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(54) **A METHOD FOR INSULATING A ROOF WINDOW AND A ROOF WINDOW WITH AN INSULATING MEMBER**

VERFAHREN ZUR ISOLIERUNG EINES DACHFENSTERS UND DACHFENSTER MIR EINEM DÄMMELEMENT

PROCÉDÉ D'ISOLATION D'UNE FENÊTRE DE TOIT ET FENÊTRE DE TOIT AVEC ÉLÉMENT ISOLANT

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Description

[0001] The present invention relates to a method for insulating a roof window comprising a stationary frame with top, bottom, and side frame pieces, each having a length, an inner side facing the window and an opposite outer side, and an interior side facing the structure and an opposite exterior side, wherein the method comprises the steps of providing an insulating member which comprises a first insulating element having an abutment side and a length corresponding substantially to the length of a first frame piece of the window and a second insulating element having an abutment side and a length corresponding substantially to the length of a second frame piece, which is opposite to the first frame piece, of the window, wherein, in a supply condition, the first and second insulating elements are interconnected to each other; separating the interconnected first and second insulating elements; and arranging the first insulating element adjacent to the outer side of the first frame piece with the abutment side facing the first frame piece and the second insulating element adjacent to the outer side of the second frame piece with the abutment side facing the second frame piece. The invention further relates to a roof window that is insulated according to the afore-mentioned method.

[0002] It is well known, that the work associated with installing roof windows is highly demanding and often presents the worker with many challenges, such as working on inclined surfaces and in strong winds. Therefore, it is desirable to simplify the installation of such windows to avoid mistakes that might lead to incorrect mounting or building material falling or blowing of the roof during installation. An example of an insulating frame for a roof window is provided in EP 1 739 247 A1 and an insulation for a roof window is known from EP 2 182 132 A2.

[0003] On this background it is an object of the invention to provide a method as described above, which improves the step of insulating a roof window to ensure correct installation and safer working conditions.

[0004] According to the invention this is accomplished with a method according to claim 1 where an insulating member is provided said insulating member comprising a first insulating element and a second insulating element which, in a supply condition, are interconnected at a predefined separation zone extending between a first side of the interconnected insulating member and a second side opposite to the first side and along the length of said insulating member, the first insulating element being adapted for insulating a first frame piece of the window by, in an installed condition, being arranged adjacent to the outer side of the first frame piece with an abutment side of said first insulating element facing the frame, and the second insulating element being adapted for insulating a second frame piece of the window, which is opposite to the first frame piece, by, in an installed condition, being arranged adjacent to the outer side of the second frame piece with an abutment side of said second insulating element facing the frame.

[0005] With such an insulating member the insulating elements may remain interconnected in one piece up until installation, meaning that fewer components have to be handled before insulating the roof window, thereby making the installation work easier.

[0006] In the supply condition, wherein the insulating member is in one piece, each insulating element may be connected to the other at its abutment side or a portion of its abutment side, i.e. the abutment side is exposed by the separation, or it may be connected at another surface, such that the abutment side forms part of the exposed surface of the insulating member.

[0007] The method is preferably used to insulate a frame of a roof window, wherein the first frame piece is the top frame piece and the second frame piece is the bottom frame piece.

[0008] The method may further comprise a step of adapting the first and/or second insulating element to an installation depth and/or installation angle of the roof window by using a predefined secondary separation zone of the insulating element to remove superfluous material.

[0009] The method may in some embodiments comprise a step of temporarily fixating the first and/or second insulating element to a frame piece or to another building component, by using an adhesive which is arranged on a surface of said first and/or second insulating element.

[0010] In some embodiments the first insulating element is adapted for insulating the top frame piece of the window and the second insulating element is adapted for insulating the bottom frame piece of the window. Such embodiments are advantageous because insulating elements adapted for insulating the top and bottom frame pieces often have different cross-sectional shapes due to the different requirements for these insulating elements, and by having them as one insulating member it is ensured that one of each will be available at installation.

[0011] The insulating member is moulded or extruded in one piece, meaning that the interconnection between the first and second insulating elements is provided by a portion of the insulating member which is adapted for being cut or broken to separate the insulating elements, thereby serving as the separation zone. Besides avoiding the need for fastening means, simultaneous manufacturing of the first and second insulating elements has the additional advantage that the need for an extra molding or extrusion process is avoided, thereby lowering production costs.

[0012] The separation zone should be understood as a narrow zone or plane extending through the insulating member to allow predetermined separation. In the simplest embodiments it may be provided by external markings showing the worker where to cut the insulating member to separate the first and second insulating elements. However, in some embodiments the insulating member is provided with a weakening of the interconnection between the first and second insulating elements (20, 30) at the separation zone. The weakening may be realized

by the material of the separation zone being weak compared to the material of the first and second insulating elements, such that when pulled or wringed apart the insulating member will separate at the separation zone. This may be accomplished by creating a structural weakening, e.g. by making a gap, a slit, or a cavity extending partially through the material of the insulating member at the separation zone or by lowering the density or strength of the material of the insulating member locally at the separation zone. Structural weakenings of the material at the separation zone can be created either during manufacture of the insulating member by creating the insulating member with less material at the separation zone, or subsequently by removing or cutting part of the material at the separation zone.

[0013] In some embodiments of the invention the width between the abutment side and an opposite side of the first and/or second insulating elements decreases over at least part of the height of the insulating element, wherein the height of an insulating element is defined as the direction which, when said insulating element is arranged in its installed position, extends from the interior to the exterior side, such that said insulating element has a maximum width at the side adapted for facing the interior. It is noted that the heights are defined by the orientation of the insulating elements relative to the window in the installed condition, and that in the supply condition the height direction of each insulating element may point in different directions depending on how the first and second insulating elements are interconnected.

[0014] By shaping the insulating elements in this way, they can be made to follow the shape of flashing- and cover members typically used on the outer and exterior sides of the roof window. This can be advantageous as particularly the flashing might be subjected to heavy loads during installation and subsequent work on the roof and the support provided by the insulating element fitting closely underneath helps the flashing withstand such pressure in addition to improving insulation by filling the cavity below the flashing members.

[0015] The insulating member may in principle be made from any thermally insulating material, but it is preferably made from a thermally insulating material which is also elastic and/or compressible, such as moulded or extruded polymer foams, e.g. foams made from polystyrene, polyethylene, polyvinyl chloride, or polyurethane.

[0016] In an embodiment of the invention the first and/or second insulating elements comprise one or more secondary separation zones. Said secondary separation zones being adapted for allowing an adaptation of the shape of the insulating elements, e.g. according to an installation depth and/or angle of the window. This means that the shape of the insulating element can be easily modified to meet the requirements of certain installation conditions, since the predefined secondary separation zones can be used to indicate where to remove superfluous material. The secondary separation zones can be realized in the same way as the separation zone between the first and the second insulating elements described above, and two or more ways of realizing the separation zones may be used in one insulating member.

[0017] In some embodiments the first and/or second insulating elements comprise an adhesive arranged on the abutment side and/or another side of the insulating element. Such an adhesive may further facilitate installation, as it may be used for at least temporary fastening of the insulating element to a fixed structure, such as the stationary window frame or the roof structure, ensuring that the insulating element will stay in place at least during installation. In embodiments where adhesives have been used for interconnecting the insulating elements, they may additionally fulfill the purpose as means for at least temporary fastening to the roof structure or the frame of the roof window during construction.

[0018] In further developments of this embodiment the adhesive is, in the supply condition, protected by a cover strip. Besides protecting the adhesive up until installation the cover strip may additionally serve as a surface on which the installation instructions can be printed, ensuring that they will not be separated from the insulating member before installation.

[0019] In an embodiment of the invention the first and/or second insulating elements comprise a sealing element projecting out from the abutment side of the insulating element, said sealing element being adapted for, in the installed condition, being arranged overlapping the frame piece at the exterior side of the frame piece. The roof window will generally further comprise an exterior cover on top of the stationary frame to protect it from the weather. By providing a sealing element between the frame and cover the window may gain improved thermal and sound insulation, and by attaching it to the insulating member additional loose components may be avoided. In some embodiments the sealing element may in itself serves as a cover, thereby further reducing the number of individual components.

[0020] In an embodiment of the invention the first and/or second insulating elements comprise a guide abutment projecting out in the height direction, such that it, in the installed condition, extends away from the frame in a direction substantially perpendicular to the frame towards the exterior. In such an embodiment, the exterior cover may be aligned to the edge of the frame, simply by pushing it against the guide abutment, thereby ensuring correct installation.

[0021] The invention will be described in more detail below by means of non-limiting examples of presently preferred embodiments and with reference to the schematic drawings, in which:

Fig. 1 shows a perspective view of an insulating member according to the invention from above,

Fig. 2 shows a perspective view of the insulating member in fig. 1 from below.

Fig. 3 shows the cross-section of the insulating member in fig. 1, taken at the II-line of fig. 1,

Fig. 4 shows a cross-sectional view of a separated first insulating element,
Fig. 5 shows a cross-sectional view of a separated second insulating element,
Fig. 6 shows a sectional view of a roof window installed in a roof and insulated at the top and bottom frame pieces by use of an insulating member according to the invention,
Fig. 7 shows a sectional view of the top frame piece of the roof window in fig. 6 insulated by a first insulating,
Fig. 8 shows a sectional view of the bottom frame piece of the roof window in fig. 6 insulated by a second insulating element according to the invention, and
Fig. 9-12 show various realizations of the separation zone.

[0022] The same reference numbers have been used throughout the entire description, even when describing different embodiments. It should be understood that the reference numbers relate to particular features of the invention having similar function, but which are not necessarily identical in every embodiment.

[0023] An embodiment of an insulating member 1 according to the invention is shown in fig. 1 and 2. The insulating member 1 comprise a first portion in the form of a first insulating element 20 and a second portion in the form of a second insulating element 30, which in the shown embodiment are adapted for insulating the top and bottom frame pieces of a roof window.

[0024] Throughout this text the terms "top", "bottom" and "side" are used to indicate the intended position of different parts in the installed position even though these parts may be located differently during for example storage and transportation or during manufacture of the insulating member 1. Likewise, the term "interior" and "exterior" are used to indicate that something is intended to face the interior or exterior of the building in which the insulating member and the roof window are installed, respectively, and the terms "inner" and "outer" that something is intended for facing towards or away from the inner opening surrounded by the frame of the window, respectively, in the installed condition.

[0025] The insulating member 1 has an elongate shape with a length in the length direction L corresponding to the length of the frame pieces of the roof window, which it is adapted for insulating, and a pre-defined cross-section which is substantially uniform along the length. While the cross-sections of the two insulating elements 20, 30 shown in this embodiment are different from each other, they can in some embodiments be identical.

[0026] The insulating elements 20, 30 may be made from any natural or synthetic thermally insulating material, preferably with a thermal conductivity of less than 1 W/mK in order to achieve good insulation properties. In a preferred embodiment less than 0.1 W/mK and in a more preferred embodiment it should be lower than 0.040 W/mK. However, it is also preferable that the material be structurally stable, such that it can provide support for flashing members 14 used on the exterior side or similar, while to an extent being compressible and elastic, such that it is easy to handle and install.

[0027] If the material used to make the insulating member 1 is suitable for extrusion or molding the insulating elements may be produced simultaneously, such that they are interconnected by the material itself, and, particularly if extrusion is used as the manufacturing method, many insulating members may be produced as one continuous profile which can be cut into appropriate lengths afterwards. These manufacturing options are advantageous as they are cost-efficient. Alternatively, the first and second insulating elements 20, 30 may be manufactured individually and interconnected by fastening means, such as adhesives, welds, clamps, etc. or by a combination thereof.

[0028] Fig. 3 to 5 show cross-sectional views of an insulating member 1 according to the invention in the interconnected and separated conditions. Each insulating element 20, 30 is designed such that it has an abutment side 21, 31 adapted to abut the outer side of a frame piece of the roof window. In the shown embodiments the insulating member 1 is further designed such that the width between the abutment side 21, 31 and the opposing side of the first and second insulating elements 20, 30 decreases along the height h of each insulating element, so that they may follow the shape of the flashing members 14 as will be described with reference to fig. 6-8. As shown, this decrease does not have to be continuous or over the entire height h of the insulating elements.

[0029] In the shown embodiments the second insulating element 30 is connected to the first insulating element 20 at a part of its abutment side 31, such that the abutment side 31 is only fully exposed after the separation. The first insulating element 20 is connected to the second insulating element 30 at an interior side which is adapted for, in the installed condition, facing the interior direction, such that the abutment side 21 of the first insulating element 20 forms part of the surface of the interconnected insulation member 1. In alternative embodiments the first and second insulating elements 20, 30 can be interconnected at other sides as will be readily understood by the skilled person.

[0030] In the embodiment shown in fig. 3 the insulating member is designed with a weakening of the interconnection at the separation zone 2, which weakening is realized by a slit extending partially through the insulating member 1, such that the insulating member 1 will separate at the material in extension of the slit if pulled or wringed apart. Similar structural weakenings may be realized by a gap, a cavity, a row of cavities, etc., or a combination thereof extending through or into the insulating member 1 at the separation zone 2.

[0031] The embodiment of the first and second insulating elements 20, 30 of the insulating member 1 shown in fig. 4 and 5 further comprises secondary separation

zones 24, 34 on each insulating element. These secondary separation zones 24, 34 provide adaptation options of the cross-sectional shape of each insulating element, such that an insulating element can be adapted according to a secondary building component, the angle at which the roof window is installed, and/or the installation depth of the roof window, by providing the option of tearing or cutting superfluous material away if needed. Although the shown embodiments comprise multiple secondary separation zones 24 on the first insulating element 20 and only one secondary separation zone 34 on the second insulating element 30, the number and positions of the secondary separation zones of each insulating element may vary in other embodiments.

[0032] The first and second insulating elements 20, 30 shown in fig. 3-5 further comprise adhesives 25, 35 arranged on the abutment side 21 of the first insulating element 20 and on the interior side the second insulating element 30, which adhesives are adapted for at least temporarily fastening the insulating elements 20, 30 to the roof structure or a frame piece of the roof window during installation. Some embodiments may have several such adhesives arranged on the abutment and/or on other sides. In the shown embodiments each of the adhesives 25, 35 are covered by a cover strip 26, 36 ensuring that the adhesives 25, 35 are protected up until use.

[0033] In the embodiment shown in fig. 4 the first insulating element 20 comprise a sealing element 28, which is projecting out from the first abutment side 21 and which is adapted to provide a sealing between a frame piece of the roof window and an outer cover. In the shown embodiment the sealing element is molded or extruded with the insulating member 1, it can however also be produced separately and attached, in which case it may be produced from a material different from that of the insulating element such as rubber or polymers. The second insulating element 30 can also be provided with a similar sealing element.

[0034] In fig. 4 the first insulating element further comprise a guide abutment 29 projecting out from the top of the insulating element 20, such that it in an installed condition extends substantially perpendicularly away from the frame of the window in the exterior direction, said guide abutment 29 being adapted to facilitate placement of a cover for the frame of the roof window by providing an abutment which the cover can be pushed against to ensure that it is aligned with the frame of the window. Like the sealing element 28 the guide abutment 29 is in the shown embodiment molded or extruded in one piece with the insulating member 1 but it can also be manufactured separately, possibly in one integral piece with the sealing element, and attached afterwards. The second insulating element 30 can also be manufactured with a similar guide abutment.

[0035] In the embodiment shown in fig. 5, the second insulating element 30 have a ledge 37 extending from the abutment side 31 of the insulating element. It is adapted for extending below the interior side of a frame piece or into an indentation of the frame piece, such that the insulating element supports the frame and fills the space below the part of the window which projects above the roof. The first insulating element 20 can also be manufactured with a similar ledge.

[0036] It is noted that even though the adhesive 25, 35, the cover strip 26, 36, the sealing element 28, the guide abutment 29, the secondary separation zones 24, 34, and the ledge 37 are shown and described here in relation to one embodiment of the invention, these features are not dependent on each other, and that one may be used without the others.

[0037] Fig. 6-8 show an insulating member 1 in the installed condition with a roof window structure 10 installed in a roof opening. The insulating member 1 has been separated into the first and second insulating elements 20, 30 and used to insulate the top and bottom frame pieces 12, 13 by arranging the insulating elements 20, 30 at their respective frame pieces 12, 13 with the height direction of each insulating element pointing in the exterior direction.

[0038] As shown in figures 6-8, the cross-sectional shape of the insulating elements 20, 30 allow them to substantially follow the shape of the flashing members 14, thereby allowing the flashing members 14 to withstand external pressure which they might be subjected to, particularly during installation of the roof window, and providing improved insulation.

[0039] Fig. 7 further show how a sealing element 28 on the first insulating element 20 provides a seal between the top frame cover 15 and the exterior side of the top frame piece 12 giving the roof window 10 improved sound and thermal insulating properties. The figure also shows that the edge of the cover 15 have been pushed against a guide abutment 29 provided on the first insulating element 20, thereby assuring that the cover 15 is aligned with the frame piece 12. In the embodiment shown in fig. 7 the sealing element 28 and guide abutment 29 have been provided by means of a separate element attached to the insulating element during installation.

[0040] Fig. 9-12 show various examples of how the separation zone may be provided. In fig. 9 the separation zone has been defined by a portion of the insulating member wherein the material density is reduced locally to lower the strength compared to the remaining material. In fig. 10 the two insulating elements have been connected by using an adhesive. In fig. 11 the separation zone has been defined by a row of cavities, each cavity extending through the material in the length direction. In fig. 12 the insulating elements have been connected by means of a secondary material, such as a weaker polymer.

[0041] The person skilled in the art realizes that the present invention by no means is limited to the preferred embodiments described above. On the contrary, many modifications and variations are possible within the scope of the appended claims.

Claims

1. A method for insulating a roof window (10) comprising a stationary rectangular frame with top, bottom, and side frame pieces surrounding an opening, each frame piece having a length, an inner side facing the opening and an outer side opposite the inner side, and an interior side and an exterior side opposite the interior side, said method comprising the steps of:

   - providing an insulating member (1) having an elongate shape with a length corresponding substantially to the length of said top and bottom frame pieces (12, 13) or to the length of said side pieces, and a pre-defined cross-section, wherein said insulating member (1) comprises:

     a first insulating element (20) and a second insulating element (30) which, in a supply condition, are interconnected at a predefined separation zone extending between a first side of the interconnected insulating member and a second side opposite to the first side and along the length of said insulating member,
     the first insulating element (20) being adapted for insulating a first frame piece of the window by, in an installed condition, being arranged adjacent to the outer side of the first frame piece with an abutment side of said first insulating element facing the frame, and
     the second insulating element (30) being adapted for insulating a second frame piece of the window, which is opposite to the first frame piece, by, in an installed condition, being arranged adjacent to the outer side of the second frame piece with an abutment side of said second insulating element facing the frame,

   - separating the interconnected first and second insulating elements at said predefined separation zone, and
   - arranging the first insulating element (20) adjacent to the outer side of the first frame piece with the abutment side facing the first frame piece, and the second insulating element (30) adjacent to the outer side of the second frame piece with the abutment side facing the second frame piece.

2. The method of claim 1, wherein the first frame piece is the top frame piece (12) and the second frame piece is the bottom frame piece (13).

3. The method of claim 1 or 2 further comprising the step of adapting the first and/or second insulating element (20, 30) to an installation depth and/or installation angle of the roof window by using a predefined secondary separation zone of the insulating element to remove superfluous material.

4. The method according to any of claim 1 to 3 further comprising the step of temporarily fixating the first and/or second insulating element (20, 30) to a frame piece or to a secondary building component, by using an adhesive which is arranged on a surface of said first and/or second insulating element (20, 30).

5. A roof window (10) for installation in a load-bearing roof structure, said roof window comprising a stationary rectangular frame with top, bottom, and side frame pieces surrounding an opening, each frame piece having a length, an inner side facing the opening and an opposite outer side, and an interior side and an opposite exterior side, said roof window further comprising an insulation member (1) having an elongate shape with a length corresponding substantially to the length of said top and bottom frame pieces (12, 13) or to the length of said side pieces, and a pre-defined cross-section, said insulating member comprising a first insulating (20) element and a second insulating element (30) which, in a supply condition, are moulded or extruded in one piece and interconnected at a predefined separation zone extending between a first side of the interconnected insulating member and a second side opposite to the first side and along the length of said insulating member,
   characterized in that, after having been separated from each other at a predefined separation zone, the first insulating element (20) is arranged adjacent to the outer side of a first frame piece and the second insulating element (30) is arranged adjacent to the outer side of the second frame piece, which is opposite to the first frame piece.

6. The roof window of claim 5 wherein the first insulating element (20) is adapted for insulating the top frame piece (12) of the window and the second insulating element (30) is adapted for insulating the bottom frame piece of the window (13).

7. The roof window of claim 5 or 6, wherein the width between the abutment side and an opposite side of the first and/or second insulating elements (20, 30) decreases over at least part of the height of the insulating element, wherein the height of an insulating element is defined as the direction which, when said insulating element is arranged in its installed position, extends from the interior to the exterior side.

8. The roof window of any of claims 5 to 7, wherein the insulating member is provided with a weakening of the interconnection between the first and second in-

sulating elements (20, 30) at the separation zone.

9. The roof window of any of claims 5 to 8, wherein the insulating elements are made from a thermally insulating material, such as polystyrene, polyethylene, polyvinyl chloride, polyurethane, or any other suitable material.

10. The roof window of any of claims 5 to 9, wherein the first and/or second insulating elements (20, 30) comprise one or more secondary separation zones.

11. The roof window of any of claims 5 to 10, wherein the first and/or second insulating elements (20, 30) comprise an adhesive (25, 35) arranged on the abutment side and/or another side of the insulating element.

12. The roof window of claim 11, wherein the adhesive is, in the supply condition, protected by a cover strip (26).

13. The roof window of any of claims 5 to 12, wherein the first and/or second insulating elements (20, 30) comprise a sealing element (28) projecting out from the abutment side of the insulating element, said sealing element (28) being adapted for, in the installed condition, being arranged overlapping the frame piece at the exterior side of the frame piece.

14. The roof window of any of claims 5 to 13, wherein the first and/or second insulating elements (20, 30) comprise a guide abutment (29) projecting out in the height direction, such that it, in the installed condition, extends away from the frame in a direction substantially perpendicular to the frame.

Patentansprüche

1. Verfahren zur Isolierung eines Dachfensters (10), einen stationären rechteckigen Rahmen mit einem oberen, einem unteren und seitlichen Rahmenteilen, die eine Öffnung umgeben, umfassend, wobei jeder Rahmenteil eine Länge, eine der Öffnung zugewandte Innenseite und eine der Innenseite entgegengesetzte Außenseite und eine innere Seite und eine der inneren Seite entgegengesetzte äußere Seite aufweist, wobei das Verfahren die folgenden Schritte umfasst:

- Vorsehen eines Isolierteils (1), das eine längliche Form mit einer Länge, die im Wesentlichen der Länge des oberen und unteren Rahmenteils (12, 13) oder der Länge der Seitenteile entspricht, und einem festgelegten Querschnitt aufweist,
wobei das Isolierteil (1) Folgendes umfasst:
ein erstes Isolierelement (20) und ein zweites Isolierelement (30), die im Lieferzustand in einer festgelegten Trennungszone, die sich zwischen einer ersten Seite des verbundenen Isolierteils und einer der ersten Seite entgegengesetzten zweiten Seite und entlang der Länge des Isolierteils erstreckt, miteinander verbunden sind,
wobei das erste Isolierelement (20) dazu eingerichtet ist, einen ersten Rahmenteil des Fensters zu isolieren, indem es im eingebauten Zustand an die Außenseite des ersten Rahmenteils angrenzend angeordnet ist, wobei eine Anschlagseite des ersten Isolierelements dem Rahmen zugewandt ist, und
wobei das zweite Isolierelement (30) dazu eingerichtet ist, einen dem ersten Rahmenteil entgegengesetzten zweiten Rahmenteil des Fensters zu isolieren, indem es im eingebauten Zustand an die Außenseite des zweiten Rahmenteils angrenzend angeordnet ist, wobei eine Anschlagseite des zweiten Isolierelements dem Rahmen zugewandt ist,

- Trennen des ersten und zweiten miteinander verbunden Isolierelements in der festgelegten Trennungszone und
- Anordnen des ersten Isolierelements (20) an die Außenseite des ersten Rahmenteils angrenzend, wobei die Anschlagseite dem ersten Rahmenteil zugewandt ist, und des zweiten Isolierelements (30) an die Außenseite des zweiten Rahmenteils angrenzend, wobei die Anschlagseite dem zweiten Rahmenteil zugewandt ist.

2. Verfahren nach Anspruch 1, wobei der erste Rahmenteil der obere Rahmenteil (12) ist und der zweite Rahmenteil der untere Rahmenteil (13) ist.

3. Verfahren nach Anspruch 1 oder 2, ferner den Schritt des Anpassens des ersten und/oder zweiten Isolierelements (20, 30) an eine Einbautiefe und/oder einen Einbauwinkel des Dachfensters durch die Verwendung einer festgelegten sekundären Trennungszone des Isolierelements, um überflüssiges Material zu entfernen, umfassend.

4. Verfahren nach einem der Ansprüche 1 bis 3, ferner den Schritt des vorübergehenden Fixierens des ersten und/oder zweiten Isolierelements (20, 30) an einem Rahmenteil oder an einer sekundären Gebäudekomponente durch die Verwendung eines Klebstoffs, der auf einer Fläche des ersten und/oder zweiten Isolierelements (20, 30) angeordnet ist, umfassend.

5. Dachfenster (10) für den Einbau in eine lasttragende Dachstruktur, wobei das Dachfenster einen stationären rechteckigen Rahmen mit einem oberen, einem unteren und seitlichen Rahmenteilen, die eine Öffnung umgeben, umfasst, wobei jeder Rahmenteil eine Länge, eine der Öffnung zugewandte Innenseite und eine der Innenseite entgegengesetzte Außenseite und eine innere Seite und eine der inneren Seite entgegengesetzte äußere Seite aufweist, wobei das Dachfenster ferner ein Isolierteil (1) umfasst, das eine längliche Form mit einer Länge, die im Wesentlichen der Länge des oberen und unteren Rahmenteils (12, 13) oder der Länge der Seitenteile entspricht, und einen festgelegten Querschnitt aufweist, wobei das Isolierteil ein erstes Isolierelement (20) und ein zweites Isolierelement (30) umfasst, die im Lieferzustand einstückig geformt oder stranggegossen sind und in einer festgelegten Trennungszone, die sich zwischen einer ersten Seite des verbundenen Isolierteils und einer der ersten Seite entgegengesetzten zweiten Seite und entlang der Länge des Isolierteils erstreckt, miteinander verbunden sind,
dadurch gekennzeichnet, dass das erste Isolierelement (20), nachdem sie in einer festgelegten Trennungszone voneinander getrennt wurden, an die Außenseite eines ersten Rahmenteils angrenzend angeordnet ist, und das zweite Isolierelement (30) an die Außenseite des dem ersten Rahmenteil entgegengesetzten zweiten Rahmenteils angrenzend angeordnet ist.

6. Dachfenster nach Anspruch 5, wobei das erste Isolierelement (20) dazu eingerichtet ist, den oberen Rahmenteil (12) des Fensters zu isolieren, und das zweite Isolierelement (30) dazu eingerichtet ist, den unteren Rahmenteil (13) des Fensters zu isolieren.

7. Dachfenster nach Anspruch 5 oder 6, wobei die Breite zwischen der Anschlagseite und einer entgegengesetzten Seite des ersten und/oder zweiten Isolierelements (20, 30) zumindest über einen Teil der Höhe des Isolierelements abnimmt, wobei die Höhe eines Isolierelements als die Richtung definiert ist, die sich von der inneren zur äußeren Seite erstreckt, wenn das Isolierelement in der Einbauposition angeordnet ist.

8. Dachfenster nach einem der Ansprüche 5 bis 7, wobei das Isolierelement mit einer Schwächung der Verbindung zwischen dem ersten und zweiten Isolierelement (20, 30) an der Trennungszone versehen ist.

9. Dachfenster nach einem der Ansprüche 5 bis 8, wobei die Isolierelemente aus einem wärmeisolierenden Material bestehen, zum Beispiel Polystyrol, Polyethylen, Polyvinylchlorid, Polyurethan oder ein anderes geeignetes Material.

10. Dachfenster nach einem der Ansprüche 5 bis 9, wobei das erste und/oder zweite Isolierelement (20, 30) eine oder mehrere sekundäre Trennungszonen umfasst/umfassen.

11. Dachfenster nach einem der Ansprüche 5 bis 10, wobei das erste und/oder zweite Isolierelement (20, 30) einen Klebstoff (25, 35) umfasst, der auf der Anschlagseite und/oder einer anderen Seite des Isolierelements angeordnet ist.

12. Dachfenster nach Anspruch 11, wobei der Klebstoff im Lieferzustand durch einen Abdeckungsstreifen (26) geschützt ist.

13. Dachfenster nach einem der Ansprüche 5 bis 12, wobei das erste und/oder zweite Isolierelement (20, 30) ein Dichtungselement (28) umfasst/umfassen, das von der Anschlagseite des Isolierelements vorsteht, wobei das Dichtungselement (28) dazu eingerichtet ist, im eingebauten Zustand den Rahmenteil an der äußeren Seite des Rahmenteils überlagernd angeordnet zu sein.

14. Dachfenster nach einem der Ansprüche 5 bis 13, wobei das erste und/oder zweite Isolierelement (20, 30) einen Führungsanschlag (29) umfasst/umfassen, der in Höhenrichtung derart vorsteht, dass er sich im eingebauten Zustand in eine Richtung im Wesentlichen senkrecht zum Rahmen vom Rahmen weg erstreckt.

Revendications

1. Procédé d'isolation d'une fenêtre de toit (10) comprenant un cadre rectangulaire fixe avec des pièces de cadre supérieure, inférieure et latérales entourant une ouverture, chaque pièce de cadre ayant une longueur, un côté interne faisant face à l'ouverture et un côté externe opposé au côté interne, et un côté intérieur et un côté extérieur opposé au côté intérieur, ledit procédé comprenant les étapes consistant à :

- fournir un élément isolant (1) ayant une forme allongée avec une longueur correspondant sensiblement à la longueur desdites pièces de cadre supérieure et inférieure (12, 13) ou à la longueur desdites pièces latérales, et une section transversale prédéfinie,
ledit élément isolant (1) comprenant :

un premier élément isolant (20) et un second élément isolant (30) qui, à l'état fourni, sont interconnectés au niveau d'une zone de séparation prédéfinie s'étendant entre un premier côté de l'élément isolant inter-

connecté et un second côté opposé au premier côté et sur la longueur dudit élément isolant,
le premier élément isolant (20) étant conçu pour isoler une première pièce de cadre de la fenêtre en étant, à l'état installé, disposé de manière adjacente au côté externe de la première pièce de cadre avec un côté butée dudit premier élément isolant faisant face au cadre, et
le second élément isolant (30) étant conçu pour isoler une seconde pièce de cadre de la fenêtre, qui est opposée à la première pièce de cadre, en étant, à l'état installé, disposé de manière adjacente au côté externe de la seconde pièce de cadre avec un côté butée dudit second élément isolant faisant face au cadre,

- séparer les premier et second éléments isolants interconnectés au niveau de ladite zone de séparation prédéfinie, et
- disposer le premier élément isolant (20) adjacent au côté externe de la première pièce de cadre avec le côté butée faisant face à la première pièce de cadre, et le second élément isolant (30) adjacent au côté externe de la seconde pièce de cadre avec le côté butée faisant face à la seconde pièce de cadre.

2. Procédé selon la revendication 1, la première pièce de cadre étant la pièce de cadre supérieure (12) et la seconde pièce de cadre étant la pièce de cadre inférieure (13) .

3. Procédé selon la revendication 1 ou 2 comprenant en outre l'étape consistant à adapter le premier et/ou le second élément isolant (20, 30) à une profondeur d'installation et/ou un angle d'installation de la fenêtre de toit en utilisant une zone de séparation secondaire prédéfinie de l'élément isolant pour éliminer les matériaux superflus.

4. Procédé selon l'une quelconque des revendications 1 à 3 comprenant en outre l'étape consistant à fixer temporairement le premier et/ou le second élément isolant (20, 30) à une pièce de cadre ou à un élément de construction secondaire, en utilisant un adhésif qui est disposé sur une surface dudit premier et/ou second élément isolant (20, 30).

5. Fenêtre de toit (10) destinée à être installée dans une structure de toit porteuse, ladite fenêtre de toit comprenant un cadre rectangulaire fixe avec des pièces de cadre supérieure, inférieure et latérales entourant une ouverture, chaque pièce de cadre ayant une longueur, un côté interne faisant face à l'ouverture et un côté externe opposé, et un côté intérieur et un côté extérieur opposé, ladite fenêtre de toit comprenant en outre un élément d'isolation (1) ayant une forme allongée avec une longueur correspondant sensiblement à la longueur desdites pièces de cadre supérieure et inférieure (12, 13) ou à la longueur desdites pièces latérales, et une section transversale prédéfinie, ledit élément isolant comprenant un premier élément isolant (20) et un second élément isolant (30) qui, à l'état fourni, sont moulés ou extrudés en une seule pièce et interconnectés au niveau d'une zone de séparation prédéfinie s'étendant entre un premier côté de l'élément isolant interconnecté et un second côté opposé au premier côté et sur la longueur dudit élément isolant,
caractérisée en ce que, après avoir été séparés l'un de l'autre au niveau d'une zone de séparation prédéfinie, le premier élément isolant (20) est disposé de manière adjacente au côté externe d'une première pièce de cadre et le second élément isolant (30) est disposé de manière adjacente au côté externe de la seconde pièce de cadre, qui est opposé à la première pièce de cadre.

6. Fenêtre de toit selon la revendication 5, le premier élément isolant (20) étant conçu pour isoler la pièce de cadre supérieure (12) de la fenêtre et le second élément isolant (30) étant conçu pour isoler la pièce de cadre inférieure de la fenêtre (13).

7. Fenêtre de toit selon la revendication 5 ou 6, la largeur entre le côté butée et un côté opposé du premier et/ou du second élément isolant (20, 30) diminuant sur au moins une partie de la hauteur de l'élément isolant, la hauteur d'un élément isolant étant définie comme la direction qui, lorsque ledit élément isolant est disposé dans sa position installée, s'étend de l'intérieur vers le côté extérieur.

8. Fenêtre de toit selon l'une quelconque des revendications 5 à 7, l'élément isolant étant pourvu d'un affaiblissement de l'interconnexion entre les premier et second éléments isolants (20, 30) au niveau de la zone de séparation.

9. Fenêtre de toit selon l'une quelconque des revendications 5 à 8, les éléments isolants étant fabriqués à partir d'un matériau thermiquement isolant, tel que le polystyrène, le polyéthylène, le chlorure de polyvinyle, le polyuréthane ou tout autre matériau approprié.

10. Fenêtre de toit selon l'une quelconque des revendications 5 à 9, les premier et/ou second éléments isolants (20, 30) comprenant au moins une zone de séparation secondaire.

11. Fenêtre de toit selon l'une quelconque des revendications 5 à 10, les premier et/ou second éléments

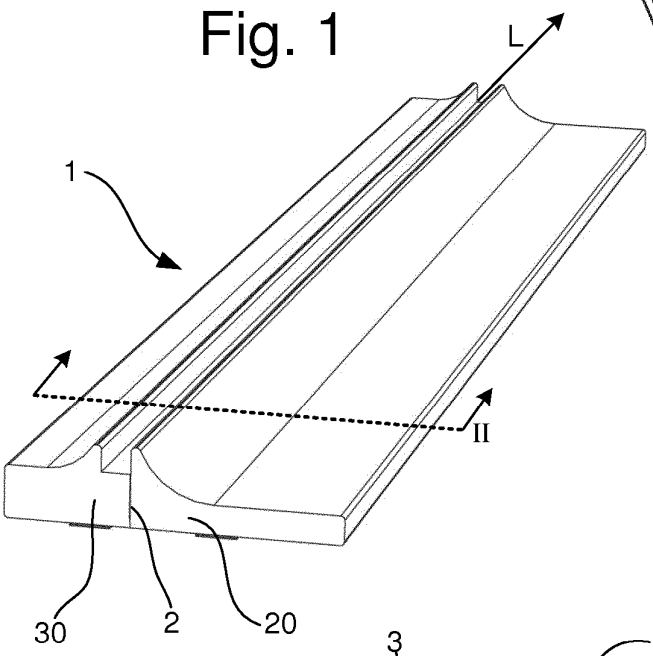
isolants (20, 30) comprenant un adhésif (25, 35) disposé sur le côté butée et/ou sur un autre côté de l'élément isolant.

12. Fenêtre de toit selon la revendication 11, l'adhésif étant, à l'état fourni, protégé par une bande de couverture (26).

13. Fenêtre de toit selon l'une quelconque des revendications 5 à 12, les premier et/ou second éléments isolants (20, 30) comprenant un élément d'étanchéité (28) faisant saillie du côté butée de l'élément isolant, ledit élément d'étanchéité (28) étant conçu pour, à l'état installé, être disposé en chevauchant la pièce de cadre sur le côté extérieur de la pièce de cadre.

14. Fenêtre de toit selon l'une quelconque des revendications 5 à 13, les premier et/ou second éléments isolants (20, 30) comprenant une butée de guidage (29) faisant saillie dans le sens de la hauteur, de sorte que, à l'état installé, elle s'étende à l'opposé du cadre dans une direction sensiblement perpendiculaire au cadre.

Fig. 1



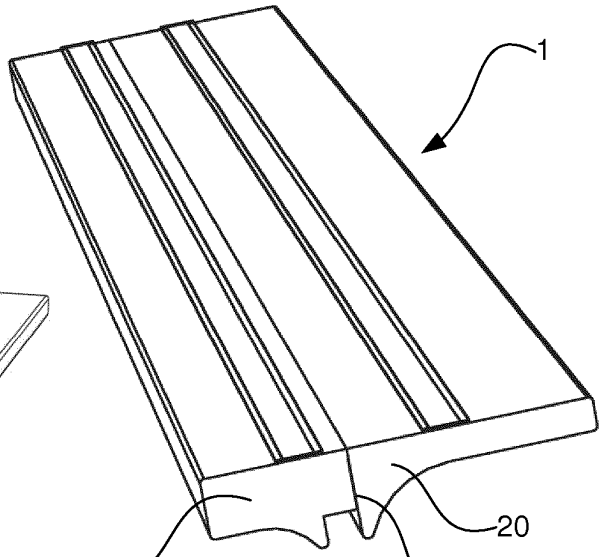


Fig. 2

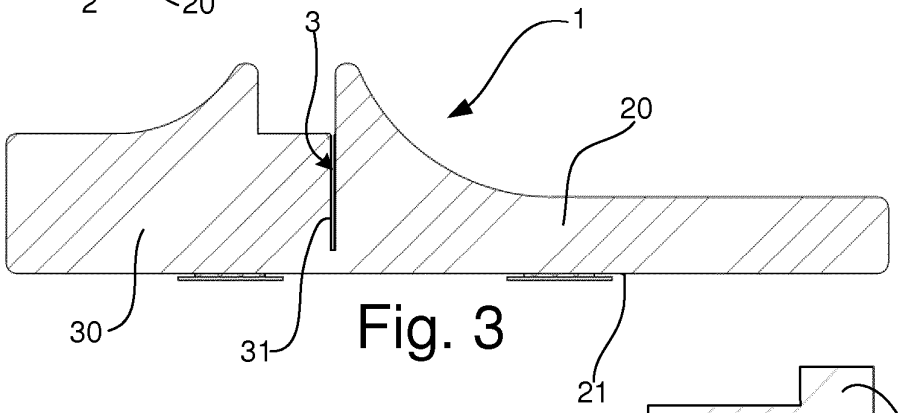


Fig. 3

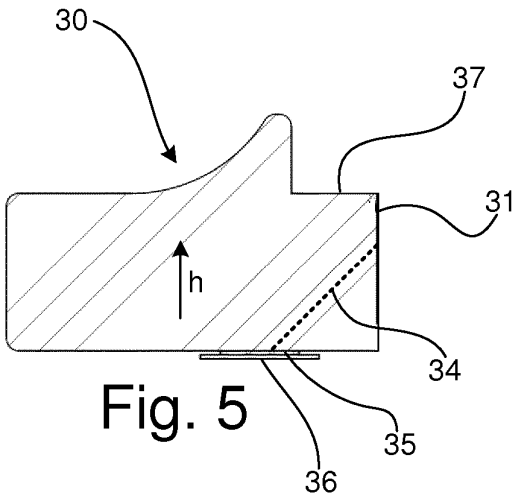


Fig. 5

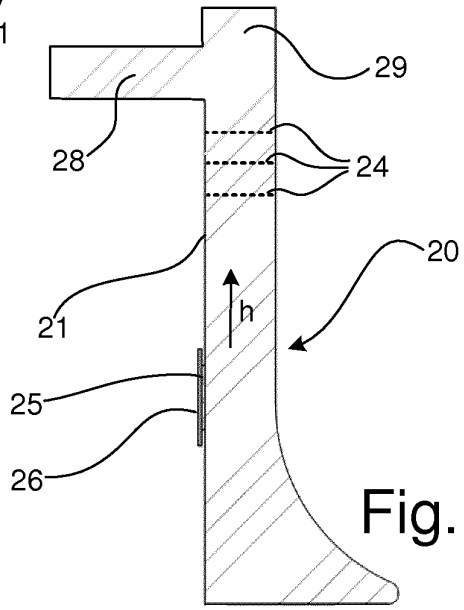


Fig. 4

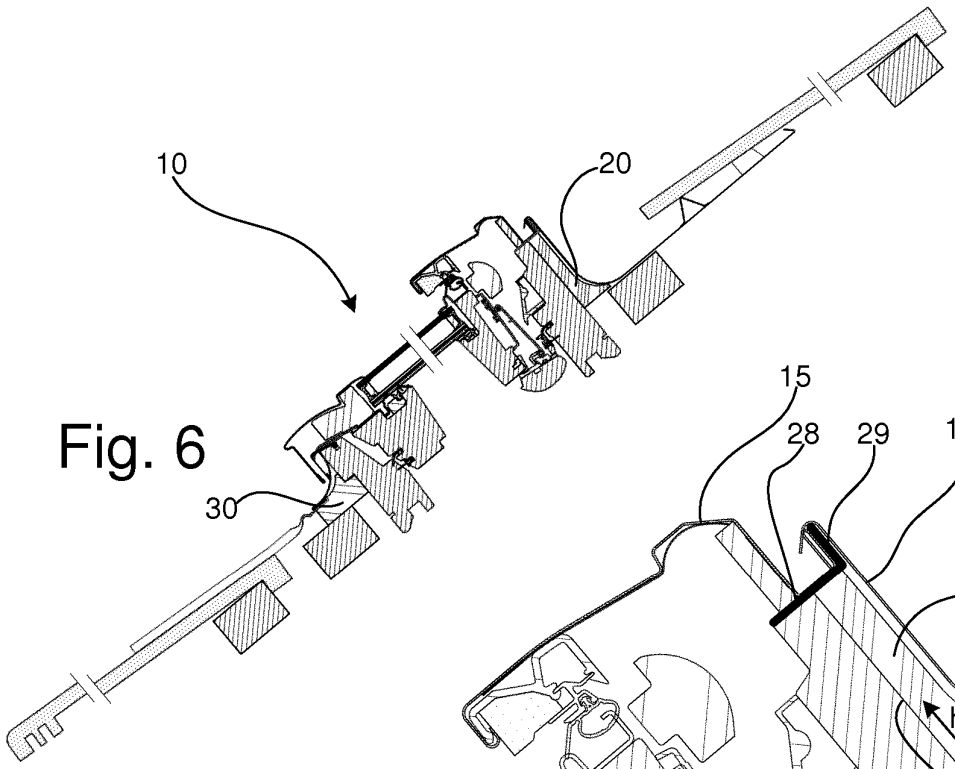


Fig. 6

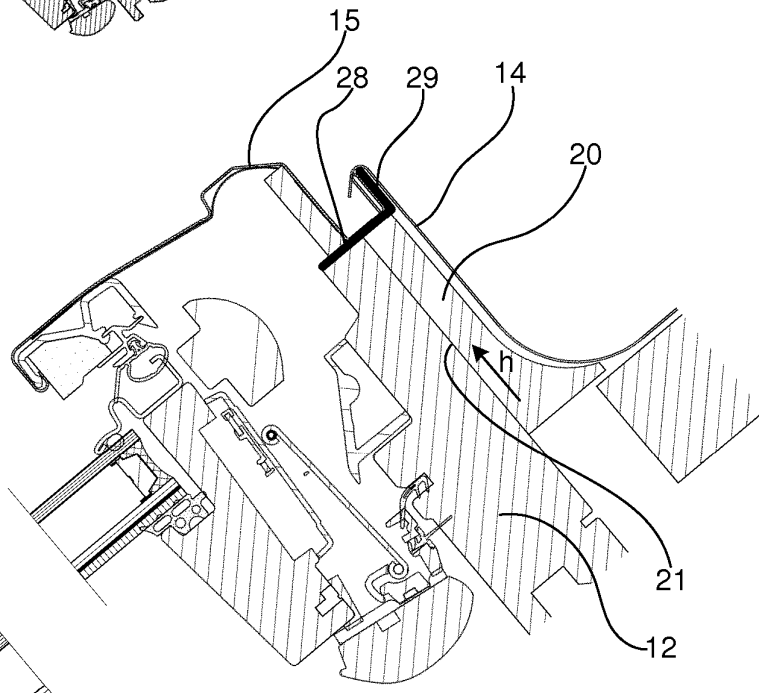


Fig. 7

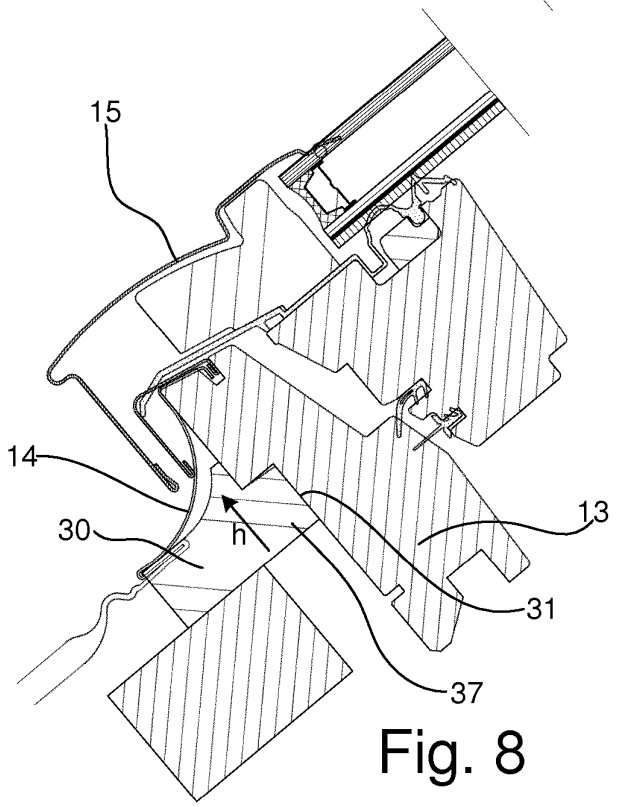


Fig. 8

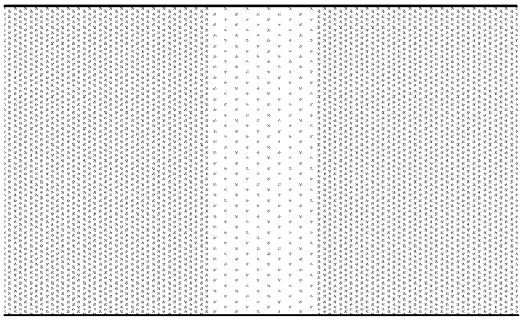


Fig. 9

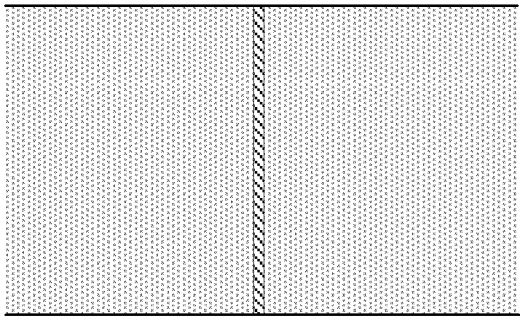


Fig. 10

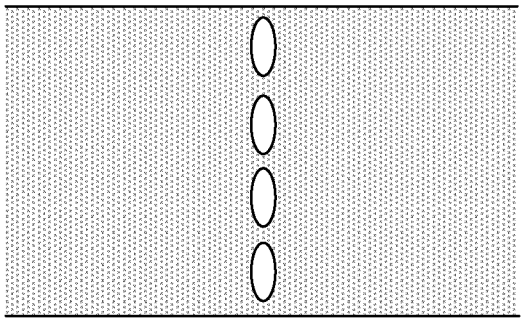


Fig. 11

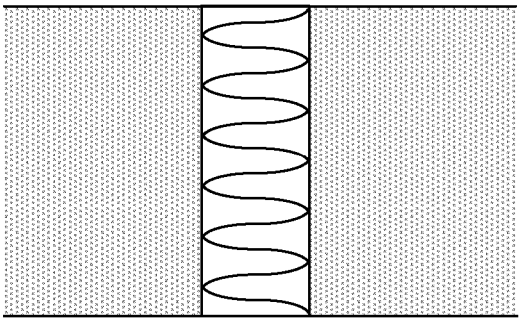


Fig. 12

REFERENCES CITED IN THE DESCRIPTION

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