

# (12) UK Patent Application (19) GB (11) 2 300 239 (13) A

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U1S S1209**

(56) Documents Cited  
**GB 1296930 A GB 0992305 A GB 0893983 A  
GB 0639698 A GB 0468045 A**

(58) Field of Search  
UK CL (Edition N ) **F2M MC1**  
INT CL<sup>6</sup> **F16B 5/02 12/14**

## (54) Connector assembly for furniture members

(57) The support legs of a table are in the form of glass sheets 10 which are connected together by a series of curved tubes 20 each provided at one end with a projection 30 and at the other end with a socket 41, the projection 30 of each tube 20 being clamped in the socket 41 of the adjoining tube 20 by means of a screw 411. The projection 30 comprises a sleeved screw 31 screwed into the threaded tube end 21 by way of the glass sheet 10. Flexible pads 33 are reinforced by metal members 34.

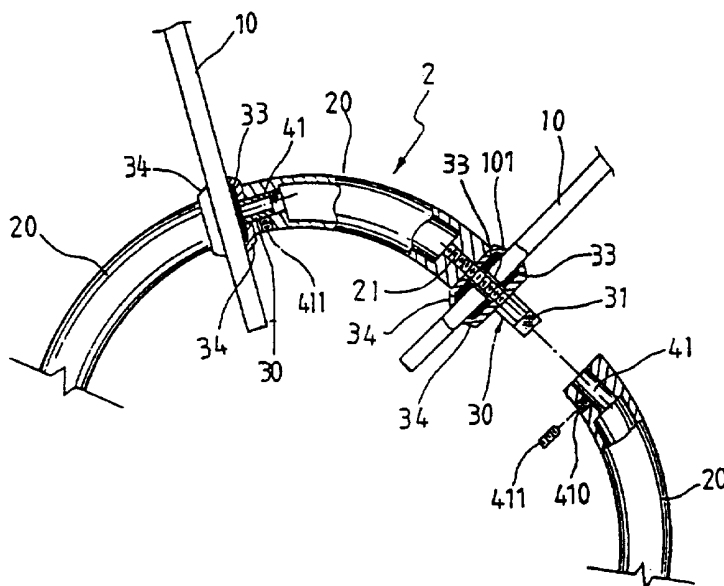


FIG.4

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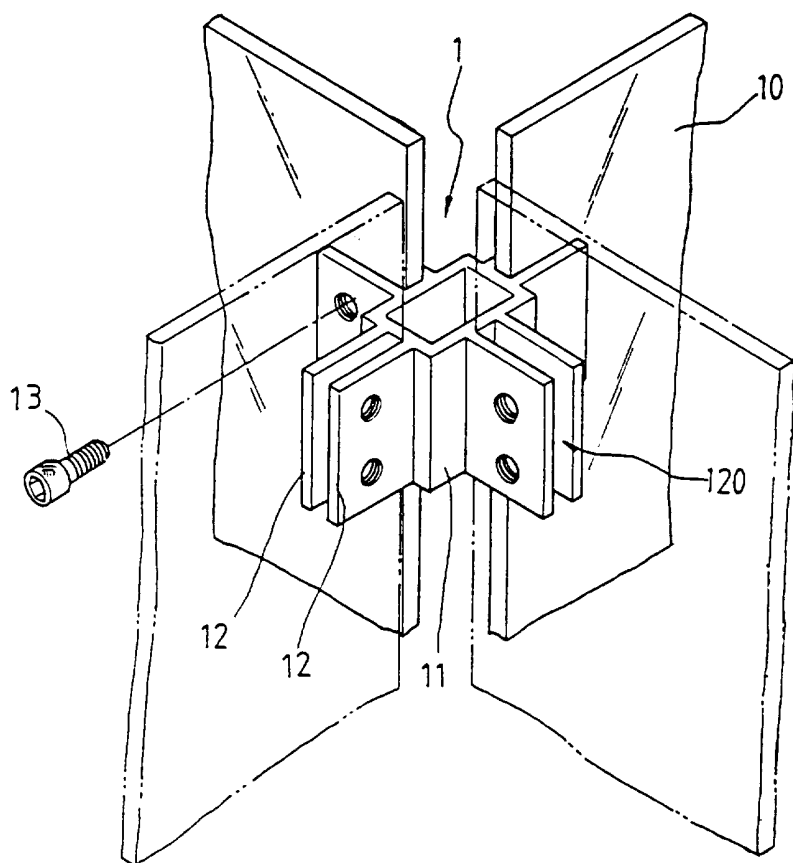


FIG.1

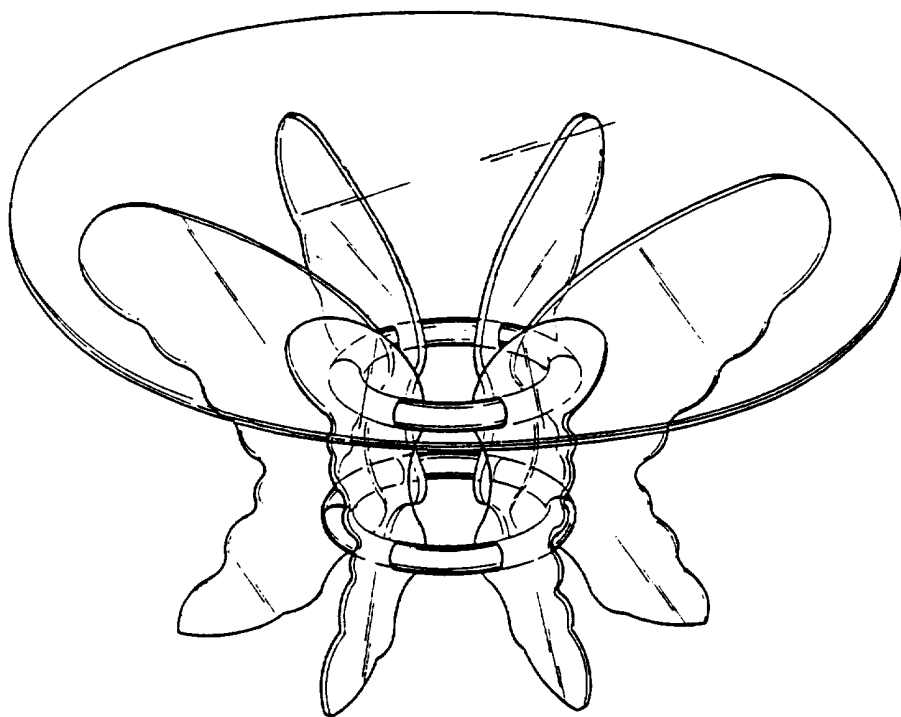


FIG. 2

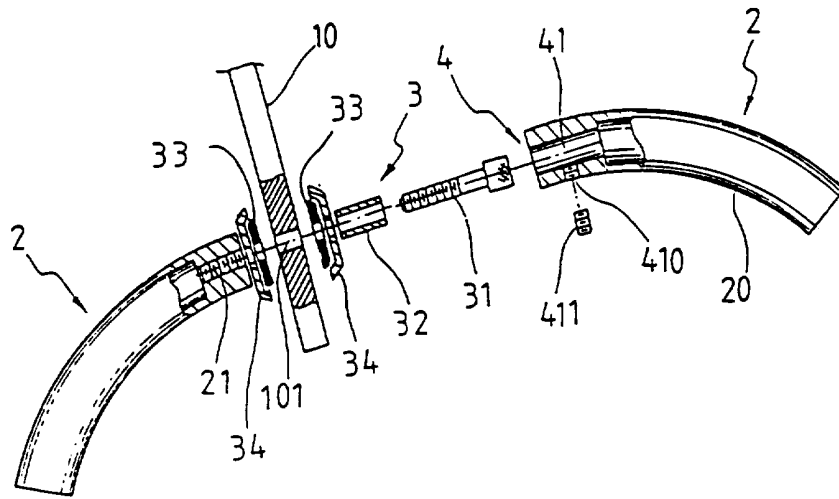


FIG. 3

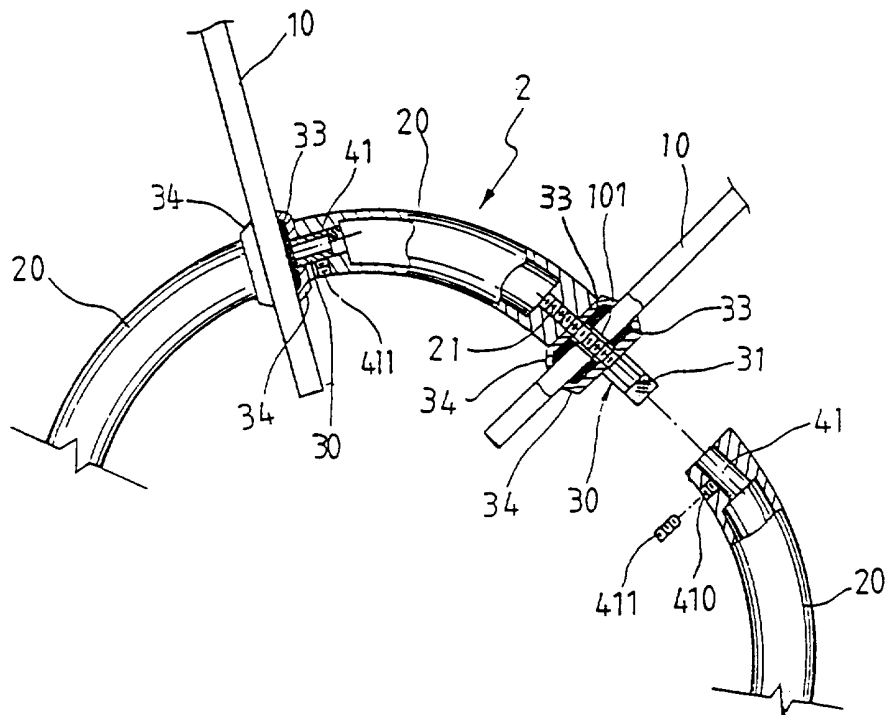


FIG. 4

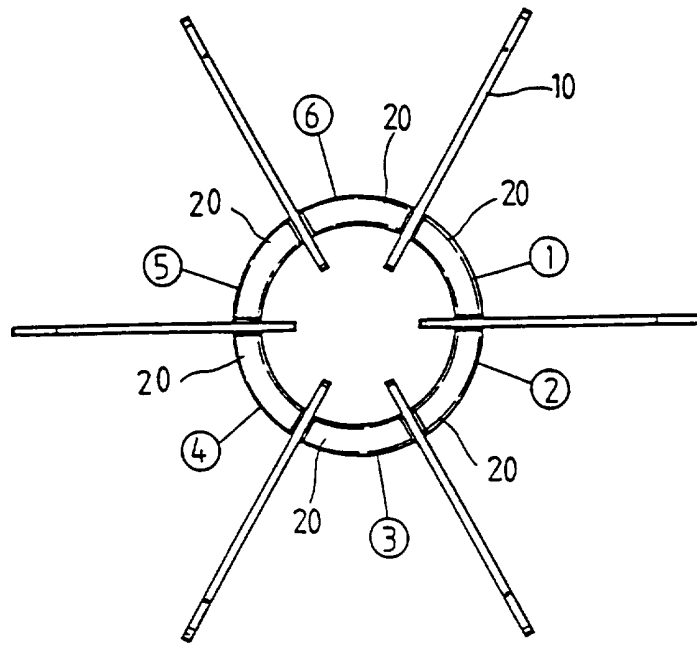


FIG. 5

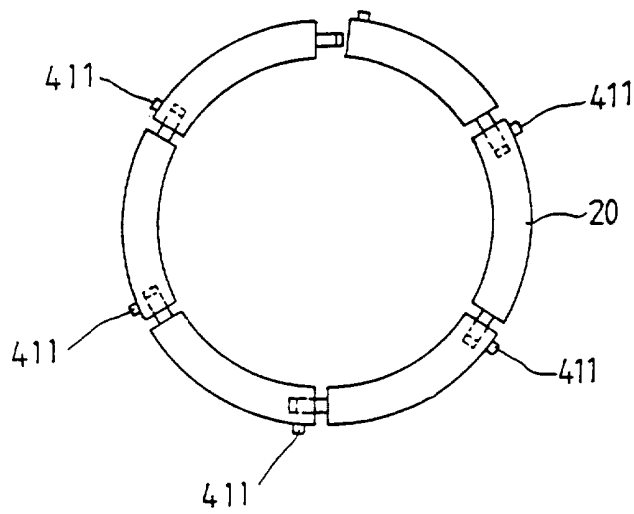


FIG. 6

A CONNECTOR ASSEMBLY FOR CONNECTING BOARD-LIKE MEMBERS  
OF A PIECE OF FURNITURE IN FITTING MANNER

BACKGROUND OF THE INVENTION

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The present invention relates to a connector assembly for connecting board-like members of a piece of furniture in fitting manner.

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Conventionally, the board-like members, especially glass-made board-like members of a piece of furniture, such as the board-like support legs 10 of a table are connected with one another by a unitary connector 1 as shown in Fig. 1. The connector 1 includes a frame-like main body 11 and two four pairs of parallel fin plates 12 radially extending outward from the main body 11. Each pair of fin plates 12 define a clamping channel 120 for clamping a board-like support leg 10 of the table therein. Screws 13 are passed through several holes of the fin plates 12 to secure the support leg 10 between the fin plates 12. Such connector 1 is made by a mold and has fixed shape and unchangeable number of fin plates. Therefore, different types of furnitures with varying numbers of support legs need different types of connectors having different numbers of fin plates to connect the support legs. These connectors must be manufactured by different molds. This increases the

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manufacturing cost of the furniture. Furthermore, the clamping channel 120 between the fin plates 12 has fixed width so that only a board-like member having a specific thickness can be snugly clamped in the clamping channel  
5 120. In addition, the board-like support leg 10 is locked with the connector 1 by screws 13 which are likely to loosen after a period of use. This may lead to the detachment of the support legs from a table face of the table and cause danger.

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#### SUMMARY OF THE INVENTION

It is therefore a primary object of the present invention to provide a connector assembly for connecting  
15 board-like members of a piece of furniture in fitting manner. The connector assembly includes several arch rod members which can be varyingly combined to connect multiple types of board-like members of the furniture.

20 The present invention can be best understood through the following description and accompanying drawing, wherein:

#### BRIEF DESCRIPTION OF THE DRAWINGS

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Fig. 1 is a perspective view of a conventional connector for connecting board-like members of a piece

of furniture;

Fig. 2 shows that the connector assembly of the present invention is used to connect board-like support legs of a table;

5        Fig. 3 is a sectional exploded view showing the male and female ends of the arch rod members of the present invention;

Fig. 4 is a sectional assembled view according to Fig. 3, showing that the board-like members are clamped  
10        between the male and female ends of the arch rod members;

Fig. 5 shows that six arch rod members are used to connect six board-like members; and

Fig. 6 shows that the fixing thread rods are not  
15        tightened before all the arch rod members are fitted with one another.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

20        Please refer to Figs. 2 and 3. The connector 2 of the present invention includes an arch hollow rod member 20 having a male end 3 and a female end 4. At the male end 3, a screw 31 fitted into a sleeve 32 is locked in a thread hole 21 of the male end 3 of the rod member 20 to  
25        form a cylindrical tenon 30 ( as shown in Fig. 4 ). The female end 4 of the rod member 20 is disposed with a circular hole 41 for the tenon 30 to insert therein. A

radial thread hole 410 is formed beside the circular hole 41 for a fixing thread rod 411 to screw therein. When assembled, the screw 31 is first fitted through the sleeve 32 and locked in the thread hole 21 to form the cylindrical tenon 30 which first passes through a through hole 101 of a glass board 10 and then fits into the circular hole 41 of the female end 4 of another rod member 20. After the tenon 30 is inserted into the circular hole 41, the fixing thread rod 411 is screwed into the thread hole 410 to lock the tenon 30 with the male end 4. At this time, the glass board 10 is clamped between the male end 3 and the female end 4. The depth of the insertion of the tenon 30 into the circular hole 41 can be easily adjusted so that the thickness of the clamped glass board 10 can be varied within a range. In addition, flexible pad members 33 can be added to the male and female ends 3, 4 to absorb the shocking force exerted thereon so as to protect the glass board 10. A reinforcing metal pad member 34 can be further disposed on an outer side of the flexible pad member 33 to cover the same. Multiple arch rod members can be associated together to form a circular combination so as to provide stably and safely supporting effect.

Please refer to Figs. 5 and 6. The circular combination can include six arch rod members 20 as denoted by the reference numerals " 1 " to " 6 " of Fig.

5. The male and female ends of the six arch rod members 20 are fitted with one another in sequence to clamp and associate six glass boards 10 which serve as support legs of a table. For remaining an adjusting clearance between the male end of sixth rod member 20 and the female end of the first rod member 20, all the fixing thread rods 411 are not completely tightened as shown in Fig. 6 and after all the tenons of the male ends of the rod members 20 are preliminarily fitted into the female ends thereof, the fixing thread rod 411 are then tightened. This facilitates the assembling procedure of the table.

It is to be understood that the above description and drawings are only used for illustrating one embodiment of the present invention, not intended to limit the scope thereof. Any variation and derivation from the above description and drawings should be included in the scope of the present invention.

## **CLAIMS**

1. A connector assembly for connecting board-like members of a piece of furniture in fitting manner, comprising more than one an arch rod member having a male end and a female end, wherein said male end includes a tenon formed by a screw fitted through a sleeve and screwed into a thread hole of said male end and said female end is formed with a hole for fitting said tenon thereinto, a radial thread hole being formed beside said circular hole for a fixing thread rod to screw thereinto to lock said tenon of said male end with said female end, flexible pad members being added between said male and female ends for absorbing external shocking force.
2. A connector assembly for connecting a plurality of arch rod members comprising a plurality of arch rod members, each member having a male end and a female end, the male end comprising a projection and the female end comprising a corresponding hole for receiving the projection of an adjacent arch rod member and a locking means for locking the projection of the adjacent arch rod member within the hole of the female end.
3. A connector assembly according to claim 2, wherein the projection comprises a screw fitted within a threaded hole of the male end of the arch rod member.
4. A connector assembly according to claim 2 or 3, wherein the locking means comprises a radial threaded hole adjacent the hole of the female end of the arch rod member, and a threaded fixing rod for screwing into the radial threaded hole to lock the projection.
5. A connector assembly according to claim 1, wherein the connecting assembly further comprises reinforcing pad members for protecting the flexible pad members.
6. A connector assembly according to claim 5, wherein the reinforcing pad members are formed of metal.
7. A connector assembly according to any preceding claim, wherein a plurality of the arch rod members are arranged to form an enclosed circular structure.
8. A connector assembly as hereinbefore described with reference to Figures 2 to 6 of the accompanying drawings.

<b>Patents Act 1977</b> <b>Examiner's report to the Comptroller under Section 17</b> <b>(T' Search report)</b>	<b>Application number</b> <b>GB 9505008.4</b>
<b>Relevant Technical Fields</b>  (i) UK Cl (Ed.N)      F2M (MCI) (ii) Int Cl (Ed.6)      F16B 12/14, 5/02  <b>Databases (see below)</b> (i) UK Patent Office collections of GB, EP, WO and US patent specifications.  (ii)	<b>Search Examiner</b> <b>P M WELLER</b>  <b>Date of completion of Search</b> <b>19 APRIL 1995</b>  <b>Documents considered relevant following a search in respect of Claims :-</b> <b>1-8</b>

**Categories of documents**

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|---|--|
| <b>X:</b> Document indicating lack of novelty or of inventive step.<br><br><b>Y:</b> Document indicating lack of inventive step if combined with one or more other documents of the same category.<br><br><b>A:</b> Document indicating technological background and/or state of the art. | <b>P:</b> Document published on or after the declared priority date but before the filing date of the present application.<br><br><b>E:</b> Patent document published on or after, but with priority date earlier than, the filing date of the present application.<br><br><b>&amp;:</b> Member of the same patent family; corresponding document. |
|---|--|

Category	Identity of document and relevant passages	Relevant to claim(s)
Y	GB 1296930 A (OFFSHORE) Figure 9	2, 4
Y	GB 0992305 A (CHING) Figures 1, 3	2
Y	GB 0893983 A (JEFFS) Figures 1, 8	2, 4
Y	GB 0639698 A (BLYTH) Figure 2	2
Y	GB 0468045 A (LESLIE) Figures 1, 3	2, 3

**Databases:** The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).