United States Patent [19]

Binek

[11] **3,709,560**

[45] **Jan. 9, 1973**

[54] **SEATING FURNITURE AND METHOD OF MANUFACTURING SUCH FURNITURE**

[75] Inventor: **Heinz Binek**, Freckenhorst, Germany

[73] Assignee: **Consolidated Burris International, Ltd.**, Lincolnton, N.C.

[22] Filed: **Aug. 18, 1970**

[21] Appl. No.: **64,733**

Related U.S. Application Data

[62] Division of Ser. No. 736,831, June 13, 1968, Pat. No. 3,564,700.

[52] **U.S. Cl.**.....**297/445,** 297/440

[51] **Int. Cl.**.....**A47c 4/02,** A47c 7/00

[58] **Field of Search**.....247/440, 443, 445, 452, 455, 247/457

[56] **References Cited**

UNITED STATES PATENTS

3,471,199	10/1969	Kuhlmann	297/445
3,101,218	8/1963	Baermann	297/455
3,423,127	1/1969	Shankman	297/457
3,564,700	2/1971	Binek	297/440
3,182,377	5/1965	Hoven et al.	297/DIG. 2

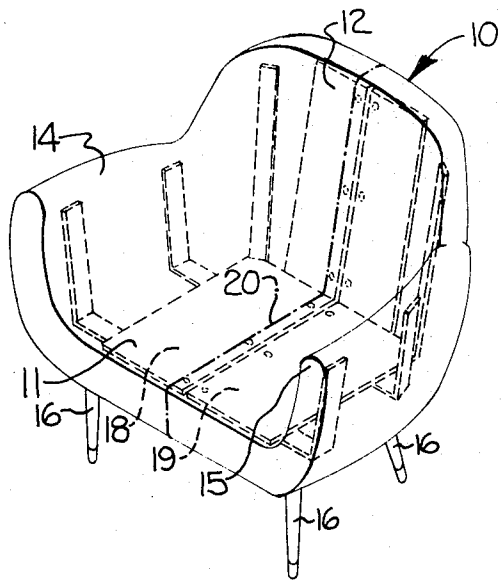
Primary Examiner—Casmir A. Nunberg

Attorney—Parrott, Bell, Seltzer, Park & Gibson

[57] **ABSTRACT**

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.

1 Claim, 4 Drawing Figures



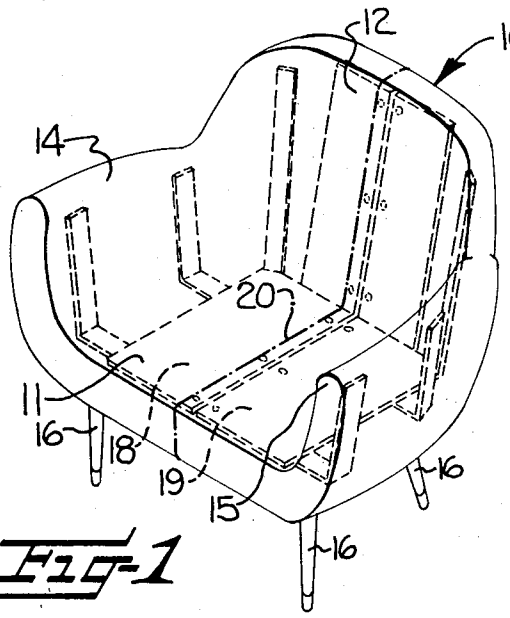


FIG-1

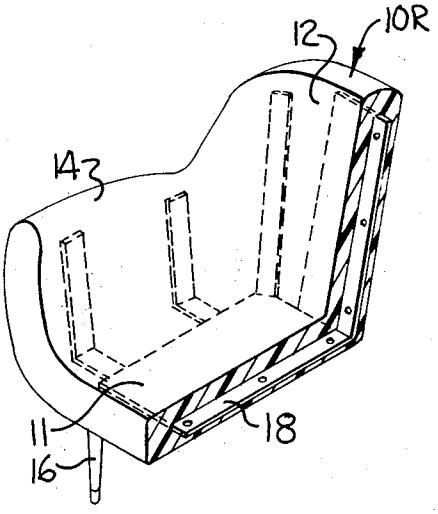


FIG-2

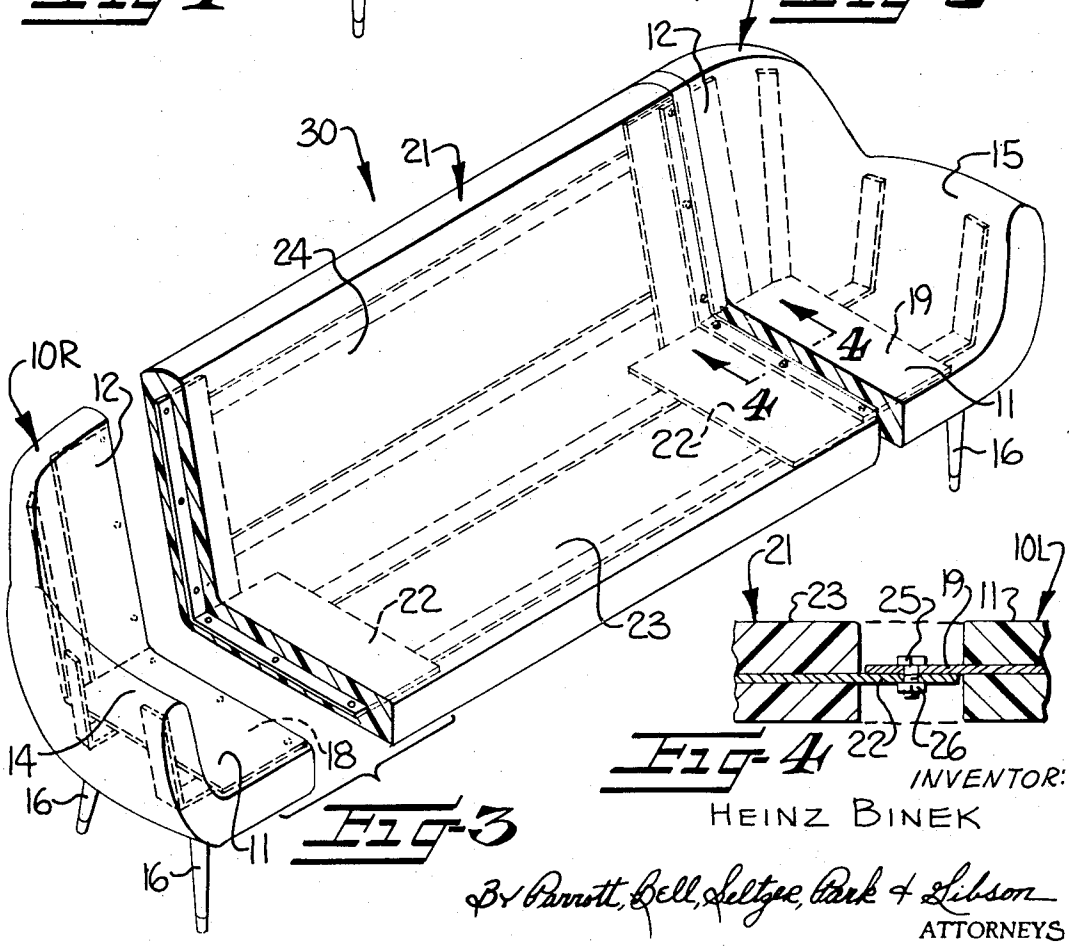


FIG-3

FIG-4

INVENTOR:
HEINZ BINEK

By Barrett, Bell, Seltzer, Park & Gibson
ATTORNEYS

SEATING FURNITURE AND METHOD OF MANUFACTURING SUCH FURNITURE

This application is a division of application Ser. No. 736,831 filed June 13, 1968 and now U.S. Pat. No. 3,564,700 issued Feb. 23, 1971.

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 realizing 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. An elongate seating furniture piece such as a couch body comprising right and left end sections each formed of synthetic foam material to have a side arm portion, a back rest portion and a seat portion; an intermediate section formed of synthetic foam material to have a back rest portion and a seat portion; reinforcing members embedded into said synthetic foam material of each of said couch body sections for enhancing the structural rigidity thereof; said reinforcing member embedded in said intermediate section being disposed in said intermediate section for cooperative relationship with said end section reinforcing members and being secured to said end section reinforcing members for supporting said intermediate section from said end sections with said intermediate section extending between said end sections and with said seat and back rest portions at least generally aligned so that the sections together form a couch body having a seat and back rest terminating at each end in a side arm portion; and a body of synthetic foam material enclosing the joined together reinforcing members for providing continuous seat and back rest surfaces.

* * * * *