April 17, 1962 M. FAXON 3,030,146

SEPARABLE FURNITURE CONSTRUCTION

Filed Aug. 18, 1958 2 Sheets-Sheet 1

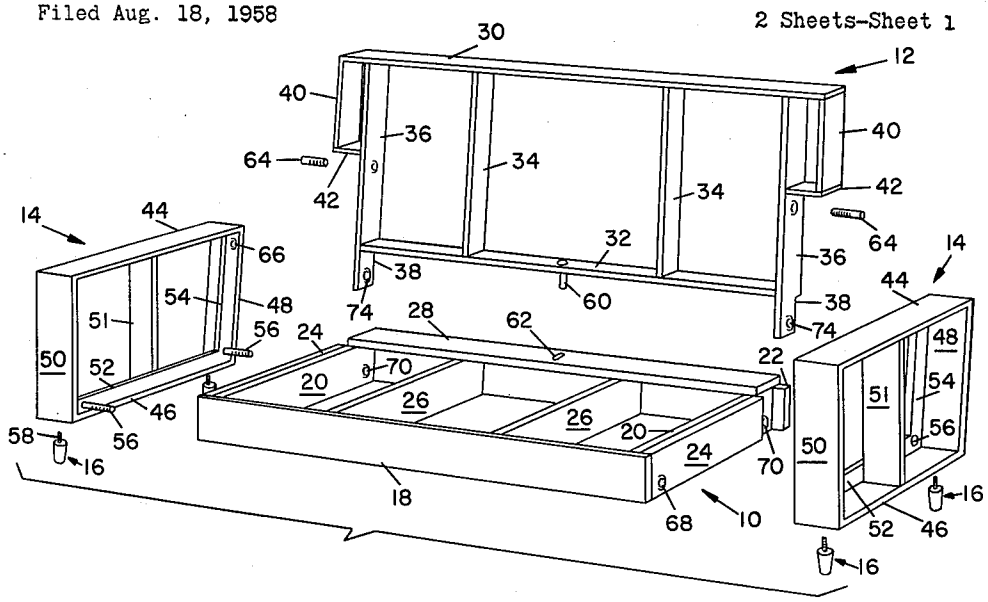


FIG- 1

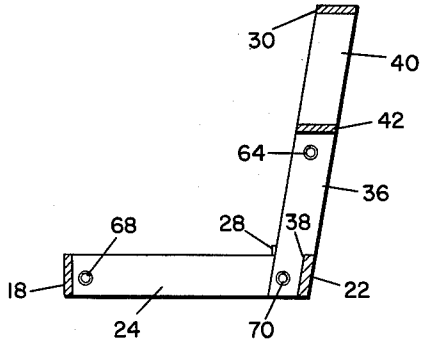


FIG- 6

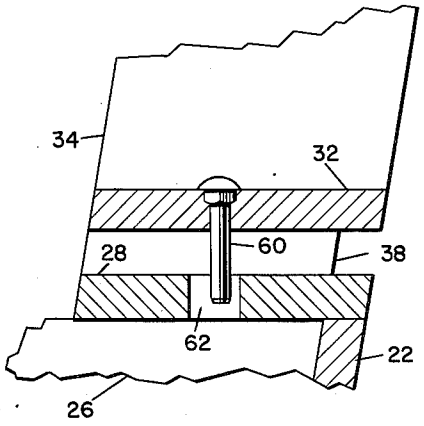


FIG- 5

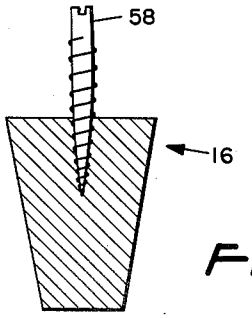


FIG- 4

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SEPARABLE FURNITURE CONSTRUCTION

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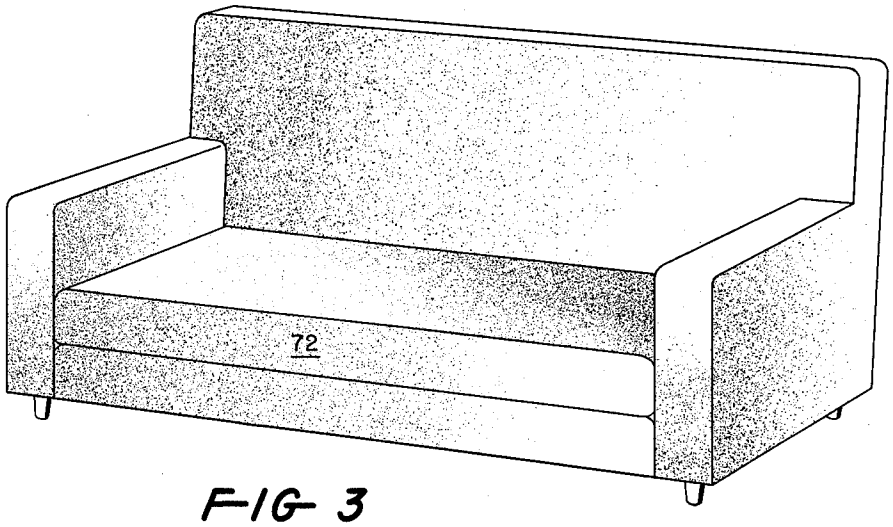


FIG 3

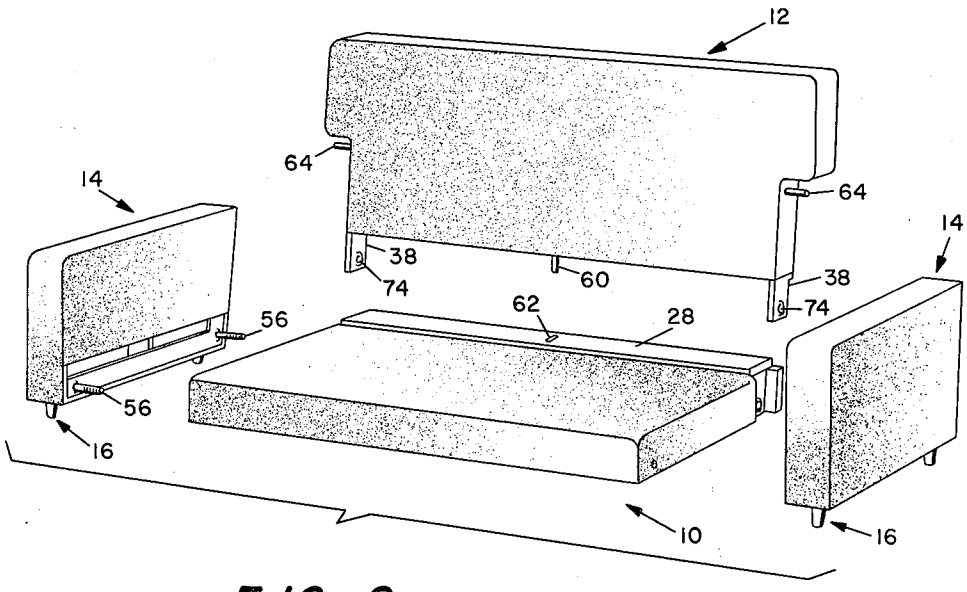


FIG 2

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SEPARABLE FURNITURE CONSTRUCTION

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Filed Aug. 18, 1958, Ser. No. 755,650
1 Claim. (Cl. 297—422)

This invention relates to a form of furniture construction and more particularly to the form of construction of sofas and chairs and the like which have seats, back portions, and side arms, in which each of those parts is formed as a completely upholstered unit, separable in itself and in which the units may be assembled at their point of delivery or use to form a complete furniture piece.

As a normal procedure the frames of furniture are completely assembled before upholstery. Since the upholstering operation must be performed at the point at which the furniture is manufactured it is necessary to ship even the largest furniture pieces, such as sofas, as completed units. Several disadvantages flow directly from this requirement. First, the cost of shipping is several times what it would be if the various components of the furniture could be kept in a knocked-down condition. Secondly, a problem is often created in bringing the furniture into the home in which it is to be used, because of the small entrances which are generally found in a home. Additionally, when it is desired to reupholster a particular area of the furniture it is necessary to ship the entire unit to a factory and to reupholster the entire unit.

For these reasons it is an object of the present invention to provide a form of furniture construction in which the seat, back and arms of a sofa or chair may be formed as independent units, each of which may be separably upholstered before assembly with the others. This form of construction allows the seat, back and arms each to be individually finished at the factory and then shipped to their point of use in a knocked-down condition. At the point of use they may then be assembled by unskilled personnel. At such time as it becomes necessary to reupholster single sections of the furniture unit, it is possible to ship that particular section alone to the reupholstery point, greatly minimizing the cost involved in the reupholstering.

It has previously been proposed to form furniture units in such separable form, however, because of the complexity of construction and the resultant high cost which each of these forms involved, none of them have found commercial acceptance.

In order that the assembly operation of the sectionalized furniture might be performed by unskilled persons without special equipment it is necessary that the fastenings be few in number and simple in operation. Therefore, the framing techniques which were used with previous types of furniture are inadequate. Because few fasteners are used between the various members the stress concentrations at these fastening points are necessarily relatively high. In the prior art attempts have been made to solve this high stress concentration problem by providing steel members in conjunction with the normal wood framing at such places as to absorb the abnormal loads. I have found it possible to construct a frame solely of wood in such a manner as to adequately protect against the heavy stresses placed upon the few and simple fastenings which I provide. Additionally, in the present invention I provide guiding means which insure that the alignment between the various sections of the unit of the furniture is maintained throughout normal usage.

It is therefore, seen to be an object of the present invention to provide an article of seating furniture such as a chair, sofa which may be constructed from separate seat, arm and back units, each of which are completely formed and upholstered previous to assembly.

Another object is to provide such a seating unit in which the framing members are constructed solely out of wood, yet are adequate to withstand the abnormal stresses which result from the method of fastening.

Another object is to provide such knock-down construction in which the assembly operation can be performed by unskilled personnel without the use of any special machinery.

In one embodiment of the present invention certain of the separable units are performed with male threading members projecting from them at certain points and metal dowel members projecting from other points. Special female receptacles are provided for these male members on the other sectionalized units so as to provide simple and quick assembly procedures which provide junctions of necessary strength and alignment qualities. This embodiment and another are described in detail in the following material which makes reference to the accompanying drawings, in which:

FIGURE 1 is an exploded view of the framing members of the seating unit of a first embodiment previous to their being upholstered;

FIGURE 2 is an exploded view of the members which form the seating unit of the first embodiment, as upholstered;

FIGURE 3 is a perspective view of a first embodiment of a finished sofa as constructed according to the teachings of the present invention;

FIGURES 4, 5 and 6 are detailed sections illustrating the methods of assembly used with the first embodiment.

Referring to FIGURE 1 a sofa may be constructed from the following general units: a seat member 10, a back member 12, two side arm units 14 and legs 16. Unless otherwise particularly noted, one-half inch by six inch lumber may be used throughout.

The seat member 10 is framed with a forward board 18, two side boards 20 which abut and are affixed to the inner side of the board 18 at approximately one-half inch from the extreme ends of the board 18, and a back member 22 which abuts and is affixed to the rear edges of the side members 20. It is to be noted that the rear edges of the side members 20 are cut at an angle of approximately 15 degrees with respect to the vertical so that the back member 22 is disposed at that same angle with respect to the vertical. The side members 20 abut the inner surface of the back member 22 at the same distance from its extreme edges as their front ends abut the front member 18.

Joints between all the wooden members used in the frame structure may be made in any number of well known manners, such as nailing or tongue and grooving.

Two exterior side members 24 run along the outer sides of the side members 20 to within approximately three inches of their rear edge. The rear edges of these outer side members 24 are also cut at an angle of approximately 15 degrees with respect to the vertical so as to form, with the extending edges of the rear member 22 and the exposed outer surface of the side members 20, a groove of approximately three inches width, which is disposed at approximately 15 degrees with respect to the vertical along the rear edge of the seat.

Two brace members 26 extend transversely between the front frame member 18 and the rear frame member 22 at intermediate positions along the length of those members. The rear ends of these frame members are also cut at approximately 15 degrees with respect to the vertical so that they abut flushly with the rear member 22. A horizontally disposed top member 28 is positioned across the tops of the end members 20 and the braces 26 in a longitudinal relation at their rearward ends. Its rear edge extends over the rear member 22. Its ex-

treme ends are cut flush with the outer surfaces of the side boards 20.

The back member 12 consists of a longitudinally extending top member 30 and a longitudinally disposed bottom member 32 which are joined by two framing braces 34 which extend at right angles between the members 30 and 32. Both ends of the braces 34 are cut at approximately 15 degree angles so that when the top member 30 and the bottom member 32 are disposed horizontally the back slants upwardly at a 15 degree angle. The bottom member 32 is shorter than the top member 30 by approximately four inches at each end. At its extreme ends the bottom member 32 abuts the interior surfaces of two side members 36. The upper ends of the side members are cut at 15 degree angles and abut the lower surface of the member 30 approximately four inches from its extreme ends. The lower ends of the members 36 extend approximately five inches below the member 32 and the rear edges are notched for approximately four inches from their extreme lower ends as at 38. Two frames formed by side members 40 and by lower members 42 form box light projections which extend beyond the members 36.

The end and arm members 14 are simply formed from upper framing members 44, lower framing members 46, rear framing members 48 and forward framing members 50. The lower members 46 are approximately three inches shorter than the upper members 44 so that the rear members 48 slope at approximately 15 degrees with respect to the vertical. Interior support is given to the arm members 14 by one-half by two inch interior framing members 52 which extend along the top edge of the bottom members 46 with their thicknesses abutting the bottom member and by similar framing members 54 which extend along the interior side of the rear member 48 and in a similar manner abut the members 52 at their lower ends.

Following the fabrication of the units in the manner previously described and prior to their upholstering, four stud bolts 66 are fixed in the lower brace members 52 of the arm members 14. The studs may be any metallic threaded member. They are fixed against rotation and extend inwardly toward the seat member 10.

Following the fabrication of the individual units in the previously described manner they are upholstered. On the seat member 10 only the outer surfaces of the forward frame 18 need be upholstered with the exception of the bottom of the lower members 46 and the lower half of the interior surfaces of the arm as shown in FIGURE 2.

Assembly of the units is achieved by screwing the leg bolts 58 which extend upwardly from each of the legs 16 into the under side of the lower arm members 46. Next, the lower end of the side members 36 adjacent to the notched portion 38 are slipped into the slots formed by the extensions of the back member 22 beyond the ends of the side members 20 and the rear ends of the side members 24. As this is done a downwardly extending metal dowel 60 which projects from the lower surface of the member 32 is guided into an oblong hole 62 which is cut in the center of the upper seat member 28. The hole 62 is lengthened so that as the back member is inserted into the seat member at a 15 degree angle the lower member 32 may slide forward with respect to the lower member 28 and allow the dowel 60 to move forward with respect to the hole 62. The back of the hole 62 is so positioned that when members 32 and 28 are touching one another the dowel 60 is in contact with the back edge of the hole 62.

Next, the side members 14 may be assembled to the seal member 10 and the back member 12. Two metallic dowels 64 extend outwardly from the side members 36. Circular holes 66 which are fitted with metallic bushings to prevent wear are positioned near the upper end of the brace members 54 in each of the sides. As the side members 14 are moved inwardly perpendicular to the seat member 10, the dowels 64 extend into the bushings 66 aligning the sides with respect to the back. At the same time the studs 56 extend into pairs of holes 68 and 70 which respectively cut through the side members 24 and 20 in the base and holes 74 in the back member 36. These holes 68, 70 and 74 are also lined with metallic bushings to prevent wear.

In order to affix the pieces together it is only necessary to affix bolts onto the studs 56 on the interior sides of the members 20 and tighten these bolts. This single operation completely joins the four members. A seat cushion 72 may then be placed on top of the seat 10 and the sofa is ready for use.

It is thus seen that through the use of three dowels and four bolts the four basic units of the sofa are joined to one another. As is seen in FIGURE 5 the dowels 60 and 64 may be threaded into their supporting members so that they may also be removed for shipping purposes.

The construction of the present invention is thus seen to provide a maximum structural thickness at those points where maximum stresses fall. The assembly is simple and may be performed by unskilled personnel in a short time. Also, positive alignment throughout the life of the article is provided for.

Although a specific embodiment has been described the scope of the invention is only limited by the following claim.

This application is a continuation in part of application, serial No. 654,269, filed April 22, 1957 now abandoned.

Having described my invention I claim:

An article of seating furniture comprising, in combination: a seat consisting of a rectangular frame formed of four elongated wooden boards having the surfaces of their widths disposed substantially in the vertical plane, the two shorter opposed sides of said rectangular frame being substantially thicker than the two longer sides; a pair of vertical grooves, one disposed in each of said shorter opposed sides immediately adjacent to one of the longer sides, a first board member disposed on the top side of the frame with its edge parallel to that of the longer members which is adjacent to said grooves and having the surface of its width in a substantially horizontal plane, and first horizontal holes passing through said shorter sides at each of the grooved portions thereof; a back member having two parallel tongue portions depending from its lower edges which are adapted to slide within said grooves, second horizontal holes in said tongue portions adapted to align with the first horizontal holes in the grooves, a second board member extending between said tongues so as to present a substantially horizontal surface adapted to be supported upon the upper surface of the said first board member; and two arm members adapted to be affixed to the thickened side members of said seat by means which includes a pair of studs adapted to pass through the aligned horizontal holes in said tongue members and grooved sections so as to join said seat back and arm.

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