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(54) Section member assembly for making window and door frames, particularly of the sliding wing type.

(57) Assembly comprising fixed frame cross-section members (1, 2) defining, at the central portions thereof, at least a substantially vertical pair of guiding lugs (3), adapted to provide the wing sliding rails, the assembly further comprising: fixed frame upright section members (20, 21, 22) which define the abutment seats for the wings; wing cross section member (30) adapted to be slidingly coupled to the guiding lugs; abutment upright section members (35) for the wing, which can be removably engaged in the abutment seats; and coupling upright section members (40, 41) for mutually coupling the sliding wings in the fixed frame.

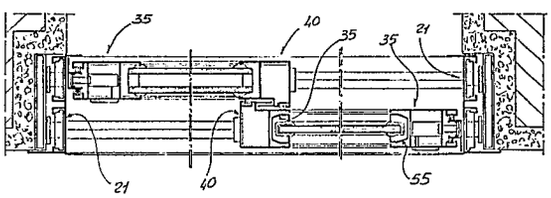

Fig. 22

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Description

SECTION MEMBER ASSEMBLY FOR MAKING WINDOW AND DOOR FRAMES, PARTICULARLY OF THE SLIDING WING TYPE

BACKGROUND OF THE INVENTION

The present invention relates to a section member assembly for making sliding wind window and door frames.

As is known, great difficulties are encountered in assembling in a precise and quick way sliding wing window and door frames by using conventionally available section members.

In particular, great difficulties are encountered in making the wing sliding guides mainly with respect to an accurate centered assembling of the wings.

Another drawback affecting prior art section members is that rather complex operations must be carried out for performing the connections at the angle regions with a consequent great amount of labour involved.

SUMMARY OF THE INVENTION

Thus, the task of the present invention is to overcome the above mentioned drawbacks, by providing a section member assembly, the section members of which have been specifically designed for making sliding wing window and door frames, and including a very reduced number of section members adapted to afford the possibility of quickly and easily making very different window and door frames.

Within the scope of the above task, a main object of the present invention is to provide such a section member assembly which affords the possibility of performing 90° connections of the component section members thereof.

Another object of the present invention is to provide such a section member assembly the section members of which have a comparatively reduced linear weight so as to reduce to a minimum the section member making cost, while providing a very high mechanical strength so as to afford the possibility of making perfectly tight window and door frames.

According to one aspect of the present invention, the above mentioned task and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a section member assembly for making window and door frames, particularly of the sliding wing type characterized in that said said section member assembly comprises: fixed frame cross section members defining, at the central portions thereof, at least a pair of substantially vertical guiding lugs for providing the sliding rails of the wings; fixed frame upright sec tion members defining abutment seats for said wings; wing cross section members adapted to be slidingly coupled to said guiding lugs; wing abutment upright section members adapted to be removably engaged in said abutment seats; and coupling upright section members having a respective leg for mutually coupling the sliding wings in the fixed frame.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the invention will become more apparent from the following detailed description of a section member assembly for making window and door frames, particularly of the sliding wing type, according to the invention, which is illustrated, by way of an indicative but not limitative example, in the accompanying drawings, where:

Figures 1 and 2 schematically show frame bottom cross section members,

Figures 3 and 4 schematically show section members according to the present invention for making fixed frame top or upper cross members;

Figure 5 schematically shows a section member according to the invention for making a bottom cross member, having an inner leg;

Figures 6 and 7 schematically show fixed frame cross section members provided with three guiding lugs;

Figures 8 and 9 schematically show two possible different embodiments of fixed frame upright section members for making window and door frames, and including two guiding lugs;

Figure 10 schematically shows a fixed frame upright section member including three guiding lugs;

Figure 11 shows a cross-section member for the frame wing;

Figure 12 schematically shows an abutment upright section member for the frame wing;

Figures 13 and 14 schematically show coupling upright section members for the sliding wing;

Figure 15 schematically shows a coupling upright section member provided with a gripping handle;

Figure 16 schematically shows a butt section member to be applied on the fixed frame upright section members;

Figure 17 schematically shows a glass restraining section member for the wing;

Figures 18 and 19 schematically show two different embodiment of covering section members;

Figure 20 schematically shows a coupling section member for assembling the sliding wing section memberswith other section members in order to make fixed-wing or hinged wing door and window frames;

Figure 21 schematically shows a two sliding wing window made by the section members of

the preceding figures;

Figure 22 is a cross-sectional view taken along the line XXII-XXII of figure 21; and

Figure 23 shows another cross-sectional view taken along the line XXIII-XXIII of figure 21.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the figures of the accompanying drawings and, more specifically, to figures 1 and 2, the section member assembly for making window and door frames, particularly of the sliding wing type, according to the invention, comprises fixed frame bottom cross section members indicated respectively at the references number 1 and 2 which, at their central portions are provided with guiding lugs 3 which are mutually parallel and substantially lie in vertical planes.

The section member 1, as shown in figure 1, is provided with a box-like body 4, whilst the section member 2 has a substantially rectilinear body, with bottom coupling projections 5.

The guiding lugs 3 provide the sliding rails for the window or door frame wings, as it will become more apparent hereinafter.

Figures 3 and 4 show top cross section members, indicated at the reference numbers 6 and 7, which, at their central portions, are provided with the mentioned lugs 3 which substantially downward extend; more specifically, the section member 6 comprises an inner leg 8, while the section member 7 is provided with a upturned inner leg 9.

The section member 10 shown in figure 5 consists of a fixed frame bottom cross member which is provided with an inner leg 11 having a projecting edge 12 and being moreover provided on both its inner and outer surfaces with coupling seats indicated at the reference number 13.

Figures 6 and 7 show cross section members indicated at the reference number 15 and 16 which are conceptually similar to the already disclosed section members, with the difference that they are provided with three guiding lugs 3, arranged in a parallel adjoining relationship for making window and door frames including at least three freely sliding wings.

Figures 8, 9 and 10 show fixed frame uprights, indicated respectively at 20, 21 and 22; in particular, the section member 20 defines at the front thereof a seat 23, whereas the section member 21 has a leg 24 and the section member 22 is so designed and sized as to be used with the section members 15 and 16 including three guiding lugs.

The section members 20, 21 and 22 practically provide an abutment region for the wing uprights consisting, for example, of the section member 35 shown in figure 12.

The cross section member 30 (as is shown in figure 11) has a H-shape and is provided with inner seats 31 formed on opposite legs; the seats 31 receive brush gaskets adapted to operate as tight elements for the sliding movement.

Figure 12 shows an abutment upright section member, indicated at 35, which defines a box-like body 36 provided, on a side, with seats 37 for coupling tightness elements.

Figures 13 and 14 show upright section members for coupling the wing, which upright section members are indicated respectively at 40 and 41, and which comprise a box-shaped body 42 which, on its outer surface, is provided with a coupling leg 43 for mutually engaging two adjoining wings.

The section member 45 shown in figure 15 is conceptually similar to the above disclosed section members, with the difference that it is provided with an inwardly extending gripping handle 46.

Figure 16 shows a further section member 50 adapted to be engaged in the seats defined by the fixed frame upright section members 20, 21 and 22 so as to provide a butt element for the legs of the wing upright section member thereby providing a more accurate mechanical coupling and improving the tightness of the coupling itself.

Figure 17 shows a section member 55, of the glass plate restraining type, which can be snap coupled with the legs of the wing upright and cross section members in order to connect the glass plate, through the interposition of tightness gaskets; the section member 55 can be made with several sizes depending on the thickness of the glass plate.

Figures 18 and 19 show covering section members 60 and 61 which are provided with a flat portion 62 and which, on the other side thereof, have projecting lugs 63 adapted to snap engage with the corresponding seats of the section members for coupling this section member with a covering of the joining lines.

The section member 60 has a single lug 63 and, at the other end thereof, it is provided with a seat 64 for receiving a tightness gasket.

Figure 20 shows a coupling section member, indicated generally at the reference number 70, which has two adjoining box-like bodies 71 and 72 and which is provided for fitting the sliding wing section members to other section members in order to make either fixed wings or rotatable opening wings.

Figures 21, 22 and 23 show a possible window or door frame which can be made by using the above disclosed section members; in this connection it should be pointed out that this represents exclusively a possible embodiment, since the type of made window or door frame will depend on specific requirements.

In fact, the above disclosed section members afford the possibility of making very different types of window and door frames, since the several connections can be performed by simply coupling at the angled portions thereof the several section members, without the need of performing finishing operations.

From the above disclosure it should be apparent that the invention fully achieves the intended task and objects.

While the invention has been disclosed and illustrated with reference to preferred embodiments. thereof, it should be apparent that the disclosed embodiments are susceptible to several modifica-

tions and variations all of which will come within the spirit and scope of the appended claims.

Claims

1. A section member assembly for making window and door frames, particularly of the sliding wing type, characterized in that said section member assembly comprises: fixed frame cross section members defining, at the central portions thereof, at least a pair of substantially vertical guiding lugs for providing the sliding rails of the wings; fixed frame upright section member defining abutment seats for said wings; wing cross-section members adapted to be slidingly coupled to said guiding lugs; wing abutment upright section members adapted to be removably engaged in said abutment seats; and coupling upright section members having a respective leg for mutually coupling the sliding wings in the fixed frames.

2. A section member assembly according to claim 1, characterized in that said section member assembly comprises fixed frame top section members and fixed frame bottom section member having at least a pair of guiding lugs.

3. A section member assembly according to the preceding claims, characterized in that said section member assembly comprises fixed frame cross section members having three adjoining guiding lugs.

4. A section member assembly according to one or more of the preceding claims, characterized in that said section member assembly comprises fixed frame upright section members having seats therein can be fixedly engaged butt section members adapted to be coupled to the upright section members of the wing.

5. A section member assembly according to one or more of the preceding claims, characterized in that said section member assembly comprises wing cross section members, having a substantially H-shape and provided, at the inner surfaces of the end portions of two adjoining legs, with seats for receiving brush gaskets.

6. A section member assembly according to one or more of the preceding claims, characterized in that said section member assembly comprises abutment wing upright section members having a box-like body and provided with seats for receiving tightness gaskets, removably coupled with the butt section member.

7. A section member assembly according to one or more of the preceding claims, characterized in that the coupling upright section members are provided with a respective coupling leg adapted to opera te as a sliding restraining element for said wing.

8. A section member assembly according to one or more of the preceding claims, characterized in that said section member assembly comprises coupling section members provided on their respective inner surfaces with a gripping handle.

9. A section member assembly according to one or more of the preceding claims, characterized in that said section member assembly comprises glass plate restraining section members which can be snap engaged in said upright section members and said cross section members, for supporting glass plates and the like.

10. A section member assembly according to one or more of the preceding claims, characterized in that said section member assembly comprises coupling section members adapted to couple said section members in order to make sliding wing window and door frames.

11. A section member assembly according to one or more of the preceding claims, characterized in that said section member assembly comprises covering section members having a flat surface and on a face of which there are provided lugs adapted to be snap engaged in adjoining section members.

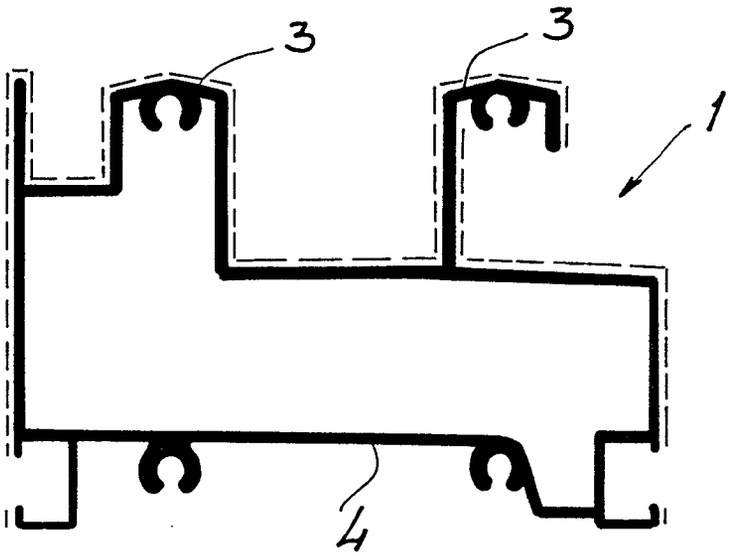


Fig. 1

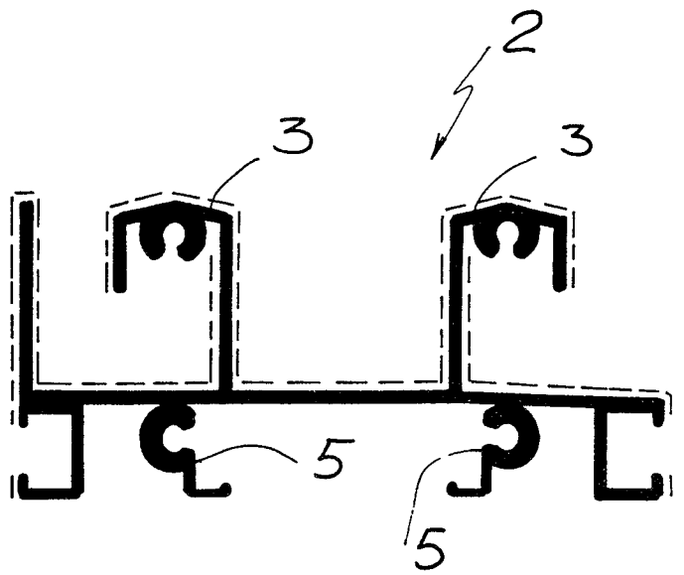


Fig. 2

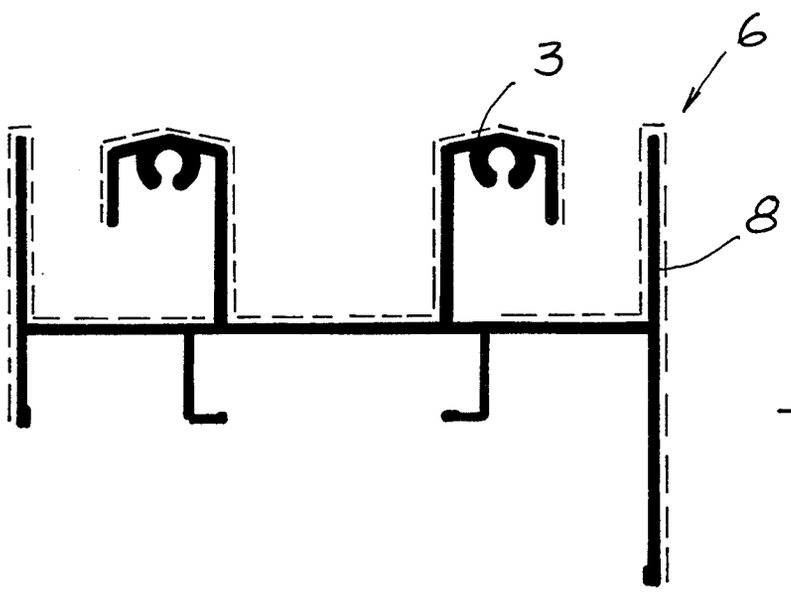


Fig. 3

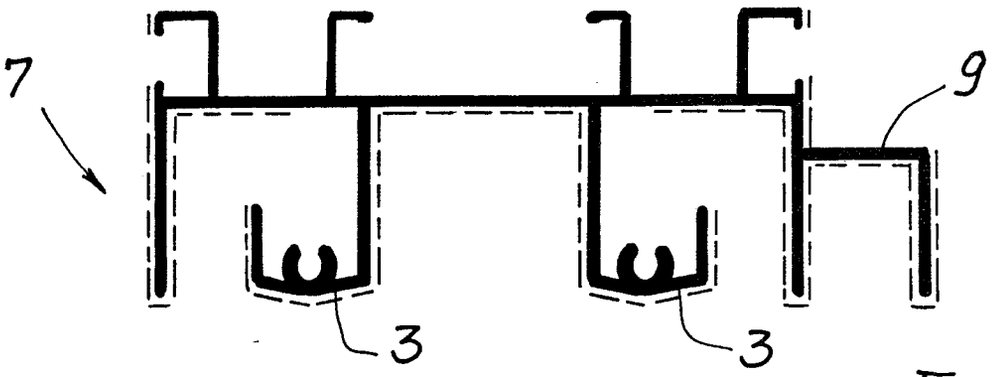


Fig.4

Fig.5

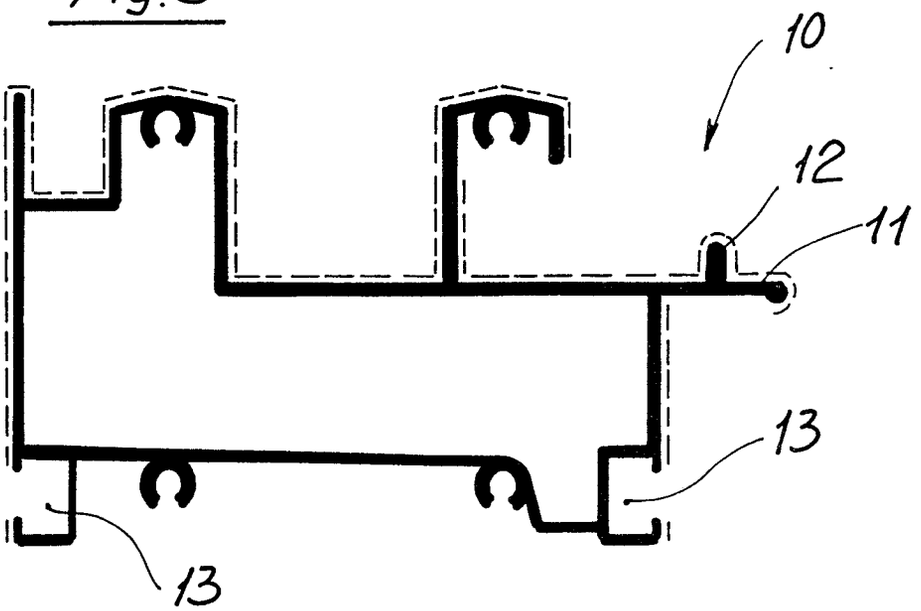
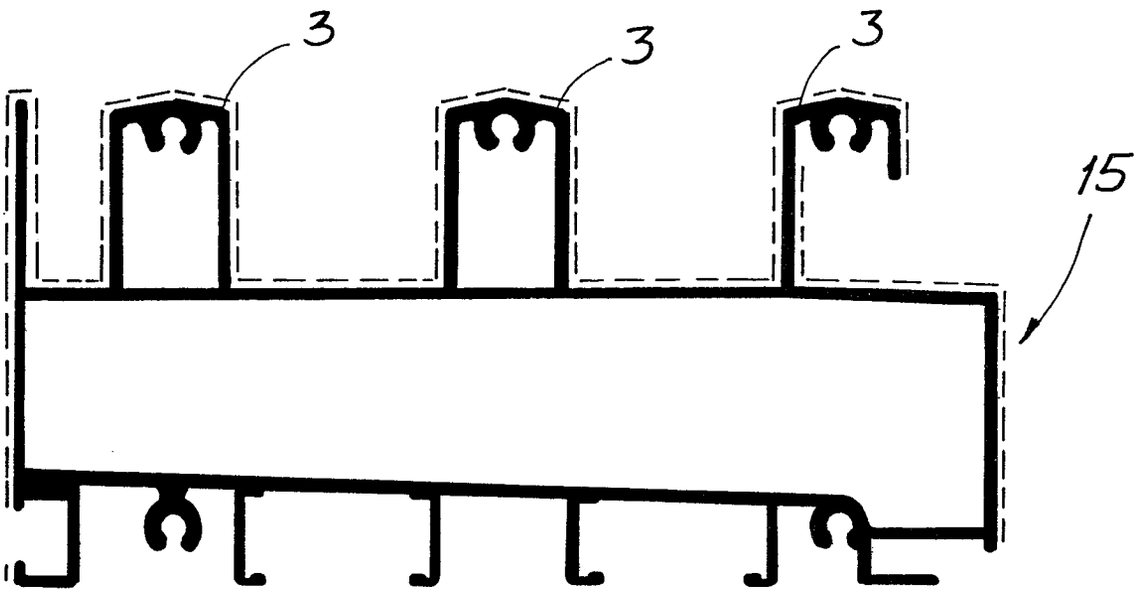


Fig.6



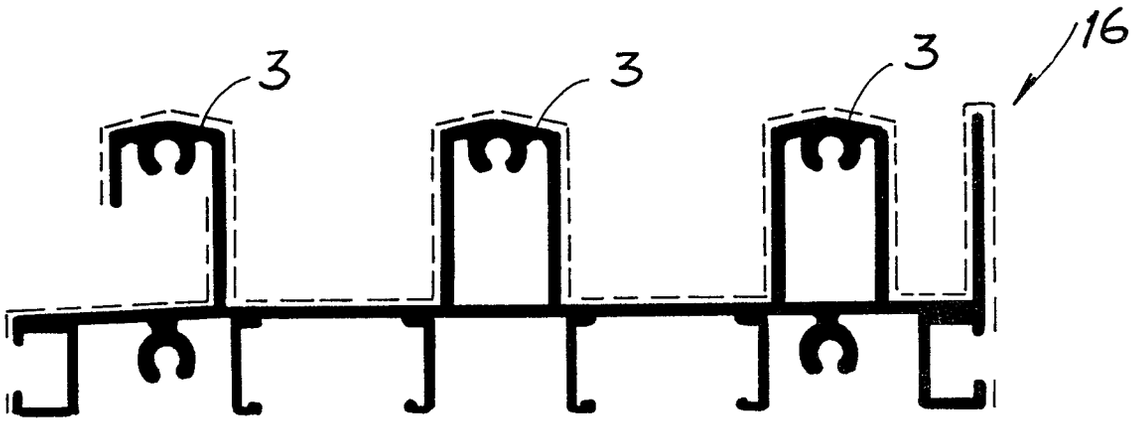


Fig.7

Fig.8

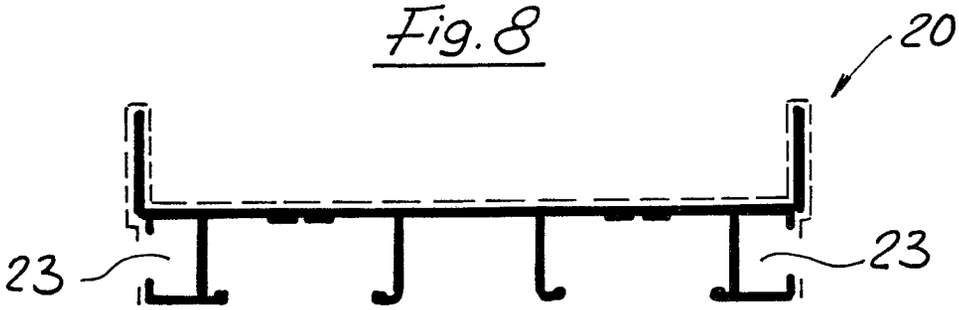


Fig.9

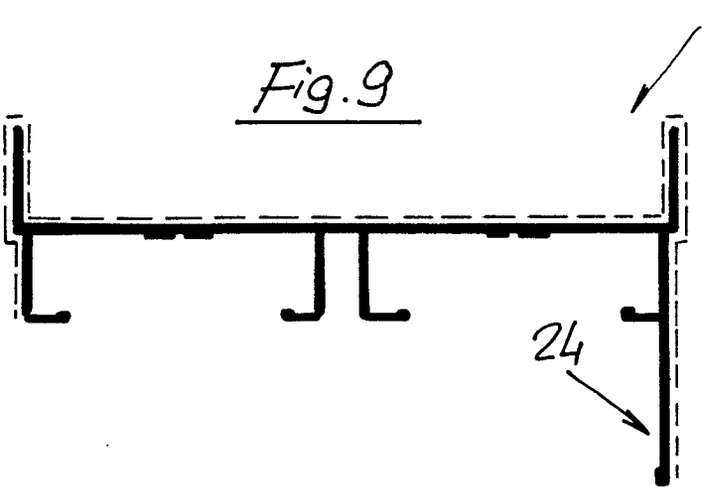


Fig.11

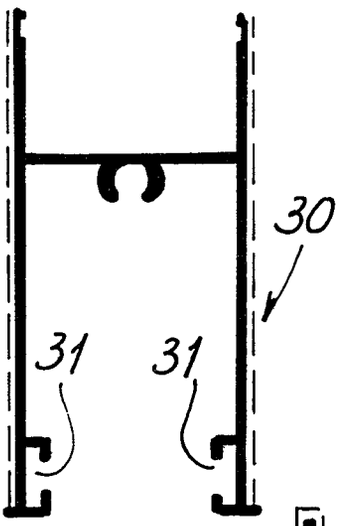
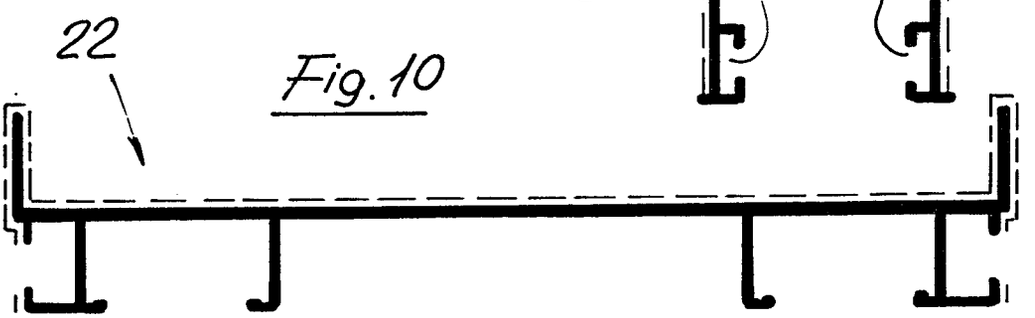


Fig.10



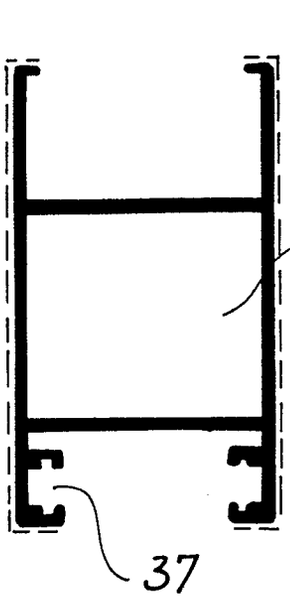


Fig.12

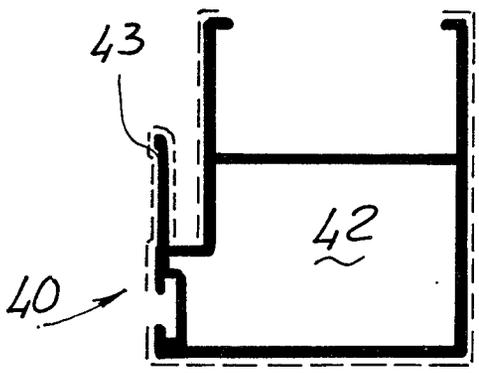


Fig.13

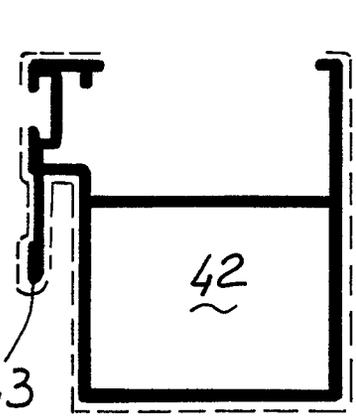
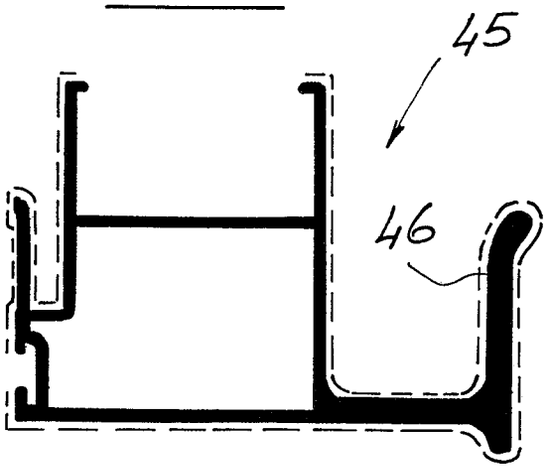


Fig.14

Fig.15



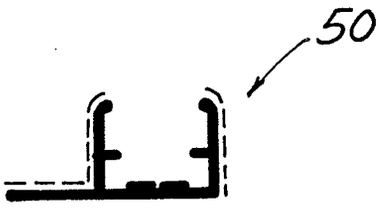


Fig.16

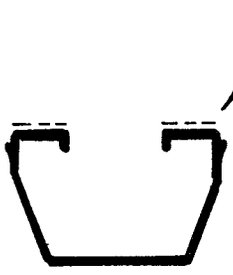


Fig.17

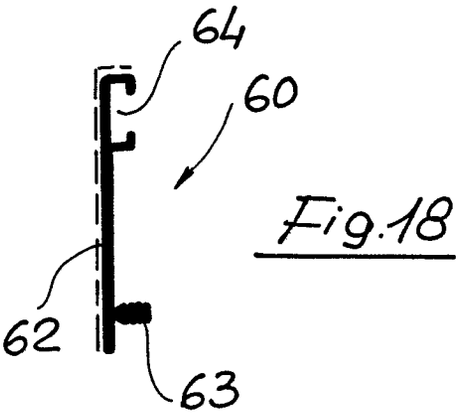


Fig.18

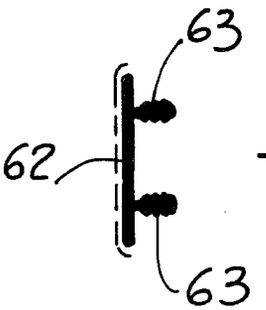


Fig.19

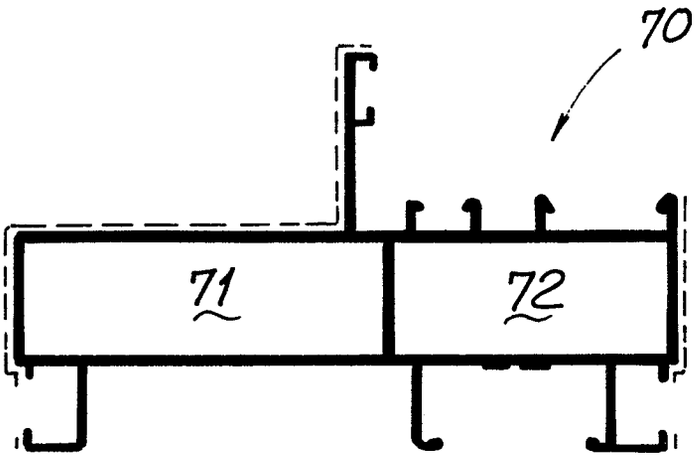


Fig.20

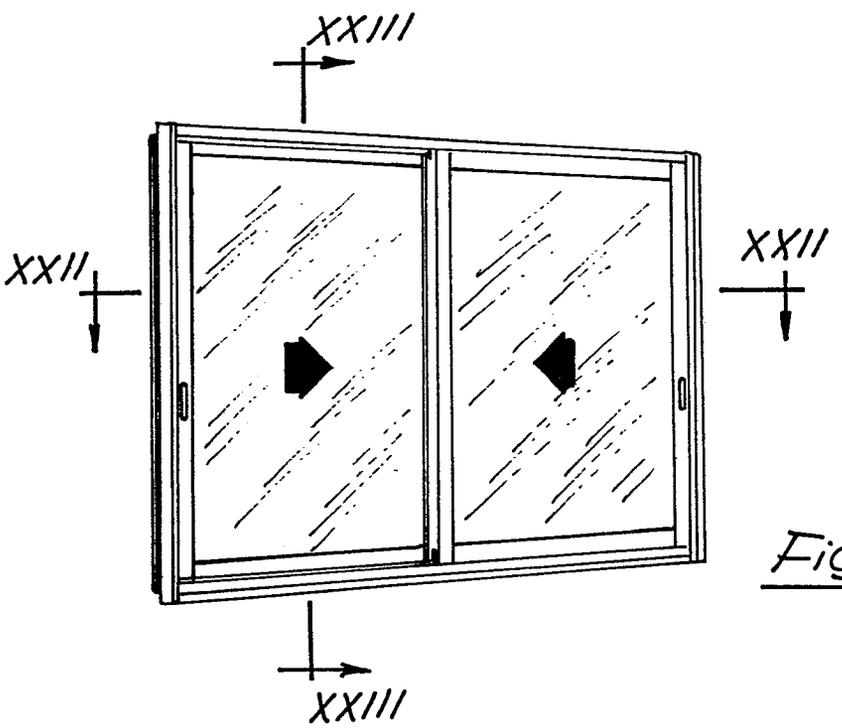


Fig.21

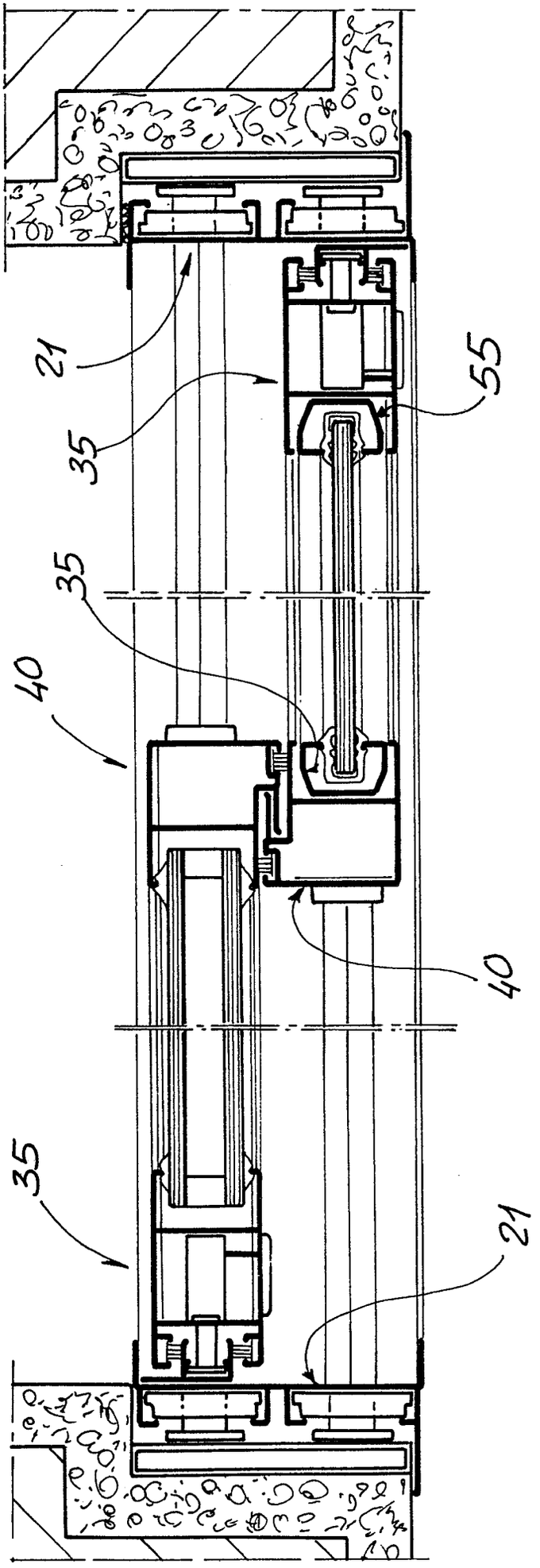


Fig. 22

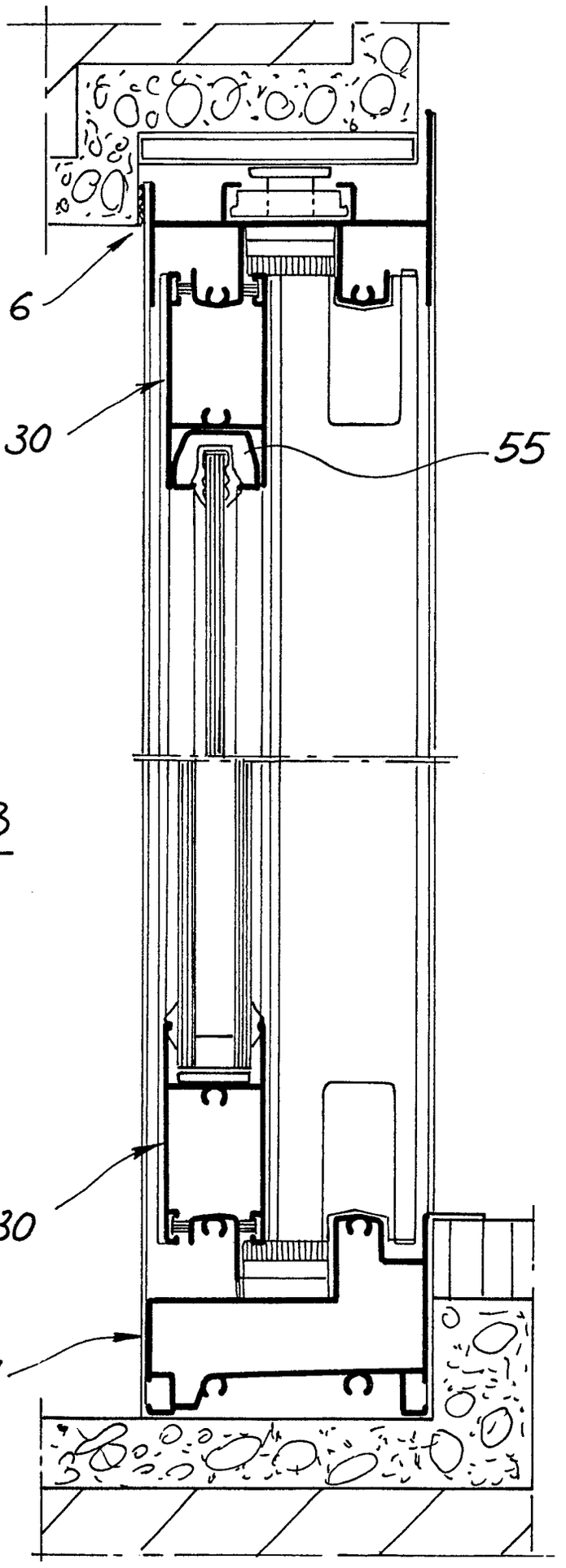


Fig. 23

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 89 83 0179

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.4)
X	GB-A-1 476 622 (KAYE) * Page 1, lines 75-85; page 2, lines 87-96; figures 1,3 *	1,2,4-8	E 06 B 3/46
X	FR-A-2 451 446 (ONGARO) * Page 6, line 11 - page 9, line 20; page 10, line 14 - page 11, line 26; page 12, line 6 - page 13, line 10; figures 1,2,4 *	1-3,5,7,8	
A		6	
X	NL-A-7 504 669 (AUBIN) * Page 8, line 34 - page 16, line 4; figures 1-16 *	1,2,5,6,10,11	
A		4,7	
X	FR-A-1 374 903 (SCHÜRMANN) * Page 2, column 1, line 8 - column 2, line 43; page 3, column 1, line 42 - column 2, line 30; figures 1-3 *	1,2,4,7,9	
A	FR-A-1 548 556 (VENDOME) * Page 2, column 1, paragraphs 10,11; page 3, column 1, paragraphs 1,5; figures 1,2,5,9 *	1,2,4, 11	TECHNICAL FIELDS SEARCHED (Int. Cl.4) E 06 B
A	FR-A-2 554 498 (ALL. CO.) * Page 4, line 1 - page 8, line 31; figures 1-21 *	1,2,5-8,10,11	
E	EP-A-0 321 417 (METALLURGICA) * Column 3, line 6 - column 4, line 15; column 4, lines 43-57; claims 1-6,10; figures 1-24 *	1-3,5-8,10	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	16-08-1989	DEPOORTER F.

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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