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(54) A COVER FOR A ROOF WINDOW

(57) A hood for a roof window; the hood extending to cover the upper portion of the roof window including the upper portion of the frame, sash and the ventilation passage extending there through; the hood having a bottom peripheral portion spaceable apart from the roof window defining an air inlet gap; the hood having a seal extending longitudinally proximal to the bottom peripheral portion of the hood for providing a seal between the roof window and the hood for reducing the passage of moisture or rain; the hood comprising a barrier for preventing the passage of moisture or rain through the ventilation passage; wherein the barrier for preventing the passage of moisture or rain through the ventilation passage is disposed on the hood away from the air inlet gap, the barrier being adapted for collecting moisture/rain and draining the moisture/rain towards the air inlet gap and out of the hood.

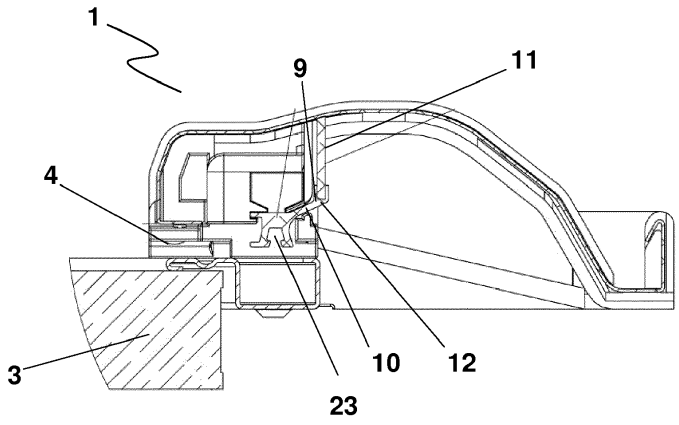

Figure 1

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Description

[0001] The present invention relates to a cover for a roof window and in particular to the hood of a roof window.

[0002] Roof windows are well known in the prior art. A typical type of roof window has a sash defining an opening for carrying a window pane, the sash being pivotally mounted to the window frame. Weather covers mounted on the frame and sash are also well known to prevent moisture ingress into the traditional wooden structures as well as to prevent rain and/or moisture passing into the ventilation passage of the roof window.

[0003] Traditionally a hood H illustrated in Figure A of the drawings extends over the top member of both the frame and sash and ventilation passage. This hood H has a generally rectangular exterior shape and comprises a C-shaped or U-shaped peripheral mounting area MA for supporting the hood H on the top frame member and the two downwardly depending side frame members. The bottom peripheral portion B of the hood H extends from one side frame member across the sash and window pane to the other side sash member and side frame member.

[0004] This bottom peripheral portion B of the hood H is a vulnerable area of the roof window because an air inlet gap G between this bottom peripheral portion B and the window glass WG is an area where rain can deflect off the window glass WG into this gap G toward the interior and ventilation passage of the roof window. Furthermore rain and/or moisture can be blown into the gap G in inclement weather conditions leading to unnecessary moisture making its way into this area and onwards.

[0005] Currently the structure of the underside of the bottom peripheral portion B of the hood H comprises a J-shaped channel in cross-section where this water accumulates. This accumulation of water within the J-shaped channel can produce varying issues depending on various weather conditions. In colder weather conditions the accumulated water can freeze. The expansion of the frozen water will deform and damage the bottom peripheral portion of the hood. Alternatively, in warm weather conditions the accumulated water will heat and the J-shaped channel will form a water-bath. This water will evaporate and pass through the ventilation passage and/or will condense deeper within the passage.

[0006] Furthermore, the rain can deflect off the interior surface of the hood H and onto the seal and glazing border GB and penetrate into the wooden sash and/or ventilation aperture.

[0007] Displaced above the J-shaped channel and extending longitudinally along the length of the hood H generally parallel to the bottom peripheral portion B is a hood strip HS for housing a seal and an associated seal. In use this seal extends into contact with the sash and preferably the glazing border GB of the window to form a seal with the sash when the sash is in the closed position. However, a gap exists between the hood strip HS for housing for the seal S and the interior surface of the hood H, namely the space directly above the hood strip and below the hood whereby rain, moisture and/or condensation can pass causing the problems associated with the ingress of moisture into the internal areas of the roof window. This gap exists because the elongate hood strip HS is held in positon by a small number of clips which are spaced apart longitudinally along the length of the hood H.

[0008] An insect filter F also illustrated in Figure A goes some way to solving this problem as it absorbs some of the moisture/rain as well as the insects. However, the filter significantly chokes the ventilation air passing through the air inlet gap G and on into the hood H as the insect filter F is placed proximal to the narrowest gap for air flow between the bottom peripheral portion B of the hood H and the window glass WG when the hood H is mounted on the window.

[0009] It is an object of the present invention to obviate or mitigate the problems associated with the prior art of water accumulating within and ingressing into the ventilation passage of a roof window with a hood as well as addressing the problem of choking of ventilation air through an air inlet gap.

[0010] Accordingly the present invention provides a hood for a roof window;
the hood extending to cover the upper portion of the roof window including the upper portion of the frame, sash and the ventilation passage extending there through;
the hood having a bottom peripheral portion spaceable apart from the roof window defining an air inlet gap;
the hood having seal means extending longitudinally proximal to the bottom peripheral portion of the hood for providing a seal between the roof window and the hood for reducing the passage of moisture or rain;
the hood comprising barrier means for preventing the passage of moisture or rain through the ventilation passage;
wherein the barrier means for preventing the passage of moisture or rain through the ventilation passage is disposed on the hood away from the air inlet gap, the barrier means being adapted for collecting moisture/rain and draining the moisture/rain towards the air inlet gap and out of the hood.

[0011] Advantageously, this barrier means provides a means for preventing the passage of moisture or rain into the ventilation passage while not interfering with the ventilation function of the air inlet gap.

[0012] Ideally, the seal means extending longitudinally and substantially parallel to the bottom peripheral portion of the hood for providing a seal between the roof window and the hood.

[0013] Preferably, the barrier means for preventing the passage of moisture or rain through the ventilation passage is located above the seal in use.

[0014] Ideally, the barrier means for preventing the passage of moisture or rain through the ventilation passage is located on the inside of the hood so as to maintain the largest air inlet gap for maintaining good ventilation.

[0015] Preferably, the barrier means for preventing the passage of moisture or rain through the ventilation passage is located upstream of the seal means in relation to the direction of the flow of air from the outside of the roof window to the inside of the hood.

[0016] Ideally, the hood has means for supporting the seal.

[0017] Preferably, the barrier means for preventing the passage of moisture or rain through the ventilation passage is operably engaged with the support means of the seal means.

[0018] Ideally, the barrier means for preventing the passage of moisture or rain through the ventilation passage is located on an opposite side of the seal to the air inlet gap in relation to the direction of the flow of air from the outside of the roof window to the inside of the hood.

[0019] Preferably, the barrier means for preventing the passage of moisture or rain through the ventilation passage comprises drainage means for draining moisture or rain in a direction towards the air inlet gap and out of the hood.

[0020] Ideally, there is a gap between the interior surface of the front of the hood and the supporting means for the seal.

[0021] Preferably, this gap defining part of the ventilation passage of the hood.

[0022] Preferably, the drainage means is capable of draining the moisture or rain back down through the gap between the interior surface of the hood and the supporting means.

[0023] Ideally, the barrier means for preventing the passage of moisture or rain through the ventilation passage extends longitudinally along all or a substantial part of the length of the hood.

[0024] Preferably, the barrier means is coextensive with the means for supporting the seal.

[0025] Preferably, the barrier means for preventing the passage of moisture or rain through the ventilation passage comprises a filter.

[0026] Ideally, the filter is located at the free end of the drainage means.

[0027] Ideally, the filter is located at the distal end of the drainage means relative to the air inlet gap.

[0028] Preferably, the filter extends between the free end/distal end of the drainage means and the internal surface of the front of the hood.

[0029] Ideally, the filter is an insect filter.

[0030] Advantageously, the drainage means and the filter create a physical barrier to the passage of moisture or rain and insects being located well away from the air inlet gap. This reduces the choking effect of the prior art insect filters being located proximal to the opening of the air inlet gap ensuring that adequate ventilation occurs whilst moisture/rain and insects are blocked.

[0031] Ideally, the drainage means extends upwardly from the support means in use in a plane generally parallel to the main plane of the front surface of the hood.

[0032] Preferably, the drainage means extends upwardly from the support means in use and towards the interior surface of the front of the hood.

[0033] Ideally, the draining surface of the drainage means runs smoothly onto the surface of the support means for the seal opposite to the interior surface of the front of the hood.

[0034] Preferably, the draining surface of the drainage means and the surface of the support means opposite to the interior surface of the front of the hood provide a continuous drainage surface for rain/moisture collected thereon.

[0035] Preferably, the draining surface of the drainage means and the surface of the support means opposite to the interior surface of the front of the hood are inclined at an obtuse angle to one another.

[0036] Ideally, the drainage means extends upwardly from the end of the support means opposing that end connectable to the seal means.

[0037] Preferably, the drainage means extends upwardly from the interior most longitudinal portion of the support means with reference to the direction of airflow for the outside to the inside of the hood.

[0038] Preferably, the drainage means extends substantially parallel to the internal surface of the hood.

[0039] Ideally, the drainage means is capable of draining liquid projectiles which have deflected through the air inlet gap during periods of heavy precipitation or windy conditions back towards and through the air inlet gap to the exterior of the hood.

[0040] Preferably, the drainage means and the support means of the seal means are in operational engagement with one another to enable liquid to drain from the ventilation passage.

[0041] Preferably, liquid within the ventilation passage drains from the drainage means and passes over the support means in the direction towards the air inlet gap, for discharge from the ventilation passage through the air inlet gap.

[0042] Preferably, the filter extends perpendicular to the internal surface of the hood.

[0043] Ideally, the filter extends along all or a substantial part of the longitudinal length of the hood.

[0044] Preferably, the free end of the filter engages the internal surface of the hood.

[0045] Ideally, the free end of the drainage means has means for receiving and supporting the filter.

[0046] Preferably, the free end of the drainage means has means for receiving and supporting one longitudinal perimeter portion of the filter.

[0047] Ideally, the drainage means is integrally formed with the support means for the seal.

[0048] Preferably, the drainage means and the support means are homogenous.

[0049] Ideally, the drainage means and the support means are co-extruded.

[0050] Advantageously, the distance/gap between the bottom peripheral portion of the hood and the sash of the roof window can be increased because the barrier means

is provided within the hood away from the air inlet gap. As any liquid such as rain or moisture will be collected and drained back out by the drainage means, the size of the air inlet gap can be increased to improve ventilation without worrying about restricting the air inlet gap to prevent the liquid getting in in the first place.

[0051] The skilled man will appreciate that all preferred or optional features of the invention described with reference to only some aspects or embodiments of the invention may be applied to all aspects of the invention.

[0052] It will be appreciated that optional features applicable to one aspect of the invention can be used in any combination, and in any number. Moreover, they can also be used with any of the other aspects of the invention in any combination and in any number. This includes, but is not limited to, the dependent claims from any claim being used as dependent claims for any other claim in the claims of this application.

[0053] The invention will now be described with reference to the accompanying drawings which show by way of example only one embodiment of a hood for a roof window in accordance with the invention.

Figure A is a cross sectional view of a prior art hood;
Figure 1 is a cross-sectional view of the hood of the present invention mounted on a roof window;
Figure 2 is a partial cross sectional view of a rendered image of the hood of the present invention mounted on a roof window; and
Figure 3 is the same view as Figure 2 showing the barrier means in use;

[0054] Referring to the drawings in general, there is shown a hood indicated generally by the reference numeral 1 for a roof window. The hood 1 having a bottom peripheral portion 2, see Figure 2 spaced apart from the roof window glass 3 defining an air inlet gap 4. The hood 1 extends to cover the upper portion of the roof window comprising the roof window glass 3 and the upper portion of the frame 5, see Figure 1, sash 6 and the ventilation passage 7 extending there though. The ventilation passage 7 extends from air inlet gap 4, up through the hood 1 and into the ventilation opening defined between the frame and the sash 6 leading to the vent flap, not shown on the inside of the roof window. The hood 1 has a seal component 8 extending longitudinally proximal to the bottom peripheral portion 2 of the hood 1 and preferably generally parallel to the bottom peripheral portion 2 for providing a seal 8 between the glazing seal 22, see Figure 3, for the roof window glass 3 and the hood 1 to prevent the passage of moisture or rain through the hood 1 in this location. This prevents rain being blown directly back up into the hood 1 an on through the ventilation passage. The hood 1 comprises a barrier arrangement 9 for preventing the passage of moisture or rain through the ventilation passage 7. The barrier arrangement 9 for preventing the passage of moisture or rain through the ventilation passage 7 is located on the hood 1 away from the air inlet gap 4. The barrier arrangement 9 is in operable engagement with the support member 14 of the seal component 8. This enables the prevention of the passage of moisture or rain into the ventilation passage 7, while not interfering with the ventilation function of the air inlet gap 4.

[0055] The barrier arrangement 9 preventing the passage of moisture or rain through the ventilation passage 7 extends longitudinally along the length of the hood 1 and has a drainage element 10 for draining moisture or rain in a direction towards the air inlet gap 4 out of the hood 1. The drainage element 10 extending upwardly from the support member 14 of the seal component 8 and preferably substantially parallel to the internal surface of the front of the hood 13. Furthermore the barrier arrangement 9 preventing the passage of moisture or rain through the ventilation passage 7 comprises a filter 11 located at the distal end of the drainage element 12 relative to the air inlet gap 4. The filter 11 extends between the distal end of the drainage element 12 and into contact with the internal surface of the hood 13 and extends along the longitudinal length of the hood 1. This enables the drainage element 10 and the filter 11 to create a barrier to the passage of moisture or rain away from the air inlet gap 4. The barrier arrangement 9 for preventing the passage of moisture or rain through the ventilation passage is located above the support member 14 for the seal component 8 in use. The filter 11 has a very shallow width of material and is preferably a sheet having little or no capacity for absorbing water acting as an insect barrier only. The filter 11 is also adapted to ensure a high throughput of airflow. In some prior art hoods, the insect barrier/filter is located proximal to the air inlet gap and is provided by a block of material having a depth of up to 20mm. These filters absorb a lot of moisture degrading over time. They also choke the airflow, especially as they fill up with liquid reducing the ventilation capacity of the roof window.

[0056] The barrier arrangement 9 for preventing the passage of moisture or rain through the ventilation passage is located on the inside of the hood 1 so as to maintain the largest air inlet gap 4 for maintaining good ventilation. The barrier arrangement 9 comprising the drainage element 10 and filter 11 for preventing the passage of moisture or rain through the ventilation passage is located upstream of the support member of the seal component 8 in relation to the direction of the flow of air through the ventilation passage from the outside of the roof window to the inside of the hood 1. The hood 1 has an assembly for supporting the seal component 8. The support assembly comprises an elongate seal support member 14 having an elongate socket 23, see Figure 1 formed for receiving an elongate plug 24, see figure 2 protruding from the base of the seal component 8. The side of the elongate seal support member 14 opposite the side having the socket has a locating arrangement 25 for locating the elongate seal support member 14 into a number of retainers being expandable clamping members. The retainers are spaced apart longitudinally along

the interior surface of the hood 1 and are attached onto the interior surface of the hood by attachment members such as clips.

[0057] The barrier arrangement 9 for preventing the passage of moisture or rain through the ventilation passage is operably engaged with the elongate seal support member 14. The barrier arrangement 9 for preventing the passage of moisture or rain through the ventilation passage is located on an opposite side of the support member 14 of the seal component 8 to the air inlet gap 4 in relation to the direction of the flow of air from the outside of the roof window to the inside of the hood 1. The barrier arrangement 9 for preventing the passage of moisture or rain through the ventilation passage comprises a drainage member 10 for draining moisture or rain in a direction towards the air inlet gap 4 and out of the hood 1. There is a gap 26, see Figure 3 between the interior surface of the front of the hood 1 and the elongate seal support member 14. This gap 26 defines part of the ventilation passage of the hood 1. The drainage member 10 is capable of draining the moisture or rain back down through the gap 26 between the interior surface of the hood 1 and the elongate seal support member 14. The barrier arrangement 9 for preventing the passage of moisture or rain through the ventilation passage extends longitudinally along all or a substantial part of the length of the hood 1. The barrier arrangement 9 is coextensive with the elongate seal support member 14. The barrier arrangement 9 for preventing the passage of moisture or rain through the ventilation passage comprises a filter 11. The filter 11 is located on the free end of the drainage member 10. The filter 11 is located on the distal end of the drainage member 10 relative to the air inlet gap 4. The filter 11 extends between the distal end of the drainage member 10 and the internal surface of the front of the hood 1. The filter 11 is an insect filter.

[0058] Advantageously, the drainage member 10 and the filter 11 create a physical barrier to the passage of moisture or rain and insects being located well away from the air inlet gap 4. This reduces the choking effect of the prior art insect filters F being located proximal to the opening of the air inlet gap ensuring that adequate ventilation occurs whilst moisture/rain and insects are blocked.

[0059] The barrier arrangement 9 initially extends upwardly from the elongate seal support member 14 in use in a plane generally parallel to the main plane of the front surface of the hood 1 or being inclined towards the main plane of the front surface of the hood 1. The barrier arrangement 9 extends upwardly from the elongate seal support member 14 in use and towards the interior surface of the front of the hood 1. The draining surface of the drainage member 10 runs smoothly onto the surface of the elongate seal support member 14 for the seal component 8 opposite to the interior surface of the front of the hood 1. The draining surface of the drainage member 10 and the surface of the elongate seal support member 14 opposite to the interior surface of the front of the hood 1 provide a continuous drainage surface for rain/moisture collected thereon. The barrier arrangement 9 and more particularly the drainage member 10 extends upwardly from the interior elongate side of the elongate seal support member 14 distal to the air inlet gap and on a side of the elongate seal support member 14 opposing that side connectable to the seal component 9.

[0060] Referring to Figure 3, the barrier arrangement 9 comprising drainage member 10 and filter 11 is capable of draining liquid droplets of rain RW for example which have deflected through the air inlet gap 4 and bounced into the space between elongate seal support member 14 and the interior surface of the front of the hood 1 back towards and through the air inlet gap 4 along the glass to the exterior of the hood. This is particularly useful during periods of heavy precipitation or windy conditions. The drainage member 10 and the elongate seal support member 14 of the seal are in operational engagement with one another to enable liquid to drain from the ventilation passage. Liquid within the ventilation passage drains from the drainage member 10 and passes over the surface of the elongate seal support member 14 which extends continuously from the surface of the drainage member 10 in the direction towards the air inlet gap, for discharging the liquid through the air inlet gap 4.

[0061] The filter 11 extends generally perpendicular to the internal surface of the hood 1. The filter 11 extends along all or a substantial part of the longitudinal length of the hood 1. The filter 11 is in contact with the interior surface of the hood along all or a substantial part of the longitudinal length of the hood 1.

[0062] The drainage member 10 is integrally formed with the elongate seal support member 14 for the seal component 8. The drainage member 10 and the elongate seal support member 14 are homogenous. The drainage member 10 and the elongate seal support member 14 are co-extruded.

[0063] Advantageously, the distance/gap between the bottom peripheral portion of the hood 1 and the glass and/or sash and/or frame of the roof window can be increased because the barrier arrangement 9 is provided within the hood 1 away from the air inlet gap. As any liquid such as rain or moisture will be collected and drained back out by the barrier arrangement 9, the size of the air inlet gap 4 can be increased to improve ventilation.

[0064] In relation to the detailed description of the embodiment of the invention, it will be understood that one or more technical features of one embodiment can be used in combination with one or more technical features of any other embodiment where the transferred use of the one or more technical features would be immediately apparent to a person of ordinary skill in the art to carry out a similar function in a similar way on the other embodiment.

[0065] In the preceding discussion of the invention, unless stated to the contrary, the disclosure of alternative values for the upper or lower limit of the permitted range of a parameter, coupled with an indication that one of the

said values is more highly preferred than the other, is to be construed as an implied statement that each intermediate value of said parameter, lying between the more preferred and the less preferred of said alternatives, is itself preferred to said less preferred value and also to each value lying between said less preferred value and said intermediate value.

[0066] The features disclosed in the foregoing description or the following drawings, expressed in their specific forms or in terms of a means for performing a disclosed function, or a method or a process of attaining the disclosed result, as appropriate, may separately, or in any combination of such features be utilised for realising the invention in diverse forms thereof as defined in the appended claims.

Claims

1. A hood for a roof window;
the hood extending to cover the upper portion of the roof window including the upper portion of the frame, sash and the ventilation passage extending there through;
the hood having a bottom peripheral portion spaceable apart from the roof window defining an air inlet gap;
the hood having seal means extending longitudinally proximal to the bottom peripheral portion of the hood for providing a seal between the roof window and the hood for reducing the passage of moisture or rain;
the hood comprising barrier means for preventing the passage of moisture or rain through the ventilation passage;
wherein the barrier means for preventing the passage of moisture or rain through the ventilation passage is disposed on the hood away from the air inlet gap, the barrier means being adapted for collecting moisture/rain and draining the moisture/rain towards the air inlet gap and out of the hood.

2. A hood as claimed in claim 1, wherein the barrier means provides a means for preventing the passage of moisture or rain into the ventilation passage while not interfering with the ventilation function of the air inlet gap.

3. A hood as claimed in claim 1 or claim 2, wherein the barrier means for preventing the passage of moisture or rain through the ventilation passage is located upstream of the seal means in relation to the direction of the flow of air from the outside of the roof window to the inside of the hood.

4. A hood as claimed in any one of the preceding claims, wherein the hood has means for supporting the seal and the barrier means for preventing the passage of moisture or rain through the ventilation passage is operably engaged with the support means of the seal means.

5. A hood as claimed in any one of the preceding claims, wherein the barrier means for preventing the passage of moisture or rain through the ventilation passage is located on an opposite side of the seal to the air inlet gap in relation to the direction of the flow of air from the outside of the roof window to the inside of the hood.

6. A hood as claimed in any one of the preceding claims, wherein the barrier means for preventing the passage of moisture or rain through the ventilation passage comprises drainage means for draining moisture or rain in a direction towards the air inlet gap and out of the hood.

7. A hood as claimed in claim 6 when depending on claim 4, wherein there is a gap between the interior surface of the front of the hood and the supporting means for the seal, this gap defining part of the ventilation passage of the hood wherein the drainage means is capable of draining the moisture or rain back down through the gap between the interior surface of the hood and the supporting means.

8. A hood as claimed in any one of the preceding claims, wherein the barrier means for preventing the passage of moisture or rain through the ventilation passage extends longitudinally along all or a substantial part of the length of the hood.

9. A hood as claimed in claim 4 or any of claims 5 to 8 when dependent on claim 4,
wherein the barrier means is coextensive with the means for supporting the seal.

10. A hood as claimed in claim 6 when depending on claim 4, wherein the drainage means extends upwardly from the support means in use and towards the interior surface of the front of the hood.

11. A hood as claimed in claim 6 when dependent on claim 4, wherein a draining surface of the drainage means runs smoothly onto a surface of the support means for the seal opposite to the interior surface of the front of the hood for providing a continuous drainage surface for rain/moisture collected thereon.

12. A hood as claimed in claim 6 when depending on claim 4, wherein the drainage means is integrally formed with the support means for the seal and/or the drainage means and the support means are homogenous and/or the drainage means and the support means are co-extruded.

13. A hood as claimed in any one of the preceding

claims, wherein the barrier means for preventing the passage of moisture or rain through the ventilation passage comprises a filter.

14. A hood as claimed in claim 13 when dependent on claim 6, wherein the filter extends along all or a substantial part of the longitudinal length of the hood between the free end/distal end of the drainage means and the internal surface of the front of the hood.

15. A roof window having a hood as claimed in any one of the preceding claims.

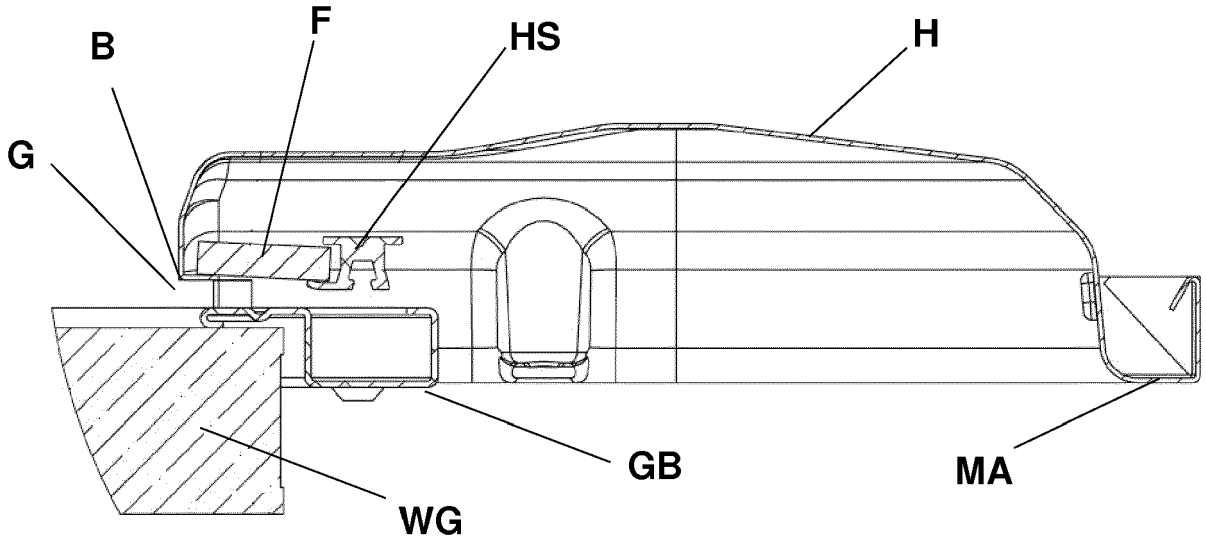

Figure A (Prior Art)

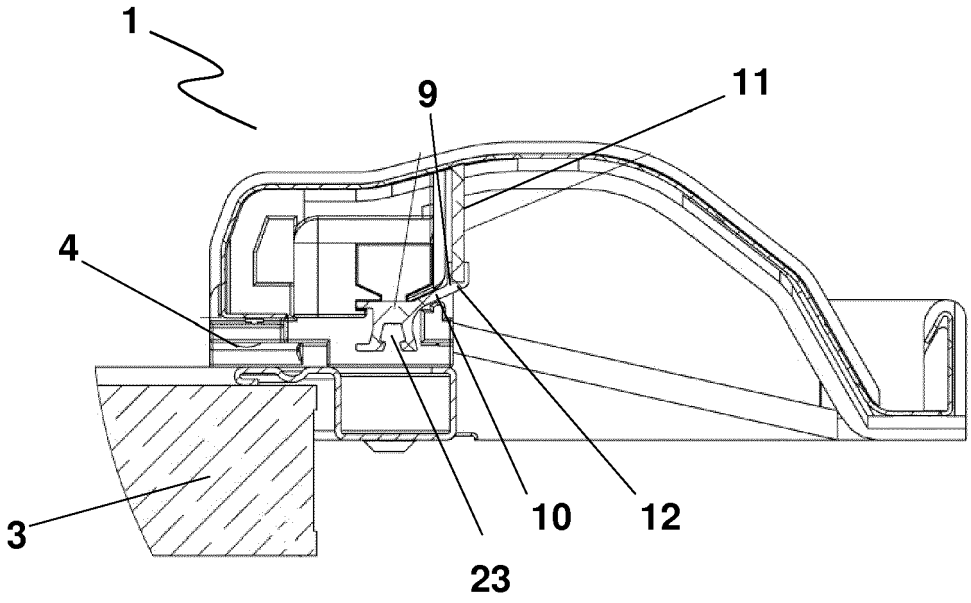

Figure 1

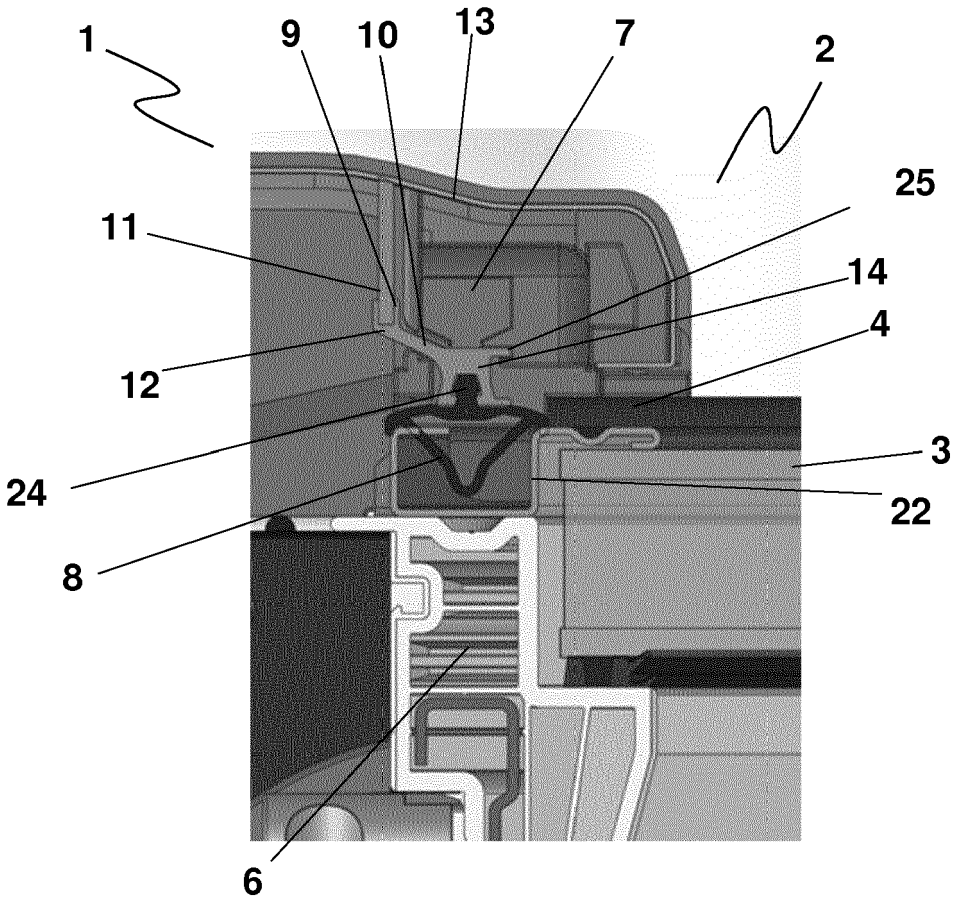

Figure 2

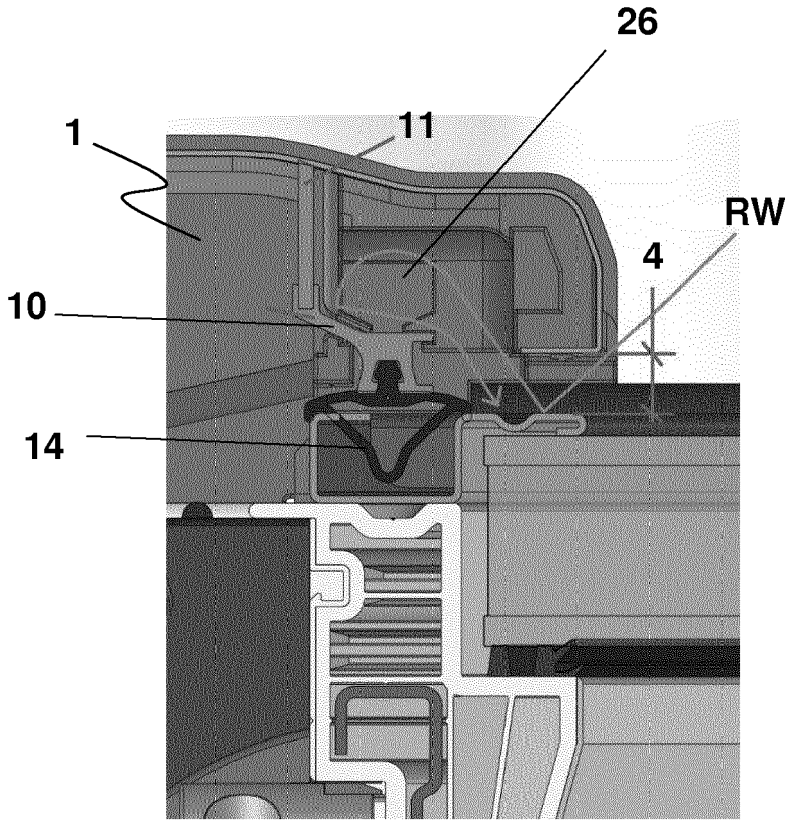

Figure 3

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EUROPEAN SEARCH REPORT

Application Number
EP 16 20 3323

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 0 690 273 A2 (ROTO FRANK AG [DE]) 3 January 1996 (1996-01-03) * figure 1 * -----	1-4,6-15	INV. E04D13/03
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TECHNICAL FIELDS SEARCHED (IPC)

E04D
E06B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	2 February 2017	Leroux, Corentine

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 16 20 3323

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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02-02-2017

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82