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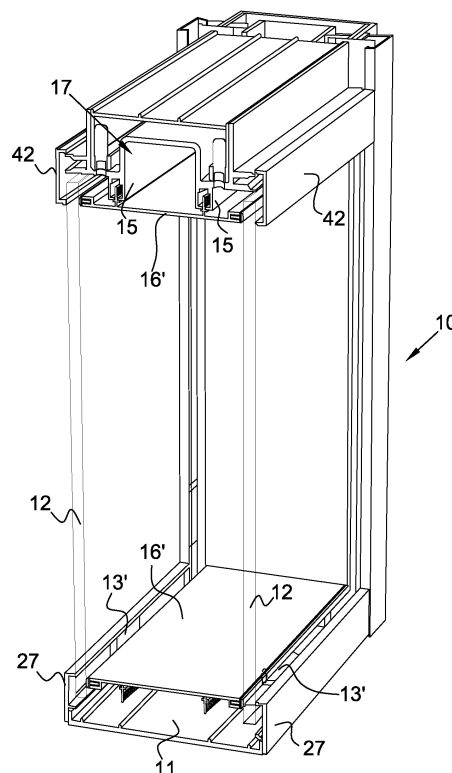
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(54) **Structure for mounting walls**

(57) A structure for mounting walls of the type with at least one vertical panel (12) is described. The structure (10) comprises at least one base element (11), lower support means (13, 13') arranged above the base element (11) to support a lower portion of at least one of such vertical panels (12) and at least one upper closing element (17) suitable for engaging with an upper portion of at least one of such vertical panels (12). Both the lower support means (13, 13') and the upper closing element (17) respectively comprise two seats (15) for receiving at least one glass retaining element (16, 16') in lateral abutment against at least one of the panels (12). The seats (15) are arranged on opposite sides with respect to the middle of the thickness of the structure (10) and make it possible to receive one or two vertical panels (12) depending on the planning requirements.

Fig. 1



Description

[0001] The present invention refers to a structure for mounting walls, in particular modular walls intended to be used both indoors, as partition walls, and outdoors.

[0002] Today many different structures, or frames, for mounting walls, whether transparent or not, are known. Such structures differ from one another mainly for the shape of the elements that form it. These known structures generally comprise one or more vertical panels, depending on whether the wall is double panelled or not, a base element for receiving a lower portion of the panels, an upper closing element for receiving an upper portion of the panels and side containment elements.

[0003] However, such aforementioned structures known today have some drawbacks, amongst which the fact that, once installed, it is not possible to modify the type of wall which is intended to be made without removing all the elements that form the structure itself. In other words, today, once a known structure is fixedly connected so as to make a wall, for example with a single panel, it is not possible to proceed making a wall with a double panel without totally removing the entire structure.

[0004] It should thus be clear how such a drawback is particularly disadvantageous both in terms of the required work time, as well as in terms of costs, since it is necessary to replace the entire structure.

[0005] Another drawback of the structures known today lies in the fact that it is possible to adjust the alignment of the elements that form the structure only when the panels have not yet been installed. However, disadvantageously, after installation of the panels it is almost always the case that other alignment adjustments are required, which causes the workers to have to dismount the panels themselves with the consequent risks. Indeed, the panels, apart from normally being elements with a considerable weight, for example when they are entirely manufactured in glass, they are also very fragile and therefore they can be very easily damaged.

[0006] A further drawback of known structures lies in the fact that, since the panels are fixed through snap-coupling, the replacement of a previously installed panel without damaging the panel itself, or the snap-coupling mechanism which supports it, is very difficult.

[0007] The general purpose of the present invention is thus that of making a structure for mounting walls that is capable of solving the aforementioned drawbacks of the prior art in an extremely simple, cost-effective and particularly functional manner.

[0008] In particular, it is a purpose of the present invention to make a structure for mounting walls which makes it possible to rapidly obtain, by only replacing some elements and not the entire structure, both structures with a single panel and double panelled structures, in which both the thickness and the materials of such panels can vary depending on the requirements.

[0009] Another purpose of the invention is that of making a structure for mounting walls that makes it possible

to adjust the alignment of the panels even when these have already been installed.

[0010] A further purpose of the invention is that of making a structure for mounting walls which offers greater safety and stability and, at the same time, makes it possible to easily replace a panel that has previously been installed. These purposes according to the present invention are achieved by making a structure for mounting walls as outlined in claim 1.

[0011] Further characteristics of the invention are highlighted in the dependent claims, which are an integral part of the present description.

[0012] The characteristics and the advantages of a structure for mounting walls according to the present invention shall become clearer from the following description, given as an example and not for limiting purposes, with reference to the attached schematic drawings, in which:

figure 1 is a schematic perspective section view of a first embodiment of a structure for mounting walls according to the present invention;

figure 2 shows an enlarged detail of the structure of figure 1;

figure 3 is a schematic section view of a second embodiment of a structure for mounting walls according to the present invention;

figure 4 is a perspective view of an element of the structure of figure 3;

figure 5 is a section view of the element shown in figure 4;

figure 6 is an exploded view of the element shown in figure 4;

figure 7 is a section view of a third embodiment of a structure for mounting walls according to the present invention;

figure 8 is a perspective view of an element of the structure of figure 7;

figure 9 is a section view of the element shown in figure 8;

figure 10 is an exploded view of the element shown in figure 8; and

figure 11 shows a detail of a fourth embodiment of a structure for mounting walls according to the present invention.

[0013] With reference to the figures, some preferred embodiments of a structure for mounting walls according to the present invention are shown, wholly indicated with reference numeral 10.

[0014] Such a structure 10 for mounting walls, of the type provided with at least one panel 12 with a substantially vertical extension which constitutes the actual partition wall, substantially comprises a base element 11 suitable for receiving a lower portion of the vertical panel 12 itself. The panel or the vertical panels 12 can be made with a transparent material, like for example glass, with opaque materials or with any other type of suitable ma-

terial, without for this reason departing from the scope of protection of the present invention.

[0015] The structure 10 thus comprises lower support means 13, 13', arranged above the base 11, suitable for supporting a lower portion of at least one panel 12, as well as at least one upper closing element 17 that is engaged with an upper portion of the at least one panel 12.

[0016] In particular, according to the invention, both the lower support means 13, 13' and the upper closing element 17, shown in detail in figure 2, comprise two seats 15 for fixedly connecting at least one glass retaining element 16, 16' arranged in a lateral abutment position, possibly through special spacing or holding elements, against the at least one panel 12.

[0017] The aforementioned seats 15 of the lower support means 13, 13' and of the upper closing element 17 are arranged on opposite sides with respect to the middle of the thickness of the structure 10.

[0018] Preferably, holding elements 80 (figure 3) are arranged in such seats, said elements collaborating with plug elements 81, which project perpendicularly from the glass retaining element 16, 16', so as to keep each panel 12 still and stable in a substantially vertical position.

[0019] Of course, the structure 10 can comprise vertical or horizontal dividing elements, as well as side containment elements, so as to make a modular structure with desired dimensions.

[0020] In the case in which there is at least one horizontal dividing element 40 between the lower support means 13, 13' and the upper closing element 17, as shown, for example, in figure 11, even such a dividing element 40 comprises two seats 15" for receiving at least one glass retaining element 16, 16' for lateral abutment of the at least one panel 12. The seats 15" are arranged on both, lower and upper, sides of the dividing element 40.

[0021] The lower support means 13, 13' comprise at least one horizontal support plane 14, 14' for the at least one panel 12. Such at least one horizontal support plane 14, 14' is mobile in the vertical direction, so as to push the at least one panel 12 itself towards the upper closing element 17 and thus ensure the correct vertical alignment of the structure 10 when the panel 12 has already been mounted.

[0022] In particular, the at least one horizontal support plane 14, 14' is mobile in the vertical direction through a conical coupling with at least one wedge-shaped element 24, which is able to be actuated to translate horizontally through a screw 25 that is accessible at the side of the lower support means 13, 13' (figure 5).

[0023] According to the invention, such a screw 25 is accessible even when the at least one panel 12 is resting on the at least one horizontal support plane 14, 14'.

[0024] According to the embodiment shown in the figures 3-6, the structure 10 comprises a panel 12 arranged in a central position with respect to the upper closing element 17, whereas the lower support means 13, 13' comprise a foot element 13 that extends from one side

of the base 11 to the other.

[0025] With reference to figure 3, such a foot element 13 comprises a horizontal support plane 14 for the panel 12 and two glass retaining elements 16 are foreseen associated with the foot element 13 and two corresponding glass retaining elements 16 associated with the upper closing element 17. Such glass retaining elements 16 extend from outer portions of the foot element 13 and of the upper closing element 17 to the central panel 12.

[0026] Externally, the foot element 13 comprises elements 18 for receiving the outer portions of the two glass retaining elements 16, as well as snap-coupling portions 26 with side covering elements 27.

[0027] Figures 7-10 show another embodiment of the system 10, which comprises two panels 12 arranged in a side position with respect to the base 11 and to the upper closing element 17. In this embodiment the lower support means 13, 13' comprise two independent foot elements 13' arranged on opposite sides of the base 11. Such independent foot elements 13' each comprise a support plane 14' for the relative panel 12 and a seat 15', formed on the inner end, to fixedly connect a common glass retaining element 16' inside the structure 10 between the two panels 12.

[0028] By comparing the two aforementioned embodiments, it should be clear how it is possible to pass from a structure 10 with a single panel 12 to a structure 10 with a double panel 12 by simply replacing the glass retaining elements 16, 16', without having to replace the entire structure 10 and in particular the base 11 and the upper closing element 17, which are fixedly connected externally with respect to the structure 10 itself.

[0029] The upper closing element 17 laterally comprises horizontal seats 50 (figure 2) for the insertion of T-shaped rabbets for holding the panels 12 resting on the foot elements 13'. Such T-shaped rabbets are mounted horizontally in the seats 50 through mechanical fastening means, for example a screw, after the installation of the panels 12.

[0030] In the case in which there is a dividing element 40, even the latter is provided with horizontal side seats 41 for the insertion of T-shaped rabbets for holding the panels resting on the foot elements 13'.

[0031] Advantageously, such T-shaped rabbets, as they are mechanically mounted after the installation of the panels 12, for example through screws, make it possible to easily replace a panel 12 by simply removing them, without in any way compromising the stability of the structure 10. Moreover, such T-shaped rabbets can be snap-coupled with covering elements 42, which have no structural function.

[0032] Each foot element 13' externally comprises abutment portions 18' for the panel 12 and some snap-coupling portions 26' with side covering elements 27.

[0033] Finally, it is foreseen for there to be means 30 for adjusting the alignment of the upper closing element 17 with respect to the relative external masonry element, for example made up of a fixed structure like the floor of

a building, to which such upper closing element 17 is fixedly connected. It is thus possible to compensate for possible squaring errors of the external masonry elements themselves.

[0034] As shown in figure 2, such means 30 for adjusting the alignment of the upper closing element 17 preferably comprise screw elements 31 projecting from the top of the upper closing element 17.

[0035] It has thus been seen that the structure for mounting walls according to the present invention achieves the purposes previously highlighted.

[0036] Indeed the structure for mounting walls according to the present invention, through the sole replacement of some elements not fixedly connected externally, makes it possible to make a structure with a single panel or a structure with a double panel in which the thickness and the materials of such panels can vary according to the requirements. Moreover, the structure requires a minimum bulk in height, thanks to the presence of means for adjusting the alignment of panels which can be activated when the panels are already installed.

[0037] Finally the structure for making walls according to the present invention offers greater safety and stability, thanks to the mechanical means for fixing the panels which replace the known snap-coupling means which make the replacement operations of a previously installed panel, extremely difficult.

[0038] The structure for making walls of the present invention thus conceived can in any case undergo numerous modifications and variants, all covered by the same inventive concept; moreover, all the details can be replaced by technically equivalent elements. In practice the materials used, as well as the shapes and sizes, can be any according to the technical requirements.

[0039] The scope of protection of the invention is thus defined by the attached claims.

Claims

1. Structure (10) for mounting walls of the type with at least one vertical panel (12), said structure (10) comprising at least one base element (11), lower support means (13, 13') arranged above said base element (11) to support a lower portion of at least one of said vertical panels (12) and at least one upper closing element (17) suitable for engaging with an upper portion of at least one of said vertical panels (12), **characterised in that** both said lower support means (13, 13') and said upper closing element (17) respectively comprise two seats (15) for receiving at least one glass retaining element (16, 16') in lateral abutment against at least one of said vertical panels (12), said seats (15) being arranged on opposite sides with respect to the middle of the thickness of said structure (10).

2. Structure (10) according to claim 1, **characterised**

in that it comprises at least one dividing element (40) arranged between said lower support means (13, 13') and said upper closing element (17), said dividing element (40) comprising two seats (15") for receiving at least one glass retaining element (16, 16') for laterally supporting said at least one vertical panel (12), provided on both sides, lower and upper, of said dividing element (40).

3. Structure (10) according to claim 1, **characterised in that** said lower support means (13, 13') comprise at least one horizontal support plane (14, 14') for said at least one vertical panel (12), said horizontal support plane (14, 14') being mobile in the vertical direction so as to push said at least one vertical panel (12) towards said upper closing element (17) and ensure the correct vertical alignment of said at least one vertical panel (12).

4. Structure (10) according to claim 3, **characterised in that** said at least one horizontal support plane (14, 14') is mobile in the vertical direction through a conical coupling with wedge-shaped elements (24), able to be actuated through a screw (25) that is accessible at the side even when said at least one vertical panel (12) is resting on said at least one horizontal support plane (14, 14').

5. Structure (10) according to any one of the previous claims, **characterised in that** it comprises a vertical panel (12) arranged in a central position with respect to said upper closing element (17), said lower support means (13, 13') comprising a foot element (13) that extends from one side to the other of said base (11), said foot element (13) comprising a horizontal support plane (14) for said vertical panel (12) arranged in a central position, two glass retaining elements (16) being associated with said foot element (13) and two glass retaining elements (16) being associated with said upper closing element (17), said glass retaining elements (16) extending from the outer portions of said foot element (13) and said upper closing element (17) up to said vertical panel (12) arranged in a central position.

6. Structure (10) according to claim 5, **characterised in that** said foot element (13) comprises, at its ends, receiver elements (18) for the outer portions of said two glass retaining elements (16).

7. Structure (10) according to claim 5, **characterised in that** said foot element (13) laterally comprises snap-coupling portions (26) with side covering elements (27).

8. Structure (10) according to claim 1, **characterised in that** it comprises two vertical panels (12) arranged in a side position with respect to said base (11) and

to said upper closing element (17), said lower support means (13, 13') comprising two independent foot elements (13') arranged on opposite sides of said base (11), said foot elements (13') each comprising a support plane (14') for each of the two vertical panels (12) and a seat (15') formed on the inner attachment end for a common glass retaining element (16'), inside said structure (10), between said two vertical panels (12).

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external masonry elements comprise screw elements (31) projecting from the top of said upper closing element (17).

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9. Structure (10) according to claim 8, **characterised in that** said upper closing element (17) laterally comprises seats (50) for the insertion of T-shaped rabbets for holding said panels (12), resting on said foot elements (13'), in a vertical position, said T-shaped rabbets being mounted horizontally, through mechanical fastening means, in said seats (50) after the positioning of said vertical panels (12).

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10. Structure (10) according to claim 8, **characterised in that** it comprises at least one dividing element (40) between said foot elements (13') and said upper closing element (17), said dividing element (40) comprising at least two seats (15") for fixing at least one glass retaining element (16, 16') for laterally supporting said at least one vertical panel (12) on both of its sides, lower and upper, said dividing element (40) also comprising side seats (41) for the insertion of T-shaped rabbets for holding said panels (12), resting on said foot elements (13'), in a vertical position, said T-shaped rabbets being mounted, through mechanical fastening means, after the positioning of said vertical panels (12).

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11. Structure (10) according to claim 9 or 10, **characterised in that** said T-shaped rabbets are snap-coupled with covering elements (42).

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12. Structure (10) according to claim 8, **characterised in that** each foot element (13, 13') comprises, at its outer ends, outer abutment elements (18') for the relative vertical panel (12).

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13. Structure (10) according to claim 8, **characterised in that** said foot elements (13') externally comprise snap-coupling portions (26') with side covering elements (27).

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14. Structure (10) according to claim 1, **characterised in that** it comprises means (30) for adjusting the alignment of said upper closing element (17) with respect to external masonry elements, to compensate for possible squaring errors of said external masonry elements.

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15. Structure (10) according to claim 14, **characterised in that** said means (30) for adjusting the alignment of said upper closing element (17) with respect to

Fig. 1

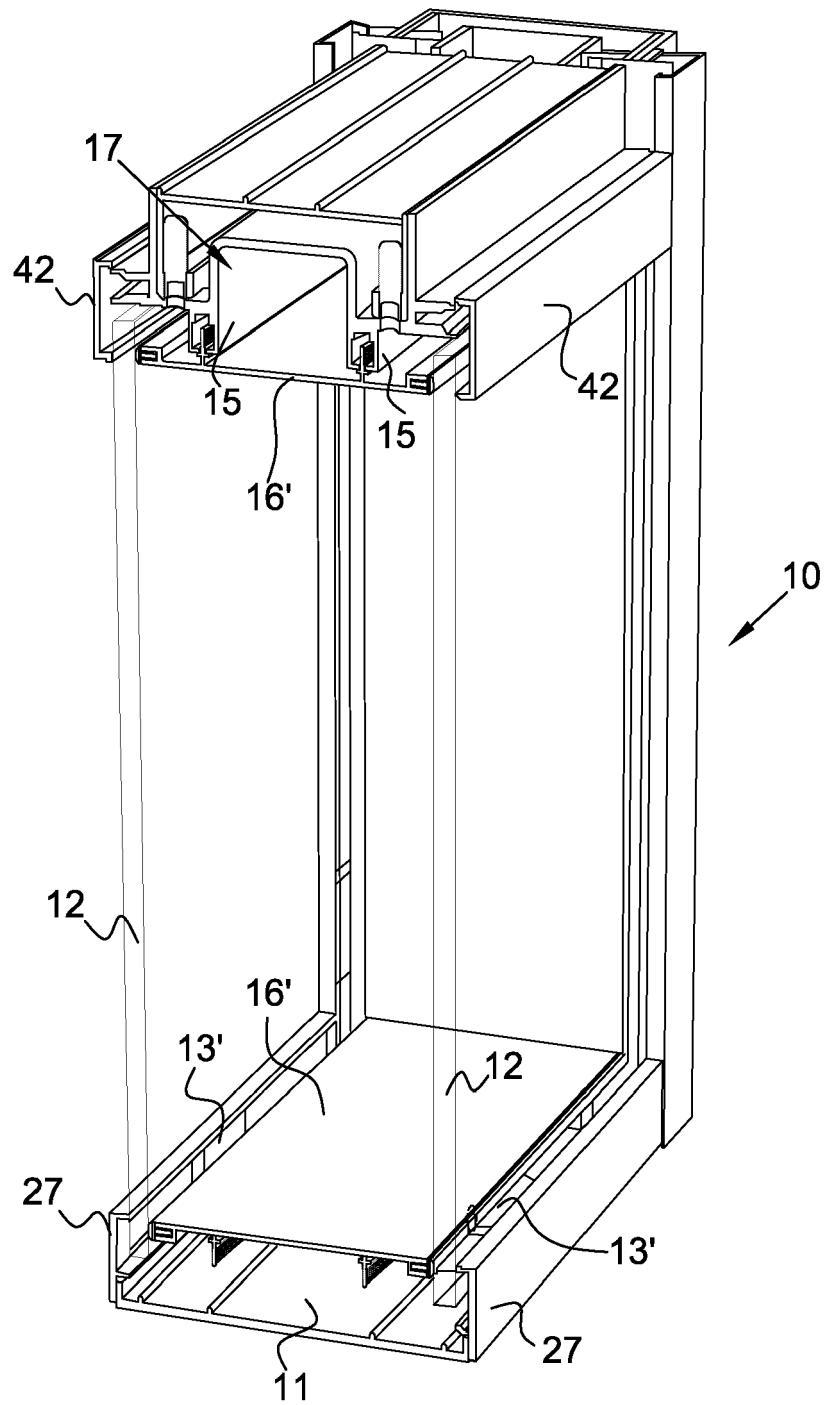
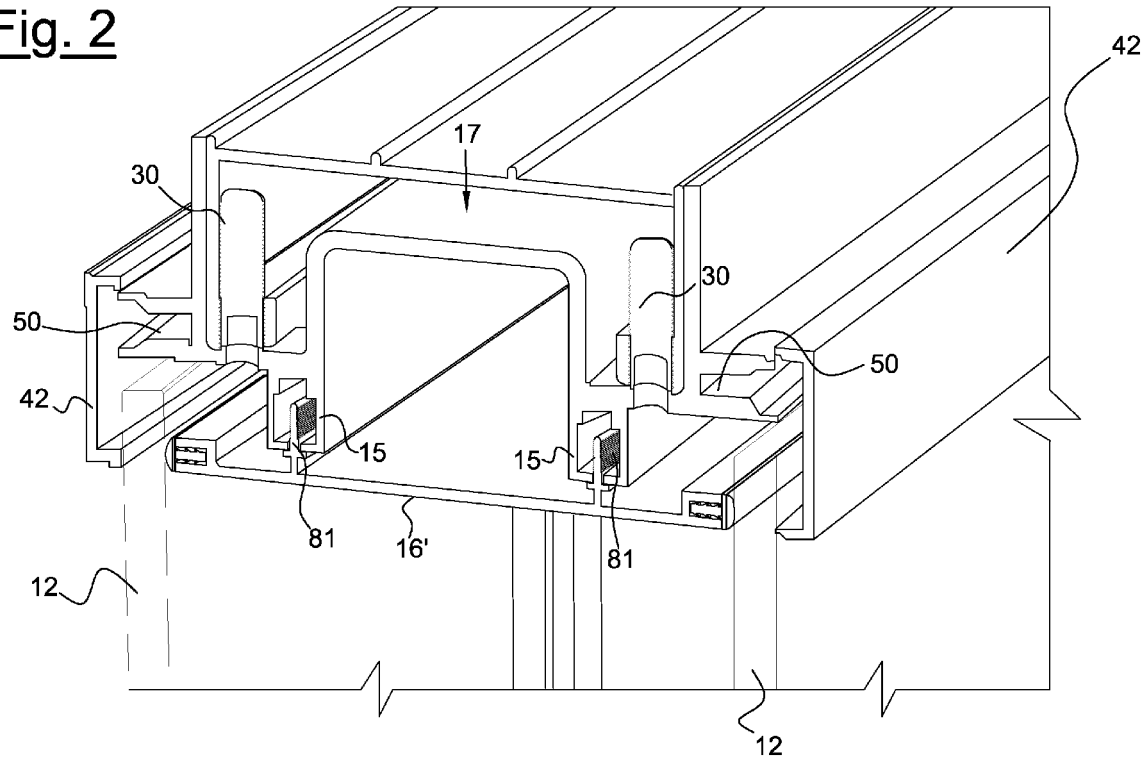


Fig. 2



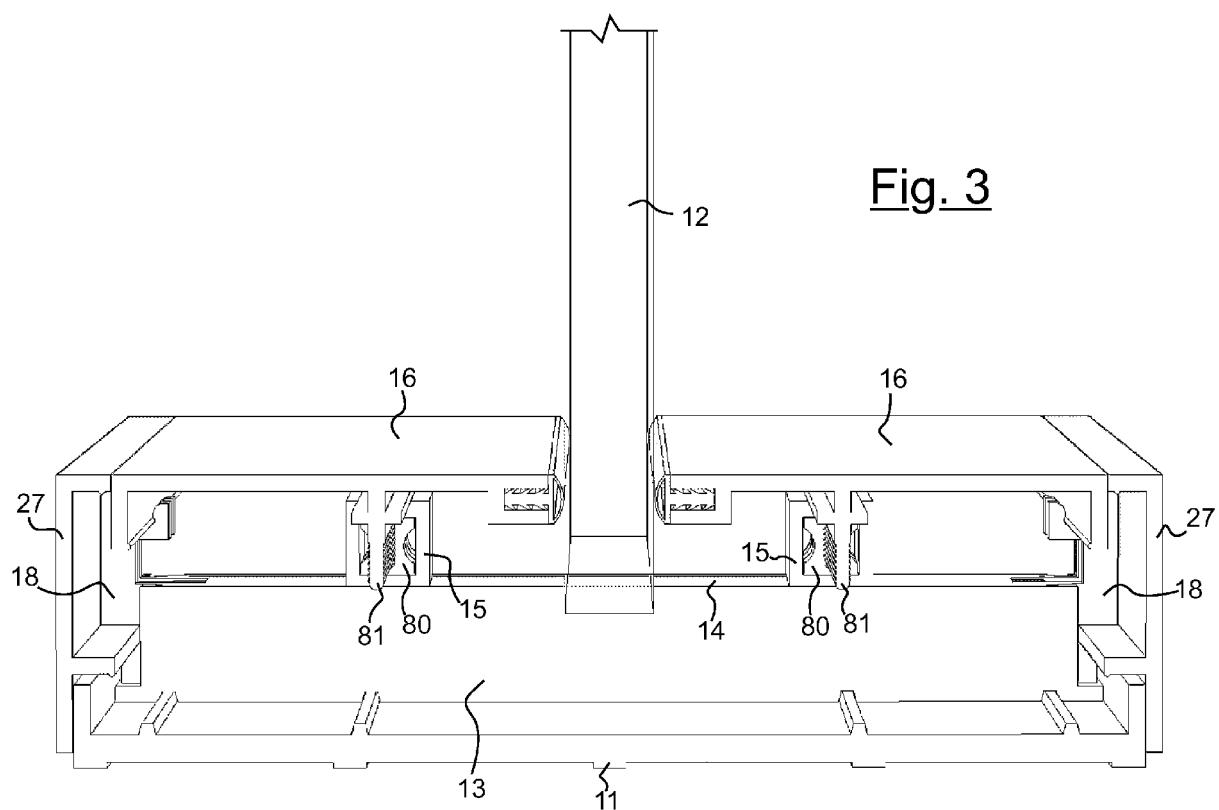
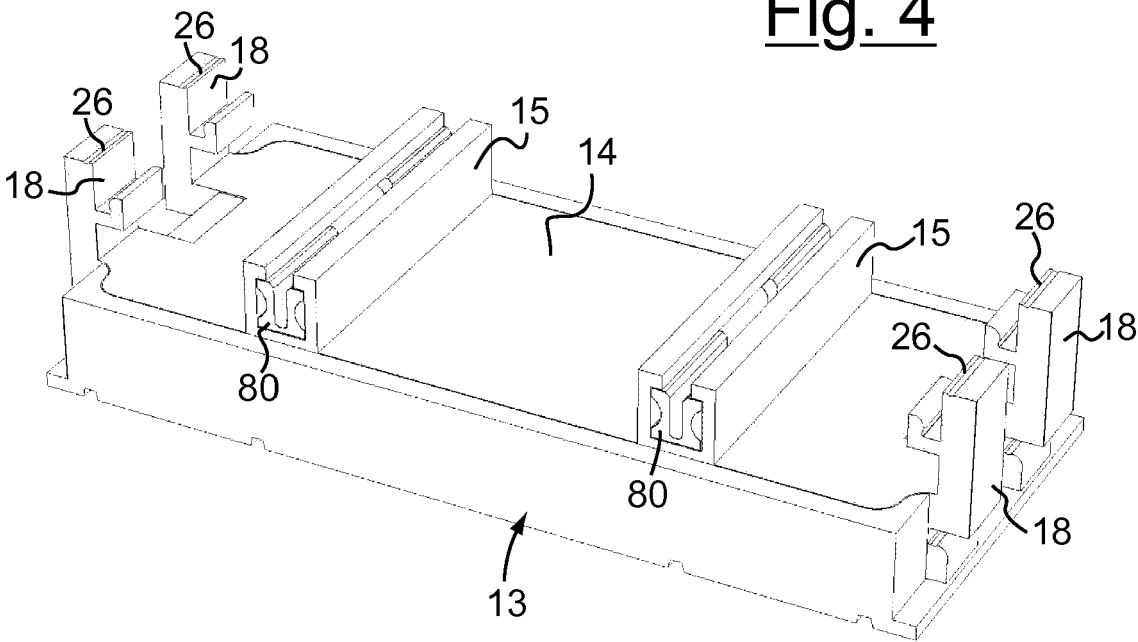
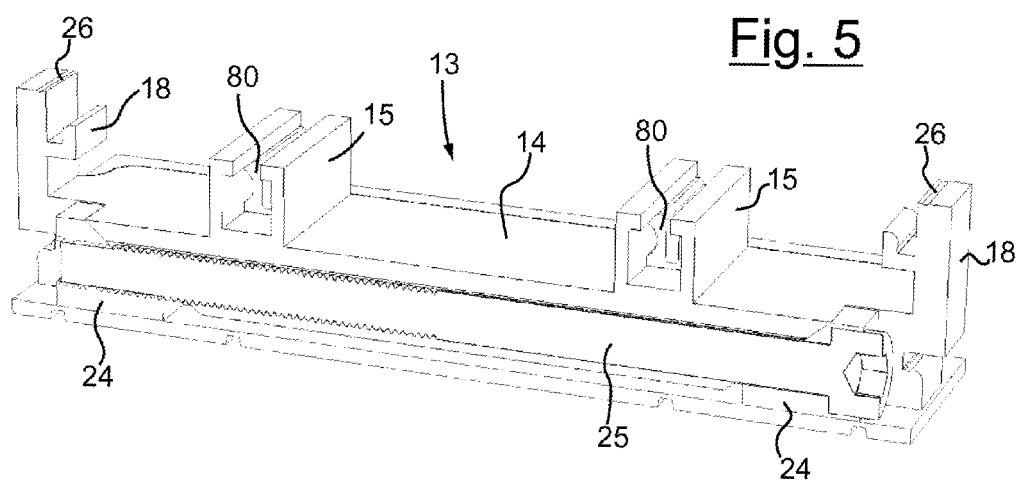


Fig. 4





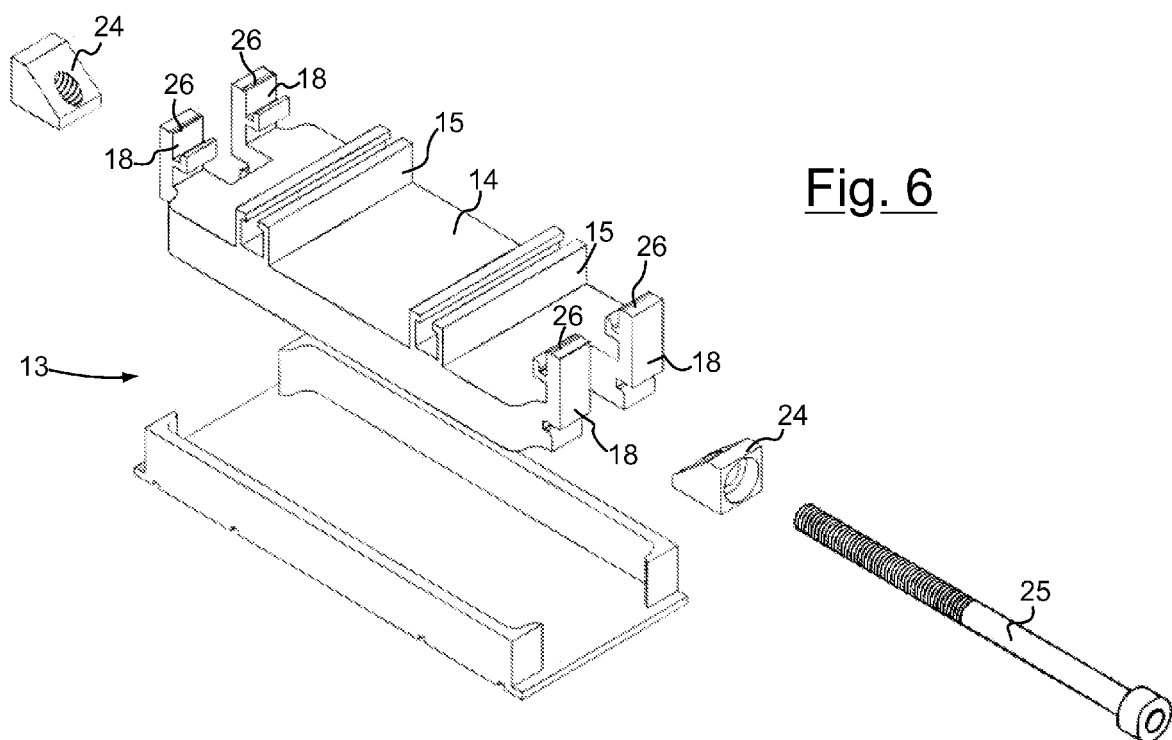
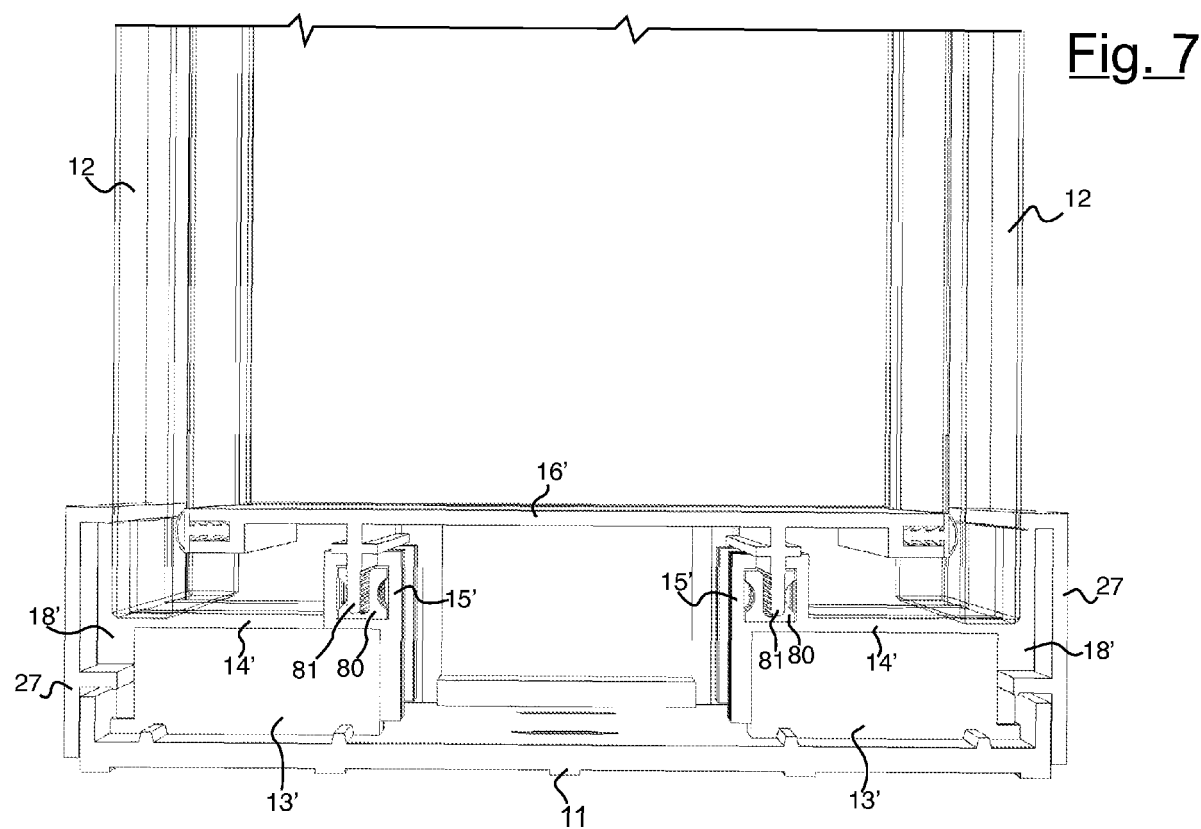


Fig. 6



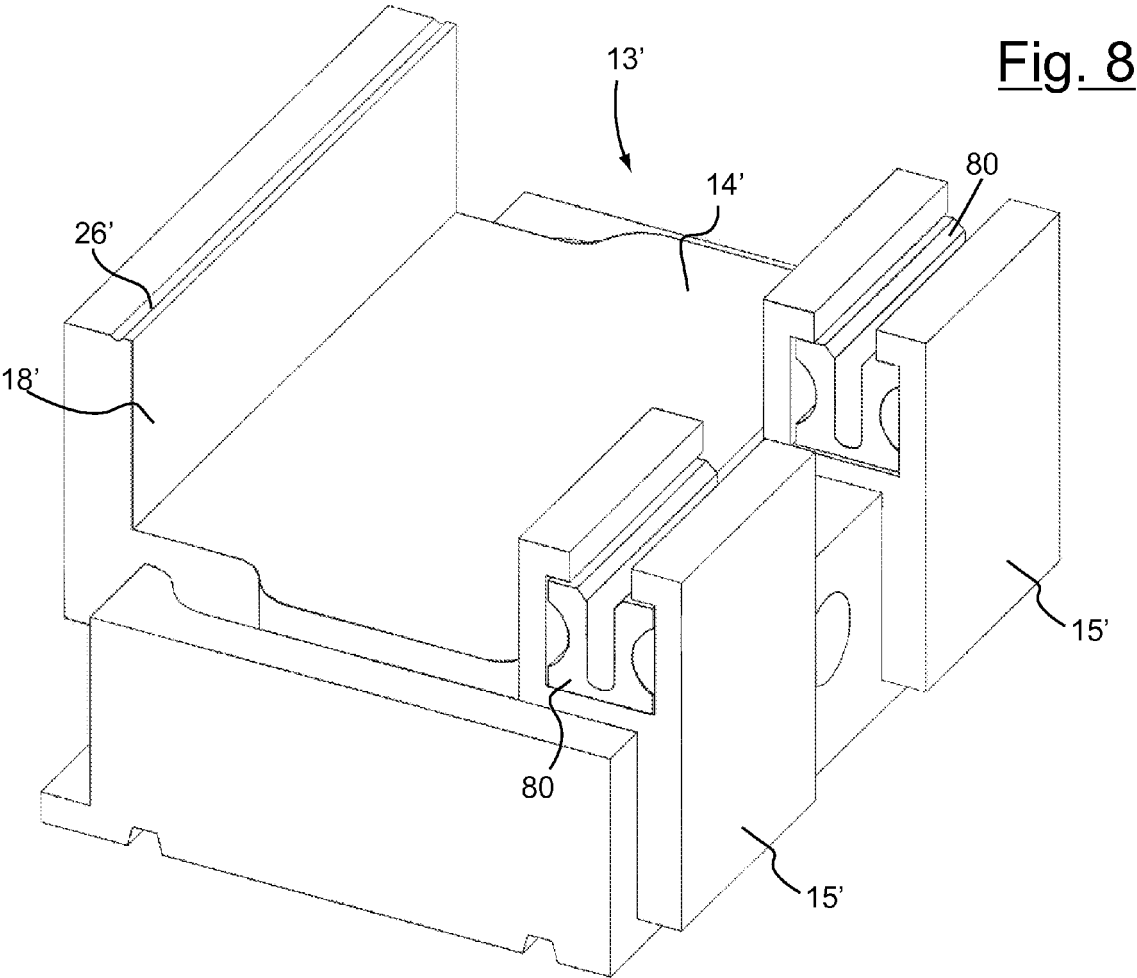


Fig. 9

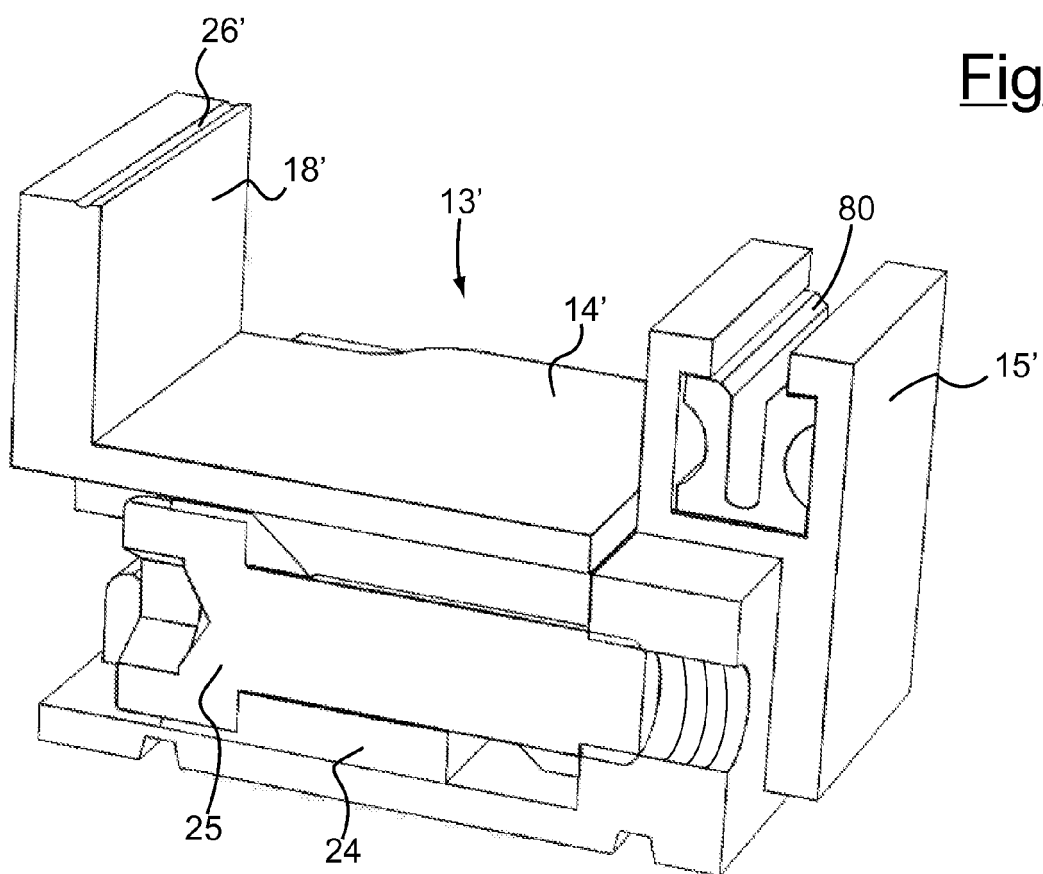
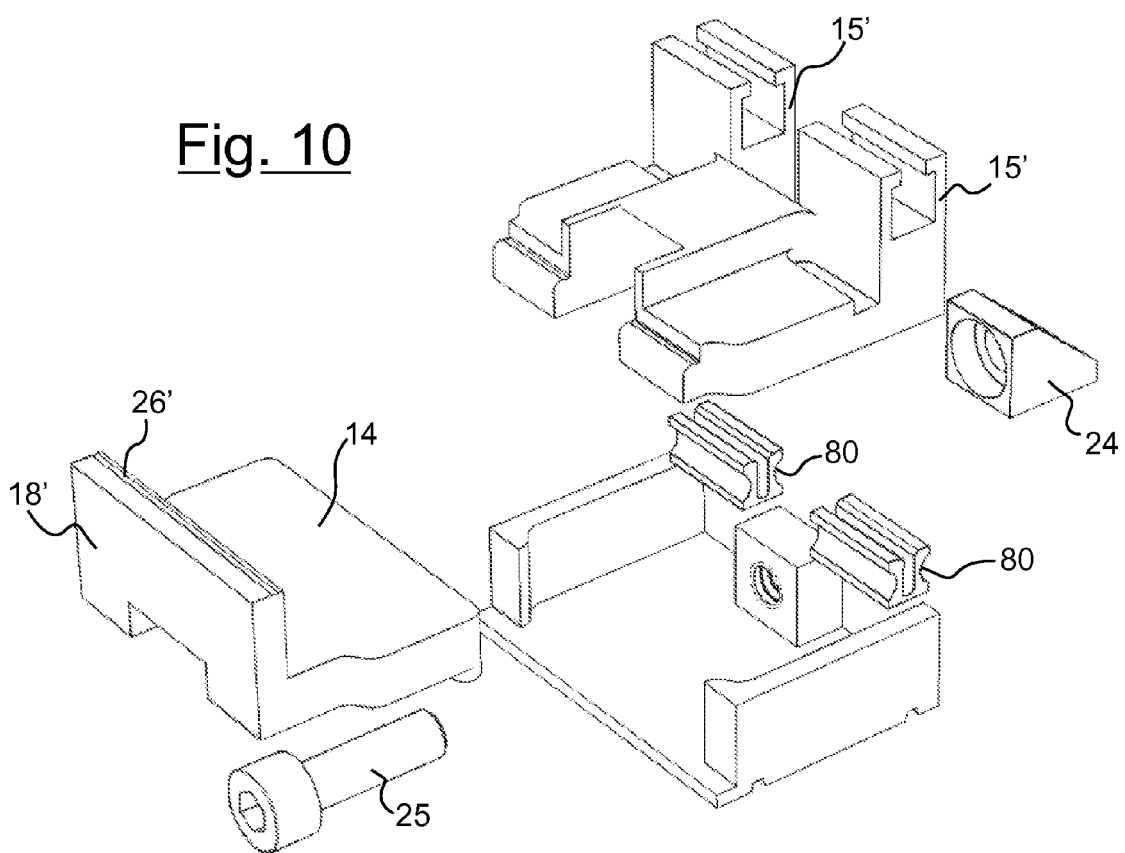


Fig. 10



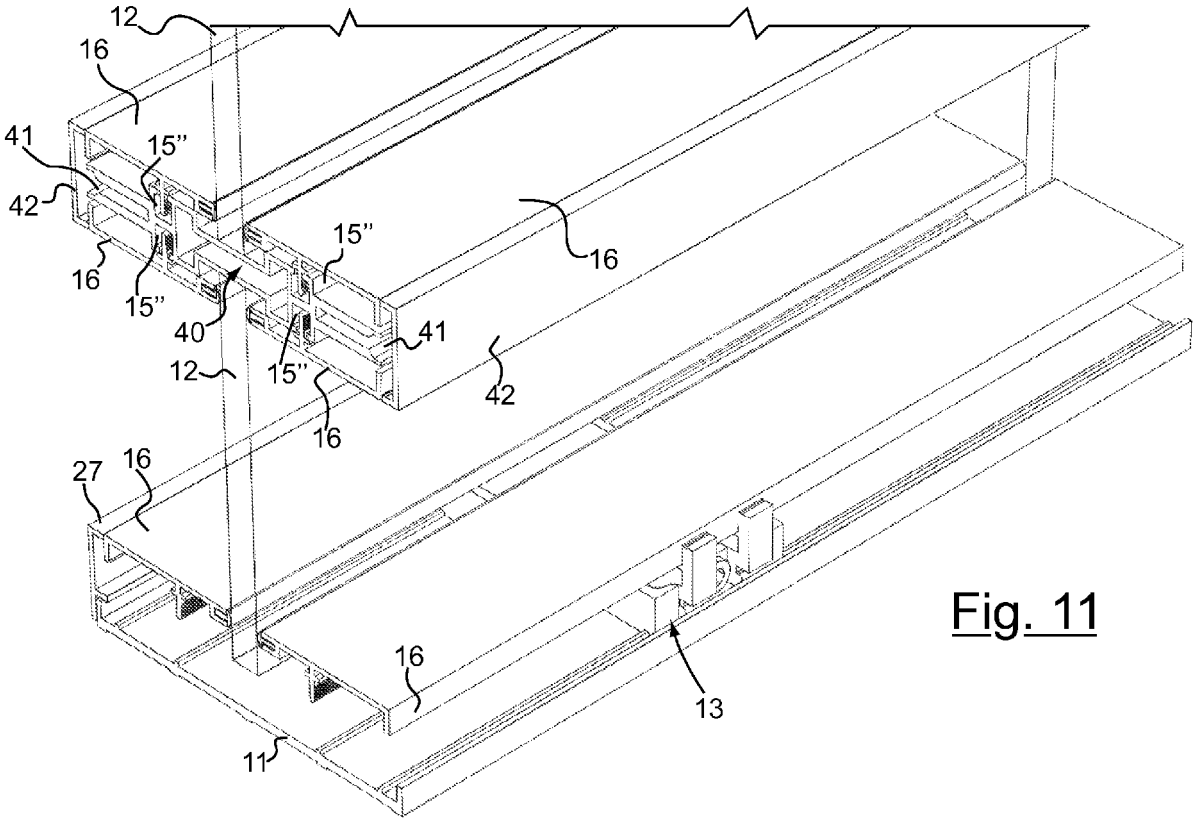


Fig. 11



EUROPEAN SEARCH REPORT

Application Number
EP 10 16 3557

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 4 016 690 A (RICHARDSON CLETUS) 12 April 1977 (1977-04-12) * column 3, line 35 - column 4, line 9; figures 1,2,4-6 *	1,2,5-7	INV. E04B2/74
X	FR 2 712 322 A (SOCAB [FR]) 19 May 1995 (1995-05-19) * page 3, line 14 - page 6, line 8; figure 3 *	1,2,8,12	
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			TECHNICAL FIELDS SEARCHED (IPC)
			E04B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 14 September 2010	Examiner Stern, Claudio
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 10 16 3557

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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14-09-2010

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