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## (54) Multi-use anchor plate for table legs

(57) A multi-use anchor plate for table legs, which, in particular, can also be used as a junction plate between tables specular-shaped with respect to a symmetry axis (11), for example having the shape of a right-angle triangle, on which there are holes for connection to the surface (12, 13, 14), is flat with a reduced height and has a connecting devices for a table leg (15, 16), consisting of a round ashlar (15) with a central threaded hole, which receives the end of the threaded stem of a leg which is inserted in said threaded hole or a hexagonal ashlar (16) with a non-threaded central hole, which receives and blocks a hexagonal nut or a screw having an axial hexagonal head.

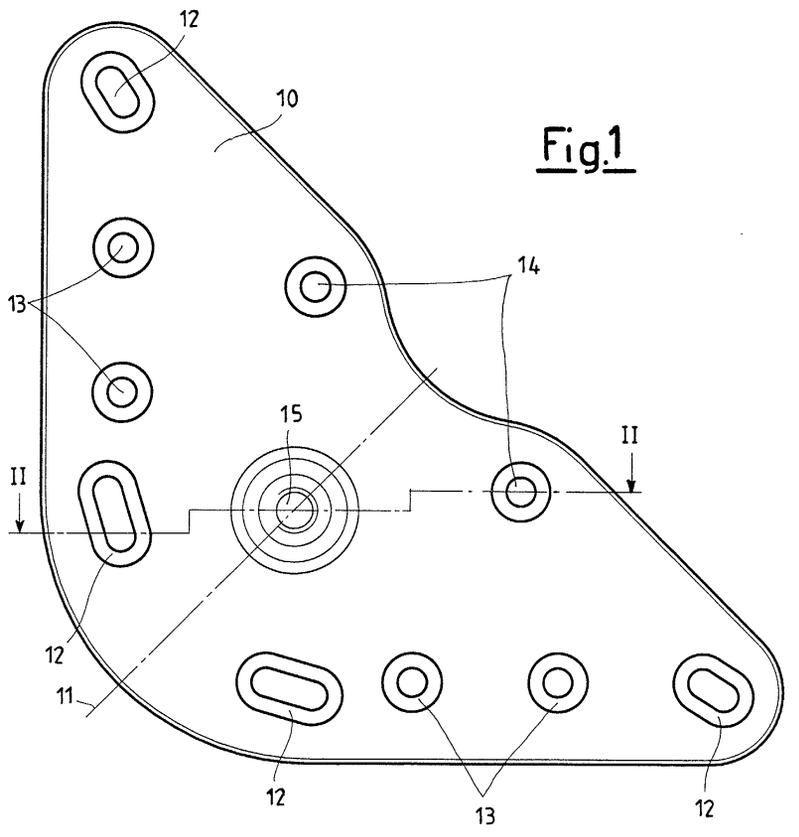


Fig.1

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## Description

**[0001]** The present invention relates to a multi-use anchor plate for table legs, which, in particular, can also be used as a junction plate between tables.

**[0002]** For practical purposes, tables are generally made up of parts which can be dismantled to facilitate their transportation and storage, making them much less bulky. The leg-fixing system should enable easy dismantling without causing the quality of the connection to deteriorate over a period of time, as a result of this operation. A solution to this necessity consists of the use of an interposed connecting device, firmly applied to each corner of the table, to which the leg is connected.

**[0003]** Another strongly felt necessity in this area is the possibility of creating a table whose surface can be dismantled into distinct parts, practically and safely joined to each other, for example by a connecting plate.

**[0004]** As both of these demands relate to the assembly of tables, the use of a single connecting device capable of being adapted to both requirements, would seem most logical for making the assembly devices as uniform as possible.

**[0005]** A solution is already currently in use, which combines the two necessities, consisting of a metal plate, suitably shaped, on which there is a sufficient number of holes appropriately positioned, to allow use in both situations. At each corner of the table surface there are holes with a standard arrangement, to which the plate is fixed, both for joining two tables and also in assembly on the corner, for fixing the leg. For this purpose, there are devices for a reciprocal firm anchorage between plate and leg.

**[0006]** An objective of the present invention is to produce an anchor plate for table legs, which can also be used in particular as a junction plate between tables, which is not bulky and reduces the risk of damaging people and objects when assembled on the table surfaces.

**[0007]** A further objective of the present invention is to produce a multi-use anchor plate for table legs which optimizes the holing system effected on the corner of the table surface with respect to both uses of the plate.

**[0008]** Yet another objective of the present invention is to produce a multi-use anchor plate for table legs which is particularly simple and functional, with limited costs.

**[0009]** These objectives according to the present invention are achieved by the production of a multi-use anchor plate for table legs as described in claim 1.

**[0010]** Further characteristics of the multi-use anchor plate for table legs are illustrated in the dependent claims.

**[0011]** The characteristics and advantages of a multi-use anchor plate for table legs according to the present invention are evident from the following, illustrative and non-limiting description, referring to the enclosed schematic drawings, wherein:

- figure 1 is a plan view of a first illustration of an anchor plate for table legs, which, in particular, can also be used as a junction plate between tables;
- figure 2 shows the section of the plate of figure 1 according to the line II-II;
- figure 3 shows the plate fixed to the surface in an angular position to allow the connection of the leg;
- figure 4 shows the assembly of the plate as a junction between two tables;
- figure 5 is an elevation sectional view of the table-leg connection;
- figure 6 is a plan view of a second illustration of a multi-use anchor plate for table legs;
- figure 7 shows the section of the plate of figure 6 according to the line VII-VII, in which a screw having an axial hexagonal head is positioned;
- figure 8 is a plan view illustrating the dimensioned plate of the invention; and
- figure 9 is a dimensioned representation on a reduced scale of the corner of a table indicating the anchorage holes of the plate of figure 8.

**[0012]** With reference to the figures, these illustrate a multi-use anchor plate for table legs, indicated as a whole with 10, in the form of a right-angle triangle and symmetrical with respect to a median axis 11 which contains the height of the triangle. The vertexes are amply rounded and the profile is curved in the central portion of the hypotenuse.

**[0013]** Along each cathetus there are two buttonholes 12 at the ends and two central holes 13, in line and at the same distance. Along the hypotenuse, in addition to the two buttonholes 12 already mentioned, in correspondence with the shorter sides, there are two holes 14 in the central portion, also in a symmetrical position with respect to the median axis 11 (figure 1). At the centre of the plate there is an ashlar 15 or 16, only slightly protruding, which creates a space, for example either round or hexagonal, perforated in the centre (figures 2 and 7). A plate 10 formed as described above has the dimensions indicated in figure 8.

**[0014]** In a first embodiment of a multi-use anchor plate for table legs, said ashlar 15 is round and has a central threaded hole. The table leg, having a threaded stem, is therefore inserted in the threaded hole of the ashlar 15. The space between table and plate, created by said ashlar 15, forms a housing for receiving the threaded stem and ensures the grip of all the hole threads, without having to resort to the perforation of the table surface (figure 5).

**[0015]** A second embodiment is also proposed of a multi-use anchor plate for table legs (figure 6), which differs from the previous one only in that the ashlar 16 in the central zone, is hexagonal with a non-threaded central hole.

**[0016]** A hexagonal nut or a suitably sized screw having an axial hexagonal head are inserted, as an in the hexagonal housing, to ensure that they correctly fit into

hexagonal form of the ashlar 16 when anchoring the leg. The leg can therefore be equipped with a threaded stem or threaded hole, respectively.

**[0017]** As can be clearly seen from figure 9, the surface T of the table used, which allows both types of assembly, is equipped with a total of 9 holes, arranged at an equidistance of 32 mm in line, at the corner. When the plate is fixed to the surface T, the holes F of the latter, with an interspacing of 32 mm, therefore exactly coincide with the buttonholes 12 and holes 13 of the plate 10, also having an interspacing of 32 mm, as can be seen in detail in figure 8. The holes 14 of the plate 10, on the other hand, have an interspacing between each other and from the buttonholes 12, in line with these, of 64 mm.

**[0018]** The assembly of the plate onto the corner of the table for fixing the table leg, utilizes the buttonholes 12 and holes 13 arranged on each cathetus of the triangular plate (figure 3). The assembly of the plate as a junction between two tables is effected by positioning said plate with the hypotenuse arranged along the outer edge of the two joined tables. For the assembly, the buttonholes 12 along the catheti, and the holes 14 on the hypotenuse, are used (figure 4).

**[0019]** The anchor plate for table legs, which, in particular, can also be used as a junction plate between tables, object of the present invention, has the advantage of being flat, without protruding connecting elements, which allows table surfaces, to whose corners said plates have been pre-applied, to be stacked up with limited bulk, thus reducing the risk of damage and accidents.

**[0020]** Furthermore the extremely simple shape and holing system represents an advantage in the production of the plates, holes and assembly.

**[0021]** The widest possible distribution of holes on the surface, allows the stress distribution on the anchoring points to be optimized.

## Claims

1. A multi-use anchor plate for table legs, which can also be used in particular as a junction plate between tables, having a specular shape with respect to a symmetry axis (11), on which there are holes for connection to the surface (12, 13, 14) and which has connecting devices for a table leg (15, 16), **characterized in that** it is flat with a reduced height.

2. The multi-use anchor plate for table legs according to claim 1, **characterized in that** said connecting devices for a table leg consist of a round ashlar (15) with a central threaded hole, which receives the end of the threaded stem of a leg which is inserted into said threaded hole.

3. The multi-use anchor plate for table legs according to claim 1, **characterized in that** said connecting devices for a table leg consist of a hexagonal ashlar (16) with a non-threaded central hole, which receives and blocks a hexagonal nut or a screw having an axial hexagonal head.

4. The multi-use anchor plate for table legs according to any of the previous claims, **characterized in that** it is in the form of a right-angle triangle with said holes for connection to the surface (12, 13, 14) in line along its three sides.

5. The multi-use anchor plate for table legs according to claim 4, **characterized in that** the holes used for connection to the surface are in line along the edges of the single surface, for anchoring a leg to the corner, or in line on the edges of both surfaces connected to each other.

6. The multi-use anchor plate for table legs according to claim 1, **characterized in that** said holes (12, 13, 14) have an interspacing of 32 mm, or a multiple of 32 mm, corresponding to the holes (F) situated at the corners of a table (T).

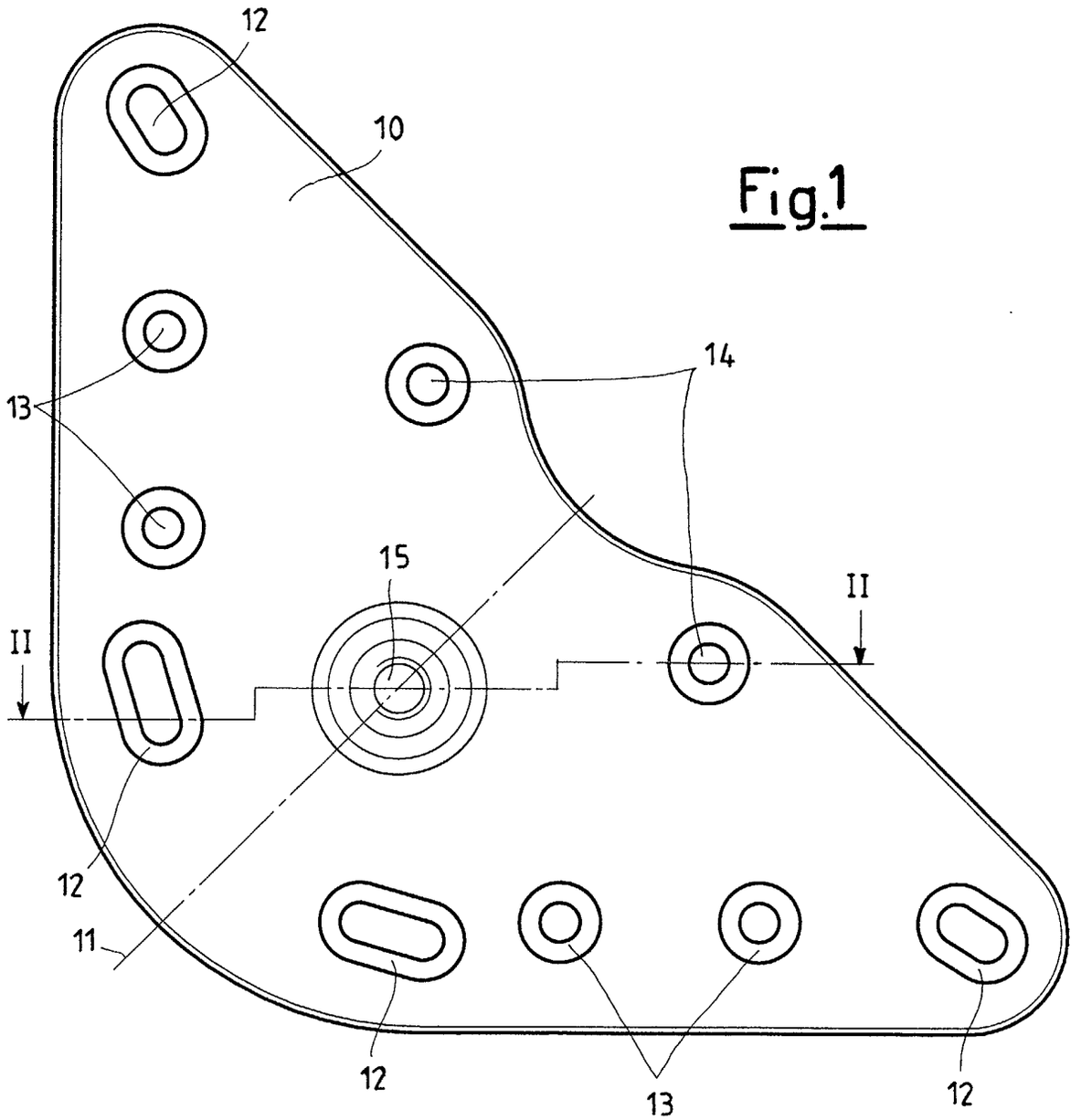



Fig.1

Fig.2

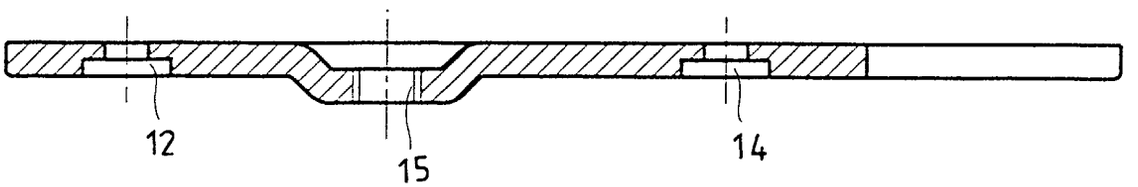


Fig.3

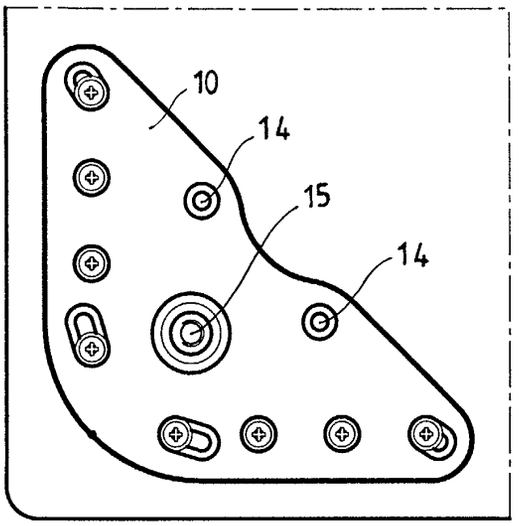
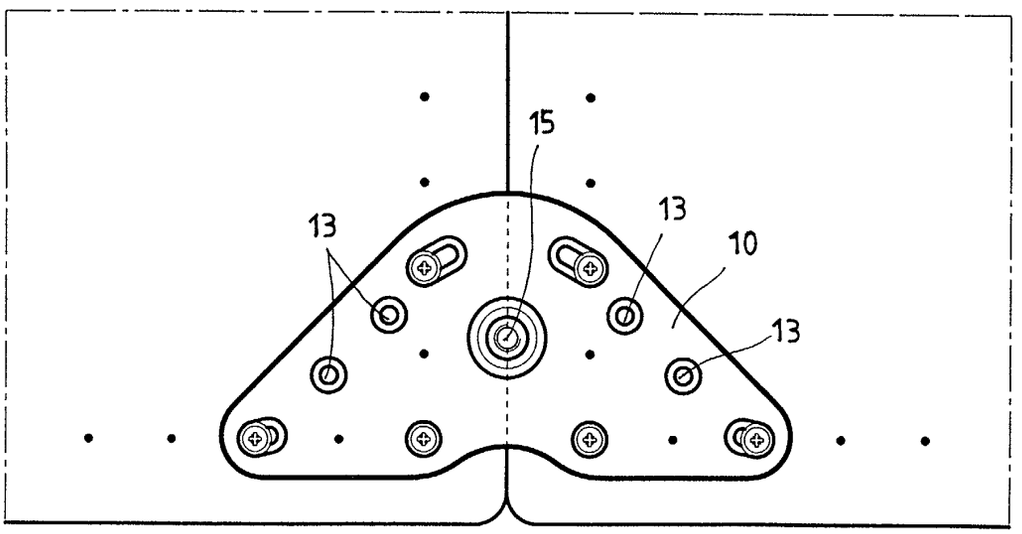



Fig.4



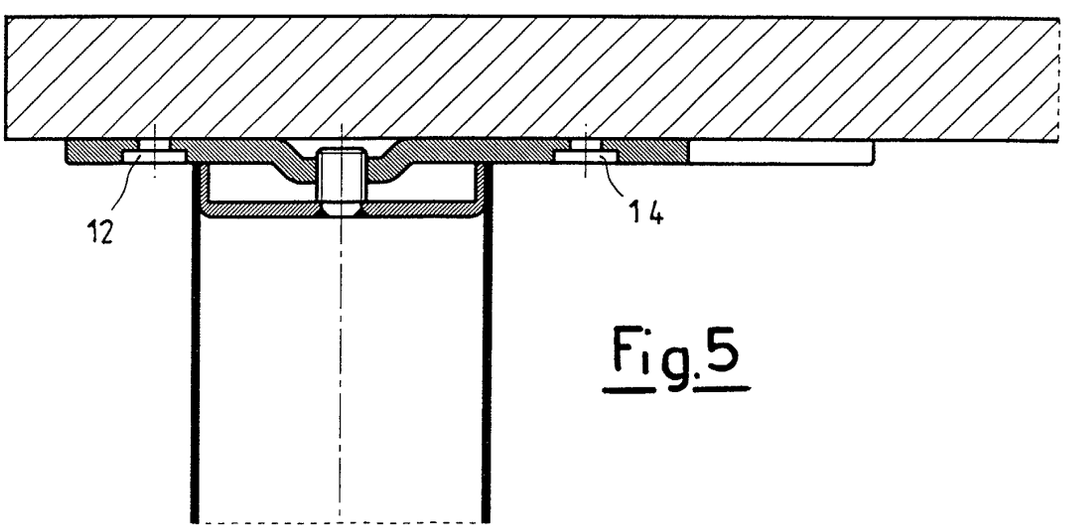




Fig.5

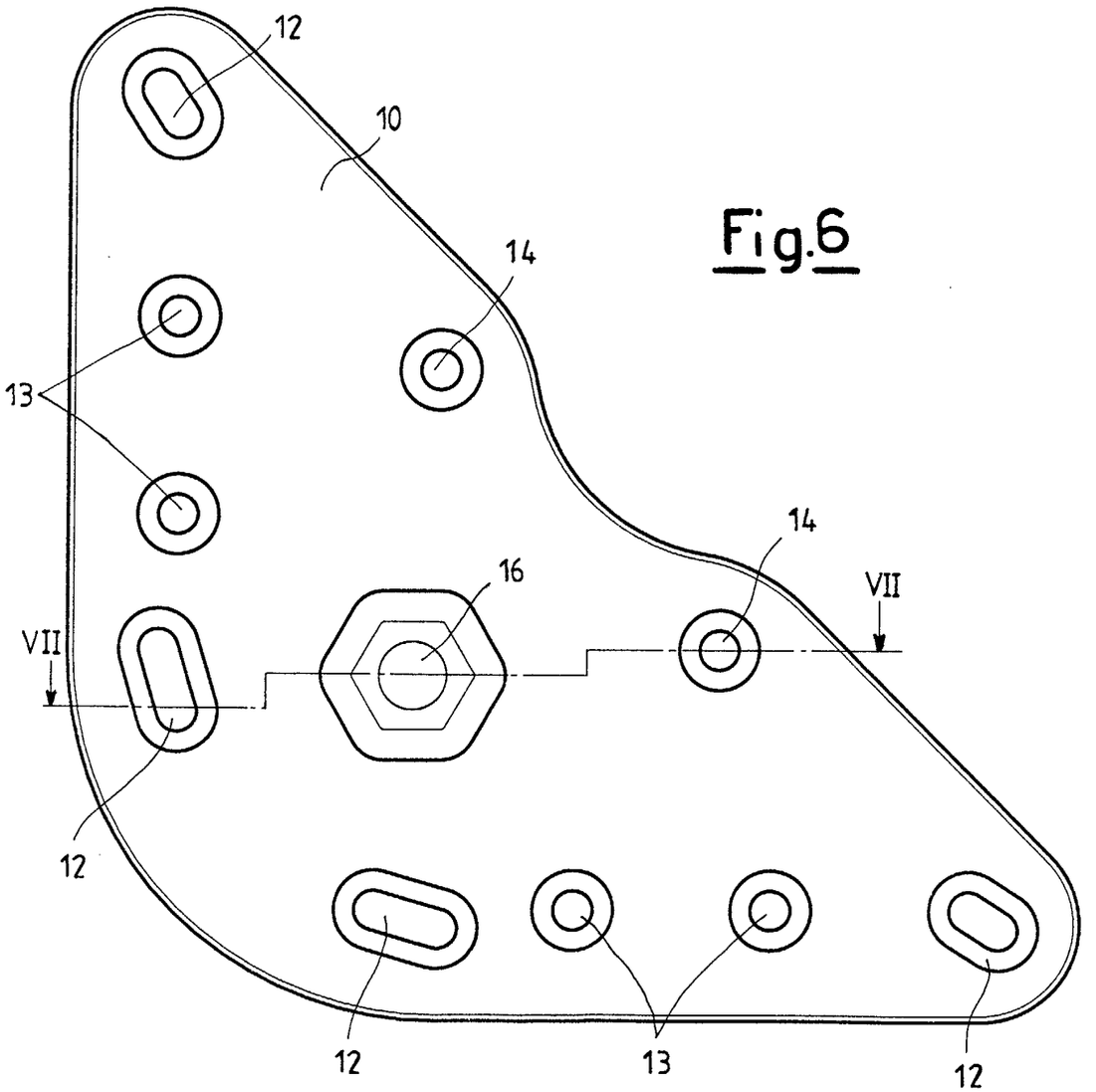



Fig.6

Fig.7

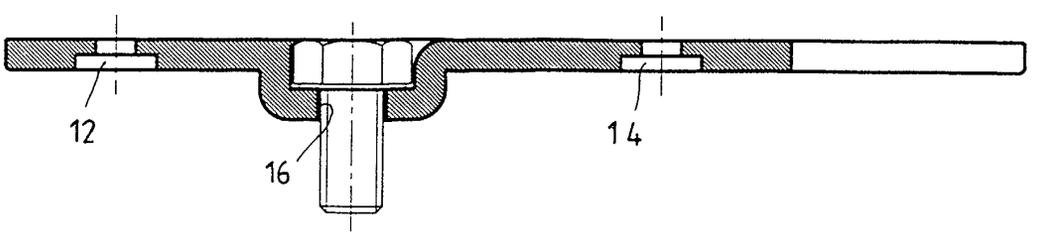
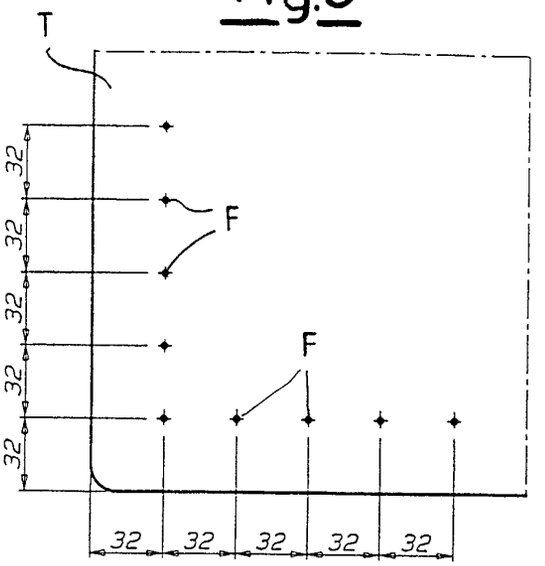


Fig.9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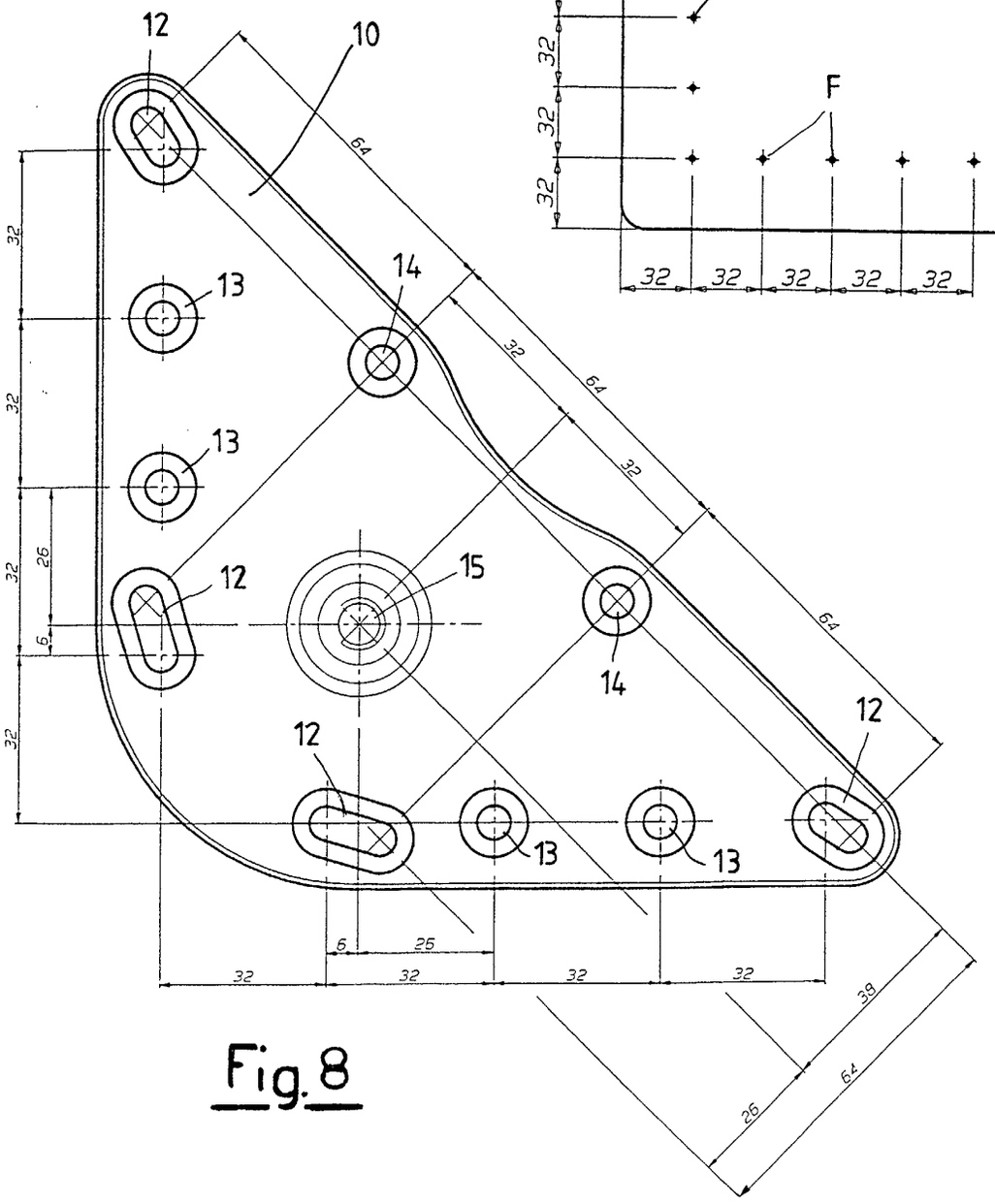
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Fig.8

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# EUROPEAN SEARCH REPORT

Application Number
EP 01 20 4449

## 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) |
|---|---|---|---|
| Y | FR 2 510 207 A (RODET HENRI)<br>28 January 1983 (1983-01-28)<br>* claim 1; figures 1-4 * | 1-5 | F16B12/44 |
| Y | FR 2 602 854 A (MECAFABLON)<br>19 February 1988 (1988-02-19)<br>* abstract; figure 4 * | 1-5 | |
| X | US 3 620 492 A (JENNINGS ROY E)<br>16 November 1971 (1971-11-16) | 1,4,5 | |
| Y | * figures 1,3,4 * | 2 | |
| Y | US 3 160 381 A (MURRAY LANGBAUM)<br>8 December 1964 (1964-12-08)<br>* figures 3-5 * | 2 | |
| X | US 3 530 804 A (BROOME OSCAR E)<br>29 September 1970 (1970-09-29)<br>* claim 1; figures 1-3 * | 1 | |
| A | US 2 895 777 A (URBAN WILBUR J)<br>21 July 1959 (1959-07-21)<br>* claim 1; figures 2,4 * | 1,2 | TECHNICAL FIELDS SEARCHED (Int.Cl.7)<br>F16B |

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| BERLIN | 21 February 2002 | Bousquet, K |

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| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| FR 2510207 A | 28-01-1983 | FR 2510207 A1 | 28-01-1983 |
| FR 2602854 A | 19-02-1988 | FR 2602854 A1 | 19-02-1988 |
| US 3620492 A | 16-11-1971 | NONE | |
| US 3160381 A | 08-12-1964 | US 3143375 A | 04-08-1964 |
| US 3530804 A | 29-09-1970 | NONE | |
| US 2895777 A | 21-07-1959 | NONE | |

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82