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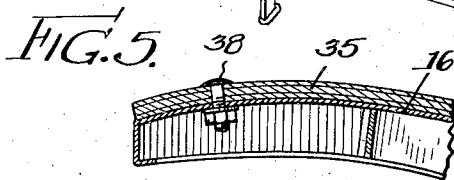
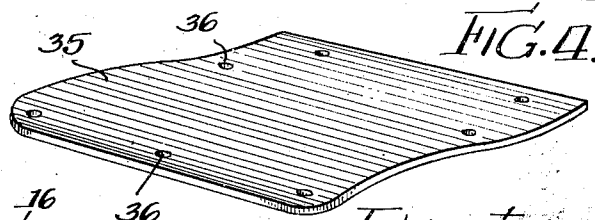
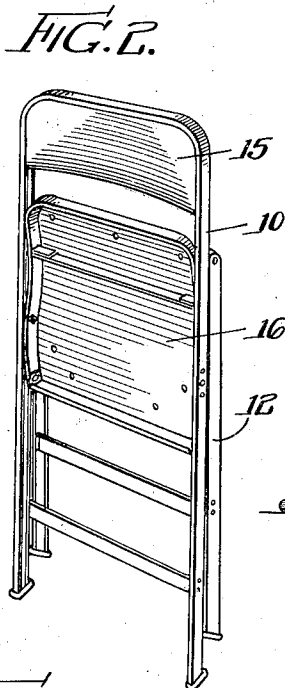
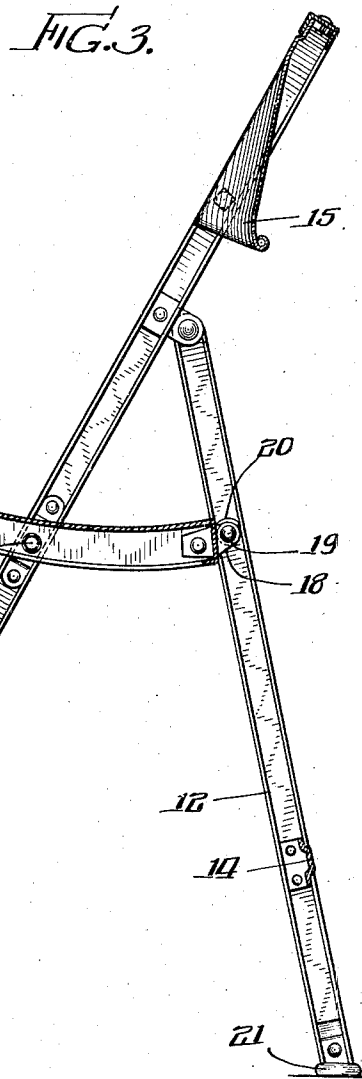
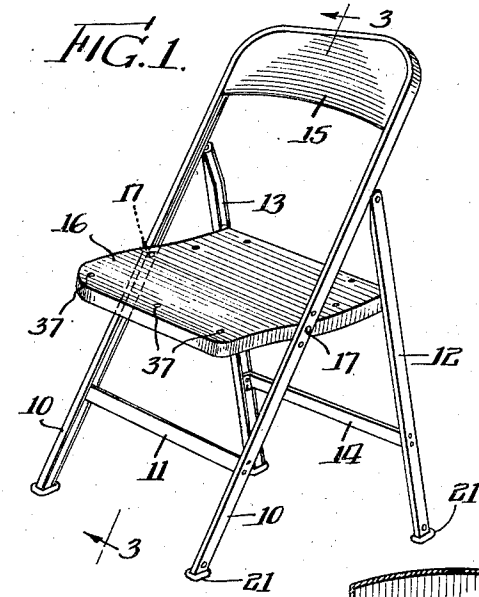
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2,364,093

CHAIR CONSTRUCTION

Filed Oct. 21, 1937

2 Sheets-Sheet 1



Inventor:  
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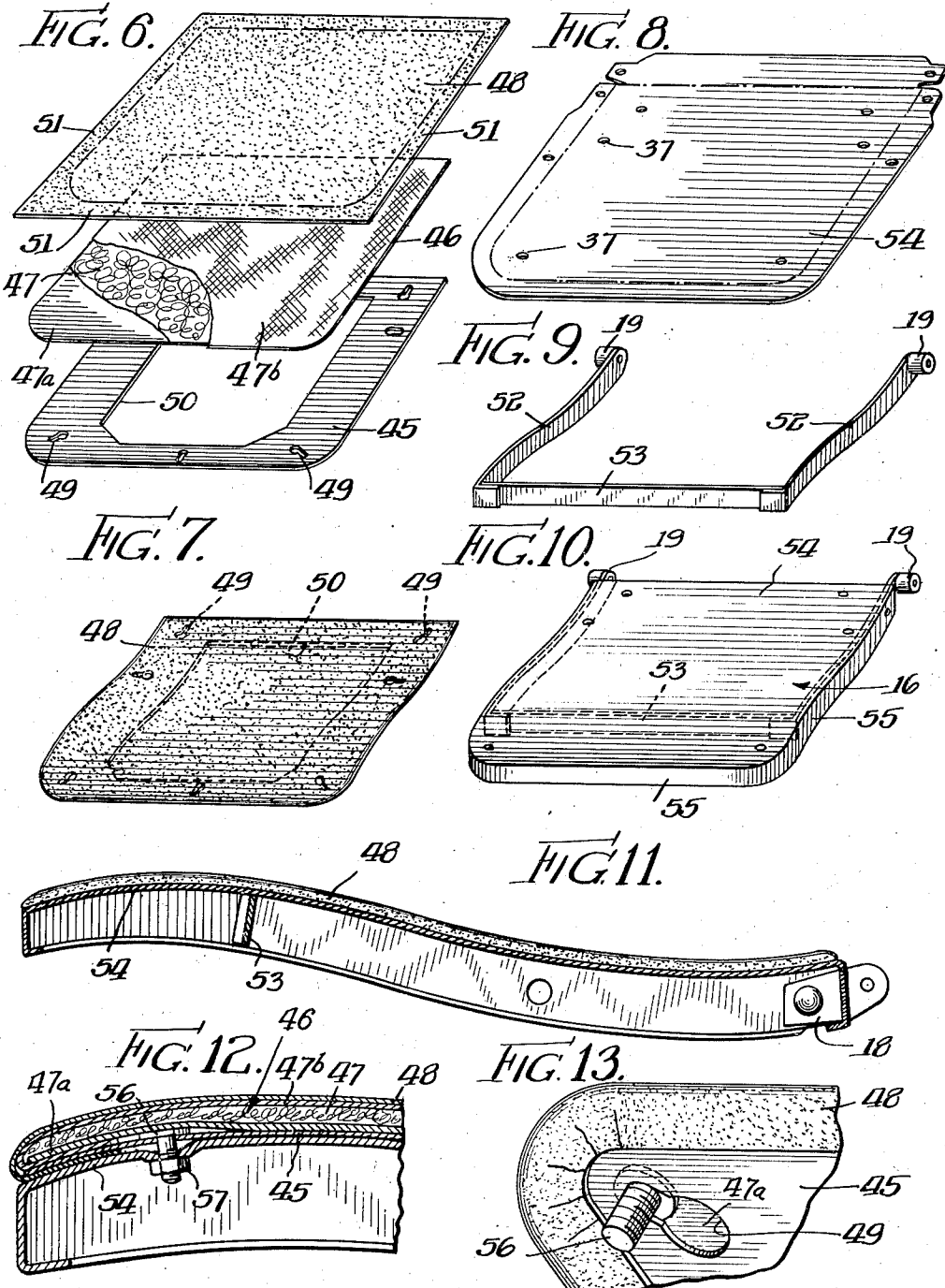
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CHAIR CONSTRUCTION

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2 Sheets-Sheet 2



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# UNITED STATES PATENT OFFICE

2,364,093

## CHAIR CONSTRUCTION

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Application October 21, 1937, Serial No. 170,256

5 Claims. (Cl. 155—184)

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

It is an object of the invention to provide a metal folding chair which is rugged, comfortable, easy to manipulate from open to closed position, and inexpensive to manufacture and fabricate.

A further and important object of the invention is to provide a metal folding chair construction which is adaptable for various types of service and requirements; more particularly, to produce a chair construction wherein the same metal chassis may be used in the making of a chair of all metal construction, or a chair having a wood or upholstered seat or back, or a seat or back faced with other desired material, as the occasion may require. In accordance with the invention, the chair seat and back may be readily faced with wood, upholstery, or other desired material, the same metal chassis in each case being used, whereby to render the chair adaptable for different types of uses and service conditions and to permit the ready replacement and substitution of the parts to compensate for wear, damage or the like.

Another object is to provide new and improved methods in the fabrication and assembly of the chair parts including the assembly of the upholstered seat and back, whereby to produce the chair construction at a minimum cost.

Still other objects and advantages of the invention will appear from the following description, when taken in connection with the accompanying drawings, wherein certain preferred embodiments of the invention are illustrated.

In the drawings, wherein like reference numerals refer to like parts throughout:

Fig. 1 is a perspective view of an all metal embodiment of the invention showing the chair in open position.

Fig. 2 is a similar view showing the chair in closed position.

Fig. 3 is a sectional view along the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of a wooden seat facing member adapted for application to the seat of the chair in Fig. 1.

Fig. 5 is a partial sectional view showing the wooden seat in applied position.

Figs. 6 and 7 are views showing the method of making the upholstered seat pad.

Figs. 8, 9 and 10 are views illustrating the method of making the metal seat or chassis.

Fig. 11 is a sectional view through the chair

seat showing the pad of Fig. 7 applied to the metal seat member of Fig. 10, and

Figs. 12 and 13 are details showing the means for securing the pad to the seat.

Referring now to the drawings, particularly Figs. 1, 2 and 3, it will be seen that the chair in general comprises a main frame formed from a metal channel bar 10 bent into U-shape, and braced at its lower end by a cross brace 11. A pair of channel bars 12 and 13 connected by a cross brace 14 are pivotally secured at their upper ends to the channel 10, and together form a rear support frame for the chair. A back 15 is secured to the U-channel 10 at the upper end thereof, and a seat 16 is pivotally secured to the frame by the pivots 17. Each rear corner of the seat is provided with a projection 18 carrying a cylindrical lug 19 slidable within its associated rear channel bar, and each of the channel bars carries a stop 20 for limiting the upward movement of its associated lug. The lower ends of the channel bars 10, 12 and 13 carry rubber feet 21 affording a firm and solid support construction.

By virtue of the foregoing construction it will be seen that the chair is of the folding type and may be readily manipulated from its open or seating position, as shown in Figs. 1 and 3, to its closed position, as shown in Fig. 2, for storage purposes. This operation may be readily effected by grasping the chair back and front of the seat and rotating the seat clockwise with respect to the frame about the pivots 17. During this operation the rear support frame comprising the channels 12 and 13 will be moved into substantial engagement with the main frame channel 10, and the seat will be simultaneously brought into the plane of the main frame whereby to collapse the chair construction into the position illustrated in Fig. 2. When it is desired to again open the chair to seating position, the seat is pivoted counter-clockwise with respect to the frame, bringing the parts into the position illustrated in Figs. 1 and 3. During this operation the stops 20 limit the upward movement of the rear of the seat, thus holding the seat during use in firm substantially horizontal position and against collapse.

The manner in which the seat member is formed and the manner in which facings of wood, upholstery, or other desired material may be applied to the seat to render it adaptable for different requirements and various conditions of use are illustrated in Figs. 4 and 5 and in Figs. 6 to 13 inclusive of the drawings. In Fig. 4 there is illustrated a seat facing member 35 shaped to

conform to the upper surface of the seat of the chair and which may be readily applied thereto. The member 35 is provided with holes 36 adapted to aline with holes 37 formed in the sheet metal seat 16 of the chair (Fig. 1). The member 35 may be firmly attached to the seat merely by superimposing it thereon and securing it to the seat by bolts 38 passing through the alined openings 36 and 37, as illustrated in Fig. 5. The facing member 35 may be of wood, or any other desired material selected to satisfy the requirements of any particular service condition. By reason of the construction provided the seat of the chair has the full rigidity and strength of the metal foundation, and at the same time any desired upper seat surface is provided by the facing member 35. This member may be of relatively light weight and strength as the sheet metal foundation withstands all the stresses imparted to the construction in use. The facing member is firmly attached in position, but it may be easily removed or substituted for other like members in the event it becomes damaged or in the event a different facing material upon the chair seat is desired.

In Figs. 6 and 7 a very desirable method for forming an upholstered seat pad for the chair is illustrated. As shown, the seat pad may comprise a piece of thin sheet metal 45, a pad member 46, and a sheet of upholstery material 48. Preferably the pad member 46 is composed of suitable filling material 47, such as hair, cotton, felt or the like, mounted upon a cardboard backing 47a and covered by fabric or the like 47b. The sheet metal member 45 has a plurality of key-hole openings 49 and a central opening 50 cut therein. In forming the assembly the pad 46 and the upholstery 48 are applied to the sheet metal member 45 after the openings 49 and 50 have been cut therein, but while the sheet is in flat form. The marginal edges 51 of the upholstery material may then be folded over the edges of the sheet metal member and adhesively secured in position, the pad 46 also being adhesively secured to the metal sheet 45, after which the entire pad is shaped into the curved form illustrated in Fig. 7.

The method of forming the main metal seat 16 which constitutes the seat chassis for the chair is illustrated in Figs. 8, 9 and 10. The seat frame is composed of a pair of side members 52 carrying the cylindrical lugs 19, secured to a cross brace member 53. The completed seat is formed by applying a sheet metal piece 54 of suitable size and shape and having the holes 37 formed therein, as illustrated in Fig. 8, to the seat frame. The sheet metal member 54 is formed by stamping or otherwise forming it into the shape shown in Fig. 10 and securing it to the frame members 52 as by welding or any other suitable means. As previously indicated, the metal seat 16 is a completely formed seat for the chair and may be used with or without a covering member. The upper surface of the seat is of somewhat S-shape rendering it very comfortable as a seat support. The cross brace 53, together with the side members 52 and the marginal flanges 55 and the S-shaping of the seat make the seat assembly very rigid and substantial. It is to be understood that the sheet metal piece 54 forming the main seat is considerably thicker than the light sheet metal piece 45 and, due to its shaping which affords cantilever action, forms a very strong seat support.

The application of the upholstery pad to the seat is illustrated in Figs. 11, 12 and 13. The up-

holstery pad is shaped to conform to the upper surface of the seat and is merely superimposed thereon, it being held in position by concealed bolts 56. These bolts are secured in place by interlocking their heads in the key-hole slots of the sheet metal member 45, as indicated in Fig. 13, after which the nuts 57 may be applied to the bolts to complete the assembly. The upholstery pad is firmly held in position, but may be readily removed at any time to permit substitution, removal or repair. The main metal seat 16 imparts the necessary strength to the structure, and accordingly the upholstery pad may be of light weight and construction. The S-shaping of the seat, the padding 47 and the cutout 50 in the sheet metal member 45, all combine to make a very comfortable seat. In use the pad member 46 will be depressed slightly into the opening 50 and in spanning this opening provides a soft and yieldable seat structure.

The considerations heretofore described apply to the seat or back, either of which may be applied to or removed from the chair as a unit, and either of which may be upholstered or otherwise covered, or not, as desired.

The chair construction of the present invention provides ready means for substituting different facing materials upon the chair seat and back, to suit varied requirements, and in view of the ease with which the entire back or seat may be removed, it is obvious that the entire seat and back constructions may be replaced or substituted, if desired, to permit the substitution of different colored seats and backs, or plain or perforated metal members, etc.

It is obvious that various changes may be made in the specific embodiments of the invention and in the several method steps of manufacture heretofore set forth, without departing from the spirit of the invention. For example, padding could be used in the application of the upholstery material to the back of the chair. Accordingly the invention is not to be limited in any way to the precise embodiments shown or described, but only as indicated in the following claims.

The invention is hereby claimed as follows:

1. A metal chair construction comprising a metal seat, said seat comprising a seat frame and a perforated sheet metal seat member of S-shaped cross section from the front to the rear thereof secured thereto, the seat frame comprising a cross frame member and a pair of rearwardly extending side frame members of a contour conforming to the shaping of the sheet metal seat member, and a facing pad assembly adapted to lie in superposed relation upon the sheet metal seat member to provide a seat surface therefor, said pad assembly comprising a sheet metal backing member of lighter gauge than the gauge of the sheet metal seat member, padding, and a covering of upholstery material, said facing pad assembly being substantially commensurate in size with the upper surface of the sheet metal seat member and shaped to conform to the cross section thereof, the backing member of said facing pad assembly also being provided with perforations in alinement with the perforations of the sheet metal seat member, and removable attachment means adapted to be received by the perforations of the backing member and the sheet metal seat member whereby the facing pad assembly may be removably attached to the chair seat.

2. A metal chair construction comprising a metal seat, said seat comprising a seat frame and

a perforated sheet metal seat member of S-shaped cross section from the front to the rear thereof secured thereto, the seat frame comprising a cross frame member and a pair of rearwardly extending side frame members of a contour conforming to the shaping of the sheet metal seat member, and a facing pad assembly adapted to lie in superposed relation upon the sheet metal seat member to provide a seat surface therefor, said pad assembly comprising a sheet metal backing member of lighter gauge than the gauge of the sheet metal seat member, padding, and a covering of upholstery material, said facing pad assembly being shaped to conform to the upper surface of the sheet metal seat member and the backing member of said facing pad assembly also being provided with perforations in alinement with the perforations of the sheet metal seat member, and removable attachment means adapted to be received by the perforations of the backing member and the sheet metal seat member whereby the facing pad assembly may be removably attached to the chair seat.

3. A metal chair construction comprising a metal seat, said seat comprising a perforated sheet metal seat member, a facing pad assembly adapted to lie in superposed relation upon the sheet metal seat member to provide a seat surface therefor, said pad assembly comprising a sheet metal backing member of lighter gauge than the gauge of the sheet metal seat member, padding, and a covering of upholstery material enclosing the padding and secured along its marginal portions to the marginal portions of the backing member, the backing member of the facing pad assembly being cut away at its central portion whereby to provide a substantially mar-

5 ginal ring, and said ring being provided with perforations in alinement with the perforations of the sheet metal seat member, and removable attachment means adapted to be received by the perforations of the backing member and the sheet metal seat member whereby the facing pad assembly may be removably attached to the chair seat.

10 4. A metal chair construction comprising a metal seat, said seat comprising a seat frame and a sheet metal seat member adapted to overlie and bridge said frame and being welded thereto, said sheet metal seat member having a downwardly turned flange extending peripherally thereof and being of S-shape from the front to the rear, and said seat frame comprising a pair of rearwardly extending side frame members lying within the flanges of the sheet metal seat member and being of a contour conforming to the shaping of the sheet metal seat member.

15 20 25 30 35 5. In a metal chair construction of the portable folding type having a folded metal frame, a metal seat, said seat comprising a seat frame and a sheet metal seat member adapted to overlie said frame and being welded thereto, said sheet metal seat member having a downwardly turned flange extending peripherally thereof and being of S-shape from the front to the rear, said seat frame comprising a pair of rearwardly extending side frame members of a contour conforming to the shaping of the sheet metal seat member, said side frame members being relatively thin but having a substantial depth in a vertical plane, and bearing lugs carried by said side frame members adjacent the rear ends thereof for sliding engagement with said chair frame.

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