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(54) **A HOOD FOR A ROOF WINDOW**

(57) A hood for a roof window, the hood being adapted to be fitted to a roof window frame and to cover a gap between a roof window frame and sash, the hood comprising a middle portion and two end caps, wherein one end cap is fitted at one end of the middle portion and another end cap is fitted at another end of the middle portion, and wherein one or both end caps comprises an

inner piece and an outer piece, the outer piece being arranged over the inner piece, wherein the inner piece comprises one or more ventilation openings, and wherein the outer piece is arranged relative to the inner piece such that air may pass around and/or through the outer piece and through the one or more ventilation openings on the inner piece.

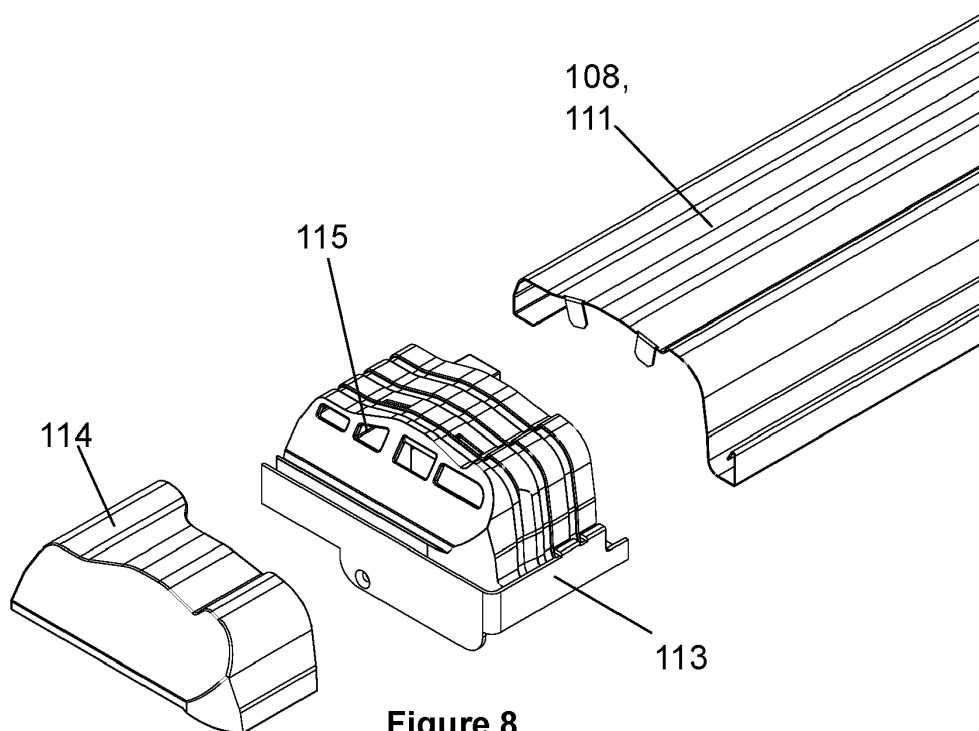


Figure 8

Description

[0001] The present invention relates to a hood for a window, and in particular to a hood with a ventilation opening.

[0002] Roof windows are typically windows that are installed in the sloped surface of a roof. One popular roof window comprises a rectangular frame which is fixable in an aperture in a roof, and a sash connected to the frame via a hinge. The frame typically comprises two parallel side frame members, and parallel top and bottom frame members. Likewise, the sash also typically comprises two parallel side sash-frame members, and parallel top and bottom sash-frame members. The sash can be positioned relative to the frame in a closed position and can be locked to the frame to secure the closed window. To open the roof window, the sash can be unlocked from the frame and pivoted about the hinge. Roof windows typically have a set of two hinges that are symmetrically arranged with one at either side of the sash. The hinges may be located at the upper part of the sash and frame, and these roof windows are often referred to as 'top hung'. A more popular arrangement, however, involves the hinges being located approximately halfway along the side of the sash and the frame (often referred to as a 'centre pivot' roof window). Such a window is shown in Figure 1 indicated by reference numeral 1, and it has a sash 2 pivoted to the frame 3. When the sash 2 is opened in such roof windows, the top of the sash 2 pivots into the room, and the bottom of the sash pivots out of the roof. The sash may even be pivoted through almost 180° to enable the outer surface of the glazing to be accessed and cleaned from the room below the roof window.

[0003] It is inevitable that a small gap is present between the roof window frame and the sash, as the sash must be able to move freely within the frame and cannot therefore abut against the frame. This gap must be weatherproofed at the exterior side of the roof window to prevent ingress of rainwater. The gap is typically covered by roof window coverings to provide a barrier for rainwater. Referring to the prior art centre-pivot roof window of Figures 1 to 4, the roof window coverings involve two lower parallel sash-frame cover members 4a, 4b fixed to the sash-frame side members 5a, 5b and extending across the gap between the frame 3 and the sash 2 when the roof window is closed. There are also two upper parallel frame cover members 6a, 6b that are fixed to the frame side members 7a, 7b and extend across the gap between the frame 3 and the sash 2. The bottom edge of the upper frame cover members 6a, 6b overlaps the top edge of the lower sash-frame cover members 5a, 5b when the roof window is closed. When the roof window is opened, the sash-frame cover members pivot outwards with the movement of the sash. There is also typically a sash-frame cover member on the sash-frame bottom member (not shown), covering the gap at the bottom of the roof window. Finally, a hood 8 is typically provided,

fixed to the frame 3, that sits at the top of the roof window 1 covering the gap between the frame top member 9 and sash-frame top member 10. The hood 8 has a middle portion 11 and two end caps 12a, 12b at either end of the middle portion 11. The end caps 12a, 12b have an inner piece 13 and outer piece 14.

[0004] Openable roof windows provide ample ventilation when opened. However, if it is raining, it is not possible to open the roof window without also allowing rainwater to enter the room below the roof window. There is therefore increasing desire to provide roof windows that can deliver substantial ventilation even when closed, as this allows the room below the roof window to be ventilated even when it is raining.

[0005] Many centre-pivot windows will be fitted with a ventilation flap on the interior side of the upper sash member, covering the gap between the upper frame member and upper sash-frame member. A gap is also purposefully left between the hood and the sash glazing so that air can pass in underneath the hood and into the space between the upper frame member and upper sash-frame member. When the ventilation flap is closed, air cannot pass into the room below. When the ventilation flap is opened, by pivoting the flap about the sash, air can freely move underneath the hood and through the gap between the upper sash-frame member and upper frame member.

[0006] The rate of movement of air through the hood and into the room below is limited by the size of the gap between the hood and the sash glazing. Whereas it is desirable to improve the ventilation capabilities of roof windows, increasing the size of this gap runs the risk of decreasing the weatherproofing characteristics of the hood. For example, a large hood gap will permit rainwater, driven by heavy wind, to enter the roof window. If moisture can easily enter underneath the hood, then the roof window frame, the majority of which are wooden, will be prone to rot. It is therefore not possible to increase the size of the gap between the hood and the sash glazing.

[0007] It is therefore an object of this invention to provide a roof window hood and a roof window with improved ventilation capabilities. It is further an object of this invention to obviate or mitigate the problem of how to improve ventilation capacity through a roof window hood without increasing the gap between the hood and the sash glazing.

[0008] According to a first aspect of the invention there is provided a hood for a roof window, the hood being adapted to be fitted to a roof window frame and to cover a gap between a roof window frame and sash, the hood comprising a middle portion and two end caps, wherein one end cap is fitted at one end of the middle portion and another end cap is fitted at another end of the middle portion, and wherein one or both end caps comprises an inner piece and an outer piece, the outer piece being arranged over the inner piece, wherein the inner piece comprises one or more ventilation openings, and wherein the outer piece is arranged relative to the inner piece

such that air may pass around and/or through the outer piece and through the one or more ventilation openings on the inner piece.

[0009] In contrast to prior art hood end caps, which typically do not have ventilation openings, the hood end cap of the present invention has ventilation openings to permit flow of air through the hood end cap. Advantageously, the outer piece acts as a barrier to prevent rain water from passing through the ventilation openings on the inner piece. Therefore, use of the hood on a roof window can increase the ventilation through the hood without substantially compromising on the weatherproofing characteristics of the hood.

[0010] Ideally, part of the middle portion is located between the end cap inner piece and outer piece.

[0011] Ideally, the end cap inner piece and outer piece are two separate pieces, but they may alternatively be integrally formed with one another.

[0012] Ideally, the middle portion is arranged relative to the inner piece such that air that passes through the one or more ventilation openings on the inner piece passes underneath the middle portion. Advantageously, when the hood is fitted on a roof window, this provides a secondary means, other than the gap between the hood and sash glazing, for air to enter through the hood for ventilation.

[0013] Preferably, the inner piece and outer piece are configured to be connected to one another.

[0014] Ideally, when the inner piece and outer piece are connected, a gap is present between the inner piece and outer piece, such that air can flow through the gap and into the one or more ventilation openings on the inner piece. Ideally, the end cap comprises a spacer to space the outer piece apart from the inner piece. The spacer may be integrally formed with the outer or inner piece and there may be a plurality of spacers. Advantageously, the spacer ensures that a gap is present between the inner and outer pieces for airflow.

[0015] Ideally, the gap between the inner and outer piece is at least 3 mm and is ideally between 3 and 10 mm. In one embodiment, the gap is 3.6 mm, and in another embodiment, the gap is 8.82 mm.

[0016] In one embodiment, the outer piece comprises a ventilation opening. Ideally, in this embodiment, the outer piece comprises a cover for the ventilation opening on the outer piece. Advantageously, the cover prevents ingress of rainwater through the ventilation opening on the outer piece. The cover for the ventilation opening may be rounded or rectangular in shape.

[0017] Preferably, the inner piece comprises fixing means to fix the hood to a roof window. Most preferably, the fixing means is operable to releasably fix the hood to a roof window. Advantageously, the fixing means can be used to fix the hood to a roof window.

[0018] Ideally, the end cap comprises a connecting means for connecting the inner and outer pieces together. Ideally, the connecting means comprises an outer-piece connecting member. The outer-piece connecting

member ideally extends from an inner surface of the outer piece towards and through an opening on the inner piece when the end cap is assembled. Ideally, the outer-piece connecting member is configured to retain the outer piece on the inner piece. Preferably, the outer-piece connecting member has an elongate arm. Ideally, the outer-piece connecting member comprises a protrusion, protruding from the surface of the elongate arm.

[0019] Ideally, the connecting member has a rest configuration and is biased towards said rest configuration, so that if it is deformed it will return to the rest configuration on removal of the deforming force.

[0020] Ideally, the outer-piece connecting member and the inner piece opening through which the outer-piece connecting member extends when the inner and outer pieces are connected serves to correctly locate the outer piece on the inner piece during assembly.

[0021] Preferably, the inner piece opening which accommodates the outer-piece connecting member is sized just larger than the cross-sectional area of the outer-piece connecting member.

[0022] In use, when the outer piece is arranged on the inner piece, the protrusion of the elongate arm abuts the inner piece at the periphery of the opening. The installer must apply a force to force the protrusion into the opening. When a force is applied, the protrusion is laterally displaced, and the connecting member is urged away from the rest configuration. When the protrusion has passed through the opening, the connecting member then moves back towards the rest configuration and the protrusion is thereby prevented from easily passing through the opening again, for example, if the outer piece were to be lifted from the inner piece.

[0023] Preferably, the middle portion has an upper end that sits against the frame of a roof window when in use. Ideally, the middle portion has a lower end that sits against the frame or frame coverings, and also extends over the glazing of the sash when in use. Ideally, the middle portion has a profile such that it extends away from the upper and lower ends and therefore away from the roof window frame when in use on a roof window. Ideally, the middle portion has a cross section with an apex located part way between the upper and lower ends. Preferably, the profile of the middle portion is consistent along its length.

[0024] Ideally, the inner piece partially has a profile that conforms to the profile of the middle portion. Ideally, the inner piece has a bottom surface, a top surface and a side surface that extends between the bottom and top surface. Ideally, the bottom surface is adapted to engage with a frame and/or frame coverings of a roof window. Preferably, the top surface is adapted to engage with the middle portion of the hood, most preferably, with the underside of the middle portion of the hood. Ideally, at least part of the top surface is shaped to conform to the profile of the middle portion. Ideally, the side surface defines a sloping surface between the bottom and top surfaces of the inner piece. Ideally, the side surface extends between

opposing edge portions of the top surface.

[0025] Ideally, the opening for accommodating the connecting member, and/or the one or more ventilation openings are most preferably arranged together as a row on the inner piece. More preferably, they are located on the side surface of the inner piece and are preferably arranged as a row on the side surface.

[0026] Ideally, the outer piece partially has a profile that conforms to the profile of the middle portion. Preferably, the outer piece comprises a top surface and a side surface. Ideally, the side surface is arranged extending between opposing edge portions of the top surface. Preferably, the side surface defines a sloping surface. Preferably, the connecting member extends from the underside of the top surface. Ideally, the spacer or spacers are located disposed on the side surface of the outer piece, but may also or alternatively be disposed on the side surface of the inner piece. Ideally, the top surface of the outer piece is shaped to conform to the profile of the middle portion.

[0027] Ideally, the outer piece ventilation opening is located on the side surface. Ideally, the outer piece ventilation opening extends across more than 50%, 60%, 70% or 80% of the width of the side surface. Ideally, the outer piece ventilation opening has an elongate shape. Ideally, the longitudinal axis of the outer piece ventilation opening is perpendicular to or substantially perpendicular to the longitudinal axis of the middle portion.

[0028] Ideally, the ventilation area of the end cap is greater than 50, 100, 150, 200, 250, 300, 350, 400, or 450 mm².

[0029] A filter may be located between the inner and outer piece. Ideally, the filter is located in a position such that air will pass initially through the filter and then through the ventilation opening or openings on the inner piece. The filter may be located over the ventilation opening or openings on the inner piece. Ideally, the filter is an insect filter. The filter may also or alternatively be an air purification filter. Ideally, the filter has openings sized to permit movement of air across the filter but to prevent movement of insects across the filter. The filter may comprise substances for purifying air.

[0030] According to a second aspect of the invention there is provided a hood end cap for a hood of a roof window. The hood end cap may have any of the features in any combination of the hood end cap of the first aspect of the invention.

[0031] According to a third aspect of the invention there is provided a roof window, the roof window comprising a hood according to the first aspect of the invention.

[0032] Ideally, the roof window comprises a frame and a sash that is pivotally connected to the frame.

[0033] Preferably, the frame comprises a top member and a bottom member which are spaced apart and parallel to one another, and side members, also spaced apart and arranged parallel to one another, and wherein the side members extend between the top and bottom member.

[0034] Ideally, the sash comprises a top member and a bottom member which are spaced apart and parallel to one another, and side members, also spaced apart and arranged parallel to one another, and wherein the side members extend between the top and bottom member.

[0035] Preferably, the roof window comprises frame cover members that are fitted to the frame and cover at least part of the frame side members and sash side members when the sash is in a closed position.

[0036] Ideally, part of the frame cover members are positioned between the hood and the frame.

[0037] Preferably, the roof window comprises one or more hood-fixing members disposed on the frame for engaging with the hood to, most preferably releasably, fix the hood to the roof window frame.

[0038] Ideally, the hood is located extending over the frame top member and the sash top member when the sash is in a closed position. Ideally, the hood extends between the frame side members. Ideally, the sash has a glazing which extends between the top, bottom and side members of the sash. Ideally, a gap is present between the sash glazing at the hood to allow ventilation.

[0039] The invention will now be described, by way of example only, with reference to the accompanying drawings in which: -

Figure 1 is a perspective view of the exterior of a prior art roof window with a known hood.

Figure 2 is a trimetric view of a prior art hood with an end cap.

Figure 3 is a cross-sectional view of the hood and end cap of Figure 2.

Figure 4 is an isometric view of the hood and end cap of Figure 2.

Figure 5 is a trimetric view of a first embodiment of a hood with an end cap according to the invention.

Figure 6 is a cross-section view of the hood end cap of Figure 5.

Figure 7 is an isometric view of the inner piece of the hood end cap of Figure 5.

Figure 8 is an exploded isometric view of the hood end cap of Figure 5.

Figure 9 is an isometric view of the hood and end cap of Figure 5.

Figure 10 is a trimetric view of a second embodiment of a hood with an end cap according to the invention.

Figure 11 is a cross-section view of the hood and end cap of Figure 10.

Figure 12 is an exploded isometric view of the hood end cap of Figure 10.

Figure 13 is an isometric view of the hood and end cap of Figure 10.

Figure 14 is an isometric view of a third embodiment of a hood with an end cap according to the invention.

Figure 15 is a cross-section view of the hood and end cap of Figure 14.

Figure 16 is an exploded isometric view of the hood

end cap of Figure 14.

Figure 17 is an isometric view of the hood and end cap of Figure 14.

Figure 18 is a trimetric view of a fourth embodiment of a hood with an end cap according to the invention. Figure 19 is a cross-section view of the hood and end cap of Figure 18.

Figure 20 is an exploded isometric view of the hood end cap of Figure 18.

Figure 21 is an isometric view of the hood and end cap of Figure 18.

Figure 22 is an isometric view of a fifth embodiment of a hood with an end cap according to the invention.

Figure 23 is a cross-section view of the hood and end cap of Figure 22.

Figure 24 is an exploded isometric view of the hood end cap of Figure 22.

Figure 25 is an isometric view of the hood and end cap of Figure 22.

[0040] In Figures 5 to 9 there is shown a first embodiment of a hood indicated by reference numeral 108 according to the invention. The hood 108 is adapted to be fitted to a roof window frame and to cover a gap between a roof window frame and sash, in the same manner as that of the hood 8 of Figure 1. The hood 108 has a middle portion 111 and two end caps, although only one end cap 112 is illustrated. The end cap 112 is fitted to the right-hand side of the middle portion 111, the right-hand side being as viewed from the exterior side of the roof window. The other end cap (not shown) is fitted to the left-hand side of the middle portion 111. The end cap 112 has an inner piece 113 and an outer piece 114. The outer piece 114 is arranged over the inner piece 113. The inner piece 113 has four ventilation openings 115. The outer piece 114 is arranged relative to the inner piece 113 such that air may pass around and/or through the outer piece 114 and through the ventilation openings 115 on the inner piece 113. Variations will be apparent to those skilled in the art, for example, the inner piece may have less or more than four ventilation openings. Further, the other end cap (not shown) may have the same configuration as the illustrated end cap 112, or a different configuration. For example, it could be similar to a prior art end cap, or it could have the configuration of one of the end caps of the other embodiments herein described. The outer piece 114 acts as a barrier to prevent rain water from passing through the ventilation openings 115 on the inner piece 113. Therefore, use of the hood 108 on a roof window can increase the ventilation through the hood 108 without substantially compromising on the weatherproofing characteristics of the hood 108.

[0041] Part of the middle portion 111 is located between the end cap inner piece 113 and outer piece 114. The end cap inner piece 113 and outer piece 114 are two separate pieces, but they may alternatively be integrally formed. The middle portion 111 is arranged relative to the inner piece 113 such that air that passes through the

ventilation openings 115 on the inner piece 113 passes underneath the middle portion 111. Advantageously, when the hood 108 is fitted on a roof window, this provides a secondary means, other than the gap between the hood and sash glazing, for air to enter through the hood 108 for ventilation.

[0042] The inner piece 113 and outer piece 114 are configured to be connected to one another. When the inner piece 113 and outer piece 114 are connected, a gap 116 is present between the inner piece 113 and outer piece 114, such that air can flow through the gap 116 and into the ventilation openings 115 on the inner piece 113.

[0043] The end cap 112 has a spacer to space the outer piece 114 apart from the inner piece 113. More specifically, the end cap 112 has two spacers 117 spaced apart from one another. The spacers 117 are integrally formed with the outer piece 114. The spacer 117 ensures that a gap is present between the inner and outer pieces 113, 114 for airflow. Variations will be apparent to those skilled in the art. For example, a single spacer or more than two spacers may be used. The spacer need not be integrally formed with the outer piece and could instead be formed with the inner piece or may instead be an individual part. A plurality of spacers comprising of one more that are formed as part of the inner piece, one or more that are formed as part of the outer piece, and/or one or more that are individual parts could be used.

[0044] The gap 116 is 3.6 mm wide, and the outer piece 114 overhangs the inner piece by 4 mm. As can be seen in Figure 3 this contrasts significantly with the prior art where there is no overlap between the inner and outer piece 13, 14, and no gap. As will be apparent to those skilled in the art, the gap may be greater or less than 3.6 mm. Even a very slight gap (e.g., less than 1 mm) will improve the ventilating properties of the hood. Ideally, the gap is between 3 and 10 mm, and further specific embodiments with gaps larger than the first embodiment are described below. The ventilation area of the end cap 112 in the illustrated embodiment in Figures 5 to 9 is increased by 290 mm² relative to the prior art end cap 12.

[0045] The inner piece 113 has fixing means 119 to fix the hood 108 to a roof window. The fixing means 119 is operable to releasably fix the hood 108 to a roof window. The fixing means 119 engages with a hood-fixing member (not shown) that is in turn fixed to the roof window frame. The fixing means 119 has two arms 120a, 120b. The arms 120a, 120b can move relative to one another. The arms 120a, 120b can bend inwards when they connect with the hood-fixing member when they are moved towards the hood-fixing member. Once they are inserted fully into the hood-fixing member, the arms 120a, 120b moves towards a resting configuration. A projection 122 on one arm 121b prevents the arms 120a, 120b from easily being removed from the hood-fixing member. The fixing means 119 can be removed from the hood-fixing member by squeezing the arms 120a, 120b together, then raising the fixing means 119 away from the hood-

fixing member.

[0046] The end cap 112 comprises a connecting means 123 for connecting the inner and outer pieces 113, 114 together. The connecting means 123 has an outer-piece connecting member 124. The outer-piece connecting member 124 extends from an inner surface 125 of the outer piece 114 towards and through an opening 126 on the inner piece 113 when the end cap 112 is assembled. The opening 126 also functions as a ventilation opening 115. Whereas the prior art hood end cap 12 also has an opening to receive a connecting member, this opening is not a ventilation opening because it is not intended to be used to allow air to enter through the hood end cap, and when the prior art hood end cap 12 is assembled, the outer piece 14 sits tight against the inner piece 13 so there is no gap to allow entry of air between the inner piece 13 and outer piece 14, and the opening on the inner piece is not therefore a ventilation opening.

[0047] Referring again to the first embodiment of the invention, the outer-piece connecting member 124 is configured to retain the outer piece 114 on the inner piece 113. The outer-piece connecting member 124 has an elongate arm 127 and it further has a protrusion 128 protruding from the surface of the elongate arm 127. The connecting member 124 has a rest configuration and is biased towards said rest configuration, so that if it is deformed it will return to the rest configuration on removal of the deforming force.

[0048] The outer-piece connecting member 124 and the inner piece opening 126 through which the outer-piece connecting member 124 extends when the inner and outer pieces 113, 114 are connected serves to correctly locate the outer piece 114 on the inner piece 113 during assembly. The inner piece opening 126 which accommodates the outer-piece connecting member 124 has a width sized just larger than the cross-sectional area of the outer-piece connecting member 124.

[0049] In use, when the outer piece 114 is arranged on the inner piece 113, the protrusion 128 of the elongate arm 127 abuts the inner piece 113 at the periphery of the opening 126. The installer must apply a force to force the protrusion 128 into the opening 126. When a force is applied, the protrusion 128 is laterally displaced, and the connecting member 124 is urged away from the rest configuration. When the protrusion 128 has passed through the opening 126, the connecting member 128 then moves back towards the rest configuration and the protrusion 128 is thereby prevented from easily passing through the opening again, for example, if the outer piece 114 were to be lifted from the inner piece 113.

[0050] The middle portion 111 has an upper end 129 that sits against the frame of a roof window when in use. The middle portion 111 further has a lower end 130 that sits against the frame or frame coverings, and also extends over the glazing of the sash when in use. The middle portion 111 has a profile such that it extends away from the upper and lower ends 129, 130 and therefore away from the roof window frame when in use on a roof

window. The middle portion has a C-shaped cross section located between the upper and lower ends 129, 130. The profile of the middle portion 111 is consistent along its length.

[0051] The inner piece 113 partially has a profile that conforms to the profile of the middle portion 111. The inner piece 113 has a bottom surface 131, a top surface 132 and a side surface 133 that extends between the bottom and top surface 131, 132. The bottom surface 131 is adapted to engage with a frame and/or frame coverings of a roof window. The top surface 132 is adapted to engage with the middle portion 111 of the hood 108. More specifically, the top surface 132 is adapted to engage with the underside of the middle portion 111 of the hood 108. The top surface 132 is shaped to conform to the profile of the middle portion 111. The side surface 133 defines a sloping surface between the bottom and top surfaces 131, 132 of the inner piece 113. The side surface 133 extends between opposing edge portions of the top surface 132.

[0052] The opening 126 for accommodating the connecting member 124, and the ventilation openings 115 are located on the side surface 133 arranged as a row on the side surface. It will be apparent to the skilled person that the opening 126 and ventilation openings 115 need not necessarily be arranged as a row but may be in any desirable pattern.

[0053] The outer piece 114 partially has a profile that conforms to the profile of the middle portion 111. The outer piece 114 has a top surface 134 and a side surface 135. The side surface 135 is arranged extending between opposing edge portions of the top surface 134. The side surface 135 defines a sloping surface. The connecting member 124 extends from the underside of the top surface 134. The spacers 117 are located disposed on the side surface 135 of the outer piece 114, but may also or alternatively be disposed on the side surface 133 of the inner piece 113. The top surface 134 of the outer piece 114 is shaped to conform to the profile of the middle portion 111.

[0054] The inner piece 113 further has a channel 136 for directing rainwater. The channel 136 is located at the lowermost part of the inner piece 113 when installed on a roof window. In use, rainwater will be directed off the outer piece 114 and into the channel 136 where it is then carried off the end cap 112 and onto the other roof coverings lower down on the roof window. The channel 136 extends around the side and upper perimeter of the inner piece 113. Whereas in this disclosure the terms inner piece 113 and outer piece 114 have been used, the entirety of the inner piece 113 is not necessarily enclosed by the outer piece 114, and parts of the inner piece 113 may be external to the outer piece 114. For example, the channel 136 is external relative to the outer piece 114. The inner piece 113 further has an aperture 137 to receive a screw or other suitable fixing to secure the inner piece 113 to the frame of a roof window.

[0055] Referring now to the second embodiment of the

invention, shown in Figures 10 to 13, there is provided a hood 208 with an end cap 212. The end cap 212 has an inner piece 213 and outer piece 214. The outer piece 214 has a top surface 234 and a side surface 235. The side surface 235 is arranged extending between opposing edge portions of the top surface 234. The side surface 235 defines a sloping surface.

[0056] The outer piece 214 has a ventilation opening 238. The outer-piece ventilation opening 238 is located on the side surface 235. The outer piece ventilation opening 238 extends across 75% of the width of the side surface 235. However, it will be apparent to the skilled person that the outer-piece ventilation opening may extend across more or less than 75% of the width of the side surface. The outer piece ventilation opening 238 has an elongate shape. The longitudinal axis of the outer piece ventilation opening 238 is perpendicular to the longitudinal axis of the middle portion 211. The outer piece 214 has a cover 240 for the ventilation opening 238 on the outer piece 214. The cover 240 prevents ingress of rainwater through the ventilation opening 238 on the outer piece 214. In this embodiment, the cover 240 is rectangular, but it could feasibly be any desired shape provided it functions as a cover. The ventilation area of the second embodiment of the end cap is 453 mm² per end cap.

[0057] Referring now to the third embodiment of the invention, shown in Figures 14 to 17, there is provided a hood 308 with an end cap 312. The end cap 312 has an inner piece 313 and outer piece 314. The outer piece 314 has a ventilation opening 338 and a cover 340 for the ventilation opening 338 on the outer piece 314. The cover 340 prevents ingress of rainwater through the ventilation opening 338 on the outer piece 314. In this embodiment, the ventilation cover 340 is a rounded hood. The ventilation area of the third embodiment of the end cap is 458 mm² per end cap.

[0058] Referring now to the fourth embodiment of the invention, shown in Figures 18 to 21, there is provided a hood 408 with an end cap 412. The end cap 412 has an inner piece 413 and outer piece 414. The outer piece 414 has a top surface 434 and a side surface 435. The side surface 435 is arranged extending between opposing edge portions of the top surface 434. The side surface 435 defines a sloping surface. The outer piece 414 has a ventilation opening 438 and a cover 440 for the ventilation opening 438 on the outer piece 414. The outer-piece ventilation opening 438 is located on the side surface 435. The outer piece ventilation opening 438 extends across the entirety of the width of the side surface 435. Further in this embodiment, there is a gap 416 present between the inner piece 413 and outer piece 414, and the gap 416 is 8.82 mm in width. The ventilation area of this embodiment of the end cap is 431 mm² per end cap.

[0059] Referring now to the fifth embodiment of the invention, shown in Figures 22 to 25, there is provided a hood 508 with an end cap 512. The end cap 512 has an inner piece 513 and outer piece 514. There is a gap 516

between the inner and outer pieces 513, 514. The outer piece 514 has a ventilation opening 538 and a cover 540 for the ventilation opening 538 on the outer piece 514. This embodiment differs from the other embodiments because the lower edge portion 541 of the outer piece 514 at its upper edge and sides is configured to abut the inner piece 513, whereas in the other embodiments a gap is purposefully left here for airflow. A gap is not needed in this embodiment at the lower edge portion 541 of the outer piece 514 because air can enter through the end cap 512 via the outer-piece ventilation opening 538.

[0060] In an embodiment not shown, there is provided a hood end cap with a filter located between the inner and outer piece. The filter is located over the ventilation openings of the inner piece and has openings sized to allow movement of air across the filter, but to prevent insects from crossing the filter and entering through the ventilation openings. In yet a further embodiment, the filter contains substances to purify the air.

[0061] The skilled person 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.

[0062] 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.

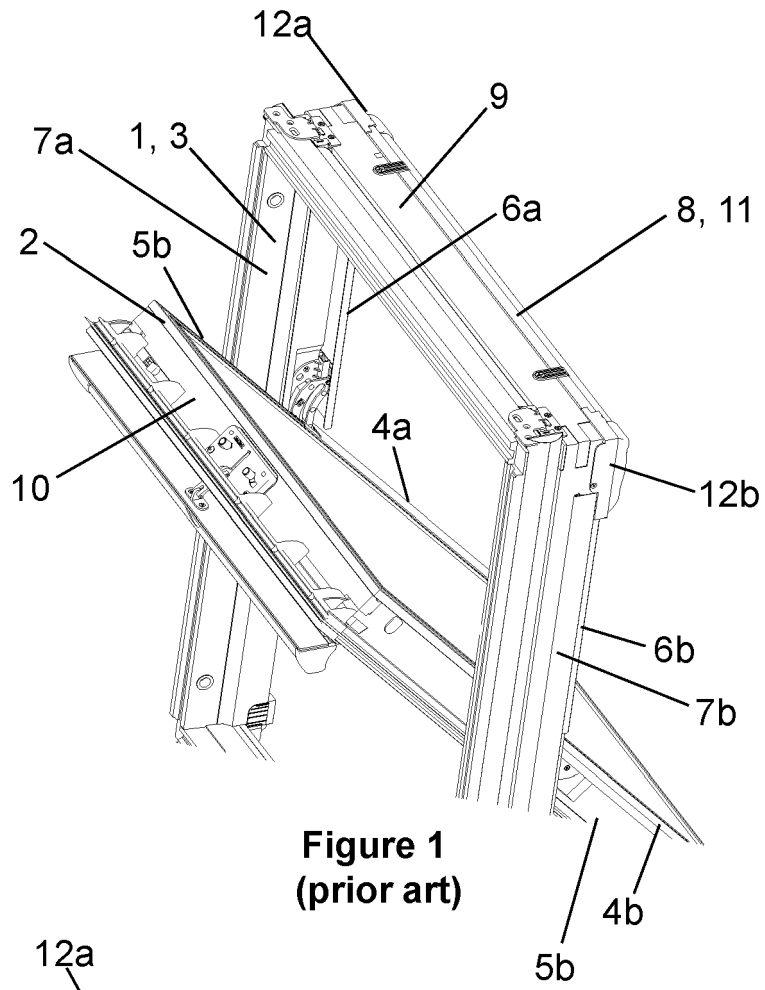
[0063] In relation to the detailed description of the different embodiments of the invention, it will be understood that one or more technical features of one embodiment can be used in combination with one or more technical features of any other embodiment where the transferred use of the one or more 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.

[0064] 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.

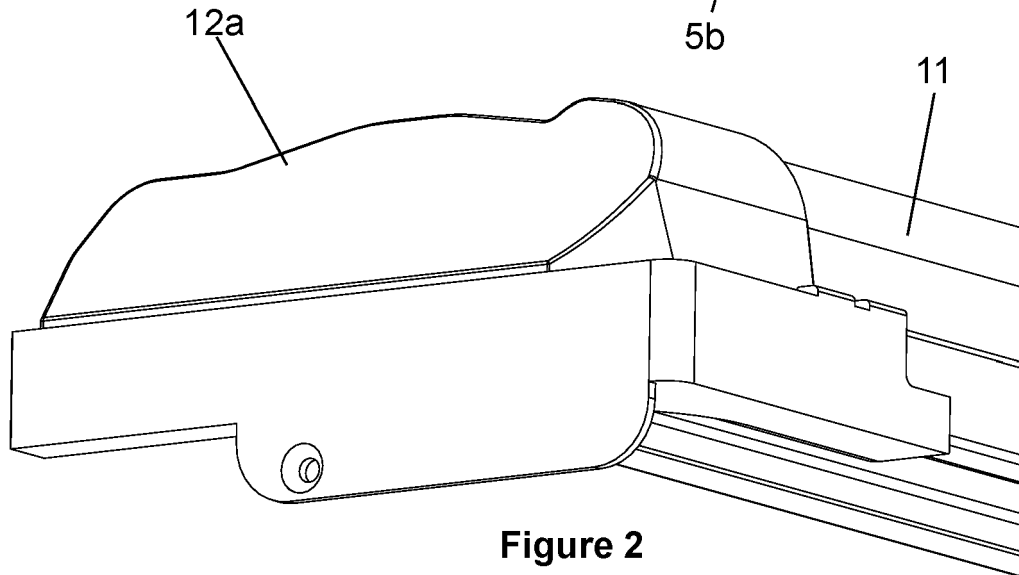
Claims

1. A hood for a roof window, the hood being adaptable to be fitted to a roof window frame and to cover a gap between a roof window frame and sash, the hood comprising a middle portion and two end caps, wherein one end cap is fitted at one end of the middle portion and another end cap is fitted at another end

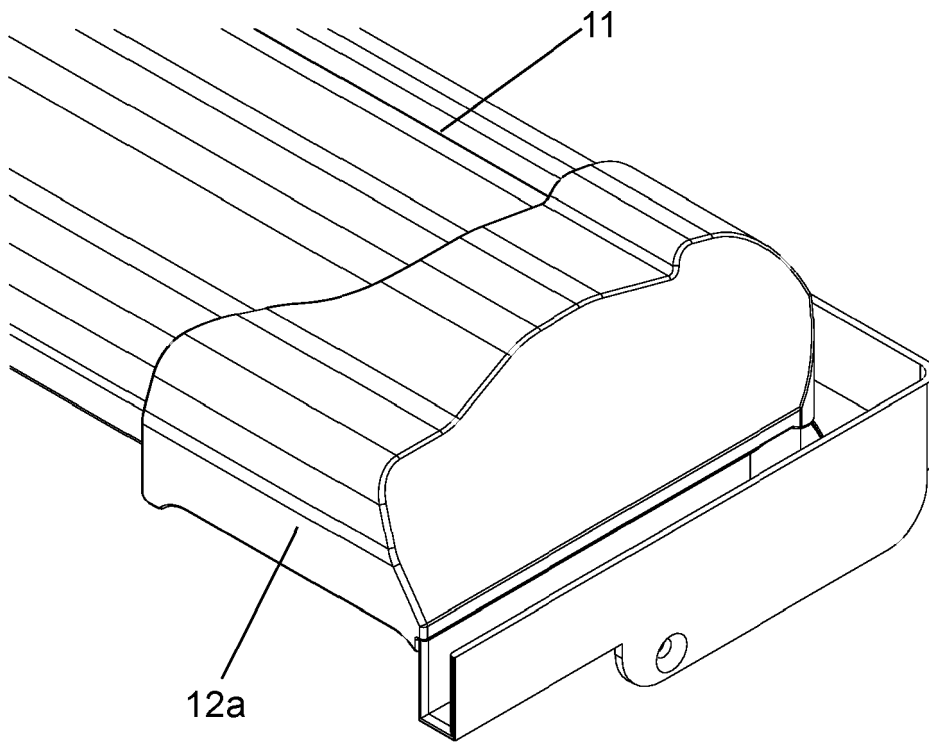
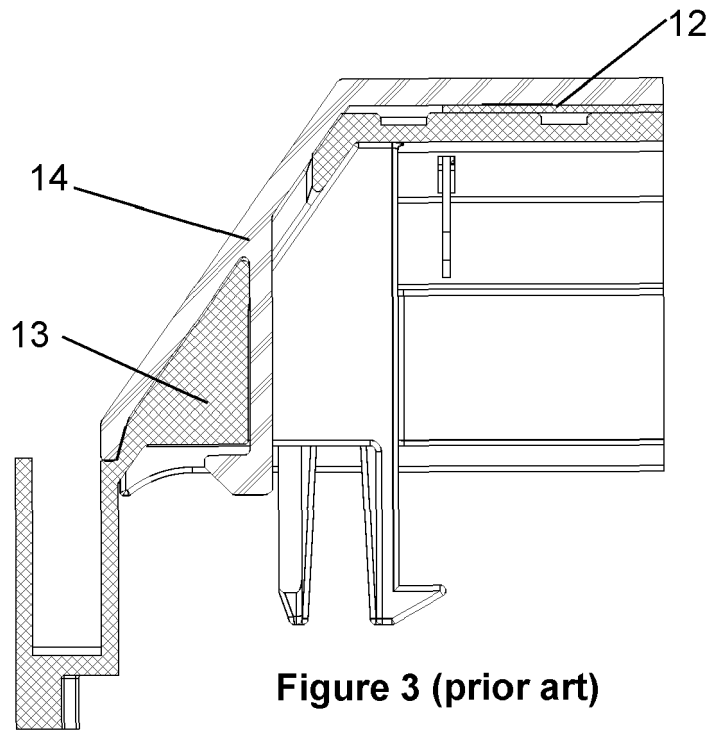
- of the middle portion, and wherein one or both end caps comprises an inner piece and an outer piece, the outer piece being arranged over the inner piece, wherein the inner piece comprises one or more ventilation openings, and wherein the outer piece is arranged relative to the inner piece such that air may pass around and/or through the outer piece and through the one or more ventilation openings on the inner piece.
2. A hood as claimed in claim 1, wherein part of the middle portion is located between the end cap inner piece and end cap outer piece.
 3. A hood as claimed in claim 1 or claim 2, wherein the end cap inner piece and outer piece are two separate pieces or alternatively the end cap inner piece and outer piece are integrally formed with one another.
 4. A hood as claimed in any one of the preceding claims, wherein the middle portion is arranged relative to the inner piece such that air that passes through the one or more ventilation openings on the inner piece passes underneath the middle portion.
 5. A hood as claimed in any one of the preceding claims, wherein the inner piece and outer piece are configured to be connected to one another.
 6. A hood as claimed in claim 5, wherein when the inner piece and outer piece are connected, a gap is present between the inner piece and outer piece, such that air can flow through the gap and into the one or more ventilation openings on the inner piece.
 7. A hood as claimed in any one of the preceding claims, wherein the end cap comprises one or more spacers to space the outer piece apart from the inner piece.
 8. A hood as claimed in claim 7, wherein the one or more spacers are integrally formed with the outer piece or inner piece.
 9. A hood as claimed in claim 6, wherein the gap between the inner piece and outer piece is between 3 mm and 10 mm.
 10. A hood as claimed in any one of the preceding claims, wherein the outer piece comprises at least one ventilation opening.
 11. A hood as claimed in claim 10, wherein the outer piece comprises a cover for the ventilation opening on the outer piece.
 12. A hood as claimed in any one of the preceding claims, wherein the inner piece comprises fixing means to fix the hood to a roof window.
 13. A hood as claimed in claim 12, wherein the fixing means is operable to releasably fix the hood to a roof window.
 14. A hood as claimed in any one of the preceding claims, wherein the end cap comprises a connecting means for connecting the inner and outer pieces together.
 15. A hood as claimed in claim 14, wherein the connecting means comprises an outer-piece connecting member, the outer-piece connecting member extends from an inner surface of the outer piece towards and through an opening on the inner piece when the end cap is assembled, the outer-piece connecting member is configured to retain the outer piece on the inner piece.



**Figure 1
(prior art)**



**Figure 2
(prior art)**



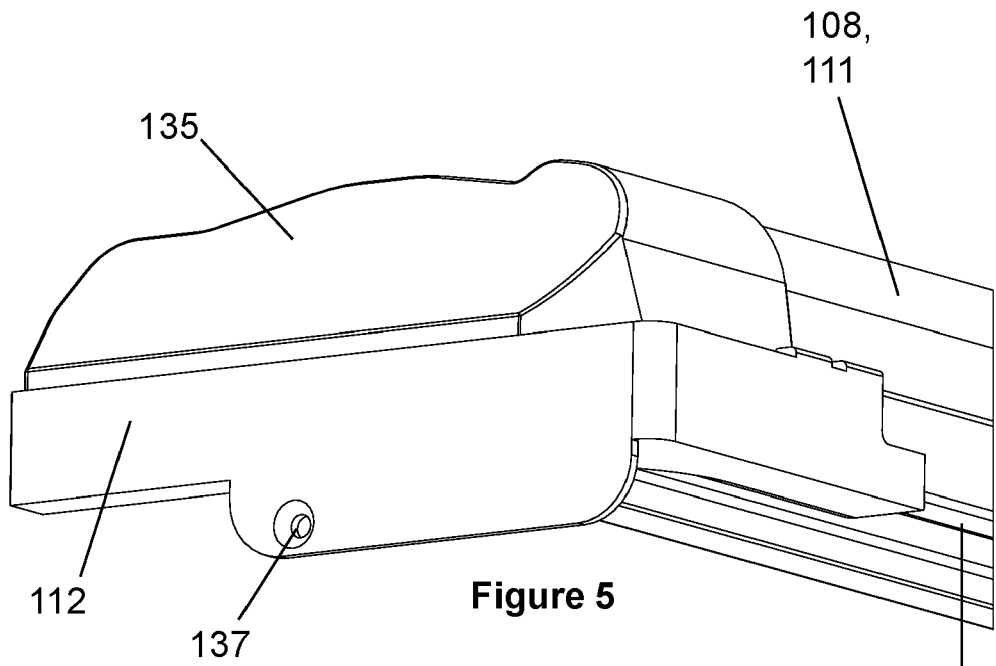


Figure 5

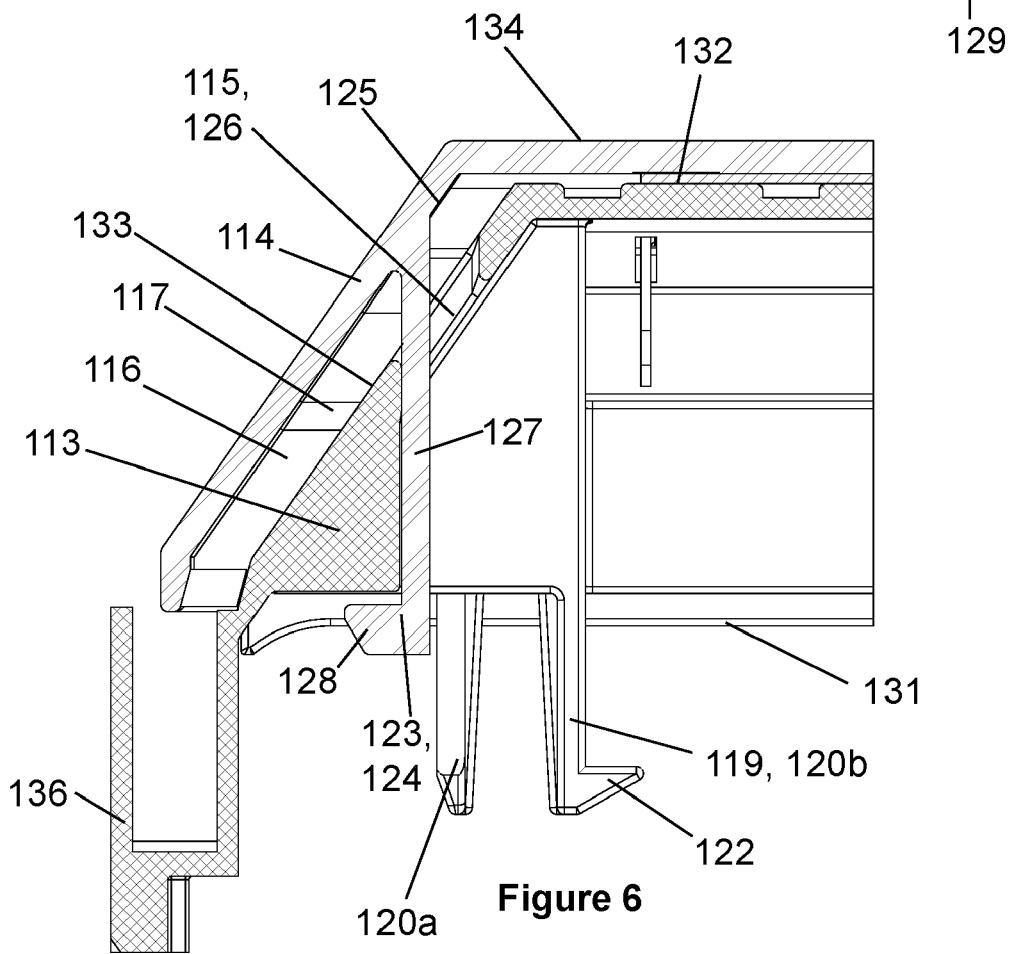
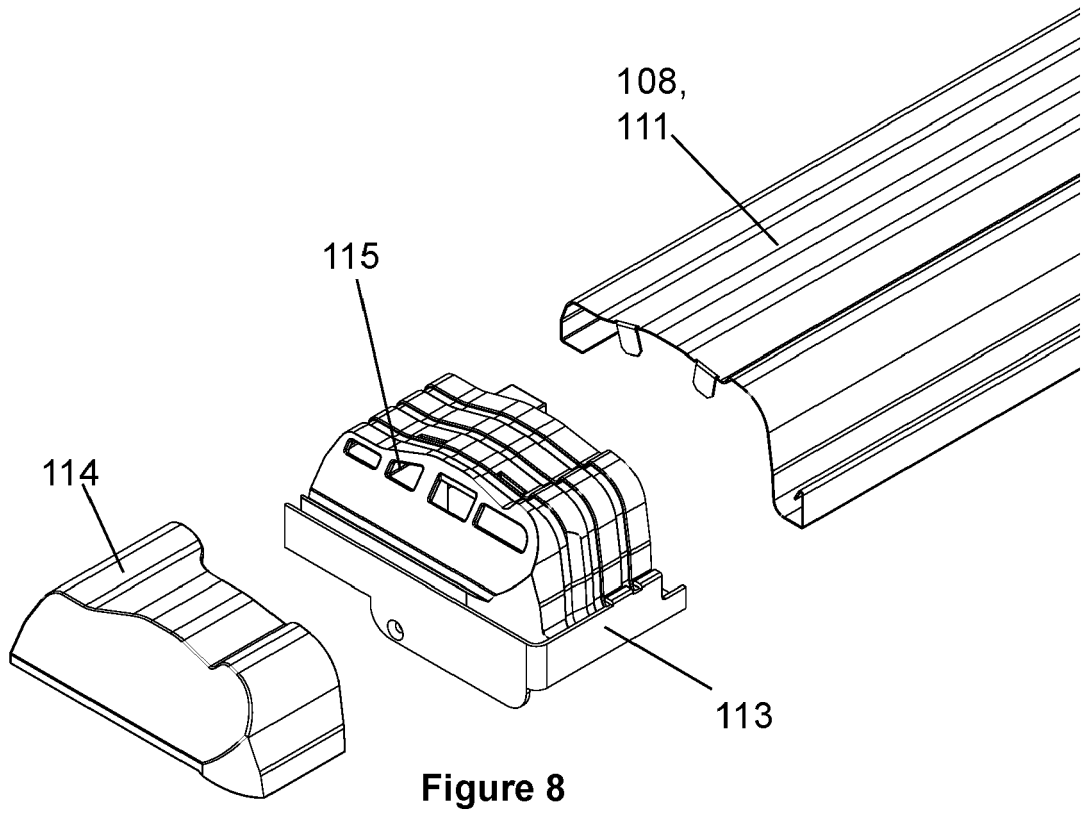
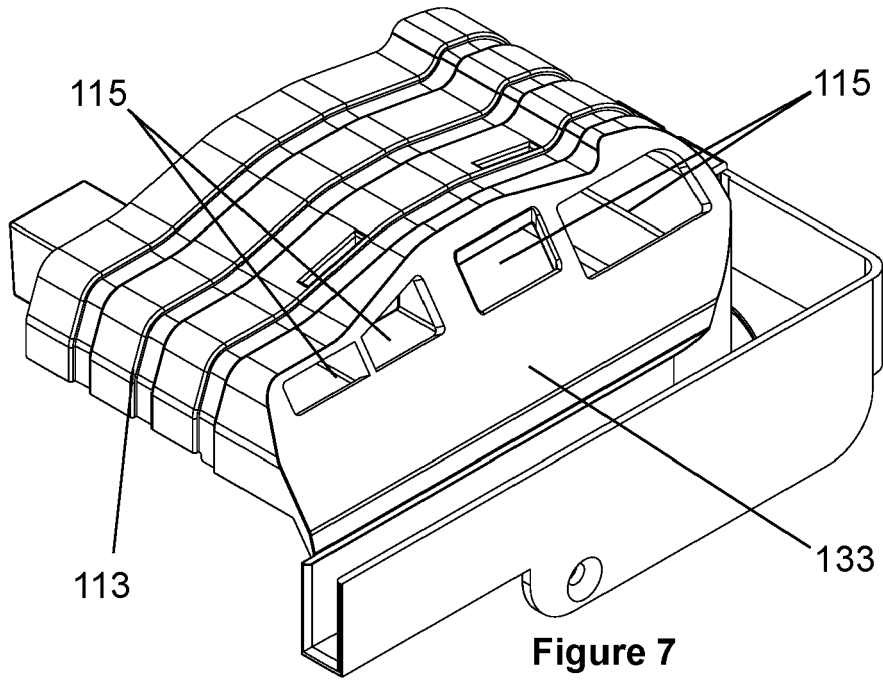
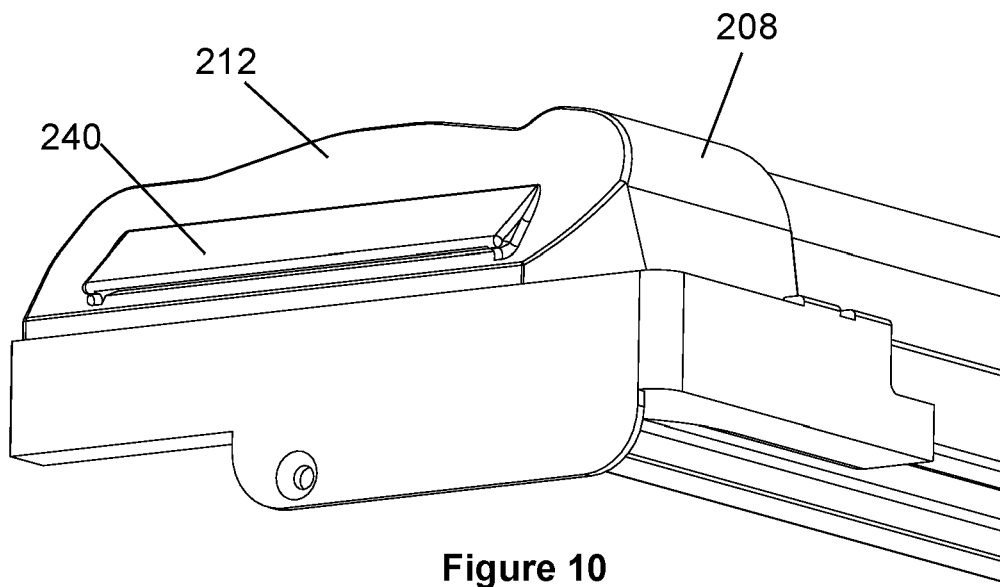
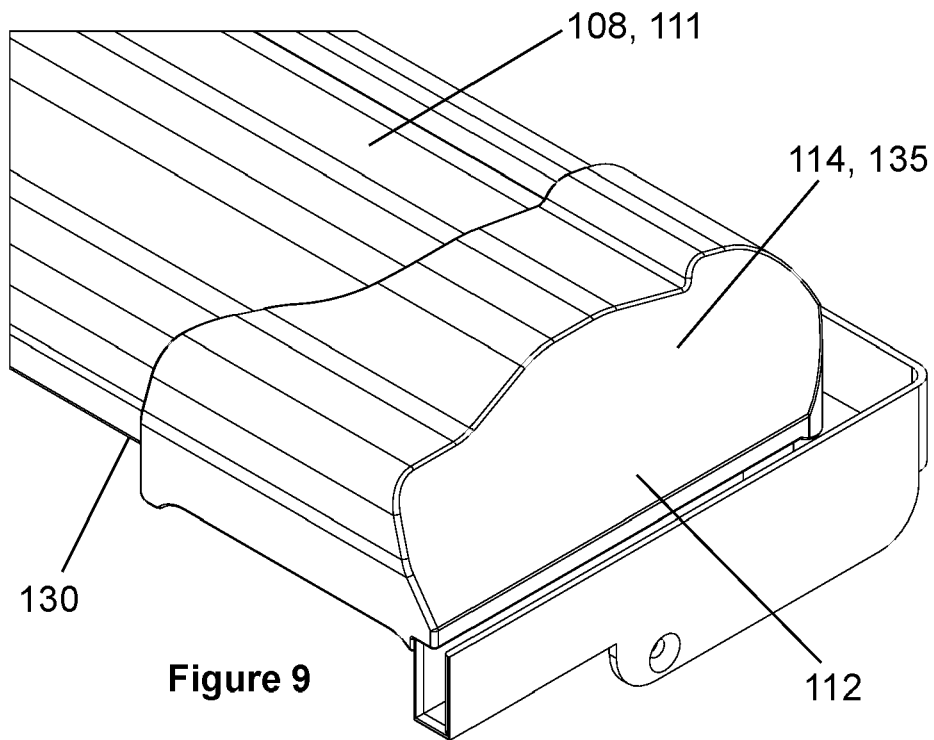


Figure 6





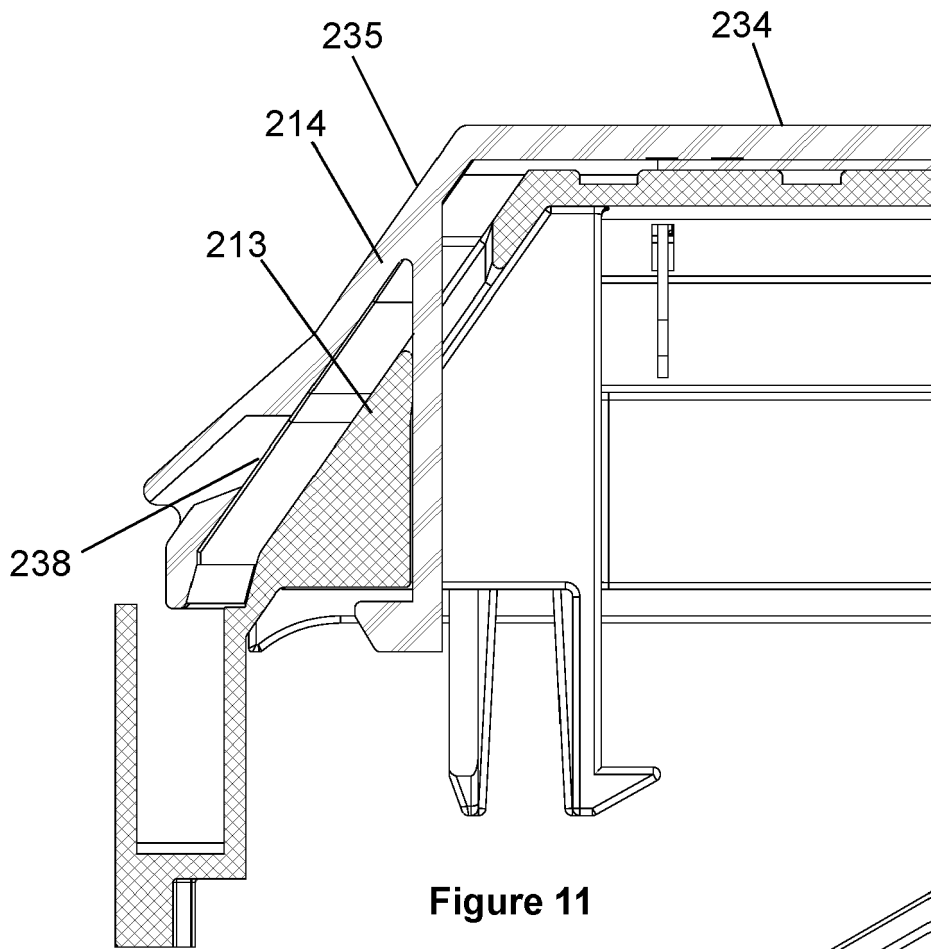


Figure 11

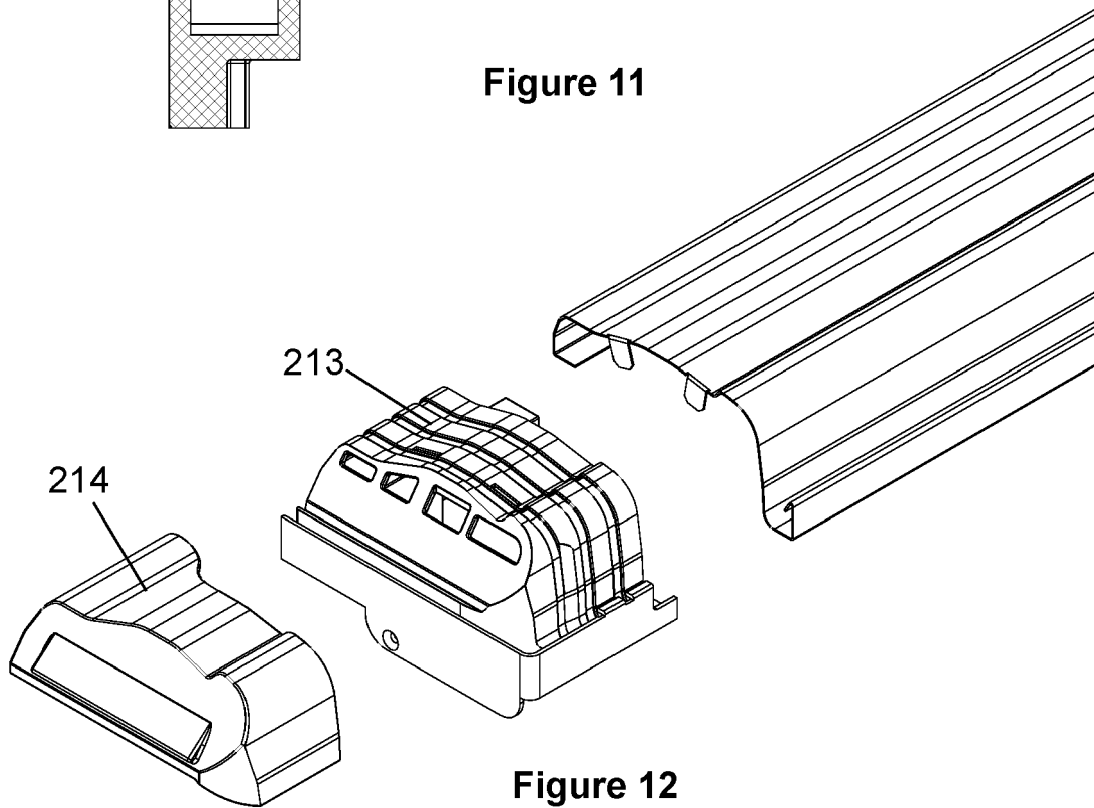


Figure 12

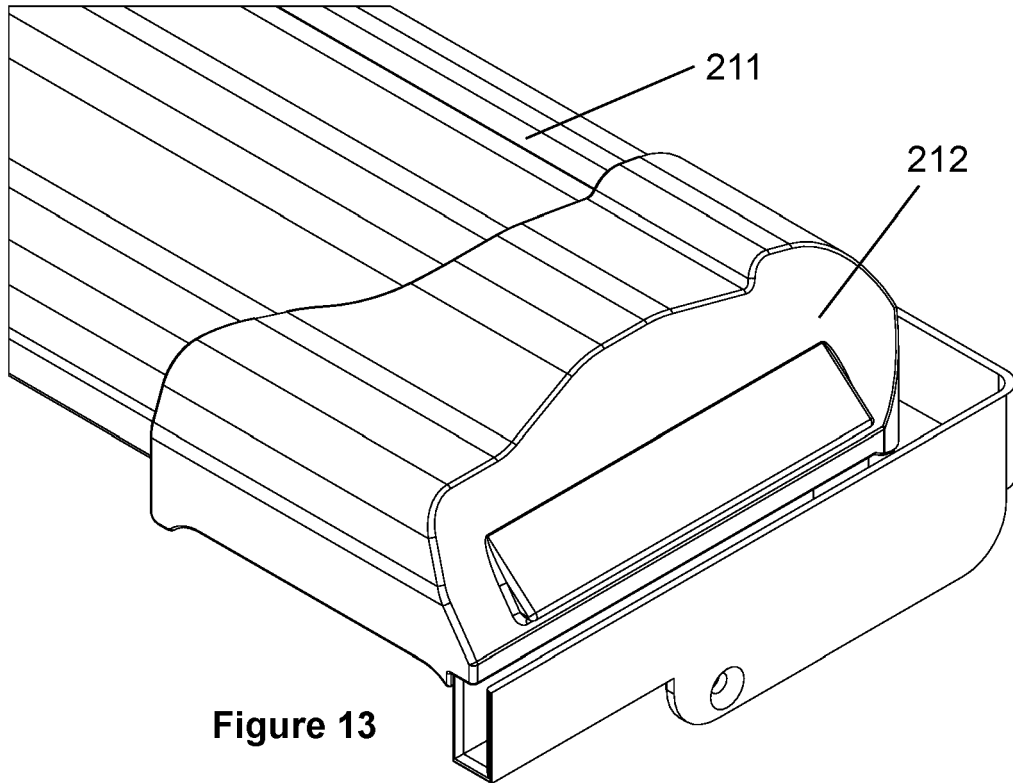


Figure 13

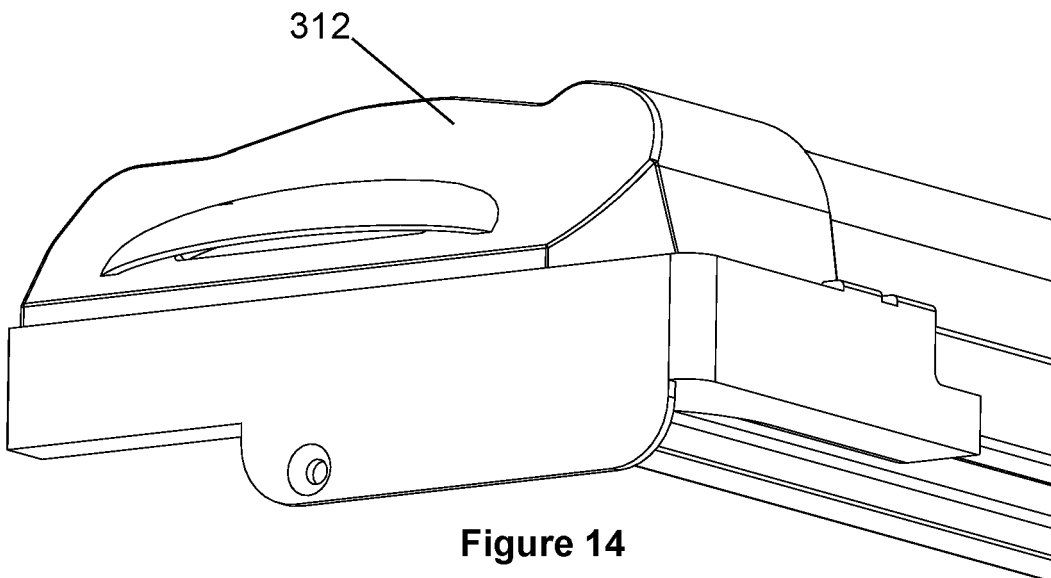


Figure 14

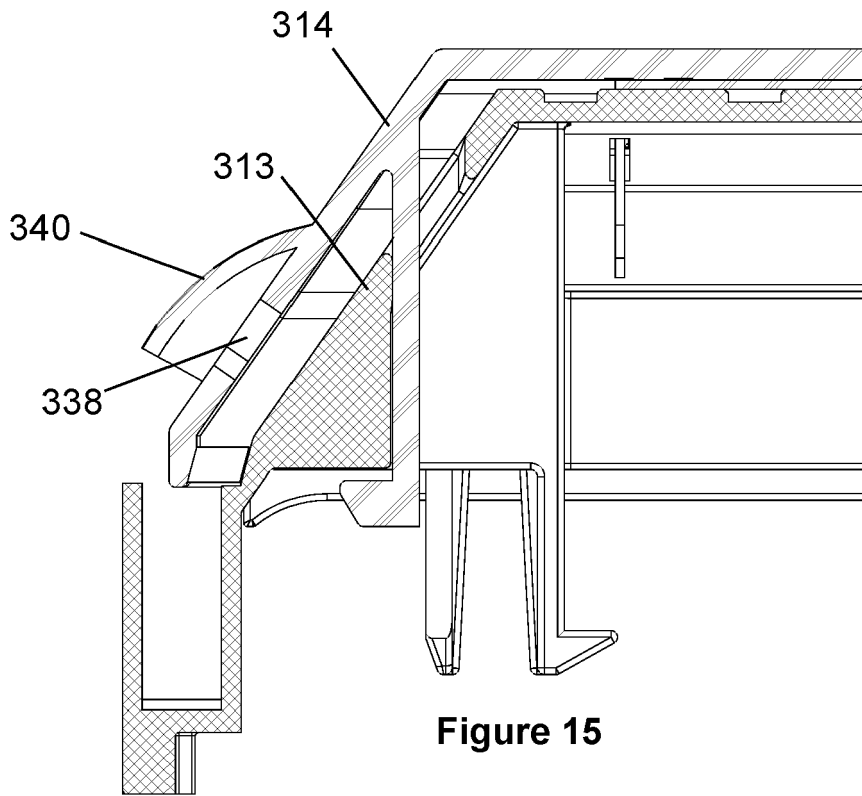


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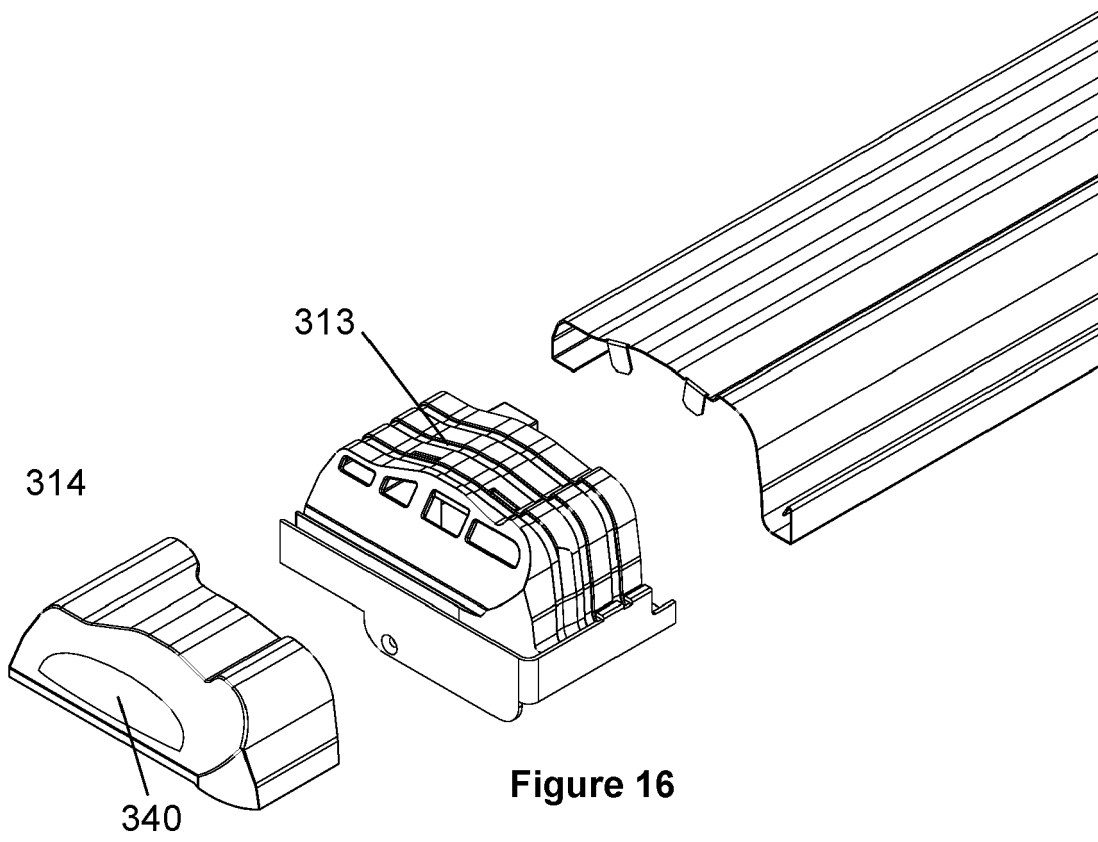
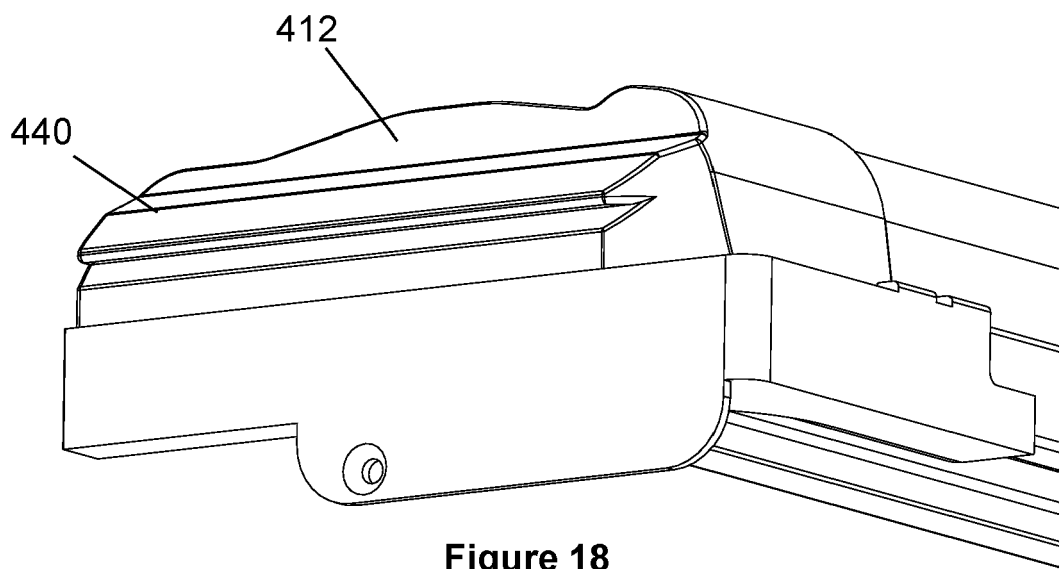
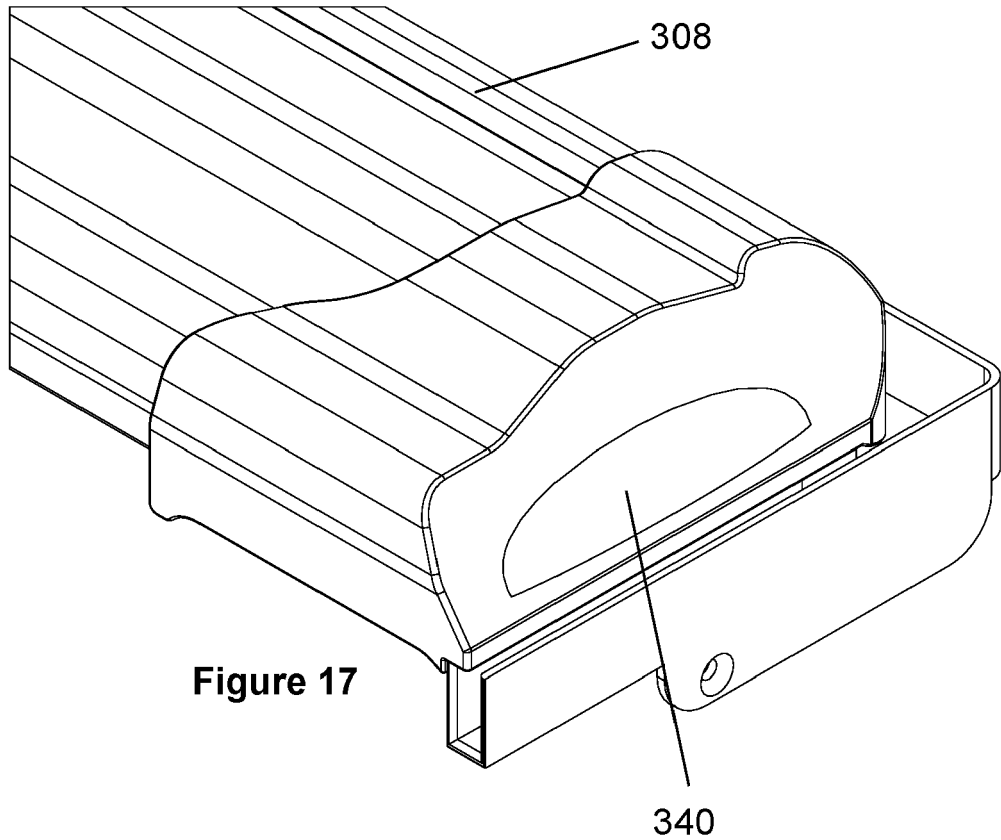


Figure 16



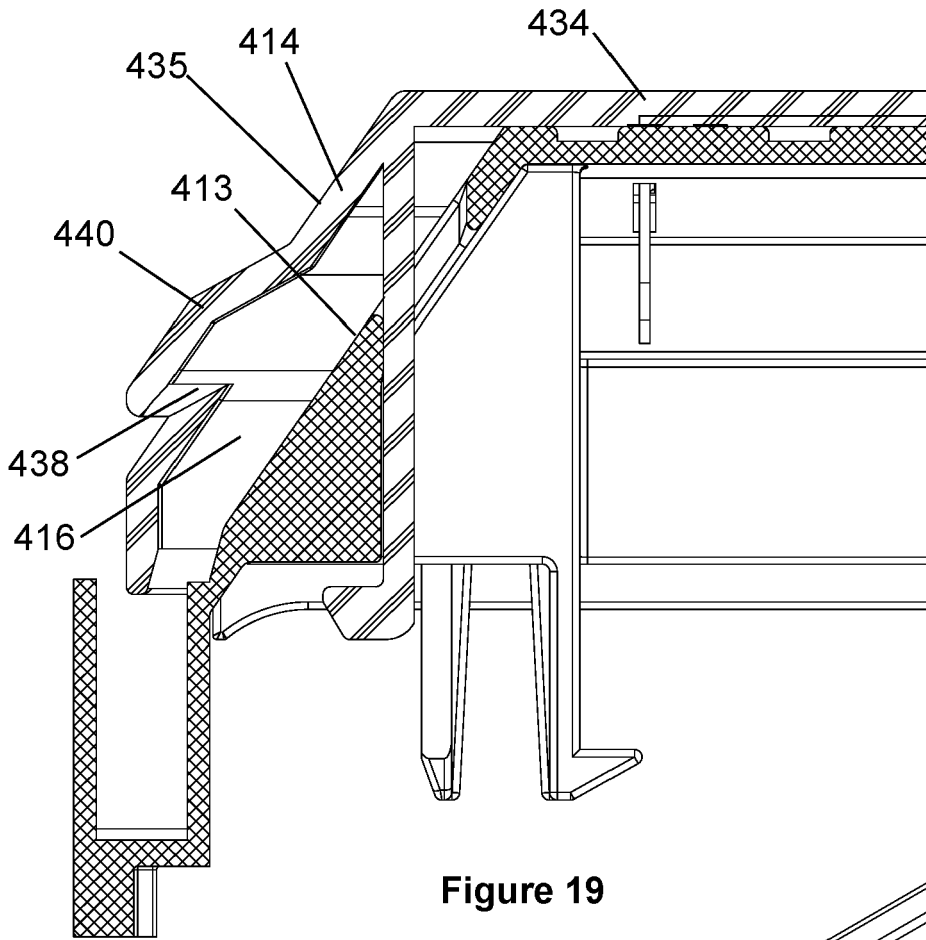


Figure 19

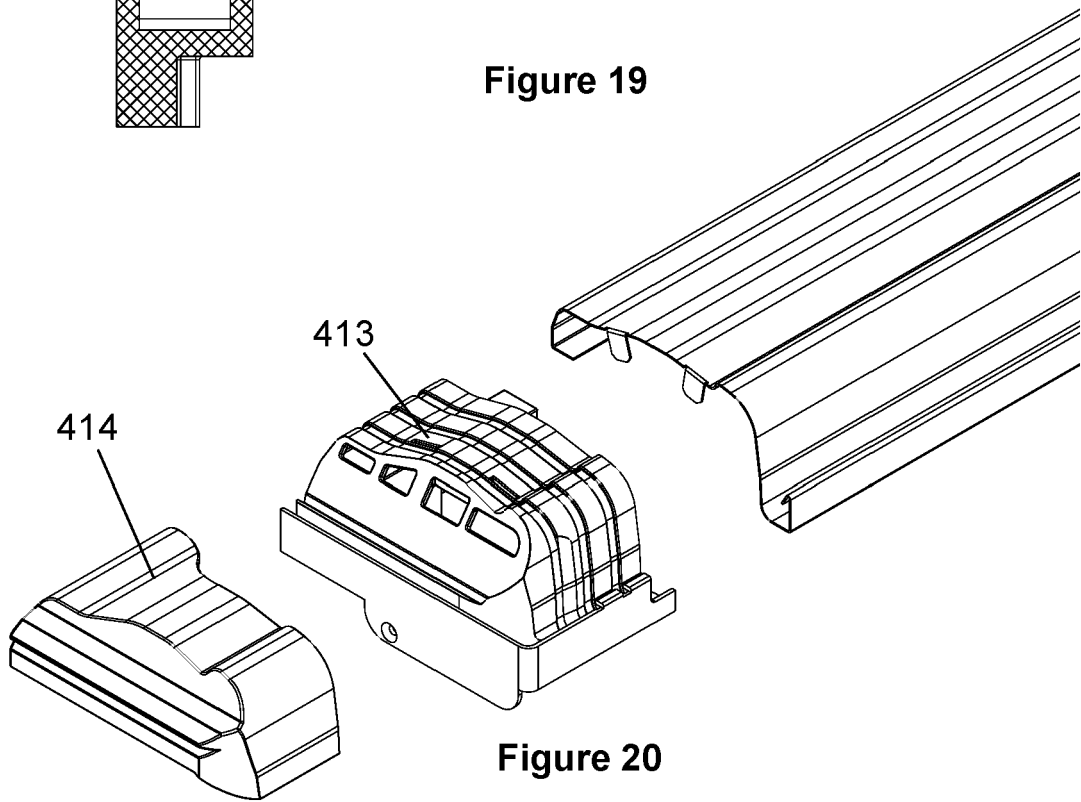


Figure 20

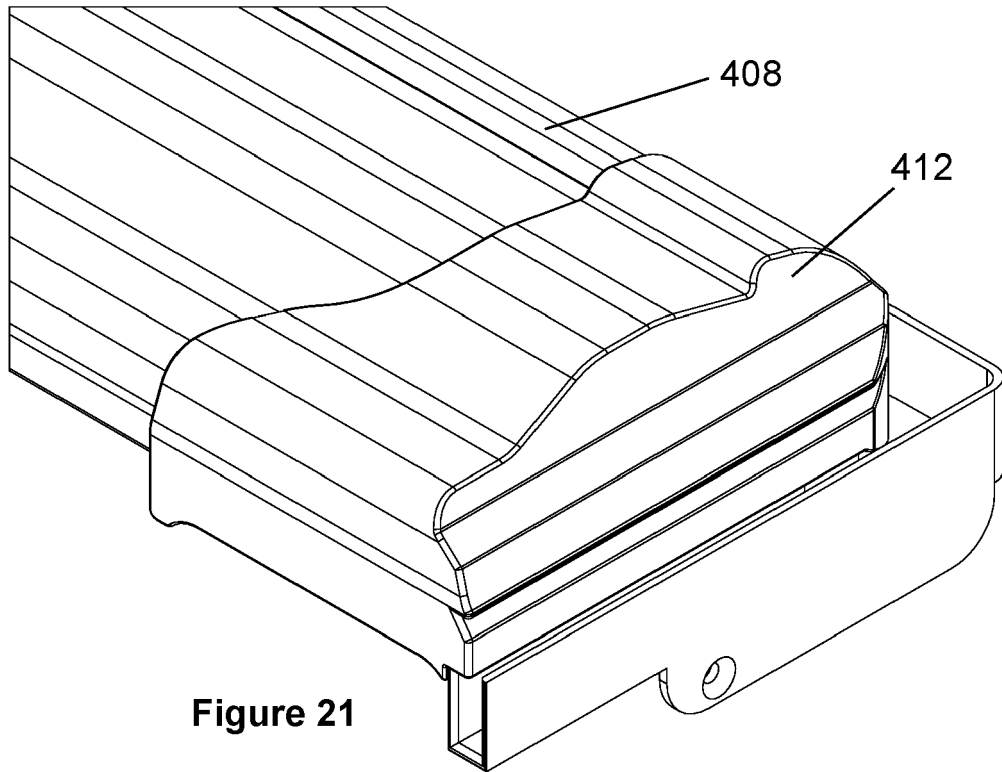


Figure 21

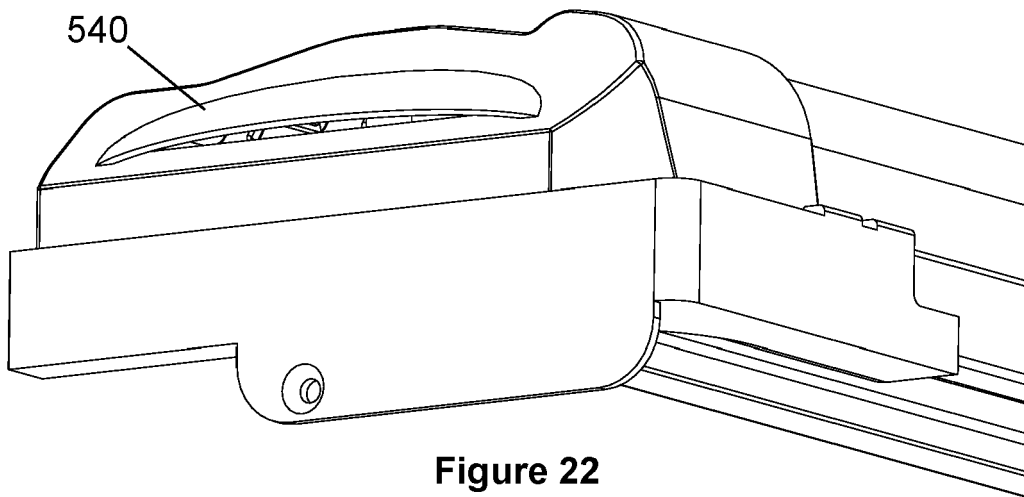


Figure 22

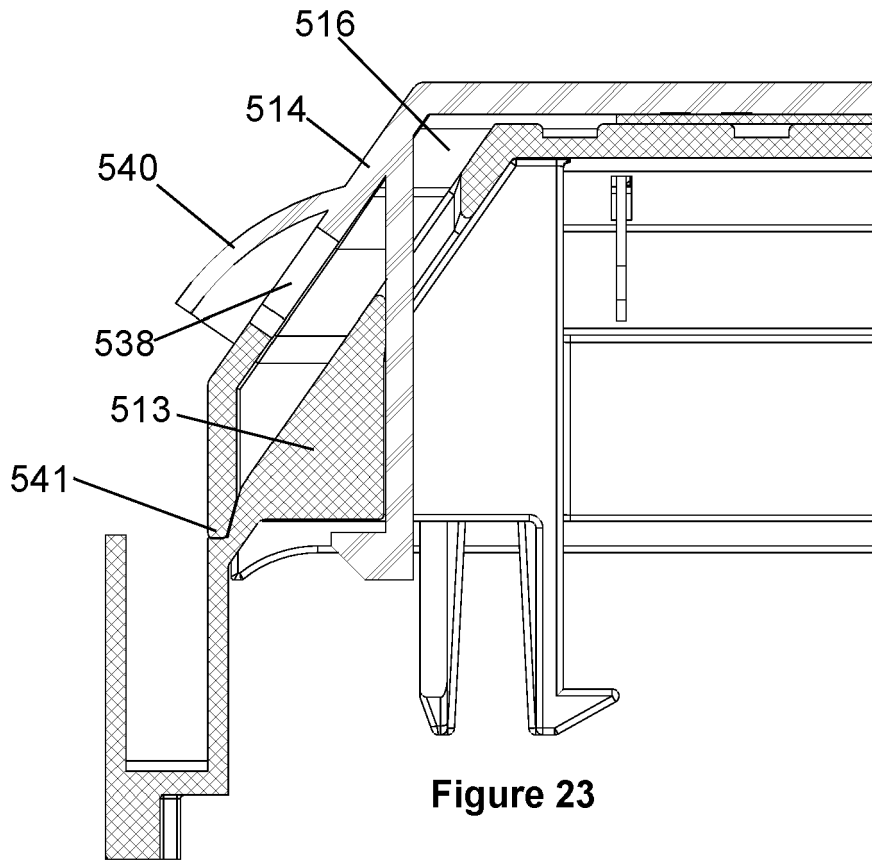


Figure 23

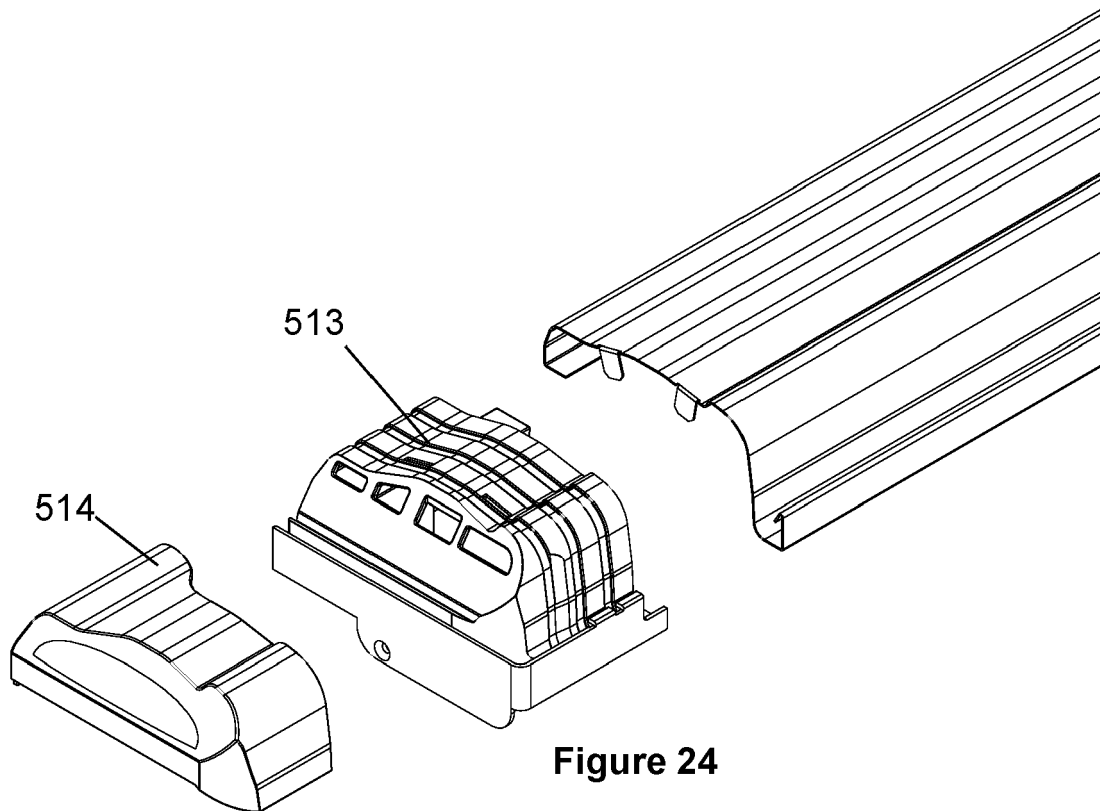


Figure 24

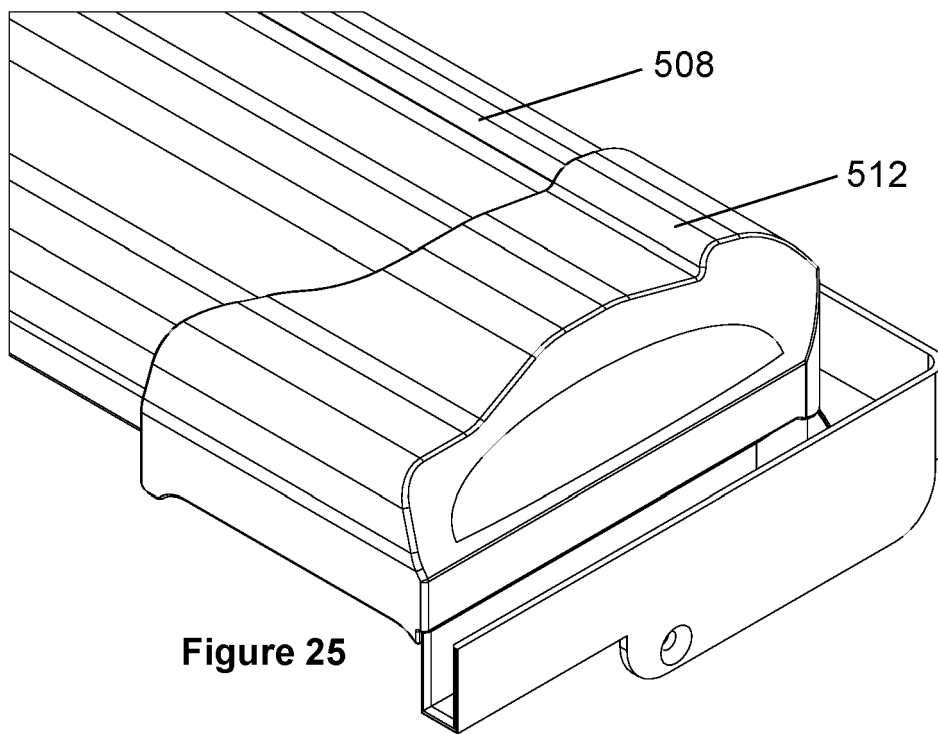


Figure 25



EUROPEAN SEARCH REPORT

Application Number
EP 23 17 5867

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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 3 309 468 A2 (VKR HOLDING AS [DK]) 18 April 2018 (2018-04-18) * figures 2, 5, 6 *	1-15	INV. E04D13/03
A	EP 2 982 811 A1 (KEYLITE ROOF WINDOWS LTD [GB]) 10 February 2016 (2016-02-10) * figures *	1-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			E04D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 12 October 2023	Examiner Tran, Kim Lien
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 L : document cited for other reasons & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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12-10-2023

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		EP 3309468 A2	18-04-2018
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82