

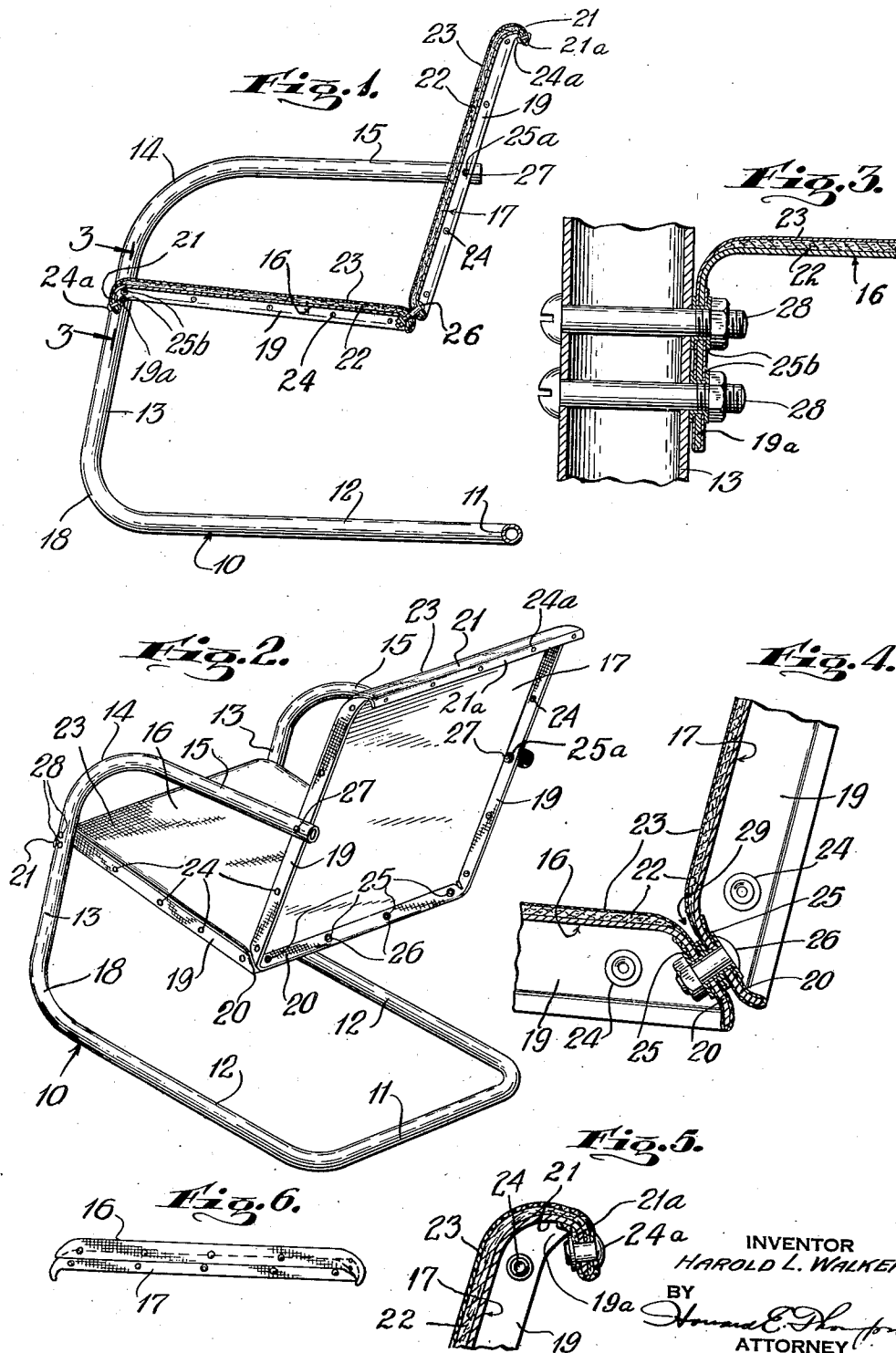
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UPHOLSTERED METAL CHAIR

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UPHOLSTERED METAL CHAIR

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This invention relates to metal chairs employing a suitable frame with coupled seat and backrest members supported in the frame in constructing a chair; and the object of the invention is to provide seat and backrest members composed of similar or substantially similar sheet metal stampings, and more particularly to the arrangement of upholstery upon the outer exposed surfaces of the seat and backrest members in the form of suitable cushioning material and fabric facings to render chairs of the type and kind in question more comfortable and to eliminate direct contact with the sheet metal of the seat and backrest of the chair; a further object being to provide a means for securing the facing to flanged edges of the seat to form a strong and water-proof coupling and also in providing spaced tubular fastening means to receive bolts, screws or other devices in mounting the seat or backrest in connection with its support; and also to space the same from the support to eliminate chafing of the facing material; a further object being to provide a simple and economical method of constructing the frame and seat and backrest members of a chair so as to materially reduce manufacturing costs and to simplify stacking of the chair parts for shipment and transportation; and a further object being to construct a seat or backrest of the character described in accordance with the method set forth; and with these and other objects in view, the invention consists in a device of the class and for the purpose specified which is simple in construction and which is constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:

Fig. 1 is a central cross-sectional view through a chair made according to my invention.

Fig. 2 is a rear perspective view of the chair.

Fig. 3 is an enlarged section on the line 3—3 of Fig. 1.

Fig. 4 is an enlarged detail view of a part of the construction shown in Fig. 1.

Fig. 5 is an enlarged detail view of another part of the construction shown in Fig. 1; and

Fig. 6 is a detail view showing the nesting of the seat and backrest parts in the shipment or transportation thereof.

In Figs. 1 and 2 of the drawing I have indicated for the purpose of illustrating one method of carrying my invention into effect, a chair frame 10 consisting of a single elongated tube or rod which is fashioned to form centrally of the rod a U-shaped base consisting of a back cross-member 11 and forwardly extending and parallel side

members 12 continuing at their forward ends in upwardly extending and slightly reclining leg members 13, the upper ends of which are curved backwardly as seen at 14 to extend into the arm rests 15, thus producing as viewed from the side of the chair, note Fig. 1, a substantially U-shaped spring chair frame which provides resilient movement of the seat member 16 and backrest 17 with respect to a supporting surface upon which the base parts 11 and 12 are arranged, the curvature as at 18 providing this spring action. The frame 10 may be constructed of any suitable material and may be painted, plated or otherwise coated to provide the desired finish thereto. However, in using certain types of materials and metals, coatings or other finishings are not absolutely essential. This is especially true in the use of certain types of wood or rust or stain-proof metals.

The seat member 16 and backrest 17 are each of identical construction; that is to say, are made from a single sheet of material, such for example, as sheet metal having angularly extending side flanges 19 and angularly extending end flanges 20 and 21. The flanges 20 are so disposed with respect to the main body portion of the sheet as to arrange the seat member 16 and the backrest 17 in the desired angular relationship to each other as is illustrated in Figs. 1 and 4 of the drawing; that is to say to maintain the forward end of the seat member slightly higher than the rear end thereof and to incline the backrest in the manner shown to provide a comfortable chair.

Arranged upon the outer surfaces of the seat member 16 and backrest 17 is suitable upholstery, which in the construction shown, consists of a padding 22 of suitable cushioning material which may be of any desired thickness depending upon the cushioning effect which is required. This material may be suitably cemented or otherwise secured to the surface of the sheet from which the seat member 16 and backrest 17 are formed, or simply laid thereon and retained in position by the facings employed for securing the outer facing material 23 in position. This facing material may be of any type and kind of fabric such as canvas, leatherettes, leather, and the like. These materials may be of the same or contrasting colors or designs on the chair and seat member depending entirely upon the ornamentation or effects to be produced in the resulting chair.

The peripheral edges of the facing 23 are passed around the flanges 19, 20 and 21 and are secured to the side flanges 19 by a series of rivets or the like as at 24 and to the front and top flanges 21 by similar rivets 24a. A series of eyelets or grommets 25 are provided on the rear flanges 20 so as to receive bolts or other coupling devices 26 for securely coupling the flanges 20 together to form of the seat 16 and backrest 17

a single L-shaped unit. One eyelet 25a is also employed centrally of the side flanges 19 of the backrest so as to receive bolts 27 in coupling the backrest to the rear ends of the arms 15. The forward end portions of the flanges 19 of the seat member are somewhat enlarged as seen at 19a. In these end portions are arranged two eyelets 25b to receive two bolts 28, note Fig. 3, for attaching the forward end of the seat member with the upper ends of the legs 13. The use of the two bolts in each leg 13 will maintain the seat and backrest in rigid position within the frame; that is to say, in conjunction with the bolts 27.

In stating that the seat and backrest are of the same construction, they are the same except for the minor details of the arrangement of the eyelets 25a, 25b therein.

In applying the facing 23 to the members 16, 17, the following method of procedure is followed. The peripheral edges of the facing are first folded around the flanges 19, 20 and 21, it being understood that the padding is arranged in position prior to this folding operation. Suitable means is provided for supporting the edges of the facing upon the inner surface of the flanges, the facing being stretched, as tight as possible, in the above operation. Holes are then formed to receive the several fastening devices 24, 24a, 25, 25a and 25b, after which such devices are secured in position. In the last operation it will be understood that the rivets and eyelets will form water-tight seals between the facing and the sheet material of the seat and backrest and will also securely support the facing against removal when subjected to stress and strain. It will be apparent, however, that the stress or strain is taken up largely by the fold of the material around the lower edges of the flanges and is not localized on the fastening devices which are employed. The final step in completing the formation of each part, namely the seat and backrest, consists in bending the free ends of the flanges 21 inwardly as seen at 21a, note Fig. 5 of the drawing, so as to draw the facing material 23 tightly upon the seat and backrest. The bending takes place inwardly of the fastening devices 24a and the degree of bending may be varied to suit different types and kinds of chairs or the amount of stretch required on the material. In some instances the intumed ends of the flanges 21 may parallel the body portion of the sheet instead of being flared outwardly as shown.

It will be apparent that instead of securing the padding to the surface of the seat or backrest, this padding may be secured to the inner surface of the facing sheet prior to attachment of the facing material. It will also appear that the eyelets 25, 25a, 25b form washers which space the facing materials from each other as seen in Fig. 4 and from the supports as illustrated, for example, in Fig. 3 of the drawing. This will prevent any possible chafing or rubbing of the facing materials upon each other or upon the supports in the use of the chair. The rounded flanges at the front of the seat and at the top of the backrest produce a full and complete upholstered appearance and the securing devices at said edges are substantially invisible at the front of the chair.

By constructing a chair in the manner described, it will be understood that in the shipment or transportation thereof, the same may be shipped in a knock-down or nested condition; that is to say, with the seat and backrest removed from the chair frame and detached with

respect to each other through the medium of the bolts 26, and the two parts, namely seat and backrest, may be nested one within the other as seen in Fig. 6 and a series of the chair frames 10 arranged one within the other and side by side so as to minimize the space occupied by a relatively large number of chairs. In fact, the seat and backrest may be separately packed or may be arranged between the bottom rails 12 and arms 15 of a series of nested frames 10. By using bolts or similar fastenings, the assemblage of the chair may be quickly performed.

In using stamped sheet metal in the construction of the seat and backrest, it would be desirable to lacquer, paint, lithograph or otherwise treat the sheet material to protect the same from the weather as well as to enhance the appearance of the entire chair. The coloring of the back or underfaces of the parts in question will preferably be made in harmony with the facing 23 employed to produce a neat and finished appearance.

In producing chairs of this type and kind for outdoor use it is desirable to employ water-proof fabrics in the facings 23 and rust-proof hardware for the fastenings as at 24, 25, 27, 28, etc. It will also appear that the eyelets 25 where coupled together by the bolts 26 will form channels 29 between adjacent surfaces of the flanges 20 for the free discharge of rain water or the like therebetween, rendering the chair highly practical for rough outdoor uses.

It will appear that the inwardly bent end portion 21a of the flange 21 extends beyond the flange 19 or the enlargement 19a thereof so as to facilitate the bending operation. As previously pointed out the facing material is first secured to the flange 21 and then by bending the portion 21a of the flange, the facing material is drawn tightly across the surface of the seat or backrest. The flanges may be otherwise drawn at the peripheral edges of the sheet metal from which the seat 16 and backrest 17 are formed.

It will of course be apparent that many other adaptations of the fundamental principles of my invention may be produced, it being understood that the more simpler form of construction is disclosed to illustrate the economy at which an upholstered chair of the type and kind may be produced.

It will appear that the side flanges 19 are arranged at right angles to the body of the sheet, whereas the flanges 20 are arranged at an angle less than 90° and present relatively flat opposed surfaces when the two flanges are coupled together by the bolts 26. It will also appear that the flanges 21 are wider than the flanges 20, at least to the degree of the foldable free edge portions 21b thereof.

It will of course be understood that my invention is not necessarily limited to the production of a chair wherein the seat and backrest members are coupled together, as each member may be independently supported in a chair frame, and the chair frame may be of any desired form and construction, the present illustration being simply an illustration of one method of carrying the invention into effect. Furthermore, in some instances and especially in the production of what may be termed high-back chairs, a backrest of greater vertical dimensions will be provided, but this backrest would be constructed otherwise in accordance with the teachings of my present invention.

One of the distinctive features of the inven-

tion resides in the provision of an upholstered seat and backrest wherein a single element, namely an eyelet, serves to provide a water-tight securing means for the facing material, engaging the facing material upon both the outer and inner surfaces of the flange, the eyelet also providing a means for the reception of bolts, screws or other fastening devices for attachment to a suitable support, and still further in providing a washer or spacing medium for spacing the facing material from the surface of the support for the purposes stated.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In combination with a chair frame comprising a U-shaped base having upwardly extending and rearwardly and upwardly inclining front legs terminating at their upper ends in rearwardly extending armrests, of a seat and backrest unit comprising detachably related similar parts, each of said parts consisting of a rectangular body of sheet material having depending side and end flanges, fabric facings arranged upon outer surfaces of said parts with peripheral edges of the facings extending around said flanges onto inner surfaces thereof, fastening devices passed through the flanges and facings at longitudinally spaced intervals to secure the facings thereto, adjacent end flanges of the seat and backrest each being disposed at the same predetermined angle to the body portion of the corresponding part, said predetermined angle being such as to arrange the seat and backrest at an angle slightly greater than 90° to each other, the fastening devices employed on said last named flanges being in the form of eyelets and bolts passed therethrough for firmly coupling the seat and backrest together, the fastenings centrally of the side flanges of the backrest being in the form of eyelets to receive bolts for coupling the backrest to the rear portion of the arms of the chair frame, and the forward end portions of the side flanges of the seat having spaced eyelets receiving pairs of bolts for attaching the forward ends of the seat to the upper end portions of the front legs in mounting the seat and backrest in said chair frame.

2. In combination with a chair frame comprising a U-shaped base having upwardly extending and rearwardly and upwardly inclining front legs terminating at their upper ends in rearwardly extending armrests, of a seat and backrest unit comprising detachably related similar parts, each of said parts consisting of a rectangular body of sheet material having depending side and end flanges, fabric facings arranged upon outer surfaces of said parts with peripheral edges of the facings extending around said flanges onto inner surfaces thereof, fastening devices passed through the flanges and facings at longitudinally spaced intervals to secure the facings thereto, adjacent end flanges of the seat and backrest each being disposed at the same predetermined angle to the body portion of the corresponding part, said predetermined angle being such as to arrange the seat and backrest at an angle slightly greater than 90° to each other, the fastening devices employed on said last named flanges being in the form of eyelets and bolts passed therethrough for firmly coupling the seat and backrest together, the fastenings centrally of the side

flanges of the backrest being in the form of eyelets to receive bolts for coupling the backrest to the rear portion of the arms of the chair frame, the forward end portions of the side flanges of the seat having spaced eyelets receiving pairs of bolts for attaching the forward ends of the seat to the upper end portions of the front legs in mounting the seat and backrest in said chair frame, and a padding of cushioning material disposed inwardly of the facings on said seat and backrest throughout the entire area thereof.

3. In a chair, a seat and backrest-forming member comprising a large substantially rectangular body having angularly extending side and end flanges, the side flanges extending substantially at right angles to said body, one end flange extending at an angle to said body and having a relatively flat surface throughout the length thereof, the other end flange being wider than the first named end flange and having a free inwardly bendable edge portion throughout the length thereof protruding beyond edges of said side flanges, a facing of fibrous material arranged on the outer surface of said body with peripheral edges thereof folded around and upon inner surfaces of the side and end flanges, fastening devices passed through the flanges at spaced intervals in securing peripheral edges of the facing thereto, the fastening devices passed through the first named end flange being in the form of eyelets, and the portions of the eyelets overlying the facing of said flange protruding from the flat surface thereof to form bearing means adapted to support the surface of said facing in spaced relation to a member secured to said flange.

4. In a chair a seat and backrest unit comprising two parts of similar shape and contour each part comprising a body portion having corresponding angularly extending side flanges and dissimilar angularly extending end flanges, one end flange of each part having a portion protruding beyond the side flanges thereof and adapted to be bent inwardly to form a rounded front edge on said seat and top edge on said backrest, the other end flanges of the seat and backrest being flat and secured together in parallel relation, said last named flanges each being disposed at the same predetermined angle with respect to the body portion of the corresponding part and said predetermined angle being such as to dispose the body portions of said parts at an angle of slightly more than 90° to each other, means centrally of the side flanges of the backrest and at the forward end of the side flanges of the seat member for maintaining said seat member and backrest in a chair frame, a fabric facing arranged upon one surface of the backrest and seat member with the peripheral edge of the facing passed around the side and end flanges and arranged upon inner surfaces of said flanges, fastening devices extending through the flanges for securing the peripheral edges of said facing thereto, the fastening device on said corresponding end flanges comprising registering grommets adapted to receive coupling members for securing the parts together, and the portions of said grommets extending on to the fabric of said parts being of such thickness as to support the parallel flanges in slightly spaced relation thereby providing for drainage of water between said parts.

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