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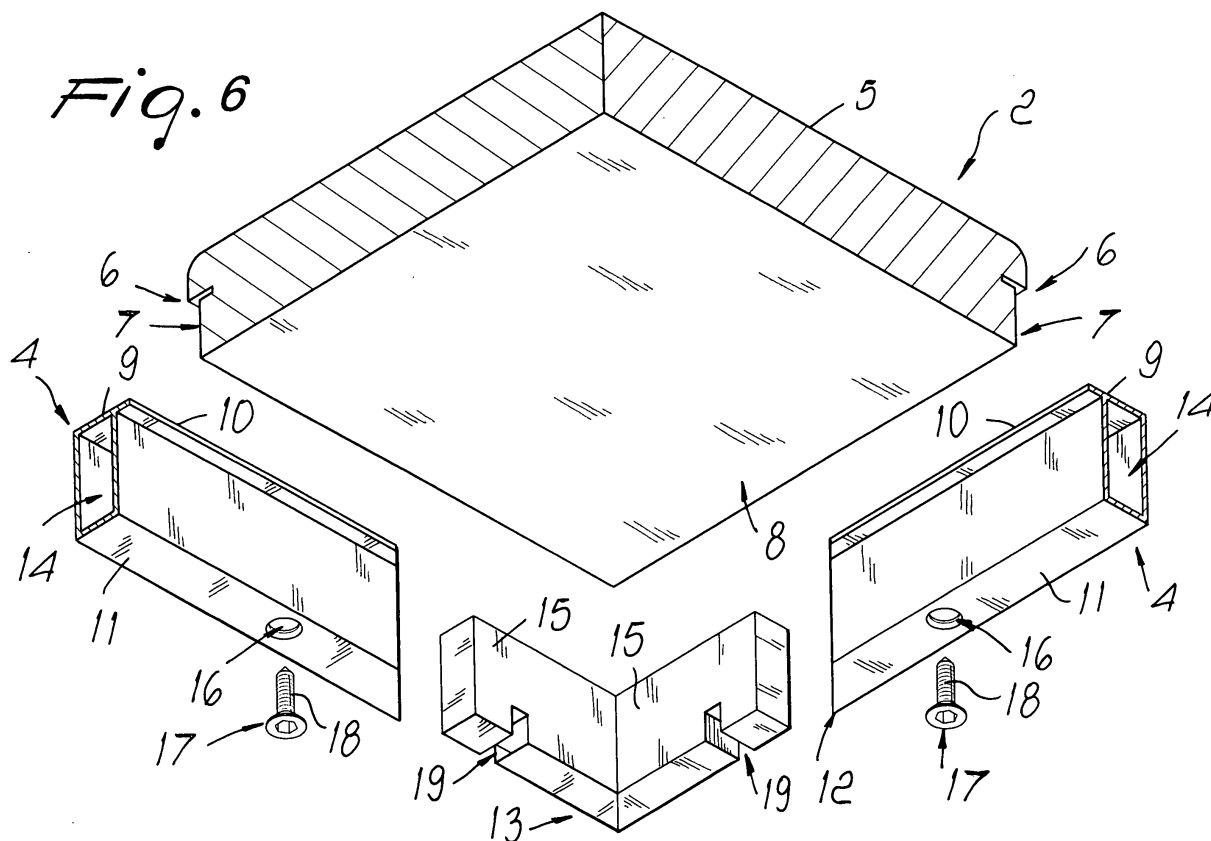
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(54) Panel, particularly for kitchen furniture

(57) A panel (1), particularly usable to manufacture kitchen furniture, comprising a flat body (2) along the

perimeter of which separate metallic profiled elements (4) are associated that have means (13) for mutual angular connection.



Description

[0001] The present invention relates to a panel, having accordingly a thickness of approximately 18 mm or more, that is particularly usable in the field of kitchen furniture, such as for example kitchen worktops, table tops, exposed doors and side walls of furniture carcasses, commonly known as finishing sides.

[0002] Table tops and doors made for example entirely of plastic material or wood coated with waterproofing paint are currently commonly used in the field of kitchen furniture.

[0003] It is also known to use panels formed by a flat body made of plywood or chipwood, fully covered with a lamina made of plastic material or by a veneer of wood, glued appropriately onto the respective faces of the flat body.

[0004] It is also known to apply a border to a panel, made for example of plastics, by thermal bonding of a strip of plastic material that is covered externally with a metallic lamination.

[0005] All the known types of panel cited above have various drawbacks, due mainly to the fact that the materials used often do not have aesthetic or technical characteristics that are adequate for their use.

[0006] In particular, the panels made of wood and/or plastics described above are prone to damage, which can occur due to exposure to high temperatures, to accidental impact with foreign objects, or due to water infiltrations.

[0007] Kitchen furniture in fact necessarily has to be arranged proximate to heat sources, such as burners, the electric or gas-fired oven, and any other heating devices, and often also acts as containers or stands for said heating devices.

[0008] Likewise, kitchen furniture accommodates or is usually arranged adjacent to at least one sink or even a dishwasher, and can also act as supporting bases for pots or kitchen vessels and accordingly are often in contact with water or other liquids.

[0009] The main drawback of these known kinds of panel is that they often have a limited durability, or in any case are subject to wear and to a gradual damage or deformation that can also entail separation of the respective borders constituted for example by said strips of plastic material or lamina.

[0010] The panels that are most intensely affected by this wear are in fact the ones that lie closest to source of heat or water, since depending on the type of panel used there may be a first initial slight peeling of the plastic lamina, which usually occurs at the connecting region between the border and the surface, and especially at the corners of the panel; or a small portion of paint might be removed, leading to loss of the waterproofness characteristic.

[0011] While maintaining their functionality sometimes unchanged, these known types of panel, once damaged, have the drawback of having in any case a

substantially compromised aesthetic impact which is in any case unpleasant.

[0012] This leads to the severe drawback of not only compromising the overall pleasantness of the kitchen but also of causing in the user the perception of low quality of the kitchen.

[0013] In the field of office furniture it is also known to use doors made of wood or plastics that have, on one or more sides, covering borders made for example of rubber which affect the entire height of the edge.

[0014] This known type of door, however, is difficult to use in the field of kitchen furniture, since the mechanical and thermal stresses described above, which are frequent in using said kitchen, can easily entail damage to the rubber borders.

[0015] The described drawbacks are worsened if a wood panel of great thickness, measuring therefore 18 mm or more, is used, since very powerful forces become involved and are discharged onto the border, deforming it or breaking it.

[0016] As a partial remedy to the drawbacks noted above it is known to provide panels constituted by a frame, made of metallic material such as aluminum, which has a square or rectangular shape.

[0017] Such frame is optionally provided with one or more horizontal crossmembers that are suitable to divide the delimited internal region into two or more rectangular or square areas, which can be conveniently closed by positioning and fixing complementarily shaped flat bodies made for example of wood or plastics.

[0018] This solution, too, has the drawbacks noted above and therefore entails the possibility that due to heat and/or humidity the panel undergoes deformation, entailing deformation of the frame; moreover, in this solution the manufacture of the components and most of all their assembly are very onerous from the economical point of view, since they require the use of expensive materials and the use of labor for a considerable period of time.

[0019] The manufacturing cost of the frame, moreover, is particularly onerous since it must have a transverse cross-section and a thickness that ensure rigidity and support to the entire panel.

[0020] The aim of the present invention is to solve the above-noted problems, eliminating the drawbacks of the cited known art, by providing an invention that allows to obtain a very thick panel, particularly for kitchen furniture, in which the perimetric structure is stable over time, said panel being cheap to manufacture and assemble and at the same time maintaining its aesthetic and functional appearance.

[0021] Within this aim, an object of the invention is to provide a panel that can be assembled even automatically by using appropriately provided machines, further reducing manufacturing costs and potentially increasing production.

[0022] Another object is to provide a panel that allows

to contain any deformations due to infiltrations of water or heat.

[0023] Another object is to obtain a large panel that has optimum mechanical strength, particularly at the regions that are stressed most intensely, therefore at the edges and comers.

[0024] Another object is to provide a panel that is structurally simple and has a particularly pleasant, innovative and durable aesthetic impact.

[0025] This aim and these and other objects that will become better apparent hereinafter are achieved by a high-thickness panel, particularly for kitchen furniture, characterized in that it is constituted by a flat body, along the perimeter of which it is possible to associate separate metallic profiled elements that have means for mutual angular connection.

[0026] Further characteristics and advantages of the invention will become better apparent from the following detailed description of a particular embodiment thereof, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a perspective view of the panel according to the invention;

Figure 2 is a sectional view of the panel, taken along the line II-II of Figure 1;

Figure 3 is a partial sectional perspective view of a metallic profiled element;

Figure 4 is a sectional view, taken along a transverse central plane, of the flat body;

Figure 5 is a top view of a comer of the panel;

Figure 6 is an exploded bottom perspective view, taken at a comer, of the components of the panel;

Figure 7 is a sectional view of the panel, taken along the line VII-VII of Figure 5.

[0027] With reference to the figures, the reference numeral 1 generally designates a large panel, which as such has a thickness of approximately 18 mm or more and can be used to manufacture furniture and particularly for kitchen furniture and components for kitchen furniture, such as for example worktops, table tops, exposed doors and/or sides of carcasses of furniture, i.e., finishing sides.

[0028] The panel 1 is constituted by a flat polygonal body 2, for example square or rectangular, at lateral edges 3 of which it is possible to associate respective metallic profiled elements, designated by the reference numeral 4.

[0029] A first seat 6 is in fact provided at each of the lateral edges 3 at right angles thereto and proximate to an upper surface 5 of the flat body 2, and affects the depth of the flat body 2 for a few millimeters.

[0030] A recess having a chosen depth, designated by the reference letter A in Figure 4, is further provided at each lateral edge 3 in a portion 7 that lies between a lower surface 8 of the flat body 2 and the first seat 6.

[0031] The metallic profiled elements 4 are associa-

ble with the flat body 2 at the lateral edges 3, are internally hollow and have, in a transverse cross-section, advantageously a rectangular plan shape, with a lateral tab 10 that is shaped approximately complementarily to the first seat 6 at an upper face 9.

[0032] The height of each metallic profiled element 4 is such that once the lateral tab 10 has been arranged in the first seat 6 a lower base 11 is arranged approximately flush with the adjacent lower surface 8 of the flat body 2.

[0033] The various metallic profiled elements have a length equal to the corresponding lateral edge with which they are to be associated; the ends 12 of each metallic profiled element being cut at a chosen angle in order to allow connection to the adjacent metallic profiled element.

[0034] In the particular embodiment shown, when using a flat body that has a rectangular or square shape, the ends of each metallic profiled element are advantageously cut at 45°.

[0035] The panel uses means for mutual angular connection between two adjacent metallic profiled elements.

[0036] Such means are constituted by a comer element 13, which has in plan view a configuration that in the particular embodiment is substantially L-shaped and can change according to the perimetric configuration of the flat body 2.

[0037] Each corner element 13 has, in a transverse cross-section, a shape that is approximately complementary to the cavity 14 formed at each metallic profiled element, since it is hollow.

[0038] Therefore, the coupling of each metallic profiled element to the lateral edge 3 of the flat body 2 provides for the positioning of a first metallic profiled element so that the lateral tab 10 is arranged in the first seat 6 and then the insertion of a wing 15 of the comer element 13 in such metallic profiled element followed by the subsequent positioning of an additional metallic profiled element at the adjacent lateral edge of the flat body and its sliding or positioning at the other wing of the comer element 13.

[0039] To allow stable interconnection between two adjacent metallic profiled elements, at the lower face 11 of each profiled element and proximate to the end 12 thereof there is a second threaded seat 16 that interacts with suitable screws 17, the stem 18 of which can be accommodated at a suitable slot 19 formed at the adjacent overlying wing 15 of the corner element 13 previously inserted in the cavity 14 of the metallic profiled element 4.

[0040] As an alternative, instead of the slot 19 it is possible to provide a third seat that is shaped complementarily to the stem 18 of the screw 17.

[0041] The positioning of the screws allows to achieve stable locking of the various metallic profiled elements, which therefore form a practically non-deformable rigid frame perimetrically with respect to the flat body 2.

[0042] It has thus been found that the invention has achieved the intended aim and objects, a high-thickness panel having been provided that can be used to manufacture furniture and particularly kitchen furniture and whose perimetric structure is stable over time, such solution being further economical to manufacture and assemble and at the same time maintaining over time its aesthetic and functional appearance.

[0043] This solution can be assembled even automatically, by using suitable machines, with a further reduction of manufacturing costs and a potential increase in production; moreover, it allows to contain any deformations due to infiltrations of water or heat, by virtue of excellent mechanical strength, particularly at the regions that are stressed most intensely, such as the corners.

[0044] The materials used, as well as the dimensions that constitute the individual components of the invention, may of course be more pertinent according to specific requirements.

[0045] The various means for performing certain different functions need not certainly coexist only in the illustrated embodiment but can be present per se in many embodiments, including ones that are not illustrated.

[0046] The disclosures in Italian Utility Model Application No. TV2003U000013 from which this application claims priority are incorporated herein by reference.

[0047] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A high-thickness panel, particularly for kitchen furniture, **characterized in that** it is constituted by a flat body, along the perimeter of which separate metallic profiled elements are associated that have means for mutual angular connection.
2. The panel according to claim 1, **characterized in that** said flat body has a thickness equal to, or greater than, approximately 18 mm and has a polygonal plan shape.
3. The panel according to claims 1 and 2, **characterized in that** at least one first seat is provided at each one of said lateral edges at right angles thereto and proximate to the upper surface of said flat body, said seat affecting the depth of said flat body for a few millimeters.
4. The panel according to claims 1 and 3, **characterized in that** a recess of material having a chosen

depth is provided at each one of said lateral edges over a given extent between the lower surface of said flat body and said first seat.

5. The panel according to claims 1 and 4, **characterized in that** said metallic profiled elements are internally hollow, and have, in a transverse cross-section, a rectangular plan shape, with at least one lateral tab shaped approximately complementarily to said first seat at their upper face.
6. The panel according to claims 1 and 5, **characterized in that** the height of each metallic profiled element is such that once said lateral tab has been arranged in said first seat the lower face of said profiled elements is arranged approximately flush with said adjacent lower surface of said flat body.
7. The panel according to one or more of the preceding claims, **characterized in that** said metallic profiled elements have a length that is equal to the corresponding lateral edge with which they are to be associated, the ends of each one of said metallic profiled elements being cut at a chosen angle in order to allow connection to the adjacent metallic profiled element.
8. The panel according to claim 7, **characterized in that** said flat body has a rectangular shape in plan view, the ends of each metallic profiled element being cut at 45°.
9. The panel according to one or more of the preceding claims, **characterized in that** each one of said means for mutual angular interconnection between two adjacent metallic profiled elements is constituted by a corner element whose plan shape depends on the perimetric configuration of said flat body.
10. The panel according to claims 1, 8 and 9, **characterized in that** said corner element is preferably L-shaped.
11. The panel according to one or more of the preceding claims, **characterized in that** each one of said corner elements has, in a transverse cross-section, a shape that is approximately complementary to the cavity formed at each hollow metallic profiled element.
12. The panel according to claim 11, **characterized in that** the coupling of one of said metallic profiled elements to the corresponding edge of said lateral edges of said flat body provides for positioning a first metallic profiled element so that said lateral tab is arranged in said first seat and then the insertion of a wing of one of said corner elements in said first metallic profiled element and then the subsequent

positioning of a second metallic profiled element on the adjacent lateral edge of said flat body, sliding or being positioned at the other wing of said corner element.

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13. The panel according to one or more of the preceding claims, **characterized in that** it comprises means for stable connection between two adjacent metallic profiled elements, said means being constituted by second threaded seats and formed at the lower face of each one of said metallic profiled elements and proximate to said ends thereof. 10
14. The panel according to claim 13, **characterized in that** a screw interacts with each one of said second threaded seats and its stem can be accommodated at a slot formed at the adjacent and overlying wing of said corner element, which is inserted beforehand in said cavity of said metallic profiled element. 15
15. The panel according to claim 13, **characterized in that** a screw interacts with each one of said second threaded seats and its stem can be accommodated at a complementarily threaded third seat formed at the adjacent and overlying wing of said corner element inserted beforehand in said cavity of said metallic profiled element. 20 25
16. The panel according to one or more of the preceding claims, **characterized in that** the placement of said screws allows to achieve stable locking of the various metallic profiled elements that form a rigid frame along the perimeter of said flat body. 30

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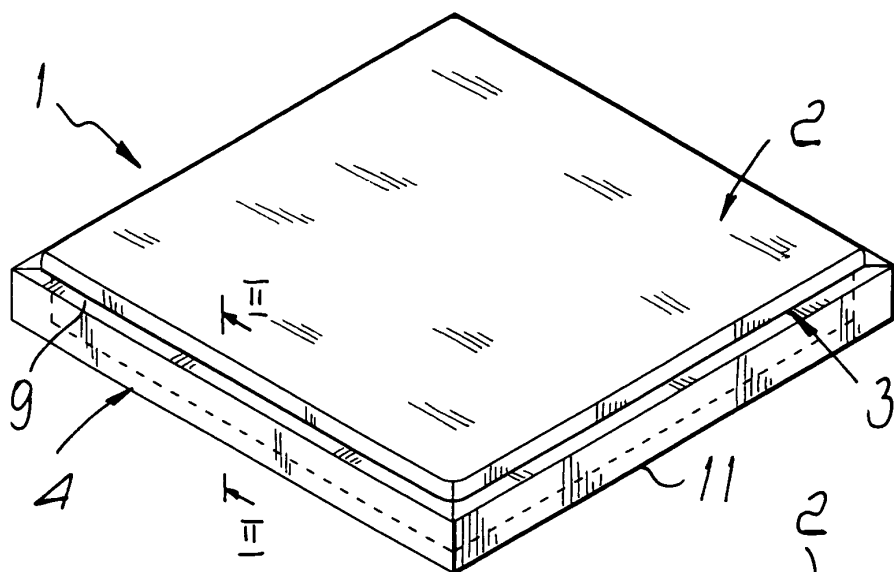


Fig. 1

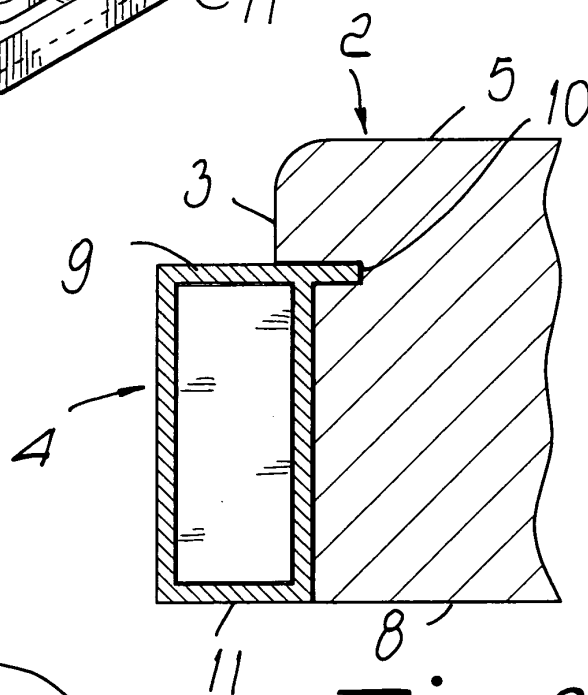


Fig. 2

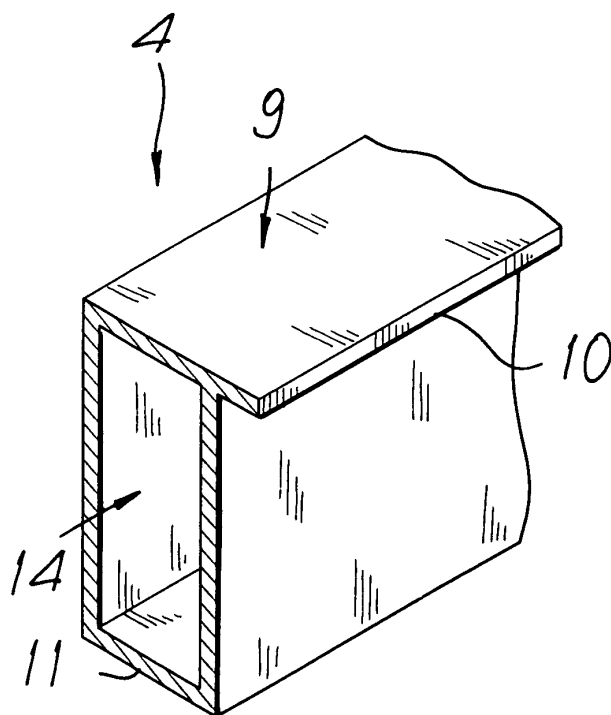
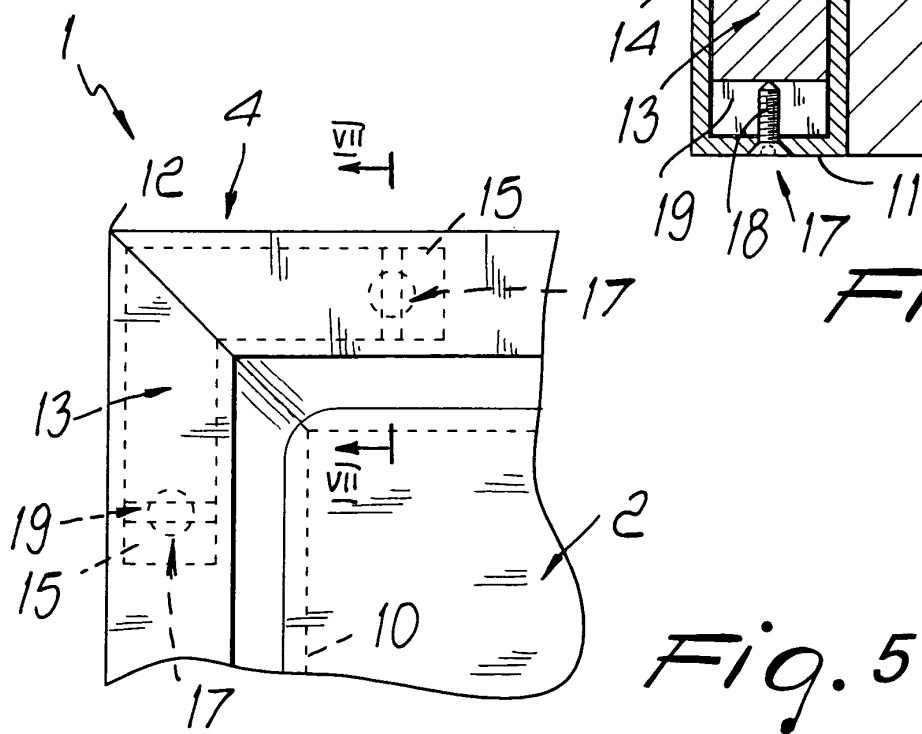
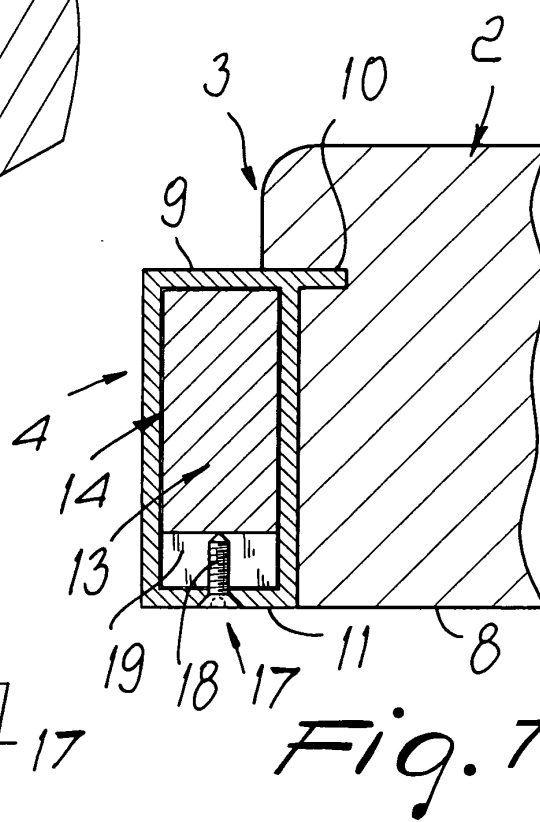
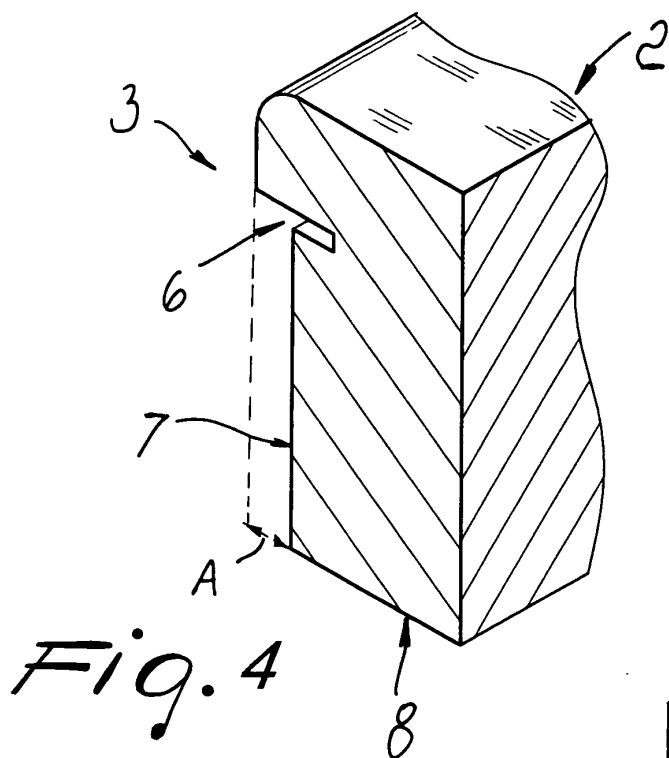
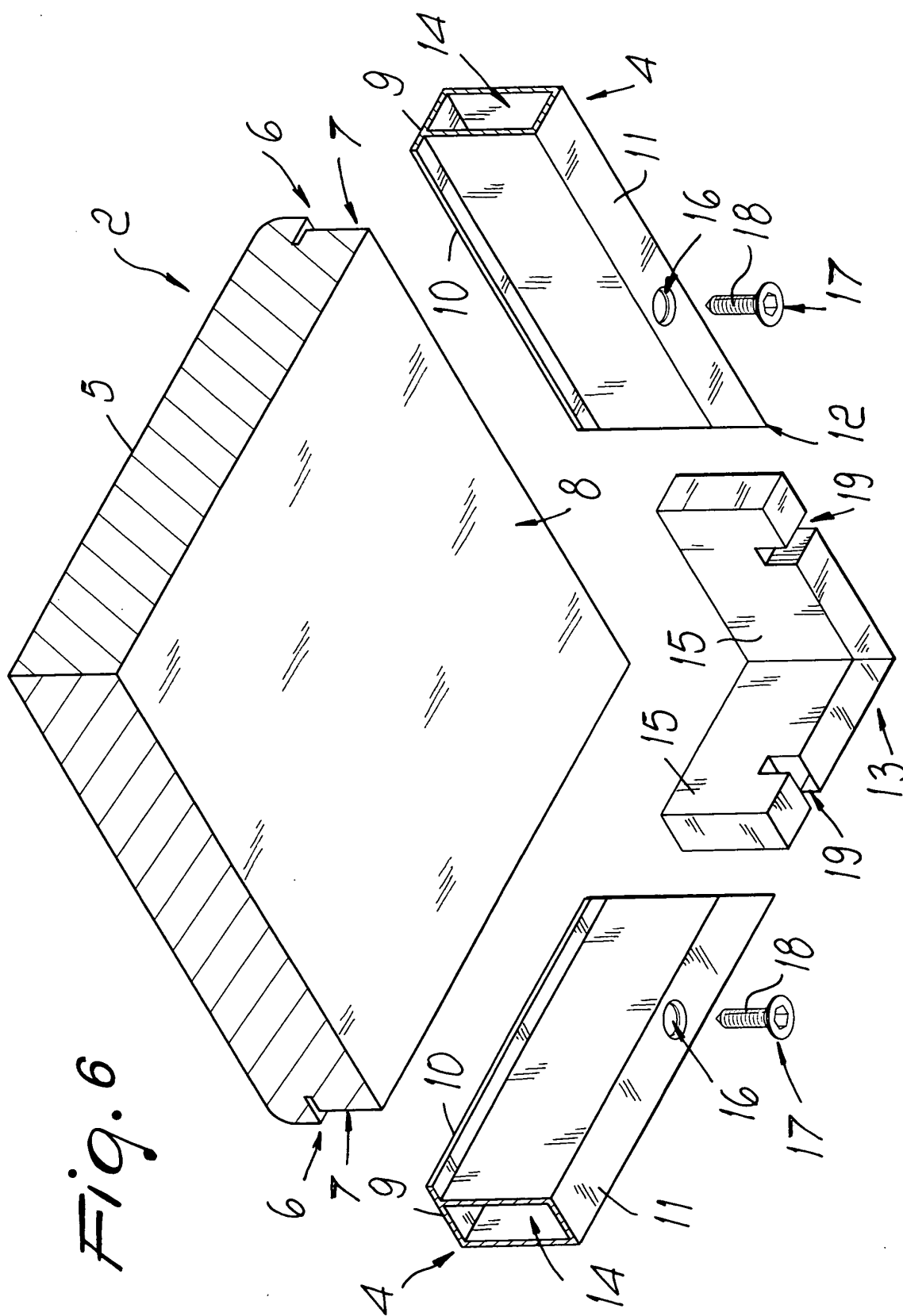


Fig. 3







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EUROPEAN SEARCH REPORT

Application Number
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The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 3 June 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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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