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METHOD OF MANUFACTURING SEATING FURNITURE

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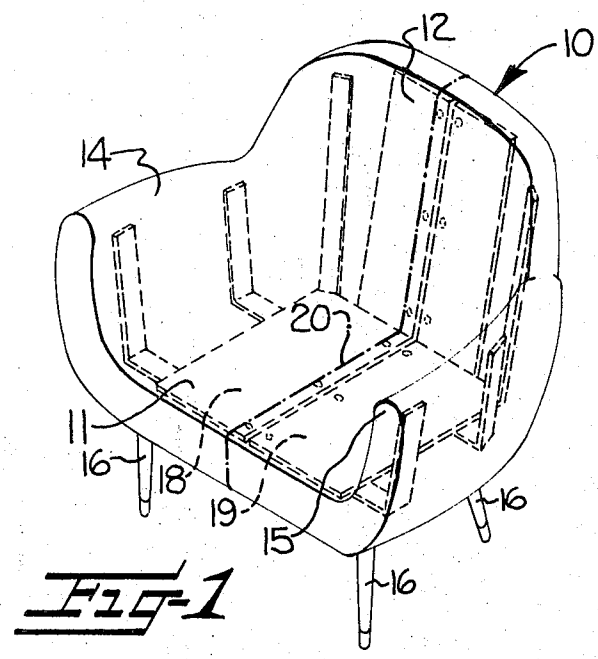


Fig-1

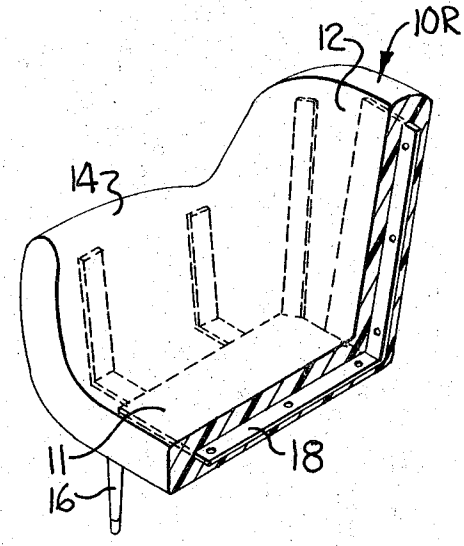


Fig-2

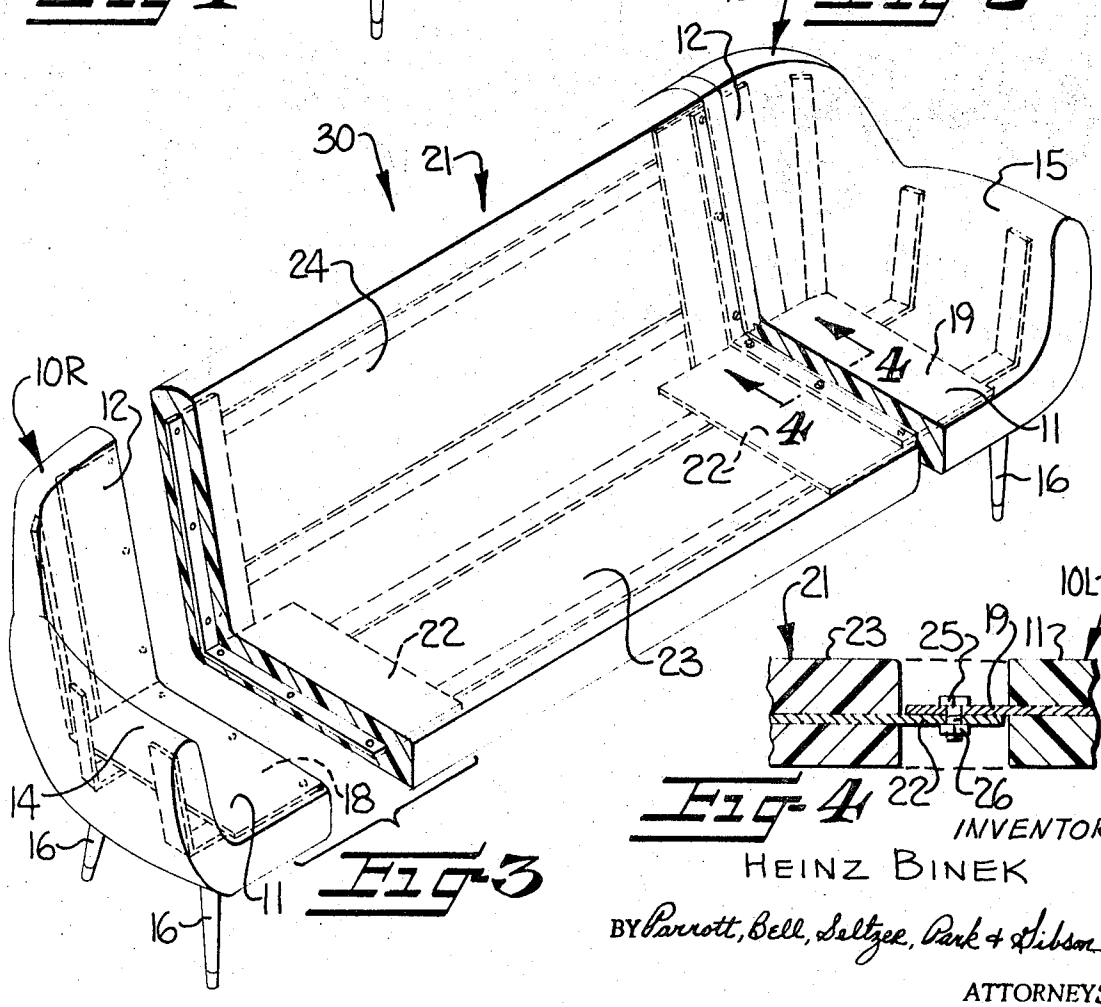


Fig-3

Fig-4

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METHOD OF MANUFACTURING SEATING FURNITURE

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U.S. Cl. 29—415 5 Claims

ABSTRACT OF THE DISCLOSURE

Multiple person seating furniture pieces, such as couches and the like, are disclosed as being produced in accordance with a method wherein synthetic foam material is formed into a chair body having a seat, a backrest, and right and left sidearm portions. The chair body thereafter is severed to produce a pair of end sections which are then joined with an intermediate section to complete the assembly of a couch body having a seat and backrest terminating at respective ends of the couch body in right and left sidearm portions.

It has heretofore been proposed to produce single person seating furniture pieces, such as chairs and the like, from synthetic foam materials. In accordance with such proposals, synthetic foam material is formed into a chair body which is thereafter covered with suitable upholstery materials such as decorative fabric, plastic film or the like. While such approaches to the manufacture of single person seating furniture pieces have recently become commercially practicable, the materials involved create certain difficulties in attempting to apply such a method to the manufacture of multiple person seating furniture pieces, principally due to the significantly larger size of such pieces. In particular, foam materials cannot be cast or molded into such large sizes with sufficient control over the quality and standards of the resulting product. Due to these difficulties, multiple person seating furniture pieces such as those with which the present invention is concerned are still produced by following the conventional method in which a frame is assembled by a skilled craftsman, padding is then secured to the frame, and the padded frame covered by an appropriate upholstery fabric or cover.

With present commercial practices and the aforementioned problems in application of modern techniques thereto in mind, it is a primary object of the present invention to provide a method for manufacturing multiple person seating furniture pieces such as couches wherein a couch body is assembled by severing a chair body into couch body end sections and then securing the end sections at opposite ends of a couch body intermediate section. In realizing this object of the present invention, the relative sizes of those sections of the couch body which are to be formed from synthetic foam materials are brought within the capability of present commercially practicable techniques, thus making possible the economical and relatively inexpensive manufacture of bodies for multiple seating furniture.

A further object of this invention is to provide a chair body particularly adapted for severance into couch body

end sections to be incorporated into a multiple seating furniture structure. In realizing this object of the present invention, the same mold may be employed for chairs and also for the end portions of couches, which results automatically in conformity of appearance for the single and multiple person seating furniture and confers additional benefits in economy of mold usage.

It is yet another object of the present invention to provide a couch body assembled from a pair of end sections each having a seat portion, a backrest portion and a sidearm portion, and an intermediate section inserted between the end sections and cooperating therewith to form a multiple person seating furniture piece having a seat and a backrest terminating at opposite ends in sidearm portions. In ralizing this object of the present invention, it is contemplated that couch bodies in various lengths may be readily manufactured by forming the intermediate section of the couch body to have a selected predetermined length so that the overall length of the furniture piece accommodates a predetermined number of persons.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds when taken in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view of a chair body in accordance with the present invention, prior to severance of the chair body into two couch body end portions;

FIG. 2 is a view similar to FIG. 1, showing a portion of a chair body after severance of the body into a pair of couch body end sections;

FIG. 3 is a perspective view of a couch body in accordance with the present invention in the process of assembly; and

FIG. 4 is an enlarged section view through a portion of the couch body of FIG. 3, taken generally along the line 4—4 in FIG. 3.

Referring now more particularly to the drawing, a chair body **10** is there shown to be formed by a body of synthetic foam material such as relatively rigid polyurethane foam. A number of foam materials and methods of handling such materials are presently known and in commercial use for the production of single person seating furniture pieces generally similar to the chair body **10**, and the present invention contemplates that the chair body **10** may be produced in accordance with and through the use of any of the methods and materials presently being employed. Thus, the synthetic foam material from which the chair body **10** is formed may be selected from the wide range of materials available to have a degree of rigidity or resilience considered suitable and appropriate for the particular purpose. In accordance with the present invention, the chair body **10** defines a seat **11**, a backrest **12**, and right and left sidearm portions **14** and **15**, respectively. While the chair body **10** chosen for illustration in the drawing includes sidearm portions **14** and **15** which rise to an appropriate height above the seat **11** for permitting an occupant of the chair **10** to rest his elbow and forearm on the upper surface of the sidearm portions, it is to be understood that the sidearm portions need not necessarily rise to such a height as to provide a resting place for an occupant's arm or, alternatively, may rise to substantially the height of the backrest **12** if so desired for aesthetic effect.

Preferably, the chair body **10** incorporates reinforcing members embedded into the synthetic foam material, as

by being positioned within a mold prior to the synthetic foam material being cast therein. The use of reinforcing members generally has been proposed heretofore, in order to permit distribution of weight loads imposed on the chair body to supporting legs such as the chair legs **16**, but the present subject invention contemplates that the reinforcing members provided be arranged in a particular manner in order to accomplish the objects of the present invention. More particularly, at least two reinforcing members **18** and **19** are provided, each being separate and apart from the other and individually reinforcing the respective right sidearm portion **14** and left sidearm portion **15**. In the particular form illustrated, each of the reinforcing members **18** and **19** comprises a generally planar base member underlying the respective portions of the seat **11** immediately adjacent the sidearm portions **14** and **15** and vertically uprising segments extending upwardly into the backrest **12** and the sidearm portions **14** and **15**. In the molding of the chair body **10**, the reinforcing members **18** and **19** are positioned within the mold at a spaced apart distance, so that the reinforcing members are separated in the chair body **10** by a small volume of foam material (as best shown by the phantom illustration of the reinforcing members in FIG. 1).

In order to accommodate the manufacture of a multiple person seating furniture piece, such as a couch body, the chair body **10** is thereafter severed into at least two parts, as being split along a medial line **20**, into respective right and left-hand couch body end sections **10R** (FIG. 2) and **10L**. Severance of the chair body **10** into the couch body end sections along the line **20** is facilitated by the separation of the reinforcing members **18** and **19** one from another and the spacing apart of those members during the molding of the chair body **10**.

In order to complete the manufacture of a couch body, generally indicated at **30** in FIG. 3, the couch body end sections **10R** and **10L** produced by severance of the chair body **10** into two portions are assembled with a couch body intermediate section **21**. Preferably, the intermediate section **21** is produced by forming synthetic foam materials in a manner somewhat similar to the procedure employed in the production of the chair body **10**, as by molding polyurethane materials about a reinforcing framework **22**. Preferably, the reinforcing framework **22** includes side plates immediately adjacent the opposite ends of the intermediate section **21** and longitudinal stretcher members extending between the side plate members to provide reinforcement for the seat **23** and backrest **24** of the intermediate section **21**. The present invention contemplates, however, that the intermediate section **21** may be produced in accordance with more conventional techniques if so desired, by assembling a suitable frame and thereafter securing to that frame appropriate padding to be covered by an upholstery material such as a fabric.

In assembling the couch body end sections **10R** and **10L** with the couch body intermediate section **21**, the present invention contemplates that a variety of techniques may be employed. A preferred technique is the removal of sufficient foam material from the end sections **10R** and **10L** to expose the free edges of the reinforcing members **18** and **19** in which a series of openings have been formed for receiving fasteners. Thereafter, the reinforcing members **18** and **19** of the end sections **10R** and **10L** are overlapped with the side plates of the reinforcing framework **22** of the intermediate section **21**, the fastener openings therein are aligned, and fasteners such as bolts **25** and nuts **26** are secured in the aligned openings to secure the reinforcing members of the sections of the couch body structure **30** into assembled relation. By so securing together the reinforcing members and framework **18**, **19** and **22** of the couch body sections **10R**, **10L** and **21**, the intermediate section **21** is supported by the end sections **10R** and **10L** and the legs **16** provided thereon. After the

reinforcing members and framework are joined together, the volumes of foam material removed from the sections of the couch body structure **30** to expose the edges of the reinforcing members are filled in with an appropriate material, preferably a synthetic foam material compatible with the principal synthetic foam material of the couch body structure, in order to provide a smooth and continuous exterior surface for the body structure, as shown by the backrest portion between the left sidearm section **10L** and the intermediate section **21** illustrated in FIG. 3.

While described above with particular reference with a bolted assemblage of the reinforcing members **18**, **19** and framework **22**, it is to be understood that the present invention contemplates that the reinforcing members may be joined by other means such as riveting, welding, or the use of adhesives. Further, the present invention contemplates that the reinforcing members within the intermediate section **21** of the couch body structure **30** may be unnecessary, thereby permitting adhesive securement of the foam material to accomplish assembly of the end sections with the intermediate section.

In the drawings and specification, there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being defined in the claims.

I claim:

1. A method of manufacturing a couch body comprising the steps of:

forming synthetic foam material about reinforcing members and into a reinforced chair body having right and left sidearm portions, a seat and a backrest, then

severing from the chair body a pair of couch body end sections each having a reinforcing member therewithin, a backrest portion, a seat portion, and a sidearm portion,

exposing portions of the reinforcing members embedded in the couch body end sections by removing a volume of foam material therefrom,

providing a couch body intermediate section of predetermined length and having a seat and a backrest, and then

joining the couch body end sections to opposite ends of the couch body intermediate section and securing the couch body intermediate section to the exposed reinforcing members of the couch body end sections so that the three sections together form a couch body having a seat and backrest terminating at respective ends in right and left sidearm portions.

2. A method according to claim **1** wherein the step of joining the couch body end sections to the couch body intermediate section further includes recovering the exposed portions of the reinforcing members so that the exterior surface of the couch body presents a smooth and continuous surface.

3. A method according to claim **1** wherein the step of providing a couch body intermediate section includes forming synthetic foam material about reinforcing members and into the couch body intermediate section.

4. A method according to claim **3** further comprising the step of exposing portions of the reinforcing members embedded in the couch body intermediate section by removing a volume of foam material therefrom and wherein the step of joining the couch body sections includes securing the exposed intermediate section reinforcing members to the exposed end section reinforcing members.

5. A method according to claim **1** wherein the step of forming synthetic foam material into the chair body further includes providing separate reinforcing members for the right and left sidearm portions and respective adjacent seat and backrest portions and molding foam material about the reinforcing members while the separate reinforcing members are in predetermined spaced relation

so that severing of couch body end sections from the chair body is facilitated.

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