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(54) **Supporting device for plasterboard walls**

(57) A supporting angled device for plasterboard walls (17), constituted by plasterboard panels, includes:

- a self-supporting upright (16) having two box-type portions (1, 2) jointed to form a predefined angle of 45° or 90° and having an approximately "C" shaped cross section and defining an external side (22), a lateral side (20) and an internal side (23);
- junction means (5, 6) having portions (21) fixed to the external sides (22) of the box-type portions (1, 2).

The plasterboard panels are fixed to the external sides (22) and to the internal sides (23) in correspondence of an assembled condition (M) of each related plasterboard wall (17).

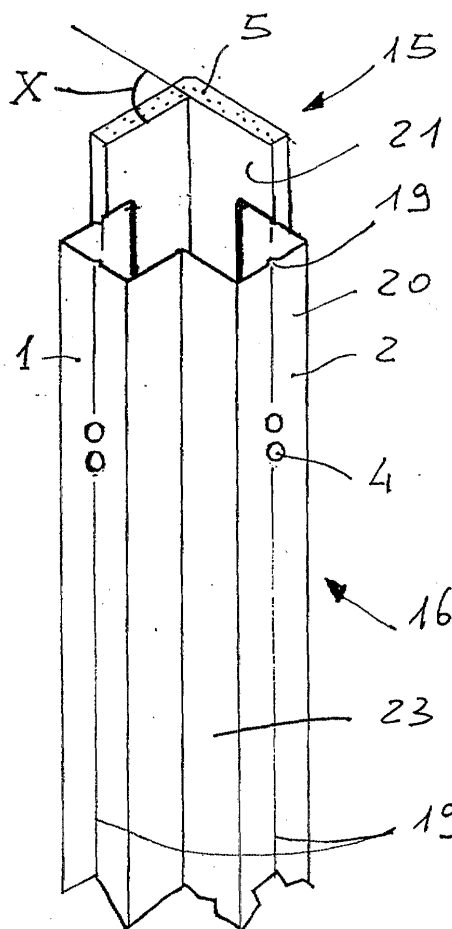


FIG. 2

Description

[0001] The present invention refers to devices used in the building trades. Particularly the invention refers to a supporting device for plasterboard walls, that is an element which simplifies the angular joining of two plasterboard walls, allows the use of rounded or faced plasterboard corners, without stuccoing the edge, thus according to regulations, and without using edge coverings made of different material (aluminium or plastic) not homogeneous with the plasterboard structure.

[0002] Currently for carrying out an angular wall, at 90° or 45°, three traditional metallic uprights are used, positioned very close each other forming a triangle, but always independently, as shown in figure 21.

[0003] The main drawback of the known junctions consists in that the three uprights that constitute the corner must be vertically assembled together with the plasterboard panels, because said uprights are integral with the wall, as shown in figure 22. This creates positioning problems and only sharp edges 22A to be stuccoed or allows superimposing edge coverings not homogenous with the plasterboard structure.

[0004] Further drawback of the three uprights consists in that the walls are not at full height, and there is not the ceiling fastening.

[0005] Another drawback consists in that also the internal corner of the wall needs an expensive stuccoing because the three uprights do not allow using a single panel of continuous paper being absent the internal support 22B.

[0006] A further drawback consists in that doors or windows at the corners cannot be provided because the three independent uprights do not constitute a self-supporting corner structure thus needing another upright 22c spaced at least 30 centimetres from the corner.

[0007] The main object of the present invention is to propose an upright at 90° and at 45° allowing the junction of two plasterboard walls for carrying out self-supporting corners independent of the walls.

[0008] Its structure further allows to obtain rounded or chamfered plasterboard edges according to rules, to eliminate the stuccoing even inside the wall, to create opening for doors or windows near the two corner, without ceiling fastening.

[0009] The invention allows assembling any angular structure, modifying the placement, carrying out the fittings passage, positioning the possible fixtures, before closing the structure with the plasterboard panels.

[0010] The uprights are carried out at 90° and at 45° and are constituted by two identical shaped elements placed in such a way to define the wall thickness.

[0011] These two shaped jointed elements form a stiff and self-supporting box that leave externally an opening fit to allow the passage of the fittings ducts, before applying the desired plasterboard edge-coverings.

[0012] The continuity of the stiff box at the internal corner allows to fit plasterboard sheets with continuous pa-

per without stuccoing.

[0013] The characteristics of the invention are underlined in the following with particular reference with the attached drawings, in which:

- 5 - figure 1 shows a cross section view of the corner supporting device, object of the present invention, to which two plasterboard walls are assembled at 90°;
- 10 - figure 2 shows an axonometric partial view of the supporting device of figure 1;
- figure 3 shows a cross section view of the supporting device at 45° assembled to two plasterboard walls positioned at 45°;
- 15 - figure 4 shows an axonometric view of the supporting device of figure 3;
- figures 5, 7 and 9 show an axonometric view of plasterboard panel portions not assembled and incised for carrying out respectively faceted, rounded and chamfered edges at 45°;
- 20 - figures 6, 8 e 10 show the assembled edges of figures 5, 7 and 9;
- figures 11, 12 and 13 show how it is possible to obtain, with a simple cutter incision, a corner panel with continuous paper without stuccoing, to be fit only onto a stiff metallic support;
- 25 - figure 14 shows a plant view of a box with self-supporting corner devices at 90° and at 45°;
- figure 15A shows an axonometric view of a plasterboard panel for carrying out the 45° edge on the supporting device of figure 4;
- 30 - figure 15B shows an axonometric view of the plasterboard edge assembled at 45° for the supporting device of figure 4;
- 35 - figures 16 and 17 show an axonometric view of the two uprights respectively at 90° and at 45° with floor and ceiling guides;
- figures 18, 19 and 20 show a variant of the supporting device object of the invention, in which a double plasterboard sheet is used both inside and outside the upright;
- 40 - figures 21 and 22 show respectively an axonometric view and a cross section view of the known uprights;
- 45 - figure 23 shows an axonometric partial view of an upright.

[0014] With reference to the figures from 1 to 20, the numeral 15 indicates a supporting angular device for plasterboard walls 17. The supporting device 15 includes a self-supporting upright 16, for instance consisting of a sheet-zinc section and junction means 5 and 6 of the plasterboard walls 17.

[0015] The self-supporting upright 16 includes two extended shaped box-type portions 1 and 2, each of them having three sides, external 22, lateral 20 and internal 23, and having cross section approximately "C" square shaped.

[0016] The two box-type portions 1 and 2 are joined

in correspondence of the longitudinal edges of the internal sides 23. The free edges of the box-type portions 1 and 2, that is the free edges of the external sides 22 are parallel and spaced in such a way to carry out an opening 3 of the upright 16.

[0017] Figures 1 and 2 show the supporting device 15 in which the two sides, internal 23 or external 22, of box-type portions 1 and 2 define a 90° angle X, between the internal face and the prolongation of the other one, of 90°.

[0018] Figures 3 and 4 show the supporting device 15 in which the X angle is 45°.

[0019] The supporting device 15 thus allows to carry out walls 17 angled at 90° or 45°.

[0020] Each side, lateral 20 and external 22, has a longitudinal stiffening groove 19.

[0021] Each lateral side 20 has a plurality of holes or slots 4 for the passage of the possible plant wiring or piping 25 of the fittings to be installed inside the plasterboard walls.

[0022] The two box-type portions 1 and 2 have a thickness of 75 mm for carrying out, with the plasterboard panels having a thickness of 12,5 mm, walls 17 with thickness of 100 mm.

[0023] With reference to figures from 5 to 10, 15A and 15B the junction means 5, 6 have a chamfer 18 interposed between two external and flat portions 21 of said junction means 5, 6. The chamfer 18 has a polygonal shape, as shown in figures 6, 10 and 15B, or a rounded shape as shown in figure 8. The polygonal shaped chamfer 18 is carried out making on the plasterboard listel 7 one or more "V" shaped parallel and near grooves 8, separated with a median portion 9. The listel 7 and the plasterboard panels of the wall 17 have the same thickness. The angle of the junction means 5 is 90° and the angle of the junction means 6 is 45°.

[0024] Channels 10, having smaller dimensions than the grooves 8, define a containment channel for the adhesive creating a perfect joining bead between the two portions of the listel 7 refolded as shown in figure 10, in order to obtain the chamfered junction means 5, 6 having a high consistence, the same thickness of the walls but independent from these latter and perfectly finished.

[0025] The lower end of the upright 16 can be fit into lower guides 14, for instance consisting of a "C" shaped section whose internal side is fixed to the floor.

[0026] The upright 16 is eventually provided with upper guides 13, for instance of known type and consisting of a "C" section whose internal side is fixed to the ceiling.

[0027] With particular reference to figures 18 and 19, the supporting device 15 allows to carry out double walls 17, each of them constituted by two superimposed plasterboard panels 26. In this case the junction means 5 or 6 are used to join the external panels only.

[0028] The self-supporting upright 16 for double walls 17 has the two box-type portions 1 and 2 with thickness of 50 mm for carrying out walls 17 with a thickness of 100 mm using two couple of plasterboard panels 26,

each of these latter 12,7 mm thick.

[0029] In correspondence of the internal sides 23 of the self-supporting upright 16 it is positioned a corner panel 11, made of continuous paper and without stuccoing, which can be easily carried out on site making a simple incision on the plasterboard panel side and refolding it, as shown in the figures 11, 12 and 13.

[0030] In case of double panels 17 a further layer of plasterboard panels is interposed between the upright 16 and the angled panel 11.

[0031] After the introduction of the fitting wiring and piping along the lower guides 14, through the holes 4 and along the upright 16, a layer of plasterboard panels 17 is fixed to the external side 22 of the upright 16 in correspondence of an assembled condition M of the related plasterboard wall 17.

[0032] The junction means 5, 6 are fixed to the upright 16, close the opening 3 and joint the adjacent plasterboard panels. If there are double layer walls 17, also the external layer of the plasterboard panels is fixed to the upright 16 so that the edges of these latter mate the edges of the junction means 5, 6.

[0033] Obviously the assembling of the supporting device 15, the walls 17 and the guides 13, 14 may be done with step and/or phases differing from those above mentioned by way of example.

[0034] It is important to notice that the junction means 5, 6 advantageously can be fit, when transported and stored, inside the related upright 16 for a better protection and for reducing the overall dimensions.

[0035] The self-supporting uprights 16, being independent from the upper metallic structure, can be advantageously used as masonry columns, whose preventive positioning determines the dimensions of the rooms that will be enclosed by the following laying of the plasterboard panels 17. It is therefore simple to plan and modify the position of any structure, because the development of this latter is defined only by the position of the columns that, being independent, can be easily moved in order to follow precisely the request.

[0036] It is advantageous to emphasize that the firmness of the upright 16 allow stiffening the corner of the plasterboard wall and fixing also the doors and windows jambs which can be assembled very close to the corner of the plasterboard wall.

[0037] The main advantage of the present invention is to provide a supporting device fit to support and joint the plasterboard panels by means of a self-supporting upright fit to drive and facilitate the plasterboard panel positioning with any angular disposition, further allowing the stuccoing removal or reduction, avoiding the use of the corner edge coverings.

[0038] Another advantage consists in providing a supporting device for walls having partial height without ceiling connections, that allows the fixing of the doors also near to their edge because of the upright stiffness.

Claims

1. Supporting device for plasterboard walls (17) made of plasterboard panels characterized in that it includes:
 - a self-supporting upright (16) including at least two box-type portions (1, 2) jointed to form a predefined angle (X) and each portion having an approximately "C" shaped cross section, an external side (22), a lateral side (20) and an internal side (23);
 - junction means (5, 6) having portions (21) fixable to the external sides (22) of the box-type portions (1, 2);

said plasterboard panels being fixed to the external sides (22) and to the internal sides (23) in correspondence of an assembled condition (M) of each related plasterboard wall (17).
2. Device according to claim 1 characterized in that there is an opening (3) between the external sides (22) of the two box-type portions (1, 2).
3. Device according to claim 1 characterized in that each lateral side (20) of the self-supporting upright (16) has a plurality of holes or slots (4) and/or a longitudinal groove (19).
4. Device according to claim 1 characterized in that the portions (21) of the junction means (5, 6) have a chamfered portion (18) carried out by means of a plurality of grooves (8).
5. Device according to claim 4 characterized in that the chamfered portion (18) includes a plurality of channels (10) defining a containment channel for an adhesive.
6. Device according to claim 4 characterized in that the chamfered portion (18) has polygonal or rounded shape.
7. Device according to claim 4 characterized in that the grooves (8) are two and are separated by a median portion (9).
8. Device according to claim 1 characterized in that further includes lower guides (14) connected to the lower end of the upright (16).
9. Device according to claim 1 characterized in that further includes upper guides (13) connected to the upper end of the upright (16).
10. Device according to claim 1 characterized in that the plasterboard panels fixed to the internal sides

(23) of the self-supporting upright (16) are of continuous-paper type.

11. Device according to claim 1 characterized in that the plasterboard panels fixed to the sides external (22) and internal (23) are constituted by two superimposed plasterboard sheets (26).
12. Device according to claim 1 characterized in that the predefined angle (X) is preferably of 45° or 90°.

FIG. 1

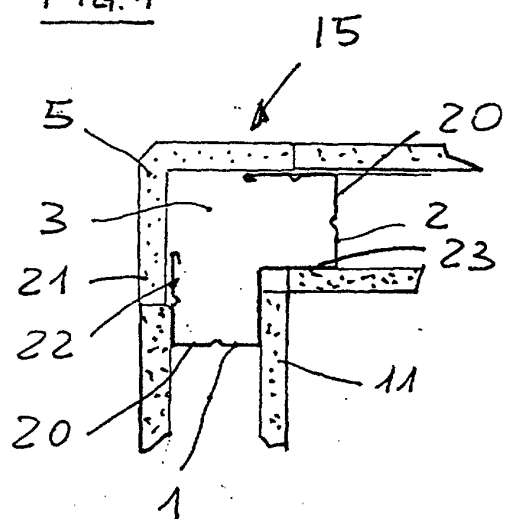


FIG. 3

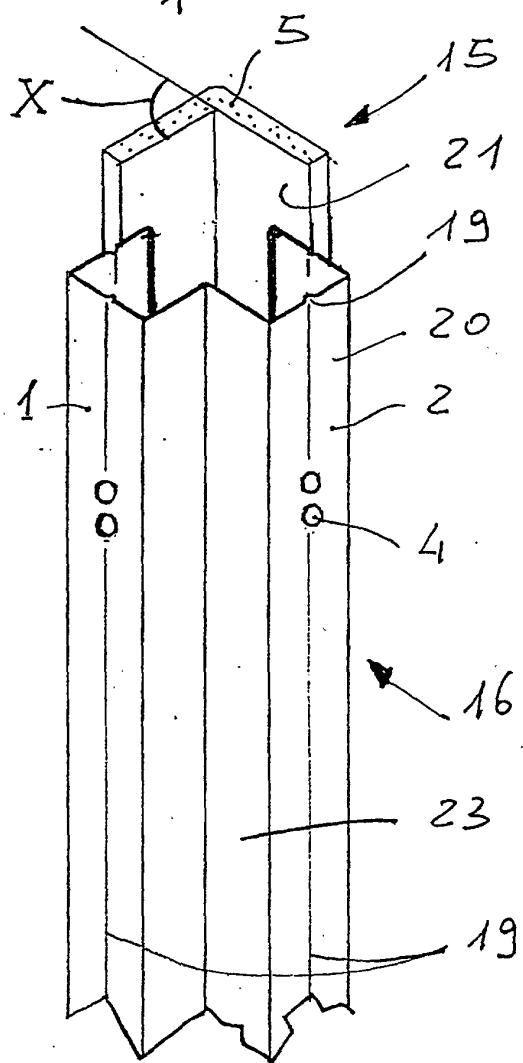
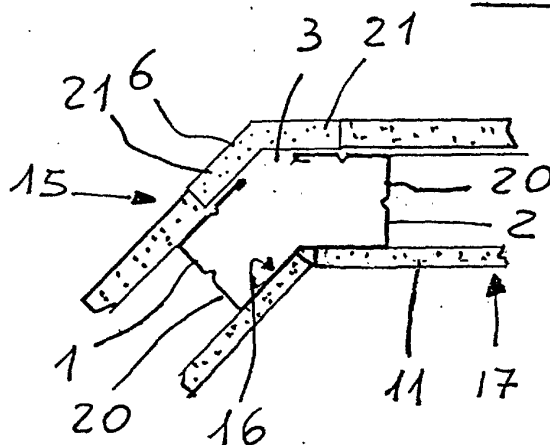


FIG. 2

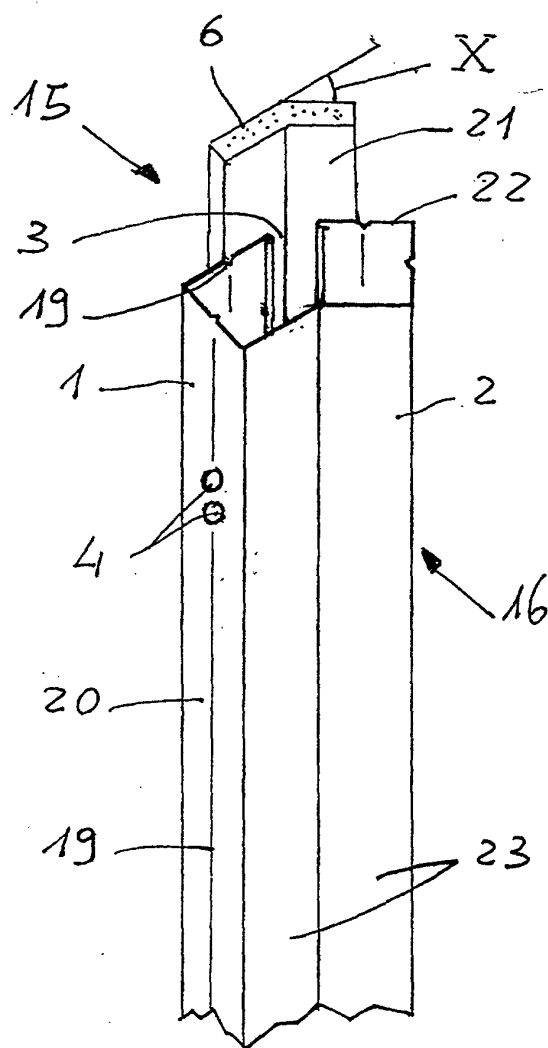


FIG. 4

FIG. 5

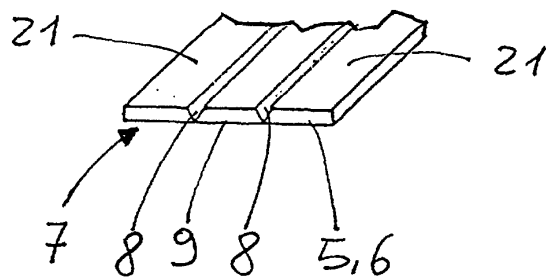


FIG. 7

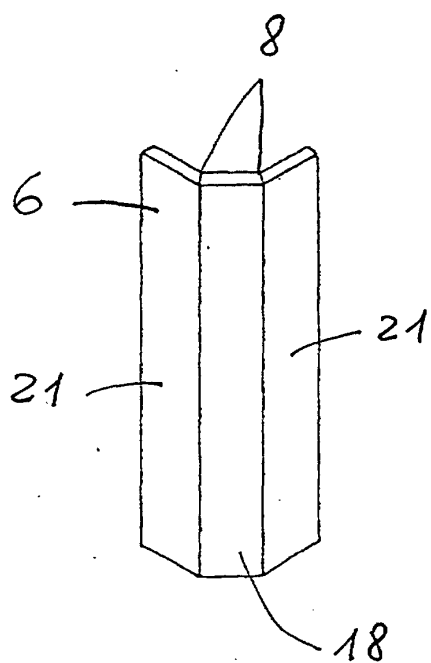
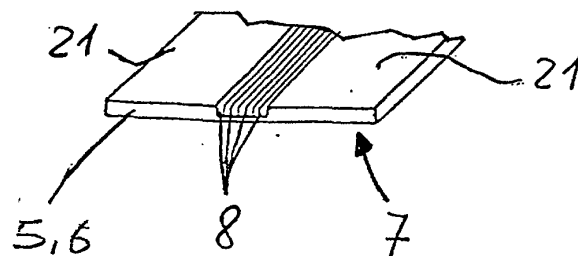


FIG. 6

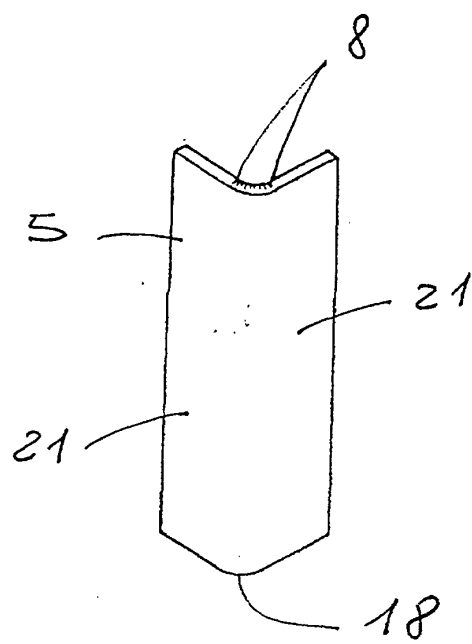
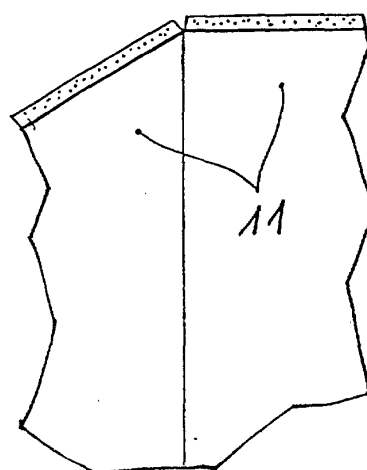
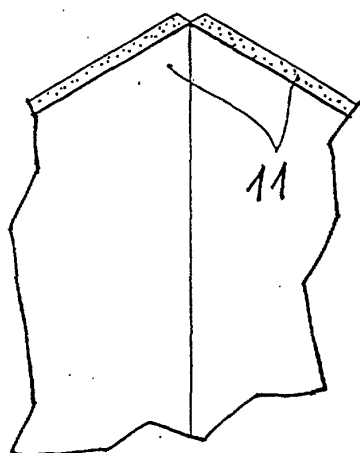
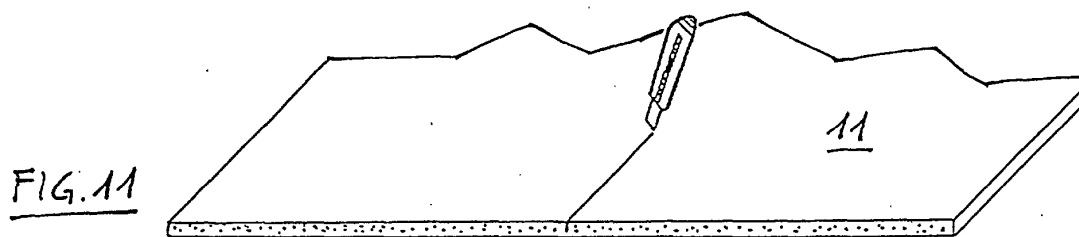
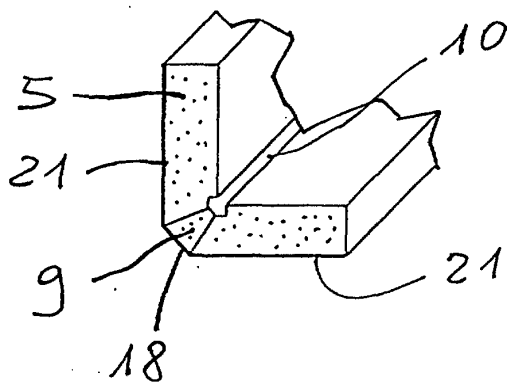
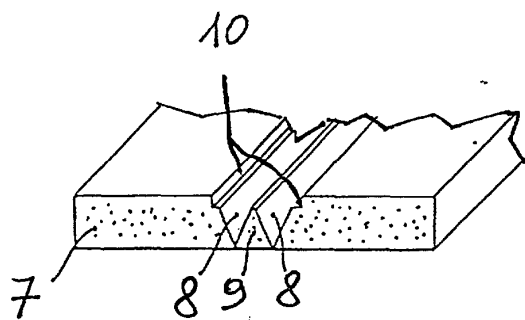
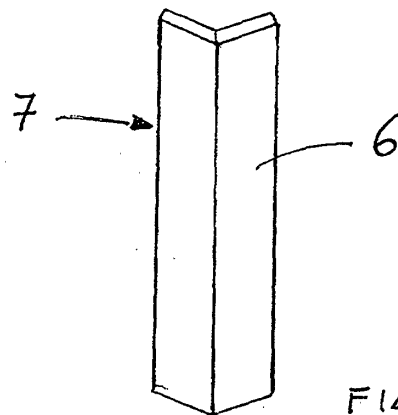
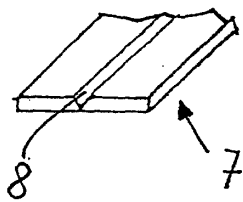
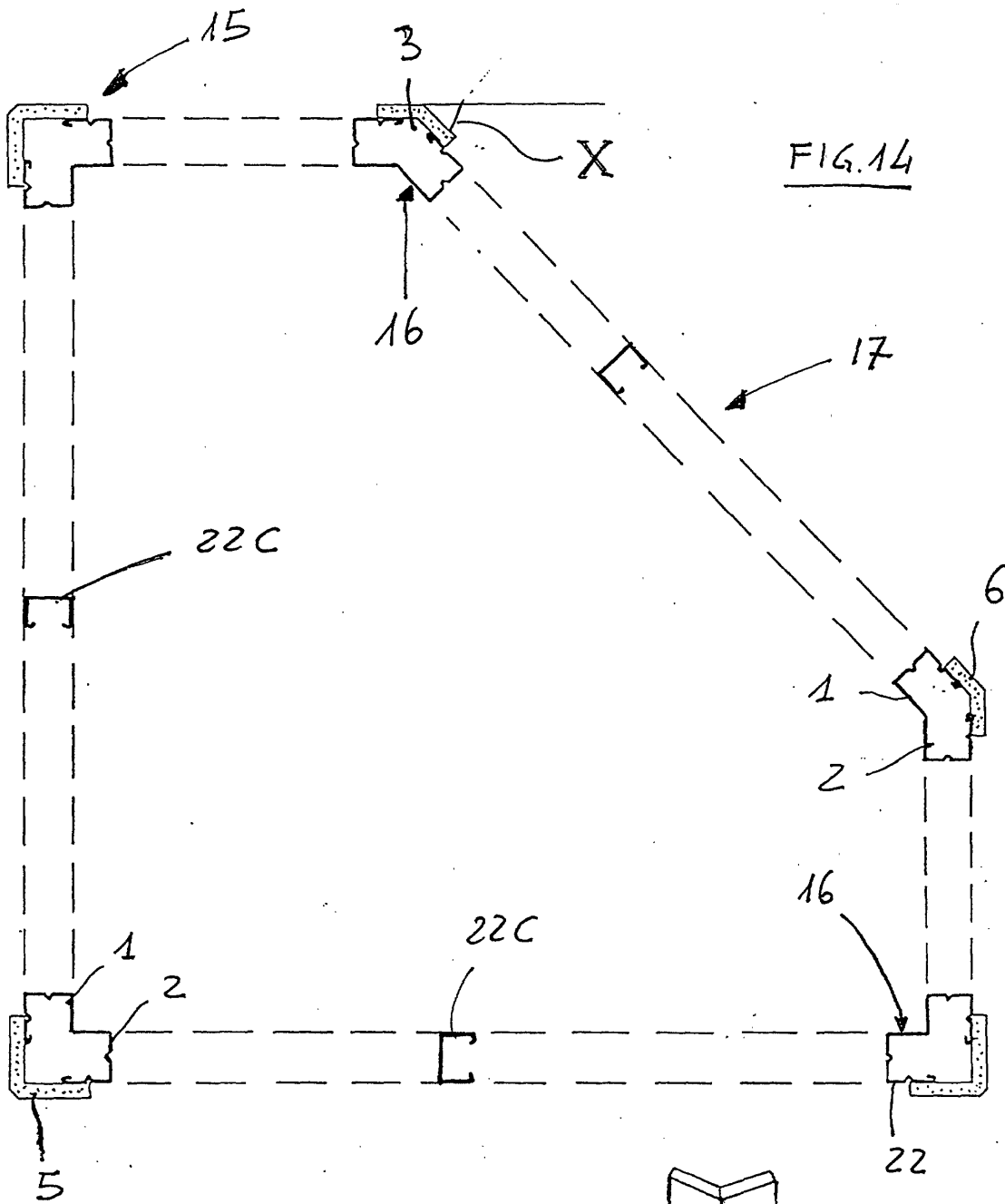
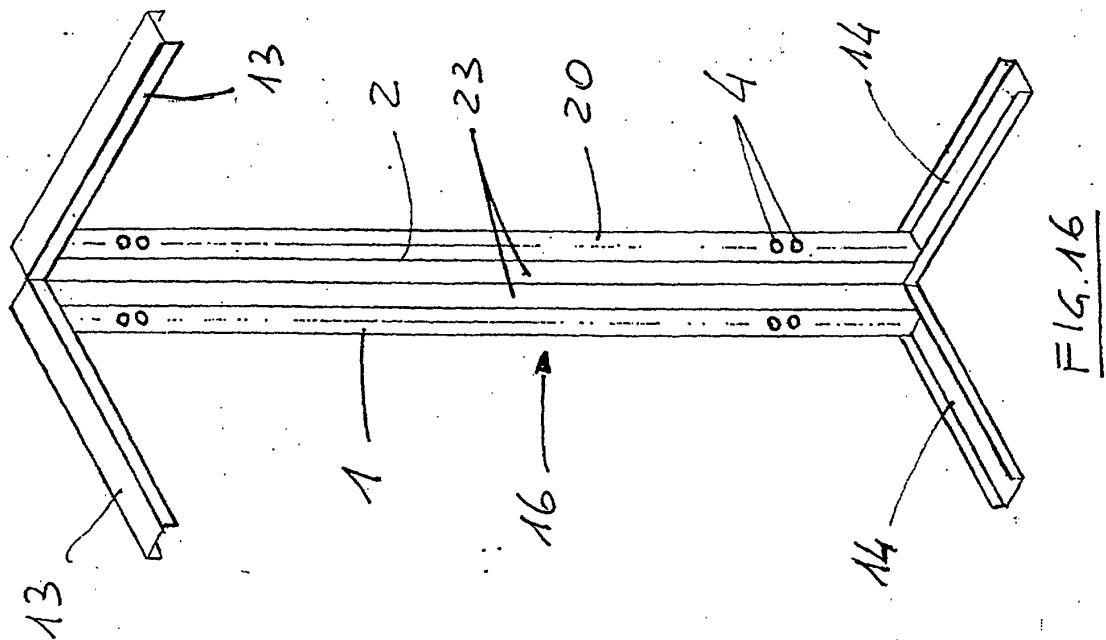
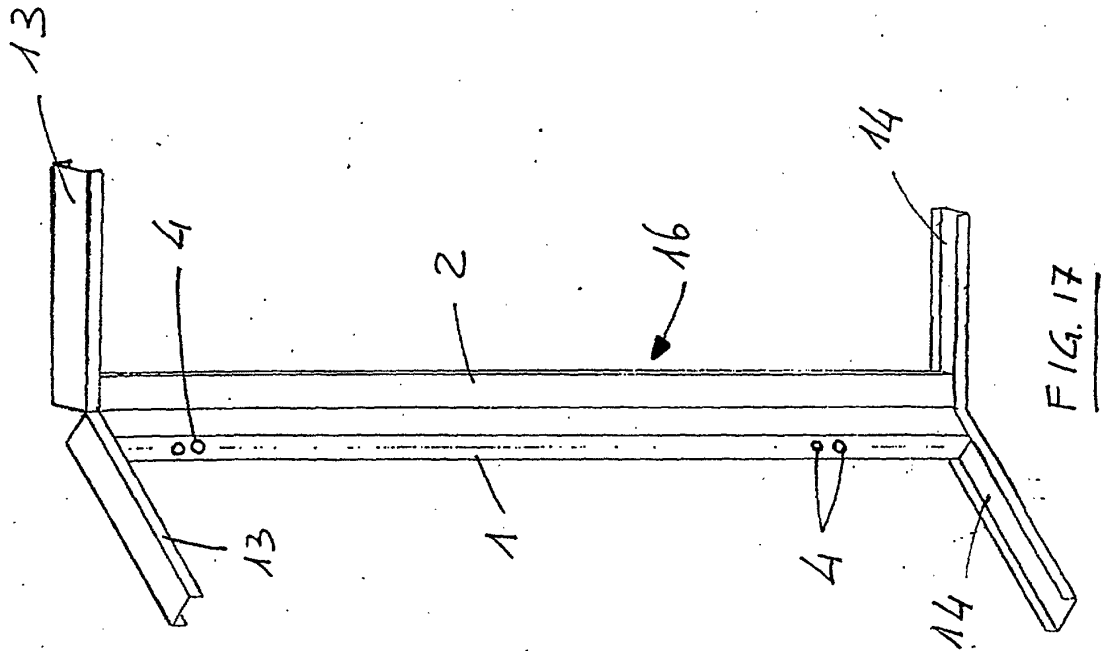
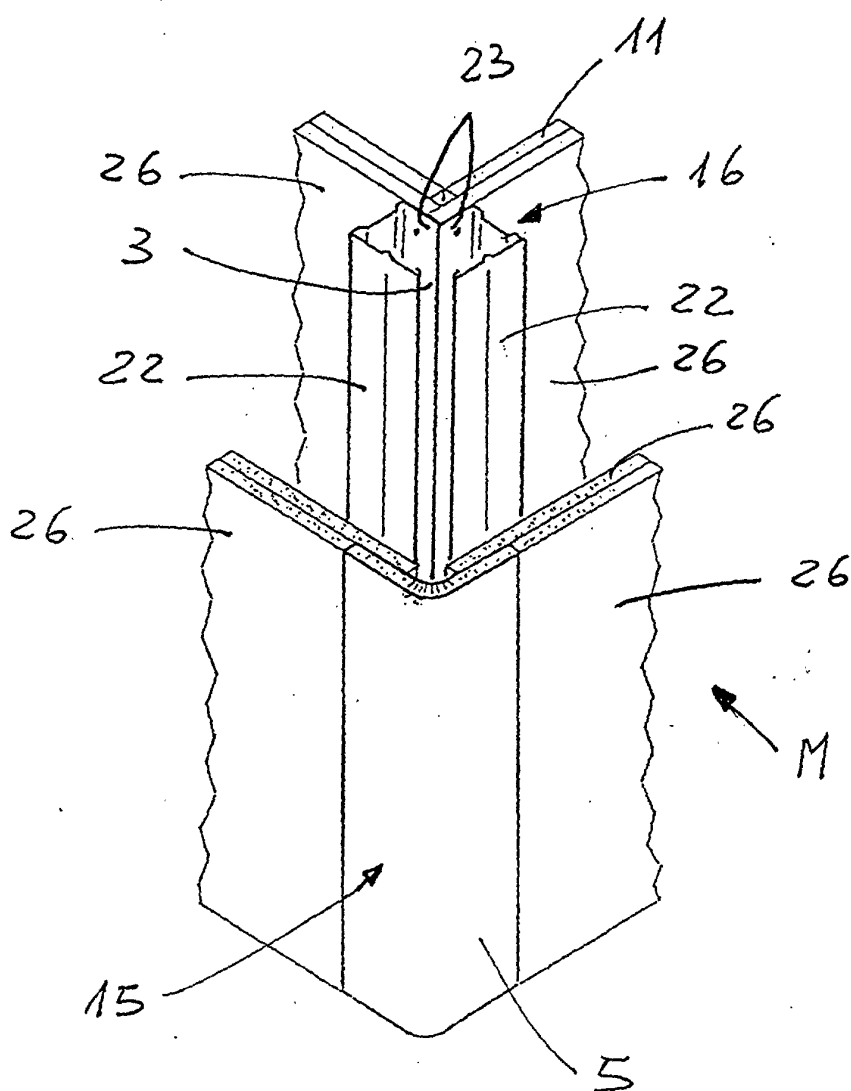
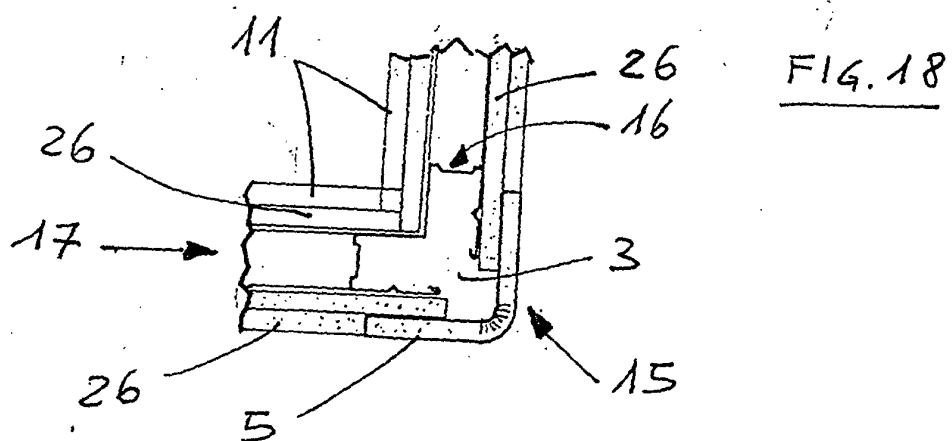


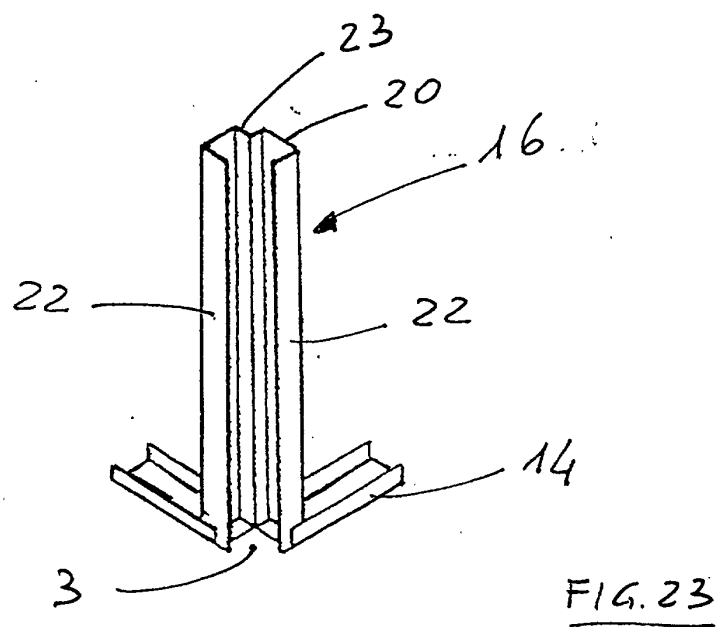
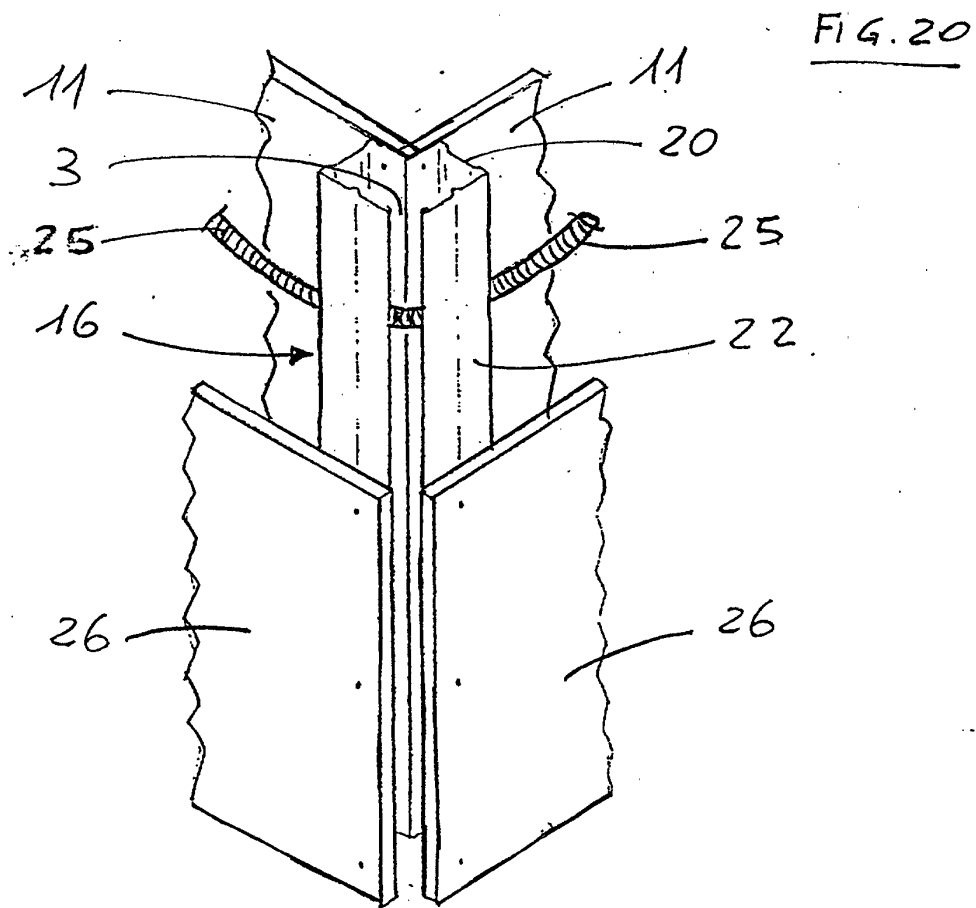
FIG. 8





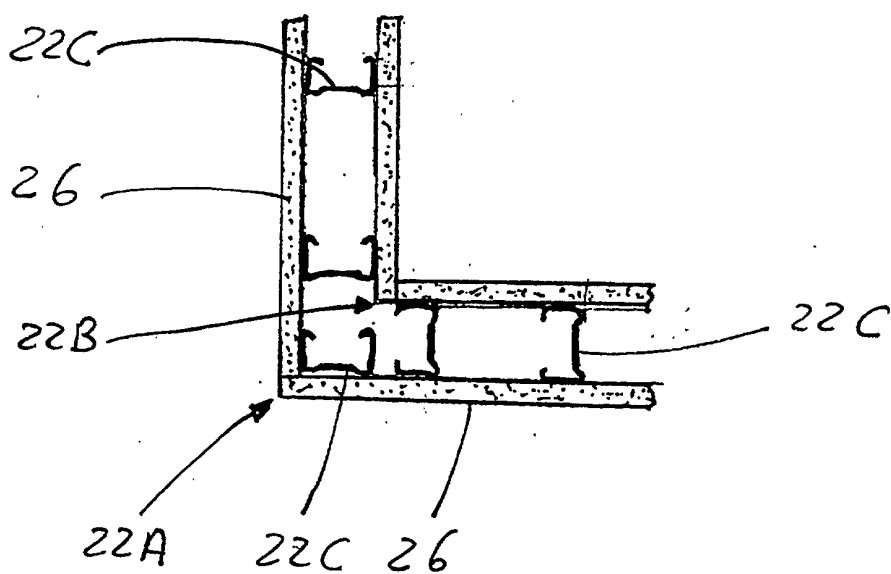
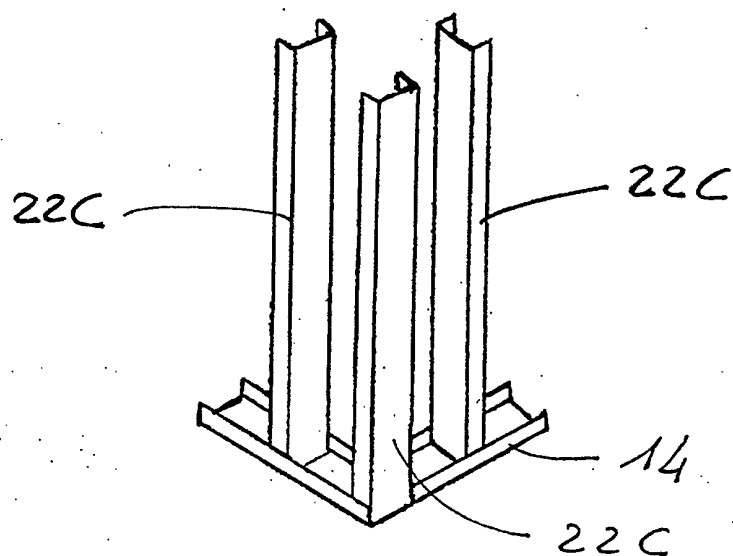






PRIOR ART

FIG. 21



PRIOR ART

FIG. 22