(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 128 371 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
13.02.2013 Bulletin 2013/07

(51) Int Cl.:
E06B 3/263 *(2006.01)*

(21) Application number: **09007045.9**

(22) Date of filing: **27.05.2009**

(54) **Method for insulating a jamb for exterior joinery work**

Verfahren zur Isolierung eines Pfostens für äußere Tischlereiarbeiten

Procédé d'isolation d'un montant pour la menuiserie extérieure

(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: **28.05.2008 BE 200800296**
03.09.2008 BE 200800488

(43) Date of publication of application:
02.12.2009 Bulletin 2009/49

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Description

[0001] The present invention concerns a method for insulating a jamb for exterior joinery work such as doors, windows or the like.

[0002] It is known that door or window jambs are formed of two jambs, i.e. what are called the outer scale and inner scale, usually made of aluminium, and at least two thermally insulating strips in the shape of jambs provided at a distance from one another between the outer scale and the inner scale so as to form a thermal interruption, whereby said strips are fixed in grooves of the outer scale and of the inner scale with their longitudinal edges during the assembly of the door or window jamb.

[0003] The strips are usually clamped in the grooves by what is called the roll-in technique, whereby the outer edges of the aforesaid grooves are plastically transformed by folding down said edges towards the inside by means of a roller or the like.

[0004] A good thermal interruption makes sure that there is not any cold radiation from the outer scale to the inner scale.

[0005] This is obtained among others by dividing the space between the strips and the outer and inner scale in air compartments that are separated from one another by means of crosswise directed partitions.

[0006] Such thermal interruptions usually have a very complex shape and, consequently, are very expensive.

[0007] Moreover, the shape and dimensions of such thermal interruptions are usually focussed on a single type of window or door jamb and, consequently, they cannot be universally applied, which also makes their application expensive.

[0008] Solutions are already known whereby foam strips are additionally provided between the thermally insulating strips, which foam strips are pushed in the cavity between said strips in their longitudinal direction.

[0009] This assembly method restricts the length of the jambs, however, for example to a length of 6 meters.

[0010] Moreover, techniques are known for injecting insulating material between the thermally insulating strips, which is a complex and expensive process, however.

[0011] DE 35 45 092 A1 shows a known method for insulating a jamb according to the preamble of claim 1 and a known insulated jamb according to the preamble of claim 3.

[0012] The invention aims to remedy one or several of the above-mentioned disadvantages and to obtain considerable insulating values for the thermal interruption of aluminium systems for manufacturing exterior joinery work in a simple and cheap manner.

[0013] To this end, the invention concerns a method for insulating a jamb for exterior joinery work of the above-mentioned type, according to claim 1.

[0014] As a function of the width of the thermal bridge, it is possible to create several compartments, thanks to a combination of the above-mentioned strips and multi-chamber jambs, which can efficiently restrict the cold transfer from the outside to the inside.

[0015] Thus, a limited series of strip forms and multi-chamber jambs can provide for an efficient thermal insulation for several types and forms of window and door jambs, with a restricted supply of said elements.

[0016] Thanks to said limited series of forms, less extrusion dies will have to be provided for to manufacture the strips and multi-chamber jambs than has been the case up to now, resulting in lower production costs.

[0017] The basic form of the strips is preferably the conventional Omega structure.

[0018] The cross ribs thereby serve as partitions which stop the cold radiation.

[0019] The I-shaped multi-chamber jamb between the strips, together with the ribs of the strips, form compartments which have a positive effect on the insulating value of the jambs.

[0020] The special design of the multi-chamber jambs has been conceived such that a mechanical insert is possible before the strips are assembled between an aluminium outer scale and inner scale.

[0021] The I-shape provides the multi-chamber jamb with a strong and robust design which resists any transformation of the jamb.

[0022] The multi-chamber jambs are profiled such that, after the assembly of the window or door jamb, they are kept in place in a clamping manner between the outer scale and inner scale by means of conical clamping as well as by means of slantingly provided distance ribs.

[0023] This offers an additional advantage in that the strips of the thermal interruption and the multi-chamber jamb can be assembled as a whole with the aluminium inner and outer scale, and in that they can be subsequently assembled in a single operation by means of a conventional strip roll-in machine or tool.

[0024] The present invention also concerns an insulated jamb for exterior joinery work such as a door or window jamb or the like, according to claim 3.

[0025] In order to better explain the characteristics of the invention, the following preferred applications of the method for insulating an outer jamb for exterior joinery work and an insulated jamb according to the invention are described by way of example only, without being limitative in any way, with reference to the accompanying drawings, in which:

figure 1 schematically represents a jamb for exterior joinery work, seen as a section but not according to the invention;

figures 2A to 2D represent possible strip forms that can be selected to modularly compose a jamb for exterior joinery work in accordance with the invention;

figure 3 represents a jamb not according to the invention as in figure 1, but applied in a wider jamb;

figure 4 represents a jamb not according to the invention in which the strips of figures 2C and 2D have

been combined so as to form a thermal insulation;
figure 5 represents exterior joinery work with a fixed frame and a hinge-mounted leaf, composed of insulated jambs not according to the invention;
figure 6 represents a jamb which is insulated according to the method of the invention, making use of insulation strips that are selected from the series of figures 2A to 2D, combined with an I-shaped multi-chamber jamb, provided with two conical crosscut ends with several slantingly provided distance ribs;
figure 7A shows a detail of the multi-chamber jamb which is indicated by F7A in figure 6;
figure 7B shows a variant of figure 7A for a narrower jamb as represented in figure 8;
figure 8 shows a jamb which is analogous to the embodiment of figure 6, but with a smaller jamb section.

[0026] Figure 1 schematically shows a jamb 1 of the exterior joinery work of a window, a door or the like, whereby the jamb 1 is in this case composed of two parallel jambs 2-3 made of aluminium or another material, i.e. an outer scale 2 and an inner scale 3 respectively, which are connected to one another by means of two thermally insulating strips 4-5 made of a heat-insulating material, for example a synthetic material or a composite material.

[0027] On the walls 6-7 of the scales 2-3 directed towards one another are provided grooves 8 for every insulating strip 4-5 which are situated opposite one another in this case, but which is not necessarily so.

[0028] The grooves 8 are defined by ribs 9 provided crosswise on the above-mentioned walls 6-7 at a distance from one another.

[0029] In the given embodiment, the insulating strips 4-5 have the conventional Omega structure, forming the base part 10 of the strip, and whereby the longitudinal edges 11 of the Omega widen so as to fix the longitudinal edges 11 in the grooves 8 of the inner and outer scale 2-3.

[0030] One or several cross ribs 12 can be provided on the base part 10.

[0031] In the given jamb 1 of figure 1, the strips 4-5 have one and two cross ribs 12 respectively which are directed towards one another, such that the cross ribs 12 divide the space between the inner and outer scale in four crosswise directed compartments 13 which are separated from one another and thus prevent any cold flow.

[0032] The method for insulating and assembling a jamb as that of figure 1, consisting of an outer and an inner scale, is very simple and as follows.

[0033] From a limited series of strip forms is selected a combination of insulating strips 4,5 after which the selected strips 4,5 are fixed in the known manner with their longitudinal edges 11 in the grooves 8 of the inner and outer scale 2,3.

[0034] The presence of the cross ribs 12 on the base part 10 of both insulating strips 4,5 divides the space in crosswise directed, separated compartments 13 and improves the insulating qualities of the obtained jamb 1.

[0035] Figures 2A-2D show some practical embodiments of a limited series of insulating strips in detail.

[0036] The insulating strip 14 in figure 2A is provided with two parallel cross ribs 12 on the inside and it is provided with a stop part 15 on the outside which, together with the base part 10, encloses a space, whereby this stop part 15, after the assembly of the jamb 1, can serve as a stop to a hinge element, for example.

[0037] In the variant of figure 2B, the base part 10 of the insulating strip 4 is provided with a cross rib 12 on one side situated around the centre of the aforesaid base part 10.

[0038] The insulating strip 5 of figure 2C is provided with a T-shaped element 16 on the outside of the base part 10, such that in an assembled jamb 1, a sealing material, a sealing jamb or the like can be fixed to said T-shaped element 16.

[0039] Figure 2D represents an insulating strip 17 which is a simplified version of the strip from figure 2C, whereby the cross ribs 12 have been omitted and only a T-shaped element 16 is provided on the outer perimeter of the base part 10.

[0040] It is clear that the jamb 1 represented in figure 1 of the strips 4-5 from figures 2B and 2C has been provided and that it is easy to build the window or door jamb in a modular manner, as a function of the required window or door jamb, with an appropriate selection of insulating strips selected from the limited series represented in figures 2A to 2D.

[0041] It will be clear to the craftsman that the above-described method is not restricted to the above-mentioned combination of strips in the jamb.

[0042] The jamb from figure 3 differs from that in figure 1 in that the outer and inner scales 2-3 are made wider.

[0043] As the grooves 8 in which the insulating strips 4,5 have been provided are further removed from one another, the compartments 13 formed in the space between the scales are not entirely separated; on the contrary, the insulating strips create a zigzag structure in the space, and in this way as well cold flow is prevented.

[0044] Figure 4 shows a cross section of a jamb 1 in which the insulating strips 5,17 from figures 2C and 2D connect the outer and inner scale 2-3 to one another.

[0045] Thanks to the position of the grooves 8 on the walls 6-7 of the scales 2-3 which are directed towards one another, the cross ribs 12 of the insulating strips form separate compartments 13 in the space between the outer and inner scale 2-3.

[0046] Figure 5 shows a cross section of joinery comprising the jamb 18 of a fixed frame and the jamb 19 of the rotating leaf of a window or door working in conjunction with the latter.

[0047] The connection between the fixed jamb 18 and the leaf 19 is realised by means of a hinge element, not represented in the figures.

[0048] The fixed jamb 18 is provided with the insulating strips 4-5 from figures 2B and 2C.

[0049] At the far end of the wall 6 of the outer jamb 2 is provided a sealing jamb 20, provided on a standing edge 21.

[0050] The standing edge 21 is situated at the head 22 of the T-shaped element 16, such that the T-shaped element 16 and the standing edge 21 form a slot in between which a head 23 of the sealing jamb 20 can be provided in a clamping manner.

[0051] The jamb 19 of the leaf is provided with the insulating strip 14 from figure 2A, whereby the stop part 15 functions as a stop to the sealing jamb 20.

[0052] Figure 6 shows an embodiment according to the invention of a wide jamb 1 whereby the use of two insulating strips is combined with an I-shaped multi-chamber jamb 24.

[0053] In the given embodiment, the multi-chamber jamb 24 is provided with two parallel flanges 25, narrowing in a conical manner, and on which are provided one or several ribs 26 extending in the longitudinal direction on the sides of the flanges 25 directed towards the scales 2-3, and with which the multi-chamber jamb 24 is provided in a conical groove 27 on the walls 6-7 of the scales 2-3 directed towards one another in a clamping manner.

[0054] The grooves 27 are preferably confined by the inner ribs 9 of the grooves 8.

[0055] In the given embodiment, the multi-chamber jamb 24 is provided between the insulating strips 4-5, and the cross ribs 12 on the strips 4-5 are directed towards said multi-chamber jamb 24, such that several compartments 13 are formed in the space between the strips 4-5 and the multi-chamber jamb 24, as a result of which an even better insulating value of the composed jamb 1 is obtained.

[0056] The multi-chamber jamb has been especially made I-shaped in order to guarantee its rigidity and so as to maintain its geometry after its clamping.

[0057] The multi-chamber jamb 24 can be made of a synthetic material, but of course the use of other insulating materials is not excluded according to the invention.

[0058] Figure 7 shows two embodiments of the multi-chamber jamb 24 in detail, whereby in figures 7A and 7B, the multi-chamber jamb 24 is provided with a narrower or a wider base part 28 respectively, and thus is more appropriate to be applied in a narrower or wider composed jamb respectively.

[0059] The base part 28 of the multi-chamber jamb 24 from figure 7A also differs from the variant in figure 7B in that there are two cross partitions 29 so as to form three chambers 30 preventing the cold flow in the composed jamb 1 and so as to additionally guarantee the geometry being maintained after the clamping.

[0060] Naturally, the invention is not restricted to such multi-chamber jambs 24 with three chambers 30, and alternative embodiments with more or less cross partitions 29 are possible as well.

[0061] The method for insulating a jamb 1 for exterior joinery work is very simple and as follows.

[0062] First, the multi-chamber jamb 24 and the thermally insulating strips 4-5 are pre-assembled and put together between the inner and the outer scale 2-3, whereby the multi-chamber jamb 24 is being held between the insulating strips 4-5 by the ribs 12 as the ribs 12 mesh in the multi-chamber jamb 24.

[0063] The strips 4-5 are thereby provided with their free edges 11 in the grooves 8, whereas the multi-chamber jamb 24 will be automatically centred in the conical groove 27 thanks to the conical crosscut flanges 25, the conical flanges 25 thus forming centring means.

[0064] Next, the insulating strips 4-5 are fixed with their longitudinal edges 11 to the scales 2-3 by rolling in, for example, whereby the outer ribs 9 of the inner and outer scale 2-3 are transformed towards the inside so as to clamp or frame the above-mentioned free edges 11 of the insulating strips 4-5.

[0065] The multi-chamber jamb 24 is thereby preferably clamped in the axial direction between the walls 6-7 of the inner and outer scale 2-3, whereby the ribs 26 serve as clamping means. The slanting erection of said distance ribs 26 in relation to the flanges 25 and to the inner scale and the outer scale serves to compensate for dimensional tolerances when clamping the multi-chamber jamb 24, such that said multi-chamber jamb 24 is always sufficiently clamped, which is absolutely necessary for a smooth processing of the window or door jamb during the later production process, for example as the multi-chamber jamb might shift while the jamb 1 is being processed.

[0066] The cross section of figure 8 differs from that in figure 6 in that the jamb 1 is not so wide and is provided with the I-shaped multi-chamber jamb 24 from figure 7B.

[0067] The cross ribs 12 on the strips 4-5 which are directed towards the base part 28 of the multi-chamber jamb 24 form entirely separated compartments 13 in the space between the outer and inner scale 2-3, preventing any cold flow from the outer to the inner scale.

[0068] Naturally, alternative embodiments are possible whereby the cross ribs 12 create a zigzag structure on the strips 4-5 in the space which is confined between the multi-chamber jamb 24, the insulating strip 4-5 and the inner and outer scales 2-3.

[0069] It is clear that the series of strip forms and multi-chamber jambs is not necessarily limited to those represented in the figures, but that for example also more than two cross ribs can be provided on the insulating strips and that the width of the multi-chamber jambs is not necessarily restricted to both embodiments of figures 7A and 7B.

[0070] Also the outward protruding elements and ribs may vary as a function of the required application.

[0071] It is clear that, thanks to the modular composition of the jambs, many possibilities are created to efficiently insulate many possible jamb forms by making a selection from a series of insulating strips and multi-chamber jambs.

[0072] The present invention is by no means restricted to the embodiments of jambs given by way of example

and represented in the accompanying drawings; on the contrary, such a method and jambs can be made according to different variants while still remaining within the scope of the invention as defined by the claims.

Claims

1. Method for insulating a jamb (1) for exterior joinery work such as a door or window jamb, formed of two jambs (2-3), what are called an outer scale (2) and inner scale (3), and at least two thermally insulating strips (4,5) in the shape of jambs provided at a distance from one another between the outer scale (2) and the inner scale (3) so as to form a thermal interruption, whereby these strips (4-5) are clamped in grooves (8) of the outer scale (2) and of the inner scale (3) with their longitudinal edges (11) during the assembly of the door or window jamb (1) by rolling in, whereby the door or window jamb (1) is modular, making use of a combination of insulating strips (4-5) selected from a limited series of strip forms with predominantly similar-shaped base parts (10) so as to connect the outer scale (2) and the inner scale (3), which combination of insulating strips (4-5) is applied in combination with at least one I-shaped jamb (24), made of insulating material, provided with its parallel flanges clamped between the inner scale and outer scale, and which is selected from a limited series of I-shaped jambs (24) having different widths, **characterised in that** the insulating strips are provided with one or several cross ribs (12) on said base parts (10), **in that** said I-shaped jamb is a multi-chamber I-shaped jamb (24), provided with its core between the cross ribs (12) of the insulating strips (4-5) with said core directed crosswise to the aforesaid cross ribs (12) and whereby, thanks to the mutual combination of the insulating strips (4-5) with at least one I-shaped multi-chamber jamb (24), the space between the insulating strips (4-5) and the I-shaped multi-chamber jamb (24) is divided in crosswise directed compartments (13).

2. Method according to claim 1, **characterised in that** the strips (4-5) of the thermal interruption and the I-shaped multi-chamber jamb (24) are assembled as a whole and are provided as a whole between the inner and outer scale, and subsequently are fixed to the inner scale and outer scale by clamping the longitudinal edges of the strips (4-5) in the grooves (8) of the inner scale or outer scale by rolling them in or the like.

3. Insulated jamb (1) for exterior joinery work such as a door, a window jamb or the like, said jamb (1) being is modularly built and comprises at least two jambs (2-3), what are called an outer scale (2) and an inner scale (3), and at least two thermally insulating strips (4-5) on the one hand, whereby the above-mentioned insulating strips (4-5) are provided at a distance from one another between the outer scale (2) and the inner scale (3) so as to form a thermal interruption, whereby the insulating strips (4-5) comprise base parts (10) and, on the other hand, at least one I-shaped jamb (24) provided with its core between the insulating strips (4-5), and which is clamped with its parallel flanges between the inner scale and the outer scale, **characterised in that** the insulating strips are provided with one or several cross ribs (12) on said base parts (10), **in that** said I-shaped jamb is a multi-chamber I-shaped jamb (24), with its core directed crosswise to the aforesaid cross ribs (12) and whereby, thanks to the mutual combination of the insulating strips (4-5) with the at least one I-shaped multi-chamber jamb (24), the space between the insulating strips (4-5) and the I-shaped multi-chamber jamb (24) is divided in crosswise directed compartments (13).

4. Insulated jamb (1) according to claim 3, **characterised in that** the multi-chamber jamb (24) is provided with clamping means.

5. Insulated jamb (1) according to claim 4, **characterised in that** the above-mentioned clamping means consist of one or several ribs (26) extending in the longitudinal direction on the sides of the flanges of the I-shaped multi-chamber jamb (24) directed towards the inner scale and outer scale.

6. Insulated jamb (1) according to claim 4 or 5, **characterised in that** the aforesaid ribs are provided slantingly on the aforesaid sides of the flanges of the I-shaped multi-chamber jamb (24) directed towards the inner scale and outer scale.

7. Insulated jamb (1) according to any of claims 4 to 6, **characterised in that** the aforesaid ribs are placed symmetrically in relation to the plane of symmetry of the I-shaped multi-chamber jamb (24).

8. Insulated jamb (1) according to any of claims 3 to 7, **characterised in that** the multi-chamber jamb (24) is provided with centring means.

9. Insulated jamb (1) according to claim 8, **characterised in that** the centring means are formed by making the flanges (25) of the multi-chamber jamb (24) conical so as to cooperate with a conical groove (27) of the scales (2-3).

10. Insulated jamb (1) according to claims 7 and 9, **characterised in that** the centring means are formed of the outer ribs on each flange of the I-shaped multi-chamber jamb (24).

11. Insulated jamb (1) according to any one of claims 3 to 10, **characterised in that** the multi-chamber jamb (24) is provided with cross partitions (29) so as to form one or several chambers (30).

Patentansprüche

1. Verfahren zum Isolieren eines Profils (1) für Außenschreinerwerk, wie etwa ein Tür- oder Fensterprofil, gebildet aus zwei Profilen (2-3), einer sogenannten Außenschale (2) und Innenschale (3), und mindestens zwei thermisch isolierenden Streifen (4, 5) in Form von Profilen, die in einem Abstand voneinander zwischen der Außenschale (2) und der Innenschale (3) angebracht sind, um eine thermische Unterbrechung zu bilden, wobei diese Streifen (4-5) mit ihren Längsrändern (11) während des Zusammenbaus des Tür- oder Fensterprofils (1) durch Einrollen in Nuten (8) der Außenschale (2) und der Innenschale (3) festgeklemmt werden, wobei das Tür- oder Fensterprofil (1) modular ist, wobei Gebrauch gemacht wird von einer Kombination von isolierenden Streifen (4-5), ausgewählt aus einer begrenzten Serie von Streifenformen mit vorwiegend gleichartig geformten Basisteilen (10), zum Verbinden der Außenschale (2) und der Innenschale (3), welche Kombination von isolierenden Streifen (4-5) in Kombination mit mindestens einem I-förmigen Profil (24) verwendet wird, das aus Isolationsmaterial besteht, das mit seinen parallelen Flanschen zwischen der Innenschale und Außenschale geklemmt angebracht ist, und das aus einer begrenzten Serie I-förmiger Profile (24) mit verschiedenen Breiten ausgewählt wird, **dadurch gekennzeichnet, dass** die isolierenden Streifen an besagten Basisteilen (10) mit einer oder mehreren Querrippen (12) versehen sind, dass besagtes I-förmiges Profil ein I-förmiges Mehrkammerprofil (24) ist, das mit seinem Kern zwischen den Querrippen (12) der isolierenden Streifen (4-5) angebracht ist, mit besagtem Kern quer zu den vorgenannten Querrippen (12) gerichtet, und wobei, dank der gegenseitigen Kombination der isolierenden Streifen (4-5) mit mindestens einem I-förmigen Mehrkammerprofil (24), der Raum zwischen den isolierenden Streifen (4-5) und dem I-förmigen Mehrkammerprofil (24) in quergerichtete Fächer (13) unterteilt ist.

2. Verfahren nach Anspruch 1, **dadurch gekennzeichnet, dass** die Streifen (4-5) der thermischen Unterbrechung und das I-förmige Mehrkammerprofil (24) als Ganzes zusammengebaut werden und als Ganzes zwischen der Innen- und Außenschale angebracht werden und anschließend an der Innenschale und Außenschale befestigt werden, indem die Längsränder der Streifen (4-5) in die Nuten (8) der Innenschale oder Außenschale geklemmt werden, indem sie eingerollt werden oder dergleichen.

3. Isoliertes Profil (1) für Außenschreinerwerk, wie etwa ein Tür-, ein Fensterprofil oder dergleichen, wobei besagtes Profil (1) modular gebaut ist und mindestens zwei Profile (2-3) umfasst, eine sogenannte Außenschale (2) und eine Innenschale (3), und mindestens zwei thermisch isolierende Streifen (4-5) einerseits, wobei die vorgenannten isolierenden Streifen (4-5) in einem Abstand voneinander zwischen der Außenschale (2) und der Innenschale (3) angebracht sind, um eine thermische Unterbrechung zu bilden, wobei die isolierenden Streifen (4-5) Basisteile (10) umfassen, und andererseits mindestens ein I-förmiges Profil (24), das mit seinem Kern zwischen den isolierenden Streifen (4-5) angebracht ist und das mit seinen parallelen Flanschen zwischen die Innenschale und die Außenschale geklemmt ist, **dadurch gekennzeichnet, dass** die isolierenden Streifen an besagten Basisteilen (10) mit einer oder mehreren Querrippen (12) versehen sind, dass besagtes I-förmiges Profil ein I-förmiges Mehrkammerprofil (24) ist, mit seinem Kern quer zu den vorgenannten Querrippen (12) gerichtet, und wobei, dank der gegenseitigen Kombination der isolierenden Streifen (4-5) mit mindestens einem I-förmigen Mehrkammerprofil (24), der Raum zwischen den isolierenden Streifen (4-5) und dem I-förmigen Mehrkammerprofil (24) in quergerichtete Fächer (13) unterteilt ist.

4. Isoliertes Profil (1) nach Anspruch 3, **dadurch gekennzeichnet, dass** das Mehrkammerprofil (24) mit Klemmmitteln versehen ist.

5. Isoliertes Profil (1) nach Anspruch 4, **dadurch gekennzeichnet, dass** die vorgenannten Klemmmittel aus einer oder mehreren Rippen (26) bestehen, die sich in Längsrichtung an den zu der Innenschale und Außenschale gerichteten Seiten der Flansche des I-förmigen Mehrkammerprofils (24) erstrecken.

6. Isoliertes Profil (1) nach Anspruch 4 oder 5, **dadurch gekennzeichnet, dass** die vorgenannten Rippen schräg an den vorgenannten, zur Innenschale und Außenschale gerichteten Seiten der Flansche des I-förmigen Mehrkammerprofils (24) angeordnet sind.

7. Isoliertes Profil (1) nach einem der Ansprüche 4 bis 6, **dadurch gekennzeichnet, dass** die vorgenannten Rippen symmetrisch in Bezug zur Symmetrieebene des I-förmigen Mehrkammerprofils (24) angeordnet sind.

8. Isoliertes Profil (1) nach einem der Ansprüche 3 bis 7, **dadurch gekennzeichnet, dass** das Mehrkammerprofil (24) mit Zentriermitteln versehen ist.

9. Isoliertes Profil (1) nach Anspruch 8, **dadurch gekennzeichnet, dass** die Zentriermittel geformt werden, indem die Flansche (25) des Mehrkammerprofils (24) konisch gemacht werden, sodass sie mit einer konischen Nut (27) der Schalen (2-3) zusammenwirken.

10. Isoliertes Profil (1) nach Ansprüchen 7 und 9, **dadurch gekennzeichnet, dass** die Zentriermittel durch die äußeren Rippen an jedem Flansch des 1-förmigen Mehrkammerprofils (24) gebildet werden.

11. Isoliertes Profil (1) nach einem der Ansprüche 3 bis 10, **dadurch gekennzeichnet, dass** das Mehrkammerprofil (24) mit Quer-Trennwänden (29) versehen ist, um eine oder mehrere Kammern (30) zu bilden.

Revendications

1. Procédé pour isoler un montant (1) pour une menuiserie extérieure telle qu'un montant de porte ou de fenêtre, constitué par deux montants (2-3), ce que l'on appelle un cadran externe (2) et un cadran interne (3), et par au moins deux bandes (4, 5) procurant une isolation thermique sous la forme de montants prévus à distance l'un de l'autre entre le cadran externe (2) et le cadran interne (3) de façon à obtenir une interruption thermique, ces bandes (4-5) étant enserrées dans des rainures (8) du cadran externe (2) et du cadran interne (3) avec leurs bords longitudinaux (11) lors du montage du montant de porte ou de fenêtre (1) par enroulement, le montant de porte ou de fenêtre (1) étant modulaire, en faisant usage d'une combinaison de bandes isolantes (4-5) choisies parmi une série limitée de formes de bandes comportant des parties de base de configuration principalement similaire (10) de façon à relier le cadran externe (2) et le cadran interne (3), ladite combinaison des bandes isolantes (4-5) étant appliquée en combinaison avec au moins un montant en i (24) constitué d'un matériau isolant, prévu de telle sorte que ses rebords sont enserrés entre le cadran interne et le cadran externe, et qui est choisi parmi une série limitée de montants en i (24) possédant des largeurs différentes, **caractérisé en ce que** les bandes isolantes sont munies d'une ou de plusieurs nervures transversales (12) sur lesdites parties de base (10), **en ce que** ledit montant en i est un montant en i (24) comportant plusieurs chambres, prévu avec sa partie centrale entre les nervures transversales (12) des bandes isolantes (4-5), ladite partie centrale étant orientée en direction transversale par rapport aux nervures transversales susmentionnées (12), et par lequel, grâce à la combinaison réciproque des bandes isolantes (4-5) avec au moins un montant en i (24) comportant plusieurs chambres, l'espace ménagé entre les bandes isolantes (4-5) et le montant en i (24) comportant plusieurs chambres est subdivisé en compartiments (13) orientés en direction transversale.

2. Procédé selon la revendication 1, **caractérisé en ce que** les bandes (4-5) de l'interruption thermique et le montant en i (24) comportant plusieurs chambres sont assemblés en un tout et sont prévus sous la forme d'un tout entre le cadran interne et le cadran externe, et sont ensuite fixés au cadran interne et au cadran externe par serrage de bords longitudinaux des bandes (4-5) dans les rainures (8) du cadran interne ou du cadran externe par enroulement ou analogue.

3. Montant isolé (1) pour une menuiserie extérieure telle qu'un montant de porte, de fenêtre, ou analogue, ledit montant (1) étant de construction modulaire et comprenant au moins deux montants (2-3), que l'on appelle un cadran externe (2) et un cadran interne (3), et au moins deux bandes (4, 5) procurant une isolation thermique, d'une part, les bandes isolantes susmentionnées (4-5) étant prévues à distance l'une de l'autre entre le cadran externe (2) et le cadran interne (3) de façon à obtenir une interruption thermique, les bandes isolantes (4-5) comprenant des parties de base (10), et d'autre part, au moins un montant en i (24) prévu avec sa partie centrale entre les bandes isolantes (4-5) et qui est enserré avec ses rebords parallèles entre le cadran interne et le cadran externe, **caractérisé en ce que** les bandes isolantes sont munies d'une ou de plusieurs nervures transversales (12) sur lesdites parties de base (10), **en ce que** ledit montant en i est un montant en i (24) comportant plusieurs chambres, ladite partie centrale étant orientée en direction transversale par rapport aux nervures transversales susmentionnées (12), et par lequel, grâce à la combinaison réciproque des bandes isolantes (4-5) avec ledit au moins un montant en i (24) comportant plusieurs chambres, l'espace ménagé entre les bandes isolantes (4-5) et le montant en i (24) comportant plusieurs chambres est subdivisé en compartiments (13) orientés en direction transversale.

4. Montant isolé (1) selon la revendication 3, **caractérisé en ce que** le montant (24) comportant plusieurs chambres est muni de moyens de serrage.

5. Montant isolé (1) selon la revendication 4, **caractérisé en ce que** les moyens de serrage susmentionnés sont constitués par une ou plusieurs nervures (26) s'étendant en direction longitudinale sur les côtés des rebords du montant en i (24) comportant plusieurs chambres, orientées en direction du cadran interne et du cadran externe.

6. Montant isolé (1) selon la revendication 4 ou 5, **ca-**

ractérisé en ce que les nervures susmentionnées sont prévues en inclinaison sur le côté susmentionné des rebords du montant en i (24) comportant plusieurs chambres, en étant orientées en direction du cadran interne et du cadran externe.

7. Montant isolé (1) selon l'une quelconque des revendications 4 à 6, **caractérisé en ce que** les nervures susmentionnées sont disposées en symétrie par rapport au plan de symétrie du montant en i (24) comportant plusieurs chambres.

8. Montant isolé (1) selon l'une quelconque des revendications 4 à 7, **caractérisé en ce que** le montant en i (24) comportant plusieurs chambres est muni de moyens de centrage.

9. Montant isolé (1) selon la revendication 8, **caractérisé en ce que** l'on obtient les moyens de centrage en conférant une conicité aux rebords (25) du montant en i (24) comportant plusieurs chambres, de façon à obtenir une coopération avec une rainure conique (27) des cadrans (2-3).

10. Montant isolé selon les revendications 7 et 9, **caractérisé en ce que** les moyens de centrage des nervures externes sont formés sur chaque rebord du montant en i (24) comportant plusieurs chambres.

11. Montant isolé (1) selon l'une quelconque des revendications 3 à 10, **caractérisé en ce que** le montant en i (24) comportant plusieurs chambres est muni de parois de séparation transversales (29) de façon à obtenir une ou plusieurs chambres (30).

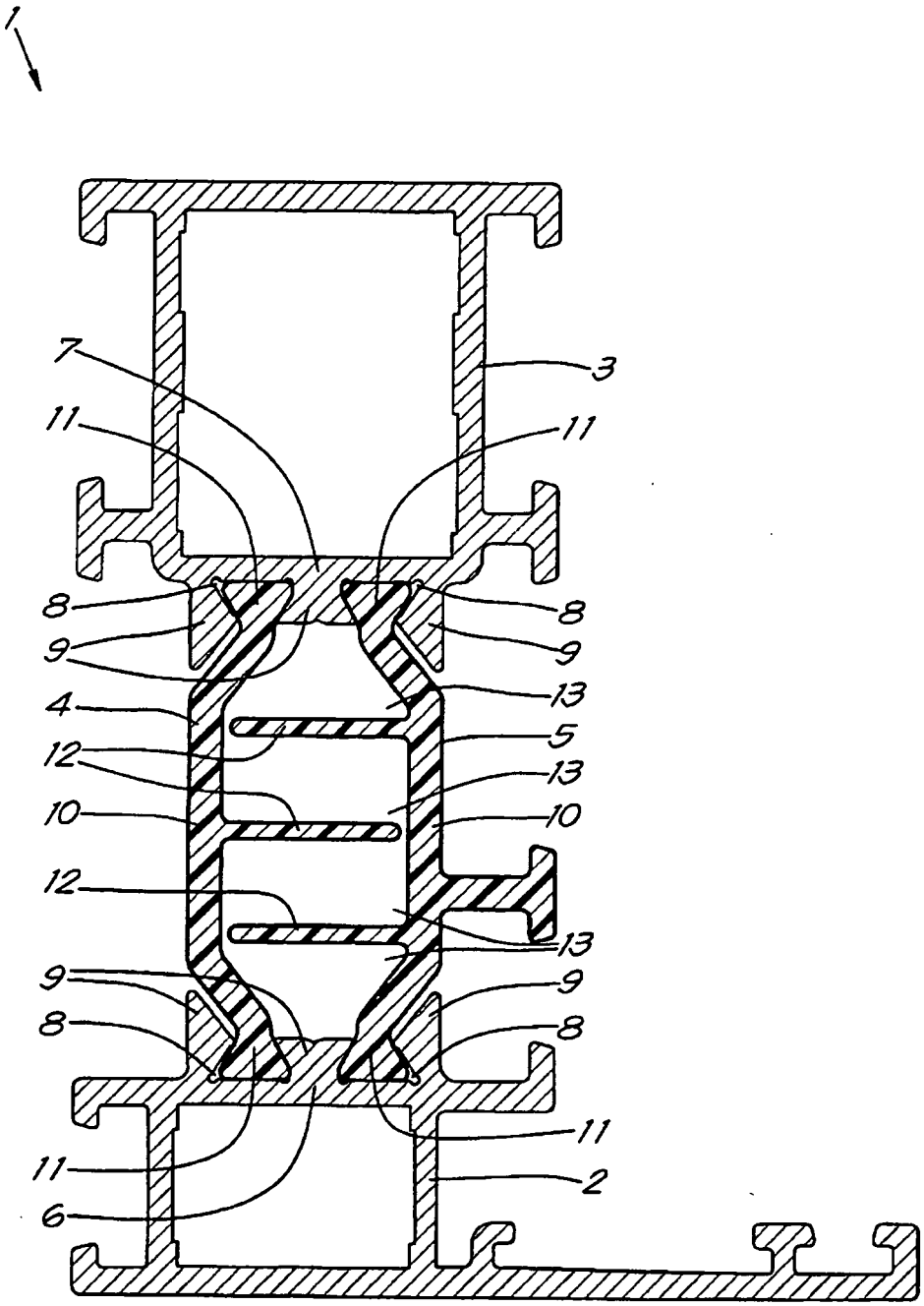

Fig. 1

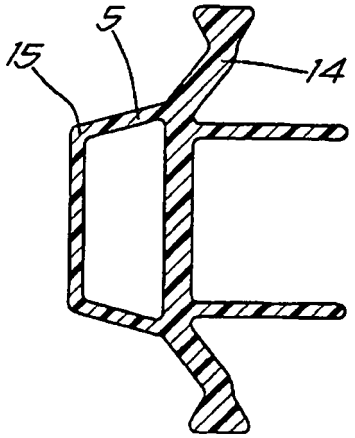

Fig.2A

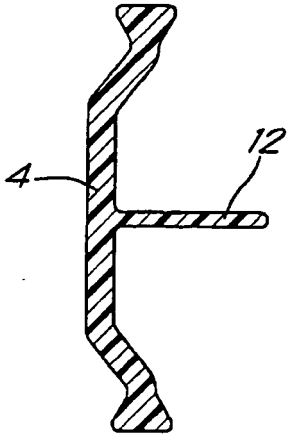

Fig.2B

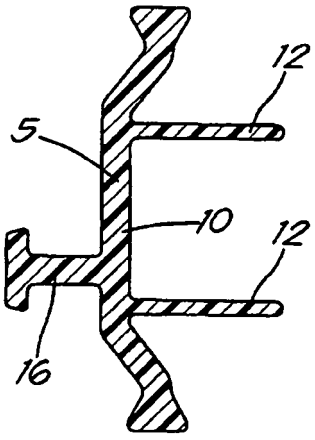

Fig.2C

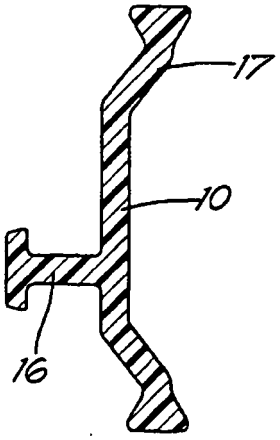

Fig.2D

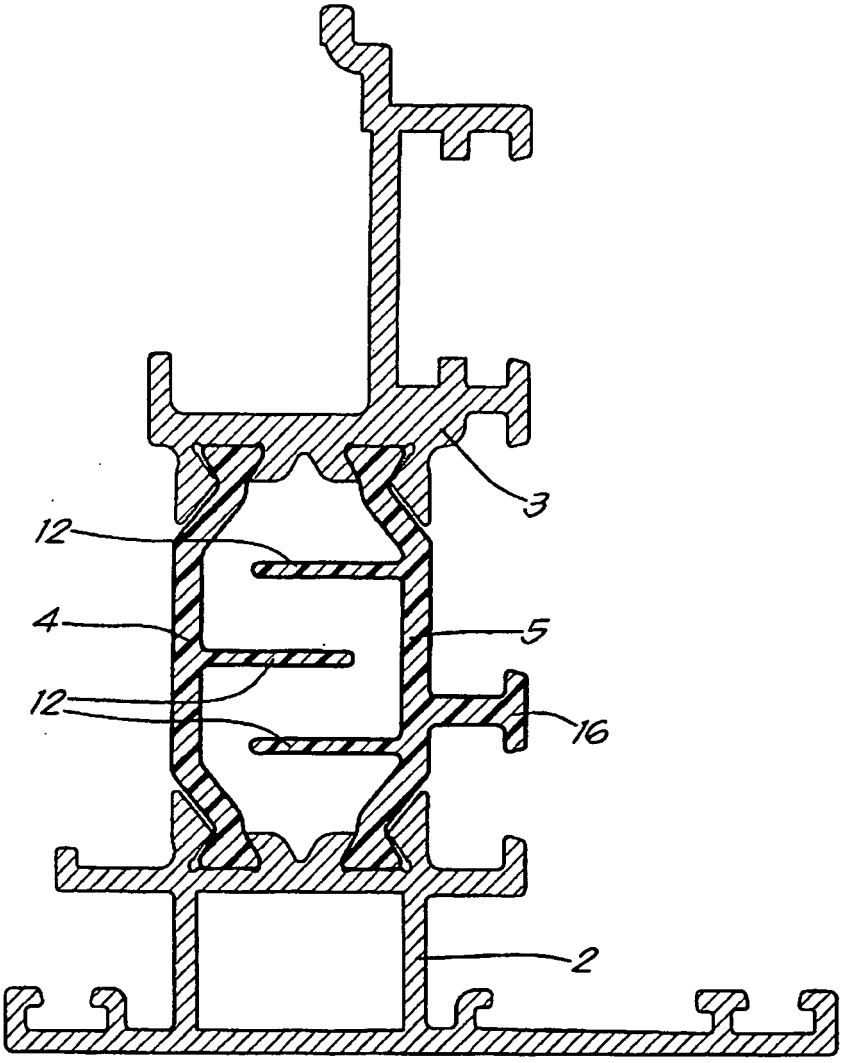

Fig.3

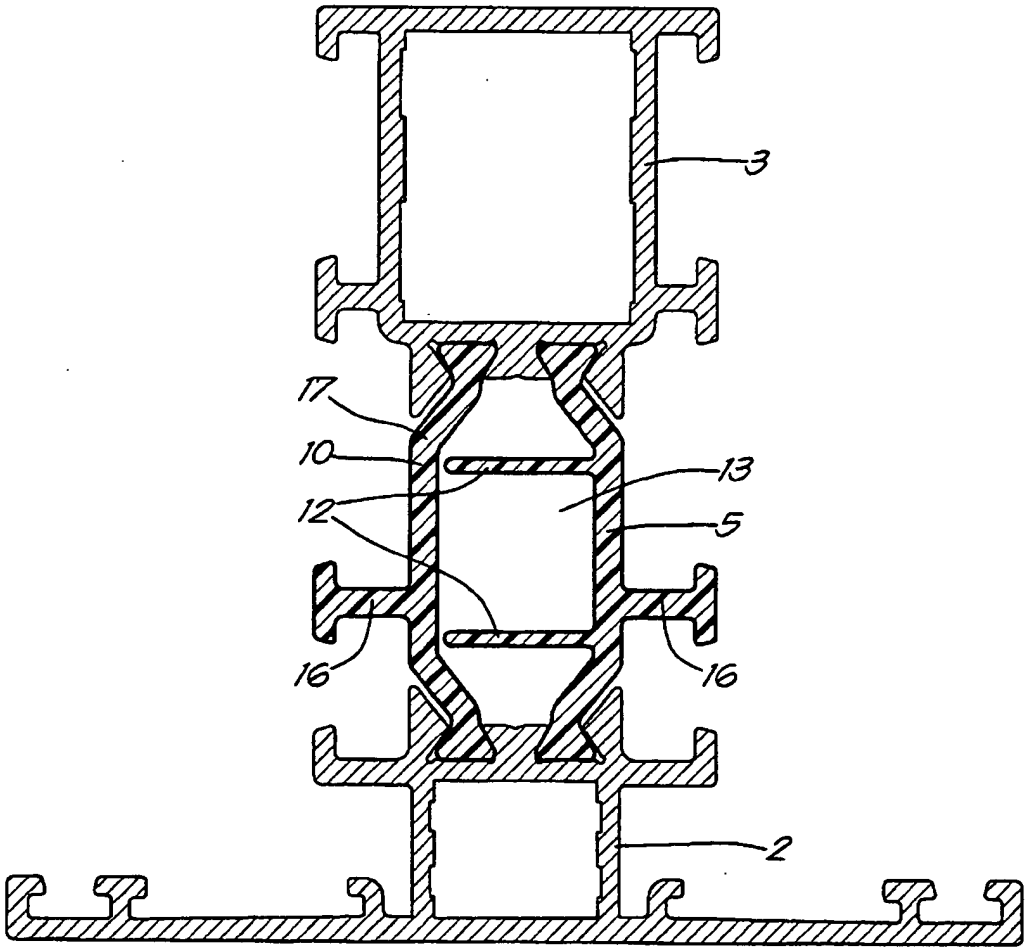

Fig.4

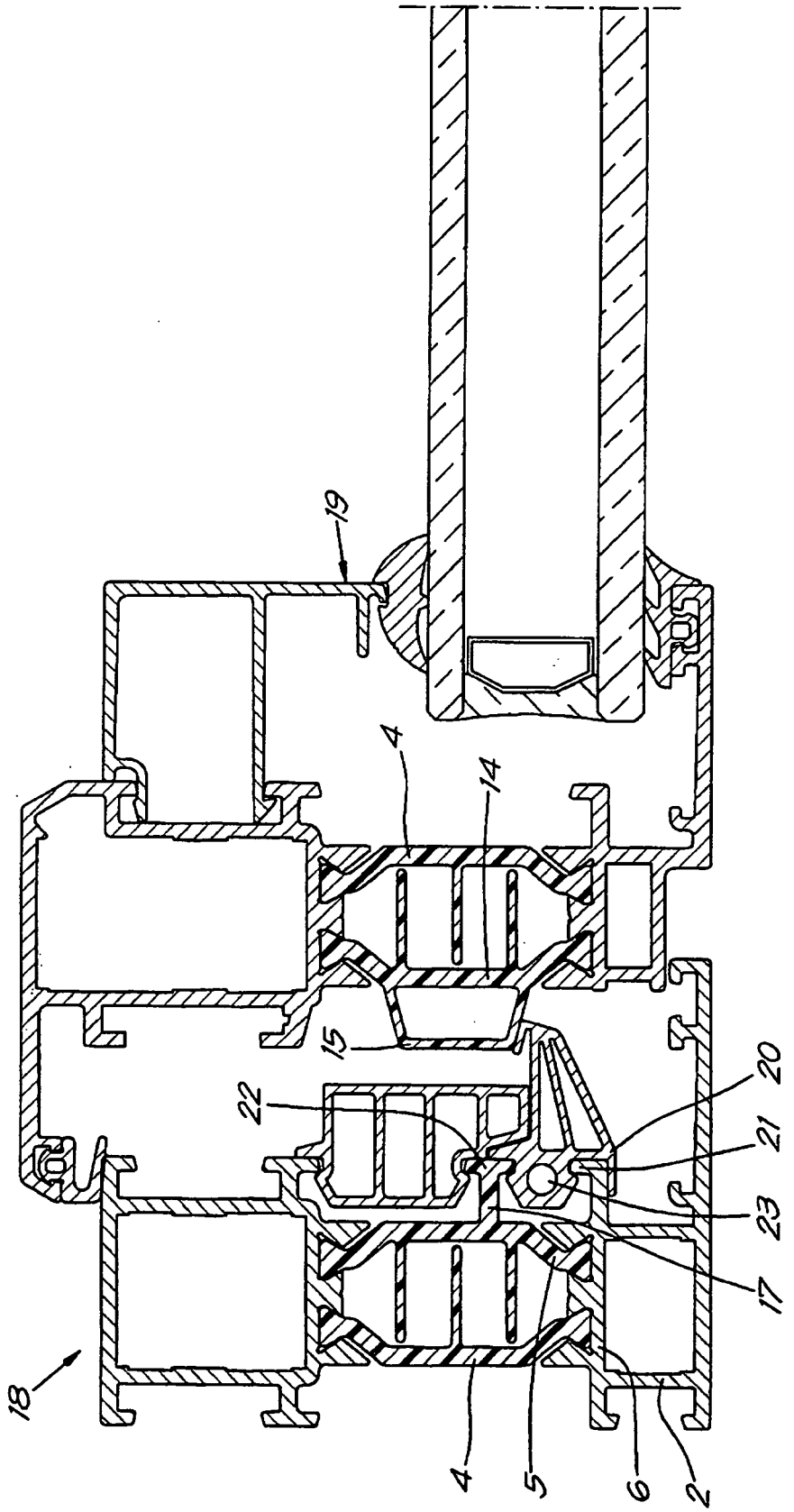

Fig.5

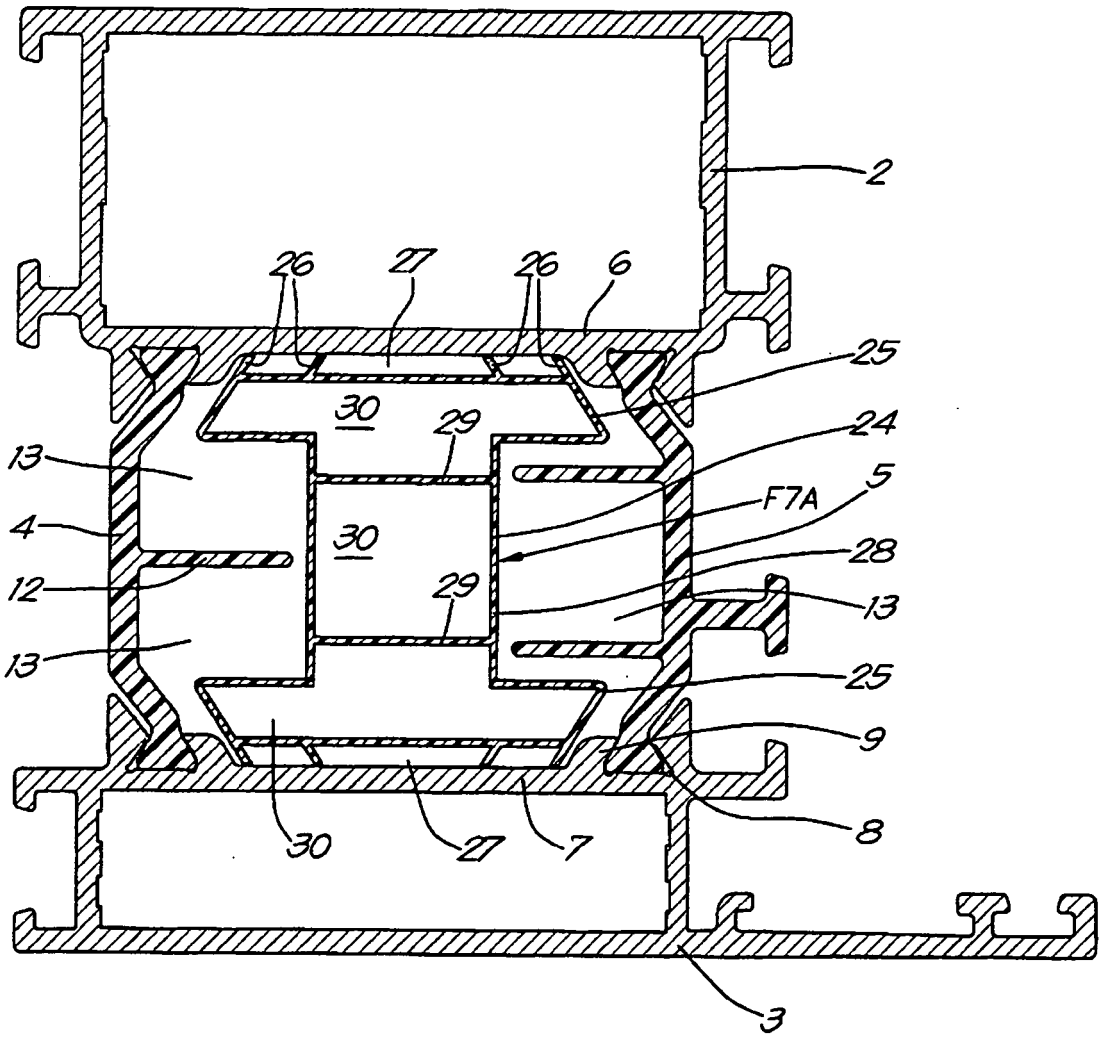

Fig.6

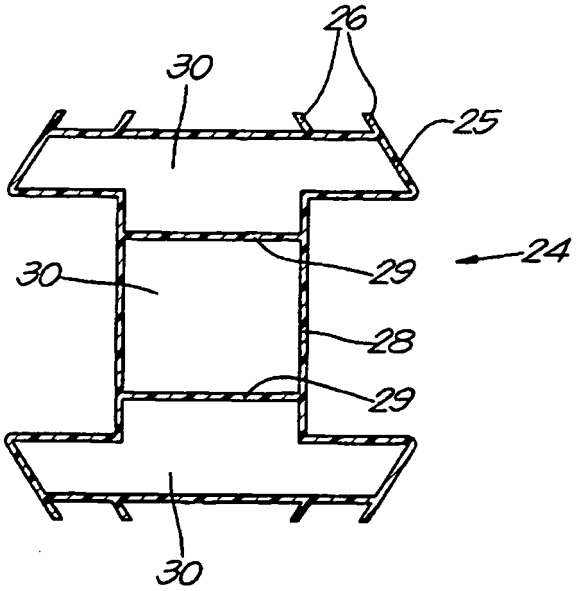

Fig. 7A

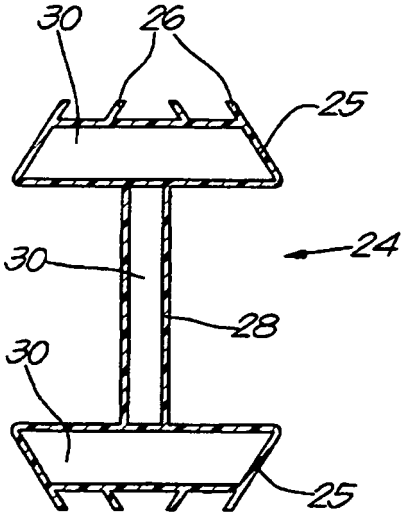

Fig. 7B

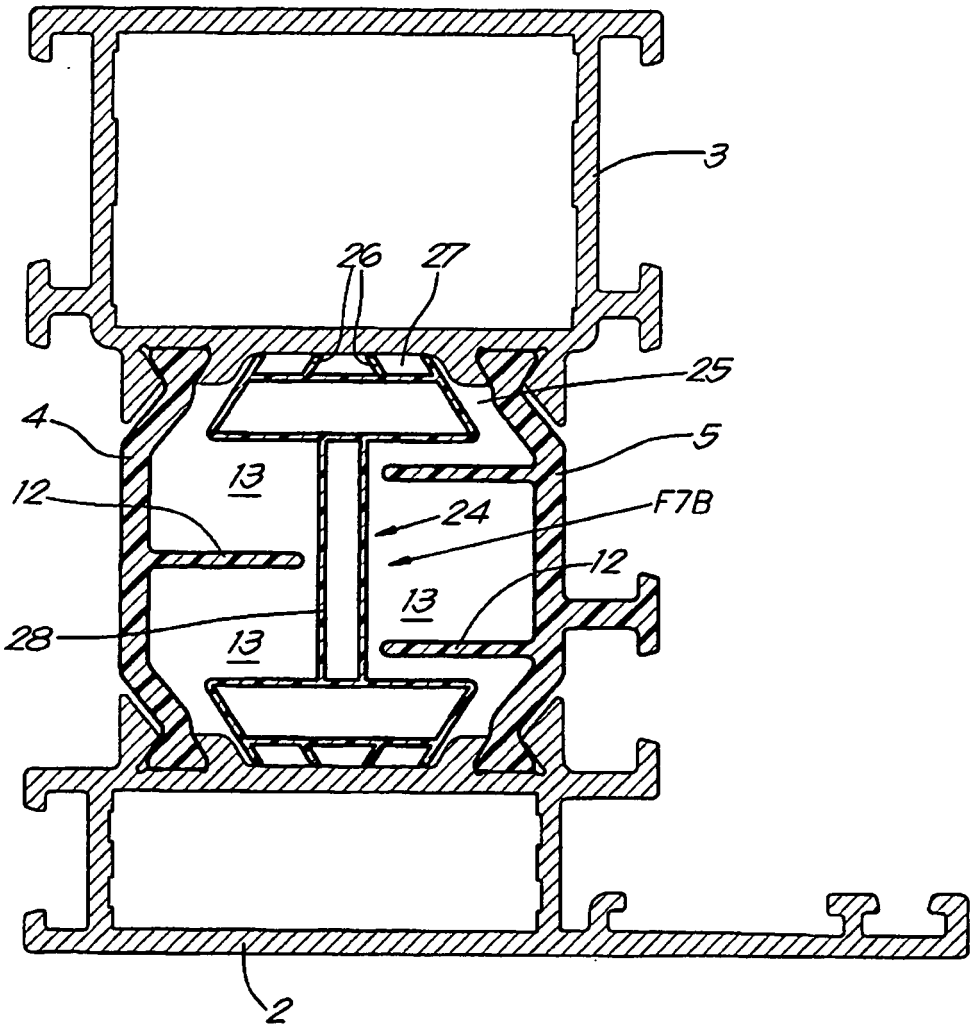

Fig.8

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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