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(54) **modular upholstered furniture**

(57) The invention relates to the provision of an item of upholstered furniture and specifically, the provision of the item of furniture formed from a series of modular units which when joined together, form the item of furniture in the required configuration. The series of modular units are formed at the point of manufacture and then transported as separate units to the location of use,

whereupon the modular units can be assembled together to form the item of furniture. The provision of the modular units for transport ensures that more efficient and cost effective transport procedures can be used thereby reducing the cost of transport to the manufacturer, improving the speed of delivery and the efficient receipt of the furniture in a manner which can be easily assembled at the point of use.

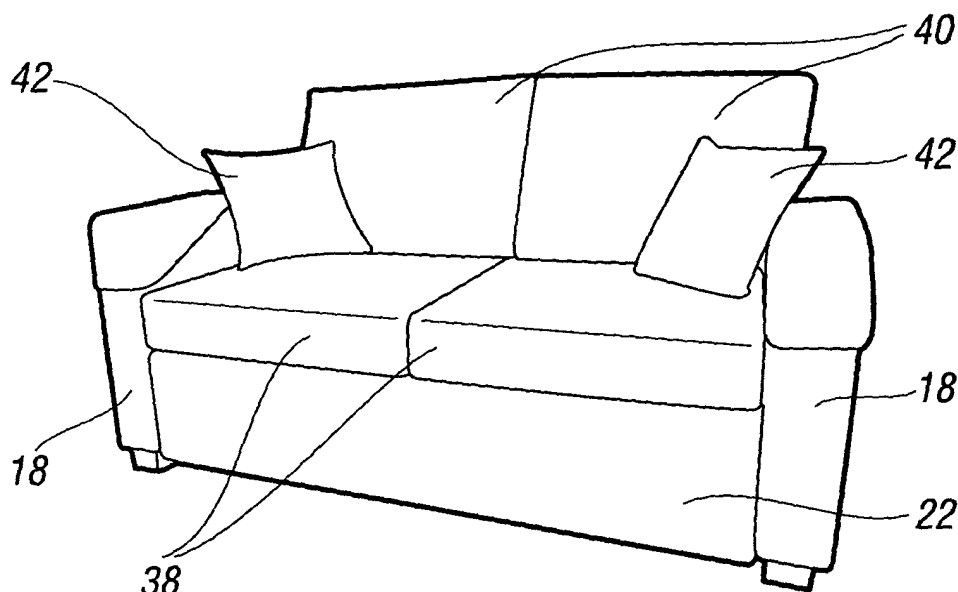


FIG. 5D

Description

[0001] The invention to which this application relates is to improvements to an item of upholstered furniture of the type such as, for example, a chair, double or multi-seated sofa or sofa bed.

[0002] A conventional chair, sofa or sofa bed, is typically manufactured from a frame, which is upholstered in a material such as cloth, fabric, leather or the like (hereby referred to by the general reference "material"). This manufacture and assembly occurs at a factory unit and then the completed products are transported, along with a number of the units, to consumers' premises and/or retail outlets in a common geographical area as a vehicle load, by road transport. For large volumes a single goods trailer can be loaded to capacity with said chairs, sofas or sofa beds for delivery to a particular geographical area with the manufacturer waiting until they have sufficient orders for units to fill the trailer to justify the economic cost of sending the trailer to that area. This waiting period can result in delays of days or weeks in the delivery of the items, firstly, because of the time taken to accumulate orders for a given geographical area and secondly, because a vehicle will usually have to visit several locations, which can mean that the vehicle's journey can last for more than one day.

[0003] For relatively smaller volumes the chairs, sofa or sofa bed can be placed into a goods trailer along with goods from other manufacturers going to the same or similar destinations and when a sufficient load size is reached, the transport occurs. However, again, extensive delays can occur for the same reasons as indicated above in that the logistical organisation and problems which exist are significant.

[0004] This means that suppliers are prescriptive with delivery dates to consumers. In other words the supplier nominates the date then seeks the consumers' approval. If the consumer doesn't approve then the supplier endeavours to coerce such approval by saying that they might not be delivering to that area for another, say, four weeks.

[0005] The problem with conventional chairs, sofas and sofa beds is that due to their nature, the same are relatively bulky and are therefore relatively expensive to transport. This means that in addition to the logistical problems, the price of the sofas and sofa beds can be adversely affected by the cost of transport and in particular with respect to faster transport options such as an overnight delivery service. Such services are nowadays provided by many haulage companies which specialise in delivering bulky items and which does not rely upon the accumulating of sufficient orders to fill an entire wagon with chairs/sofas/sofa beds destined for a particular geographical area. This would reduce delays and provide a better service to the retailer and or consumer.

[0006] However due to the size of conventional sofa units, this option is precluded by the very high cost of the option due to the need to transport a bulky item of

furniture as a single unit.

[0007] A yet further problem with respect to transport can be experienced by the consumer when they purchase a conventional item of furniture from a retail outlet or a manufacturer. The consumer then has the problem of getting the item back to their premises and at the present time they have limited options. They can either hire or borrow a trailer, van or roof rack which is large enough to accommodate the item of furniture or they have to pay for delivery by the supplier. This therefore can add cost to the purchase and can also be frustrating and difficult to arrange for the consumer.

[0008] A further problem which is experienced by the consumer who receives the item of furniture such as a chair, sofa or sofa bed is actually getting the item of furniture into their premises in the required location without causing damage to the item, to the premises and/or needing to remove fittings such as doors windows or the like.

[0009] The aim of the present invention is to allow an item of upholstered furniture such as a chair, sofa or sofa bed to be constructed in a manner which allows the quality of the same to be maintained while allowing the transport of the same in a more economical and prompt manner. A further aim is to ensure that the chair, and/or sofa and/or sofa can be transported more easily upon purchase from a retail outlet or a manufacturer and, upon reaching the premises in which the same is to be used can be located in position in the premises without damage and allows the same to be placed in locations which may not be accessible to conventional sofas or sofa beds.

[0010] In a first aspect of the invention there is provided an item of upholstered furniture, said item formed in a modular manner such that at the location of manufacture, the required number of modular units for the item are produced and formed and are available for transport to, and assembly into the item of furniture at, a location of use of the item and wherein, once assembled, the assembly means used to join together the modular units into the item of furniture are hidden from external view at least on the top and side walls of the item when in use.

[0011] Typically, all of the assembly means are positioned on and/or accessed from faces of the modular unit which when the item is formed are positioned inwardly of the item of furniture.

[0012] Preferably the assembly means are completely hidden from external viewing once the item is assembled.

[0013] In one embodiment, the assembly means are positioned in internal cavities of the item and access to the cavities within the unit in which the assembly means are provided, is via a flap of material, said flap of material movable to an open position to allow access and, once the assembly means are engaged, the material can be moved to a closed position whereupon the flap is retained in that position. In one embodiment, the flap of material is retained in position by hook and loop fasten-

ing means.

[0014] In one embodiment, a series of assembly means are provided, in one embodiment the assembly means include an aperture which is threaded for the reception of a threaded bolt. Typically a series of said assembly means are spaced at suitable locations on the modular units to allow the joining together of the modular units at the point of use. In one embodiment the assembly means are in the form of a series of blind fittings such as, for example, but not limited to, a rivet T-nut for the reception of a threaded bolt.

[0015] In one embodiment, each of the modular units is formed of a frame made from a suitable material such as soft or hard woods, board, chipboard, MDF, OSB or plywood. The frame is in turn upholstered at required locations in fabric, leather, lining cloth, interliner or whatever appropriate material, or combinations of whichever materials are appropriate.

[0016] In one embodiment, when the item of furniture is a sofa bed, the folding bed mechanism is provided as a modular unit for transport and can be attached to the remainder of the modular units for the item upon assembly.

[0017] When the item of furniture is a sofa, and of the same design as the sofa bed, the item of furniture is provided with a replacement modular unit in the form of a frame which extends between the arms of the sofa and between the back and front of the sofa in a similar manner and position to replace the sofa bed mechanism modular unit.

[0018] In one embodiment, the modular units for the item include left and right hand arm units, a back unit, a front border unit and a seat platform unit. In one embodiment the seat platform unit is the sofa bed mechanism or in an alternative embodiment the seat platform unit is the frame which extends between the arms and between the back and the front border units.

[0019] In one embodiment a brace is provided to be fitted under the seat platform unit to reduce possible flexing of the seat unit.

[0020] Typically, the front border, the seat platform and back modular units are each attached at their opposing ends to the left and right hand arm units respectively to assemble the item of furniture.

[0021] In addition to the modular units, additional items such as any or any combination of seat cushions, back cushions, scatter cushions, arm caps, glides, feet assembly tools, assembly instructions and the like are provided as separate items such that, for transport, these items and the modular units can be transported separately and not as an integral chair/sofa/sofa bed. This allows cheaper overnight transport delivery costs of the item such as the units for one chair or one sofa or one sofa bed to anywhere in the UK or even abroad by the aforementioned hauliers who specialise in overnight delivering of reasonably sized parcels. Additionally, more prompt delivery from the time of order and reduced assembly costs of the chair/sofa/sofa bed in the

manufacturing facility are achieved.

[0022] In a further aspect of the invention there is provided

[0023] The inventor has realised that by manufacture of modular units, whereby each modular unit when packaged would constitute a reasonably sized parcel, then the units for the item of furniture can be transported in a format at a cost which is commercially viable by any one of the many haulage companies which nowadays offer overnight delivery services for reasonably sized parcels. The modular units can then be assembled into the item at the place of the intended use of the item.

[0024] A major advantage of being able to despatch modular furniture using overnight delivery services is that once the ordered item has been manufactured the consumer can nominate their preferred delivery date and the supplier can action this by simply despatching on the prior day.

[0025] This is undoubtedly a major plus point for the consumer and allows the supplier to achieve service levels hitherto unachievable. The current invention allows this to be achieved as the modular units are of an acceptable size for transport using these services.

[0026] Specific embodiments of the invention are now described with reference to the accompanying drawings:-

Figure 1 illustrates a back module for an item of furniture in accordance with an embodiment of the invention;

Figure 2 illustrates a seat platform for use in conjunction with the module of Figure 1;

Figure 3 illustrates one of the arm module units for use in conjunction with Figures 1 and 2;

Figure 4 illustrates a front border modular unit for use in conjunction with the units of Figures 1 to 3; and

Figures 5a - d illustrate the assembly of the units of Figures 1 to 4 to form the finished item.

[0027] Referring firstly to Figures 1 to 4, there are illustrated the required modular units for the construction and assembly, at the place for use, of an item of furniture which in this case is a sofa. It should be appreciated that two of the modular arm units of Figure 3 will be provided, one for each end of the sofa. The modular units comprise a back unit 2 as shown in Figure 1, said back unit comprising a frame of suitable material or materials selected from, for example, particle board, chipboard, plywood, MDF, OSB and/or soft and hard woods. It is found in this particular example, that plywood material has the strength and size characteristics which are beneficial for manufacture of the components in which the locating apertures are drilled. The back unit is formed having an

angled upper portion 4 which serves as a backrest of the sofa and a lower portion 6 in which assembly means 8, 10 are provided in the form of apertures through which threaded bolts can be passed in the direction indicated by arrow 12. Typically, the unit is upholstered in fabric or leather, with that part of the unit which is to be exposed externally, when the chair/sofa/sofa bed is assembled, typically being upholstered in a higher grade of material than the remainder of the unit.

[0028] Figure 2 illustrates the seat platform modular unit 14 which, in this embodiment, is comprised of a rectangular frame of, but not limited to, plywood, chipboard particle board, MDF, OSB, softwood or hardwood material with assembly means in the form of apertures 16 provided at each end thereof, again for the subsequent passage of threaded bolts therethrough in the direction indicated by arrows 20. It should be noted that if a sofa bed is to be subsequently assembled rather than a sofa, then the seat platform unit 14 will not be provided and is replaced by a folding bed mechanism modular unit in a folded position which will be attached, perhaps using different assembly apertures, but in the same manner, as will now be described.

[0029] Figure 4 illustrates a front border unit 22 which is in the form of a rectangular frame, upholstered in a suitable material and again has assembly means apertures 24 at each end thereof.

[0030] Figure 3 illustrates one of the arm modular units 18 which has an outer face 26, top face 28, front face 30 and inner face 32. The arm unit is formed of a plywood/chipboard/particle board/MDF/OSB/softwood/hardwood frame upholstered with fabric and/or leather and on the inner face 32, a range of assembly means 34 is provided at selected locations. In one embodiment, only the assembly means for a particular item of furniture will be formed, or alternatively, a number of assembly means are provided, not all of which may be required to be used for a particular furniture item assembly so that, for example, assembly means can be provided for the assembly of a folding bed mechanism, and apertures can be provided for a seat platform unit 14 with the use of the seat platform unit or folding bed mechanism unit dependent on whether the item of furniture is to be a sofa or a sofa bed. In any case, it is preferred that the assembly means include a blind fixing system such as but not limited to a rivet T-nut. This allows threaded aperture to be provided into which bolts, having passed through an aperture in the back unit, seat platform or front border unit, can be tightened to join the units together. It will therefore be appreciated that in each case the attachment of the units to the arm units at each end, is achieved from "inside" a cavity in one of the units the sofa such that the same are not viewable externally, once the sofa has been assembled.

[0031] Figures 5a to d illustrate the assembly of an item of furniture using the components of Figures 1 to 4 and in accordance with the invention. Each of the modular units is constructed and upholstered in the factory.

The modular units are then packaged separately, or in certain combinations of units and are transported either direct to the consumers' premises or to a retail outlet. When the modular units, which will also include items such as cushions, scatters, arm caps, feet and the like, reach their final destination the recipient can take the relatively simple steps of assembling the item of furniture.

[0032] Figure 5a illustrates two arm units 18 and a back unit 2 in position awaiting assembly.

[0033] With reference now to all of the drawings, to form the item of furniture once delivered to the premises for use the back unit is moved to a substantially vertical position, as shown in Figure 5b, and assembly bolts are inserted through the apertures 8 and 10 at each end of the back unit, by lifting a flap or portion of material 32 at the bottom portion of the back unit allowing access to be gained to the cavity within the frame. Threaded bolts are then inserted to pass through the apertures 8, 10, in the direction of arrows 12 in Figure 1, so that the bolts will enter the threaded apertures 34 of Figure 3 at the rear of the arm unit internal face.

[0034] With these bolts inserted and tightened in position, the back unit is held in position with the arm modular units as illustrated in Figure 5b and then the seat platform unit 14 of Figure 2 can be moved into position. In this case as the seat platform unit has no material on the underside of the same access can be directly gained into the cavity in that unit frame for bolts to be passed through the aperture 16 in the direction of arrows 20 in Figure 2 with the threaded bolts being received in the apertures 34 suitably positioned on the internal face 32 of each of the arm units. Thus, the back unit and seat platform unit are now located with respect to the arms. Figure 5c illustrates how the front border unit 22 can be moved into position and retained by passing threaded bolts from the inside cavity of the unit 22, again by removing a flap of fabric on the inner side, and into the threaded apertures 34". In addition items such as seat cushions 38, back cushions 40 and scatter cushions 42 can be provided so the sofa is completely assembled. In each case once the appropriate assembly means bolts have been inserted any flaps of material can be moved to a closed position so as to mask the cavity and the flaps can then be retained in that position.

[0035] The ability to provide the chair, sofa or sofa bed in a modular form rather than the conventional integral form means that several advantages are obtained.

[0036] Firstly the manufacturing stages of the item at the factory unit are reduced thereby saving time of construction at the factory for each sofa.

[0037] Secondly, the provision of the chair, sofa or sofa bed in a kit of modular units considerably improves the transport opportunities without affecting the quality of the product. For example, the transport of the chair, sofa or sofa bed by an overnight delivery service is possible as each unit is transported as an entity rather than the whole item as one unit and the cost is significantly

reduced thereby making the use of this form of delivery service to be a commercial reality for manufacturers. Furthermore the use of overnight delivery services such as many hauliers provide nowadays for reasonably sized parcels permits the economical and prompt delivering of single chairs/sofas/sofa beds in a modular format to anywhere in the UK or even abroad. This is in stark contrast to the current means of distributing conventional chairs/sofas/sofa beds where distribution cannot take place until a sufficient number of chairs/sofas/sofa beds is required in a given geographical area to make sending a wagon to that area commercially viable. This, in turn, means that the manufacturer can provide the delivery of single chairs, sofas or sofa beds extremely quickly after the order has been made and makes the possibility of direct mail or internet ordering of the goods in question by consumers economically viable.

[0038] Thirdly, the provision of the items of upholstered furniture in a kit form means that the same can be provided for storage at a retail outlet and then provided to consumers for transport to home in the kit form in their own cars without the consumer necessarily having to pay for transport by third parties or arrange and pay for the hire of vehicles or trailers.

[0039] Fourthly a yet further advantage is that as the chairs, sofas or sofa beds can be provided in a kit form the same can be transported into areas of a premise which may not be accessible for a conventional upholstered item, such as for example into attic spaces. Indeed a further advantage is that the modular units can be manoeuvred and/or delivered by potentially one person rather than the two persons who are normally required to lift and carry conventional upholstered items of furniture. Furthermore due to the assembly as described herein, when assembled the onlooker cannot view the assembly means as they are all hidden from view either by material, by other components of the item or because they are located on the underside of the item.

Claims

1. An item of upholstered furniture, said item formed in a modular manner such that the location of manufacture, the required number of modular units for the item are produced and formed and are available for transport to and assembly into the item of furniture at a location of use of the item and wherein, once assembled, the assembly means used to join together the modular units into the item of furniture are hidden from external view at least on the top and side walls of the item when in use.
2. An item according to claim 1 wherein access to engage the assembly means is from faces positioned inwardly of the item of furniture once formed.
3. An item according to claim 1 wherein access to engage the assembly means is via an internal cavity within one of the modular units being jointed together.
4. An item according to claim 3 wherein access is gained via a flap of material movable to an open position and, once the assembly means are engaged, the material is moved to a closed position whereupon the flap is retained in that position.
5. An item according to claim 1 wherein the assembly means include an aperture in a first modular unit which is threaded for the reception of a threaded bolt which passes through an aperture in a second modular unit to join the same together, and a series of said assembly means are spaced at suitable locations on the modular units to allow the assembly together at the point of use.
6. An item according to claim 5 wherein the assembly means threaded apertures are in the form of a series of lined fittings for the reception of a threaded bolt.
7. An item according to claim 1 wherein each of the modular units comprises a frame and at least one face of the said frame is upholstered.
8. An item according to claim 1 wherein the item of furniture is a sofa bed and the bed mechanism is provided as a unit during transport which can be attached to the remainder of the modular units upon assembly.
9. An item according to claim 1 wherein the item of furniture is a sofa and includes a modular unit frame which extends between the arms and between the back and front of the sofa when formed.
10. An item according to claim 1 wherein the modular units include left and right hand arm units, a back unit, a front border unit and a seat platform unit.
11. An item according to claim 10 wherein the seat platform unit is a sofa bed mechanism.
12. An item according to any of the preceding claims wherein additional items for use in conjunction with the item of furniture can be transported with but separately to the modular units.
13. A method of manufacturing an item of upholstered furniture, said method comprising the steps of identifying a series of modular units which are required to form the item, manufacturing the frames and upholstering the same as required for each of the modular units at the location of manufacture, and where-

in the modular units are transported to a location for use or retail display and joining together the modular units to form the item via assembly means which, when the item is formed, are hidden from view.

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- 14.** A method according to claim 13 wherein additional items are transported for use with the item when formed.

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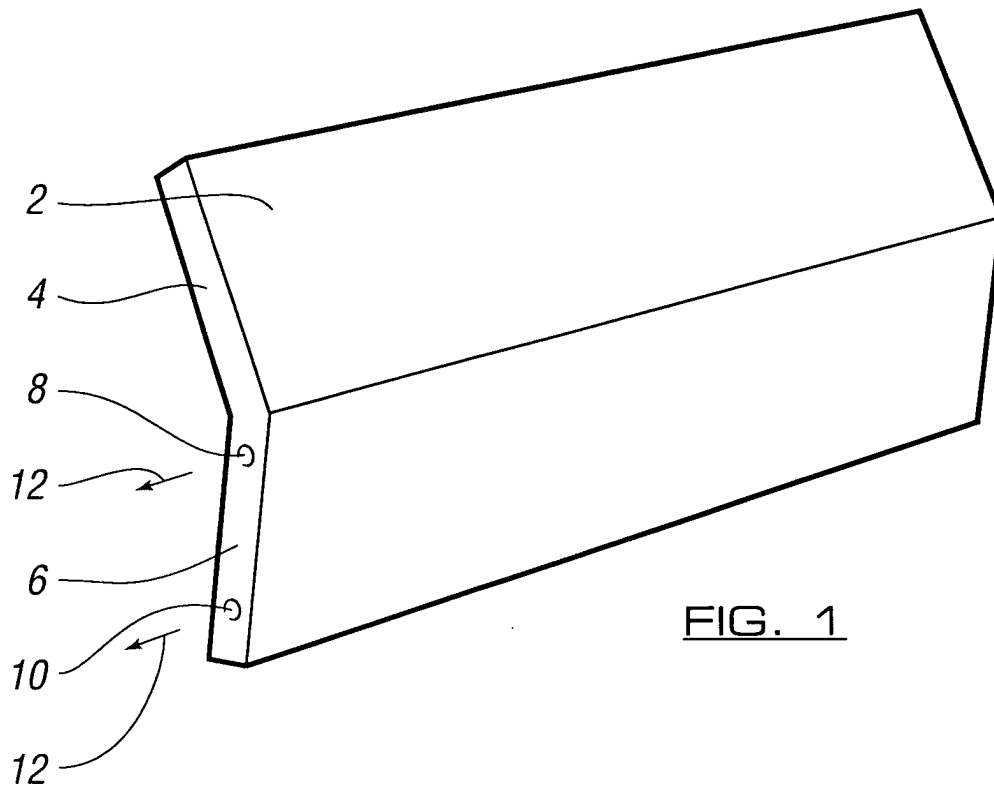


FIG. 1

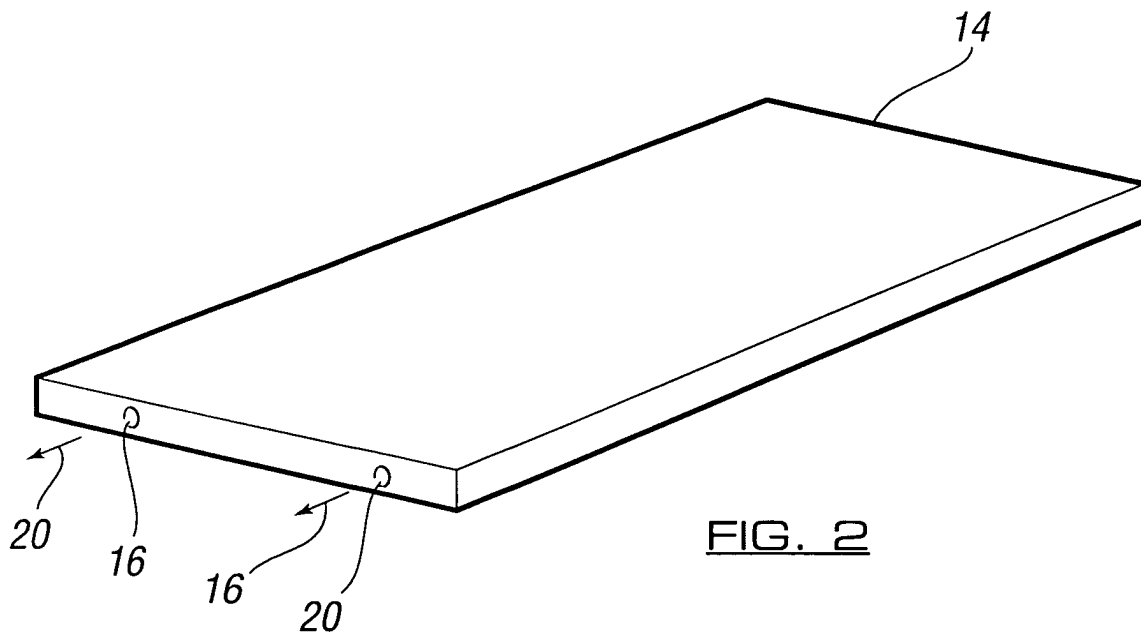


FIG. 2

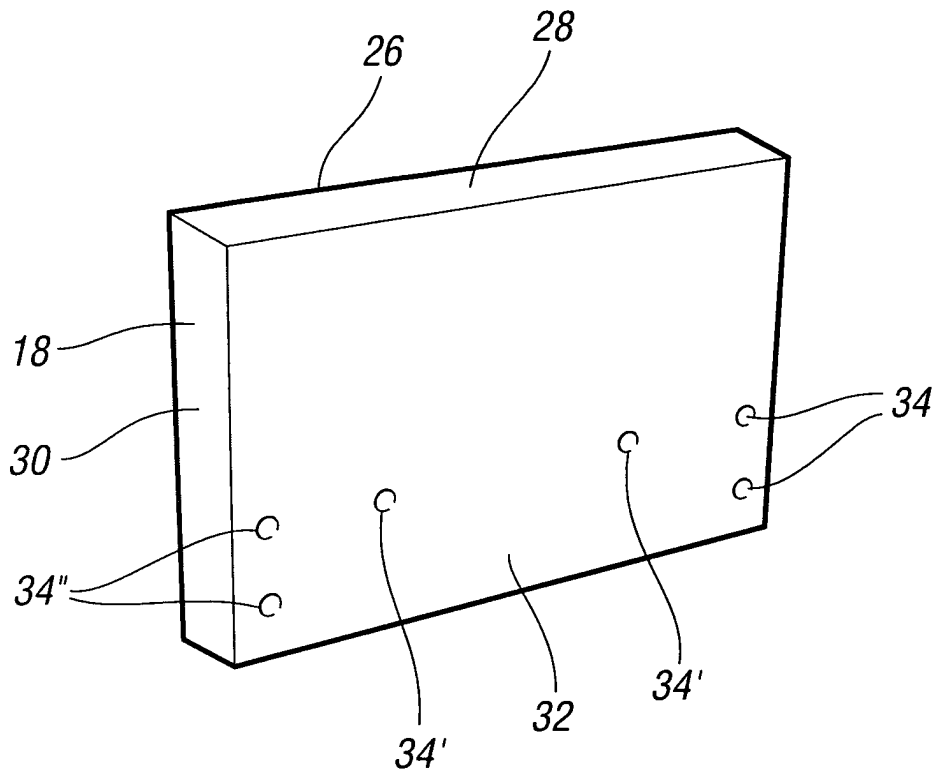


FIG. 3

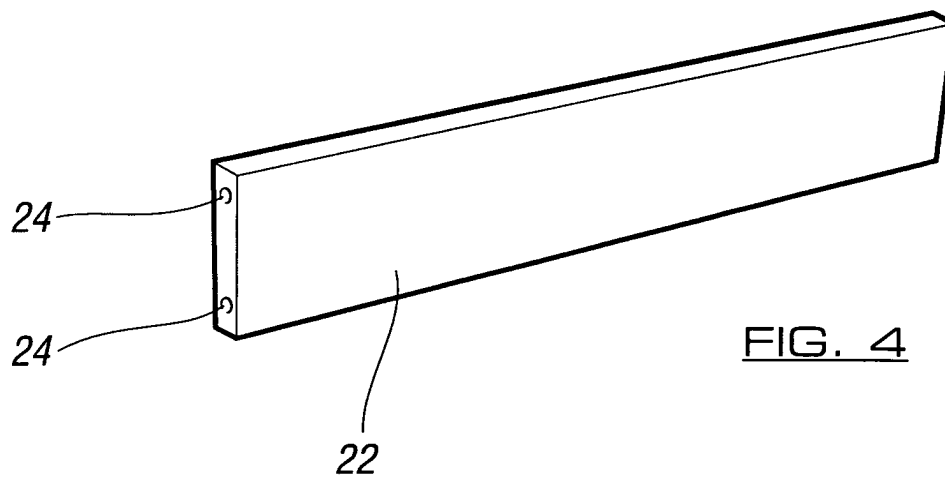
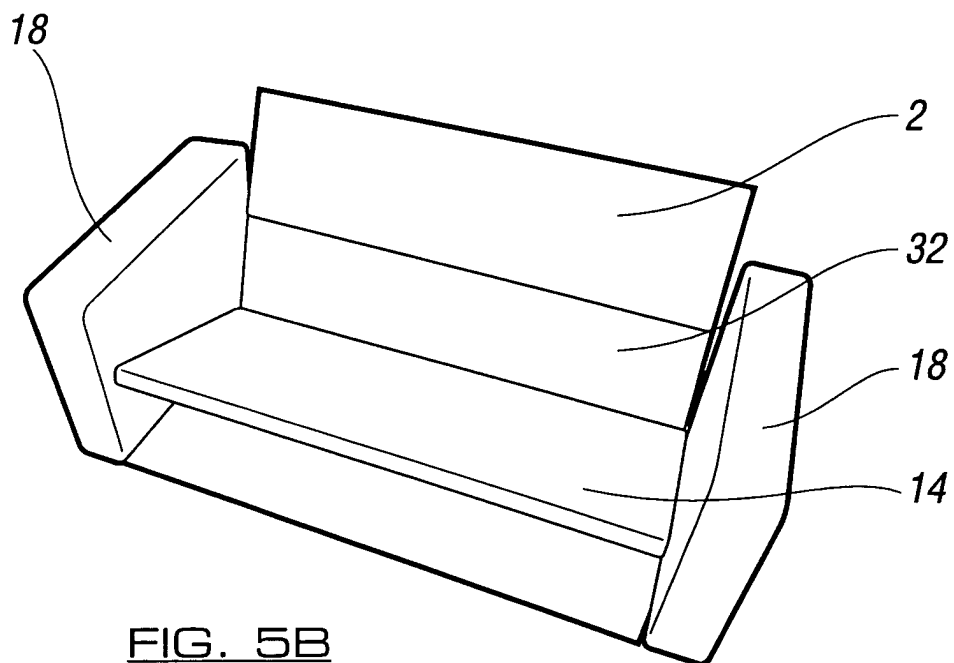
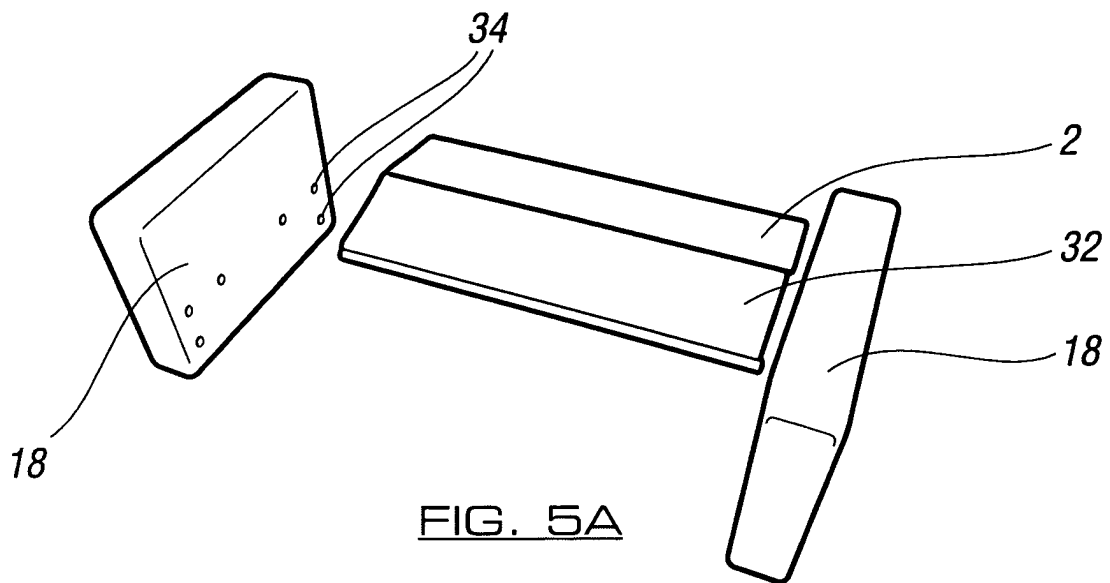


FIG. 4



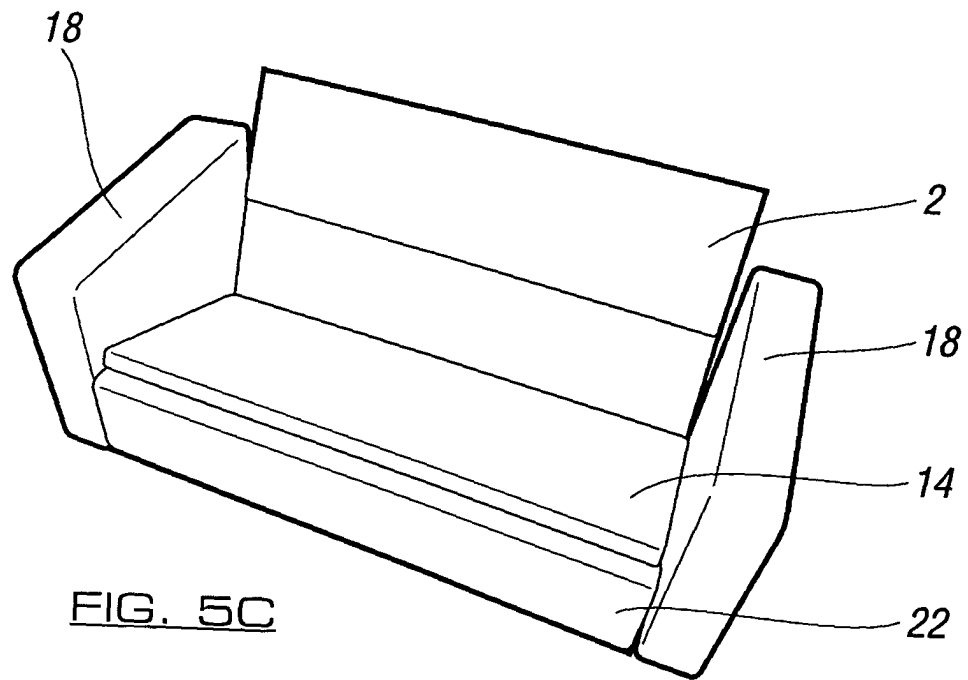


FIG. 5C

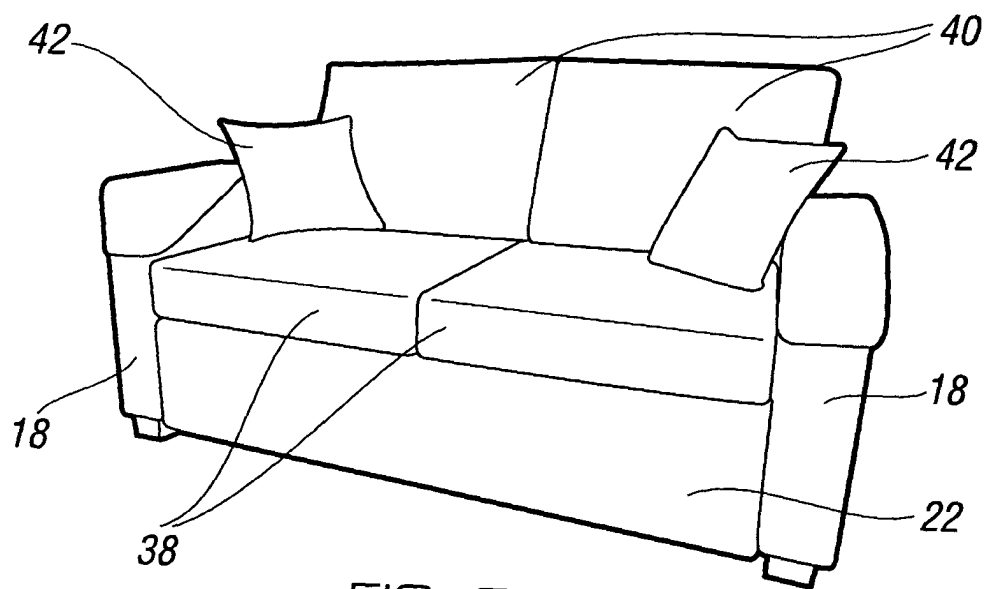


FIG. 5D



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 04 02 0954

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	GB 2 046 088 A (DRUCE & CO LTD) 12 November 1980 (1980-11-12) * abstract * * page 1, line 100 - page 2, line 3 * -----	1-3,5-14	A47C23/06
X	US 5 890 767 A (CHANG YUAN-FENG) 6 April 1999 (1999-04-06) * abstract * * column 1, line 28 - column 1, line 47; figures *	1-3, 5-10, 12-14	
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X	US 3 973 800 A (KOGAN ALLAN SHELDON) 10 August 1976 (1976-08-10) * abstract; figures *	1	
X	GB 2 040 159 A (ALSTONS COLCHESTER LTD) 28 August 1980 (1980-08-28) * abstract; figures 1,2 * -----	1	TECHNICAL FIELDS SEARCHED (Int.Cl.7) A47C
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 30 November 2004	Examiner MacCormick, D
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03 82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 04 02 0954

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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30-11-2004

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