

(19)



(11)

EP 2 107 204 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
18.12.2013 Bulletin 2013/51

(51) Int Cl.:
E06B 7/02 (2006.01)

(21) Application number: **09004446.2**

(22) Date of filing: **27.03.2009**

(54) **Ventilation element with adjustable elements**

Belüftungselement mit verstellbaren Elementen

Élément de ventilation avec des éléments réglables

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL
PT RO SE SI SK TR**

(30) Priority: **03.04.2008 BE 200800208**

(43) Date of publication of application:
07.10.2009 Bulletin 2009/41

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Description

[0001] The present invention concerns a ventilating element.

[0002] In particular, the invention concerns a ventilating element which can be placed above a window.

[0003] Such ventilating element can be inserted through a hole in a window frame such as for instance shown in GB 2394767, but can also be installed above a window frame, such as shown in DE 10 2006 025 372.

[0004] A further known ventilating element is formed of two extruded aluminium shells, i.e. an inner shell and an outer shell, which correspond to two extruded plastic shells on which the aluminium shells are provided.

[0005] The two plastic shells can be provided on top of one another, in particular in different mutual positions, such that one and the same ventilating element can be provided on different types of windows with deviating thickness dimensions.

[0006] The shells are provided with ribs, grooves and teeth to cooperate in an appropriate manner with glass rubbers, window jambs or other elements that are usually provided in a window.

[0007] In the aluminium jambs and in the supports are provided openings which make it possible for a flow of air to pass from the outside to the inside or vice versa.

[0008] However, these last-mentioned known ventilating elements require the supports to be adjusted to the different wall thickness that must be spanned.

[0009] The present invention aims to remedy said problem.

[0010] To this end, the ventilating element according to the invention comprises two extruded shells, namely an inner shell and an outer shell, and a support provided between the aforesaid shells, whereby the support is provided with an air passage reaching from the inner shell to the outer shell, and whereby the supports can be telescopically adjusted so as to be adapted to several wall thicknesses.

[0011] In order to better explain the characteristics of the invention, the following preferred embodiments are described by way of example only without being limitative in any way, with reference to the accompanying drawings, in which:

figures 1 and 2 show a ventilating element according to the invention, seen in perspective from different angles;

figure 3 shows a section according to line III-III in figure 1;

figures 4 and 5 show the part, indicated by arrow F4 in figure 1, seen in perspective from different angles; figures 6 and 7 show an alternative embodiment of the part, indicated by arrow F4 in figure 1, seen in perspective from different angles.

[0012] Figures 1 to 3 show a ventilating element 1 according to the invention.

[0013] The ventilating element 1 mainly consists of two extruded shells, namely an inner shell 2 and an outer shell 3 respectively, designed to be provided on the inside and the outside of the building.

5 **[0014]** Between both shells 2 and 3 is provided a support 4. In the support 4 is provided an air passage 5 which reaches from the inner shell 2 to the outer shell 3.

[0015] The plastic support 4 is made in two parts here and thus comprises a first block 6 on which the inner shell 2 is provided, and a second block 7 on which the outer shell 3 is provided.

10 **[0016]** The second block 7 has a 3D design here with a variable section in its longitudinal direction, corresponding with the 3D design of the first block 6 which also has a variable section in its longitudinal direction, such that both blocks 6 and 7 can be fixed and clamped to one another in various positions in order to obtain an adjustable total width B of the support 4.

[0017] The 3D design of both blocks 6 and 7 is illustrated in figures 4 and 5.

[0018] The first block 6 can be regarded as a jamb with a predominantly U-shaped section, with a back 8 and legs 9 and 10, whereby the back 8 is provided with a recess 12 in the central part 11.

20 **[0019]** The outer walls of these legs 9 and 10 are situated at a distance D1.

[0020] The second block 7 can be regarded as a jamb with a predominantly U-shaped section, with a back 13 and legs 14 and 15, whereby the back 13 is provided with a recess 17 in the central part 16.

30 **[0021]** The back 8, the legs 9 and 10, the back 13 and the legs 14 are thick-walled or in this case massive, in particular with thicknesses of more than 2 mm, in this case between 5 mm and 30 mm.

35 **[0022]** A few water discharge channels 18 reach from the inner part of the recess 17 to the connection of the back 13 with the leg 15 situated at the bottom.

[0023] The inner walls of the legs 14 and 15 are situated at a distance D2, which corresponds in an appropriate manner with or is even somewhat smaller than the outside dimension D1 of the first block 6, such that they can be clamped together.

40 **[0024]** The blocks 6 and 7 have such a design on the outside, in particular with a few edges 19, and near the transition from the back 13 into the leg 15 they have a shoulder 20 corresponding with the inner shell 2 and the outer shell 3 and designed to fix the latter on the blocks 6 and 7.

50 **[0025]** Said inner shell 2 is provided to that end with a first pair of protruding flanks 21 which, as is shown in figures 1 to 3, co-operate in an appropriate manner with the outside of the first block 6, and with a second pair of protruding flanks 22, the topmost flank 22 of which co-operates in an appropriate manner with the outside of the second block 7, and whose bottommost flank 22 is provided with teeth 23 to co-operate with a plastic fixing post 24 between the inner shell 2 and the outer shell 3.

55 **[0026]** In line with the air passage 5, the inner shell 2

is provided with a recess 25 and further in line therewith with a rotating stop valve 26.

[0027] In analogy with what precedes, also the outer shell 3 is provided, in line with the air passage 5 there, with a recess 27 and in line therewith with a self-regulating stop valve 28 made of plastic.

[0028] This self-regulating stop valve 28 is provided in a rotating manner in a screening cap 29 provided on the outer shell 3 by means of what is called a clip connection 30.

[0029] The self-regulating stop valve 28 is predominantly Y-shaped.

[0030] The working of the ventilating element 1 according to the invention is simple and as follows.

[0031] When there are no stop valves 26 and 28, the ventilating element 1 according to the invention provides for an isolated element which, in the orientation as shown, can be provided above a window jamb in which is provided a passage 5 which connects to openings 26 and 27 in the aluminium shells 2 and 3 forming a housing of the ventilating element 1.

[0032] Air can then be moved unhindered from the inside to the outside, or vice versa, depending on the differential pressure over the inside and the outside of the building.

[0033] When there is an equilibrium of pressure, the ventilating element 1, for the time being still being considered without any stop valves 26 and 28, would form a good insulating element, but without any particular use however.

[0034] Indeed, the blocks 6 and 7 and the plastic fixing post 24 between the inner shell 2 and the outer shell 3 provide for a good insulation between the inside and the outside of the building on the one hand, and between the ventilating element 1 and the window jamb on the other hand.

[0035] The plastic fixing post 24 thereby maintains the thermal separation between an inner frame and an outer frame of a usually underlying window.

[0036] The blocks 6 and 7 are clamped onto one another, which allows for a telescopic adjustment which may be optionally variable.

[0037] The used hard foam, in this case hard EPS, is advantageous in that it is a relatively hard plastic, but nevertheless sufficiently flexible and deformable or compressible, which makes it possible to provide a mould with limited tolerances of for example 0.1 mm.

[0038] The support 4 is thick-walled in this case, such that the structure as a whole offers sufficient rigidity. The walls in particular have a thickness larger than 2 mm, and preferably larger than 3 mm, in this case in particular between 5 and 30 mm, but depending on the dimensions of the ventilating element 1, the used plastic or the required characteristics, sizes may vary.

[0039] This characteristic offers the advantage that the used material must not have the same strength as the materials that are usually applied, such as PVC.

[0040] Thanks to said characteristic, the support 4 can

be made of a strongly insulating material which is easy to process, which are important qualities for the present application.

[0041] In what follows, the stop valves 26 and 28 on the ventilating element 1 are taken into account again.

[0042] Thanks to the presence of the self-regulating stop valve 28, the free flow of air from the outside to the inside will be restricted in case of a differential pressure.

[0043] Indeed, as the overpressure between the outside and the inside increases, for example due to the influence of the wind, the tendency for the free flow of air to increase through the air passage is restricted as the self-regulating stop valve 28 is lifted.

[0044] This lifting is procured by the differential pressure between the outside and the inside and possibly also by any additional changes in pressure caused by the air flow itself and the specific rendering of the ventilating element 1 there, among others due to the venturi action at the self-regulating stop valve 28.

[0045] To this end, the self-regulating stop valve 28 has a special distribution of weight in relation to its hinge pin.

[0046] In particular, the specific Y-shaped section makes sure here that the centre of gravity of the self-regulating stop valve 28 is mainly situated on the leg with which the self-regulating stop valve 28 is hinge-mounted.

[0047] The counterweight increases as the self-regulating stop valve 28 is tilted as a result of an overpressure on the outside of the ventilating element 1. This prevents it from closing off too quickly.

[0048] The stop valve 26 makes it possible to close off the air passage 5 manually from the inside.

[0049] According to a special embodiment, represented in figures 6 and 7, the blocks 6 and 7 are provided with fastening means 31 on one or on both free ends, in this case in the shape of a tooth or a groove in the shape of a dovetail directed crosswise to the longitudinal direction of the blocks 6 and 7.

[0050] Said fastening means 31 make it possible to extend the support 4 by connecting blocks 6 or 7 with one another, or by providing adapters, connecting pieces or end parts or the like on the latter.

[0051] Additional recesses 32 may also be provided at the far ends which may serve as parts of the air passage 5.

[0052] When a first block 6 is provided with a tooth or a groove 31 on at least one far end, whereas the second block 7 is provided with a tooth or a groove 31 on at least the other far end, this will make it possible to saw the blocks 6 and 7 at the required lengths and to provide an extension piece, an end part or a connecting piece on both far ends which must then be provided with a corresponding groove or tooth.

[0053] To that end, the blocks 6 and 7 are sawn on the free ends that are moved away from one another, such that the support 4, when the blocks 6 and 7 are joined after having been sawn, is still provided with connecting means on each of the free ends, be it then only on one

of the blocks 6 and 7.

[0054] This makes it possible to provide ventilating elements 1 with an arbitrary length, whereby they can still be provided with an extension piece, an end part or a connecting piece or the like on both free ends.

[0055] Besides, the blocks 6 and 7 are clamped onto one another, which offers the possibility, in case of a crossed mutual positioning, to extend the blocks with additional blocks or to provide them with adapters, connecting pieces or end parts or the like.

[0056] The clamping co-operation between the blocks 6 and 7 allows for a telescopic adjustment, which may be optionally variable, but it is clear that this adjustability for a given support 4 is restricted to a certain interval.

[0057] It is clear that the blocks 6 and 7 can also be integrated and made in one piece. This results in a cheaper but less flexible support 4.

[0058] The support 4 or the blocks 6 and 7 can be made in different lengths, for example in lengths of one metre.

[0059] It is also clear that a support 4 can be made of various materials, or that a single support 4 can be composed of different materials.

[0060] The inner shell 2 as well as the outer shell 3 can be provided with connecting means to apply numerous accessories, such as an insect netting or a pollen filter which are preferably replaceable, external operation means, a fan, sound deadening means or heat recycling means.

[0061] The present invention is by no means restricted to the embodiments described by way of example and represented in the accompanying drawings; on the contrary, such a ventilating element according to the invention can be made in many different shapes and dimensions while still remaining within the scope of the invention as defined by the appended claims.

Claims

1. Ventilating element to form a ventilating passage between two spaces comprising two extruded shells, namely an inner shell (2) and an outer shell (3), and a support (4) provided between the aforesaid shells (2,3), whereby the support (4) is provided with an air passage (5) reaching from the inner shell (2) to the outer shell (3), and whereby the support (4) is built of two blocks (6 and 7) on which are respectively provided the inner shell and the outer shell, **characterised in that** the two blocks are telescopically adjustable.
2. Ventilating element according to claim 1, **characterised in that** the support (4) comprises walls with a thickness of more than 2 mm.
3. Ventilating element according to claim 1, **characterised in that** the support (4) comprises walls with a thickness of more than 5 mm.
4. Ventilating element according to one or several of the preceding claims, **characterised in that** the support (4) is provided with water discharge channels (18).
5. Ventilating element according to one or several of the preceding claims, **characterised in that** between the inner shell (2) and the outer shell (3) is provided a plastic fixing post (24).
6. Ventilating element according to one or several of the preceding claims, **characterised in that** the support (4), or if necessary at least one of the blocks (6,7), is provided with fastening means on at least one of its free ends for fixing an end part, a connecting piece or an extension piece or the like.
7. Ventilating element according to claims 9 and 2, **characterised in that** the first block (6) is provided with fastening means on one far end, whereas the second block (7) is provided with fastening means on the other far end.

Patentansprüche

1. Lüftungselement zur Bildung eines Lüftungsdurchlasses zwischen zwei Räumen, umfassend zwei extrudierte Schalen, nämlich eine Innenschale (2) und eine Außenschale (3), und einen zwischen den besagten Schalen (2, 3) vorgesehenen Träger (4), wobei der Träger (4) mit einem Luftdurchlass (5) versehen ist, der von der Innenschale (2) zu der Außenschale (3) reicht, und wobei der Träger (4) aus zwei Blöcken (6 und 7) aufgebaut ist, worauf die Innenschale beziehungsweise die Außenschale angebracht sind, **dadurch gekennzeichnet, dass** die zwei Blöcke teleskopartig verstellbar sind.
2. Lüftungselement nach Anspruch 1, **dadurch gekennzeichnet, dass** der Träger (4) Wände mit einer Dicke von mehr als 2 mm umfasst.
3. Lüftungselement nach Anspruch 1, **dadurch gekennzeichnet, dass** der Träger (4) Wände mit einer Dicke von mehr als 5 mm umfasst.
4. Lüftungselement nach einem oder mehreren der vorgenannten Ansprüche, **dadurch gekennzeichnet, dass** der Träger (4) mit Wasserabfuhrkanälen (18) versehen ist.
5. Lüftungselement nach einem oder mehreren der vorgenannten Ansprüche, **dadurch gekennzeichnet, dass** zwischen der Innenschale (2) und der Außenschale (3) ein Kunststoff-Befestigungsprofil (24) vorgesehen ist.

6. Lüftungselement nach einem oder mehreren der vorgenannten Ansprüche, **dadurch gekennzeichnet, dass** der Träger (4), oder gegebenenfalls mindestens einer der Blöcke (6, 7), an mindestens einem seiner freien Enden mit Befestigungsmitteln zum Befestigen eines Endstücks, eines Verbindungsstücks oder eines Verlängerungsstücks oder dergleichen versehen ist. 5
7. Lüftungselement nach Ansprüchen 9 und 2, **dadurch gekennzeichnet, dass** der erste Block (6) an einem Ende mit Befestigungsmitteln versehen ist, während der zweite Block (7) an dem anderen Ende mit Befestigungsmitteln versehen ist. 10

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Revendications

1. Élément de ventilation pour former un passage de ventilation entre deux espaces comprenant deux enveloppes extrudées, plus précisément une enveloppe interne (2) et une enveloppe externe (3), un support (4) étant prévu entre les enveloppes susmentionnées (2, 3), le support (4) étant muni d'un passage pour l'air (5) qui s'étend depuis l'enveloppe interne (2) jusqu'à l'enveloppe externe (3), le support (4) étant formé de deux blocs (6, 7) sur lesquels on prévoit respectivement l'enveloppe interne et l'enveloppe externe, **caractérisé en ce que** les deux blocs peuvent être réglés par voie télescopique. 20 25 30
2. Élément de ventilation selon la revendication 1, **caractérisé en ce que** le support (4) comprend des parois dont l'épaisseur est supérieure à 2 mm. 35
3. Élément de ventilation selon la revendication 1, **caractérisé en ce que** le support (4) comprend des parois dont l'épaisseur est supérieure à 5 mm. 40
4. Élément de ventilation selon une ou plusieurs des revendications précédentes, **caractérisé en ce que** le support (4) est muni de canaux (18) pour l'évacuation de l'eau. 45 50
5. Élément de ventilation selon une ou plusieurs des revendications précédentes, **caractérisé en ce qu'on** prévoit, entre l'enveloppe interne (2) et l'enveloppe externe (3), un montant de fixation (24) en matière plastique. 55
6. Élément de ventilation selon une ou plusieurs des revendications précédentes, **caractérisé en ce que** le support (4) ou, si nécessaire, au moins un des blocs (6, 7) est muni de moyens de fixation sur au moins une de ses extrémités libres pour la fixation d'un élément terminal, d'un élément de liaison ou d'un élément d'extension, ou analogue.

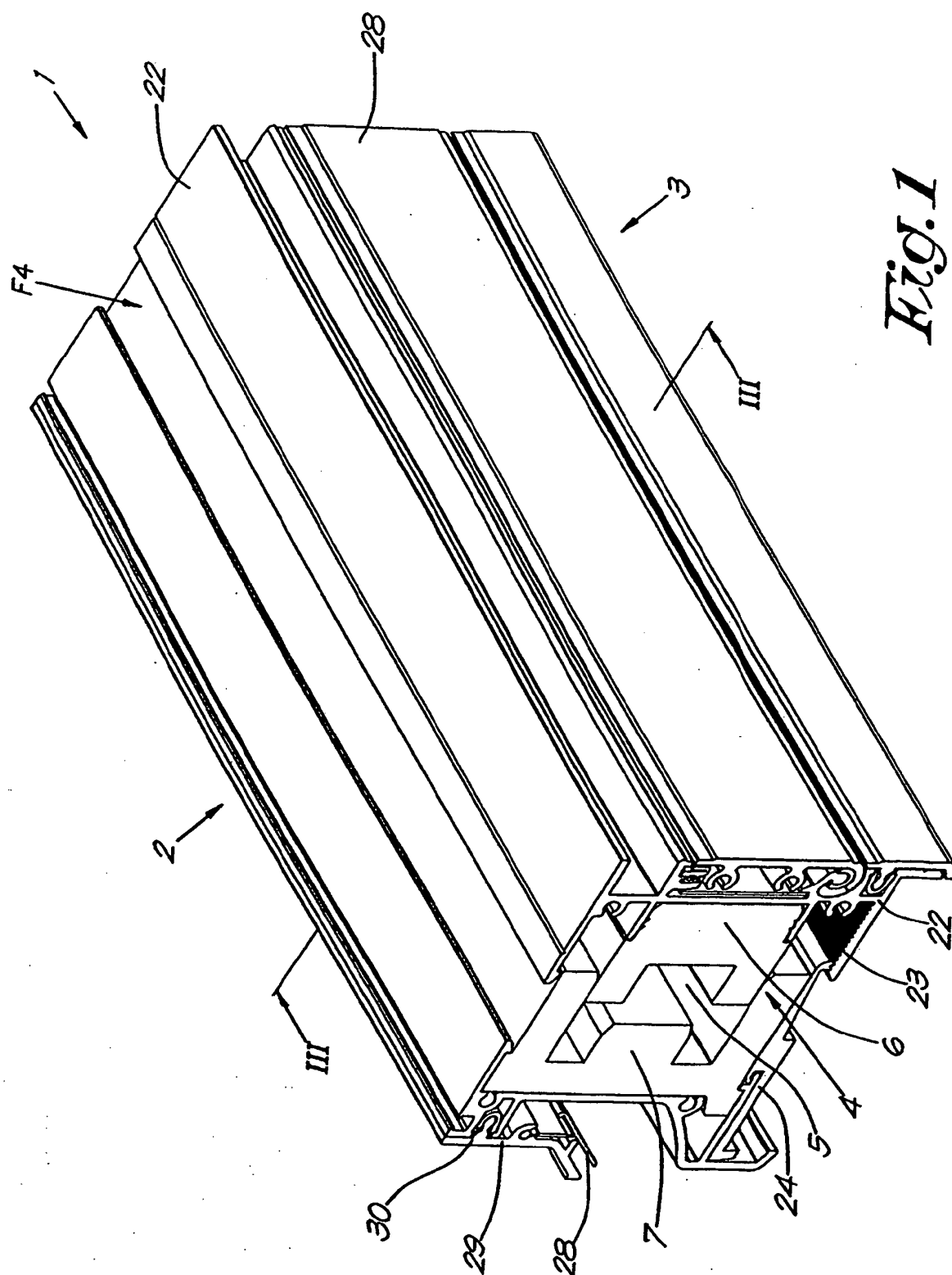


Fig. 1

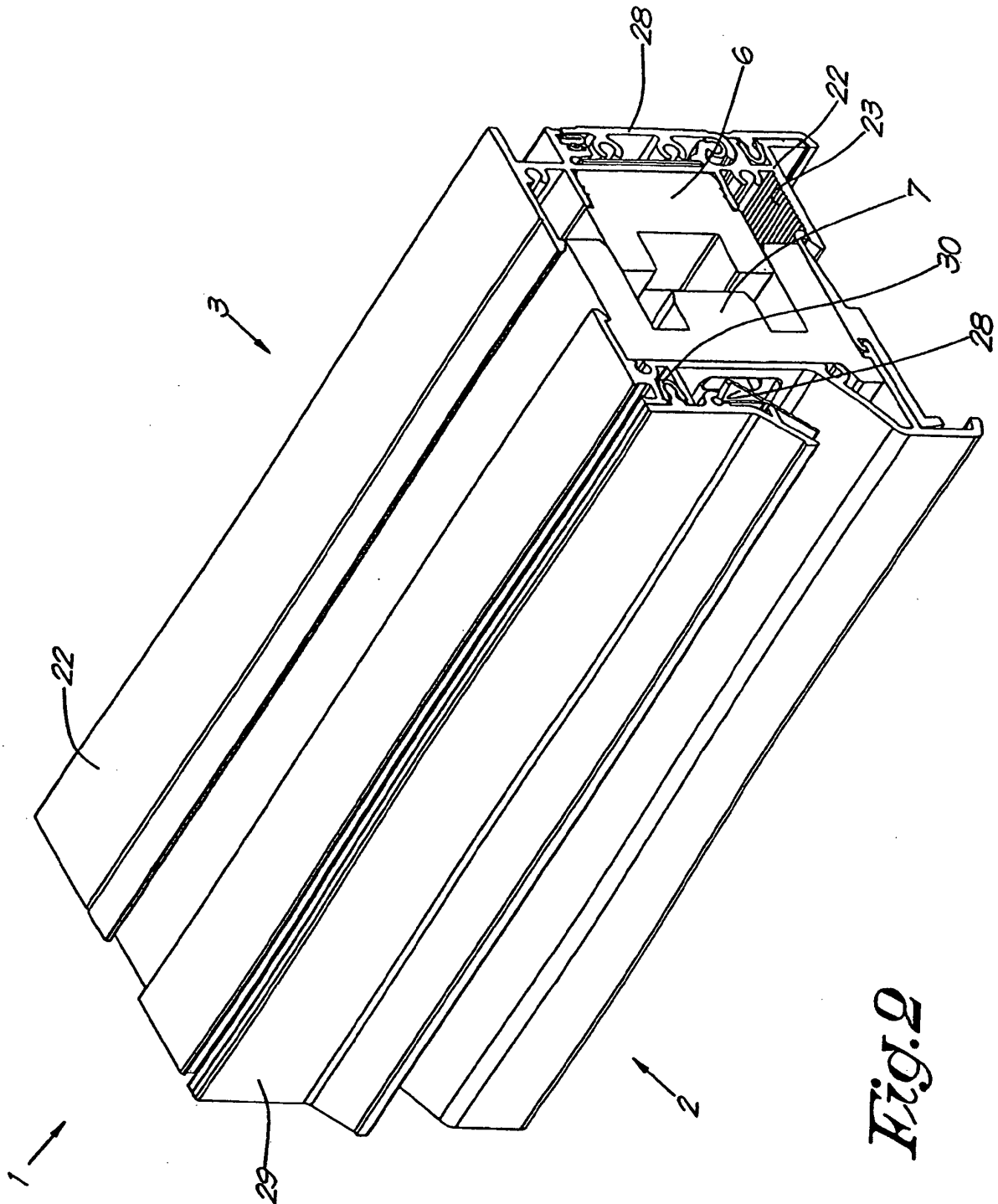


Fig. 2

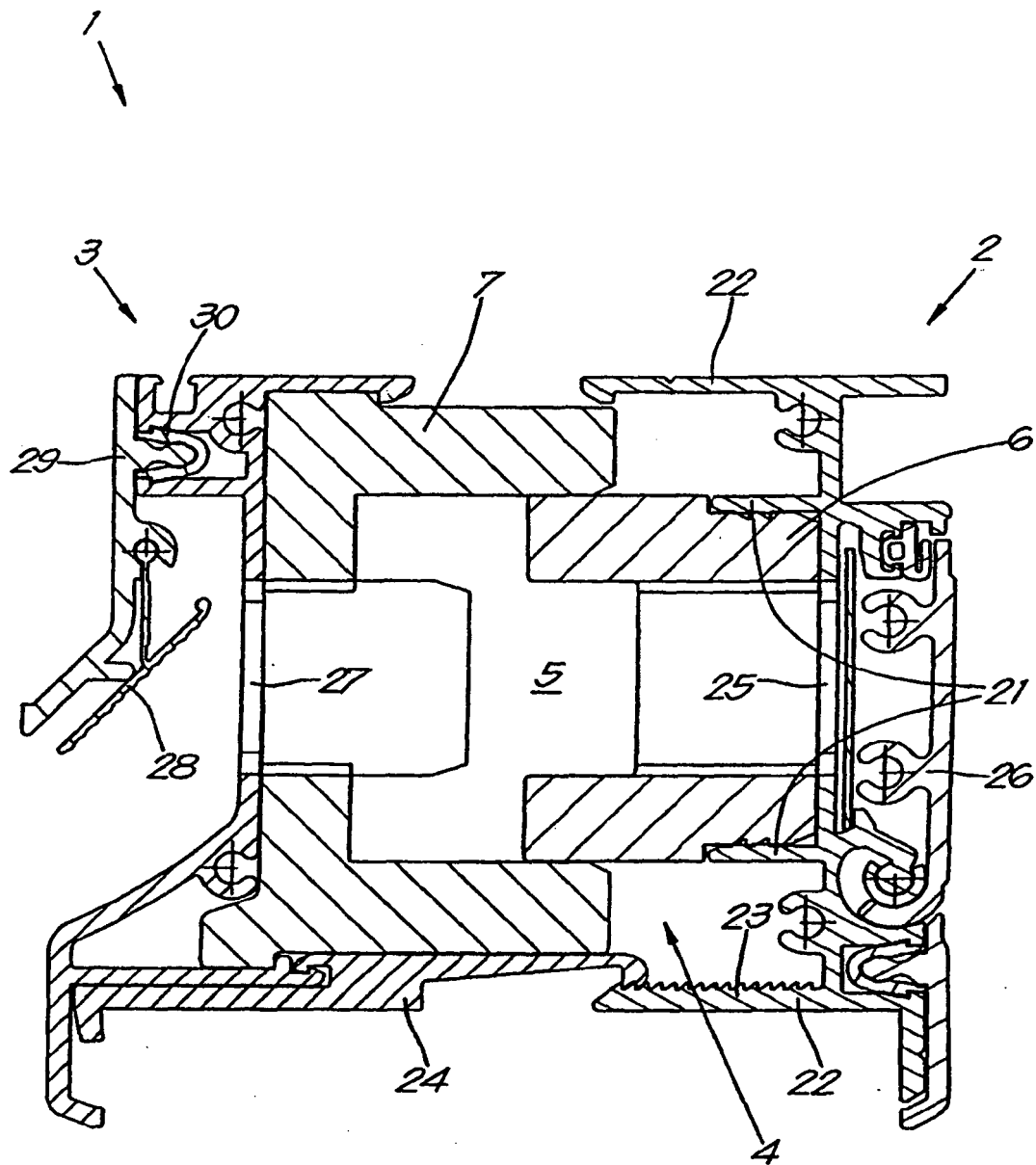
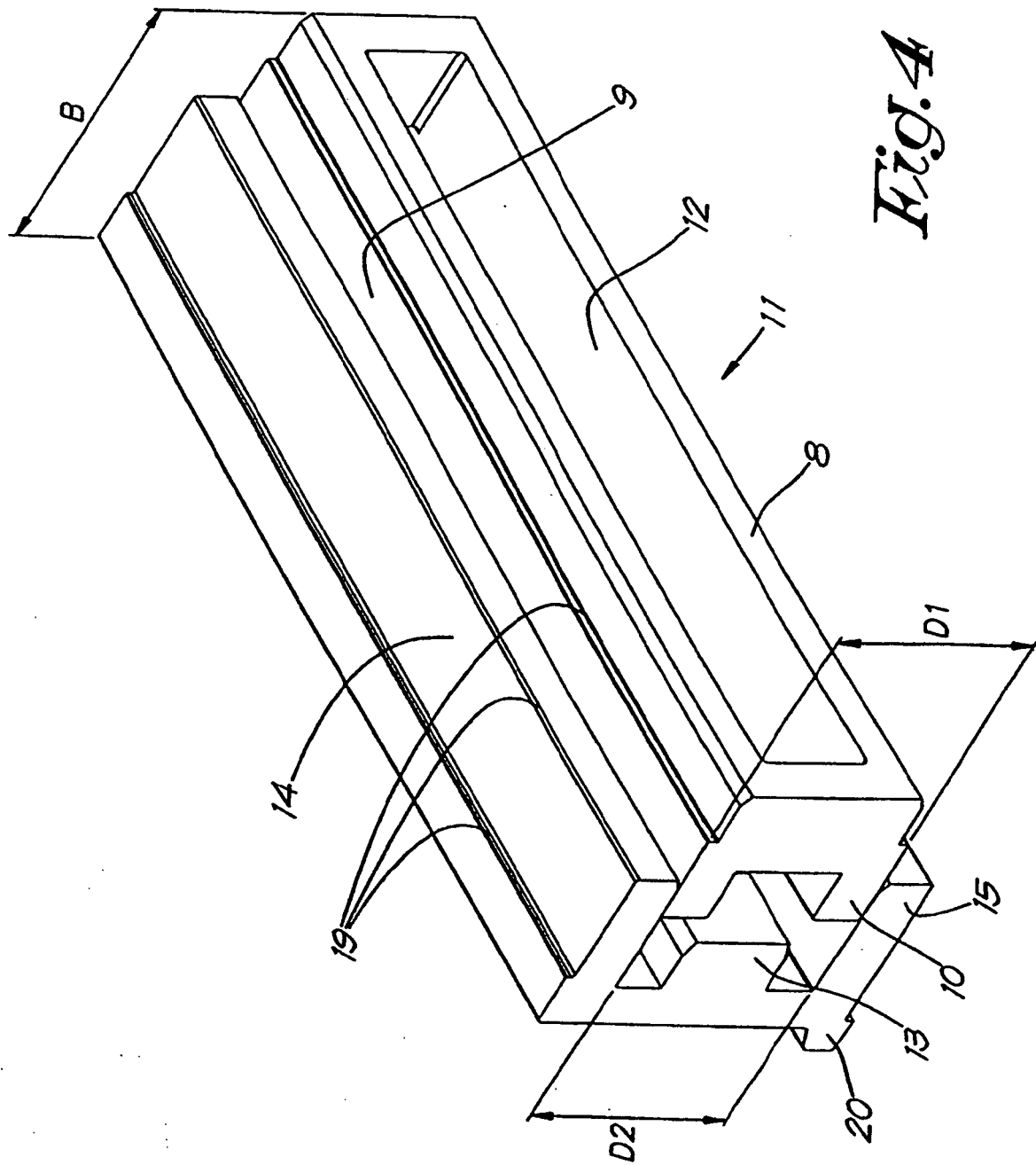


Fig. 3



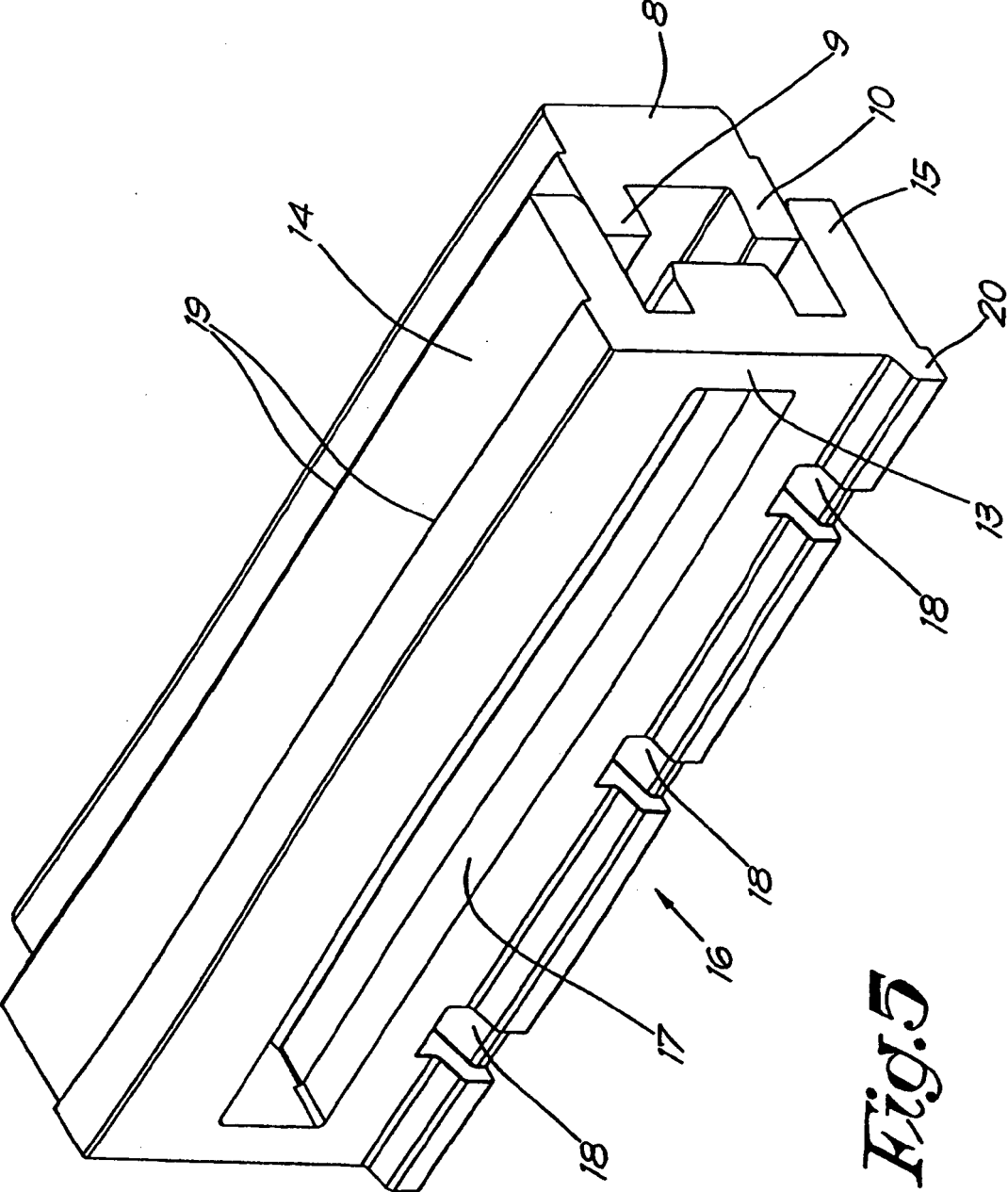
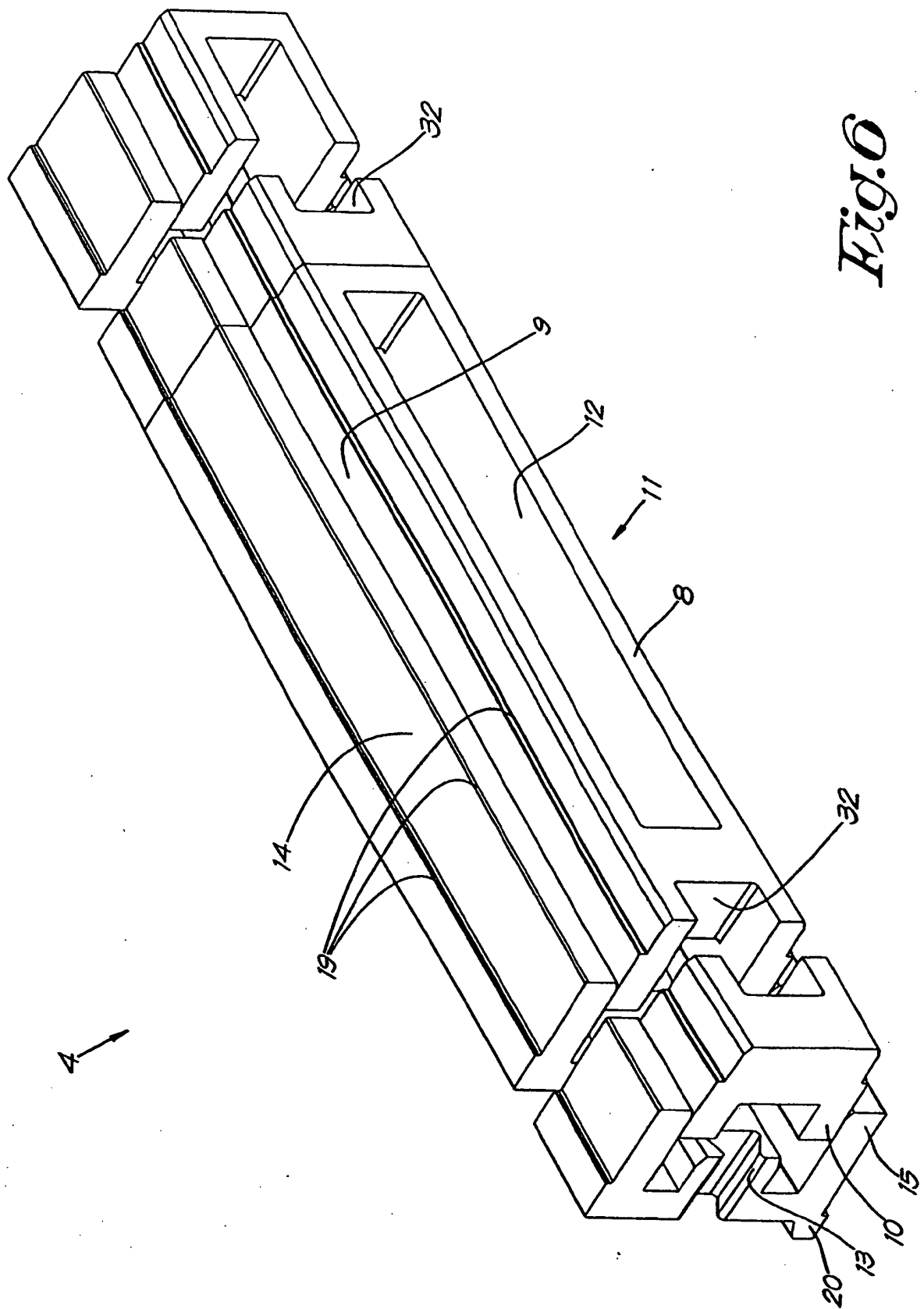
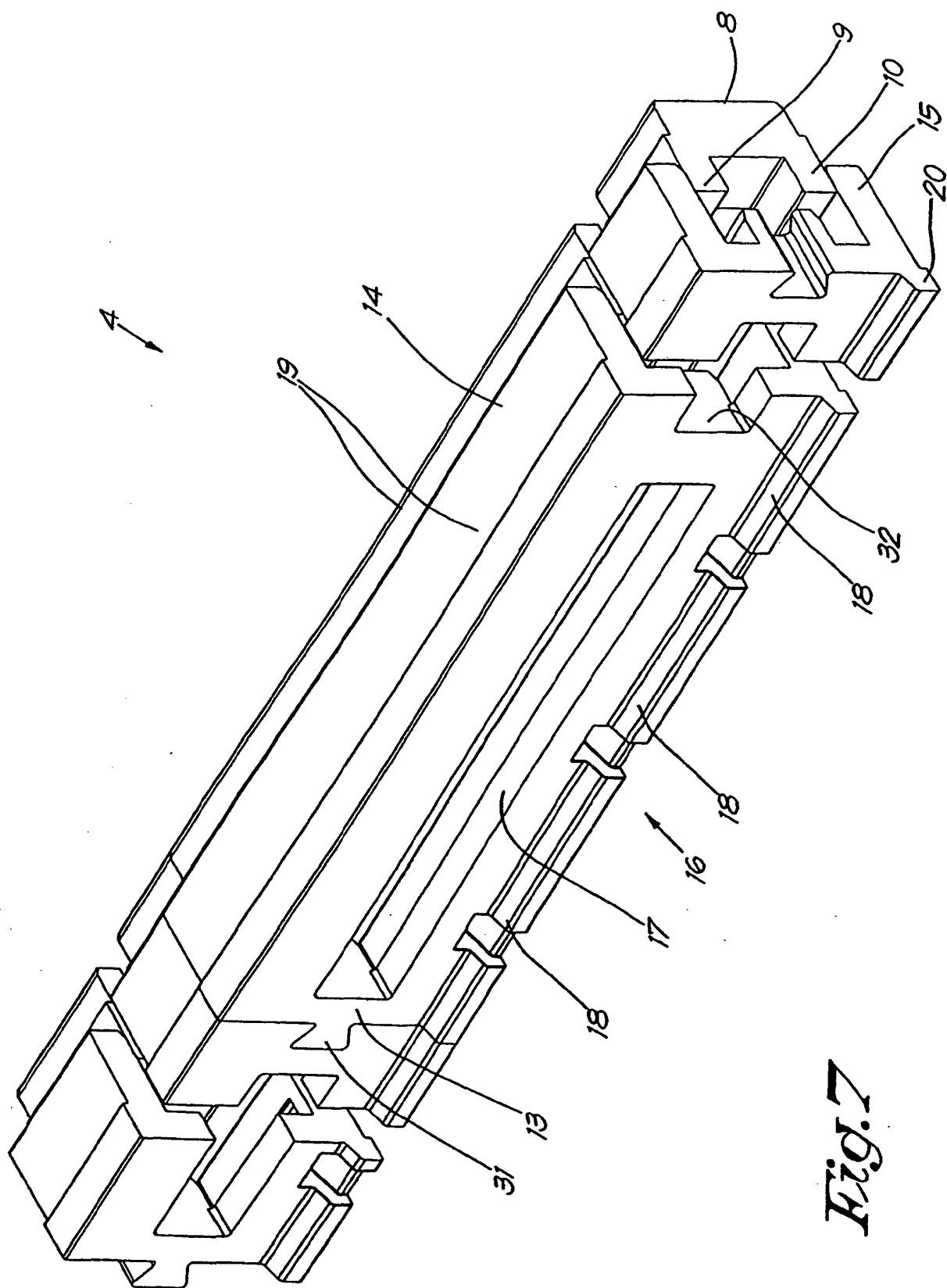


Fig. 5





REFERENCES CITED IN THE DESCRIPTION

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