March 11, 1941. L. LARSEN 2,234,677

CHAIR OR SIMILAR ARTICLE

Filed Feb. 27, 1939

Fig. 1.

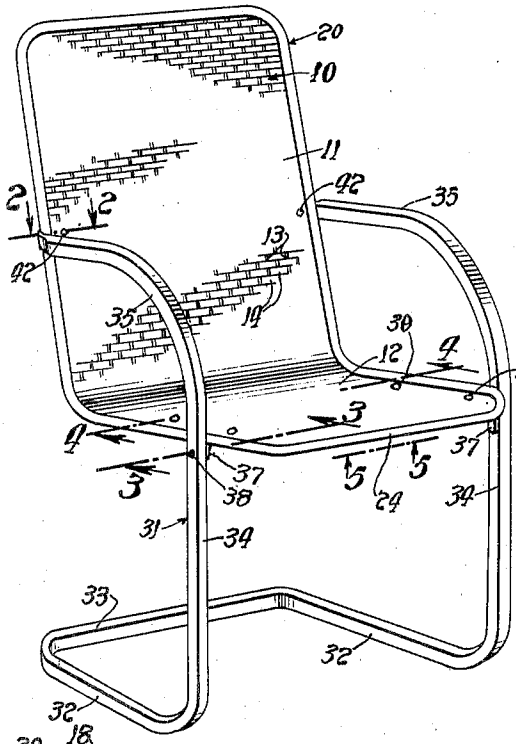


Fig. 2.

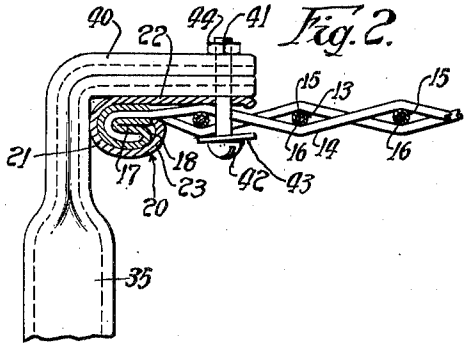


Fig. 3

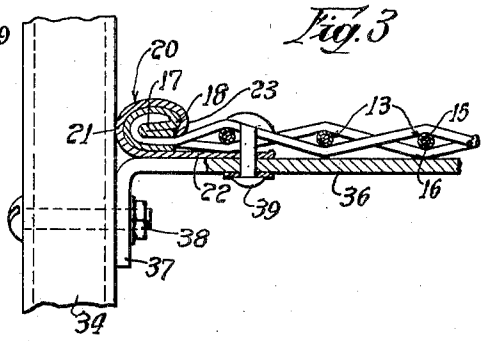


Fig. 4.

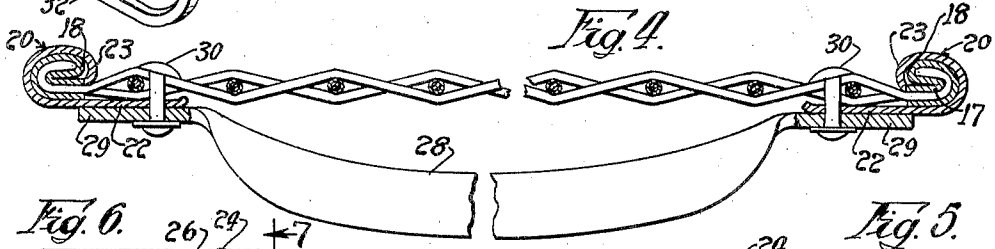


Fig. 6.

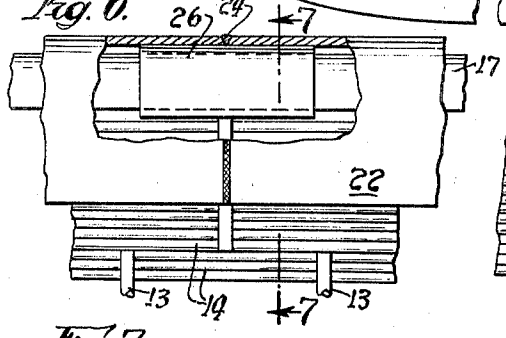


Fig. 5.

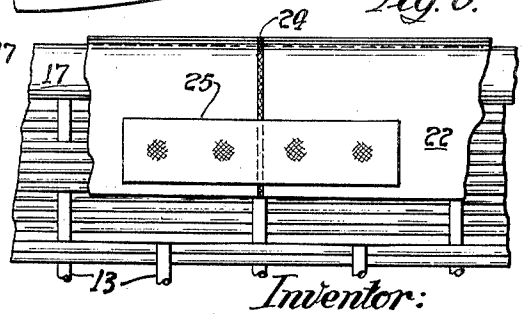
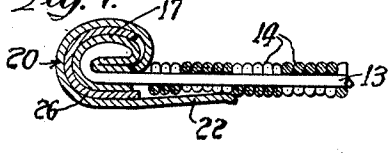


Fig. 7.



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2,234,677

CHAIR OR SIMILAR ARTICLE

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Application February 27, 1939, Serial No. 258,603

3 Claims. (Cl. 155—187)

This invention relates to improvements in chairs or similar articles of furniture and it consists of the matters herein illustrated and described and more particularly pointed out in the appended claims.

One of the objects of the present invention is to provide an article of furniture such as a chair, which is not only comfortable and pleasing in appearance but which may be produced at a relatively low cost.

Another object of the invention is to provide an article of furniture which includes a marginally bound panel of sheet material as a part thereof and a supporting frame for said panel enclosing the bound margin of the panel and so engaged therewith as to prevent a relative pulling apart between the supporting frame and panel.

A further object of the invention is to provide an article of furniture such as a chair in which the side frame members for the seat-like panel are held against lateral movement under the weight of the occupant and whereby the seat cannot sag out of shape.

Again, it is an object of the invention to provide in an article of furniture that includes a panel-like back rest and seat, a novel frame therefor which not only holds the backrest and seat in shape but which provides for the attachment of said seat and backrest to the supporting base of the article of furniture.

The above mentioned objects of the invention, as well as others, together with the several advantages thereof will more fully appear as the specification proceeds.

In the drawing:

Fig. 1 is a perspective view of an article of furniture in the form of a chair embodying the preferred form of the invention.

Fig. 2 is a detail horizontal sectional view on an enlarged scale, through a part of the chair of Fig. 1 as taken on the line 2—2 of said Fig. 1 and shows more particularly the manner of securing a lateral margin of the backrest panel to the associated end of the arm rest.

Fig. 3 is another detail vertical sectional view on the scale of Fig. 2 through a part of the chair as taken on the line 3—3 of Fig. 1 and shows more particularly the manner of securing and supporting the front portion of the seat with respect to the supporting base or frame of the chair.

Fig. 4 is a transverse detail vertical sectional view through the seat of the chair as taken on the line 4—4 of Fig. 1 and shows more particularly the manner of connecting the frame parts at the sides of the seat against movement toward each other so as to prevent the sagging of the seat panel under the weight of the occupant.

Fig. 5 is a view on an enlarged scale showing one manner of securing together and reenforcing the abutting ends of the panel supporting frame and which view is indicated by the line 5—5 on Fig. 1.

Fig. 6 is a view similar to Fig. 5 and illustrates a modified form of reenforcement for the abutting ends of the panel supporting frame.

Fig. 7 is a detail vertical sectional view through the structure of Fig. 6, as taken on the line 7—7 of Fig. 6.

Referring now in detail to that embodiment of the invention illustrated in Figs. 1 to 5 inclusive of the accompanying drawing, 10 indicates a sheet-like panel forming in this instance, a combined backrest 11 and seat 12 for an article of furniture such as a chair. In this instance the panel 10 is made of a woven stake and strand fabric and includes stakes 13 and strands 14 having an under and over engagement with the stakes. The stakes 13 which extend from front to rear of the seat and up the back comprise a wrapping of twisted sized paper 15 on a reenforcing wire 16 and the strands 14 are made of twisted sized paper. Such fabric and the characteristics thereof are so well known in the art as to require no further mention.

In the present instance, the side and the end margins of the fabric of the panel have a folded over engagement with a metallic strip to form a binding 17 (see Figs. 2 and 3) therefor with a shoulder 18 on one face of the panel that is spaced inwardly from the edge of the binding. As shown herein, this shoulder is disposed upon the front face of the backrest portion and upon the top face of the seat portion of the panel.

The panel 10 is held in its back rest and seat forming shape by a boundary frame 20 preferably formed of a strip of relatively thin sheet metal but having such a cross sectional shape as to be stiff and rigid. This frame extends about the sides and the end edges of the bound fabric and the ends of the frame abut at the center of the front of the seat and are operatively secured together in a manner soon to appear.

The frame 20 before mentioned includes a hollow body portion 21, one margin of which has a longitudinally disposed web 22 and the other margin 23 of which terminates as a hook, facing toward but spaced from the web a sufficient dis-

tance to receive the thickness of the panel therebetween. The body 21 of the frame is of such internal diameter as to receive the bound edge 17 of the panel, with the margin 23 having a hooked engagement with the shoulder 18 and with the web 22 engaging with and overlapping a portion of the face of the panel forming the rear face of the backrest and the bottom face of the seat.

The abutting ends of the frame are welded together as at 24 and a plate 25 extends across the line of weld and is spot welded to the exposed face of the web as best appears in Fig. 5. This plate reenforces the line of welding which, of course, is finished off to present a smooth surface. The plate 25 is disposed beneath the central front portion of the frame and this provides an outside reenforcement for the joint which is concealed and unnoticeable.

In Figs. 6 and 7 I have illustrated a slightly modified form of reenforcement for the seam produced by the welded together abutting ends of the frame 20. Instead of using the plate 25 before mentioned, a clip 26 is applied to the central portion of that part of the binding 17 where the abutting ends of the frame 20 meet when said frame is applied to the panel. As best appears from Fig. 7 this clip is of a U shaped section to embrace both sides and the rounded front edge of the binding strip 17. When the abutting ends of the frame 20 are made to embrace said clip and when said ends are welded together, the clip is secured within the body portion of frame to provide a reenforcement for the joint formed by the welded abutting ends of the frame.

Preferably the frame 20 as a whole is applied to the panel when the panel is in straight flat form. The abutting ends of said frame are then welded together and reenforced as before described after which the panel with the frame thereon is bent or shaped in a press to form the integral backrest and seat for the article of furniture.

When the combined backrest and seat is embodied in an article of furniture such as a chair, it is apparent that the greatest part of the weight of an occupant is imposed upon the seat portion 12 and which weight would have the tendency to cause the seat part of the panel to sag downwardly. This would tend to cause those portions of the frame 20 at opposite sides of the seat to flex or bow inwardly so as to become distorted.

To guard against such an occurrence, I provide the following arrangement: 28 indicates a downwardly bowed stretcher bar that is arranged beneath and extends transversely of the seat with its flattened ends 29 engaging the web portion 22 of the frame 20 at both sides of the seat. The flattened ends of said bar are secured in any suitable manner to said web portions and to the panel as by the headed rivets 30 appearing in Fig. 4. When the chair is occupied, it is to be noted that the stretcher bar opposes any movement of those portions of the frame member at the sides of the seat, toward each other. Thus, that part of the panel forming the seat portion 12 cannot sag but is held taut and even.

By reason of the frame 20 and its cross sectional shape as before described, when the panel and its frame are shaped to form the backrest and seat, there is provided a stiff unitary structure of sufficient strength and rigidity to prevent warping when embodied in the associated article of furniture.

The combined backrest and seat made as above described is capable of use with many kinds of supporting frames or bases. In Fig. 1 a simple form of frame 31 is shown which is made of tubing of rectangular cross sectional shape although it may also be of other cross sectional shapes.

As shown, the supporting frame 31 includes a U shaped floor engaging base that has the two side members 32—32 and a rear cross member 33. Rising from the front ends of the side members are the upright legs 34 spaced apart a distance approximating the width of the seat and arranged rearwardly of the front edge of the seat. The legs 34 terminate in upwardly and rearwardly extending armrests 35 which are connected to the backrest as will soon appear.

The top end portions of the legs are connected together by a cross bar 36 arranged beneath the seat and having downturned ends 37 that engage the inner surface of the legs 34—34 and are secured thereto as by the bolts 38 and associated nuts. The web 22 of those portions of the frame 20 associated with the seat 12 engage upon end portions of the bar 36 and rivets 39 extend through said bar, said webs and the fabric of the panel, as best appears in Fig. 3. The head of the rivet is made flat and its edges are rounded so as to present substantially no protuberance upon that part of the panel embodied in the seat.

The rear end of each arm rest portion 35 is squeezed together in a vertical plane to flatten the same as best appears in Fig. 2 and each flattened end is bent inwardly to form a right angled extension 40. These extensions each engage the rear face of the web 22 of the frame 20 associated with the back rest and a bolt 41 is passed through each flattened end and through the associated parts of the web and the fabric of the panel as in Fig. 2. In this arrangement, the head 42 of the bolt is disposed to the front of the panel and a washer 43 is interposed between the head and fabric. A nut 44 is then threaded on the bolt to engage the flattened extension 40 of the arm rests. When the nuts 44 are drawn up tight, this pulls the head 42 and the washer 43 into tight engagement in the fabric so as to leave no appreciable projection.

A chair made as above described has a pleasing and attractive appearance, is light in weight, is comfortable as well as strong and rigid, and yet is simple for low cost production.

While in describing the invention I have referred in detail to the form, arrangement and construction of the various parts thereof, the same is to be considered only in the illustrative sense so that I do not wish to be limited thereto except as may be specifically set forth in the appended claims.

I claim as my invention:

1. An article of furniture embodying therein a panel of stake and strand fabric, a metallic binding embracing a margin of said panel, said binding and embraced margin of the panel being jointly folded over upon one face of the panel, the folded over portion of the binding on said face of the panel being reversely bent to present an edge spaced inwardly from the edge of the bound panel, the edge of the binding on the other face of the panel also being spaced inwardly from said edge of the bound panel, and a rela-

tively stiff sustaining frame bounding the bound margin of the panel and determining its contour and shape and comprising a member formed to embrace the bound margin of the panel and having a portion bent laterally to engage the edge of the binding, the edge of said portion of said frame abutting the first mentioned face of the panel.

2. An article of furniture embodying therein a panel of stake and strand fabric, a metallic binding embracing a margin of said panel, said binding and embraced margin of the panel being jointly folded over upon one face of the panel, the folded over portion of the binding on said face of the panel being reversely bent to present an edge spaced inwardly from the edge of the bound panel, the edge of margin of the binding on the other face of the panel also being spaced inwardly from said edge of the bound panel, and a relatively stiff sustaining frame bounding the bound margin of the panel and determining its contour and shape and comprising a member including a hollow body and a lateral web, said body embracing said metallic binding and having an edge along the first mentioned face of the panel abutting the first mentioned edge of the binding, said web having an overlapping engagement with said other face of the panel.

3. An article of furniture embodying therein a panel of stake and strand fabric shaped to provide the back rest and the seat of the article of furniture, means providing a metallic binding for the sides and the ends of said panel, said binding embracing a margin of said sides and said ends of said panel, said binding and said margins of the panel being jointly folded over upon one face of the panel, the folded over portion of the binding on said face of the panel being reversely bent to present an edge spaced inwardly from the edge of the bound panel, and a relatively stiff sustaining frame member bounding the bound margin of said sides and said ends of the panel and holding it in its shaped condition, said member comprising a hollow body and a lateral web, said body embracing said metallic binding and including an inturned marginal portion along the first mentioned face of the panel abutting the first mentioned edge of the binding, the web of said frame member having an overlapping engagement with the other face of the panel.

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