March 11, 1952 P. SCHLADERMUNDT ET AL 2,588,417

FURNITURE CONSTRUCTION FEATURING LEG STRUCTURES AND MOUNTING MEANS THEREFOR

Filed Oct. 19, 1948 3 Sheets-Sheet 1

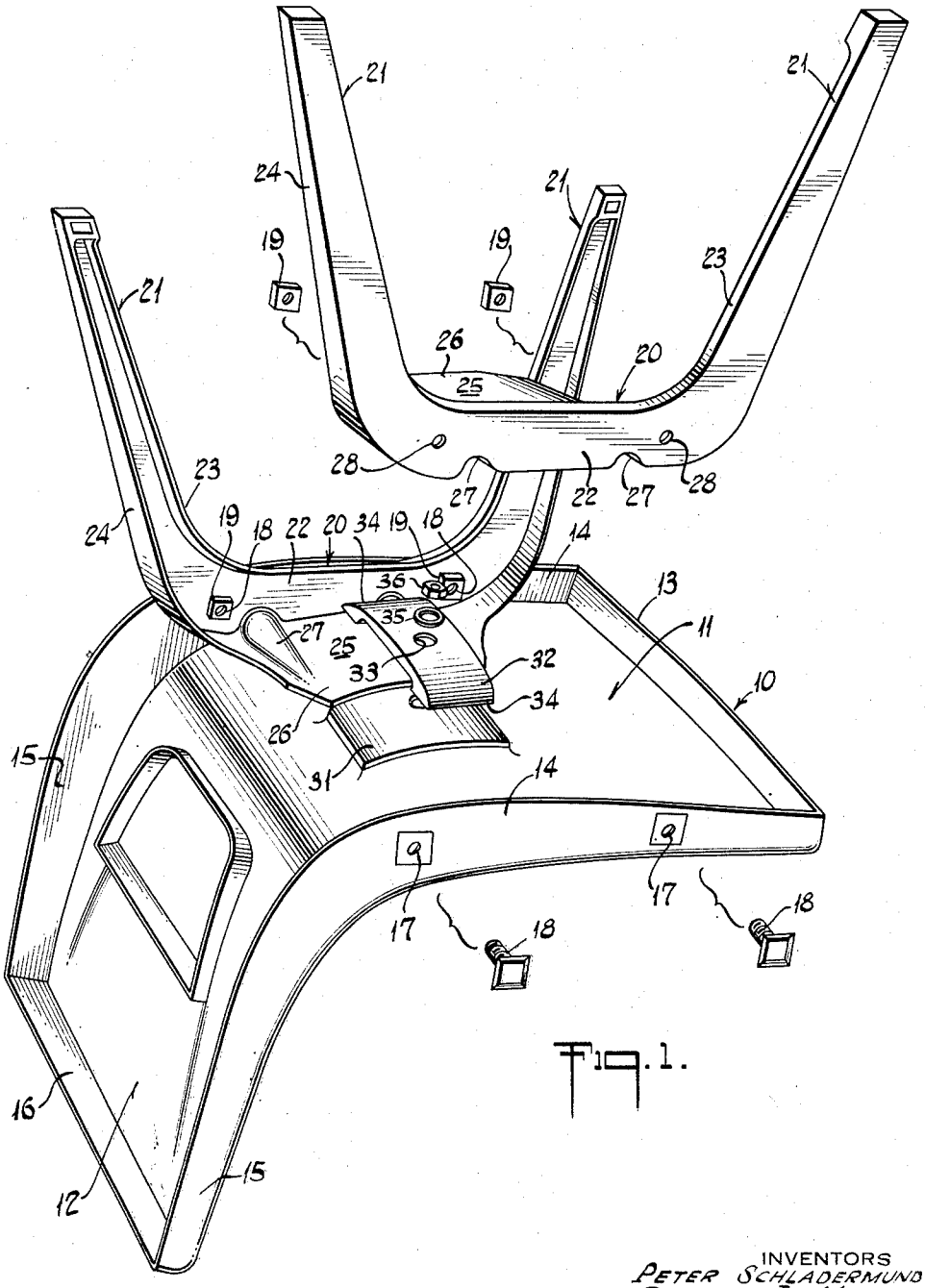


Fig. 1.

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Fig. 2.

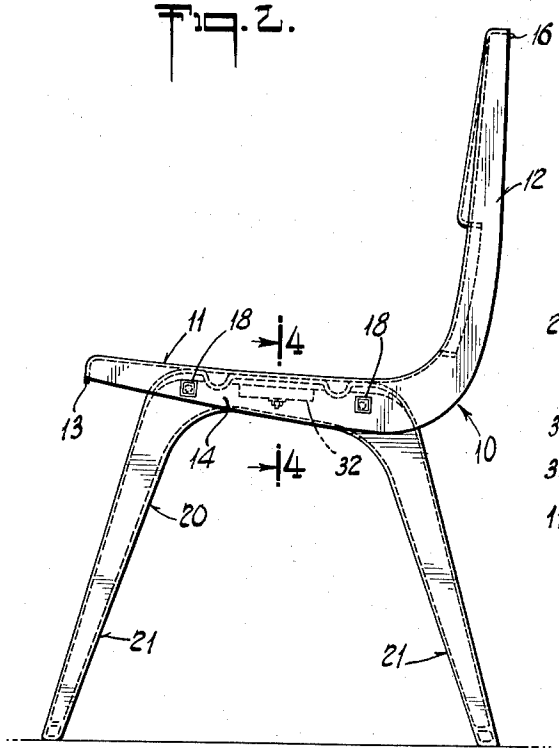


Fig. 3.

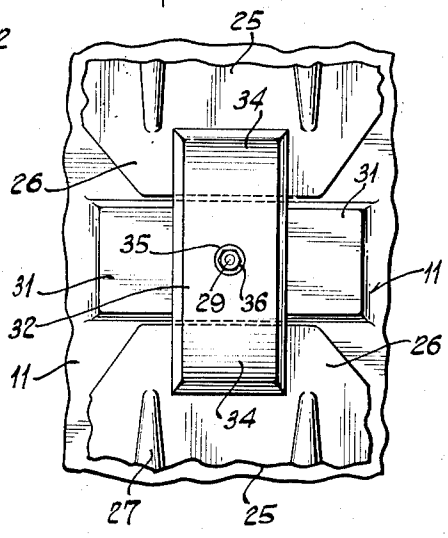


Fig. 4.

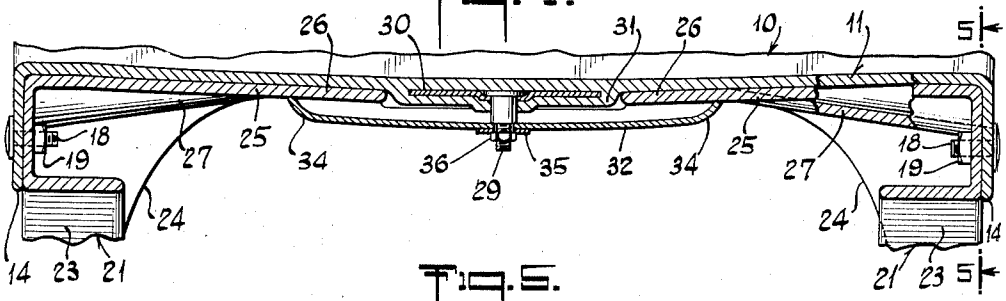
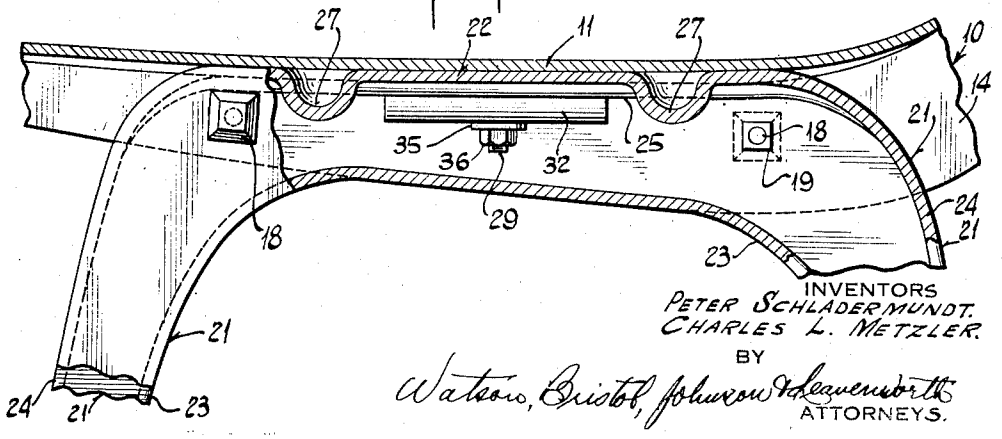


Fig. 5.



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Fig. 6.

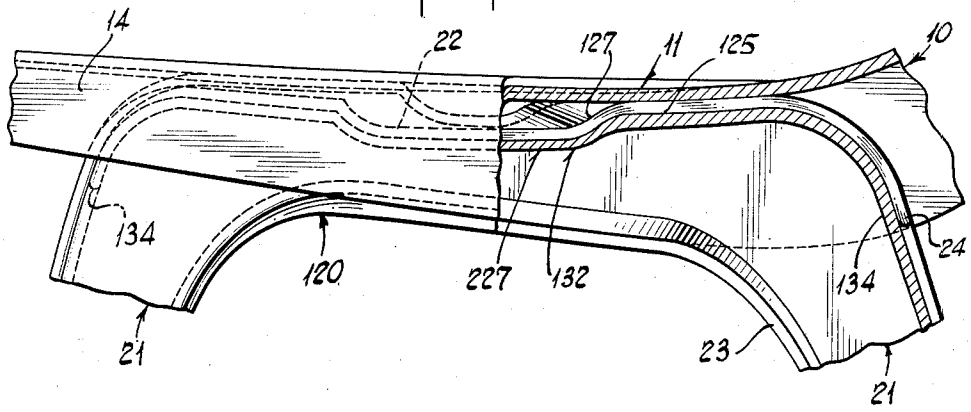


Fig. 7.

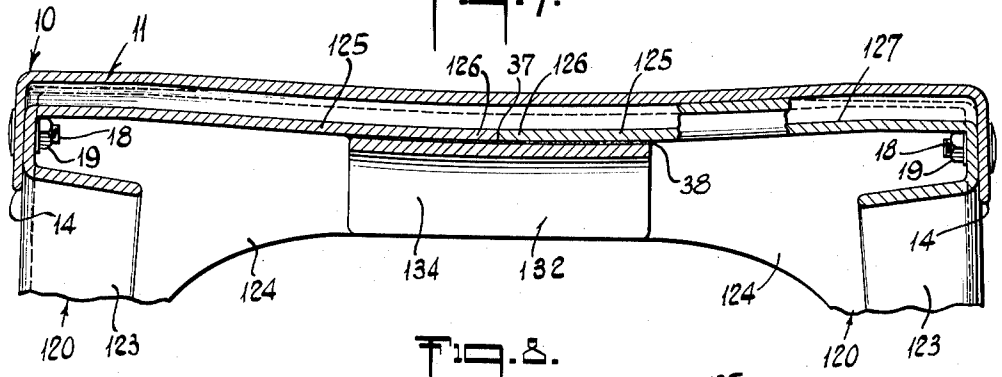
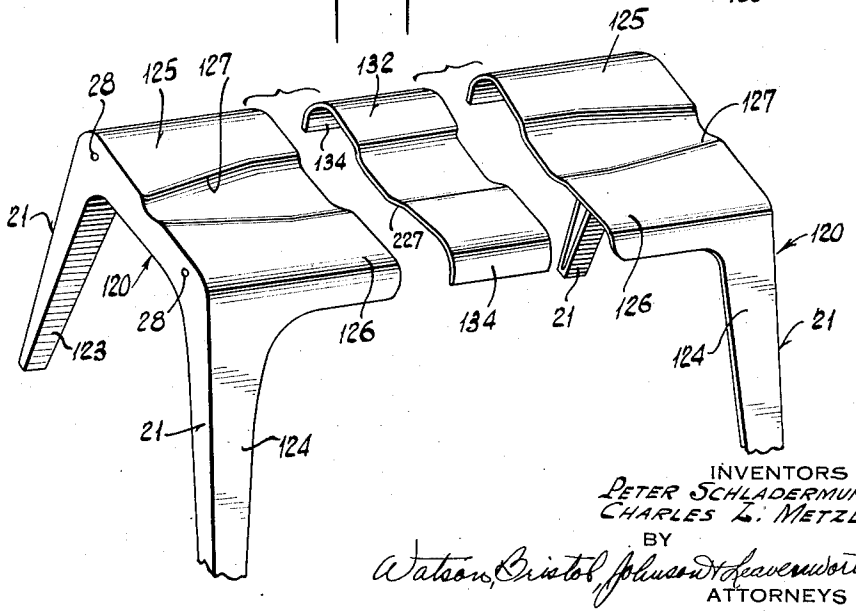


Fig. 8.



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FURNITURE CONSTRUCTION FEATURING LEG STRUCTURES AND MOUNTING MEANS THEREFOR

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7 Claims. (Cl. 155—196)

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The present invention relates to furniture constructions, and, more particularly, to supporting leg structures thereof and means for mounting the same to the bodies of such constructions, such as chairs, couches, tables, etc.

The general object of the present invention is to provide such constructions featured by leg units, each consisting of an arched member forming two spaced leg elements adapted readily to be securely fastened to a furniture body in a simple and ready manner for efficient support of the latter with practice of minimum factory procedure requiring little skill and expenditure of relatively few man hours.

A more specific object of the present invention is to provide in such constructions leg units, each of which includes a pair of spaced-apart leg elements provided with a laterally mounted or anchoring flange so associated with other fastening means as to permit ready securement to furniture body structure in an unusual and simple manner.

Another object of the present invention is to provide such furniture constructions which permit effective practice of the cold molding process of making articles from plastic materials, although it will be understood that the utilization of the structural features of the present invention is not limited to constructions formed exclusively from such materials.

A further object of the present invention is the provision of structural embodiments of articles of furniture featuring the present invention which are readily constructed and permit efficient use thereof.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combination of elements and arrangement of parts, which will be exemplified in the construction hereinafter set forth, and the scope of the invention will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawing, in which:

Fig. 1 is an exploded perspective view of a chair embodiment of the present invention shown in an inverted position as would be normal in the assembly of the parts thereof;

Fig. 2 is a side elevational view, to a smaller scale, of the structure shown in Fig. 1;

Fig. 3 is an enlarged detail, with parts broken away, of anchoring means employed in the embodiment of Figs. 1 and 2;

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Fig. 4 is an enlarged transverse sectional view taken substantially on line 4—4 of Fig. 2, with parts broken away;

Fig. 5 is a sectional view taken substantially on line 5—5 of Fig. 4, with parts broken away;

Fig. 6 is a view similar to Fig. 5 of a modified form of the chair embodiment shown in Figs. 1 to 5 inclusive;

Fig. 7 is a sectional view similar to Fig. 4 of the modified construction shown in Fig. 6; and

Fig. 8 is an exploded perspective view of leg and anchoring element structure of the construction shown in Figs. 6 and 7.

Referring to the drawings, like numerals identify similar parts throughout, and, as will be seen from the chair construction shown by way of example in Figs. 1 to 5, inclusive, the body of that piece of furniture may comprise a one-piece seat and back 10 preferably compression molded from suitable plastic material. The body unit 10 preferably comprises a seat portion 11 and a back portion 12, with the margins thereof provided with integral strengthening flanges, such as the downwardly extending front flange 13 and side flanges 14, 14, which merge with the rearwardly extending strengthening flanges 15, 15 and 16 of the back portion. Each of the side flanges 14 is preferably provided with a pair of holes 17, 17 to receive fastening means, such as bolts 18, 18 adapted to receive on the inner ends thereof taps 19, 19.

The four legs of the chair construction shown in Figs. 1 to 5 inclusive are, in accordance with the present invention, provided by a pair of leg units 20, 20, preferably also compression molded from plastic material in the form of molded sheet structure of substantially uniform thickness, as is the body unit 10, for reasons familiar to those skilled in the art of such molding technique.

Each of the arched leg units 20 includes two spaced-apart leg elements 21, 21 extending down away from opposite ends of a transversely extending mid-section 22 when that leg unit is oriented to its normal supporting position as shown in Fig. 2, or may be seen with an inversion of Fig. 1. Leg unit 20 includes side strengthening flanges consisting of a bottom strengthening flange 23 and a top strengthening flange 24 extending laterally from the edges of the leg elements 21, 21 and the mid-section 22. As is most clearly indicated in Fig. 1, the top strengthening flange 24 is elongated opposite the top edge of the mid-section 22 to provide an anchoring

flange 25 having a terminal portion 26, with that laterally extending flange preferably provided with a pair of strengthening ribs 27, 27 formed during the molding of the leg unit.

Each leg unit 20 is provided preferably in its mid-section, with a pair of holes 28, 28 adapted to be aligned with holes 17, 17 in the side flange 14 of the body 10 for reception therethrough of bolts 18, 18 to permit secure fastening together, as is indicated on the far side of the construction shown in Fig. 1. The mounting of each leg unit 20 to the underside of the seat portion 11 of the furniture body 10 is completed by securely anchoring the anchoring flange 25 thereto. In the form shown in Figs. 1 to 5 inclusive, this may be accomplished by means of a stud bolt 29 riveted or staked in an anchor plate 30 molded within boss 31, as best shown in Fig. 4. This anchoring means also includes a strap member in the form of a bowed clamping plate 32, centrally apertured at 33 to receive stud bolt 29, with its ends 34, 34 respectively adapted to lap over beneath the end portions 26, 26 of anchoring flanges 25, 25. The stud bolt receives a washer 35 and a tap 36 beyond or below clamping plate 32 to tighten and hold the parts together.

It will readily be seen in Figs. 1 to 5 inclusive that the chair embodiment shown therein consists of three major units, namely, two leg units 20, 20 and body unit 10. Assembly of those three units is readily accomplished by locating each of the leg units 20 beneath the seat unit 11 in a position similar to that indicated on the far side of Fig. 1, with the anchoring flange 25 thereof abutted against the under surface of the seat portion, and with the holes 28, 28 aligned with the holes 17, 17. Bolts 18, 18 are placed through those aligned holes and the taps 19, 19 threaded thereon and tightened to fasten each leg unit to the body unit. Each anchoring flange 25 is then securely anchored or clamped to the bottom of the seat portion 11 by placing the clamping plate 32 over the bolt 29 in the position indicated in Figs. 3 and 4, with the ends 34, 34 of the clamping plate lapping over the end portions 26, 26 of the anchoring flanges 25, 25. Washer 35 is placed over the extending end of the anchoring bolt 29 and the tap 36 threaded thereon and tightened up so that the clamping plate 32 securely snugs the anchoring flanges 25, 25 to the underside of the seat portion 11. It will thus be seen that very simple means are employed to assemble and secure the parts of the construction together, and that the anchoring flanges of the leg units also provide load-bearing members on which the furniture body is efficiently supported.

In Figs. 6, 7 and 8 a modified form of the invention as employed in chair constructions is shown, and as there indicated, leg unit 120 may have anchoring flange 125 modified slightly both with respect to mergence with strengthening side flange 124 and strengthening rib structure 127. Further, such anchoring flanges 125, 125 may be extended so that the edges of their terminal portions 126, 126 will substantially abut at 37 when each leg unit 120 is positioned beneath the bottom portion 11 with its mid portion 22 fastened to the inner face of the downwardly extending seat flange 14 by the pair of bolts 18, 18 and taps 19, 19, as shown in Fig. 7. Anchoring strap member 132 is shaped to have face engagement with the underside of the terminal portions 126, 126 of the anchoring flanges 125, 125 and may have a rib 227 formed therein within which portions of strengthening ribs 127, 127 of the anchoring flanges may nest. The anchoring strap member 132 is lapped over both anchoring flange terminal portions 126, 126 and is preferably anchored thereto in any suitable manner, such as by a layer 38 of adhesive or cement.

It will be understood that since the leg units 120, 120 are fastened to the body 10 by bolts 18—18 and taps 19—19 and their anchoring flanges 125, 125 are located beneath the seat portion 11, any load imposed on the latter is efficiently supported by the leg units, with the anchoring flanges 125, 125 connected together by a strap member 132. However, it is preferred that the anchoring flanges 125, 125 be further fixedly connected to the seat portion 11 by any suitable supplemental anchoring means, preferably layers of adhesive or cement interposed between the top surfaces of the anchoring flanges and the bottom surface of the seat portion.

It will be readily understood that the assembly procedure for the embodiment of Figs. 6, 7 and 8 is comparable, as to simplicity and rapidity, with that involved for setting up the embodiment of Figs. 1 to 5 inclusive, and that the unique features of the present invention characterize both embodiments disclosed by way of example in the drawings. It will also be apparent that those constructions are well adapted to commercial mass production of pieces of furniture wherein the three major units are desirably formed by cold molding plastic materials, and that the resultant constructions are sturdy and efficient as to load-bearing characteristics, as well as contributing to the production of ornamental and pleasing designs.

It will thus be seen that the objects set forth above among those made apparent from the preceding description are efficiently attained and, since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described our invention, what we claim as new and desire to secure by Letters Patent is:

1. An article of furniture comprising, in combination, a body having a pair of downwardly-extending side flanges arranged in spaced-apart relation on opposite sides thereof with each having an inner downwardly-extending bearing face, a pair of leg units each comprising an arched member providing two spaced leg elements extending downwardly from opposite ends of a transversely-extending mid-section with the latter having on its outer side a bearing face located adjacent one of said inner body flange bearing faces, each of said leg unit mid-sections having a lateral load-supporting flange extending inwardly an appreciable distance from the inner side thereof with both of the load-supporting flanges located beneath said body between the side flanges of the latter and extending toward each other while being substantially rigidly connected together, and means fastening said mid-sections to said body.

2. The furniture construction as defined in

claim 1 characterized in that each of said leg units is in the form of molded sheet stock having a substantially flat upwardly-extending web on the outer side thereof and laterally-extending strengthening flanges on the inner side thereof extending along both edges of said web, the top strengthening flange along the mid-section being elongated to provide said lateral load-supporting flange with said web in the mid-section providing the outer leg unit bearing face lapped against and fastened to the inner bearing face of one of the body flanges.

3. The furniture construction as defined in claim 2 characterized in that the lateral load-supporting anchoring flange portion of the top strengthening flange has molded therein at least one laterally-extending strengthening rib of substantially the same thickness of sheet stock as the remainder thereof.

4. An article of furniture in the form of a chair comprising, in combination, a one piece molded seat and back unit having along both sides of the seat section thereof downwardly-extending flanges, a pair of one piece molded leg units each comprising an arched member providing two spaced leg elements extending downwardly from opposite ends of a transversely-extending mid-section and in the form of molded sheet stock having a substantially flat upwardly-extending web on the outer side thereof and laterally-extending strengthening flanges on the inner side thereof extending along both edges of said web, the top strengthening flange along each mid-section being elongated to provide a laterally-extending anchoring flange disposed beneath the seat with the terminal portions of the resulting two anchoring flanges being arranged in opposed relation and anchored to the underside of the seat, a strap member bridged across the terminal portions of said anchoring flanges and anchored thereto to connect them together, and means fastening the web of each leg unit mid-section to the inner side of one of the downwardly-extending seat flanges.

5. The chair construction as defined in claim 4 characterized in that in each of said leg units said laterally-extending anchoring flange is wider in a direction from leg to leg thereof than the distance between said legs, with the side edges of said anchoring flange curved down to extend from the sides of the leg webs in the vicinity of junctions thereof with the mid-section, the terminal portions of those anchoring flanges substantially abut, and the strap member laps both those terminal portions substantially throughout the widths thereof and is conformed substantially to the shape thereof.

6. The chair construction as defined in claim 5 characterized in that each of said laterally-extending anchoring flanges is provided with a longitudinal downwardly-extending strengthening rib molded therein and said strap member has molded therein a downwardly-extending rib extending thereacross and mated with said ribs in said anchoring flanges, said anchoring flanges being adhered to the under side of the seat and said strap member being adhered to the under sides of said anchoring flanges.

7. An article of furniture comprising, in combination, a one piece molded seat and back body unit having along each of both sides of the seat section thereof a downwardly-extending side flange provided with an inner downwardly-extending bearing face with the resulting pair of bearing faces arranged in opposed and spaced-apart relation, a pair of one piece molded leg units each comprising an arched member providing two longitudinally-spaced leg elements extending downwardly from opposite ends of a transversely-extending mid-section and in the form of molded sheet stock having a substantially flat upwardly-extending web on the outer side thereof and laterally-extending strengthening flanges on the inner side thereof extending along both edges of said web, the outer side of the web of each mid-section providing a bearing face substantially abutted against one of said pair of bearing faces with the top strengthening flange along each mid-section being elongated to provide a laterally-extending load-supporting flange disposed beneath the seat section of said body unit, said load-supporting flanges being extended toward and rigidly fastened to each other to provide a four-legged stool structure upon which said body unit is mounted with the top of said stool structure received between said pair of body seat section flanges, and means securing the web of each leg unit mid-section to the adjacent body seat section flange.

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