

Dec. 3, 1957

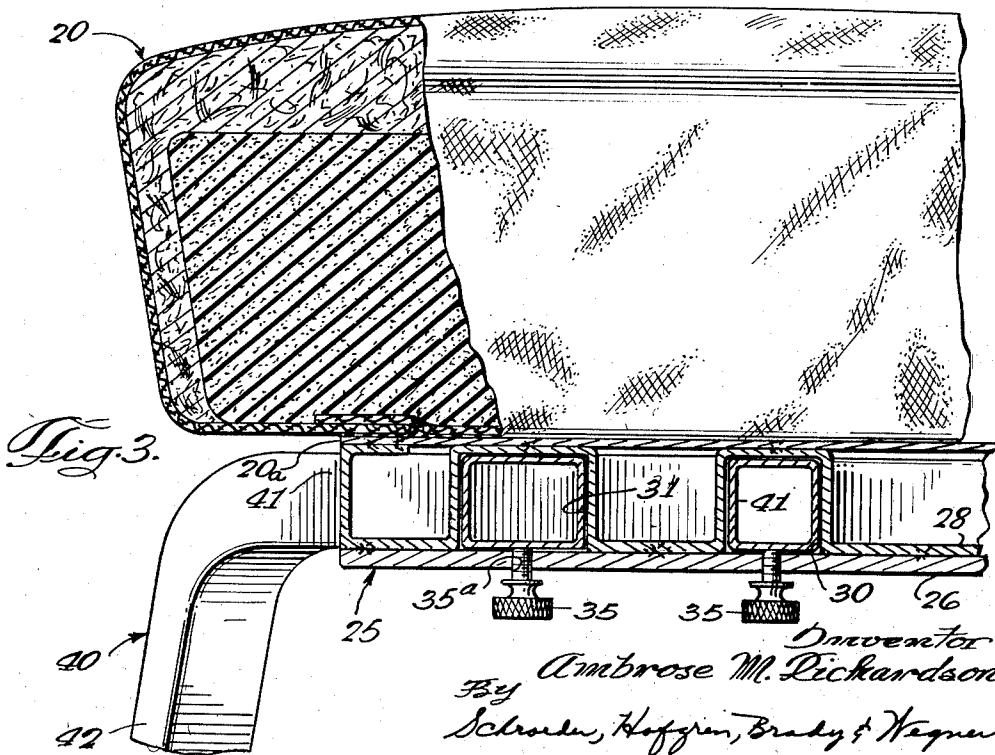
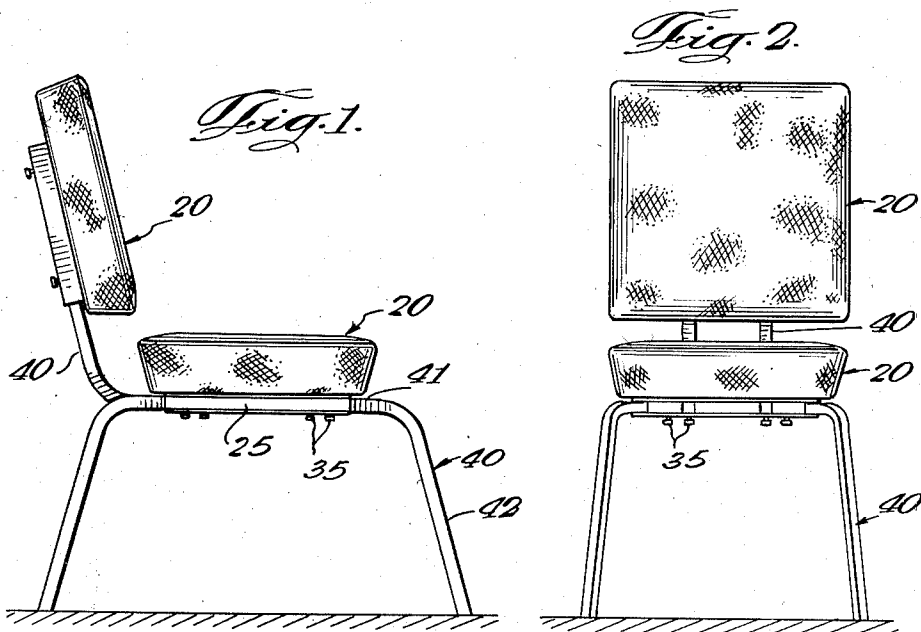
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2,815,067

CONVERTIBLE FURNITURE UNIT

Filed March 3, 1955

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

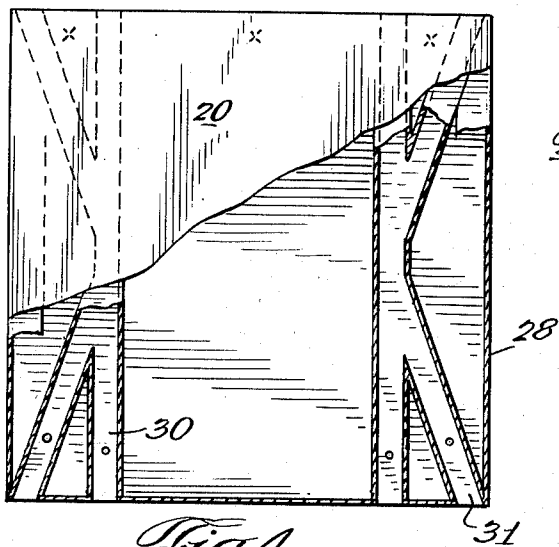


Fig. 4.

Fig. 5.

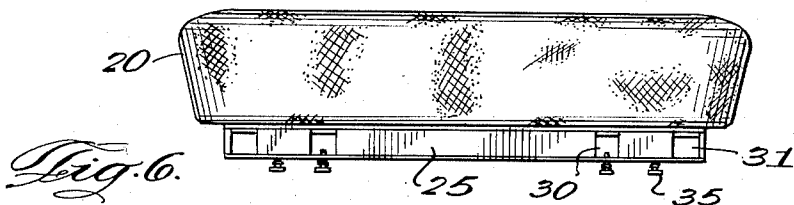
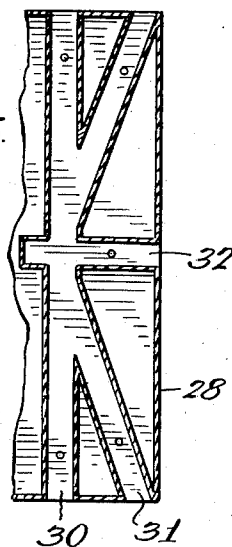


Fig. 6.

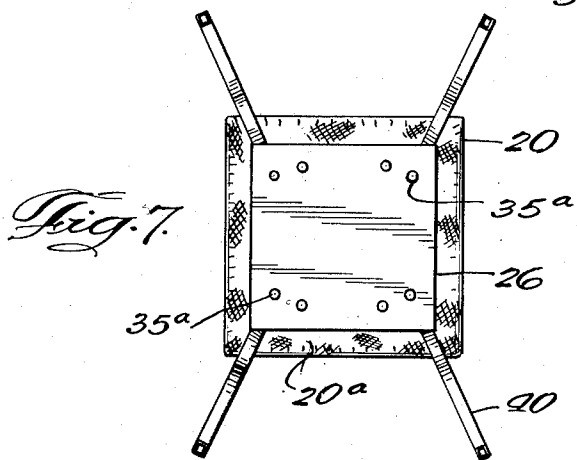


Fig. 7.

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3 Sheets-Sheet 3

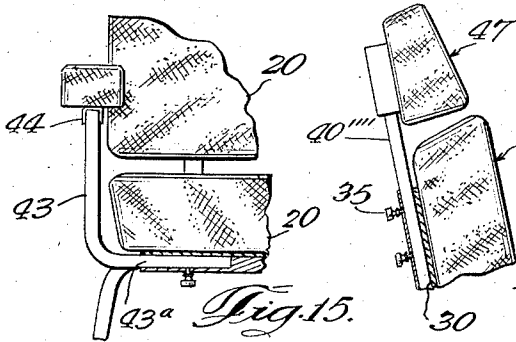
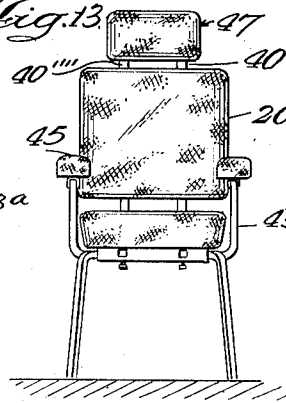
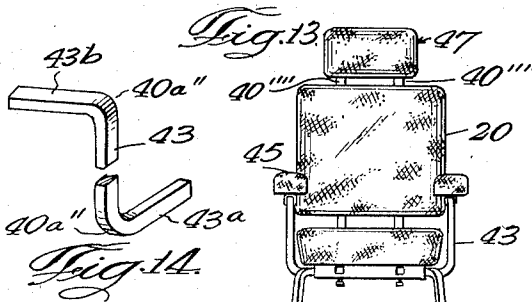
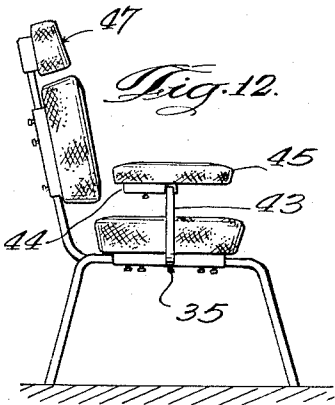
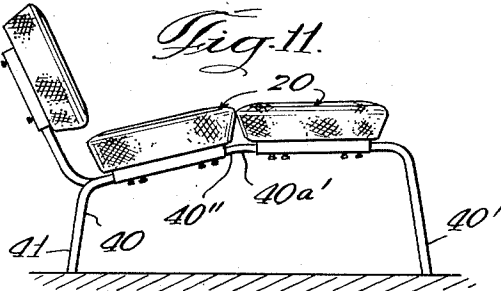
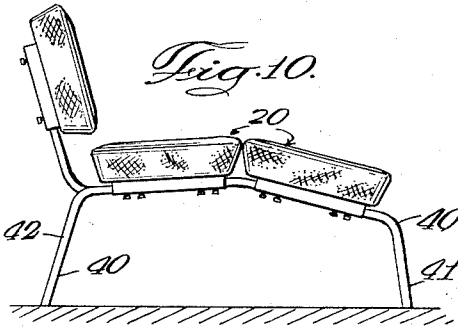
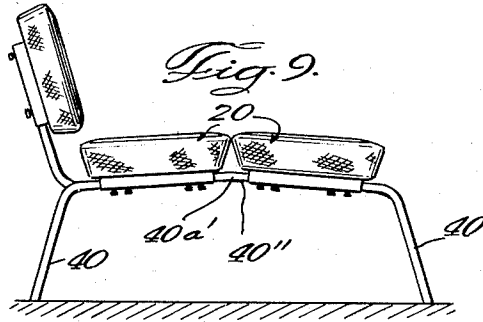
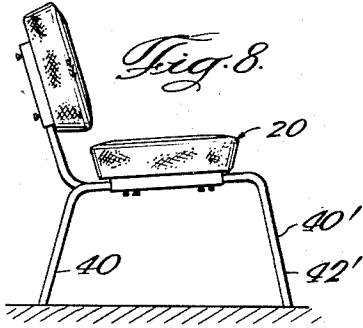


Fig. 16.

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2,815,067

CONVERTIBLE FURNITURE UNIT

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Application March 3, 1955, Serial No. 491,863

5 Claims. (Cl. 155—196)

This invention relates to a convertible furniture unit and in particular to a combination of supporting members and supporting elements which may be assembled in a number of ways to produce different furniture units.

Furniture units are known which are designed for ready assembly and disassembly by the user, and wherein brackets and clamps are used to secure supporting elements such as legs and back or arm supports to supporting members such as seats, arm rests, head rests and the like. Such connecting means, however, heretofore did not provide, over the life of the furniture unit, a tight and secure connection, particularly where a considerable amount of assembly and disassembly is involved.

The principal feature of this invention is the provision of a convertible furniture unit having integral channel connecting means for fixedly retaining the supporting elements.

A further feature is the provision of a convertible furniture unit wherein the supporting members have a base portion comprising two plates formed to provide channel connecting means for fixedly retaining supporting elements therein.

A still further feature is the provision of a convertible furniture unit having supporting members each provided with a base portion having a plurality of channels of a non-circular cross-sectional configuration to fixedly retain connecting portions of supporting elements therein.

A yet further feature of the invention is the provision of a convertible furniture unit having support members provided with a base having a plurality of channels each of similar cross-section and a plurality of support elements each having at least one portion with a mating cross-sectional configuration whereby the support members and support elements may be assembled in a plurality of manners to form different furniture units.

Yet another feature of the invention is the provision of a convertible furniture unit having support element connecting means which will allow repetitive assemblies and disassemblies without excessive wear of the retaining or engaging surfaces.

Other features and advantages of this invention will be apparent from the following specification and the drawings in which:

Fig. 1 is a side elevational view of an embodiment of my invention wherein the components are assembled into a chair;

Fig. 2 is a front elevational view of the unit shown in Fig. 1;

Fig. 3 is a fragmentary detailed view, partially in section, of the supporting member, base portion and supporting element;

Fig. 4 is a bottom plan view of the supporting member base with the bottom plate partially broken away;

Fig. 5 is a fragmentary plan view of a modified form of the supporting member base;

Fig. 6 is a front view of the supporting member;

Fig. 7 is a bottom plan view of a furniture unit;

Fig. 8 is a side elevational view of a furniture unit

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comprising a lounge chair having front legs longer than the rear legs;

Fig. 9 is a side elevational view of a furniture unit comprising a chaise longue;

5 Fig. 10 is a side elevational view of a furniture unit comprising a forwardly inclining chaise longue;

Fig. 11 is a side elevational view of a furniture unit comprising a rearwardly reclining chaise longue;

10 Fig. 12 is a side elevational view of a furniture unit comprising a lounge chair provided with an arm rest and a head rest;

Fig. 13 is a front view of the furniture unit of Fig. 12;

Fig. 14 is a detail view of the arm rest bracket in perspective;

15 Fig. 15 is a fragmentary detailed view of the arm rest installed on a chair unit; and

Fig. 16 is a fragmentary detailed view of the head rest installed on a chair unit.

Referring now to the drawings and in particular to Figs. 1 and 2, one embodiment of my invention may be seen. A support member 20 is provided with a plurality of removable support elements 40 adapted to form supporting legs or additional support member securing means. The support elements 40 are provided with a short portion 41 and an angularly extending longer portion 42 arranged to provide a stable leg support configuration having pleasing esthetic qualities while also adapted to provide proper positioning for additional support members such as chair backs.

Turning now to detailed Figs. 3 to 7, it may be seen that the connecting means for securing the support elements to the support members comprise channel grooves 30 and 31 formed in a square-shaped base portion 25 of the supporting member. Base 25 comprises a first base plate 28 which is secured, as by spot welding, to a bottom portion 20a of support member 20. Base plate 28 is provided with a plurality of spaced grooves 30 and 31, each having a square cross-sectional configuration opening downwardly, and extending along the base plate. Grooves 30 are parallel and extend transversely across the base plate terminating at opposite edges thereof while grooves 31 extend outwardly at an angle from points adjacent the longitudinal midportion of grooves 30 to points adjacent the corners of base plate 28. As shown in Fig. 5, additional grooves 32 may be provided in the base plate. These grooves, arranged to extend perpendicular to and intermediate the ends of grooves 30, are adapted to receive arm rest supports or other similar support member modifications.

Base plate 28 is somewhat smaller than support member 20 so that the edges of the base plate are positioned inside the edges of the support member and the base plate normally will not be seen. Secured, as by spot welding, to the underside of the first base plate is a second base plate 26 comprising a flat sheet having the same over-all dimensions of the first base plate and forming grooves 30, 31 and 32 into channels. Thumbscrews 35 are secured in threaded holes 35a which are positioned in the base plate 26 so that at least one thumbscrew extends into each of the channels.

Support elements 40 are formed of a square cross-section tubing. Portion 41 is provided with a longitudinal length slightly less than that of portion 42 which is such as to space the support member 20 at a normal seating level when the element is secured to the support member with portion 41 retained in the channel and portion 42 extending downwardly. The cross-sectional dimensions of the elements are slightly smaller than those of the grooves 30, 31 and 32 so that portion 41 may be readily inserted into any of the channels formed while the dimensions of the elements are sufficiently close

to those of the channels to assure the prevention of any pivotal rotation of the support element within the groove.

It is not necessary that the cross-sectional configuration be square as any non-circular configuration would suffice to prevent pivotal rotation of the support elements in the groove. It has been found that the square cross-sectional configuration provides optimum rotation prevention and supporting element rigidity, and slight tolerances in the fit thereof within the channels may be allowed without allowing rotation. Further, as the portion of the support element inserted into the channel has considerable length, the pressure on any particular area of the support element will be minimized precluding twisting or distortion of the element.

Support element portion 41 is retained in the channel by screwing thumbscrew 35 through the threaded hole 35a in plate 26 in communication with that channel so that it will engage one side of the support element and thereby prevent any undesired longitudinal displacement of the support element.

It can be seen that the insertion of the support elements into the channel grooves 31 will result in legs positioned at an angle to the sides of the support member, thereby presenting a pleasing appearance. If, however, it is desired to minimize floor space requirements, the support elements may be inserted into channel grooves 30 so that the legs will extend at right angles to the edge. A series of such units may be placed side by side abutting along the edges which are perpendicular to the edges from which the legs extend.

A modification of the support element installation can be readily effected by insertion of support element portion 42 into the channel and utilizing portion 41 as the depending leg extension. When all legs are so installed, a unit having the support member spaced lower relative to the floor is obtained. By installing only two support elements thusly extending forwardly or rearwardly, a pitch to the support member may be obtained providing a reclining or inclining seat. The engagement of the portion 42 in the channel in all other respects will be similar to that above described.

When it is desired to assemble furniture units with a plurality of support members, such as a chair having a back as seen in Fig. 1, the support element 40 may be installed with portion 41 retained in one of the channel grooves 30 of one support member and the portion 42 retained in one of the channel grooves 30 of the second support member. It will be noted that the position of the second support member with regard to the first can be easily adjusted by varying the extent to which elements 40 are inserted in grooves 30.

Referring now to Figs. 8 to 16, various modifications of the furniture units obtainable from the above described support members, support elements and modified forms thereof may be seen. Fig. 8 shows an embodiment of my invention wherein a modified form of support element 40' is provided with a leg portion 42' having a length greater than that of portion 42 above described. The installation of this form of support element as the forwardly extending legs provides a rearwardly reclining lounge chair.

In Fig. 9 is shown a horizontally arranged chaise longue wherein two horizontally disposed support members are connected by a support element 40'' having a small angle bend 40a'. In all other respects, the unit is similar to the chair of Figs. 1 and 2.

In Figs. 10 and 11, modified forms of the chaise longue are shown. In Fig. 10 the forwardly extending support elements 40 are installed so as to have the short portion 41 extend downwardly to form the legs. The rear support elements 40 are installed with the longer portion 42 extending downwardly thus resulting in a forwardly inclining chaise longue. In Fig. 11, the modified support element 40' is used for the forwardly extending legs and the support element 40 is installed with the short portion

41 extending downwardly for the rearwardly extending legs. This provides a rearwardly reclining chaise longue.

In Figs. 12 to 15, the arm rest 45 is shown, being secured to a support member by a modified form of support element 43. This support element or arm rest bracket is provided with two mutually normal bends 40a''. One end portion 43a is inserted into support member channel 32 and held therein by a thumbscrew 35. The opposite end portion 43b is inserted into a channel member 44 which is secured to the arm rest 45. A thumbscrew is provided in the channel member adapted to fixedly secure portions 43b therein. Positional adjustments in the horizontal plane may be readily made by moving the arm rest 45 forwardly or rearwardly on bracket portion 43b, and sidewardly by moving bracket portion 43a, longitudinally in channel 32.

As seen in Figs. 12, 13 and 16, a head rest 47 may be readily provided. A short straight support element 40''' is secured at one end to the support member 20, constituting the chair back by retention in channel 30. Vertical positioning is readily obtained by longitudinal movement in the channel and securing therein by the thumbscrew 35.

My furniture unit provides great flexibility and adaptability. The support elements may be used in different manners to provide different length legs or to be used as back or auxiliary supporting members securing means. As the longitudinal positioning in the channels may be varied, horizontal positioning of the legs is readily obtained as well as horizontal and vertical positioning of the back and auxiliary members.

The support members and support elements may be easily stored in the disassembled state requiring only a small storage space. Any of the various possible combinations may be then quickly and easily made when desired by simply inserting the proper support elements into the channels formed in the support member bases and securing them therein by the thumbscrews. A strong and sturdy connection is thereby made, with the walls of the grooves preventing any pivotal rotation of the legs and the thumbscrews restraining any longitudinal movement. The construction of the unit is exceedingly simple and economical of manufacture, yet provides high strength, durability, and pleasing esthetic qualities.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims.

I claim:

1. In a furniture unit having a support member, support means comprising: a first plate secured to said support member; a second plate secured to said first plate, at least one of said plates being provided with one or more grooves forming channels, said channels having at least one portion extending to a side of said plates; at least one support element having a portion in engagement with a channel and extending outwardly from said plates; and adjustable securing means retaining said element portion in any one of a plurality of positions longitudinally within said channel.

2. In a convertible furniture unit having a support member, support means comprising: a base secured to said member and comprising two plates secured together, at least one plate formed with a plurality of grooves having similar cross-sections and forming channels when the plates are placed in juxtaposition; a plurality of support elements, each element having at least two portions, each portion having a configuration mating with said channels; and adjustable securing means for retaining either of said element portions longitudinally within said channels, whereby said members and elements may be assembled in a plurality of manners to form different furniture units.

3. A convertible furniture unit comprising: a plu-

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5 rality of similar support members, each having a base portion comprising two facially juxtaposed plates arranged to form a plurality of channel therebetween, said channels having a regular polygonal cross-section and extending transversely of said plates to have at least one portion extending to a side of said base portion; a plurality of complementary supporting elements of regular polygonal cross-section, each having at least two angularly related, dissimilar portions, said portion being alternatively receivable in one of said channels and extending 10 outwardly from said side to provide alternatively different support configurations; and adjustable securing means retaining said element portion in any one of a plurality of positions longitudinally within said channel.

15 4. A furniture unit comprising in combination: two horizontally disposed support members, each having a portion provided with longitudinally extending channels; a plurality of L-shaped tubular support elements, each having one portion in removable engagement with a channel and a leg-forming portion extending downwardly; a 20 plurality of tubular support elements, each removably engaging a channel in each horizontal support member and extending only generally horizontally; a generally vertically disposed support member having a portion provided with longitudinally-extending channels; and a plurality of L-shaped tubular support elements, each having 25

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a first portion in removable engagement with a channel of a horizontally disposed support member and a second portion in removable engagement with a channel of the vertically disposed support member.

5 5. A convertible furniture unit comprising in combination: a horizontal support member having a plurality of horizontal extending channels opening into the side edges thereof; a plurality of generally L-shaped support elements having dissimilar leg portions, each portion being alternatively receivable in a channel whereby the other portion acts as a generally vertical support for the support member; and means for fixedly retaining the support element portion in said channels in any one of a plurality of longitudinal positions.

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