

12

EUROPEAN PATENT APPLICATION

21 Application number: 88830556.2

51 Int. Cl.4: E06B 5/10 , E06B 3/16

22 Date of filing: 22.12.88

30 Priority: 25.01.88 IT 1919388

43 Date of publication of application:
02.08.89 Bulletin 89/31

84 Designated Contracting States:
AT BE CH DE ES FR GB GR LI LU NL SE

71 Applicant: **METALLURGICA METRA TRAFILATI
ALLUMINIO S.p.A.**
Via Provinciale Stacca, 1
I-25050 Rodengo Saiano (Brescia)(IT)

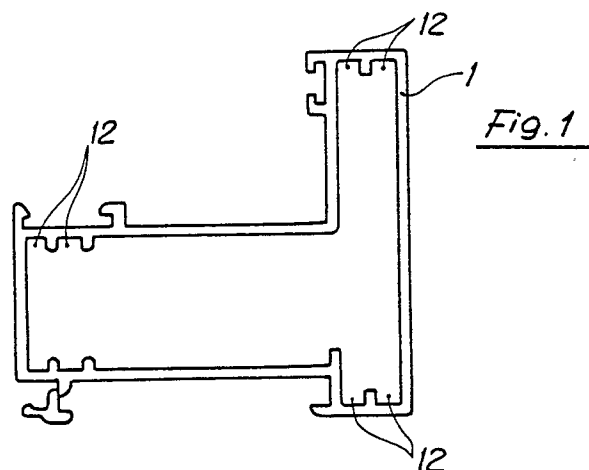
72 Inventor: **Giacomelli, Mario METALLURGICA
METRA TRAFILATI**
ALLUMINI S.p.A. Via Provinciale Stacca, 1
I-25050 Rodengo Saiano Brescia(IT)

74 Representative: **Cicogna, Franco**
Ufficio Internazionale Brevetti Dott.Prof.
Franco Cicogna Via Visconti di Modrone,
14/A
I-20122 Milano(IT)

54 **A coordinated section member assembly for making armoured window and door frames.**

57 This section member assembly comprises a fixed frame section member (1); a movable frame section member (2) for making window frames, inwardly openable; a movable frame section member for making window frames outwardly openable; a movable frame section member for making inwardly openable door frames; an auxiliary section member provided for making two wing window frames; a further central auxiliary section member for making two-wing door frames; an abutment section member for providing an abutment for outwardly openable frames; a further section member for providing a frame band and base for doors; a glass plate restraining section member (9); and a further section member adapted to be used as a upright or fixed cross-member.

In particular, the subject section members for making fixed and movable frames are provided, at the armoured regions thereof, with a double seat adapted to house corresponding steel or aluminium foils (A).



A COORDINATED SECTION MEMBER ASSEMBLY FOR MAKING ARMoured WINDOW AND DOOR FRAMES

BACKGROUND OF THE INVENTION

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

As is known, armoured window and door frames are usually used for banks and the like.

Conventional armoured window and door frames, however, have discontinuity lines susceptible to allow for a shell impinging thereon to pass through the window or door frame.

Also known is the fact that the mentioned discontinuity lines are conventionally formed at the corners of the window or door frames since, in this zone, the reinforcing foils or blades, cut at 45°, simply abut onto one another.

There are also known window and door armoured frames in which the reinforcing blades are coupled without any interruption lines; however, this approach requires that the window and door frames be subjected to complex milling operations, with a consequent increase of the finished product.

SUMMARY OF THE INVENTION

Accordingly, the task of the present invention is to overcome the above mentioned drawbacks, by providing a coordinated section member assembly, for making armoured window and door frames, which affords the possibility of making armoured window and door frames devoid of any discontinuity lines or zones between the reinforcing foils or blades.

Within the scope of the above mentioned task, a main object of the present invention is to provide such a coordinated section member assembly, for making armoured window and door frames, which affords the possibility of easily and quickly making window and door frames with different opening patterns.

Another object of the present invention is to provide such a coordinated section member assembly, for making armoured window and door frames, the section members of which are able of housing the reinforcing blades or foils, without the need of subjecting said section members to machining operations.

According to one aspect of the present invention, the above mentioned task and objects, as well as yet other objects, which will become more ap-

parent hereinafter, are achieved by a coordinated section member assembly, for making armoured window and door frames, characterized in that said section member assembly comprises: a fixed frame section member; a movable frame section member for making inwardly openable window frames; a movable frame section member for making outwardly openable window frames; a movable frame section member for making inwardly openable doors; an auxiliary central section member for making two-wing window frames; a further central auxiliary section member for making two-wing doors; an abutment section member for providing an abutment for outwardly openable frames; a section member providing a door band and/or base; a glass plate restraining section member; a section member adapted to be used as a fixed upright or cross member; said fixed and movable frame section members being provided, at the armouring zones thereof with a double seat adapted to house corresponding steel or aluminium armouring foils or blades.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the coordinated section member assembly according to the present invention will become more apparent hereinafter from the following detailed description of a preferred, though not exclusive, embodiment of said section members and portions of the window and door frames made thereby, which are illustrated, by way of an indicative but not limitative example, in the figures of the accompanying drawings, where:

Figure 1 shows a cross-sectional view of the section member used for making fixed frames;

Figure 2 shows a further cross-sectional view of the section member used for making the movable frame of inwardly openable windows;

Figure 3 shows the section member for making the movable frames of outwardly openable windows or doors;

Figure 4 shows a cross-sectional view of a section member for making the movable frame of inwardly openable doors;

Figure 5 shows a cross-sectional view of a section member adapted to operate as an abutment for outwardly openable doors and windows;

Figure 6 shows a cross-sectional view of a glass plate restraining section member;

Figure 7 is a cross-sectional view illustrating the two central uprights of a two-wing inwardly openable door;

Figure 8 shows the two adjoining uprights of a two-wing window;

Figure 9 schematically illustrates a wing frame with a fixed side frame;

Figure 10 is a partial cross-sectional view illustrating an outwardly openable wing window;

Figure 11 is a further partial cross-sectional view showing a magnetic closure wing window;

Figure 12 is a cross-sectional view illustrating the base portion with a glassed door; and

Figures 13 and 14 are respectively a front view and a side view illustrating the procedure for superimposing reinforcing or armouring foils or bal-des, at the corner regions of the window and door frames.

DESCRIPTION OF THE PREFERRED EMBODI-MENTS

With reference to the Figures of the accompanying drawings, the coordinated section member assembly for making armoured window and door frames according to the invention, comprises a section member for making fixed frames 1, a section member 2 for making the movable frame of inwardly openable windows; a section member 3 for making the movable frame of outwardly openable windows; a section member 4 for making the movable frame of inwardly openable doors; an auxiliary section member 5 for making two-wing win-dows;

a further auxiliary central section member 6 for making two-wing doors; an abutment section member 7 adapted to provide an abutment for outwardly openable windows and doors; a section member 8 providing a door band and/or base; a glass-plate restraining section member 9; and a section member 10 to be used as a fixed upright or cross member.

In this connection it should be pointed out that of the above mentioned section members, those provided for housing the armouring foils or blades 11 are provided, at corresponding positions, with a respective double seat 12.

Thus, owing to this provision, the reinforcing foils will assume, at the corner regions, a superimposed condition, thereby covering any interruptions which, on the other hand, are usually formed in conventional armoured window and door frames.

The mentioned foils or blades, in particular,

can be provided, at each armouring zone, as a single blade or a double blade depending on the armouring performance to be obtained.

The same armouring blades, moreover, can be made either of steel or aluminium, depending on the armouring performance to be obtained.

The section member assembly according to the invention provides the possibility of easily and quickly making window and door frames with different opening patterns (such as windows and doors having one or two wings, inwardly or outwardly openable, vasistas frames and so on).

Air and water tightness is provided, in the case of the windows, by suitable magnetic gaskets 13 specifically designed for a long duration.

For the doors, said tightness is provided by conventional gaskets, preferably made of ethylene-propylene elastomeric materials (such as Dutral) and the like.

In this connection it should be pointed out that the spaces provided for receiving the glass plates 15, which will have a great thickness, can be of the order of 63 mm (that is for a glass plate having an overall thickness of 57 mm).

Moreover, the mentioned glass plate restraining section member 9 will have a suitably great thickness since it must be able of firmly restraining the glass plate even if the latter is impacted by a shell or projectile.

At the reference numbers 16 and 17 there are respectively indicated a hinge assembly and a flush covering section member.

In particular, the fixed frame section members will have preferably a depth of 80 mm, where as the movable frame section members will have a depth from 80 to 88 mm.

From the above disclosure it should be apparent that the section member assembly according to 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 modifications and variations all of which will come within the scope and spirit of the appended Claims.

Claims

1. A coordinated section member assembly for making armoured window and door frames, characterized in that it comprises a section member for making fixed frames; a section member for making the movable frames of inwardly openable windows; a section member for making the movable frames of outwardly openable windows; a section member for making the movable frames of inwardly openable

ble doors; an auxiliary central section member for making two-wing windows; a further auxiliary central section member for making two-wing doors; an abutment section member adapted to provide an abutment for outwardly openable frames; a section member adapted to provide a band and/or a base for the doors; a glass plate restraining section member; a section member adapted to provide a fixed upright or cross-member; the section members for making the fixed and movable frames of said window and door frames being provided, at their armouring zones, with a double seat adapted to receive steel or aluminium armouring foils or blades.

2. A coordinated section member assembly, according to the preceding Claim, characterized in that said armouring foils can be provided at said armouring zones in a number of one or two depending on the armouring performance to be obtained, said armouring foils or blades, moreover, being made either of steel or of aluminium.

3. A coordinated section member assembly according to the preceding Claims, characterized in that the section members of said assembly are adapted to make window and door frames of different opening patterns.

4. A coordinated section member assembly according to one or more of the preceding Claims, characterized in that the air and water tightness of said window and door frames is provided, in the case of the windows, by a magnetic gaskets of long duration material, whereas, for the doors, said tightness is provided by conventional gaskets preferably made of ethylene-propylene elastomeric materials (such as Dutral) and the like.

5. A coordinated section member assembly according to one or more of the preceding Claims, characterized in that the spaces provided for receiving the glass plates have a size up to 63 mm (for a maximum thickness of the glass plate of 57 mm) said glass plate restraining section member having a suitably designed thickness to firmly restrain said glass plate even if said glass plate is impacted by a shell.

6. A coordinated section member assembly according to one or more of the preceding Claims, characterized in that said section members for forming said fixed frames have a depth of 80 mm, and said section members for forming said movable frames have a depth from 80 to 88 mm.

7. A coordinated section member assembly for making armoured window and door frames according to the preceding Claims and substantially as broadly disclosed and illustrated in the preceding disclosure and in the Figures of the accompanying drawings which form an integrating part of this Industrial Invention Patent Application.

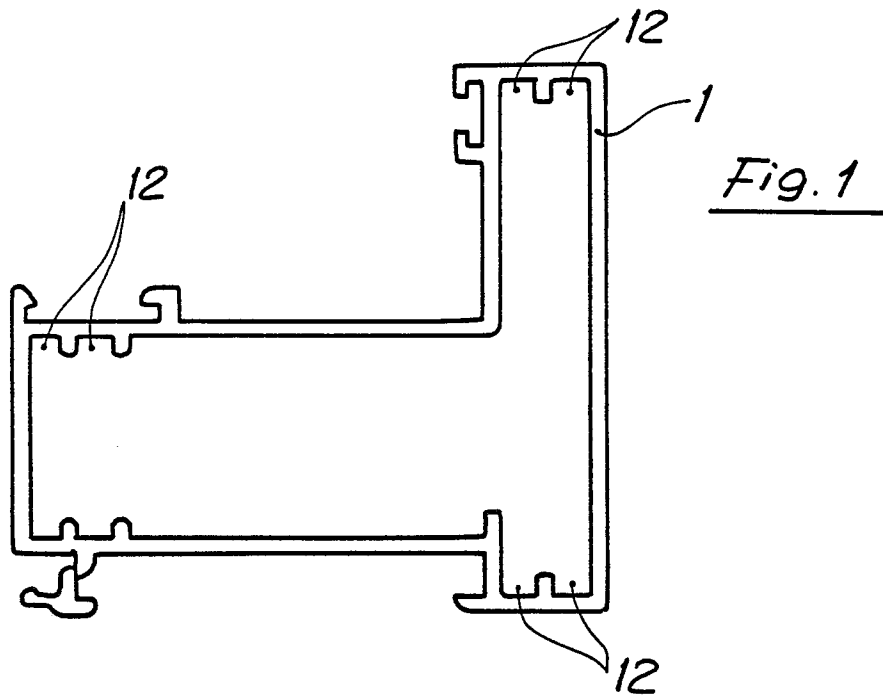


Fig. 2

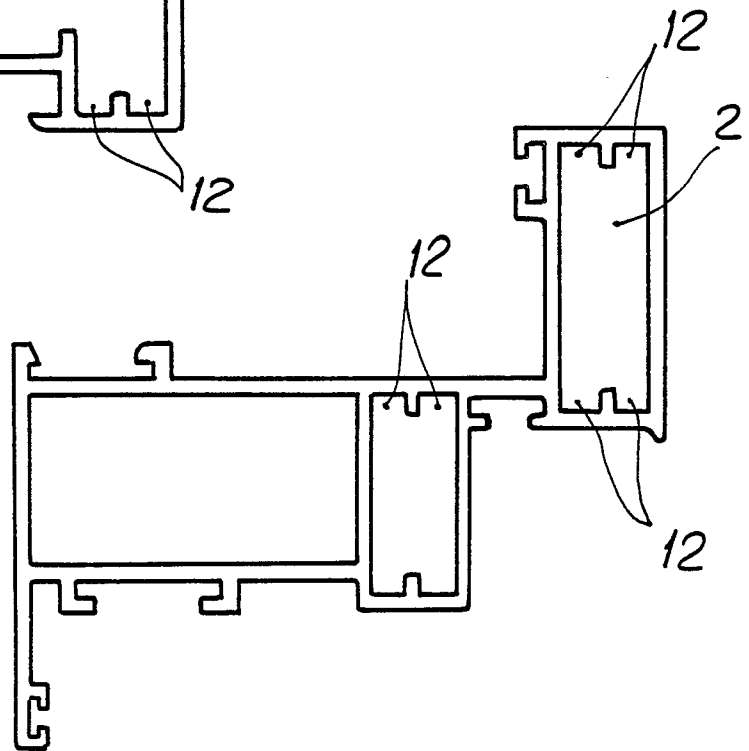
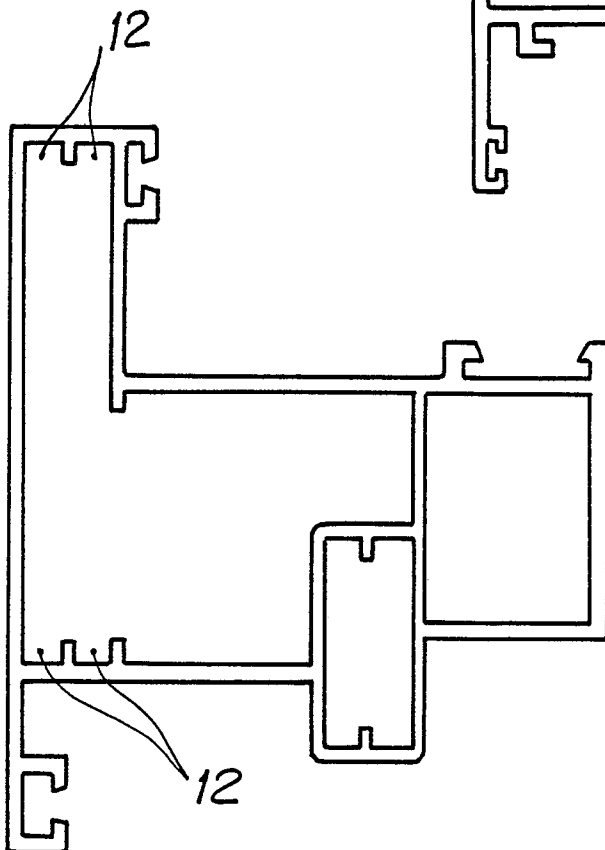
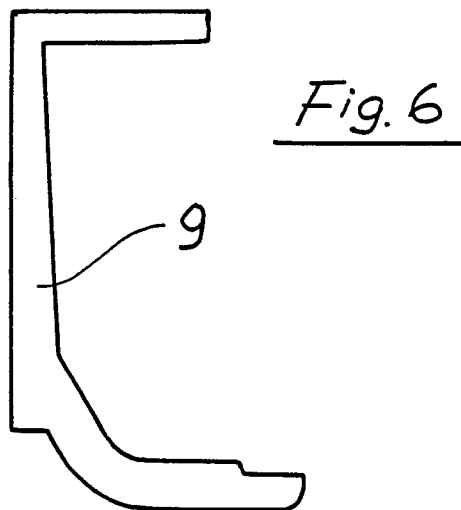
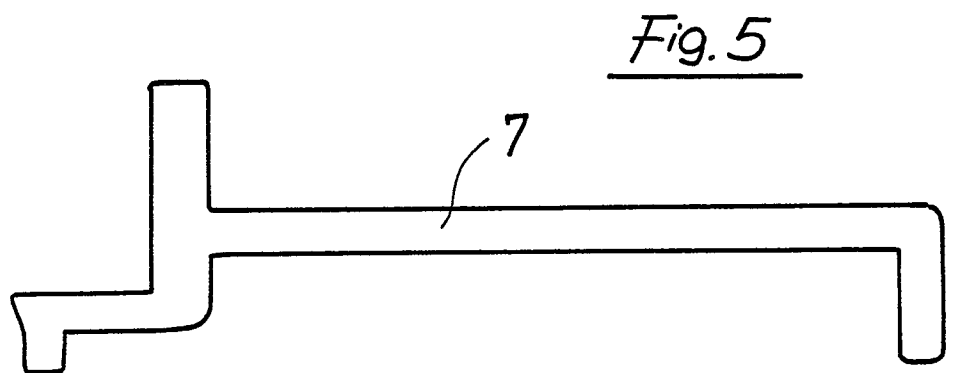
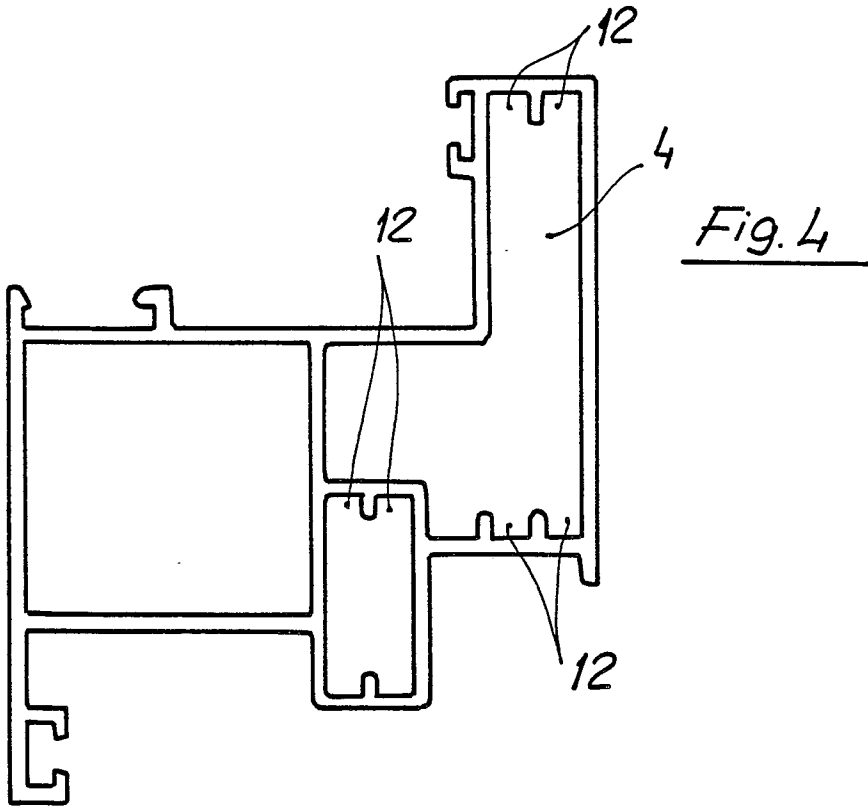


Fig. 3





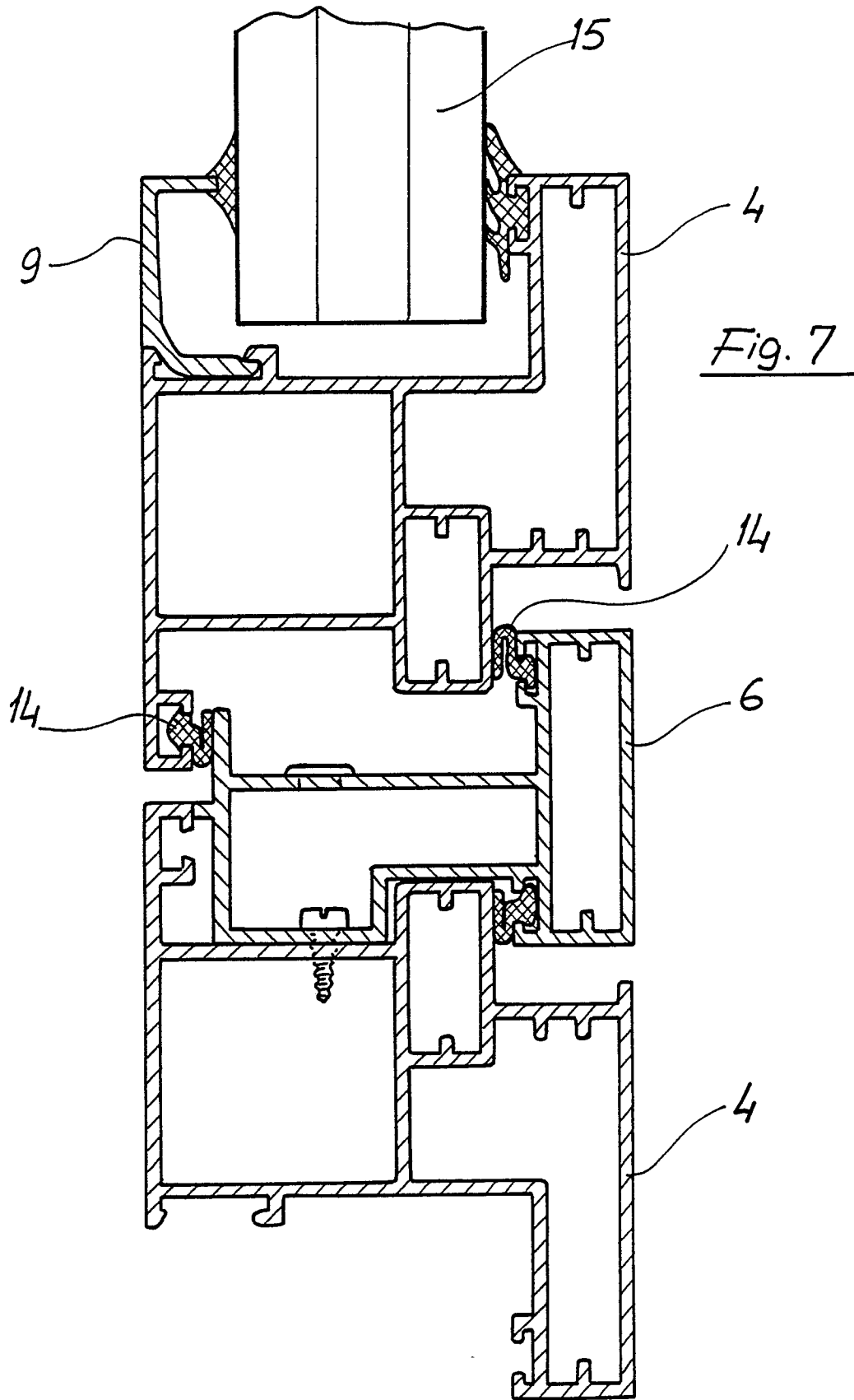
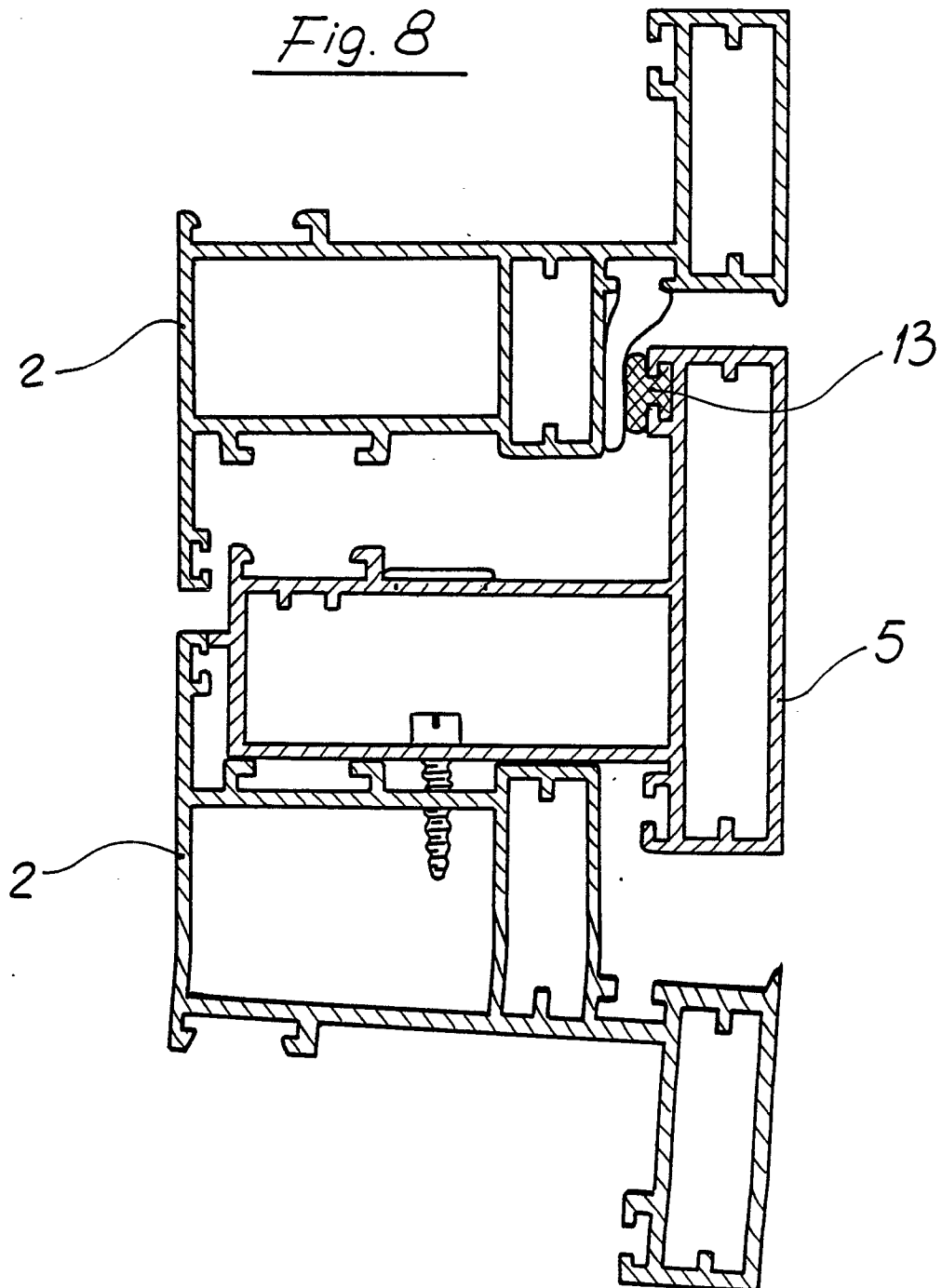
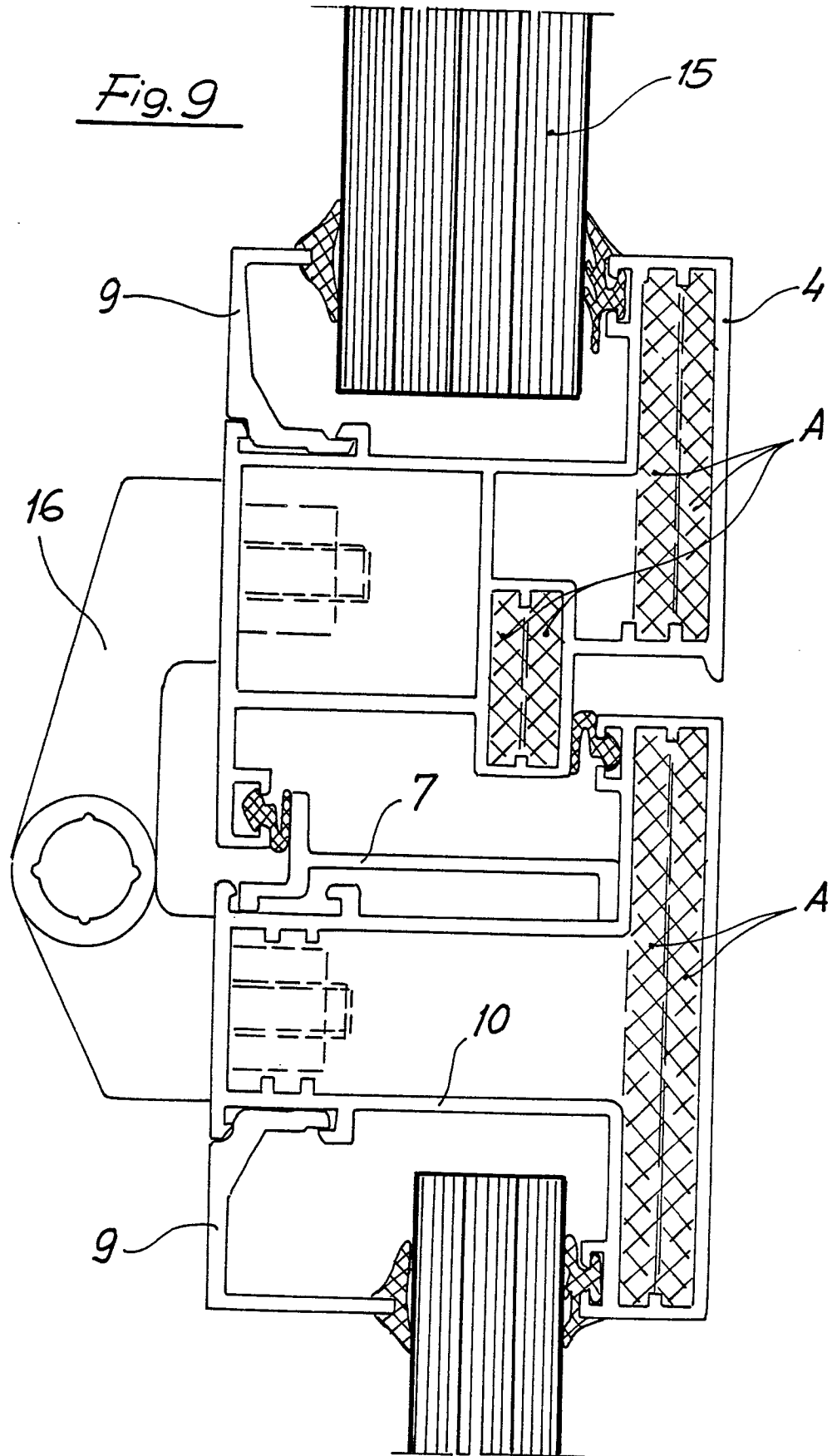


Fig. 8





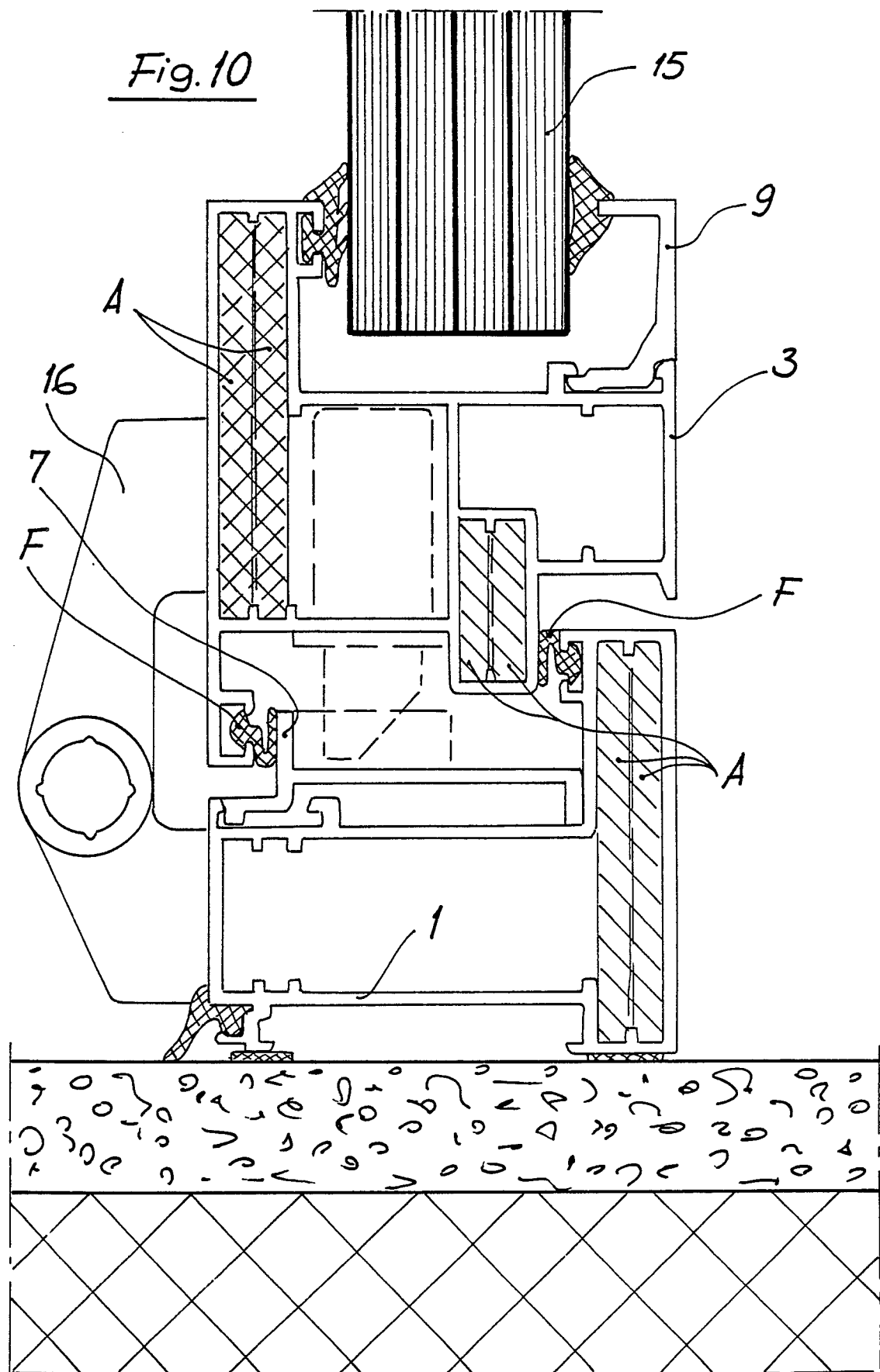
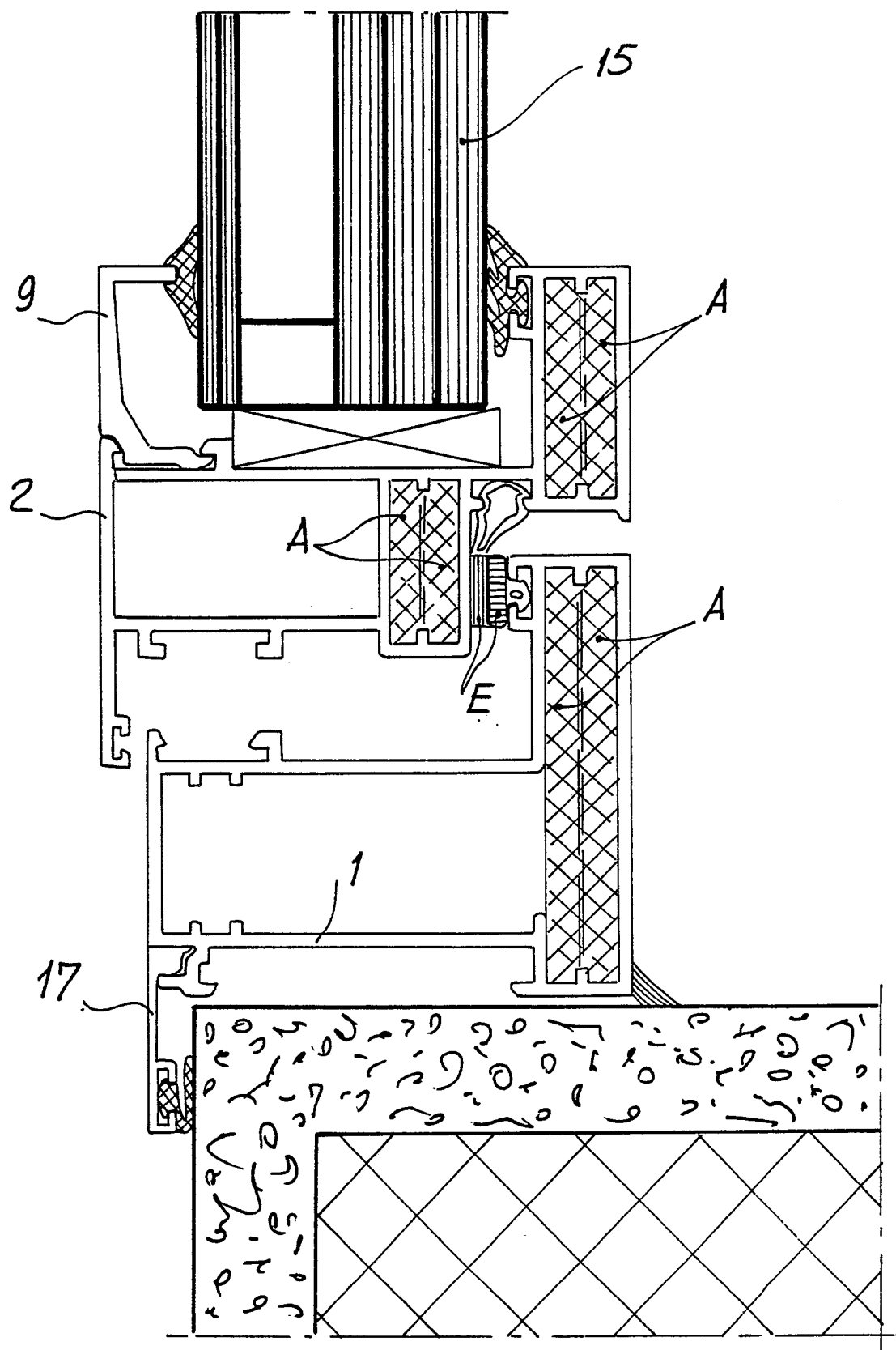


Fig. 11

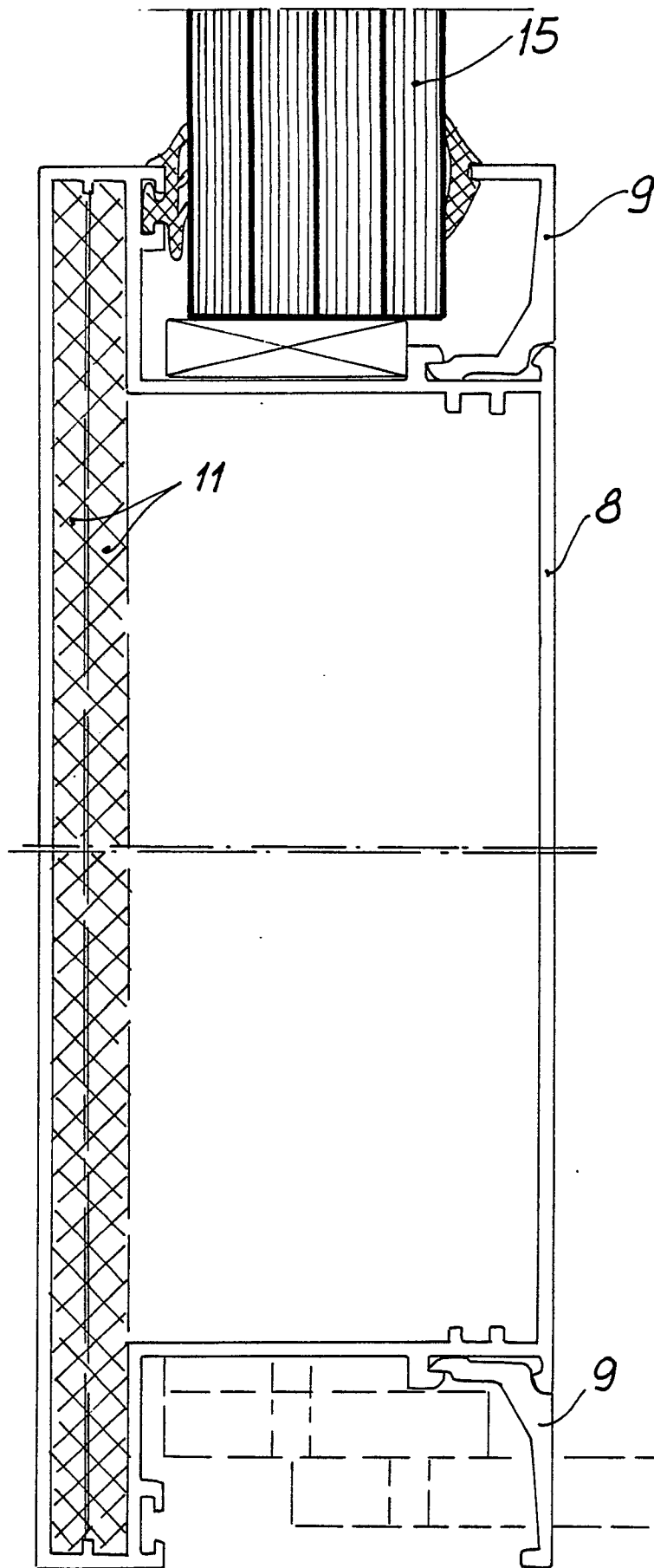


Fig. 12

Fig. 13

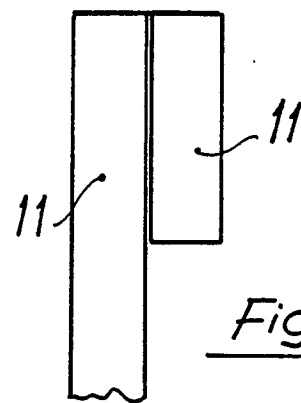
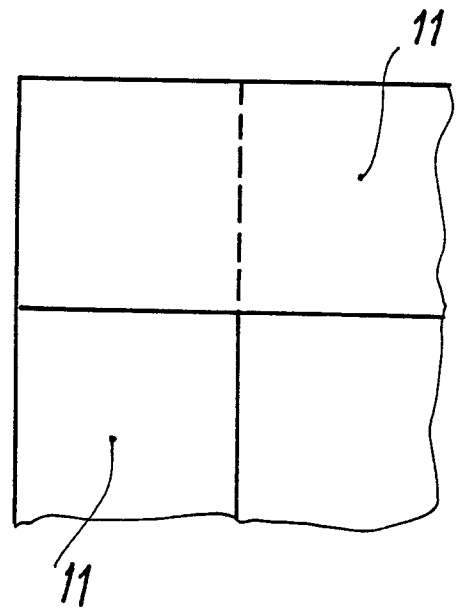


Fig. 14



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)
Y	DE-U-8 016 077 (REMA) * Page 5, line 25 - page 6, line 29; figures 1,2 *	1-3	E 06 B 5/10 E 06 B 3/16
A	---	4,5	
Y	GB-A-2 029 480 (SÄLZER) * Page 1, line 5 - page 2, line 39; figure *	1-3	
A	---	4,5	
A	DE-A-3 506 130 (BEYER) * Column 3, lines 3-45; column 4, lines 24-35; column 5, line 6 - column 6, line 5; column 6, lines 35-56; figure 2 *	1-5	
A	---		
A	DE-A-2 913 405 (GIESELER) * Page 4, line 1 - page 6, line 8; page 7, line 23 - page 8, line 9; figure 2 *	1-5	
A	---		
A	DE-A-2 836 564 (SÄLZER) * Page 4, line 1 - page 5, line 4; figure *	1,2	TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	---		E 06 B
A	DE-A-3 711 936 (SÄLZER)		
A	---		
A	DE-A-3 110 479 (SÄLZER)		
A	---		
A	DE-A-3 613 478 (NEFF)		
A	---		
A	EP-A-0 049 694 (R.A.I.)		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 28-04-1989	Examiner 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			