(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 July 2012 (19.07.2012)

WIPO | PCT

(10) International Publication Number
WO 2012/095454 A1

(51) International Patent Classification:
A47B 47/04 (2006.01) *F16B 12/24* (2006.01)
A47B 87/00 (2006.01) *F16B 12/26* (2006.01)

(21) International Application Number:
PCT/EP2012/050370

(22) International Filing Date:
11 January 2012 (11.01.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
1100622.8 14 January 2011 (14.01.2011) GB
1112225.6 15 July 2011 (15.07.2011) GB

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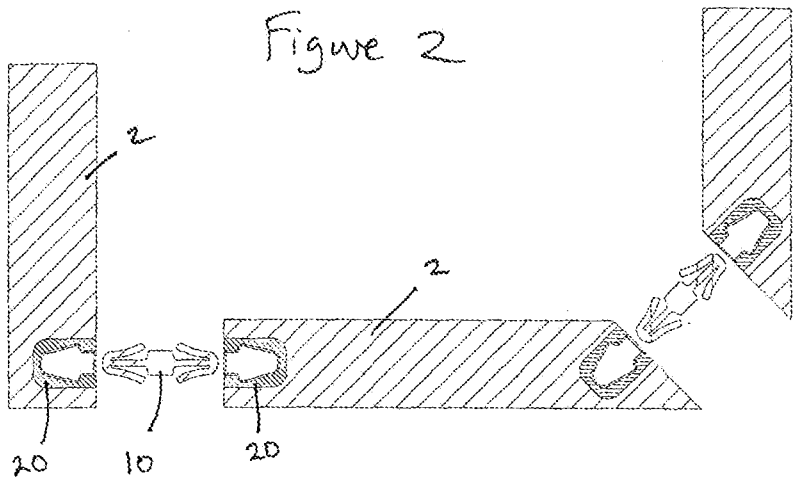
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report (Art. 21(3))*

(54) **Title**: CONNECTOR ASSEMBLY FOR AN ARTICLE OF FURNITURE



(57) **Abstract**: A connector assembly for connecting the free ends of the adjacent panels of a ready to assemble article of furniture together when assembled, said connector assembly comprising a male connector having opposite ends insertable into respective opposing receiving apertures provided in adjacent ends of the panels, each end of said male connector being provided with retaining means to retain the ends of the male connectors in said respective apertures and a ready to assemble article of furniture comprising a plurality of substantially rigid panels attached together end to end, the ends of the panels being bevelled or otherwise shaped such that the panels can be folded to bring said ends into abutting relationship to define a polygonal article, wherein said panels are attached together by means of a flexible sheet material extending between the panels.

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Connector Assembly for an Article of Furniture

This invention relates to a connector assembly for an article of furniture and a ready to assemble article of furniture, such as a storage unit, preferably utilising such connector assembly, that can be assembled without the use of tools.

Ready to assemble furniture has been known in the furniture industry for many years. This type of furniture construction provides a number of advantages to the manufacturer, to the retailer, and to the customer. For example, as to the manufacturer, there are significant cost savings in manufacturing unassembled furniture over conventional fully assembled furniture. Ready to assemble furniture can be supplied flat packed, thus requiring less storage space for both the manufacturer and the retailer. The customer ultimately benefits the lower cost of ready to assemble furniture as opposed to pre-assembled furniture and the ease of transport of flat packed ready to assemble furniture.

Unlike conventional fully or pre-assembled furniture, ready to assemble furniture, as the name implies, requires assembly by the customer. This furniture often requires the use of tools by the customer to enable the manipulation of specialized fittings to assemble and secure the various components of the furniture together. The customers may not have the necessary tools or skill level to assemble the furniture properly. The failure to do so may result in the furniture being unstable, and potentially collapsing during use. It is therefore be desirable to provide ready to assemble furniture which can be assembled without the need for tools in a simple and efficient manner, while ensuring the integrity of the resulting assembled furniture.

According to a first aspect of the present invention there is provided a connector assembly for connecting the free ends of adjacent panels of a ready to assemble article of furniture together when assembled, said connector assembly comprising a male connector having opposite ends insertable into respective opposing receiving apertures provided in said adjacent ends of the panels, each end of said male connector being provided with retaining means to retain the ends of the male connectors in said respective apertures.

Preferably said retaining means comprises at least one resilient retaining member adapted to engage a shoulder within the respective receiving aperture to retain the male connector therein.

Said receiving aperture of each adjacent end of the panels may comprise an elongate channel, said male connector comprises an elongate body having a portion adapted to be inserted into said elongate channel defined by each receiving aperture, said at least one resilient retaining member defining a side of said elongate body.

Said male connector may comprise a base region and a pair of distal end regions on either side of the base region, said at least one retaining member of each end of the male connector comprising

an outwardly flared resilient wing extending from said respective distal end region towards said base region, a distal end of said resilient wing being adapted to engage a shoulder within the respective receiving aperture into which the respective end of the male connector is inserted to retain said end of the male connector in said receiving aperture.

In one embodiment the retaining means of at least one end of said male connector comprises a pair of outwardly flared symmetrically arranged resilient wings provided on either side of a central rib or web such that said wings define a substantially arrow head shaped cross section, distal ends of said resilient wings being adapted to engage respective opposing shoulders within the respective receiving aperture into which the respective end of the male connector is inserted to retain said end of the male connector in said receiving aperture.

In an alternative embodiment the retaining means of at least one end of said male connector comprises a resilient wing provided on a first side of said at least one end of the male connector, a second, opposite side of said at least one end of the male connector defining a curved outer face extending between said base and distal end region of said at least one end of the male connector. Preferably said resilient wing extends from an outer end of said second side of the male connector.

In a preferred embodiment the or each resilient wing is curved outwardly between said respective distal end region and said base region of the respective end of the male connector.

Said receiving apertures may be formed in respective female connector members located in respective recesses in the free ends of said adjacent panels. Barbs, hooks, teeth or similar retaining formations may be formed on an outer surface of each of said female connector members for retaining said female connector member within its respective receiving recess.

In one embodiment at least one end of said male connector comprises a curved side having a radius substantially equal to the distance of said curved side from an adjacent corner of the article of furniture defined by adjacent folded panels such that the male connector may be inserted into the receiving apertures of said abutting ends of adjacent panels.

In an alternative embodiment at least one end of said male connector comprises a side arranged substantially tangentially to a curve having a radius substantially equal to the distance of said curved face from an adjacent corner of the article of furniture defined by adjacent folded panels such that the male connector may be inserted into the receiving apertures of said abutting ends of adjacent panels.

An opening may be provided in a side region of at least one of said receiving apertures, a tool being insertable into said opening to engage said retaining member of the respective end of the male connector member located therein in order to release the retaining means, permitting removal of the male connector from the receiving aperture. Said opening may extend substantially perpendicular to

an outer surface of said retaining member.

According to a further aspect of the present invention there is provided a ready to assemble article of furniture comprising a plurality of substantially rigid panels attached together end to end, the ends of the panels being bevelled or otherwise shaped such that the panels can be folded to bring said ends into abutting relationship to define a polygonal article.

Said polygonal article may comprise a storage unit for storing articles within a hollow space defined by said assembled panels.

Preferably said panels are attached together by means of a flexible sheet material extending between the panels. Preferably said flexible sheet material comprises webbing, tape, fabric or similar thin flexible sheet like material. Said flexible sheet material may comprise a single elongate sheet of material attached to the outer faces of the panels to extend between the panels to define an outer surface of the assembled storage unit. Said flexible sheet material may be removable from the panels to allow said material to be removed once the panels have been assembled to define said storage unit.

Alternatively the panels may be connected together by hinge means, such as two part mechanical hinges or integrally formed one part live hinges.

Preferably a first connector assembly is provided for connecting the free ends of the panels together when assembled. Further connector assembly may further be provided between the abutting ends of the panels to secure the panels in their folded assembled position.

Preferably said first and/or further connector assemblies are in accordance with the first embodiment of the present invention described above.

A bevelled slot or channel may be provided along one side of each panel for receiving a correspondingly bevelled rear panel of the assembled article of furniture, the bevelled shape of the slot enabling the rear panel to be inserted and the panels assembled so that the rear face of the rear panel lies flush with the rear sides of the panels. Such arrangement avoids the formation of a gap between a rear panel of an assembled storage unit and the rear edges of the sides of the unit to retain the rear panel within its receiving slot by bevelling the edges of the rear panel and correspondingly bevelling the receiving slots in the side panels to enable the rear face of the rear panel to lie flush with the rear edges of the side panels of the unit.

Preferably a plurality of said assembled polygonal articles may be stacked or otherwise placed together to define a larger article of furniture. Connection means may be provided for connecting said article together. In one embodiment said connection means comprises a connector strip having a planar front face and projections formed on a rear face thereof to be received in cooperating

formations formed in a front side of adjacent panels of adjacent articles. Preferably said cooperating formations of each panel comprises an elongate channel or groove formed in said front side of each panel, each connector strip having a pair of spaced apart parallel elongate ribs extending from a rear face thereof, a first of said pair of ribs being received in a channel in a front side of a panel of a first article and a second of said pair of ribs being received in a channel in a front side of a panel of a second article abutting said panel of said first article to join said first and second articles together.

An embodiment of the present invention will now be described by way of example only, with reference to the accompanying drawings, in which:-

Figure 1 is a detailed sectional view of an article of furniture comprising a plurality of panels connected together by means of a connector assembly in accordance with an embodiment of the present invention;

Figure 2 is an exploded view of the panels of Figure 1;

Figure 3 is an exploded perspective view of a portion of an article of furniture incorporating the connector assembly of Figure 1;

Figure 4 is a detailed exploded view of the connector assembly of Figure 1;

Figure 5 is a further exploded view of an article of furniture incorporating the connector assembly of Figure 1;

Figure 6 is an isometric projection of the male connector member of the connector assembly of Figure 1;

Figure 7 is a sectional view of the connector assembly of Figure 1;

Figure 8 is a sectional view of the connector assembly of Figure 1 in an assembled configuration;

Figure 9 is a detailed sectional view of an article of furniture comprising a plurality of panels connected together by means of a connector assembly in accordance with a further embodiment of the present invention;

Figure 10 is an exploded sectional view of the article of furniture of Figure 9;

Figure 11 is a detailed sectional view of the connector assembly of Figure 9 in an assembled configuration;

Figure 12 is a detailed sectional view of the connector assembly of Figure 9 in an exploded configuration;

Figure 13 is an isometric projection of the male connector member of the connector assembly of Figure 9;

Figure 14 is perspective view of a modified version of the connector assembly of Figure 9 showing a release tool;

Figure 15 is a detailed sectional view of the connector assembly and release tool of Figure 14;

Figure 16 is a perspective view of a female connector member of a connector assembly in accordance with an embodiment of the present invention;

Figure 17 is a perspective view of a modified female connector member of a connector assembly in accordance with an embodiment of the present invention;

Figure 18 is an exploded view of a further modified female connector member of a connector assembly in accordance with an embodiment of the present invention;

Figure 19 is a transverse sectional view through the female connector member of Figure 18;

Figure 20 is a longitudinal sectional view through the female connector member of Figure 19;

Figure 21 is a transverse sectional view through a female connector member of the connector assembly of Figure 1;

Figure 22 is a transverse sectional view through a female connector member of the connector assembly of Figure 9;

Figure 23 is a transverse sectional view of the female connector member of Figure 17;

Figure 24 is a detailed view of a retaining barb of the connector assembly of Figure 17;

Figure 25 is a detailed perspective view of a connector assembly for interconnecting a plurality of storage units in accordance with an embodiment of the present invention;

Figure 26 is a sectional end view showing a connector assembly and base of the assembly of Figure 25;

Figure 27 is a sectional view of a connector assembly for interconnecting a plurality of storage units in accordance with an embodiment of the present invention;

Figure 28 is a exploded view of a female connector member of the connector assembly of Figure 27;

Figure 29 is an exploded view of a male connector member of the connector assembly of Figure 27;

Figure 30 is an isometric projection of the male connector member of the connector assembly of Figure 27;

Figure 31 is an isometric projection of the female connector member of the connector assembly of Figure 27;

Figure 32 shows a ready to assemble storage unit in accordance with an embodiment of the present invention in a disassembled configuration;

Figure 33 shows the storage unit of Figure 32 in an assembled configuration;

Figure 34 shows an assembly comprising a plurality of the storage units of Figure 32 assembled to comprise an article of furniture;

Figure 35 shows an assembly comprising a plurality of the storage units in accordance with an alternative embodiment of the invention assembled to comprise an article of furniture;

Figures 36 to 8 are perspective views of articles of furniture in accordance with further alternative embodiments of the present invention in their assembled configurations;

A connector assembly for connecting the free ends of the adjacent panels 2 of a ready to assemble article of furniture together when assembled in accordance with a first embodiment of the present invention is illustrated in Figures 1 to 8.

The connector assembly comprises a male connector member 10 comprising an elongate body having a common central base region 12, first and second central ribs 14 extending outwardly from the base region 14 on either side thereof, a distal end of each central rib 14 supporting a respective pair of outwardly flared symmetrically arranged resilient wings 16,18 on either side thereof, said wings 16,18 extending towards the base region 12, each pair of resilient wings 16,18 having a substantially arrow head shaped cross section extending on either side of the base region 14. Each wing 16,18 is curved in an outwards direction away from the respective central rib 14.

A female connector member 20 is inserted into a respective receiving recess in adjacent abutting faces of adjacent panels 2 to be connected together, each female connector member 20 having a

channel having a base 22, a pair of diverging sides 24,26 extending from the base 24 and a narrowed neck region 26, a pair of opposing shoulders 30,32 being defined between said diverging sides 24,26 and narrow neck region 26.

Each end of the male connector member 10, more specifically the resilient wings 16,18 thereof, is adapted to be received within a respective female connector member 20, the resilient wings 16,18 being resiliently displaceable towards to the respective central rib 14 to enable the wings 16,18 to pass through the narrowed neck region 28 of the respective female connector member 20, the ends of the resilient wings 16,18 engaging the shoulders 30,32 of the respective female connector member 20 once the male connector member 10 has been inserted therein to retain the male connector member 10 therein.

This arrangement allows the panels 2 of an article of furniture to be fitted together in snap fit manner without the use of tools.

The outward curvature of each resilient wing 16,18 ensures that the connector assembly resists any forces attempting to pull the connector assembly apart, such forces causing the wings 16,18 to bend outwardly, ensuring that the ends of the wings 16,18 remain firmly located behind the respective shoulders 30,32 of the female connector member 20. The curvature provided a resilience to the wings 16,18 such that the ends of the male connector member is effectively sping loaded within the respective female connector members.

A modified connector assembly is illustrated in Figures 9 to 15, wherein the male connector member 40 has a curved outer side wall 42, defining a curved outer side face of the male connector member 40, and a single resilient wing 44 extending from an end of the curved side wall 42 towards a central base region 46 of the male connector member 40.

A corresponding female connector member 50 is provided having a correspondingly shaped channel, having a first side 52 shaped to correspond to the curved side wall 42 of the male connector member 40 and a second side 54 having a shoulder 56 to be engaged by an end of a respective resilient wing 44 of the male connector member 40 to retain the male connector member 40 within the female connector member 50.

Such connector assembly may be used with an article of furniture having panels 2 may be folded to an assembled configuration, wherein the curved side wall 42 of the male connector member 40 enables the male connector member 40 to pass into the receiving channel of the respective female connector member 50 mounted in an end face of a panel 2 as the panels 2 are folded to bring the ends of the panels 2 into abutting contact.

A hole 58 may be provided in a wall of one of the panels to open into a corresponding hole 60 in the second side 54 of the female connector member 50, whereby an elongate tool 62 may be inserted

into the hole 60 to engage the resilient wing 44 of the male connector member 40 to enable the resilient wing 44 to be displaced inwardly to allow the male connector member 40 to be released from the female connector member 50 to permit the storage unit to be collapsed or disassembled, as best shown in Figures 14 and 15.

Figure 16 shows a female connector member 20,50 to be inserted into a corresponding recess formed in a panel 2 to allow a male connector member 10,40 to be secured therein. The female connector member 20,50 may be secured within the recess by means of a suitable adhesive. Grooves or ridges may be formed in the outer sides of the female connector member 20,50 to allow the female connector member 20,50 to bed into the adhesive.

In a modified embodiment, shown in Figure 17, barbs 64 are formed on the outer walls of the female connector member 20,50 to retain the female connector member 20,50 within a corresponding receiving aperture within an end wall of a panel 2.

In a further embodiment, shown in Figures 18 to 20, apertures 66 may be formed through the female connector member 20,50 adjacent either end thereof through which securing screws 68 may be passed to secure the female connector member 20,50 within a corresponding receiving aperture in an end wall of a panel 2.

Figure 21 shows a cross section through a female connector member 20 for receiving the male connector member 10 of Figures 1 to 8, the channel within the female connector member 20 having a substantially arrow head cross section.

Figure 22 shows a cross section through a female connector member 50 for receiving the male connector member 40 of Figures 9 to 15, having a first curved side 52 and a second side 54 having a shoulder 56 for engagement with a respective resilient wing 44 of the male connector member 40.

Figure 23 shows a cross section through a female connector member 20 having retaining barbs 64 formed on the outer sides thereof for retaining the female connector member 20within a corresponding recess in an end wall of a panel 2. Figure 24 is a detailed section view showing one of the barbs 64. As can be seen, the barbs 64 are arranged to permit easy insertion of the female connector member 20 into a receiving aperture within an end wall of a panel 2, while preventing removal of the female connector member 20 therefrom.

In order to secure the assembled units together, elongate connector strips 70 are provided, as shown in Figure 25, each strip 70 having a flat front face 72 and a pair of parallel elongate ridges 74,76 on a rear face thereof, said ridges 74,76 being receivable in a respective corresponding slots 78,80 provided on a front side of each panel so that abutting panels 2 of adjacent storage units 6 can be secured together by locating a connector strip 70 to extend between the abutting panels 2 of the adjacent units 6 such that each of the parallel ridges 74,76 on the connector strip 70 engage a

respective slot 78,80 in the front faces of the abutting panels. The edge face of the front side of each panel 2 adjacent the connector receiving slot 78,80 is recessed so that the front face 72 of the connector strip 70, when the connector strip 70 is attached to the panels 2, lies flush with the front of the assembled units 6 or is slightly recessed with respect to the front of the assembled units 6.

As can be seen from Figure 26, a bevelled slot 82 is formed along a rear side of each panel 2 for receiving a correspondingly bevelled rear panel 4 of the assembled unit 6, the bevelled shape of the slot 82 enabling the rear panel 4 to be inserted and the panels 2 assembled so that the rear face of the rear panel 4 lies flush with the rear sides of the panels 2. Such arrangement avoids the formation of a gap between the rear panel 4 of the assembled storage unit 6 to enable the rear face of the rear panel 4 to lie flush against a surface against which the storage unit 6 may be placed.

As shown in Figure 26, base member may be provided for supporting the units 6. The base member comprises a planar base panel 8 having adjustable support legs 90 mounted on a lower face thereof. A plinth 92 is mounted on a front edge of the base panel 8 to fill the gap between the base panel 8 and the floor. As with the panels 2 forming each modular storage unit 6, a front side of the base panel 8 is provided with one or more elongate slots 94 adjacent its upper face to receive a respective ridge of a connector strip 70 to connect the base panel 8 to a lowermost panel of a storage unit 6 supported thereon. The length of the base panel 8 may be sufficient to support a plurality of storage units 6 in side by side relationship along an upper surface of the base panel 8 of the base member.

Figures 27 to 31 show a connector assembly for linking individual furniture/storage units 6 together comprising a substantially U shaped clip 96 received within apertures provided in the end faces of the rear side of adjacent panels 2 of adjacent units 6 to be connected. The apertures are defined by moulded female connector members 98 which may be received within corresponding mounting recesses/holes in the panels 2.

The legs of the U shaped clip 96 may converge towards one another in order to provide a resilient biasing force to hold the adjacent units 6 together as the legs are displaced to a substantially parallel configuration when the clip 96 is inserted into its receiving apertures 98 in the adjacent units. A recess 100 may be provided adjacent an end of each leg of the clip 96 to receive a projection 102 in the respective female connector member 98 to positively lock each leg of the clip 96 in the respective female connector member 98.

A ready to assemble modular storage unit utilising a connector assembly in accordance with an embodiment of the present invention is illustrated in Figures 32 and 33 with the general reference numeral 6. The storage unit 6 comprises six panels 2a,2b,2c,2d,2e,2f joined end to end by means of a sheet of flexible material, such as a fabric, applied to the faces of the panels 2 defining outer faces of the assembled unit.

Adjacent ends of each panel 2 are bevelled so that the panels 2 can be folded until the bevelled ends abut one another to bring the unit 6 into an assembled configuration, whereby the panels 2 define a hollow hexagonal structure, as shown in Figure 33.

To retain the panels 2 in their assembled configuration, a connector assembly as shown in Figures 9 to 15 may be used to connect adjacent ends of the panel 2 together to secure the panels 2 in an assembled configuration. The curved side walls 42 of the male connector members 40 allow the panels 2 to be folded until the ends of the male connector members 40 are engaged with the respective female connector member 50 as the panels 2 are folded to their assembled configuration.

As shown in Figure 34, a plurality of the assembled hexagonal storage units 6 may be stacked on top of one another to produce a modular storage unit of any desired size, each individual unit comprising a separate storage compartment of the complete assembly. The units may be secured together using the connector assembly shown in Figures 25 and 26 and/or 27 to 31.

The number of panels 2 from which each storage unit 6 is comprised may be varied to vary the shape of the assembled unit, the angle of the bevelled ends of the panels 2 being adjusted accordingly to suit the angle between the panels of the assembled unit. In the embodiment shown in Figure 35, each storage unit 6 is comprised of four panels 2a,2b,2c,2d to define square units when the panels are assembled.

A shown in Figures 36 to 39, different articles of furniture and different shaped modular storage units may be produced by changing the number of panels 2 and the sizes of the panels 2 from which the article is made and by varying the angles of the bevelled ends of the panels. Figure 36 shows an embodiment wherein the article, when in its assembled configuration, defines a plant holder. In the embodiment shown in Figure 37 the article comprises a square storage unit formed from four panels, provided with dividers to define a modular wine rack.

Where the panels are separate from one another prior to assembly the connector assembly of Figures 1 to 8 may be used instead of the connector assembly of Figures 9 to 15 because the male connector members 10 do not then need to accommodate folding of the panels 2.

Figure 38 shows a tall rectangular storage unit formed from four panels. Shelves may be fitted into the storage unit. Figure 39 shows a flatter narrower storage unit formed from two short panels and two longer panels.

It is envisaged that a male connector member may be provided having a first end formed with a pair of symmetrical resilient wings, as shown in Figures 1 to 8, and a second, opposite end having a curved side and a single resilient wing, as shown in Figures 9 to 15.

While the connector assembly of the present invention has been described in relation to a ready to assemble/self assembly article of furniture, it is envisaged that such connector assembly may be utilised to interconnect a wide variety of articles, such as in automotive assemblies, or any other application where it is desired to couple to connect two articles in a rapid and reliable manner without requiring the use of tools. The connector assembly in accordance with the present invention may be used on all types of self assembly furniture wherein butting panels need to be attached to one another.

The invention is not limited to the embodiment(s) described herein but can be amended or modified without departing from the scope of the present invention.

Claims

1. A connector assembly for connecting the free ends of adjacent panels of a ready to assemble article of furniture together when assembled, said connector assembly comprising a male connector having opposite ends insertable into respective opposing receiving apertures provided in said adjacent ends of the panels, each end of said male connector being provided with retaining means to retain the ends of the male connectors in said respective apertures.

2. A connector assembly as claimed in claim 1, wherein said retaining means comprises at least one resilient retaining member adapted to engage a shoulder within the respective receiving aperture to retain the male connector therein.

3. A connector assembly as claimed in any of claims 2, wherein said receiving aperture of each adjacent end of the panels comprises an elongate channel, said male connector comprises an elongate body having a portion adapted to be inserted into said elongate channel defined by each receiving aperture, said at least one resilient retaining member defining a side of said elongate body.

4. A connector assembly as claimed in claim 2 or claim 3, wherein said male connector comprises a base region and a pair of distal end regions on opposite sides of the base region, said at least one retaining member of each end of the male connector comprising an outwardly flared resilient wing extending from said respective distal end region towards said base region, a distal end of each resilient wing being adapted to engage a shoulder within the respective receiving aperture into which the respective end of the male connector is inserted to retain said end of the male connector in said receiving aperture.

5. A connector assembly as claimed in claim 4, wherein the retaining means of at least one end of said male connector comprises a pair of outwardly flared symmetrically arranged resilient wings provided on either side of a central rib or web such that said wings define a substantially arrow head shaped cross section, distal ends of said resilient wings being adapted to engage respective opposing shoulders within the respective receiving aperture into which the respective end of the male connector is inserted to retain said end of the male connector in said receiving aperture.

6. A connector assembly as claimed in claim 4, wherein the retaining means of at least one end of said male connector comprises a resilient wing provided on a first side of said at least one end of the male connector, a second, opposite side of said at least one end of the male connector defining a curved outer face extending between said base and the distal end region of said at least one end of the male connector.

7. A connector assembly as claimed in claim 6, wherein said resilient wing extends from an outer end of said second side of the male connector.

8. A connector assembly as claimed in any of claims 4 to 7, wherein the or each resilient wing is curved outwardly between said respective distal end region and said base region of the respective end of the male connector.

9. A connector assembly as claimed in any preceding claim, wherein said receiving apertures are formed in respective female connector members located in respective recesses in the free ends of said adjacent panels.

10. A connector assembly as claimed in claim 9, wherein barbs, hooks, teeth or similar retaining formations are formed on an outer surface of each of said female connector members for retaining said female connector member within its respective receiving recess.

11. A connector assembly as claimed in any preceding claim, wherein at least one end of said male connector comprises a curved side having a radius substantially equal to the distance of said curved side from an adjacent corner of the article of furniture defined by adjacent folded panels such that the male connector may be inserted into the receiving apertures of said abutting ends of adjacent panels.

12. A connector assembly as claimed in any of claims 1 to 10, wherein at least one end of said male connector comprises a side arranged substantially tangentially to a curve having a radius substantially equal to the distance of said curved face from an adjacent corner of the article of furniture defined by adjacent folded panels such that the male connector may be inserted into the receiving apertures of said abutting ends of adjacent panels.

13. A connector assembly as claimed in any preceding claim, wherein an opening is provided in a side region of at least one of said receiving apertures, a tool being insertable into said opening to engage said retaining member of the end of the respective male connector located therein in order to release the retaining means, permitting removal of the male connector from the receiving aperture.

14. A connector assembly as claimed in claim 13, wherein said opening extends substantially perpendicular to an outer surface of said retaining member.

15. A ready to assemble article of furniture comprising a plurality of substantially rigid panels attached together end to end, the ends of the panels being bevelled or otherwise shaped such that the panels can be folded to bring said ends into abutting relationship to define a polygonal article, wherein said panels are attached together by means of a flexible sheet material extending between the panels.

16. A ready to assemble article of furniture as claimed in claim 15, wherein said flexible sheet material comprises webbing, tape, fabric or similar thin flexible sheet like material.

17. A ready to assemble article of furniture as claimed in claim 15 or claim 16, wherein said flexible sheet material comprises a single elongate sheet of material attached to the outer faces of the panels to extend between the panels to define an outer surface of the assembled storage unit.

18. A ready to assemble article of furniture as claimed in claim 17, wherein said flexible sheet material is removable from the panels to allow said material to be removed once the panels have been assembled to define said storage unit.

19. A ready to assemble article of furniture as claimed in any one of claims 15 to 18, wherein said polygonal article comprises a storage unit for storing articles within a hollow space defined by said assembled panels.

20. A ready to assemble article of furniture as claimed in any of claims 15 to 18, wherein a first connector assembly is provided for connecting the free ends of the panels together when assembled.

21. A ready to assemble article of furniture as claimed in claim 20, wherein a further connector assembly is provided between the abutting ends of the panels to secure the panels in their folded assembled position.

22. A ready to assemble article of furniture as claimed in claim 21, wherein said first and/or further connector assemblies are in accordance with any one of claims 1 to 14.

23. A ready to assemble article of furniture as claimed in any one of claims 15 to 22, wherein a bevelled slot or channel is provided along one side of each panel for receiving a correspondingly bevelled rear panel of the assembled article of furniture, the bevelled shape of the slot enabling the rear panel to be inserted and the panels assembled so that the rear face of the rear panel lies flush with the rear sides of the panels.

24. A ready to assemble article of furniture as claimed in any one of claims 15 to 22, wherein a plurality of said assembled polygonal articles are stacked or otherwise placed together to define a larger article of furniture, connection means are provided for connecting said plurality of assembled polygonal articles together.

25. A ready to assemble article of furniture as claimed in claim 24, wherein said connection means comprises a connector strip having a planar front face and projections formed on a rear face thereof to be received in cooperating formations formed in a front side of adjacent panels of adjacent articles.

26. A ready to assemble article of furniture as claimed in claim 25, wherein said cooperating formations of each panel comprises an elongate channel or groove formed in said front side of each panel, each connector strip having a pair of spaced apart parallel elongate ribs extending from a rear face thereof, a first of said pair of ribs being received in a channel in a front side of a panel of a first article and a second of said pair of ribs being received in a channel in a front side of a panel of a second article abutting said panel of said first article to join said first and second articles together.

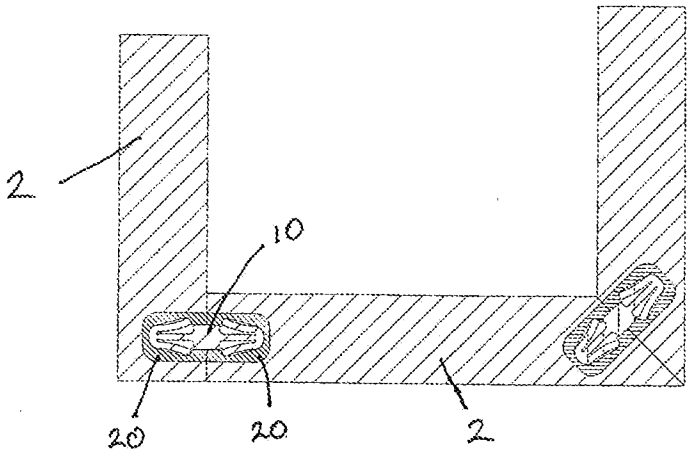


Figure 1

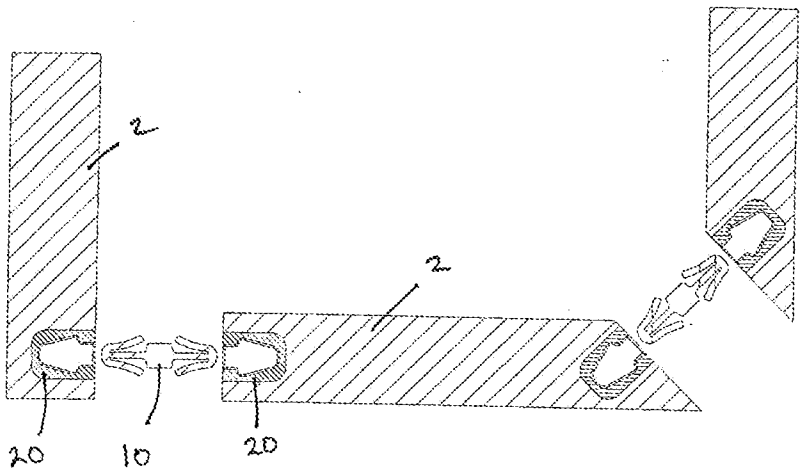


Figure 2

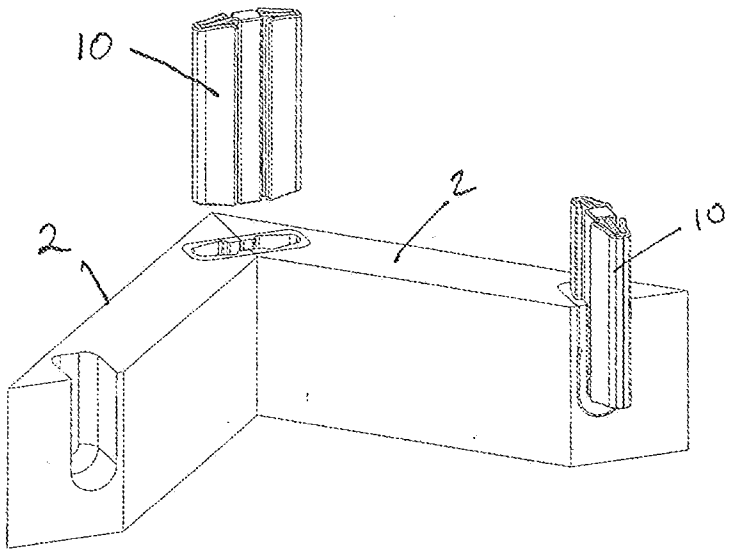


Figure 3

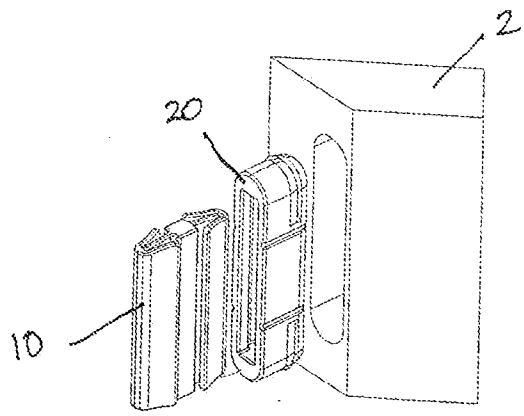


Figure 4

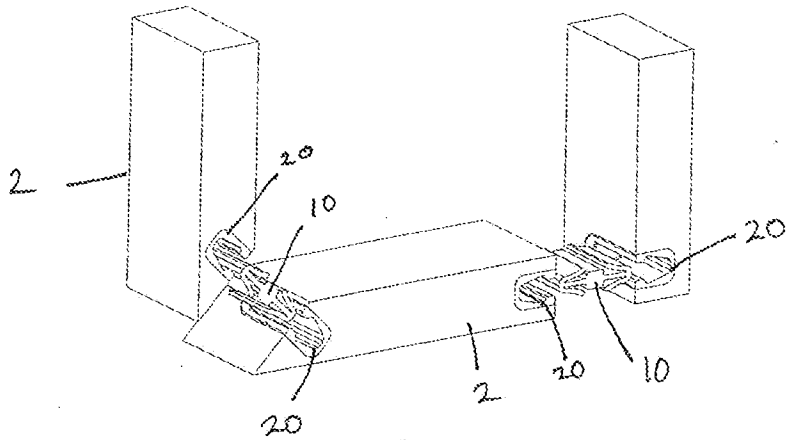


Figure 5

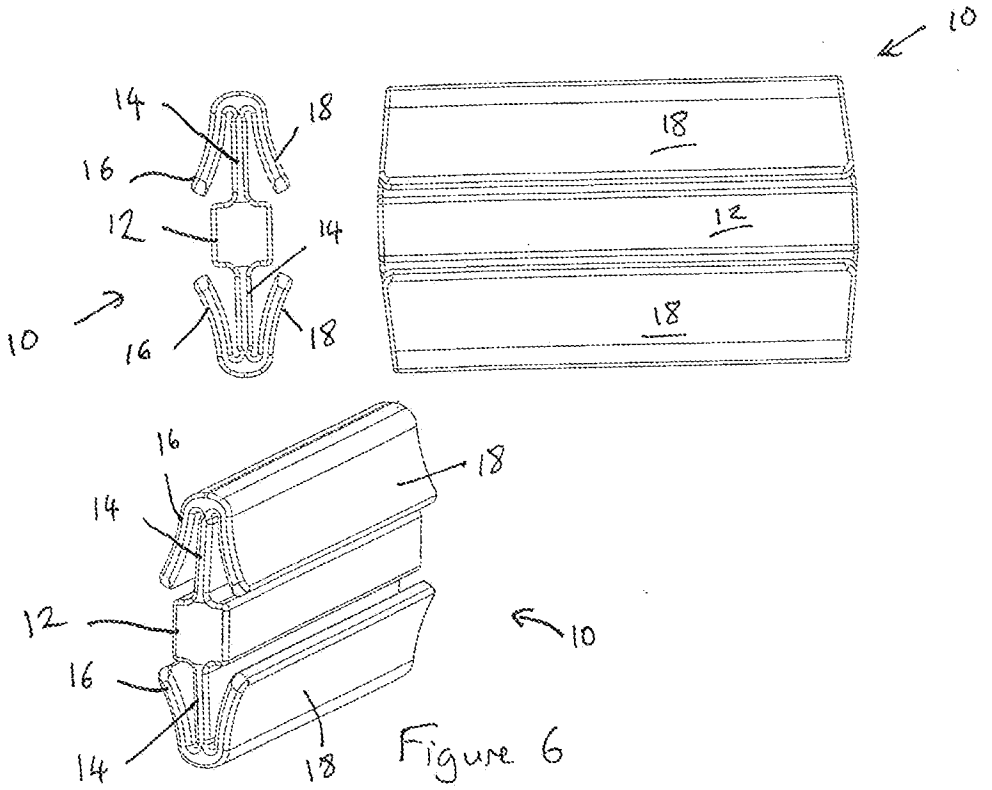


Figure 6

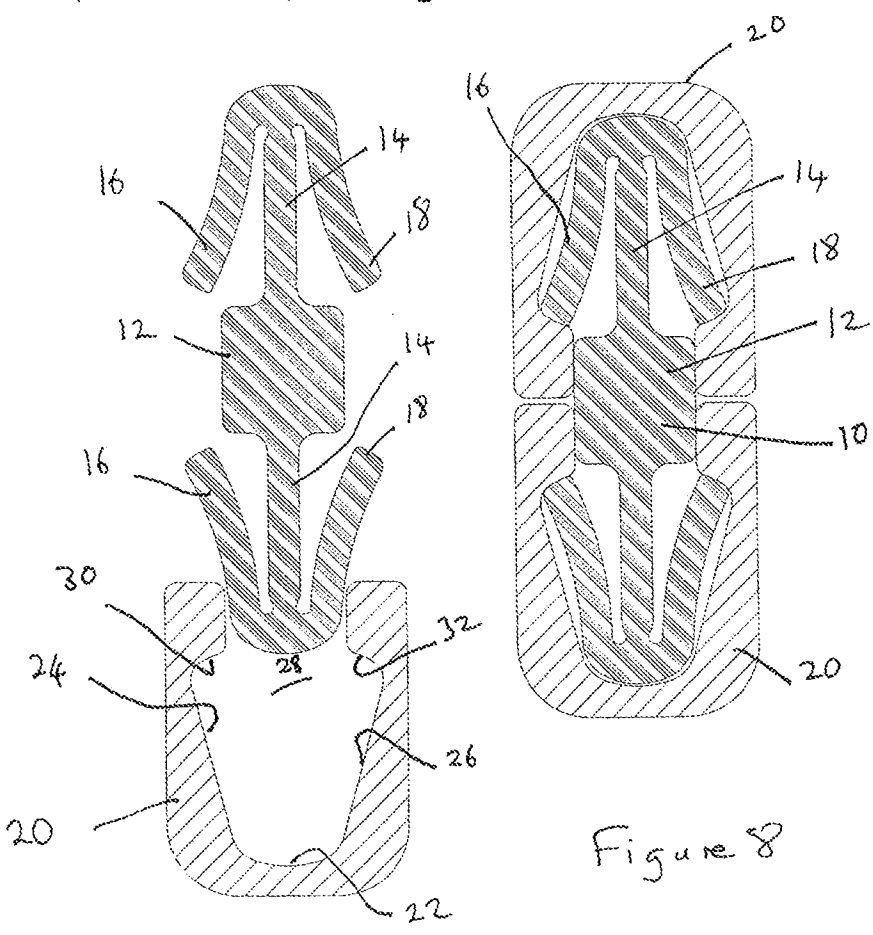


Figure 7

Figure 8

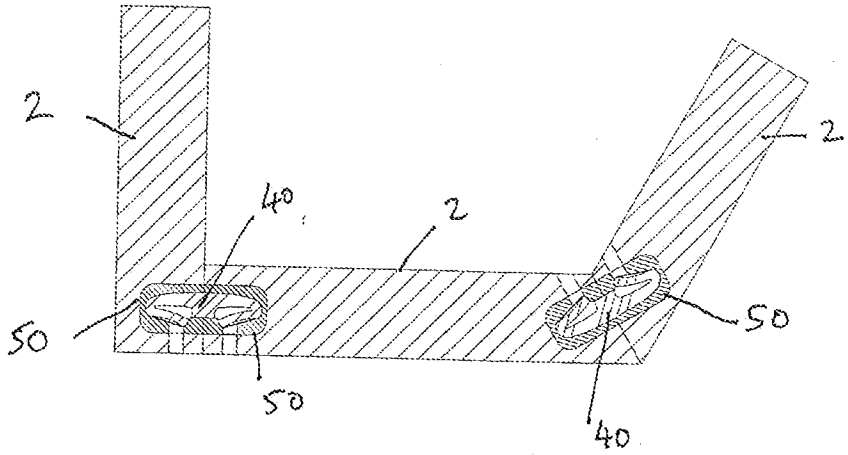
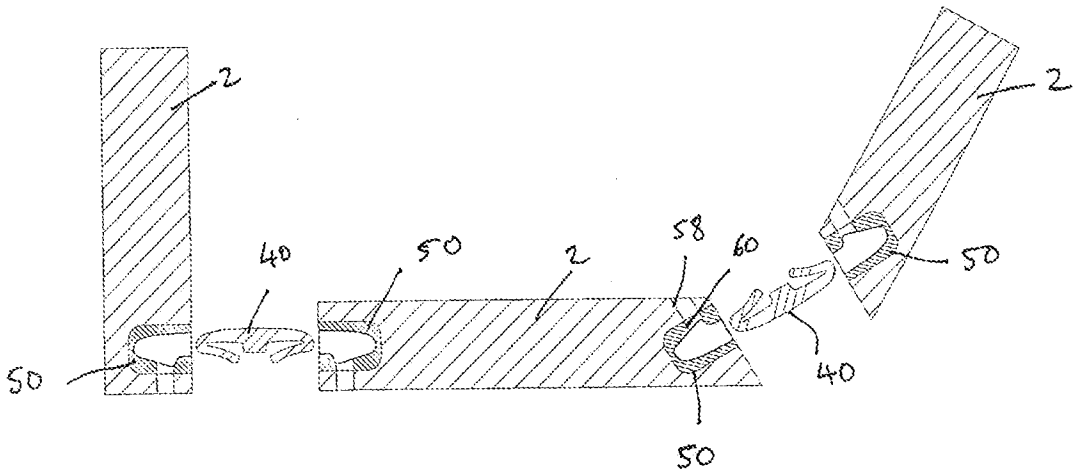


Figure 9



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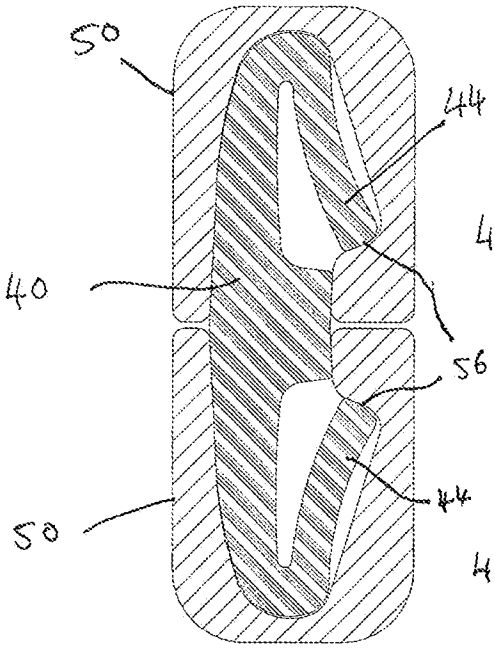

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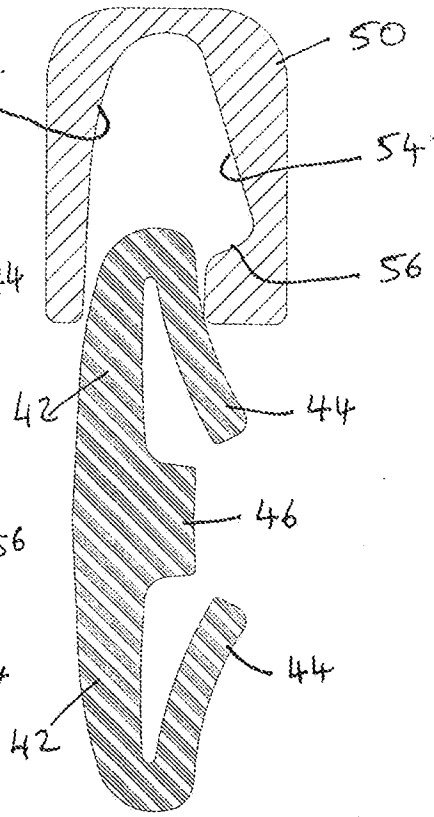

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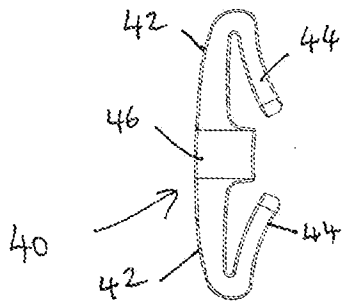
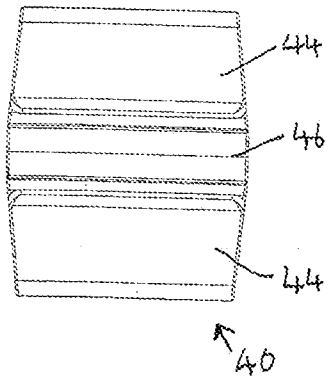




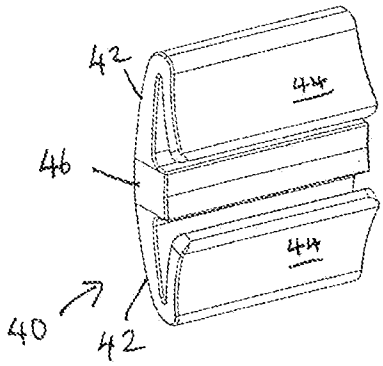


Figure 13

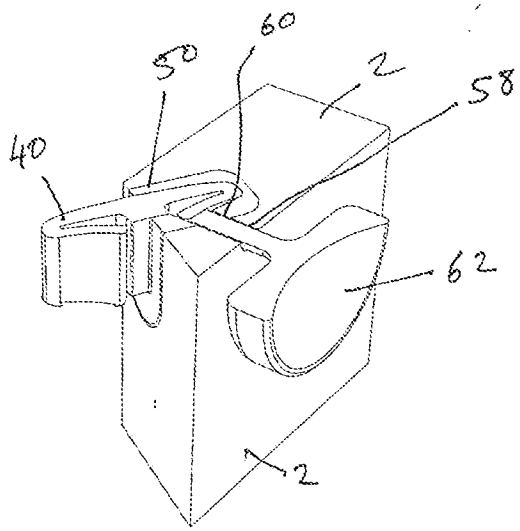
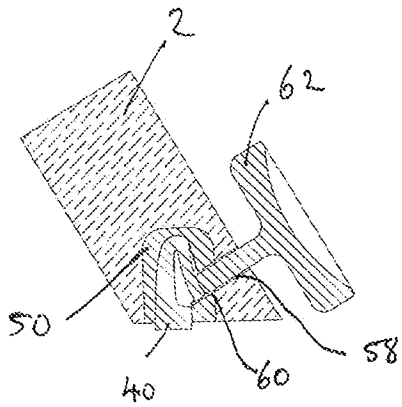


Figure 14



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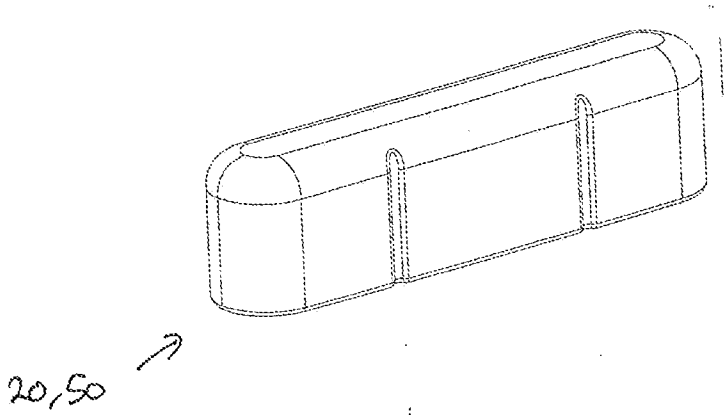


Figure 16

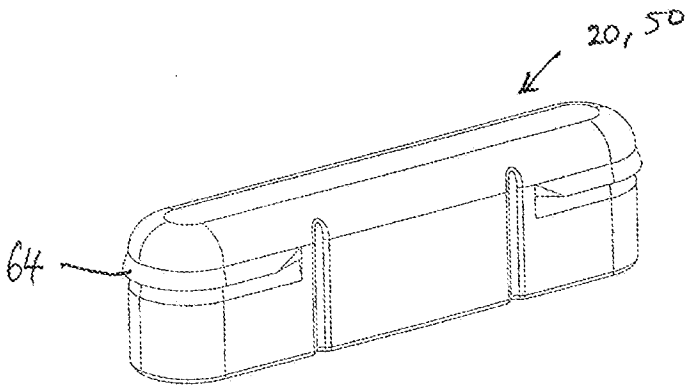


Figure 17

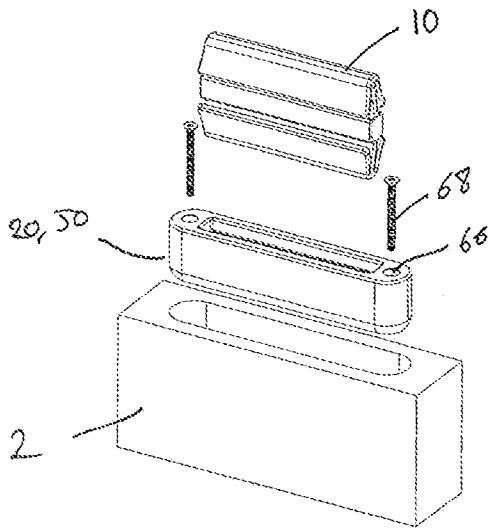


Figure 18

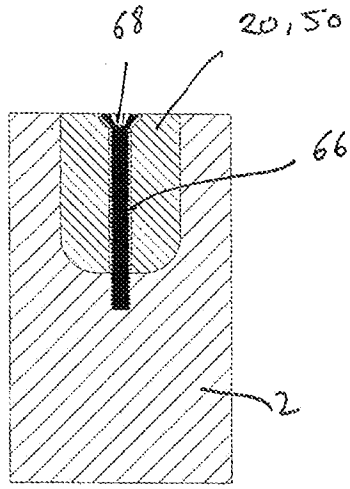


Figure 19

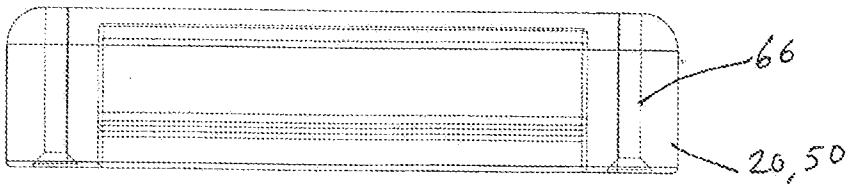
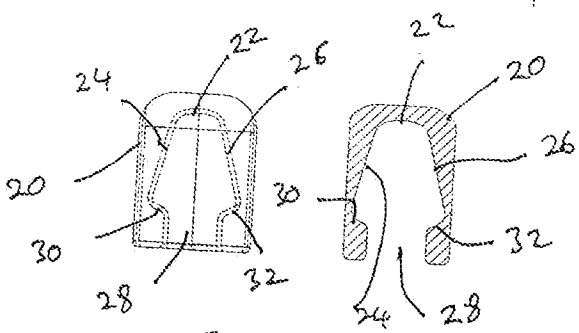


Figure 20



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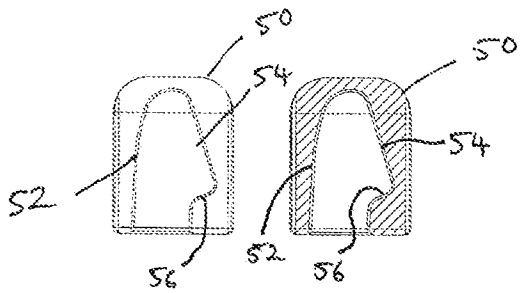

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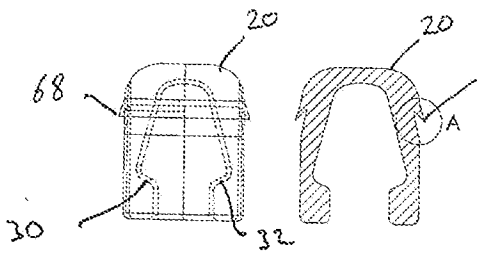

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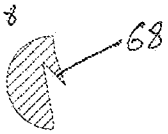

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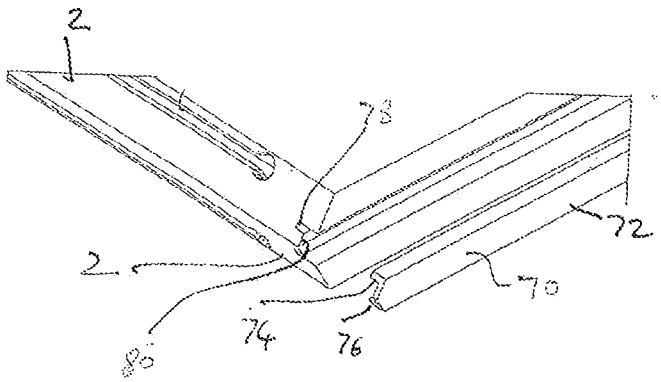

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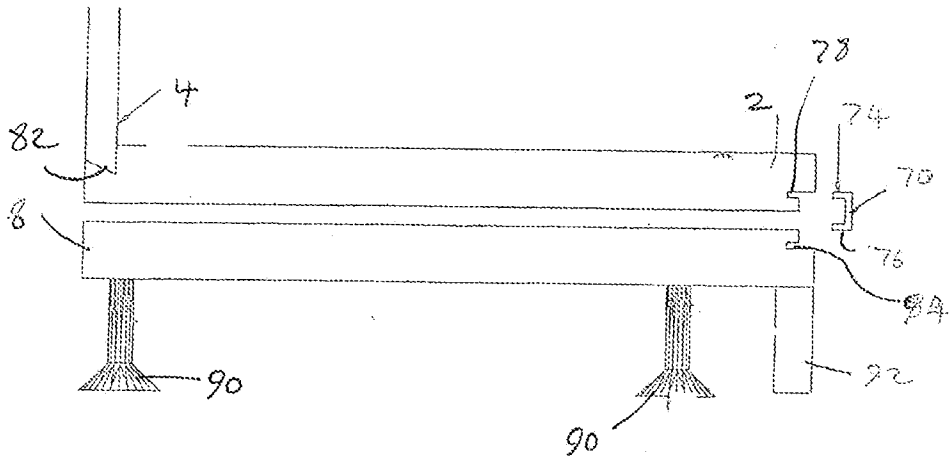

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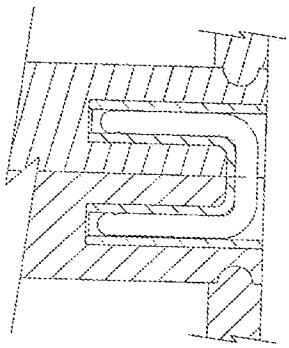

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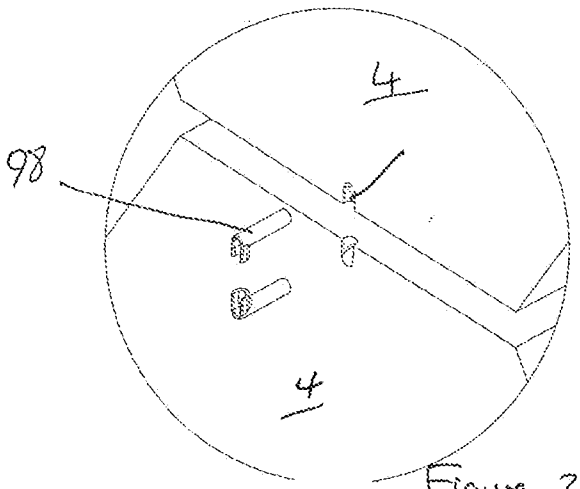


Figure 28

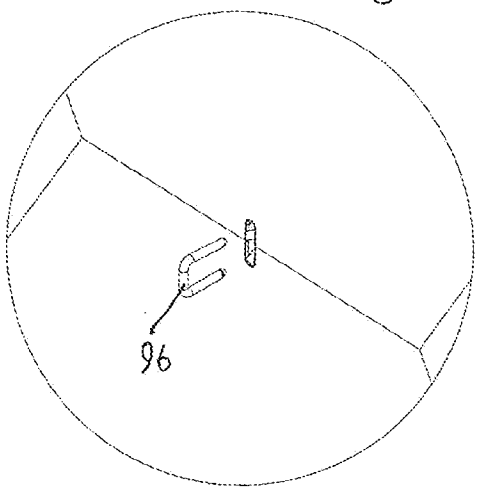


Figure 29

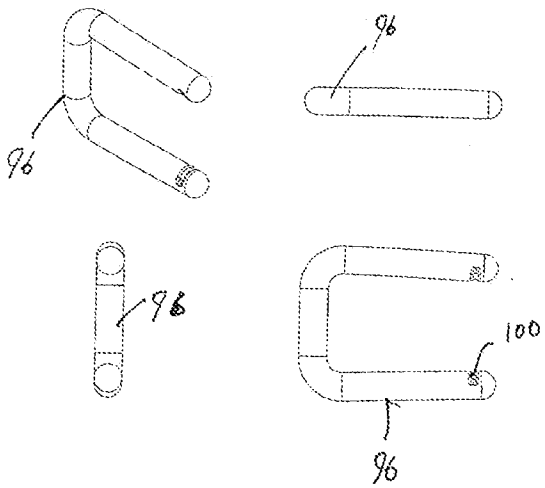


Figure 30

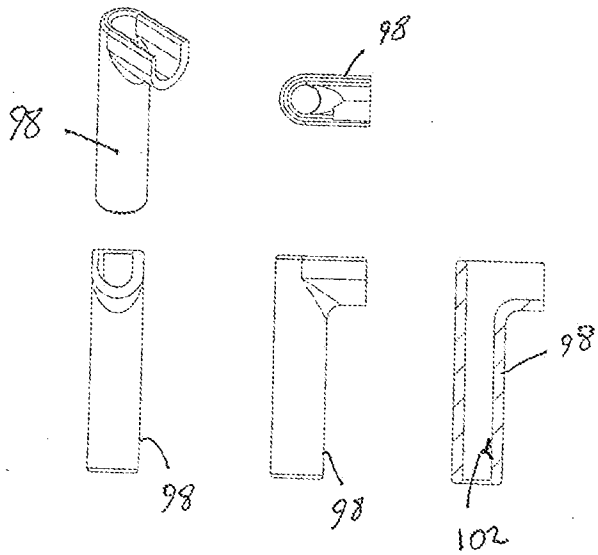


Figure 31

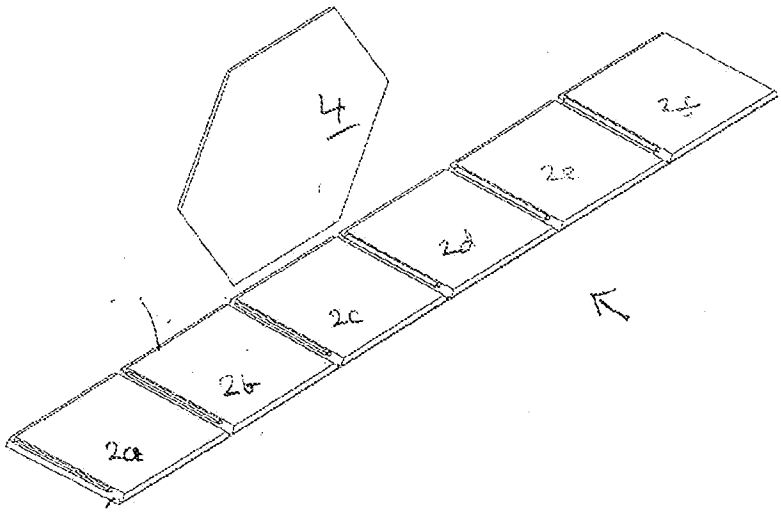


Figure 32

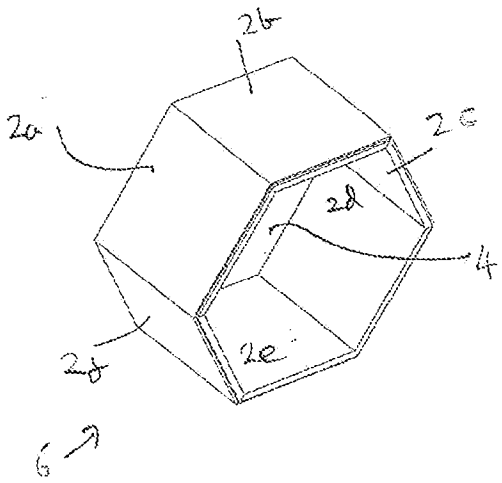


Figure 33

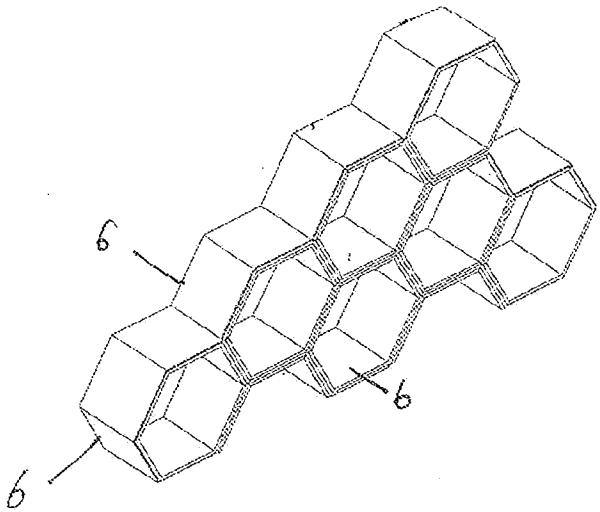


Figure 34

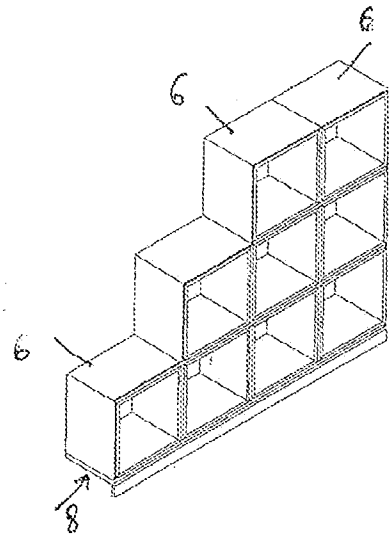


Figure 35

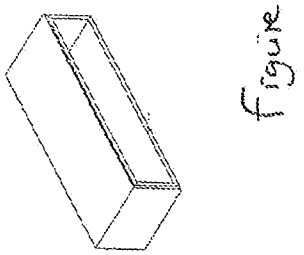
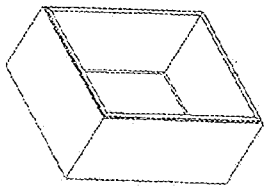


Figure 39



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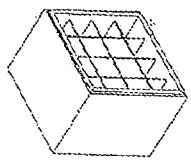

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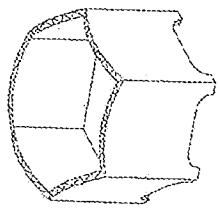

Figure 36

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2012/050370

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☒ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/050370

A. CLASSIFICATION OF SUBJECT MATTER
INV. A47B47/04 A47B87/00 F16B12/24 F16B12/26
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A47B F16B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 374 737 A1 (SAUERWEIN ET AL) 2 January 2004 (2004-01-02) paragraph [0001] paragraph [0016] paragraph [0021] - paragraph [0022] paragraph [0024] paragraph [0026] paragraph [0028] paragraph [0037] paragraph [0042] paragraph [0046] - paragraph [0047]; figures 2b,2c,2d,5,6a,6b,9a,9c,10a ----- -/--	1-5, 15-26

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
13 February 2012	20/02/2012

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Jacquemin, Martin

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Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/050370

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 186 698 B1 (KNAPP) 13 February 2001 (2001-02-13) column 1, line 4 - line 17 column 2, line 7 - line 20 column 3, line 57 - column 4, line 7; figures 5,6	1-8

X	DE 72 31 950 U (PAUL HETTICH & CO) 14 December 1972 (1972-12-14)	1-5,9,10
Y	the whole document	13,14

Y	FR 86 990 E (FT PRODUCTS LTD) 20 May 1966 (1966-05-20) page 2; figure 3	13,14

1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2012/050370

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1374737 A1	02-01-2004	DE 10227205 A1	29-01-2004
		EP 1374737 A1	02-01-2004
US 6186698 B1	13-02-2001	AT 180873 T	15-06-1999
		AU 1884695 A	09-10-1995
		DE 9404642 U1	19-05-1994
		EP 0750721 A1	02-01-1997
		HR 950280 A2	30-06-1997
		IL 112974 A	14-08-1997
		JP 3036461 U	22-04-1997
		US 6186698 B1	13-02-2001
		WO 9525898 A1	28-09-1995
DE 7231950 U	14-12-1972	NONE	
FR 86990 E	20-05-1966	NONE	

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14

   a connector assembly with resilient retaining means

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2. claims: 15-26

   an article of furniture with panels attached together by means of a flexible sheet

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