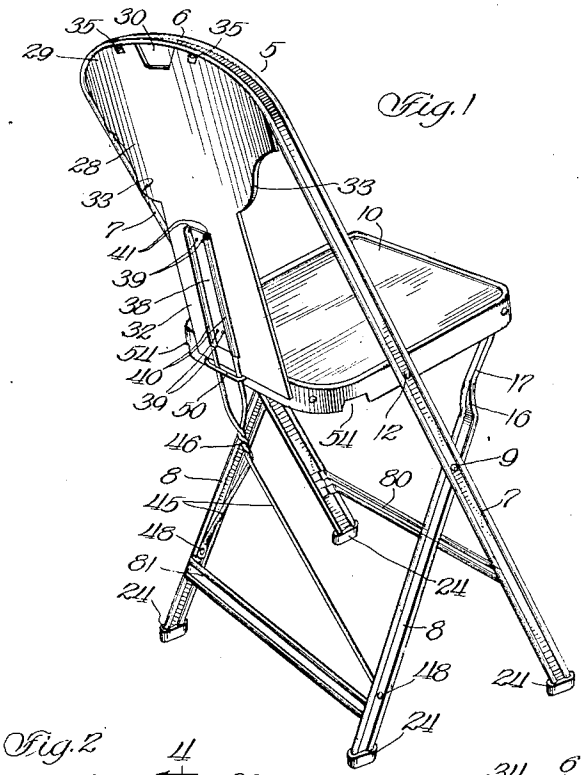


Fig. 4

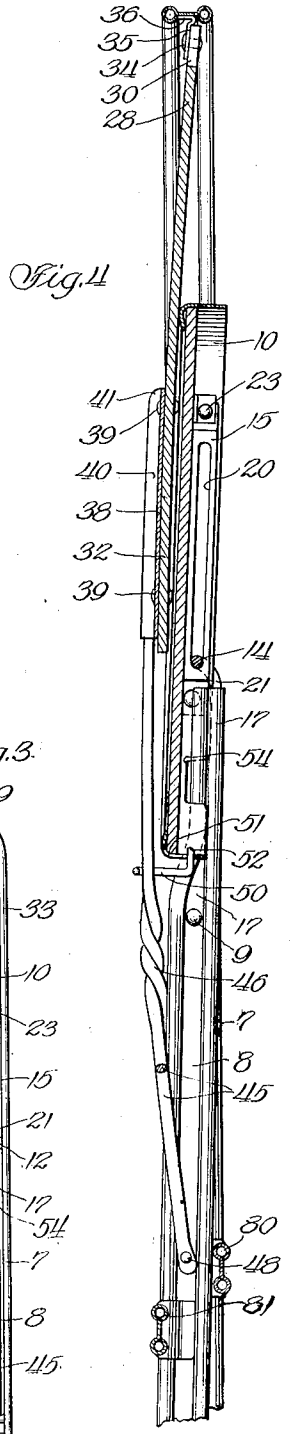


Fig. 2

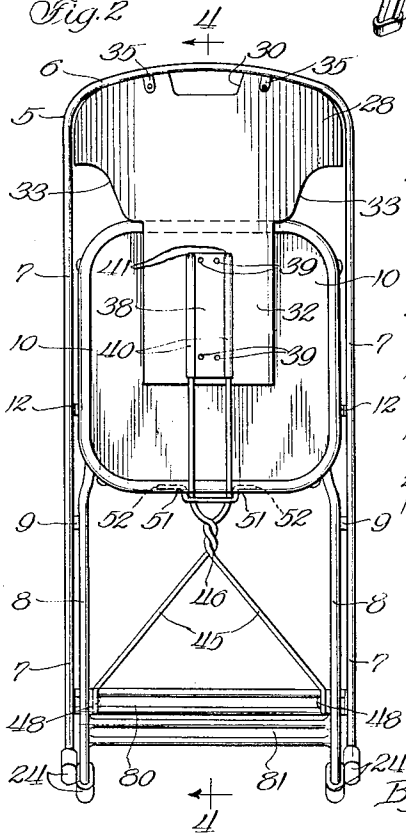
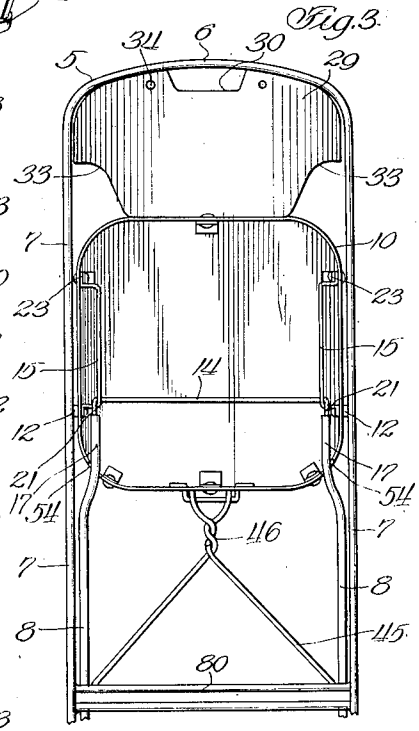


Fig. 3



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Fig. 5

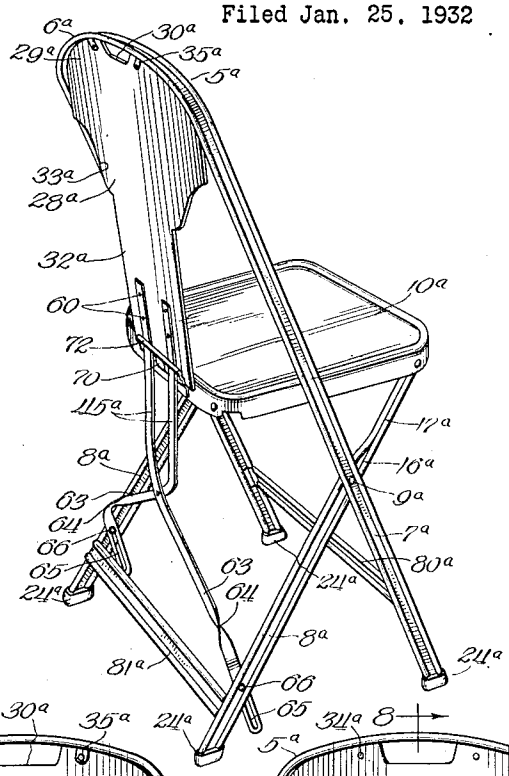


Fig. 6

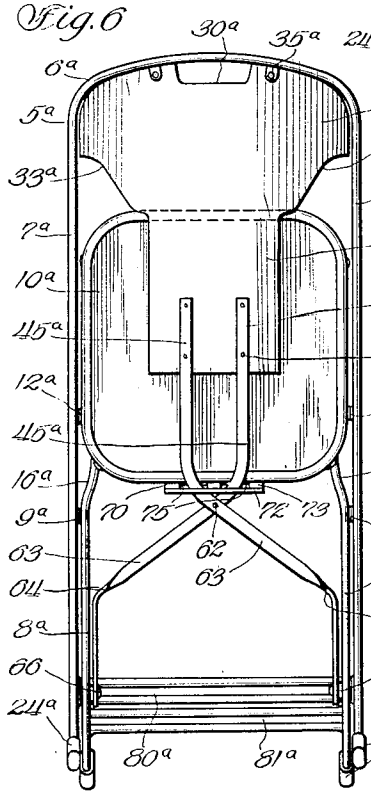


Fig. 7

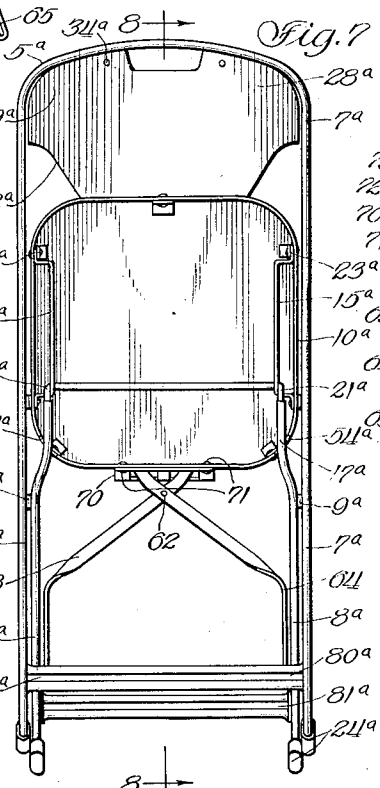
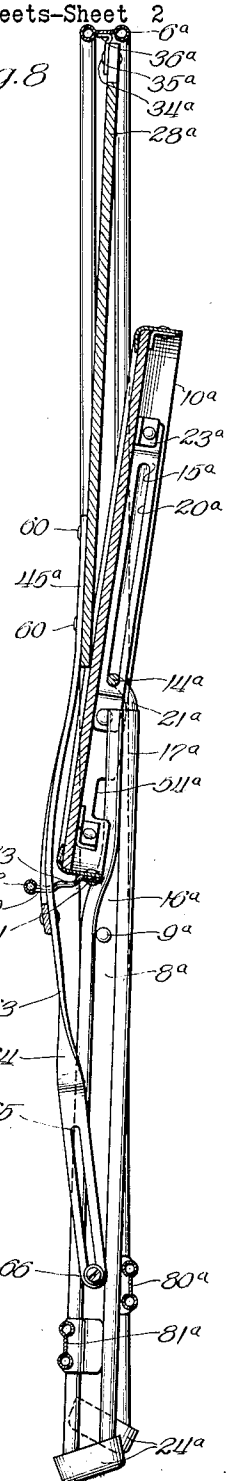


Fig. 8



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UNITED STATES PATENT OFFICE

1,945,574

FOLDING CHAIR

Joseph Silverman, Chicago, Ill.

Application January 25, 1932. Serial No. 588,603

6 Claims. (Cl. 155—144)

My invention relates to folding chairs, and has for one of its objects the provision of a folding chair comprising a first pair of legs, a second pair of legs pivoted to the first legs, a seat pivoted to the first legs and connected or slidingly and pivotally connected to the second legs, a back, and connecting link means connected between the back and the second legs, and reenforcing or bracing the second legs crosswise of the chair.

Another object is the provision of means at the rear of the seat for engaging the connecting link means to hold the same to the seat.

Another object is the provision of a seat having notches at its opposite sides to receive the second legs.

Further objects and advantages of the present invention will appear from the following detailed description and the accompanying drawings, in which:

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

Figure 2 is a rear elevational view of the chair in folded position;

Figure 3 is a fragmentary front elevational view of the chair in folded position;

Figure 4 is a vertical sectional view of the chair in folded position and taken on the line 4—4 of Figure 2;

Figure 5 is a perspective view of a modified form of a chair embodying the invention;

Figure 6 is a rear elevational view of the chair of Figure 5 in folded position;

Figure 7 is a front elevational view of the chair of Figure 5 in folded position; and

Figure 8 is a vertical section similar to Figure 4 and taken on the line 8—8 of Figure 7.

Referring to the drawings, the folding chair of my present invention comprises a generally U-shaped frame 5, closed at the top at 6, and having sides 7, 7 forming a pair of relatively long legs.

Disposed between the legs 7, 7 are a second pair of legs 8, 8, and one of these second legs 8 is pivoted at 9 to each of the legs 7. A seat 10 is positioned between the legs 7, 7, and is pivoted at each of its opposite sides at 12 to the respective legs 7. The seat 10 is connected or slidingly and pivotally connected also to the upper ends of the legs 8. In the illustrated embodiment of the invention this connection comprises a rod 14, having sliding pivotal connection in bracket members 15, 15, one at each of the opposite sides of the bottom of the seat 10. In the particular structure shown in the drawings, the legs 7, 7 and 8, 8 are formed of metal and have rolled margins, and the upper ends of the legs 8, 8 are offset inwardly slightly at 16, and the rolled margins of these inwardly offset upper ends are crushed together as more fully described in my copending application, Serial No. 358,486, filed April 27, 1929, which is to issue under Patent No. 1,844,077 as of February 9, 1932.

Each bracket 15 has an elongated slot 20 extending in the direction of the depth of the seat 10, and the sliding pivotal connection between the upper ends of the legs 8, 8 and the seat 10 is obtained by passing the rod through the slots 20 transversely of the seat and turning the ends 21 of the rod outwardly of the bracket 20 down into the tubular portions at the upper ends of the legs 8, and securing said downturned ends in said tubular portions. The ends of the bracket 15 are secured at 23 to the depending side flange of the metal frame of the seat 10. The lower ends of the legs 7 and 8 may be provided with rubber or other suitable feet 24.

The back 28 is of ply wood having veneered front and back surfaces or it may be of metal or another suitable material. This and other features may, of course, vary within the scope of my invention. The back 28 fits between the upper ends of the leg forming sides 7, 7 of the frame 5, and its upper edge is shaped at 29 to conform with the lower side of the closed end 6 of the frame. The upper edge 29 of the back 28 has an opening 30 through which the hand may be inserted to grasp the adjacent portion of the closed end 6 of the frame for facility in handling. The lower end of the back has a depending intermediate portion 32, and the back may be shaped at the opposite sides as desired at 33. At its upper end the back 28 is fixedly secured as by means of rivets 34 (Figure 4) to the depending flanges of a pair of angle brackets 35, and the other flanges of these angle brackets are secured by spot welding or the like at 36 to the lower side of the end 6 of the frame.

Attached as by means of rivets 39 to the rear side of the back 28, centrally between the opposite sides of the back, is a metal plate 38 having rolled margins forming tubular parts 40 extending vertically along the opposite edges of the member 38. The upper ends of these tubular margins 40 may be reduced in cross section by crushing the side walls of these tubular margins together slightly at 41.

The connecting link members 45, 45 in this embodiment are in the form of rods of circular cross section. The upper ends of the rods 45 are parallel and having sliding engagement in the

parallel tubular margins 40 of the member 38, and below these parallel upper ends the rods 45 are twisted together at 46. From the bottom of the twisted part 46 the rods 45 converge diagonally, one extending to each of the legs 8, 8, and the lower ends of the rods are pivoted at 48, one to each of the legs 8 below the pivoting of the seat 10 in the frame at 9 and near the lower ends of the legs 8. The connecting links 45 thus reenforce or brace the legs 8, particularly crosswise thereof, and at the same time these links 45 form a connection between the back and the legs 8, which connection with the other parts are all brought into substantially the plane of the frame 5 when the chair is folded.

For the purpose of holding the connecting link members 45, 45 to the rear of the seat 10, the seat is provided centrally along its rear margin with a staple. This staple is in the form of a U-shaped rod engaging over the upper parallel ends of the connecting links 45, 45, and the legs of this rod pass loosely through openings 51 in the depending rear flange of the seat frame, and are turned over at 52 internally of said flange to hold the staple to the rear of the seat. The openings 51 are elongated vertically around the rear upper corner of the seat frame so that the staple will have movement relative to this frame inwardly and outwardly slightly through the opening 51, and at the same time is adapted to assume slightly different angular position with respect to the seat frame to allow disposition of the upper ends of the rods 45 over the top of the seat 10 in the folded position of the chair and vertically along the rear edge of the seat in the open position of the chair. The staple or loop 50 may, however, be secured rigidly in place within the scope of my present invention.

In order to permit the legs 8 and seat 10 to fold into or more nearly into the plane of the frame 5, the rounded rear corners of the depending flanges of the seat frame have notches 54, one at each of the opposite rear corners. These notches receive the legs 8 in folded position of the chair, as illustrated in Figure 4.

Except for the connecting link means between the back and the relatively short legs, the connection or engagement of this link means with the back and with the relatively short legs and the means for holding the connecting link members to the rear of the seat, the embodiment of Figures 5 to 8, inclusive, is substantially the same as the preceding embodiment, and corresponding parts are indicated by corresponding reference characters with the letter *a* applied thereto.

In this form of the invention the connecting link members 45*a* are in the form of flat metal bars, and the parallel upper ends of these bars 45*a* are riveted or otherwise secured at 60 to the depending lower part 32*a* of the back 28*a*. At the lower ends of the upper parallel portions the bars 45*a* are crossed and riveted or otherwise secured together at 62, and below this the bars converge downwardly at 63, one extending to each of the relatively short legs 8*a*. These converging lower ends are twisted at 64 to dispose the widths of the lower ends of the bars 45*a* generally parallel the widths of the legs 8*a* and at substantially right angles to the widths of the parallel upper ends of the bars. The lower ends of the connecting link forming bars have elongated slots 65, and pins 66 secured to the opposite legs 8*a* engage in these slots 55 and connect the lower ends of the bars 45*a* pivotally and slidingly to the respective legs 8*a*.

For the purpose of holding the link members 45*a* to the rear of the seat 10*a*, a metal plate 70 is secured as by means of rivets 71 to the depending flange of the metal frame of the seat 10*a*. This plate 70 is doubled back upon itself and has a rolled margin at its free end, which rolled margin is filled by a metal pin or rod 72. The plate 70 is offset at 73 to receive and firmly hold the lower edge of the back 28*a* in place when the chair is open for use, as shown in Figure 5. The plate 70 also has a pair of transversely spaced openings 75 through which the upper ends of the connecting links 45*a* pass and are operable in folding and opening the chair. The rolled margin 72 of the plate 70 forms retention at the rear of the plate 70 for the lower edge of the back 28*a* when the chair is open for use, but it is to be understood that the rear end of the plate 70 may be turned up slightly for this purpose or to increase the retention if and as desired.

It is to be understood that the form of connecting link members shown in Figures 5 to 8 may have fixed pivotal connection to the legs 8*a*, and that the upper ends of these link members may have sliding connection with the back 28*a*, or the form of link members shown in Figures 1 to 4, inclusive, may be fixedly fastened at their upper ends to the back 28, and slidingly and pivotally connected at their lower ends to the relatively short legs 8 of the chair.

The lower ends of the legs 7 in Figures 1 to 4 are braced crosswise by a brace member 80, and the lower ends of the legs 8 are braced crosswise by a similar brace member 81, and these brace members are designated in the embodiment of Figures 5 to 8, inclusive, by similar reference characters with the letter *a* applied thereto.

I do not intend to be limited to the precise details shown or described.

I claim:

1. A folding chair comprising a first pair of legs, a second pair of legs pivoted to said first legs, a seat pivoted to said first legs and connected to said second legs, a back at the upper ends of said first legs, guides on said back, a pair of connecting link members having free sliding engagement at their upper ends in said guides and pivoted at their lower ends to said second legs, and means at the rear of the seat engaging the connecting link members for holding said link members to the rear of the seat.

2. A folding chair comprising a first pair of legs, a second pair of legs connected thereto, a seat pivoted to said first legs and connected to said second legs, a back at the upper ends of said first legs, guide means secured centrally on said back, and a pair of connecting link members connected between the back and said second legs, said connecting link members having free sliding engagement at their upper ends in said guide means and being pivoted at their lower ends to said second legs.

3. A folding chair comprising a first pair of legs, a second pair of legs connected thereto, a seat pivoted to said first legs and connected to said second legs, a back at the upper ends of said first legs, a pair of connecting link members connected between the back and said second legs, said connecting link members being twisted together below the back and extending diagonally to said second legs, and a loop on the rear of the seat and engaging over the upper ends of the connecting link members for holding said link members to the rear of the seat.

4. A folding chair comprising a frame closed

at the top and having sides forming a pair of relatively long legs, a pair of relatively short legs pivoted between said relatively long legs, a seat pivoted between said relatively long legs and having sliding pivotal connection with the upper ends of said relatively short legs, a flexible back fixedly attached to the top of said frame, a pair of connecting link members having sliding engagement with the back and pivoted to the relatively short legs below the pivotal connection of the relatively short legs to the relatively long legs, said connecting link members being twisted together below said back and extending diagonally to said second legs to brace said second legs crosswise, and a loop on the rear of the seat and engaging over the connecting link members for holding said link members to the rear of the seat.

5. A folding chair comprising a first pair of legs, a second pair of legs pivoted to the first legs, a seat pivoted to said first legs and slidingly and pivotally connected to said second legs, a back at the upper ends of said first legs, a pair of connecting link members having sliding engagement at their upper ends in said back, said members having diagonally extending lower ends connected together and to said second legs and bracing the same, and means at the rear of said seat engaging said members and forming an abutment for the lower end of said back.

6. A folding chair comprising a first pair of legs, a second pair of legs pivoted to the first legs, a seat pivoted to said first legs and slidingly and pivotally connected to said second legs, a back at the upper ends of said first legs, spaced vertical guides on the rear of said back, a pair of link members having their central portions twisted together and having their lower ends extending diagonally outwardly and being connected to said second legs, the upper ends of said members extending vertically into said guides and having sliding engagement therein, and means at the rear of said seat engaging said members and forming an abutment for the lower end of said back.

JOSEPH SILVERMAN.