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(54) **Arrangement for sealing and draining the overlapping area of lifting and sliding wings**

(57) The application concerns an elevating sliding window or door with a sealing system which permits a sealed closure in the crossing zone of the panes which form part of the elevating sliding window or door, by

means of a combination of sealing means in the longitudinal direction to the guides with sealing means in the direction transversal to the guides.

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Description

OBJECT OF THE INVENTION

[0001] The object of this invention is an elevating sliding window or door with a sealing system which consists of an enclosure which prevents the entry of wind, air water and/or noise, in particular in the crossing area of the panes which form the enclosure.

BACKGROUND TO THE INVENTION

[0002] Elevating sliding windows or doors are known in the state of the art, having at least two panes and which include guides over which the panes of the door or window slide when these panes have been elevated with respect to the resting or closed position of the panes when they are in a downward position.

[0003] In the open or elevated position, sliding of the pane along the guide cannot be prevented by any element which would cause friction between the pane and the guide. However in the resting or closed position the pane requires some means for sealing the closed panes preventing the entry of water, wind, air and/or noise.

[0004] It is therefore necessary to seek a compromise solution in which there will be means for sealing between the frame guide and the pane; and, while the pane is in open or elevated position for sliding along the frame guide, these means of sealing do not hinder the sliding of the pane.

[0005] The most appropriate zones for resolving the seal of a sliding door or window are the connection joints of the panes against the window or door frame, with this problem being accentuated in the area where the panes cross, particularly in the upper part and the lower part of this crossing zone, in which the panes make contact with the window or door frame.

[0006] In order to resolve the sealing of the connection joints of the panes against the frame, each of the panes of the frame is provided with a sealing joint along its perimeter, both on its external side (which is the side exposed to the elements, such as rain, wind or air and noise) and on its interior side (the part which corresponds to the interior of the room in a house, for example).

[0007] An example illustrating this configuration is the patent document EP1967682.

[0008] Therefore, the object of this invention is to obtain a sealed closure of the sliding door or window in the zone where the panes cross, or central zone, and in particular in the areas of this crossing of panes which are in correspondence with the upper and lower zones of the window or door frame.

DESCRIPTION OF THE INVENTION

[0009] This invention consists of an elevating sliding door or window with a sealing system in which the elevating sliding door or window comprises:

- at least two panes and a perimeter frame for each one of these, formed by two profiles parallel to each other and to the main surface of the pane and which supports the window pane.
- a window frame which is provided with two guides, one above and another below, for each of the at least two panes and along which those panes slide, with said guides being arranged both on the upper horizontal profile and the lower horizontal profile which forms said window frame.
- a lower and an upper channel formed in each one of the upper and lower horizontal profiles and confined within the guides.
- at least two crossing profiles corresponding to each of the panes formed by at least one vertical profile and two crossing covers in correspondence with said vertical profile situated in the upper and lower ends thereof, in such a way that said profile covers a free vertical edge formed by the two profiles which configure the frame of the pane, with this edge being visible when the panes are in closed position, so that the sealing system, is provided with first sealing means which seal in the longitudinal direction of the guides so that said first sealing means are arranged in :

a first groove arranged at an end of the crossing cover in correspondence with the guide and which form first deformable means which consist of an appendix formed by a support and at least two joints of deformable material and which is extended with respect to said crossing cover in order to be introduced into the interior of the channel formed by the guides;

and in a second groove, arranged at the end of the crossing cover in correspondence with the guide and which is formed by second deformable means, the shape of which corresponds to the form of the guide;

and because it is provided with second sealing means which seal in the transversal direction of the guides arranged in the channel formed by the guides, and which is formed by third deformable means, the length of which coincides with the distance separating the first deformable means when the panes are in a closed position.

[0010] Additionally, and in order to assist the functioning of the sealing system in the crossing zone of the panes in this invention, it is possible to provide a water evacuation system in the channel situated in the lower horizontal profile of the door or window frame, which is in contact with the external ambience. This system takes advantage of wind force in order to expel the water.

[0011] In this way a total seal of the sliding window or door is obtained in the crossing zone of the panes which make up said enclosure, and in particular, in the upper and lower zones of this crossing zone, thus resolving a problem of sealed closure of an elevating and sliding enclosure which has not been resolved until now.

[0012] The configuration details corresponding to dependent claims 2 to 16, are considered to be equally in-

cluded by reference in this description.

DESCRIPTION OF THE DRAWINGS

[0013] The present descriptive report is complemented by a set of plans, the figures of which illustrate the most significant details of the invention, but which are in no way restrictive.

[0014] Figure 1 shows a perspective view of the crossing zone formed by the overlapping of the two panes when they are in closed position.

[0015] Figure 2 shows a transversal section according to a horizontal axis of the crossing zone of the two panes.

[0016] Figure 3 shows a perspective view of a crossing cover.

[0017] Figure 4 shows a perspective view of a crossing cover, together with the first means of sealing in the longitudinal direction of the guide.

[0018] Figure 5 shows a transversal section according to a vertical axis of the crossing zone in the upper part of the window frame.

[0019] Figure 6 shows a transversal section according to a vertical axis of the lower channel which form lower guides with the second sealing means which seal in the transversal direction of the guides, mounted on said channel.

[0020] Figure 7 shows a perspective view of the upper part of the crossing zone with the first longitudinal sealing means and the second transversal sealing means in functioning position.

[0021] Figure 8 shows a perspective view of the lower part of the crossing zone with the first sealing means and the second means of sealing in functioning position and mounted on the lower part of the window frame.

[0022] Figure 9 shows a transversal section according to a vertical axis of the crossing zone in the lower part of the window frame in resting or closed position and in open or elevated position.

[0023] Figure 10 shows a perspective view of the water evacuation system situated in the lower channel zone which communicates with the outside of the room.

[0024] Figure 11 shows a transversal section according to a vertical axis of the lower channel of the window frame showing the circuit made by the wind in the evacuation system.

PREFERRED EMBODIMENT OF THE INVENTION

[0025] In the light of the aforementioned description, this invention refers to an elevating sliding window or door with a sealing system which permits a sealed closure in the crossing zones of the panes which form part of the elevating sliding window or door by means of a combination of some means of sealing in the longitudinal direction of the guides with sealing means in the transversal direction of the guides.

[0026] The crossing zone (12) is formed by the overlap of the two panes (1, 1') which form the enclosure in resting

or closed position, in this particular case the enclosure is an elevating sliding window, as may be seen from figure 1.

[0027] The arrow represents in a vertical direction, the ascending and descending movements of the panes (1, 1') for passing from a resting or closed position to an open or elevated position.

[0028] As may be seen from figure 1, the sliding and elevating window is formed by the following elements:

- at least two panes (1, 1') which may be formed by one or more panels as appropriate, in this case it is provided with two transparent panels.
- a perimeter frame (2, 2') which supports each of the panes (1, 1') and which also has an aesthetic function. This frame (2, 2') is in turn formed by two parallel profiles (2.1.1, 2.1.2) which may be made for example, from extruded aluminium or PVC, as may be seen in 2.
- a window frame (3) formed by various profiles, for example, extruded aluminium, and which in turn is provided with an upper horizontal zone (3.2) and a lower horizontal zone (3.1), which in turn may be formed by the connection of various profiles, where the guides are located (3.1.1, 3.1.1', 3.2.1 y 3.2.1'), an upper and a lower one for each pane (1, 1') making a total of four guides along which each pane (1, 1') slides above and below when these panes (1, 1') are in an open or elevated position. The sliding of the panes (1, 1') may be carried out by means of wheels (not represented here) which are present in the interior of the frame (2, 2') of each of the panes (1, 1').
- Two channels (3.1.2 and 3.2.2) one below and another above, situated on each of the upper and lower horizontal zones (3.1 and 3.2) of the window frame (3) and which are defined by the guides (3.1.1, 3.1.1', 3.2.1 y 3.2.1'). Said channels have a transversal section which is essentially U-shaped.
- at least two crossing profiles corresponding to each of the panes (1, 1') formed by at least one vertical profile (4.1, 4.1') and two crossing covers (4.2, 4.2') situated at the upper and lower ends of each of the crossing profiles (4.1, 4.1') so that said crossing profiles (4.1, 4.1') cover the free vertical cantos formed by the vertical profiles (2.1, 2.1') in the crossing zone (12) of the frame (2, 2') of each pane (1, 1'). These vertical cantos of the frame (2, 2') of the pane (1, 1') are visually accessible when the pane (1, 1') is in a resting or closed position.

[0029] The crossing panes (4.1, 4.1') are formed by the connection of two profiles, a first crossing profile (4.1.1, 4.1.1') preferably made from aluminium, and a second crossing profile (4.1.2, 4.1.2') preferably made from plastic material.

[0030] The first crossing profile (4.1.1, 4.1.1') has a configuration essentially perpendicular to the main surface of the pane (1, 1') and the second profile (4.1.2,

4.1.2') has a configuration essentially parallel to the main surface of the pane (1, 1').

[0031] The connection of these two profiles (4.1.1, 4.1.1', 4.1.2, 4.1.2') is made preferably by means of rapid attachment and in particular by means of clipping. In turn, these profiles are also joined and preferably by means of clipping to the frame (2, 2') of the pane (1, 1') and in particular to the vertical profiles (2.1, 2.1') which form said frame (2, 2') in the crossing zone (12). In this way the configuration of the vertical profiles (2.1, 2.1') of said frame (2, 2'), closes vertically and externally, considering externally to be the vertical face of the vertical profiles (2.1, 2.1') opposite the face where the panel or the panels which form each of the panes (1, 1') are situated.

[0032] The first crossing profile (4.1.1, 4.1.1') has an essentially tubular configuration, so that the profile acquires a more rigid configuration with respect to the profiles the configuration of which is a simple pane with a curved configuration.

[0033] As the second crossing profile (4.1.2, 4.1.2') is parallel to the main surface of the pane (1, 1') it is in correspondence with the frame (2, 2') of the opposite pane (1, 1') and in particular with the vertical profiles (2.1, 2.1') of the frame (2, 2') which are in the crossing zone (12). We consider the opposite pane to be the pane (1, 1') situated in front of the pane (1, 1') to which the second crossing profile (4.1.2, 4.1.2') is joined.

[0034] This second crossing profile (4.1.2, 4.1.2') incorporates, preferably in an integrated manner, a double rail (4.1.2.1, 4.1.2.1') vertically and along its complete length in order to house bands (9, 9') of felt so that said felt bands (9, 9') are in contact with the frame (2, 2') of the opposite pane (1, 1') when the panes are located in a resting or closed position.

[0035] In addition to the double rail (4.1.2.1, 4.1.2.1'), the second crossing profile (4.1.2, 4.1.2') also incorporates in integrated manner, at least one thermal insulation chamber (4.1.2.2, 4.1.2.2') and preferably two chambers, the function of which is to break the thermal bridge in order to reduce the loss of heat between panes (1, 1'). This function carried out by the thermal insulation chamber (4.1.2.2, 4.1.2.2') is reinforced by the incorporation of plastic profiles (2.1.1.1, 2.1.1.2) through clipping of the vertical profiles (2.1, 2.1') in the internal cavity which forms the frame of the pane (1, 1').

[0036] Finally, the second crossing profile (4.1.2, 4.1.2') incorporates, preferably in an integrated manner, a housing (4.1.2.3, 4.1.2.3') vertically and along its complete length, in the form of a channel for housing a sealing joint (10, 10') which is mounted on said channel.

[0037] The crossing covers (4.2, 4.2') extend above and below, the functions associated with the crossing profiles (4.1, 4.1') and in particular to the double rail (4.1.2.1, 4.1.2.1') for housing the bands of felt (9, 9'), to the at least one thermal insulation chamber and preferably two insulation chambers (4.1.2.2, 4.1.2.2') and to the housing (4.1.2.3, 4.1.2.3') in the form of a channel designed to house a sealing joint (10, 10') which is mount-

ed on said channel in such a way that the crossing profile is given continuity (4.1, 4.1') both in the upper end and in the lower end of the crossing profile (4.1, 4.1').

[0038] These covers, are preferably made from plastic material and incorporate other housings, in addition to those described, for incorporating means which ensure sealing in this crossing zone (12) which is so complicated in respect of this function.

[0039] Firstly, and as mentioned above, the crossing covers (4.2, 4.2') provide the crossing profile (4.1, 4.1') with continuity and in particular the configurations formed in the second crossing profile (4.1.2, 4.1.2') as indicated in figure 3.

[0040] In order to implement this continuity, the crossing covers (4.2, 4.2') are provided with various housings, in particular, a double rail (4.2.3, 4.2.3') arranged vertically and along its complete length, for housing the bands (9) of felt, at least one thermal insulation chamber (4.2.4, 4.2.4') and in particular two chambers, as may be seen in figure 3. Finally and as continuity of the second crossing profile (4.1.2, 4.1.2'), it is provided with a vertical housing and along its complete length in the form of a channel designed to house a sealing joint (10).

[0041] Normally the bands (9) of felt and the sealing joint (10) housed in the second crossing profile (4.1.2, 4.1.2') are extended in a continuous manner on the housings provided in the crossing covers (4.2, 4.2') comprising a single element.

[0042] Secondly, these crossing covers (4.2, 4.2') incorporate two housings (4.2.1, 4.2.3) designed to house some first means of sealing which will ensure sealing in the crossing zone (12) in a longitudinal direction with respect to the guides (3.1.1, 3.1.1', 3.2.1 y 3.2.1').

[0043] The first housing (4.2.1) of the crossing cover (4.2) consists of a groove with a rectangular section designed to house the first deformable means (5) with an essentially U-shaped configuration.

[0044] As may be seen in figure 4, said first deformable means (5) comprise an appendix formed by a base body (5.1) of rigid plastic material with an L-shaped configuration and by at least one joint (5.2) and preferably two joints (5.2) of deformable material (which is why they are termed deformable means) with elastic deformation such as for example, foam or elastomer. Said joints (5.2) of deformable material have a U-shaped configuration. These first deformable means, are prolonged in respect of the crossing cover (4.2, 4.2') in order to be inserted in the channel (3.1.2, 3.2.2) formed by the guides (3.1.1, 3.1.1', 3.2.1, 3.2.1').

[0045] These joints (5.2) of deformable material are solid with said base body (5.1) and are extended above on the same, being extended on one of its ends by means of a vertical extension (5.2.1) in order to form a U-shaped configuration. In addition these joints (5.2) project with respect to said base body (5.1) in order to be in contact with the horizontal channel (3.2.2) which is formed in the window frame (3).

[0046] A vertical section (5.1.1) which forms the base

body of the first deformable means (5) on which the sealing joints (5.2) are not arranged, may be inserted in the interior of the cavity forming the first housing (4.2.1) of the crossing cover (4.2), so that the position of the first deformable means (5) is maintained as fixed with respect to said crossing cover (4.2).

[0047] The crossing cover is provided with a second housing (4.2.2) which forms a cavity which copies the form of the guide (3.2.1) along which the pane slides (1). In this second housing (4.2.2) second deformable means (6) are inserted which comprise an element of deformable material which copies the form of the guide (3.2.1) as they are in direct contact therewith.

[0048] These second deformable means (6) are formed from a single piece body of deformable material with this material being for example, foam or elastomer.

[0049] Both the first deformable means (5) and second deformable means (6) are inserted through pressure in the interior of the cavities corresponding to the crossing cover (4.2). In order to insert these deformable means (5, 6) a vertical movement is made as may be seen in figure 4.

[0050] A configuration of one of the crossing covers has been described, the configuration of the remaining covers, consisting of two for each crossing profile will be exactly the same, except that in the upper covers the housings designed to house the first sealing means are situated in the upper part of the covers in correspondence with the upper channel, and in the lower covers the housings are situated in the lower part of the crossing covers in correspondence with the lower channel.

[0051] The functioning of these first and second deformable means is explained in detail below and may be noted in the vertical transversal section of the crossing zone (12) in figure 5. For this purpose, reference is made to the upper part of the crossing zone (12) in the lower part, functioning would be the same.

[0052] In the first place the second deformable means (6) of each of the panes (1, 1') fully embraces the guides (3.2.1, 3.2.1') in this way preventing the passage of air and water in the longitudinal direction of these guides (3.2.1, 3.2.1').

[0053] Secondly, the first deformable means (5), and in particular the joints (5.2) which form part of said means, completely cover the interior of the horizontal channel (3.2.2) in the same way preventing the passage of air and water in the longitudinal direction thereof.

[0054] In this way it is possible to completely seal the possible entries of atmospheric agents in a longitudinal direction of both the guides (3.2.1, 3.2.1'), and the channel (3.2.2).

[0055] Having resolved the sealing in a longitudinal direction, the problem remains of sealing in the direction transversal to the guides (3.2.1, 3.2.1').

[0056] For this purpose, and as may be seen in figure 6, third deformable means (8) or windbreaks are provided, formed by a main support body (7.1) with a parallel-opiped prism form from which three protuberances

emerge, two lateral protuberances (7.2) and a central protuberance (7.3). These protuberances (7.2, 7.3) extend throughout its complete length.

[0057] The lateral protuberances (7.2) are formed by two sections, in such a way that the first section emerges vertically with respect to the main support body (7.1) and the second section is extended towards the central protuberance (7.3) forming an acute angle with respect to the first section of the lateral protuberance (7.2).

[0058] The central protuberance (7.3) is formed by a single section which emerges from the main support body (7.1) the form of which, in the end farthest from the main support (7.1), is rounded.

[0059] Both the protuberances (7.2, 7.3) and the main support body (7.1) constitute a part made from deformable material, preferably elastomer or foam.

[0060] These three deformable means (7) act in direct contact with both the horizontal channel (3.2.1, 3.2.2) formed by the guides (3.1.1, 3.1.1', 3.2.1, 3.2.1') in the upper zone (3.2) and in the lower zone (3.1) of the window frame (3), and with the first deformable means (5) and in particular with the joints (5.2) which form a part thereof.

[0061] In order to ensure that the closure is completely sealed, the length, (in longitudinal direction with respect to the guides) of these third deformable means (7) is equal to the distance which separates the first deformable means (5) of one of the upper crossing covers (4.2) of the first deformable means (5) of the other upper crossing cover (4.2') when the panes (1, 1') are in a closed position (figure 7).

[0062] The fact that there is no clearance between the first deformable means (5) and the third deformable means (7) causes a problem when centring these third deformable means (7).

[0063] In order to resolve this problem, the third deformable means (7) are mounted on a position adjustment base (8) as may be seen in figure 7. This position adjustment base (8) is fixed through a mounting hole (8.1) to the channel (3.2.1, 3.2.2) of the window frame (3) in such a way that it permits displacement in the direction longitudinal to said channel (3.2.1, 3.2.2).

[0064] Having mounted the third deformable means (7) or windbreaks on the channel (3.2.1, 3.2.2) through the position adjustment base (8), each of the panes (1, 1') is moved towards the closing position (figure 8) and it is in this approaching movement that the first deformable means (5), by approaching those corresponding to one of the panes (1) to those of the other pane (1') that the third deformable means (7) are pushed in the longitudinal direction of the channel (3.2.1, 3.2.2), causing these third deformable means (7) or windbreaks to centre themselves so that finally the closed position of the panes (1, 1') is achieved.

[0065] In this way a completely sealed closure has been achieved in the crossing zone (12) both in the longitudinal and transversal directions with respect to the guides (3.1.1, 3.1.1', 3.2.1 y 3.2.1') or channel (3.2.1, 3.2.2) formed by these guides (3.1.1, 3.1.1', 3.2.1 y

3.2.1').

[0066] Additionally, the third deformable means (7) or windbreaks constitute a further sealing element in the direction longitudinal to the channel (3.2.1, 3.2.2) as they extend between the first deformable means (5) and their form adapts to that of the channel (3.2.1, 3.2.2).

[0067] Another sealed closure made by the third deformable means (7) and which acts both longitudinally and transversal to the channel (3.2.1, 3.2.2) may be seen in the transversal section of the lower part of the crossing zone (12) of figure 9.

[0068] In order to understand the functioning of the third deformable means (7) which ensure sealing at this point, firstly the panes (1, 1') are shown in open or elevated position and secondly in resting or closed position.

[0069] In the first open or elevated position, it is possible to see that the protuberances (7.2, 7.3) which emerge from the main body supporting (7.1) the third deformable means (7) are not in contact with the panes (1, 1') which permits said panes to slide freely along the guides (3.1.1, 3.1.1').

[0070] However, in the second resting or closed position it may be seen how the panes (1, 1') deform the protuberances (7.2, 7.3) so that the second section of lateral protuberances (7.2) deforms approaching the central protuberance (7.3) and the central protuberance (7.3) is inserted between the two panes (1, 1'). As a result it is impossible for any air to pass between the two panes (1, 1').

[0071] Finally, and as a complement to the means of sealing for the crossing zone (12) described above, a system is also described for the evacuation of any water which might accumulate in the lower channel (3.1.2) and in particular, in the part of the channel which is in contact with the outside and which facilitates evacuation of water in order to ensure that the channel (3.1.2) does not flood over the means of sealing provided in the crossing zone (12), and that said means do not lose their functionality.

[0072] The proposed evacuation, as may be seen in figures 10 and 11, is based on the functioning of a turbo siphon that is it is based on making use of wind pressure in order to evacuate the water. This system also combines with a classic water evacuation system based on gravitational force. Depending on the climatic agents involved, either system will be effective.

[0073] The system consists of two lateral orifices (11.1) situated in the lower part of the channel (3.1.2) either directly or on an independent plate which is mounted on said channel (3.1.2). Said orifices (11.1) are communicated through a third central orifice (11.2, the height of which is lower than that of the orifices (11.1) that it communicates.

[0074] The evacuation system is completed with a fourth orifice (11.3) situated above and between the lateral orifices (11.1).

[0075] The evacuation of water by traditional means based on the force of gravity, is made through the lateral orifices (11.1). This evacuation system is adequate when

the wind force does not exceed limits in which the wind would block these lateral orifices (11.1).

[0076] In the event that the wind exceeds these limits, the wind pressure is used, in that when it enters the upper orifice (11.3), this wind makes a brusque turn, changing direction, and causes water, pushed by this wind, to evacuate through the lower central orifice (11.2). Figure 11 shows the circuit made by the wind in the turbo siphon.

[0077] The essential nature of this invention is not altered in any way by variations in materials, form, shape and arrangement of the component elements which are described in a manner which is in no way restrictive but which is sufficient to for an expert to proceed to its reproduction.

Claims

1. Elevating door or window with a sealing system in which the sliding door or window comprises:

- at least two panes (1, 1') and a perimeter frame (2, 2') for each of these, formed by two profiles parallel to each other and the main surface of the pane which supports the window pane
- a window frame (3) which is provided with two guides ((3.1.1, 3.1.1', 3.2.1, 3.2.1')) for each of at least two panes (1, 1') and through which said panes slide (1, 1'), with said guides (3.1.1, 3.1.1', 3.2.1, 3.2.1') arranged both in an upper horizontal zone (3.2) and in a lower horizontal zone (3.1) formed by said window frame (3)
- a lower channel (3.1.2) and an upper channel (3.2.2) formed in each of the upper and lower horizontal zones (3.1, 3.2) and defined by the guides (3.1.1, 3.1.1', 3.2.1, 3.2.1'),
- a crossing profile (4) for each of the panes (1, 1') formed by at least one vertical profile (4.1, 4.1') and two crossing covers (4.2, 4.2') situated at the upper and lower ends of the vertical profile (4.1, 4.1'), in such a way that said crossing profile (4) covers a free vertical edge which forms the two vertical profiles (2.1.1, 2.1.1', 2.1.2, 2.1.2') of the crossing zone (12) which form the frame (2, 2') of the pane (1, 1'), with this edge being visible when the panes (1, 1') are in a closed position.

Characterised in that:

It is provided with first means of sealing (5,6) which seal in the longitudinal direction of the guides (3.1.1, 3.1.1', 3.2.1, 3.2.1') in such a way that said first means of sealing (5,6) are formed by first deformable means (5) and second deformable means (6) in such a way that:

The first deformable means (5) are provided with a first housing (4.2.1) arranged at the end of the

- crossing cover (4.2, 4.2') in correspondence with the guide (3.1.1, 3.1.1', 3.2.1, 3.2.1') and consist of an appendix formed by a base body (5.1) and at least one joint (5.2) made of deformable material, so that these first deformable means (5), are extended with respect to said crossing cover (4.2, 4.2') in order to be inserted inside the channel (3.1.2, 3.2.2) formed by the guides (3.1.1, 3.1.1', 3.2.1, 3.2.1'); And the second deformable means (6) are arranged in a second housing (4.2.2) arranged at one end of the crossing cover (4.2, 4.2') in correspondence with the guide (3.1.1, 3.1.1', 3.2.1, 3.2.1') and consists of an element made from deformable material the form of which corresponds to the form of the guide (3.1.1, 3.1.1', 3.2.1, 3.2.1'), And because it is provided with second sealing means (7) for sealing in the transversal direction of the guides (3.1.1, 3.1.1', 3.2.1, 3.2.1') arranged in the channel (3.1.2, 3.2.2) formed by the guides (3.1.1, 3.1.1', 3.2.1, 3.2.1') and which are formed by third deformable means (7) the length of which coincides with the distance separating said deformable means (5) when the panes (1, 1') are in a closed position.
2. Elevating door or window with a sealing system according to claim 1 **characterised in that** the first deformable means (5) have a U-shaped configuration so that a vertical section (5.1.1) which forms the base body (5.1) of the first deformable means (5) on which the sealing joints are not arranged (5.2), is insertable inside the cavity formed by the first housing (4.2.1) of the crossing cover (4.2), so that the position of the first deformable means (5) is maintained in a fixed position with respect to said crossing cover (4.2) and because at least one joint of (5.2) deformable material is solid to said base body (5.1) and is extended above thereon (5.1) extending at one of its ends by means of a vertical extension (5.2.1) in order to form a U-shaped configuration.
 3. Elevating sliding door or window with a sealing system according to claim 1, **characterised in that** the third deformable means (7) are formed by a main support body (7.1) with a parallelepipedic shape from which three protuberances emerge, two lateral protuberances (7.2) and a central protuberance (7.3) which extend along its whole length.
 4. Elevating sliding door or window with a sealing system according to claim 3 **characterised in that** the lateral protuberances (7.2) are formed by two sections, in such a way that the first section emerges vertically with respect to the main support body (7.1) and the second section is extended towards the central protuberance (7.3) forming an acute angle with respect to the first section of the lateral protuberance (7.2) and because these lateral protuberances (7.2) are deformed by pressure exercised by the frame (2.1, 2.1') of the pane (1, 1') when it is in resting or closed position.
 5. Elevating sliding door or window with a sealing system according to claim 3, **characterised in that** the central protuberance (7.3) is situated in correspondence with the zone situated between the two panes (1, 1') and is deformed by the pressure exercised by the frame (2.1, 2.1') when the panes (1, 1') are situated in resting or closed position.
 6. Elevating sliding door or window with a sealing system according to claim 1 **characterised in that** the second sealing means (7) are provided with a position regulating base (8) on which said second sealing means (7) are mounted in order to facilitate adjustment of the position of the second sealing means (7) in the longitudinal direction with respect to the guides (3.1.1, 3.1.1', 3.2.1, 3.2.1').
 7. Elevating sliding door or window with a sealing system according to claim 1, **characterised in that** the crossing profile (4) is formed by two vertical profiles (4.1.2, 4.1.1, 4.1.2', 4.1.1') clipped together, a first crossing profile (4.1.1, 4.1.1') with a configuration which is essentially perpendicular to the main surface of the pane and a second crossing profile (4.1.2, 4.1.2') with a configuration which is essentially parallel to the main surface of the pane (1, 1').
 8. Elevating sliding door or window with a sealing system according to claim 7 **characterised in that** the first crossing profile (4.1.1, 4.1.1') closes the frame configuration (2, 2') of the pane (1, 1') externally and vertically using rapid attachment means.
 9. Elevating sliding door or window with a sealing system according to claim 8 **characterised in that** the first crossing profile (4.1.1, 4.1.1') has a tubular configuration.
 10. Elevating sliding door or window with a sealing system according to claim 7, **characterised in that** the second crossing profile (4.1.2, 4.1.2') is situated in correspondence with the frame (2, 2') of the opposite pane (1, 1'), that is, that which is in front of the pane (1, 1') to which said second crossing profile (4.1.2, 4.1.2') is joined.
 11. Elevating sliding door or window with a sealing system according to claim 10, **characterised in that** the second crossing profile (4.1.2, 4.1.2') is provided with a double rail (4.1.2.1, 4.1.2.1') for housing the felt bands (9, 9') so that said felt bands (9, 9') are in contact with the frame (2, 2') of the opposite pane

(1, 1') when the panes (1, 1') are in a resting or closed position.

12. Elevating sliding door or window with a sealing system according to claim 10 **characterised in that** the second crossing profile (4.1.2, 4.1.2') is provided with at least one thermal insulation chamber (4.1.2.2, 4.1.2.2'). 5
13. Elevating sliding door or window with a sealing system according to claim 10 **characterised in that** the second crossing profile (4.1.2, 4.1.2') is provided with a housing (4.1.2.3, 4.1.2.3') arranged vertically and along its length, in the form of a channel designed to house a sealing joint (10, 10') which is mounted on said channel. 10 15
14. Elevating sliding door or window with a sealing system according to claims 11, 12 and/or 13 **characterised in that** the crossing cover (4.2, 4.2') is provided with a double (4.2.3, 4.2.3') rail of felt in correspondence with the double rail of felt (4.1.2.1, 4.1.2.1') of the second crossing profile (4.1.2, 4.1.2'), with at least one insulation chamber (4.2.4, 4.2.4') in correspondence with that of at least one insulation chamber (4.1.2.2, 4.1.2.2') of the second crossing profile (4.1.2, 4.1.2') and/or of a housing (4.2.5, 4.2.5') in channel form in correspondence with the housing (4.1.2.3, 4.1.2.3') in channel form of the second crossing profile (4.1.2, 4.1.2') and which is designed to house a sealing joint (10) which is mounted on said channel in such a way that it gives continuity to the vertical profile (4.1, 4.1') of the crossing profile (4, 4'), both at the upper and lower end of the vertical profile (4.1, 4.1') through the crossing covers (4.2, 4.2'). 20 25 30 35
15. Elevating sliding door or window with a sealing system according to claim 1, **characterised in that** the vertical profiles (2.1, 2.1') which form the frame (2, 2') of the pane (1, 1') form an interior cavity where two clipped vertical profiles (2.1.1.1, 2.1.1.1', 2.1.2.1, 2.1.2.1') are situated, forming at least one thermal insulation chamber. 40
16. Elevating sliding door or window with a sealing system according to claim 1, **characterised in that** the zone of the lower channel (3.1.2) formed by the lower guides in the lower horizontal zone (3.1) of the window frame (3) which is in contact with the outside, is provided with a water evacuation system (11) formed by at least one lower orifice (11.2) and at least an upper orifice (11.3) in such a way that the wind accesses the interior of the channel (3.2.1) through said upper orifice (11.3) and said wind subsequently makes a brusque turn, changing direction and causing the evacuation of water which is pushed by this wind through the lower orifice (11.2). 45 50 55

Amended claims in accordance with Rule 137(2) EPC.

1. Elevating sliding door or window with a sealing system in which the door or window comprises
- at least two panes (1, 1') and a perimeter frame (2, 2') for each of these, formed by two profiles parallel to each other and the main surface of the pane and which supports the window pane
 - a window frame (3) which is provided with two guides ((3.1.1, 3.1.1', 3.2.1, 3.) for each of the at least two panes (1, 1') and along which said panes slide (1, 1'), with said guides (3.1.1, 3.1.1', 3.2.1, 3.) arranged both in an upper horizontal zone (3.2) and in a lower horizontal zone (3.1) formed by said window frame (3)
 - a lower channel (3.1.2) and an upper channel (3.2.2) formed in each of the upper and lower horizontal zones (3.1, 3.2) and defined by the guides (3.1.1, 3.1.1', 3.2.1, 3.),
 - a crossing profile (4) for each of the panes (1, 1') formed by at least one vertical profile (4.1,) and two crossing covers (4.2, 4.2') situated at the upper and lower ends of the vertical profile (4.1,), in such a way that said crossing profile (4) covers a free vertical edge formed by the two vertical profiles (2.1.1, 2.1.1', 2.1.2, 2.1.2') of the crossing zone (12) which form the perimeter frame (2, 2') of the pane (1, 1'), with this edge being visible when the panes (1, 1') are in a closed position.

Characterised in that:

It is provided with

- first means of sealing (5,6) which seal in the longitudinal direction of the guides (3.1.1, 3.1.1', 3.2.1, 3.) in such a way that said first means of sealing (5,6) are formed by first deformable means (5) and second deformable means (6) in such a way that:

The first deformable means (5) are arranged in a first housing (4.2.1) arranged at the end of the crossing cover (4.2, 4.2') in correspondence with the guide (3.1.1, 3.1.1', 3.2.1, 3.) and consist of an appendix formed by a base body (5.1) and at least one joint (5.2) made of deformable material, so that these first deformable means (5), are extended with respect to said crossing cover (4.2, 4.2') in order to be inserted inside the channel (3.1.2, 3.2.2) formed by the guides (3.1.1, 3.1.1', 3.2.1, 3.);

And the second deformable means (6) are arranged in a second housing (4.2.2) arranged at one end of the crossing cover (4.2, 4.2') in cor-

respondence with the guide (3.1.1, 3.1.1', 3.2.1, 3.) and consists of an element made from deformable material the form of which corresponds to the form of the guide (3.1.1, 3.1.1', 3.2.1, 3.),

- second means (7) of sealing for sealing in the transversal direction of the guides (3.1.1, 3.1.1', 3.2.1, 3.) arranged in the channel (3.1.2, 3.2.2) formed by the guides (3.1.1, 3.1.1', 3.2.1, 3.) and which are formed by third deformable means (7) the length of which coincides with the distance separating said first deformable means (5) when the panes (1, 1') are in a closed position.

2. Elevating door or window with a sealing system according to claim 1 **characterised in that** the first deformable means (5) have a U-shaped configuration so that a vertical section (5.1.1) which forms the base body (5.1) of the first deformable means (5) on which the sealing joints are not arranged (5.2), is insertable inside the cavity formed by the first housing (4.2.1) of the crossing cover (4.2), so that the position of the first deformable means (5) is maintained in a fixed position with respect to said crossing cover (4.2) and because at least one joint of (5.2) deformable material is solid to said base body (5.1) and is extended above thereon (5.1) extending at one of its ends by means of a vertical extension (5.2.1) in order to form a U-shaped configuration.

3. Elevating sliding door or window with a sealing system according to claim 1, **characterised in that** the third deformable means (7) are formed by a main support body (7.1) with a parallelepipedic shape from which three protuberances emerge, two lateral protuberances (7.2) and a central protuberance (7.3) which extend along its whole length.

4. Elevating sliding door or window with a sealing system according to claim 3 **characterised in that** the lateral protuberances (7.2) are formed by two sections, in such a way that the first section emerges vertically with respect to the main support body (7.1) and the second section is extended towards the central protuberance (7.3) forming an acute angle with respect to the first section of the lateral protuberance (7.2) and because these lateral protuberances (7.2) are deformed by pressure exercised by the frame (2.1,) of the pane (1, 1') when it is in resting or closed position.

5. Elevating sliding door or window with a sealing system according to claim 3, **characterised in that** the central protuberance (7.3) is situated in correspondence with the zone situated between the two panes (1, 1') and is deformed by the pressure exer-

cised by the frame (2.1,) when the panes (1, 1') are situated in resting or closed position.

6. Elevating sliding door or window with a sealing system according to claim 1 **characterised in that** the second sealing means (7) are provided with a position regulating base (8) on which said second sealing means (7) are mounted in order to facilitate adjustment of the position of the second sealing means (7) in the longitudinal direction with respect to the guides (3.1.1, 3.1.1', 3.2.1, 3.).

7. Elevating sliding door or window with a sealing system according to claim 1, **characterised in that** the crossing profile (4) is formed by two vertical profiles (4.1.2, 4.1.1, 4.1.2', 4.1.1') clipped together, a first crossing profile (4.1.1, 4.1.1') with a configuration which is essentially perpendicular to the main surface of the pane and a second crossing profile (4.1.2, 4.1.2') with a configuration which is essentially parallel to the main surface of the pane (1, 1').

8. Elevating sliding door or window with a sealing system according to claim 7 **characterised in that** the first crossing profile (4.1.1, 4.1.1') closes the frame configuration (2, 2') of the pane (1, 1') externally and vertically using rapid attachment means.

9. Elevating sliding door or window with a sealing system according to claim 8 **characterised in that** the first crossing profile (4.1.1, 4.1.1') has a tubular configuration.

10. Elevating sliding door or window with a sealing system according to claim 7, **characterised in that** the second crossing profile (4.1.2, 4.1.2') is situated in correspondence with the frame (2, 2') of the opposite pane (1, 1'), that is, that which is in front of the pane (1, 1') to which said second crossing profile (4.1.2, 4.1.2') is joined.

11. Elevating sliding door or window with a sealing system according to claim 10, **characterised in that** the second crossing profile (4.1.2, 4.1.2') is provided with a double rail (4.1.2.1, 4.1.) for housing the felt bands (9,) so that said felt bands (9,) are in contact with the frame (2, 2') of the opposite pane (1, 1') when the panes (1, 1') are in a resting or closed position.

12. Elevating sliding door or window with a sealing system according to claim 10 **characterised in that** the second crossing profile (4.1.2, 4.1.2') is provided with at least one thermal insulation chamber (4.1.2.2, 4.1.2.2').

13. Elevating sliding door or window with a sealing system according to claim 10 **characterised in that**

the second crossing profile (4.1.2, 4.1.2') is provided with a housing (4.1.2.3,) arranged vertically and along its length, in the form of a channel designed to house a sealing joint (10,) which is mounted on said channel.

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14. Elevating sliding door or window with a sealing system according to claims 11, 12 and/or 13 **characterised in that** the crossing cover (4.2, 4.2') is provided with a double (4.2.3, 4.2.3') rail of felt in correspondence with the double rail of felt (4.1.2.1, 4.1.) of the second crossing profile (4.1.2, 4.1.2'), with at least one insulation chamber (4.2.4,) in correspondence with that of at least one insulation chamber (4.1.2.2, 4.1.2.2') of the second crossing profile (4.1.2, 4.1.2') and/or of a housing (4.2.5, 4.2.5') in channel form in correspondence with the housing (4.1.2.3,) in channel form of the second crossing profile (4.1.2, 4.1.2') and which is designed to house a sealing joint (10) which is mounted on said channel in such a way that it gives continuity to the vertical profile (4.1,) of the crossing profile (4, 4'), both at the upper and lower end of the vertical profile (4.1,) through the crossing covers (4.2, 4.2').

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15. Elevating sliding door or window with a sealing system according to claim 1, **characterised in that** the vertical profiles (2.1,) which form the frame (2, 2') of the pane (1, 1') form an interior cavity where two clipped vertical profiles (2.1.1.1, 2.1.1.1', 2.1.2.1, 2.1.) are situated, forming at least one thermal insulation chamber.

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16. Elevating sliding door or window with a sealing system according to claim 1, **characterised in that** the zone of the lower channel (3.1.2) formed by the lower guides in the lower horizontal zone (3.1) of the window frame (3) which is in contact with the outside, is provided with a water evacuation system (11) formed by at least one lower orifice (11.2) and at least an upper orifice (11.3) in such a way that the wind accesses the interior of the channel (3.2.1) through said upper orifice (11.3) and said wind subsequently makes a brusque turn, changing direction and causing the evacuation of water which is pushed by this wind through the lower orifice (11.2).

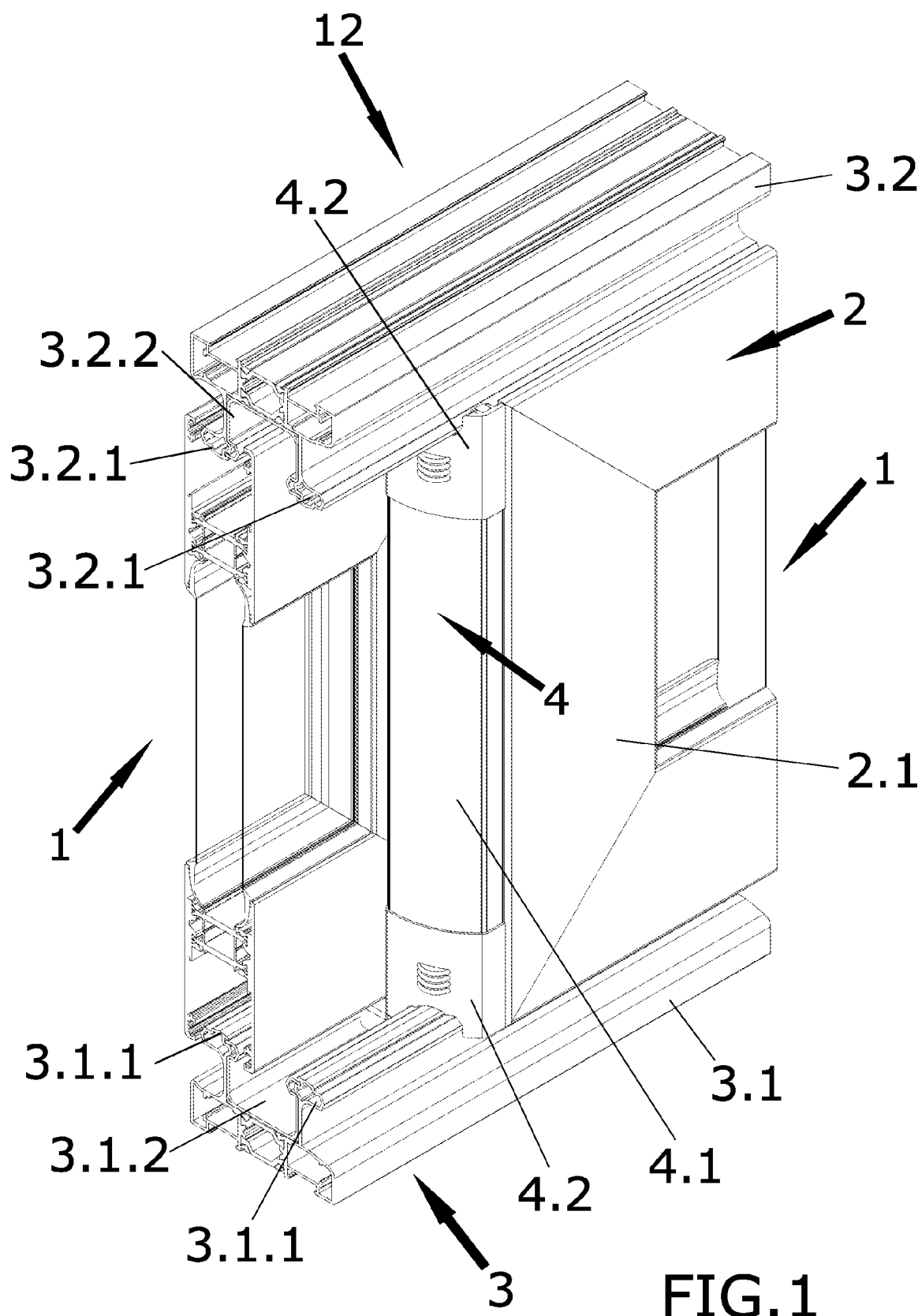
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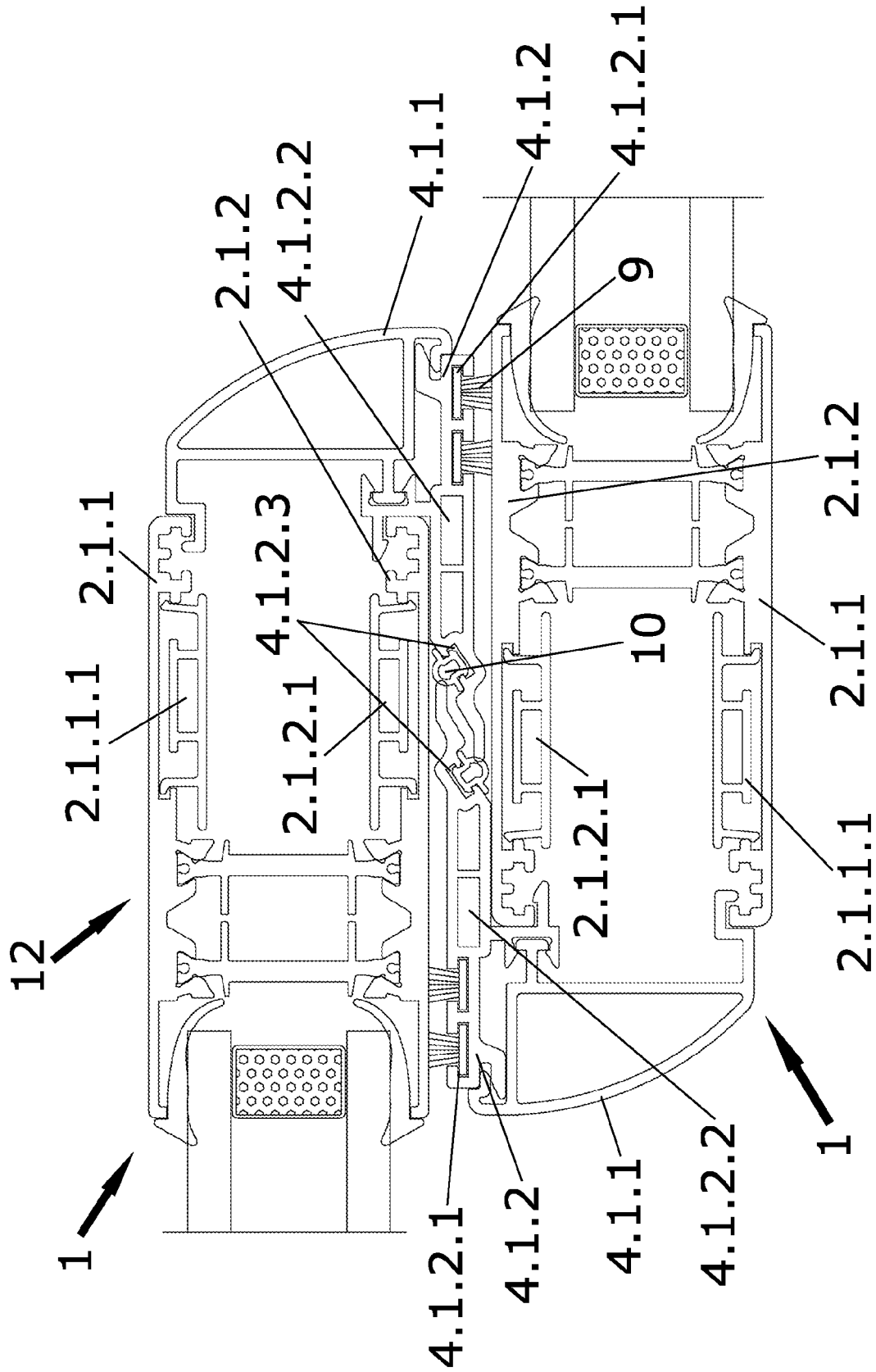


FIG. 2

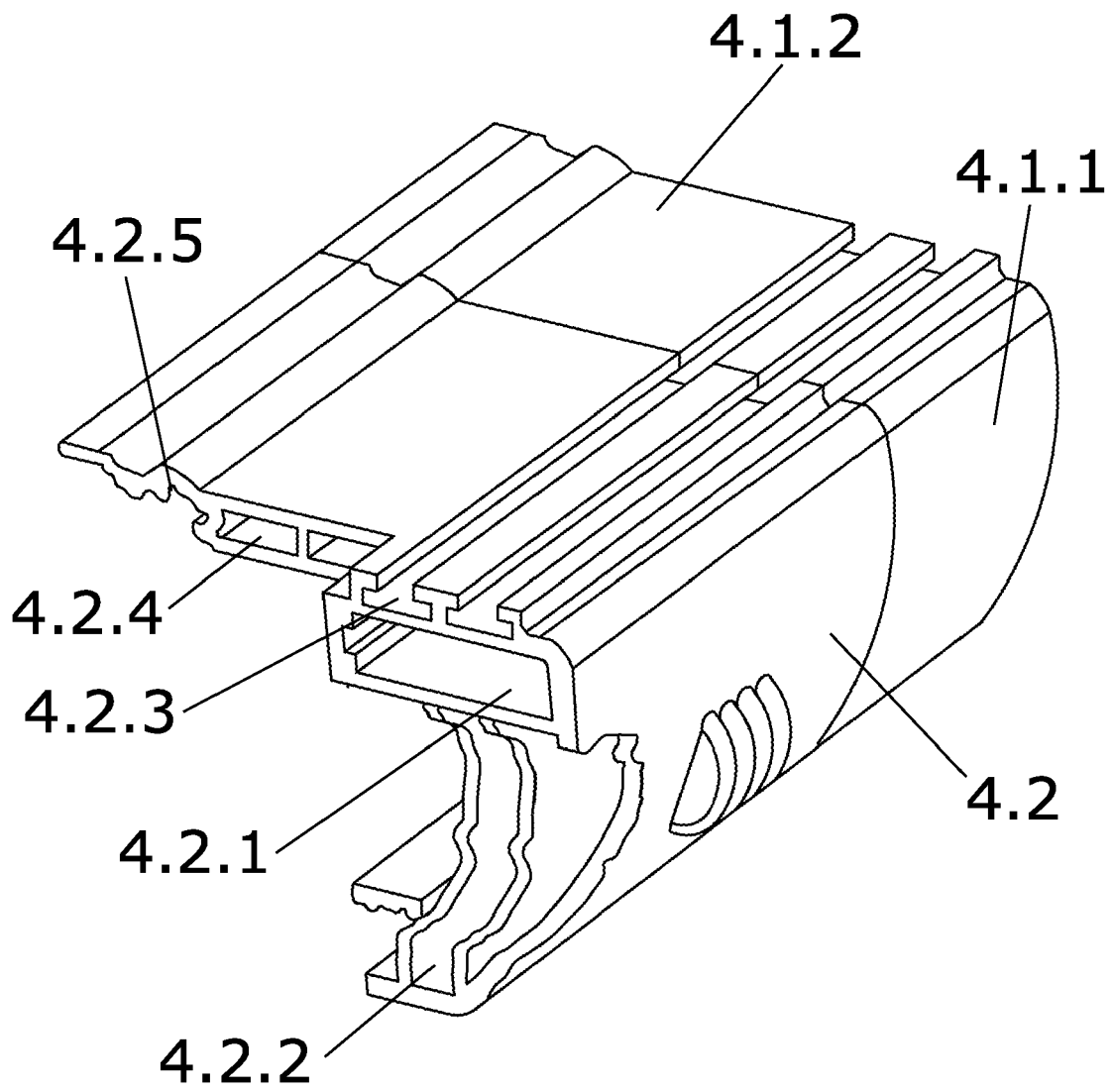


FIG.3

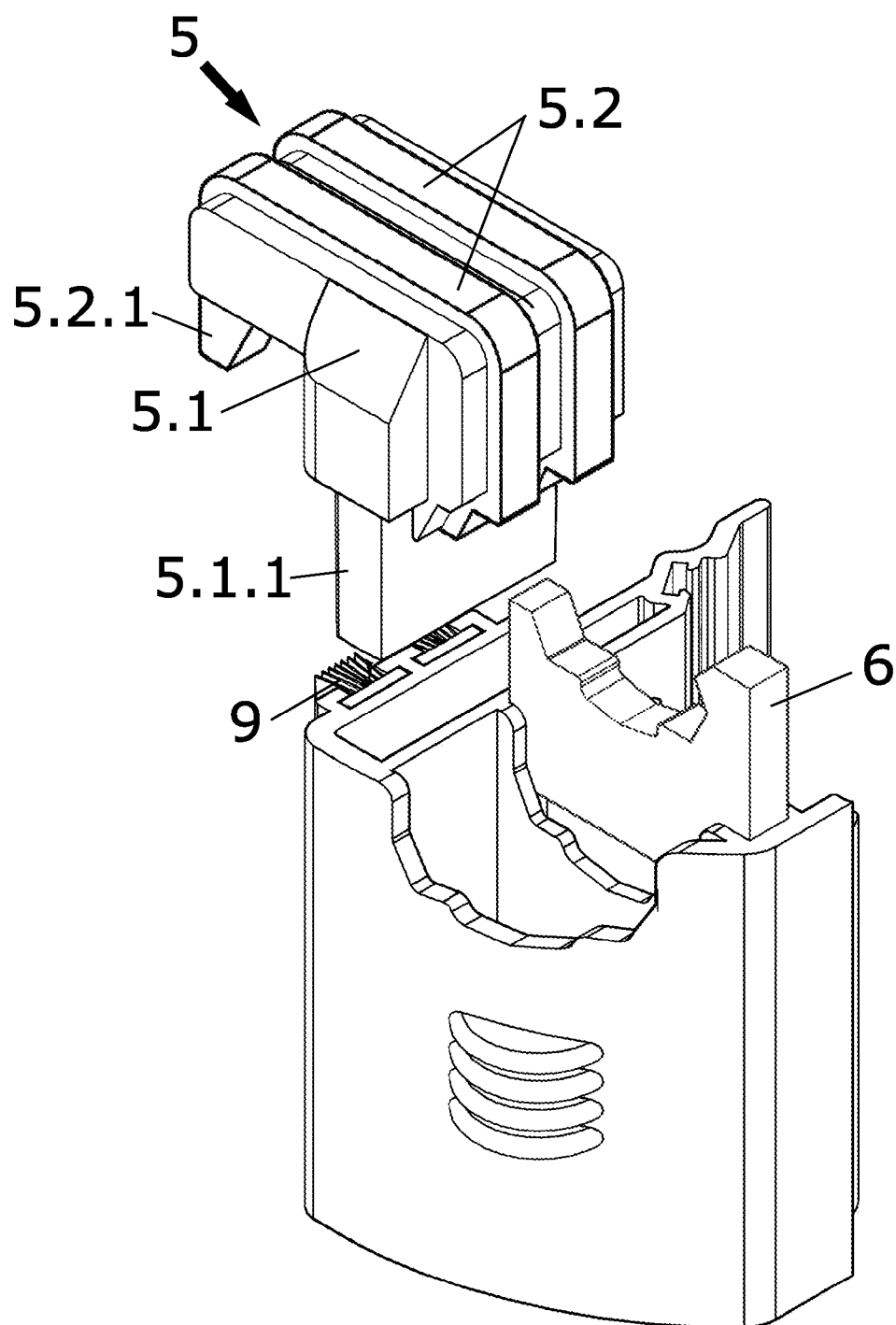


FIG.4

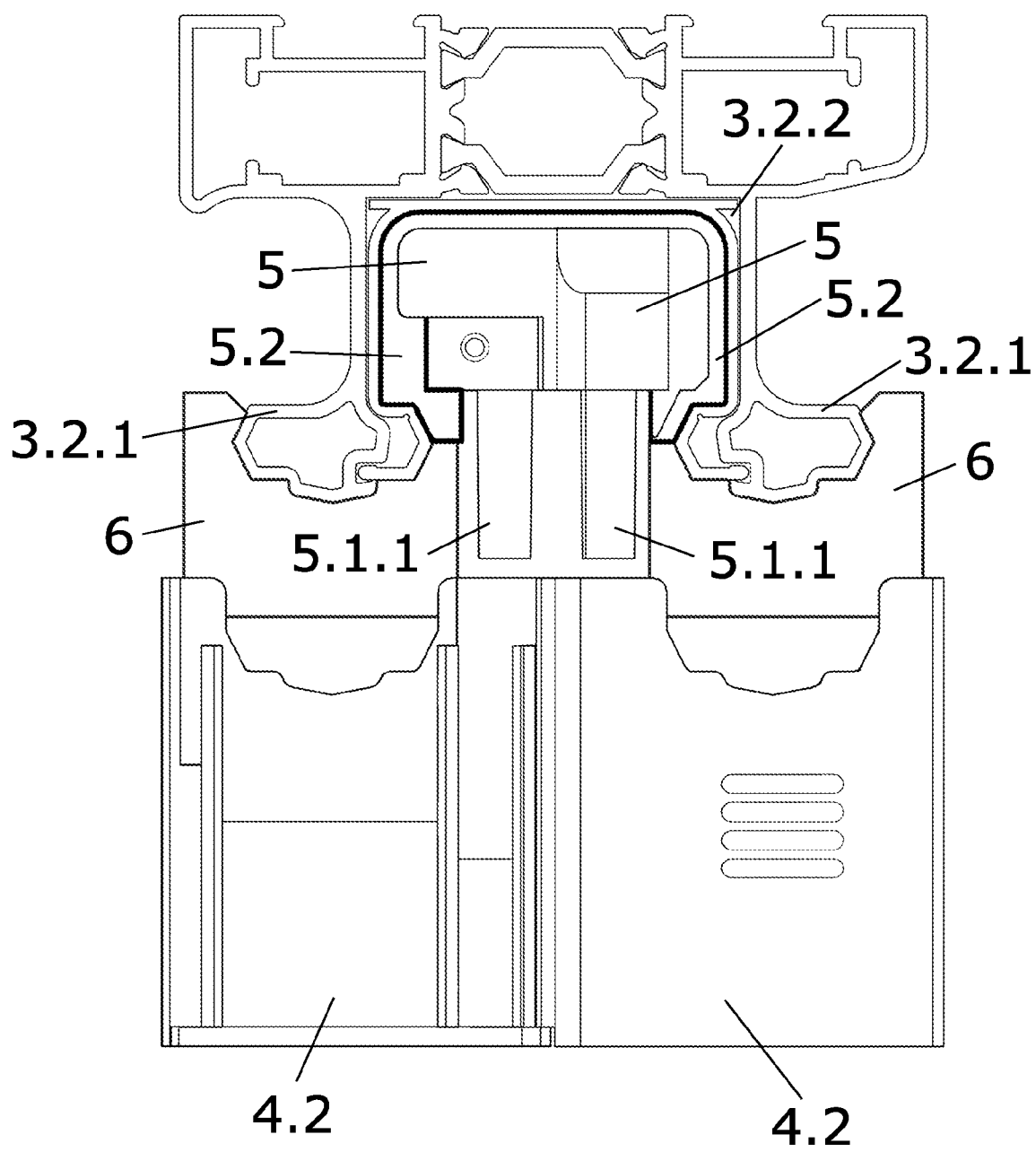


FIG.5

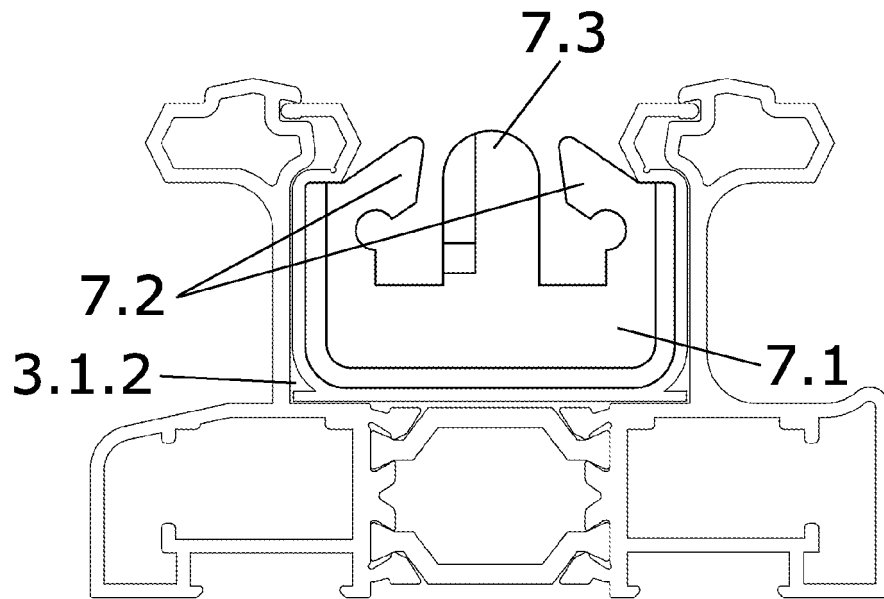


FIG. 6

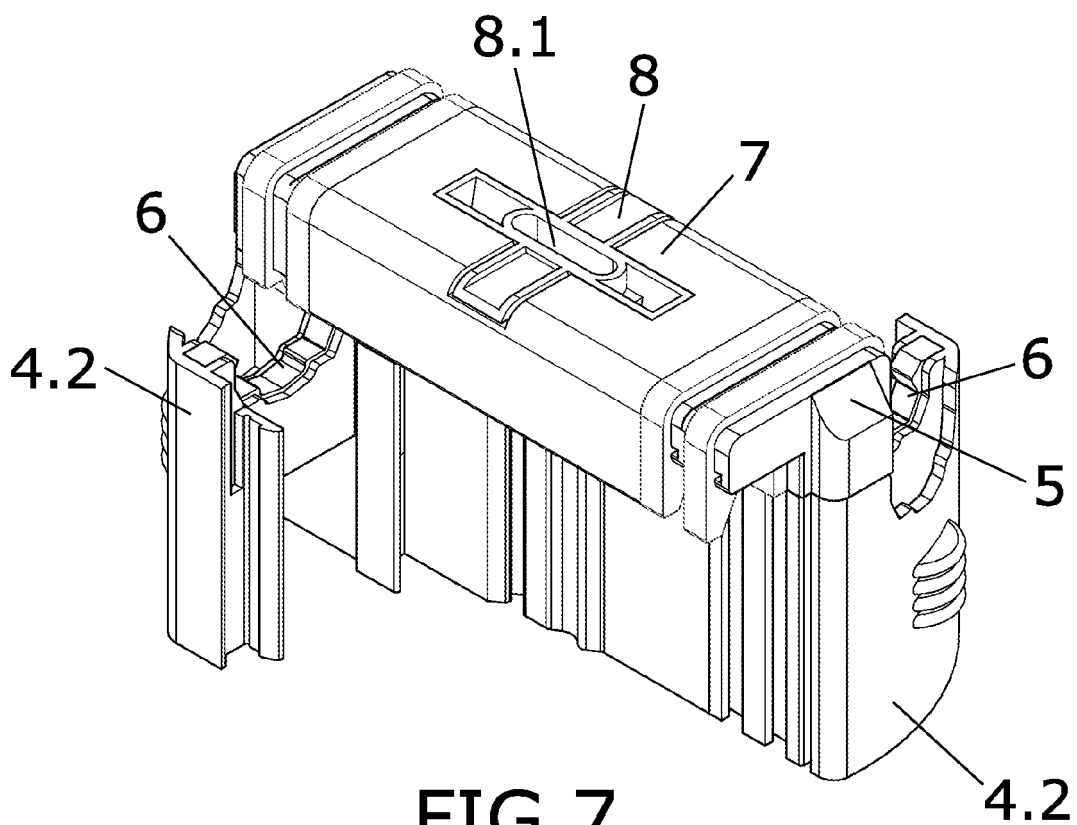
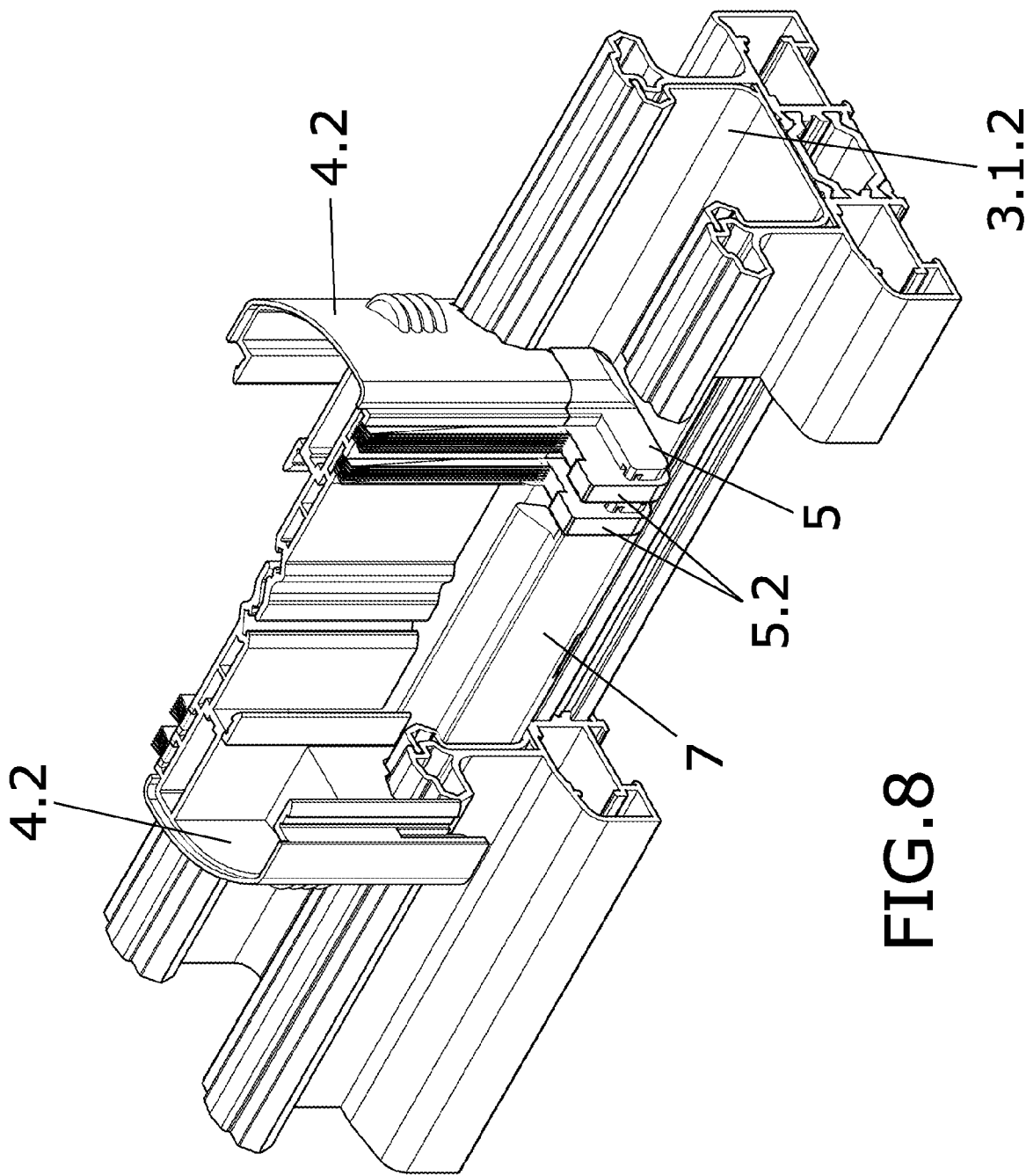


FIG. 7



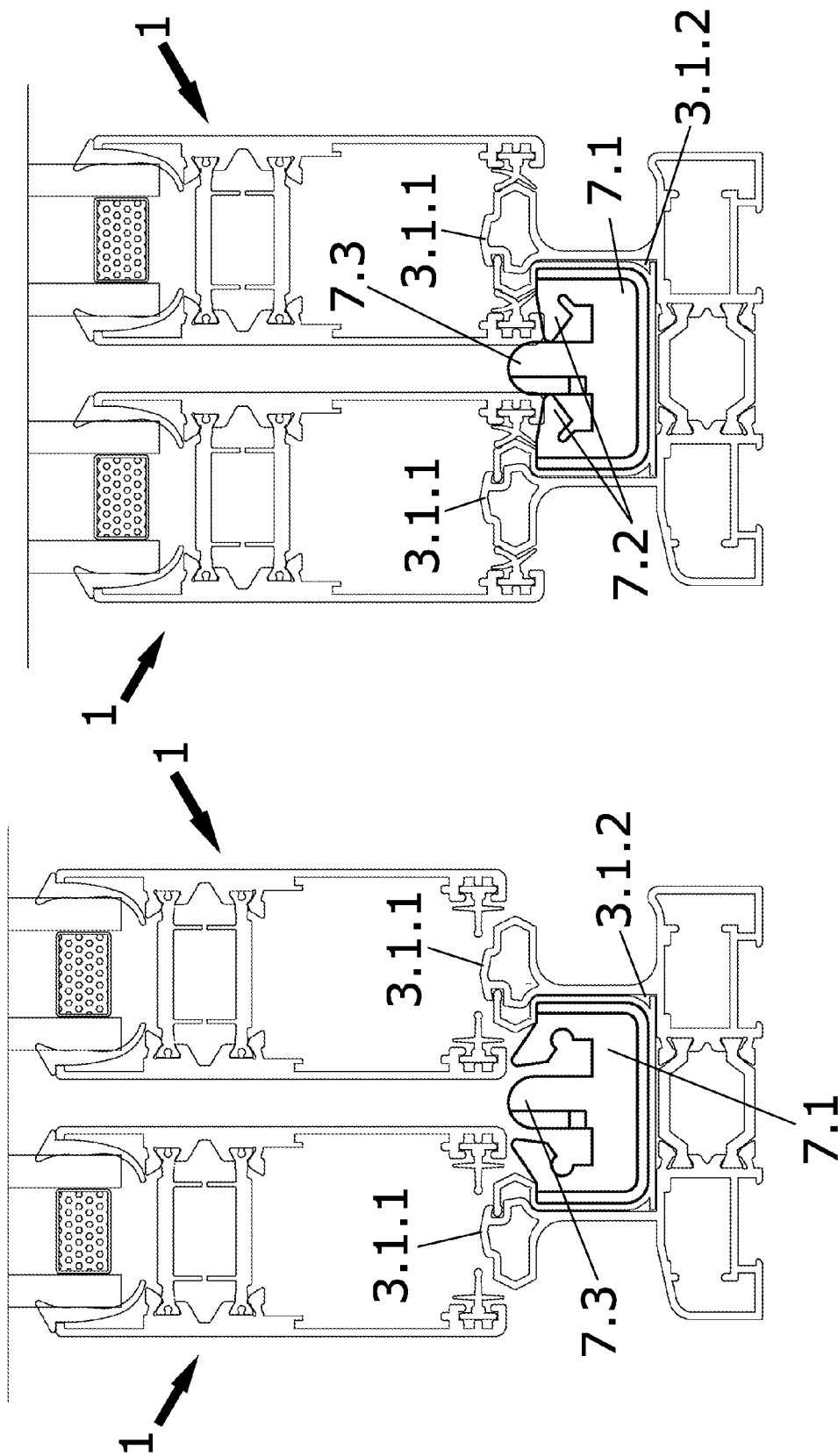


FIG. 9

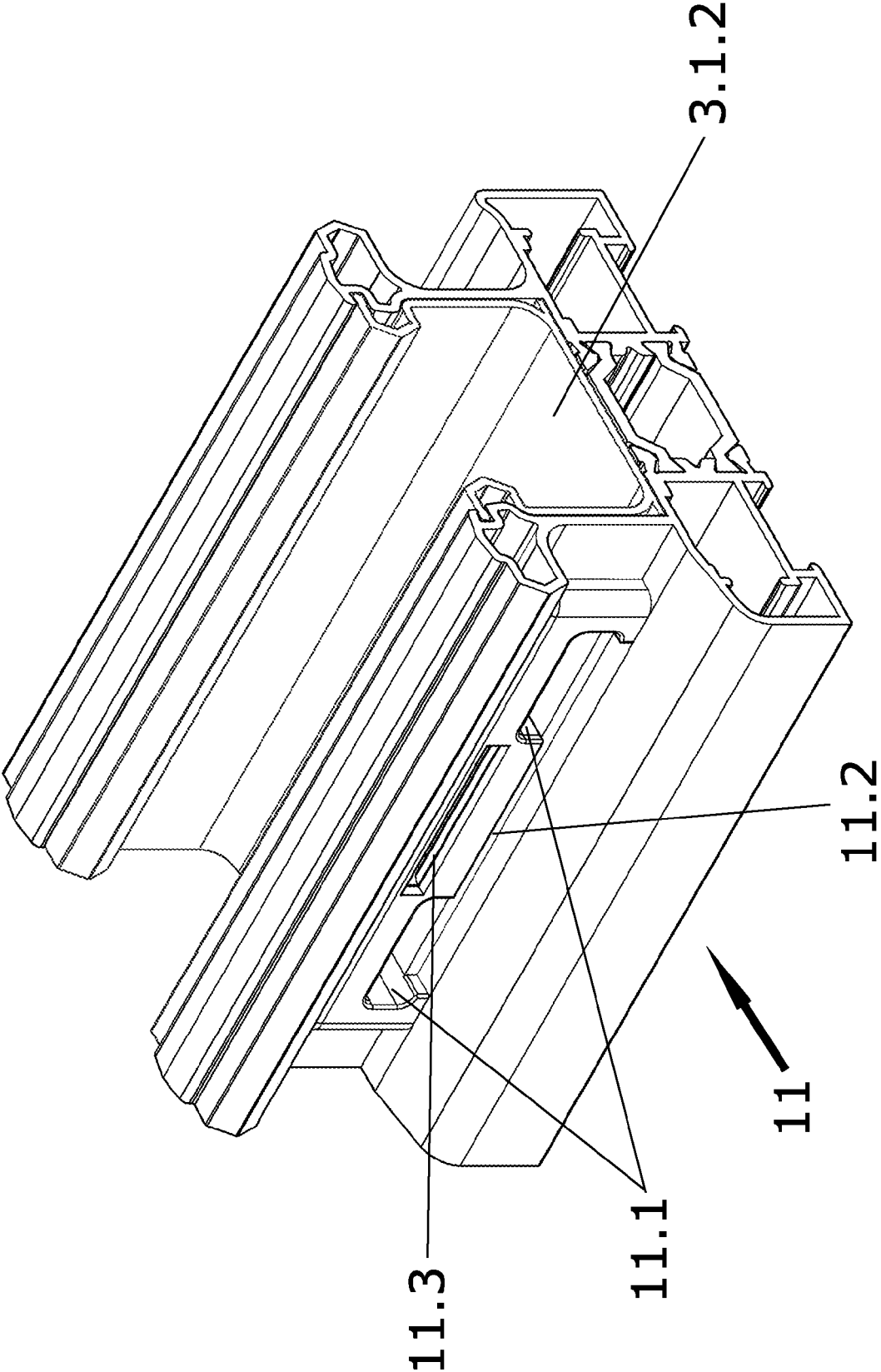


FIG.10

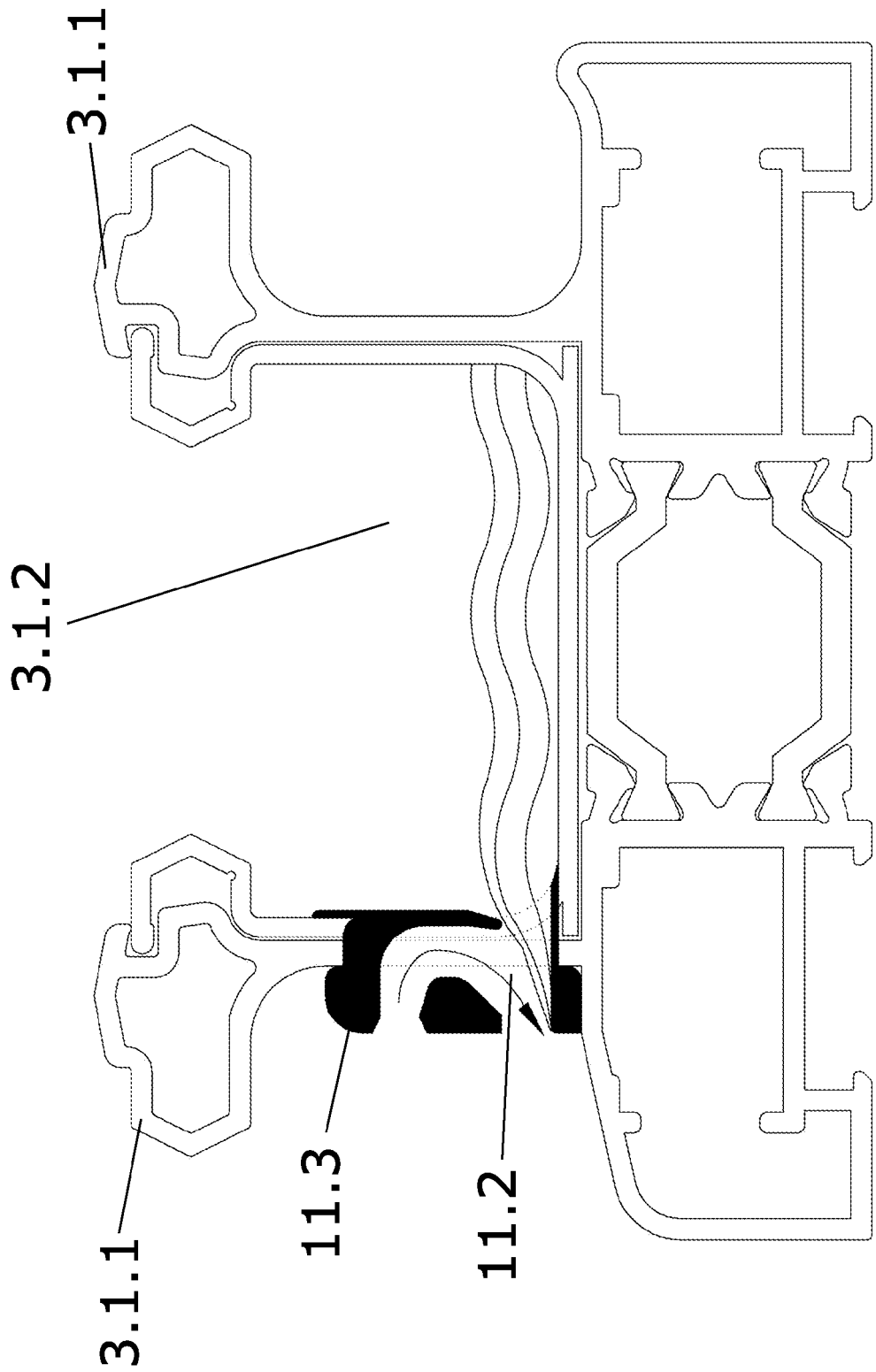


FIG.11



EUROPEAN SEARCH REPORT

Application Number
EP 09 38 1005

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	EP 1 344 891 A (VERTIRAMA BVBA [BE]) 17 September 2003 (2003-09-17) * figures 1-6 *	1-16	INV. E06B7/14 E06B7/16 E06B7/26
A	DE 26 01 795 B1 (WIELAND WERKE AG) 12 May 1977 (1977-05-12) * the whole document *	1-16	
A	WO 2005/033456 A (TREND WINDOWS & DOORS PTY LTD [AU]; FORSTER COLIN RAYMOND [AU]) 14 April 2005 (2005-04-14) * figures 1-21b *	1-16	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			E06B E05B
Place of search		Date of completion of the search	Examiner
Munich		12 August 2009	Schwertfeger, C
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EP 09 38 1005

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12-08-2009

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WO 2005033456	A	14-04-2005	AU 2003266833 A1	21-04-2005

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