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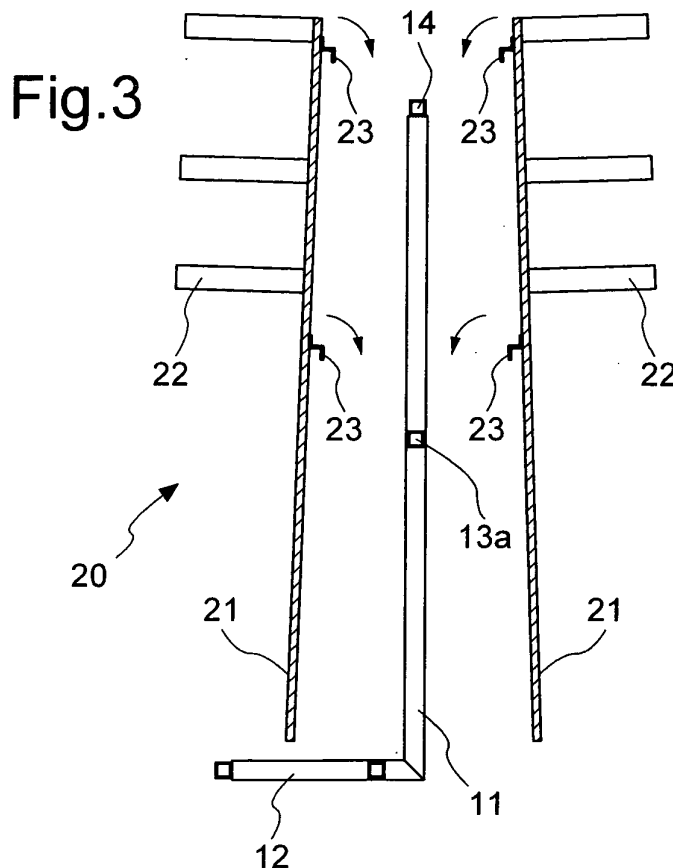
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(54) **Modular self-standing support structure for furnishing components**

(57) Modular self-standing support structure for furnishing components, comprising at least one frame (10; 110) formed by a pair of uprights (11;111) provided with a respective foot (12;112) and connected together in the

transverse direction by transverse tie-pieces (13) and at least one panel (20) provided with members (23) engaging with the said frame (10;110) for covering thereof, members (22) for supporting shelves (30) or the like being fixed to the said panel (20).



Description

[0001] The present invention relates to a modular self-supporting frame for forming furnishing components.

[0002] It is known in the interior furnishing product sector that there exists the need to provide support structures for furniture such as shelf units, bookcases and the like, which have a suitable strength and rigidity, having at the same time a pleasing appearance and being easy and inexpensive to produce.

[0003] It is also known that such shelf units must be fastened to the surrounding fixed structures such as inner walls, masonry walls, beams and the like with the consequent need to provide holes inside which rawl plugs and associated fixing screws are inserted, thus making both mounting and any subsequent displacement of the shelf unit into a different position a complicated and costly operation.

[0004] In addition, the known shelf units require fastening of the brackets in predefined positions by means of fixed holes formed in the uprights, which are in turn fixed, therefore limiting considerably the possibility of varying the configuration of the shelf unit.

[0005] Examples of the prior art according to the preamble of Claim 1 are known from EP 0,908,120, US 6,848,589 and WO 97/30612.

[0006] The technical problem which is posed, therefore, is to provide a structure which comprises support members able to be combined in a modular manner and allow fixing of the brackets in the most widely varying positions, so as to form furnishing components also of widely varying shape and size which can easily be assembled also by non-specialized users and are able to ensure strength and structural rigidity, without the need for fixed systems for fastening to walls and/or the like, while having an attractive appearance and finish.

[0007] In connection with this problem a further requirement is that the components forming the structure should be able to be obtained by means of parts which can be manufactured using simple and low-cost production processes.

[0008] These results are obtained according to the present invention by a modular self-standing support structure for furnishing components according to the characteristic features of Claim 1.

[0009] Further details may be obtained from the following description of a non-limiting example of embodiment of the present invention provided with reference to the accompanying drawings in which:

- Figure 1 shows an exploded perspective view of a first embodiment of the support frame of the structure according to the invention;
- Figure 2 is a perspective view of the frame according to Figure 1, assembled;
- Figure 3 is a partially sectioned side view of the frame in Figure 1 during mounting of the closing panels;
- Figure 4 is a rear view of the frame according to

Figure 3;

- Figure 5 is a perspective view of a shelf unit during completion;
- Figure 6 is a partial schematic view along the plane indicated by VI-VI in Figure 5;
- Figure 7 is a cross-section along a vertical plane of a second embodiment of the shelf unit according to the present invention;
- Figure 8 is a perspective front view of a further embodiment of the shelf unit according to the present invention;
- Figure 9 is a perspective rear view of the shelf unit according to Fig. 8; and
- Figure 10 is a schematic cross-section along the plane indicated by X-X in Fig. 9.

[0010] As illustrated in the figures and assuming solely for the sake of convenience of the description and without a limiting meaning a set of three reference axes in the longitudinal direction X-X, transverse direction Y-Y and vertical direction Z-Z, as well as a front part corresponding to the frame part with foot and a rear part opposite to the front part, the structure according to the present invention comprises at least one modular frame 10 substantially in the form of an L and composed of an upright 11, which in the example has a box-shaped cross-section, with, fixed to its base, a foot 12 extending transversely towards the front and provided with feet 15 of the type which can be adjusted heightwise via conventional screw means which are known per se so as to allow levelling of the L-shaped parts.

[0011] Said L-shaped parts are fastened together in the transverse direction by tie-pieces 13 which are fixed to the uprights 11 and to the feet 12 by means of bolts and the like 13c.

[0012] As shown, in the example described it is envisaged that said cross-pieces 13 may be designed longer in size 13a or shorter in size 13b so as to allow greater versatility as regards construction of the frame.

[0013] The open top end 11a of the upright 11 and open front end 12a of the foot 12 are closed by means of corresponding transverse bars 14 which have extensions 14a able to be inserted with friction inside said open ends.

[0014] Once the frame 10 is assembled it is possible to fit to it panels 20 for closing the vertical surface, substantially formed by a flat surface 21 provided at the rear with flanges 23 in the form of a double "L" able to engage vertically with the respective cross-pieces 13a; said flat surfaces 21 moreover comprise means for engagement and centring in the transverse direction (see example in Figure 4) consisting of pins 25a able to engage inside respective holes 25b in the adjacent panel. The flat surfaces 21 of the panels also have, fitted to them, brackets 22 for supporting and guiding shelves 30 (Figs. 5 and 6) which, once they are fixed to the structure, determine the final configuration, for example of a shelf unit, bookcase or the like.

[0015] Said joint between the shelf 30 and brackets 22 is achieved by means of suitable seats 31 (Fig. 6) formed inside the said shelf 30 over a suitable transverse section and by envisaging, where appropriate, partitions 32 for dividing said seats along the sections where two brackets 22 are situated close to each other.

[0016] Once fitting of the vertical panels 21 and a horizontal panel 24 for closing the base of the frame has been completed, the shelf unit is ready for use, being self-supporting and therefore able to be arranged in any position also not adjacent to the wall.

[0017] As shown in Figure 2 by means of broken lines, it is also possible to envisage a symmetrical arrangement, with respect to the vertical plane, of two supports for forming a structure of the "stand-alone" type which can be accessed both from the front and from the rear.

[0018] In Figure 7 the stand-alone structure is instead obtained with a frame 110 formed by an upright 111 which is fixed to a foot 112 formed by two feet 12 situated opposite each other and forming overall an overturned "T".

[0019] Figs. 8 to 10 show a further embodiment of the structure according to the invention in which the closing panel 20 is provided with through-windows 50 able to allow electric cables 51 to pass through from the rear of the panel, for connection to the mains, to the front thereof, for powering apparatus such as televisions, recording apparatus and the like.

[0020] In this embodiment, the closing panels 20 have in their rear surface inset zones 52 able to allow the electric cables to pass in the longitudinal direction X-X since in the vertical direction Z-Z the passage of said cables is ensured by the transverse dimension of the tie-pieces 13a, 13b which is smaller than the transverse dimension of the uprights 11.

[0021] As shown with broken lines it is, however, possible to envisage inset zones 52 also in the region of the cross-pieces 13 so as to allow the passage of cables with a larger diameter.

[0022] It is envisaged moreover that said panels 20 have sides extending in the transverse direction in order to conceal the frame from sight laterally.

[0023] In addition to this it is pointed out that, although in the description reference has been made to brackets 22, it is understood that these may be replaced by other support parts such as hooks or other specialized iron-ware.

[0024] It is therefore clear how with the structure according to the present invention it is possible to provide modular self-supporting furnishing components, also of very widely varying shape and size, which can be easily assembled also by non-specialized users, said structure being however suitable for ensuring strength and structural rigidity and being able to be installed in loco without the need for fixed systems for fastening to the surrounding walls, while having an attractive appearance and finish.

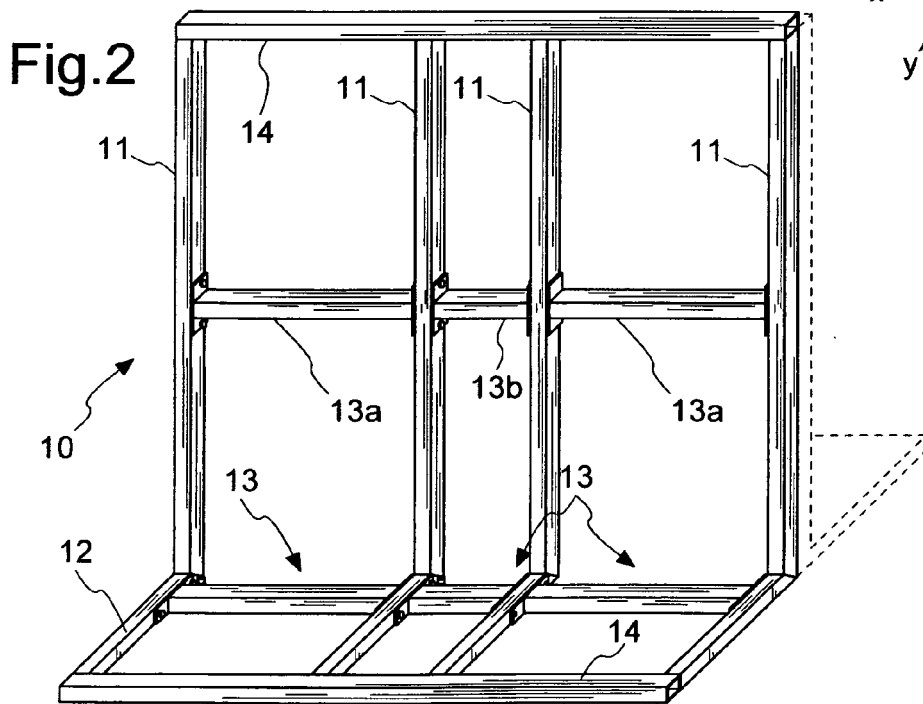
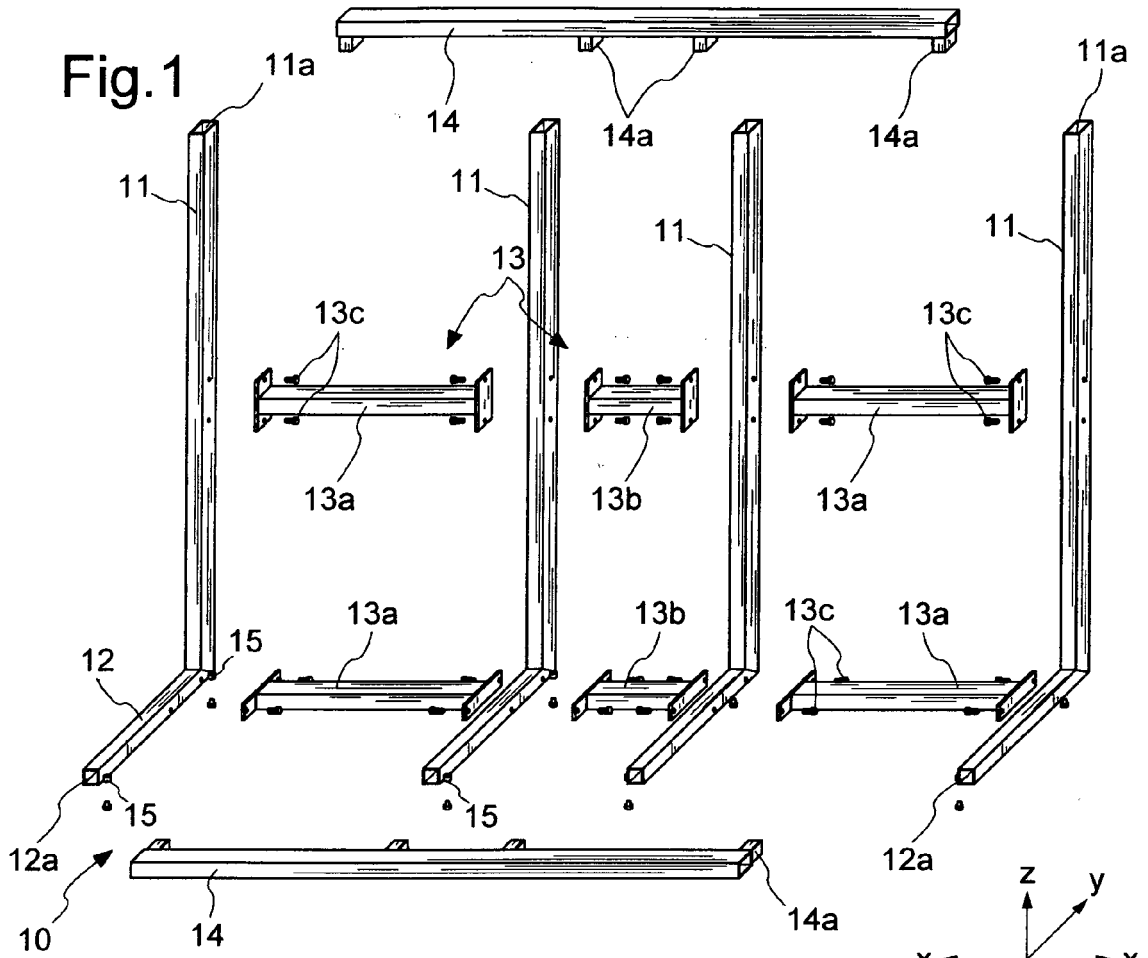
[0025] In addition to this, the use of the closing panel also allows the fitting of the support parts, such as the

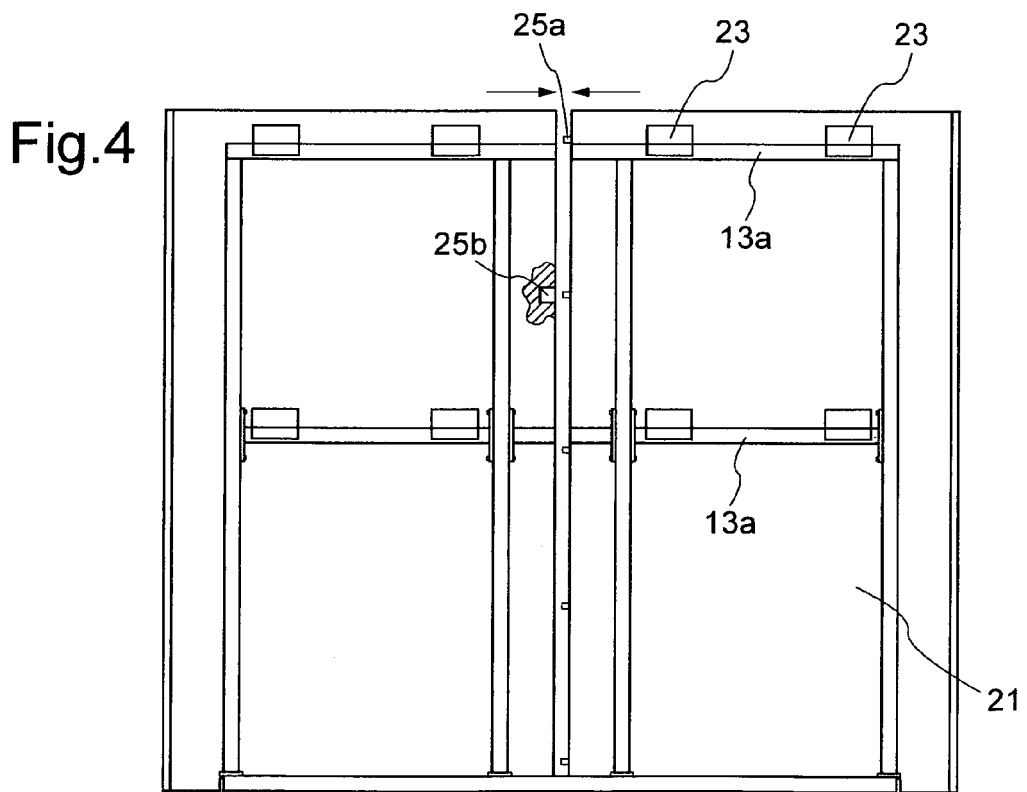
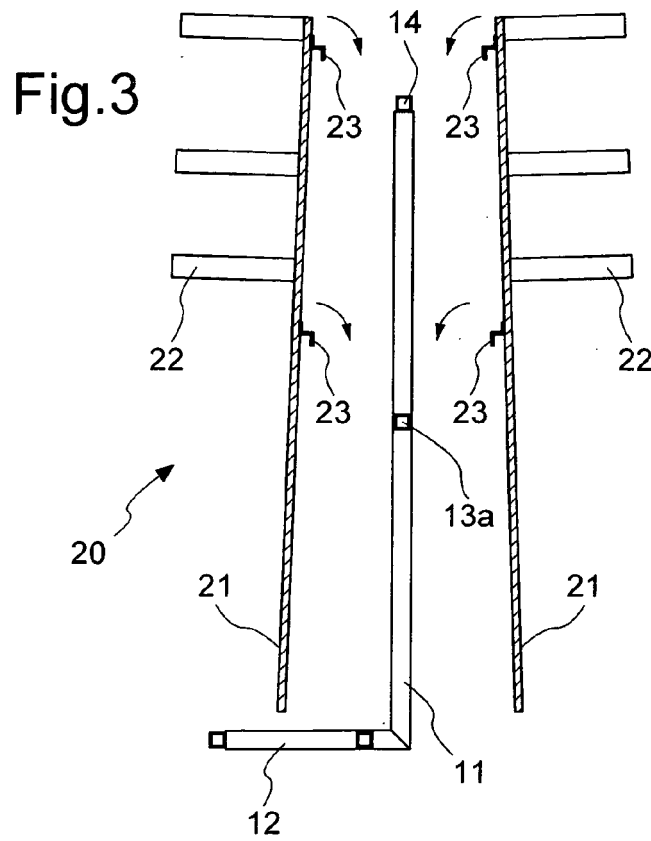
brackets for the shelves, in any position on the panel without the constraint arising from the need to fasten the brackets to cross-pieces or uprights of the structure.

Claims

1. Modular self-standing support structure for furnishing components, comprising at least one frame (10; 110) formed by a pair of uprights (11;111) provided with a respective foot (12;112) and connected together in the transverse direction by transverse tie-pieces (13) and at least one panel (20) provided with members (23) engaging with said frame (10;110) for covering thereof, **characterized in that** members (22) for supporting shelves (30) or the like are fixed to the said panel (20).
2. Structure according to Claim 1, **characterized in that** said foot (12) extends transversely towards the front of the frame.
3. Structure according to Claim 1, **characterized in that** said foot (112) extends transversely both towards the front and towards the rear of the frame (110).
4. Structure according to Claim 3, **characterized in that** said frame (110) has an overall form of an overturned "T".
5. Structure according to Claim 1, **characterized in that** feet (15) of the type which can be adjusted heightwise by screw means (15a) are fitted to said foot (12;112).
6. Structure according to Claim 1, **characterized in that** said tie-pieces (13) are fixed to the uprights (11; 111) and to the feet (12;112) by means of bolts (13c).
7. Structure according to Claim 1, **characterized in that** said cross-pieces (13) are longer in size (13a) or shorter in size (13b).
8. Structure according to Claim 1, **characterized in that** said uprights (11;111) and foot (12;112) are formed with hollow box-shaped members.
9. Structure according to Claim 8, **characterized in that** the top open end (11a) of the upright (11;111) and front open end (12a) of the foot (12;112) are closed by means of corresponding transverse bars (14).
10. Structure according to Claim 9, **characterized in that** said transverse bars (14) have extensions (14a) able to be inserted with friction inside said open ends of the uprights and feet of the frame.

11. Structure according to Claim 1, **characterized in that** said closing panels (20) comprise a vertical surface (21) to which said members engaging with the frame (10) are fixed. 5
12. Structure according to Claim 1, **characterized in that** said engaging members comprise flanges (23) in the form of a double "L" able to engage in the vertical direction with the respective cross-pieces (13a) of the frame (10). 10
13. Structure according to Claim 1, **characterized in that** said panels (20) comprise means for engagement and centring in the transverse direction consisting of pins (25a) extending outwards in the transverse direction and suitable for engagement with respective holes (25b) in the adjacent panel. 15
14. Structure according to Claim 1, **characterized in that** said panels (20) have through-windows (50) able to allow electric cables (51) to pass from the rear to the front of the panel. 20
15. Structure according to Claim 14, **characterized in that** said panels (20) have in their rear surface inset zones (52) able to allow the electric cables to pass between the closing panel and the members of the support structure. 25
16. Structure according to Claim 14, **characterized in that** the transverse size of the tie-pieces (13a;13b) is smaller than the transverse size of the uprights (11). 30
17. Structure according to Claim 1, **characterized in that** brackets (22) for supporting and guiding shelves (30) are fitted to said panels (20). 35
18. Structure according to Claim 17, **characterized in that** the joint between a shelf (30) and the respective brackets (22) is achieved by means of suitable seats (31) formed inside the said shelf along a suitable transverse section. 40
19. Structure according to Claim 18, **characterized in that** said seats are separated by vertical partitions (32) at locations corresponding to brackets (22) arranged close together. 45
20. Structure according to Claim 1, **characterized in that** said panels (20) have sides extending in the transverse direction. 50
21. Structure according to Claim 1, **characterized in that** it is a shelf unit. 55
22. Structure according to Claim 1, **characterized in that** it is a bookcase.





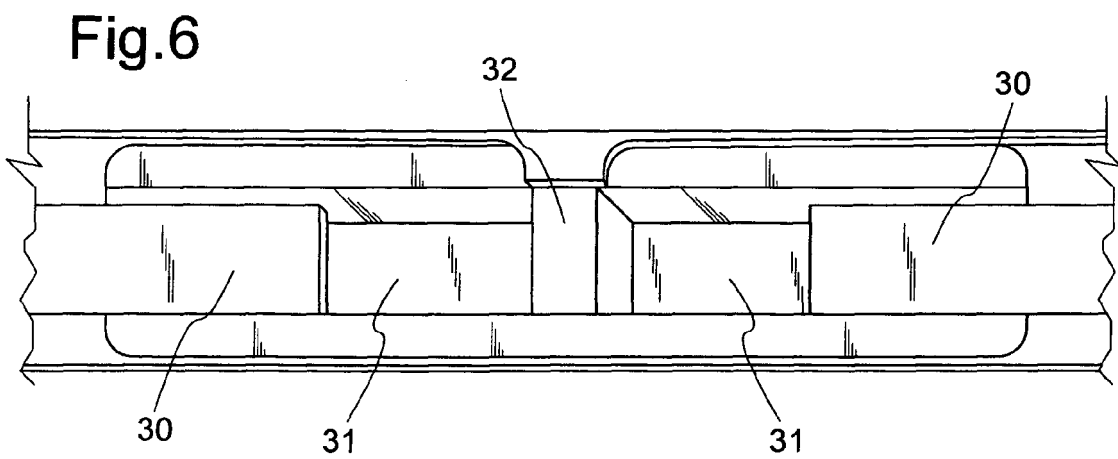
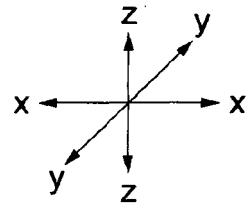
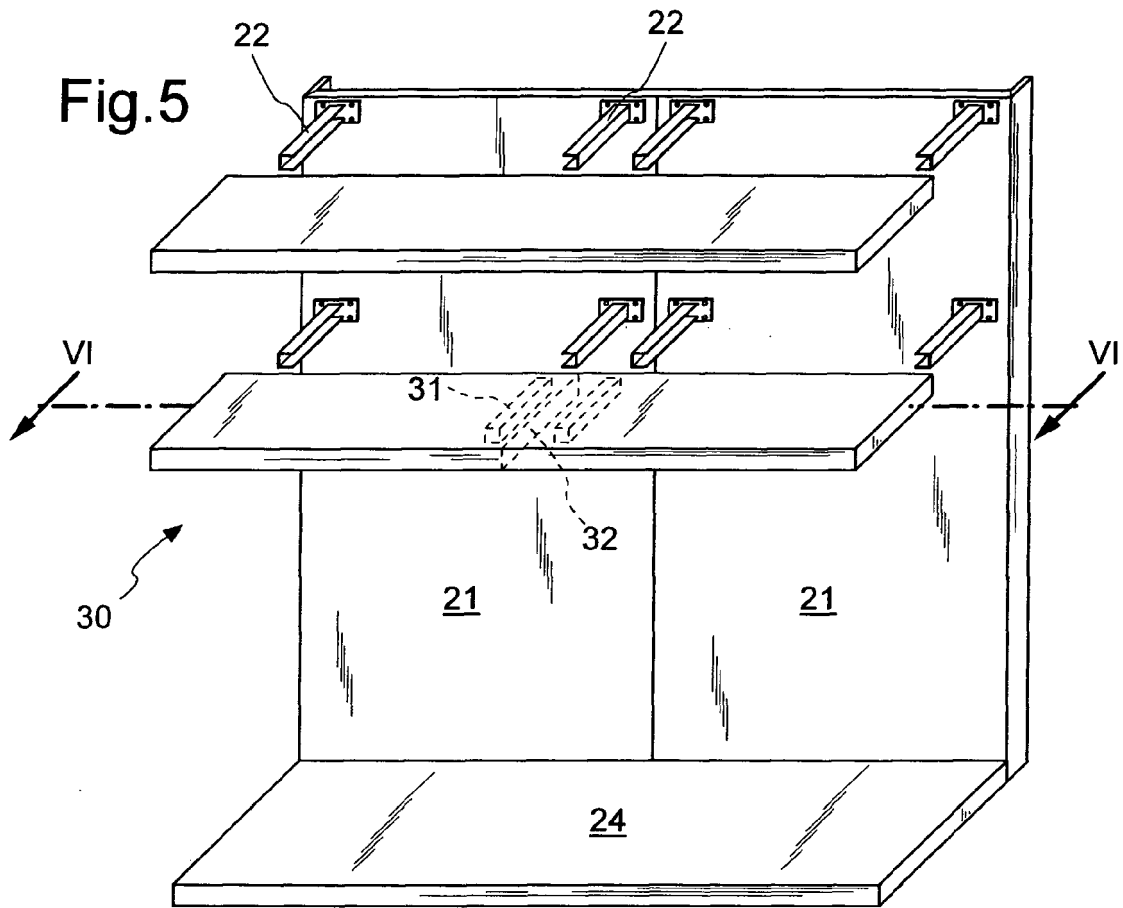


Fig.7

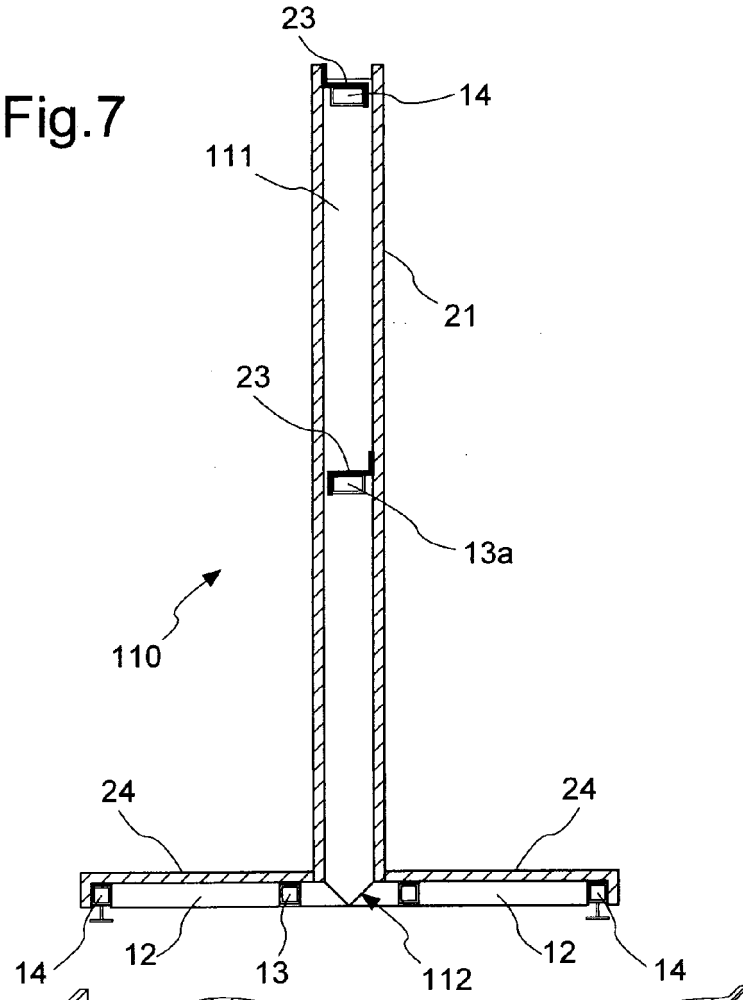


Fig.8

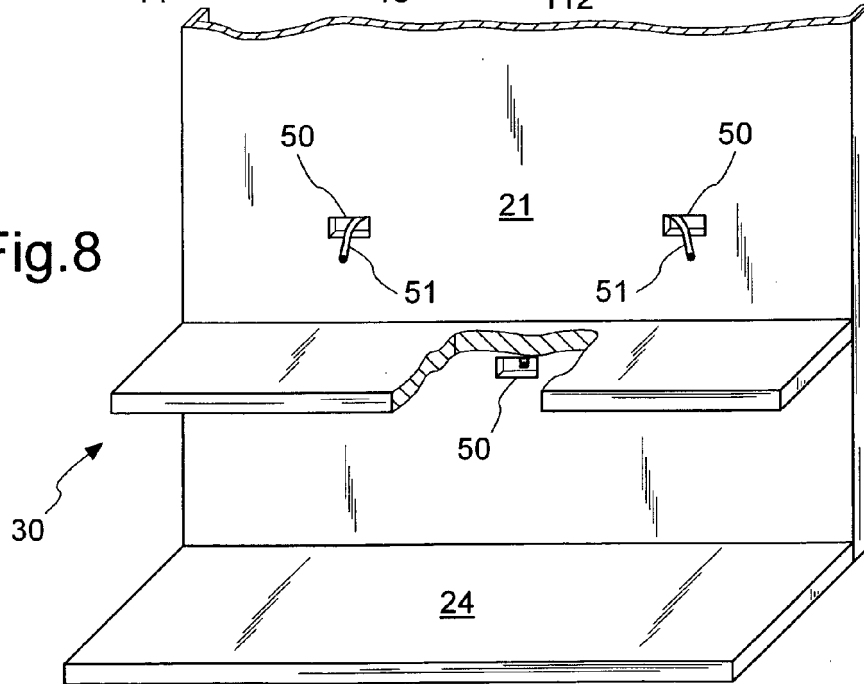


Fig.9

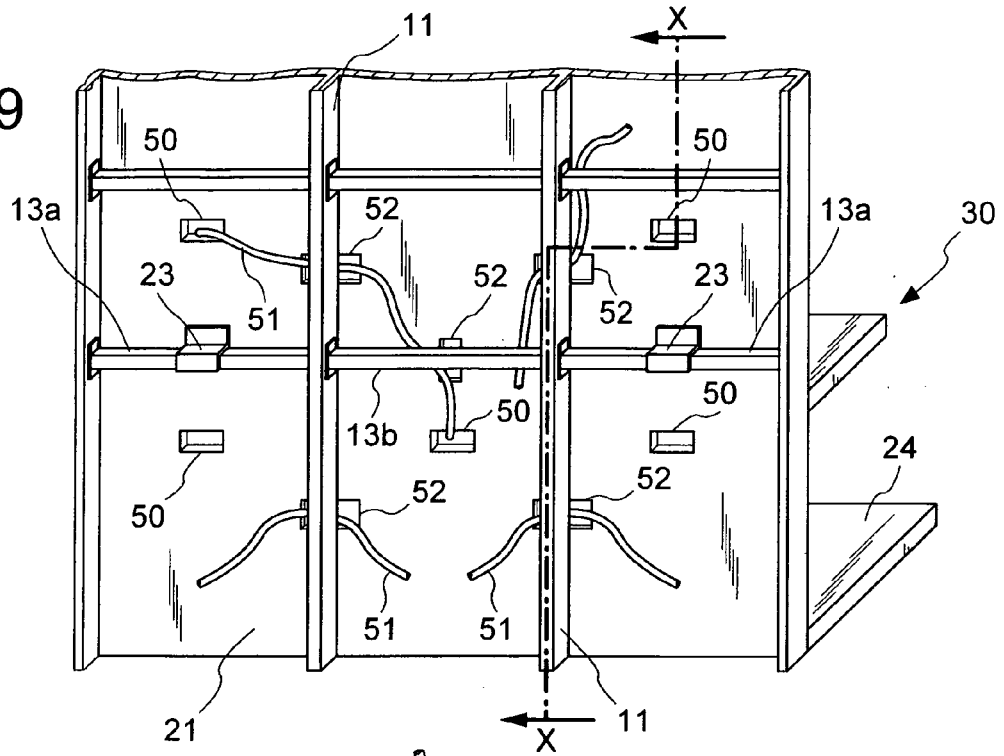
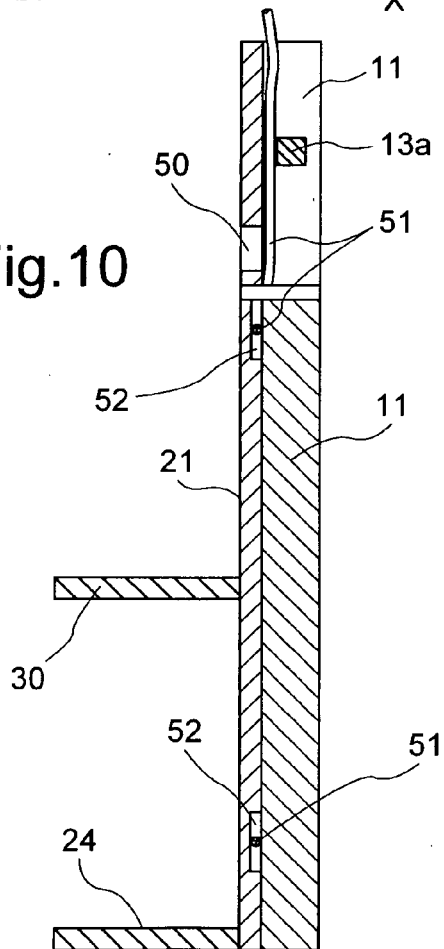


Fig.10



REFERENCES CITED IN THE DESCRIPTION

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