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(54) **A WINDOW WITH AN OPENING RESTRICTOR HAVING A GRIPPING MECHANISM**

(57) In the window configured to be installed in an inclined roof, the opening restrictor (10; 110; 210) is configured to assume an engaged condition, where a gripping mechanism (12; 112; 212) is engaging with a gripping element (13; 113; 27; 213) provided on the sash (3) of the window, said engaged condition limiting the opening of the window, and a first disengaged condition, where the gripping element automatically engages with the grip-

ping mechanism (12; 112; 212) of the frame of the window. The opening restrictor (10; 110; 210) is connected to one of the side frame members (6), such that said arm in the first disengaged condition is hidden in a space (130; 230) provided between the frame (2) and sash (3) leaving said opening restrictor (10; 110; 210) invisible in the closed position of said sash.

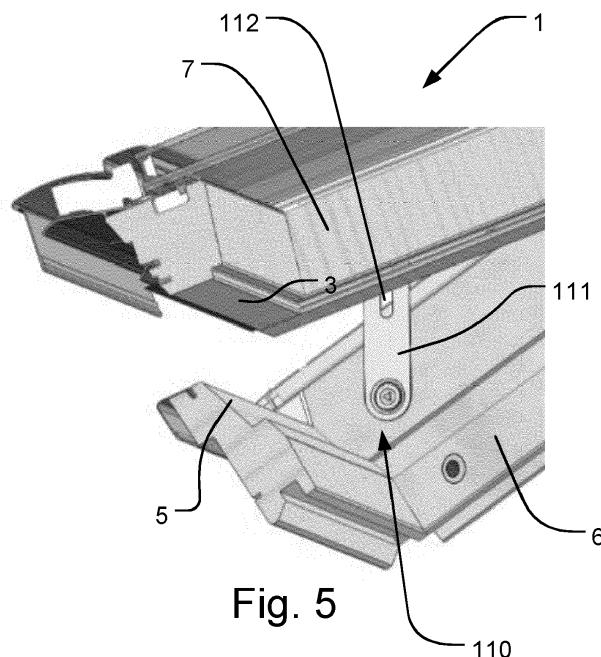


Fig. 5

Description

[0001] The present invention relates to a window configured to be installed in an inclined roof, said window comprising a frame and a sash each having a top member, a bottom member and two side members, the sash being pivotably connected to the frame, such that a pivotal opening movement of the sash in relation to the frame brings the sash from a closed position to an open position, and an opening restrictor comprising an arm rotatably connected to the frame and having a gripping mechanism, said opening restrictor being configured to assume an engaged condition, where the gripping mechanism is connected with a gripping element provided on the sash, said engaged condition limiting the opening of the window, and a first disengaged condition, where said gripping mechanism is in an active position where said gripping element automatically engages with the gripping mechanism

[0002] Opening restrictors of this kind are well known to be installed in windows, where a limitation of the opening of the sash in relation to the frame is achieved. Conventionally, such limitation by an opening restrictor provides the possibility of locking the sash in a ventilation position leaving a free airflow into a room. Furthermore, conventional opening restrictors also provides a child safety mechanism preventing unintended opening of the window.

[0003] As known per se, opening restrictors are usually installed on the frame part of a window and comprises a gripping element having a gripping mechanism, where the gripping mechanism is configured to engage a stud provided on the sash part of the window. Thus, a pivotal opening movement of the sash in relation to the frame causes the stud to be restricted by the gripping mechanism of the opening restrictor. In this way the degree of opening of the sash in relation to the frame is limited by the gripping mechanism.

[0004] In order to provide a fully opened window, for example for cleaning of the window or for providing and increased airflow in the room, the opening restrictor is often manually disengaged from the engaged condition. This disengagement is achieved by a user actively acting on the gripping mechanism of the opening restrictor releasing the stud from the gripping mechanism thereby allowing the sash to be freely moved away from the frame. The manual act by a user leading to disengagement of the opening restrictor is not an obvious act for a child to comprehend, thereby preventing unintended opening by a child.

[0005] A window with an opening restrictor of this kind is disclosed in GB2414513, where the opening restrictor is provided on a bottom part of the frame so that a slot provided in an arm of the opening restrictor engages a stud on the bottom part of the sash. The disengagement is achieved by a user acting on both the window sash and the arm of the opening restrictor at the same time. During a pivotal opening movement of the sash in relation

to frame, the slot automatically engages with the stud on the sash so that the opening restrictor is automatically activated. Thus, the disengagement of the opening restrictor is provided by a two part act, where a user handles both the sash and the opening restrictor at the same time in order to release the opening restrictor from the sash to provide a fully opening thereof. In general the sash often needs to be pulled towards or away from the frame in order to release the opening restrictor from the engaged position, so that both the sash and the opening restrictor should be handled during disengagement of the opening restrictor. A closing movement of the sash in relation to the frame causes the stud to automatically engage the slot of the opening restrictor. Thus, the opening restrictor is as such always in an active position, and needs to be disengaged if a fully opening of the sash in relation to the frame is needed. The opening restrictor in general limits the airflow into the room due to the limited opening provided by the slot. In a room where children are not present more airflow for ventilating the room may be preferable, why a need for opening restrictors providing the option of occasional child safety is needed.

[0006] Well-known opening restrictors are also often, as disclosed in for example GB2414513, intended to restrict opening of windows installed in facades of buildings and may not be adapted in a proper manner to roof windows. Thus, there is a present need for opening restrictors suitable to be installed in an inclined roof window.

[0007] In light of the above it is the object of the present invention to provide a window with an opening restrictor of the type mentioned in the introduction which overcomes the above mentioned disadvantages.

[0008] To meet this object the window according to the present invention is furthermore characterised in that the opening restrictor is configured to assume a second disengaged condition, where the gripping mechanism is in an inactive position, where the opening restrictor is adapted to be manually handled for bringing the gripping mechanism into the active position of the first disengaged condition, and that the arm of the opening restrictor is connected to one of the side frame members, such that said arm in the first disengaged condition is hidden in a space provided between the frame and sash leaving said opening restrictor invisible in the closed position of said sash..

[0009] With this arrangement an opening restrictor suitable for use in an inclined roof window, while being provided with a child safety mechanism, that may be in an active or inactive position, is provided for. By active position should be understood the position in which the arm automatically engages with the gripping element of the sash during a pivotal movement of the sash in relation to the frame. By inactive position should be understood the position where the arm is in the second disengaged condition where the arm should be manually handled for bringing the arm into the first disengaged condition. In other words, the opening restrictor is configured to assume an "auto-on" position, i.e. the first disengaged con-

dition, an "active" position, i.e. the engaged condition and an "off position", i.e. the second disengaged condition. The second disengaged condition enables the sash to be pivoted away from the frame without any restrictions as to the opening angle in relation to the frame.

[0010] The manual handling of the opening restrictor from the active state to the inactive state, where the gripping mechanism does not automatically engage with the gripping element on the sash during use, provides the opening restrictor with the advantage that the opening restrictor and thus also the child safety mechanism can be fully inactivated. In rooms where children are only occasionally present it may be preferred to open the window without having to disengaging the safety mechanism prior to opening which is achieved by the opening restrictor of the present invention. The ease of use during opening of the window is therefore improved. When the gripping mechanism of the opening restrictor has been brought into the second disengaged condition, i.e. the inactive position, a user may simply pivot the sash from the frame to provide a fully open position of the sash without prior having to disengage the opening restrictor. The user may then if needed due to for example the presence of children manually handle the opening restrictor for bringing the gripping mechanism into the first disengaged condition, i.e. back to the active position.

[0011] Furthermore, the opening restrictor as disclosed, has the advantage that it is suitable for windows to be installed in inclined roofs. Known opening restrictors may not be suitable for use in roof windows since they are often installed such that they do not account for the roof pitch and thereby the opening angle of the window. This may cause improper solutions if trying to install existing opening restrictors in roof windows of the type mentioned herein. However, the opening restrictor of the present invention could be suitable for installation in façade buildings.

[0012] In a presently preferred and mechanically simple embodiment, the attachment portion is provided as a groove in said arm, the depth of said groove extending towards a backside of the at least one arm. The provision of a simple configuration of the opening restrictor renders installation and handling easy and safe, and the opening restrictor is furthermore easy to clean.

[0013] In a further development of the preferred embodiment, the gripping mechanism is provided as a slot, the length of said slot being substantially half the length of the arm and the width of the slot being substantially 1/3 of the width of the arm. In this manner, the desired movement pattern is achieved in a simple manner.

[0014] The arm may be provided with a planar depression and a bulge, where said planar depression and bulge is provided on opposite sides of the arm. This renders activation and deactivation particularly easy.

[0015] Simple and logical handling is provided in a further development in which said gripping mechanism is brought into the second disengaged condition by a 180° rotation of said at least one arm.

[0016] The mechanically simple character of the opening restrictor is further enhanced in an embodiment in which the arm of the opening restrictor is made out of a substantially flat piece of material having a first end and an opposing second end, where the ends are interconnected by two opposing side portions of substantially equal lengths.

[0017] Preferably and increasing the operability of the opening restrictor of the inventive window even further, the gripping mechanism comprises a slot in the form of an oval or oblong hole extending in the longitudinal direction of the arm, and the circumferential of the hole is substantially formed by the two side portions, defined as upper side portion and lower side portion, where the lower side portion is intended to rest on a part of the side frame member and faces towards the interior of the room when the arm is in the position of the first disengaged condition. The upper side portion is in the first disengaged condition intended to face the exterior of the room.

[0018] In the following the advantages of the invention will be described in more detail by means of examples of embodiments, with reference to the schematic drawings in which

Figs 1 to 3 show schematic illustrations of the general concept of the window including an opening restrictor according to the invention, where Fig. 1 illustrates the first disengaged condition, Fig. 2 illustrates the second disengaged condition and Fig. 3 illustrates the engaged condition;

Figs 4 to 5 show partial perspective views of a an embodiment of the window comprising an opening restrictor according to the present invention, said opening restrictor illustrated in the engaged condition;

Fig. 6 shows a partial perspective view of the window of Figs 4 and 5, the window being illustrated in a closed position, where the opening restrictor is not visible;

Fig. 7 shows a partial perspective view corresponding to Fig. 6, where the window is in a partly open position and the opening restrictor is in the engaged condition;

Fig. 8 is a view corresponding to Figs 6 and 7, illustrating a user acting on the opening restrictor;

Fig. 9 is a view corresponding to Figs 6 and 7, where the window is in an open position with the opening restrictor in the position providing the first disengaged condition;

Fig. 10 is a view corresponding to Figs 6 and 7, where the window is in the open position and a user is acting on the opening restrictor;

Fig. 11 is a view corresponding to Figs 6 and 7, where the window is in an open position and the opening restrictor is in the second position providing the second disengaged condition;

Figs 12 and 13 show perspective views, on a larger scale, of the opening restrictor of the window in the

embodiment in Figs 6 to 11, seen from a front side and a back side, respectively;

Fig. 14 shows a partial perspective and break-out view of the window in a further embodiment of the invention, said opening restrictor illustrated in a closed position of the window; and

Fig. 15 is a view corresponding to Fig. 14, wherein the opening restrictor is shown in the engaged condition,

[0019] Initially referring to Figs 1 to 3, these figures are provided so as to illustrate schematically the different positions of the opening restrictor in an embodiment of the window according to the invention. Generally the opening restrictor is installed in a window, preferably a roof window 1 having a frame 2 and a sash 3 each comprising a top member 8, 9, a bottom member 4, 5 and two side members 6, 7. The top, bottom and side members 9, 5, 7 of the sash 3 together define a window plane in which a pane is installed.

[0020] The window is configured to be built into a roof surface, which is inclined with respect to horizontal. At a position at the centre, or between the top and centre, or at the top of the window, there is a hinge connection between the frame 2 and sash 3. The sash 3 is openable with respect to the frame 2, as the sash 3 may be moved from a closed position, in which e.g. the sash side member is substantially parallel with the frame side member, to an open position, in which the sash side member forms an angle with the frame side members. In the closed position, the window plane defined by the sash members is substantially parallel with a plane defined by the frame members.

[0021] As illustrated the opening restrictor 10 is at an attachment portion 17 rotatably connected to a part of the frame 2 and comprises an arm 11 having a gripping mechanism 12. The opening restrictor 10, as illustrated in Fig. 3, is configured to assume an engaged condition, where the gripping mechanism 12 is engaging with a gripping element 13 provided on the sash 3, so as to limit the opening of the window.

[0022] Furthermore as illustrated in Fig. 1, the gripping mechanism of the opening restrictor is in the first disengaged condition of the opening restrictor configured to extend in a first direction A and in the further second disengaged condition extending in an opposite second direction B of the first disengaged condition, substantially along the longitudinal direction and preferably said first A and second B direction forms an angle of substantially 180°. Thus, the opening restrictor is through the gripping mechanism of the arm 11 configured to assume a first disengaged condition, where the gripping mechanism 12 is in a first position A, where the gripping element 13 of the sash 3 automatically engages with the gripping mechanism 12 during a closure of the window, thus creating an "auto-on" condition.

[0023] In order to fully deactivate the opening restrictor without having to dismount the elements of the restrictor,

the opening restrictor 10 is as illustrated in Fig. 2, configured to assume the further, second disengaged condition, where the gripping mechanism 12 is positioned in the second position B, where the opening restrictor 10 is adapted to be manually handled for bringing the gripping mechanism 12 into the first position A of the first disengaged condition. Thus, bringing the opening restrictor from the position A in Fig. 1 to the position B in Fig. 2, where the opening restrictor is in an "off" condition, requires a user handling the opening restrictor.

[0024] The opening restrictor 10 may in other words assume an "on" position, i.e. the engaged condition, an "auto-on"-position corresponding to the first disengaged condition, where it may engage automatically, with a gripping element 13 provided on the sash, or in an "off"-position, where the opening restrictor does not engage with the gripping element 13, i.e. the second disengaged condition. In this way the opening restrictor 10 can only be handled so as to be moved between the first disengaged condition and the second disengaged condition when the window is at least slightly open. This provides the effect that children and/or adults cannot activate or inactivate the opening restrictor when the window is in the closed position.

[0025] Furthermore, a dismounting of the elements of the opening restrictor 10 is not necessary in order to deactivate the opening restrictor 10, which is most often the case with known opening restrictors leaving behind unwanted mounting holes from for example screws.

[0026] A more detailed description of a presently preferred embodiment of a window 1 including an opening restrictor 110 is given with initial reference to Figs 4 to 5. Here it is seen how the opening restrictor 110 is arranged at a part of the side member 6 of the frame 2. In more detail the opening restrictor 110 is in this embodiment connected to the side frame member 6 at a position where it is hidden in a space 130 provided between the frame 2 and sash 3. This resulting in that the opening restrictor 110 is not visible in the closed position of the window as illustrated in Figs 6 and 14 for different embodiments of the invention. In this way the opening restrictor can only be handled so as to be moved between the first disengaged condition of for example Figs 1 and 9, and the further second disengaged condition of for example Figs 2 and 11, when the window is at least slightly open. This provides the effect that children and/or adults cannot activate or inactivate the opening restrictor when the window is in the closed position.

[0027] In one embodiment, especially illustrated in Figs 4 to 13, the gripping mechanism is provided as a slot 112 and the gripping element 113 comprises a stud 27 on the sash side member 7, to be explained in more detail in the following.

[0028] Furthermore, referring to the embodiment of Figs 4 to 13, however without being limited thereto, the movement of the window 1 from the closed position of Fig. 6 to the partly open position of Fig. 7 is illustrated. Here the opening restrictor 110 becomes activated in that

the slot 112 in the arm 111 of the opening restrictor engages the stud 27 illustrated in Fig. 4 on the side sash member 7. This results in the arm 111 of the opening restrictor 110 being rotated about an axis substantially parallel with the hinge axis, which hinge axis is substantially parallel with the top and bottom members of the sash and frame. The opening restrictor 110 is in this way rotated in the direction of opening of the sash 3 so that the stud 27 provided on the side sash member 7 slides in the slot 112 of the arm 111 of the opening restrictor 110. The degree of opening of the sash 3 is thereby limited by the length of the slot 112 in the arm 111 of the opening restrictor 110.

[0029] Coming from the partly open position of Fig. 7 to the fully open position of the sash, where the arm 111 is in a position where the opening restrictor 101 is in the disengaged condition, is achieved by a user 20 manually handling the opening restrictor 110. The user 20 manually exerts a force on the arm 111 of the opening restrictor 110 in a direction towards the side frame member to which it is attached.. The act of the user 20 is illustrated in Fig. 8, where the user 20 pushes the arm 111 towards the side frame member 6, which causes the arm 111 of the opening restrictor 110 to disengage the stud 27 on the side sash member 7 from the slot 112. The gravitational forces and the inclination of the roof in which the window is installed, will then automatically allow the arm 111 of the opening restrictor 110 to fall to a position at the side frame member so as to rest at a flange part of the side frame member. In this way the arm 111 extends parallel with the longitudinal direction of the frame member. Furthermore, the flange part together with the normal construction of the sash provides for the hidden space, in which the opening restrictor in the closed position of the window is hidden.

[0030] In this first disengaged condition of Fig. 9, the arm 111 is arranged in a position where the slot 112 of the arm 111 is parallel with the frame side member. The frame side member substantially defines a longitudinal direction extending between the bottom frame member and the top frame member. In the first disengaged condition the arm 111 of the opening restrictor extends in a first direction substantially parallel to the longitudinal direction, where in the further second disengaged condition the arm 111 is arranged in an opposite direction of the first disengaged condition. By this arrangement, the slot 112 of the opening restrictor 110 automatically engages with the stud during closure of the window. In the position illustrated in Fig. 8, the opening restrictor is therefore still in the active position despite being disengaged from the stud.

[0031] The inactive position, i.e. the second disengaged condition of the opening restrictor 110 is achieved by the steps illustrated in the Figs 9 to 11. When coming from the first disengaged condition of the opening restrictor 110 illustrated in Fig. 9 to the second disengaged condition of Fig. 11, the user 20 as illustrated in Fig. 10 simply manually rotates the opening restrictor 110 so that

the arm 111 of the opening restrictor 110 is moved from the position in which it may engage the stud 27 on the side sash member 7. The arm 111 comprising the gripping mechanism is arranged so that the gripping mechanism is brought into the second disengaged condition by a 180 degree rotation of said arm 111. Thus, the arm 111 is turned upside down in relation to the position of the arm in the first disengaged condition. With upside down should be understood that the arm is arranged in an opposite direction of the position of the arm in the first disengaged position as previously described.

[0032] In the second disengaged condition illustrated in Fig. 11, the arm 111 of the opening restrictor 110 is hidden by the space provided between the side sash member 7 and the side frame member 6, when the window is closed. In this way the opening restrictor in the second disengaged condition cannot be moved to the active position without firstly opening the window. A manually handling of the opening restrictor is therefore necessary to obtain the first disengaged condition, in which the opening restrictor is in the active position.

[0033] Going from the second disengaged condition, where the opening restrictor does not engage the stud on the side sash member to the active position of the opening restrictor, is simply done by a user manually rotating the arm of the opening restrictor back to the first disengaged condition.

[0034] Referring now to Figs. 12 and 13 the opening restrictor 110 of the above-mentioned further embodiment of the window according to present invention is illustrated in more detail. As illustrated in the figures, the arm 111 of the opening restrictor 110 is made out of a substantially flat piece of material having a first end 121 and an opposing second end 122, where the ends are interconnected by two opposing side portions 114a, 114b of substantially equal lengths.

[0035] The flat piece of material constituted by the arm 111 could be made from metal, plastic or any other suitable material.

[0036] The shape of the arm 111 is illustrated as oval, but could also be rectangular or any other suitable geometrical shape.

[0037] The arm 111 of the opening restrictor 110 has a back side 115 and a front side 116, where the back side 115 should be interpreted as being the side intended to face towards the side frame member 6 to which it is installed. For installation of the arm 111 to the side frame member 6, the arm 111 is provided with an attachment portion 117 provided in the first end 121 of the arm 111, wherein the attachment portion is configured to constitute a rotary joint and is adapted to receive a fastening element. Thus, the attachment portion provides for a rotational movement of the opening restrictor upon a force acting on said arm 111.

[0038] The attachment portion 117 is in the embodiment shown in Figs 12 and 13 illustrated as a groove extending towards the backside 115 of the arm 111 and provided in the first end 121 of the arm 111. The groove

has a rounded shape and is provided with an attachment hole 118, provided for receiving an attachment element, such as a screw or similar attachment means for installation on the side frame member 6. The attachment portion could be oval, rectangular, triangular or any other suitable shape. Providing the attachment portion 117 as a groove extending towards the back side 115 of the arm 111 has the effect that it creates a distance between the side frame member 6 and the slot 112 of the arm 111. This results in that the stud, i.e. also to be understood as being the gripping element on the sash has room to be engaged in a slidable manner in the slot 112, i.e. the gripping mechanism, even in the closed position of the window.

[0039] In more detail the slot 112 is in the embodiment shown extending from the second end 122 towards the first end 121.

[0040] The slot 112 is illustrated in the form of an oval or oblong hole extending in the longitudinal direction of the arm 111. The circumferential of the hole is substantially formed by the two side portions 114a, 114b of the arm 111. The side portions is defined as the upper side portion 114b and the lower side portion 114a, where the lower side portion 114a is intended to rest on a part of the side frame member 6 and faces towards the interior of the room when the arm 111 is in the position of the first disengaged condition. The upper side portion 114b is in the first disengaged condition intended to face the exterior of the room.

[0041] In the further second disengaged condition the lower side portion 114a is thus intended to face the exterior of the room, where as the upper side portion 114b is intended to face the interior of the room, as illustrated in Fig. 11.

[0042] The arm 111 of the opening restrictor is furthermore provided with planar depression 120 and a bulge 119, where the planar depression 120 and bulge 119 is provided on opposite sides of the arm 111.

[0043] In more detail, on a part of the lower side portion 114a, the arm 111 is provided with the planar depression 120 formed substantially as a u-shaped groove. The planar depression extends towards the back side 115 of the arm 111 and is intended to be provided as a handling element, so that a user may handle the opening restrictor without getting the fingers caught in the window during handling of the opening restrictor.

[0044] The opposite upper side portion 114b of the arm 111 is in a similar manner provided with a bulge 119, the depth of the bulge extending in the direction towards the backside 115 of the arm 111.

[0045] The dimensions of the arm 111 is so that the length of the slot 112 is substantially half the length of the arm 111 and the width of the slot 112 is substantially 1/3 of the width of the arm 111.

[0046] Furthermore the u-shaped groove 120 of the lower side portion 114a constitutes substantially 1/3 of the length of the slot 112 and is arranged at a distance closer to the second end 122 than to the first end 121

within the length of the slot 112.

[0047] The bulge 119 of the upper side portion 114b constitutes substantially 1/6 of the length of the slot 112 and is arranged at a distance closer to the first end 121 than to the second end 122 within the length of the slot 112.

[0048] The depth of the u-shaped groove and/or the bulge should be no more than the space provided between the frame and sash when the window is closed. In this way the opening restrictor may always fit into the space between the sash and frame in the closed position of the window so that it is hidden and cannot be handled without an opening of the window.

[0049] Referring now to Figs 14 and 15 another embodiment of the opening restrictor 210 according to the invention is illustrated.

[0050] In this embodiment the gripping mechanism 212 is provided on a second arm 240 rotatable connected to the arm 211 of said opening restrictor 210. The arm 211 should be regarded as a first arm, and the opening restrictor of this embodiment, thus comprises two separate arms, wherein the second arm 240 comprises the gripping mechanism 212. The first arm 211 is in a similar manner as in the previous described embodiment, connected to the frame by a connection point 217, around which the first arm rotates upon opening and closing of the window.

[0051] The second arm 240 comprises a first end 241 and a second end 242, wherein the first end 241 comprising a gripping part 244, preferably in the form of a groove. The groove, or any other suitable shape such as a hook or the like, is arranged at the end 241 of the second arm 240 so to be able to engage a stud, i.e. the gripping element 213 on the sash. The opening restrictor of this embodiment is also configured to assume an engaged condition as illustrated in Fig. 15 and a first disengaged condition as illustrated in Fig. 14, in which condition the first and second arm 211, 240 is hidden in a space 230 provided between the frame 2 and sash 3.

[0052] In order to obtain the further second disengaged condition the first and second arm 211, 240 is connected through a connection joint 243. By a 180° rotation of the second arm 240 around said connection joint 243, the first end 241 of the second arm 240 is brought into the second disengaged condition (not illustrated). Referring to Fig. 15, this would result in the second end 242 of the second arm 240 to be rotated such that the second end 242 points towards the bottom part of the window, and the first end 241 pointing towards the top part of the window.

[0053] The embodiment of Figs. 14 and 15 thus have the same functioning as the previous described, however with a substantially different construction.

[0054] The invention should not be regarded as being limited to the embodiments described in the above, but various modifications may be carried out without departing from the scope of the appended claims.

Claims

1. A window (1) configured to be installed in an inclined roof, said window comprising
a frame (2) and a sash (3) each having a top member (8, 9), a bottom member and two side members (6, 7), the sash (3) being pivotably connected to the frame (2), such that a pivotal opening movement of the sash (3) in relation to the frame (2) brings the sash from a closed position to an open position, and an opening restrictor (10; 110; 210) comprising an arm (11; 111; 211) rotatably connected to the frame (2) and having a gripping mechanism (12; 112; 212), said opening restrictor being configured to assume an engaged condition, where the gripping mechanism (12; 112; 212) is connected with a gripping element (13; 113, 27; 213) provided on the sash (3), said engaged condition limiting the opening of the window, and a first disengaged condition, where said gripping mechanism is in an active position where said gripping element (13; 113, 27; 213) automatically engages with the gripping mechanism (12; 112; 212),
characterised in that the opening restrictor (10; 110; 210) is configured to assume a second disengaged condition, where the gripping mechanism is in an inactive position, where the opening restrictor is adapted to be manually handled for bringing the gripping mechanism into the active position of the first disengaged condition, and that the arm (11; 111; 211) of the opening restrictor (10; 110; 210) is connected to one of the side frame members (6), such that said arm in the first disengaged condition is hidden in a space (130; 230) provided between the frame (2) and sash (3) leaving said opening restrictor (10; 110; 210) invisible in the closed position of said sash.
2. A window according to claim 1, wherein the gripping mechanism in the first disengaged condition of the opening restrictor (10; 110; 210) extends in a first direction (A) and in the further second disengaged condition extends in an opposite second direction (B) of the first disengaged condition substantially along the longitudinal direction, preferably said first (A) and second direction (B) forms an angle of substantially 180°.
3. A window according to any one of the preceding claims, wherein the arm (11; 111; 211) is provided with an attachment portion (17; 117; 217), said attachment portion being configured to constitute a rotary joint and adapted to receive a fastening element.
4. A window according to claim 3, wherein said attachment portion (117) is provided as a groove in said arm (111), the depth of said groove extending towards a backside (115) of the at least one arm (111).
5. A window according to claim 4, wherein the gripping mechanism (12, 112) is provided as a slot (112), the length of said slot (112) being substantially half the length of the arm (111) and the width of the slot (112) being substantially 1/3 of the width of the arm (111).
6. A window according to any one of claims 4 and 5, wherein the arm (111) is provided with a planar depression (120) and a bulge (119), where said planar depression (120) and bulge (119) is provided on opposite sides of the arm (111).
7. A window according to any one of claims 4 to 6, wherein said gripping mechanism (112) is brought into the second disengaged condition by a 180° rotation of said at least one arm (111).
8. A window according to any one of claims 4 to 7, wherein the arm (111) of the opening restrictor (110) is made out of a substantially flat piece of material having a first end (121) and an opposing second end (122), where the ends are interconnected by two opposing side portions (114a, 114b) of substantially equal lengths
9. A window according to claim 8, wherein said gripping mechanism comprises a slot (112) in the form of an oval or oblong hole extending in the longitudinal direction of the arm (111), and wherein the circumferential of the hole is substantially formed by the two side portions (114a, 114b), defined as upper side portion (114b) and lower side portion (114a), where the lower side portion (114a) is intended to rest on a part of the side frame member (6) and faces towards the interior of the room when the arm (111) is in the position of the first disengaged condition. The upper side portion (114b) is in the first disengaged condition intended to face the exterior of the room.
10. A window according to any one of claims 1 to 3, wherein said gripping mechanism (212) is provided on a second arm (240) rotatably connected to said arm (212) of said opening restrictor (210).
11. A window according to any to claim 10, wherein said second arm (240) comprises a first end (241) and a second end (242), said first end (241) comprising a gripping part, preferably in the form of a groove.
12. A window according to claim 11, wherein said arm and said second arm is connected through a connection joint (243) such that a 180° rotation of said second arm (240) around said connection joint (243) brings said first end (241) of said second arm (240) into said second disengaged condition.
13. A window according to any one of the preceding claims, wherein the space (130; 230) is provided at

the lower part or the upper part of the side frame member (6).

14. A window according to any one of the preceding claims, wherein the gripping element (13; 113; 213) comprises a stud (27) connected to the side member (7) of the sash (3). 5
15. A window according to any one of the preceding claims, wherein one opening restrictor (10; 110; 210; 310) is provided at each side frame member (6) of the window. 10

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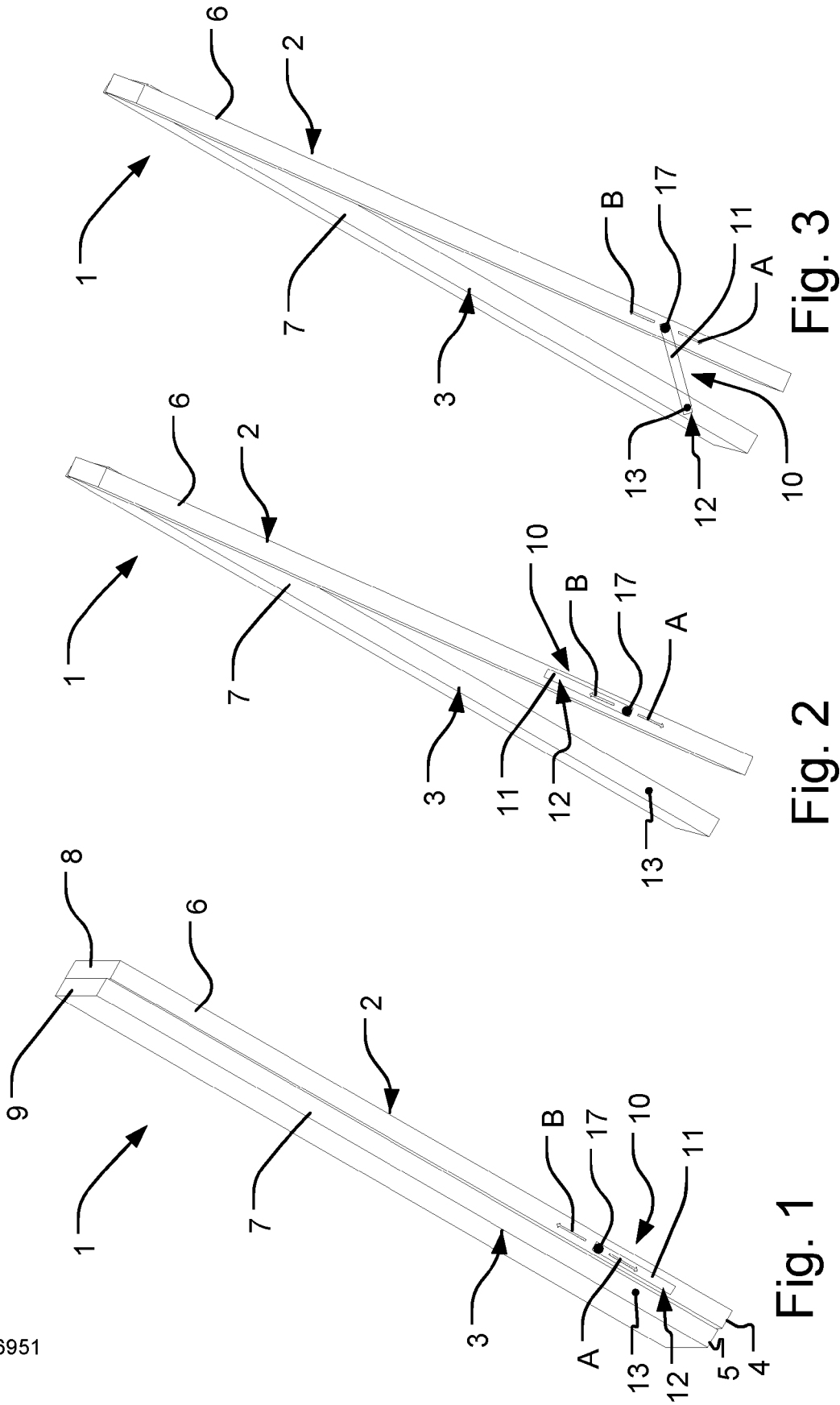
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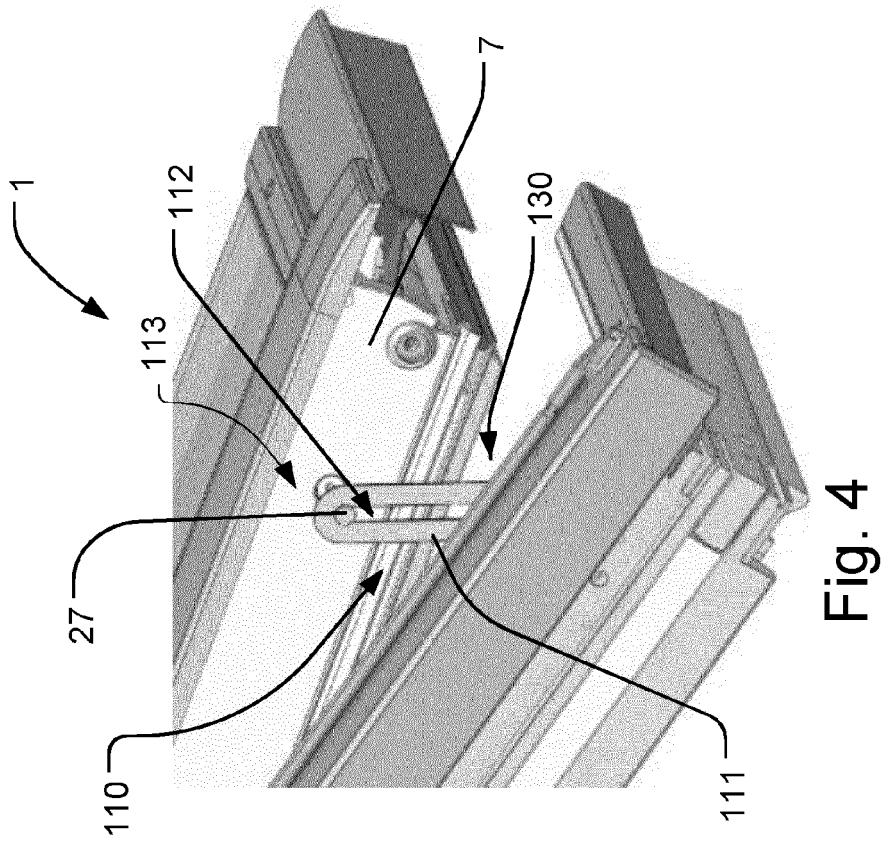
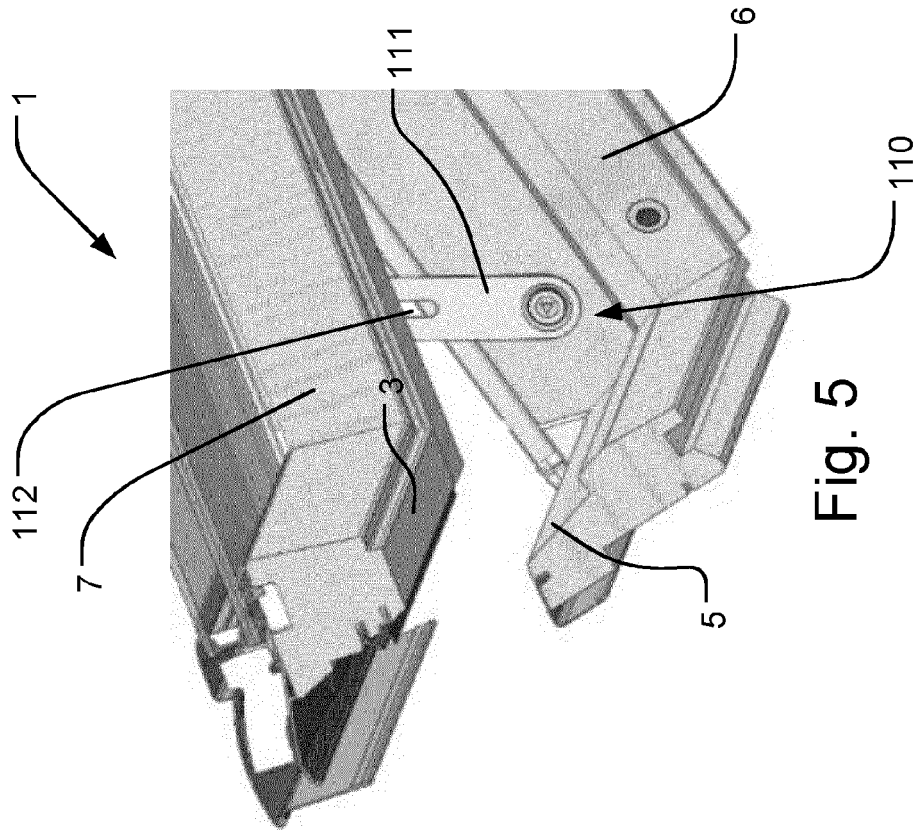
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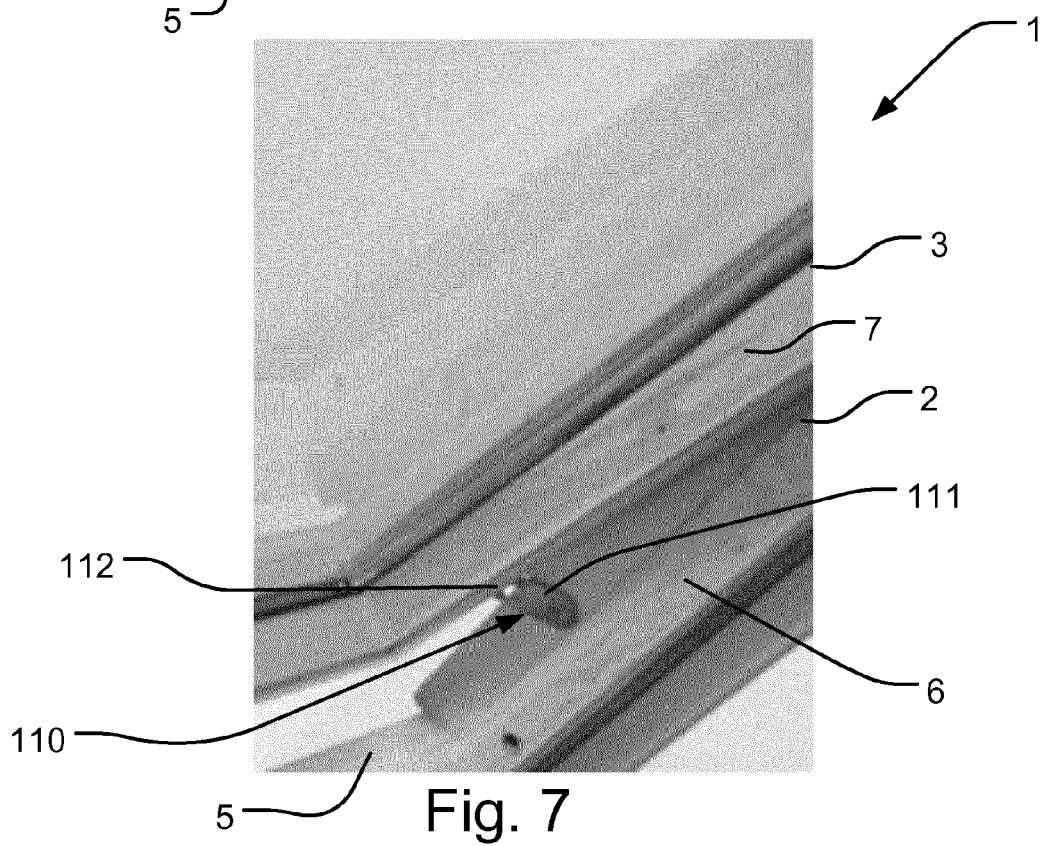
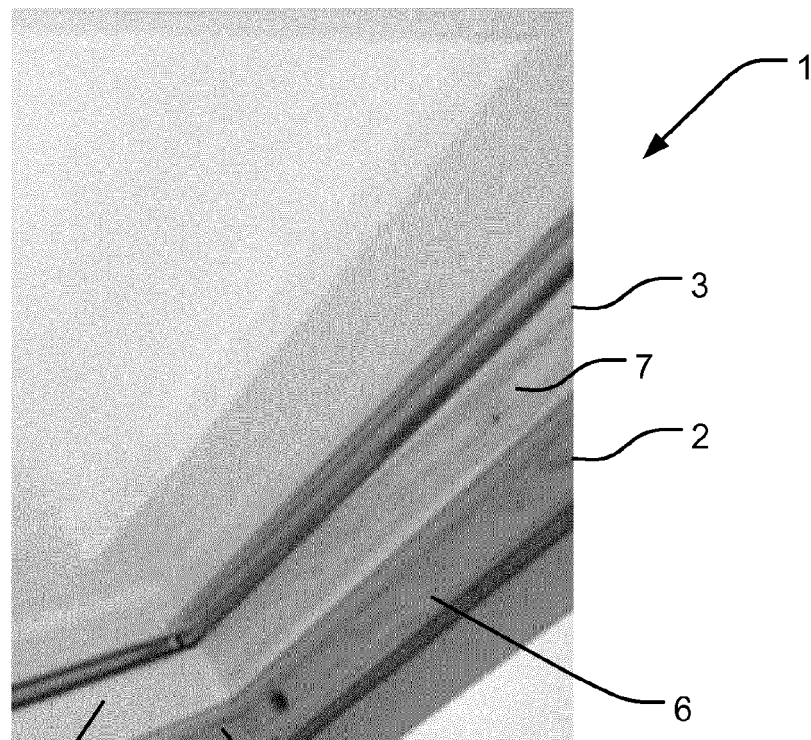
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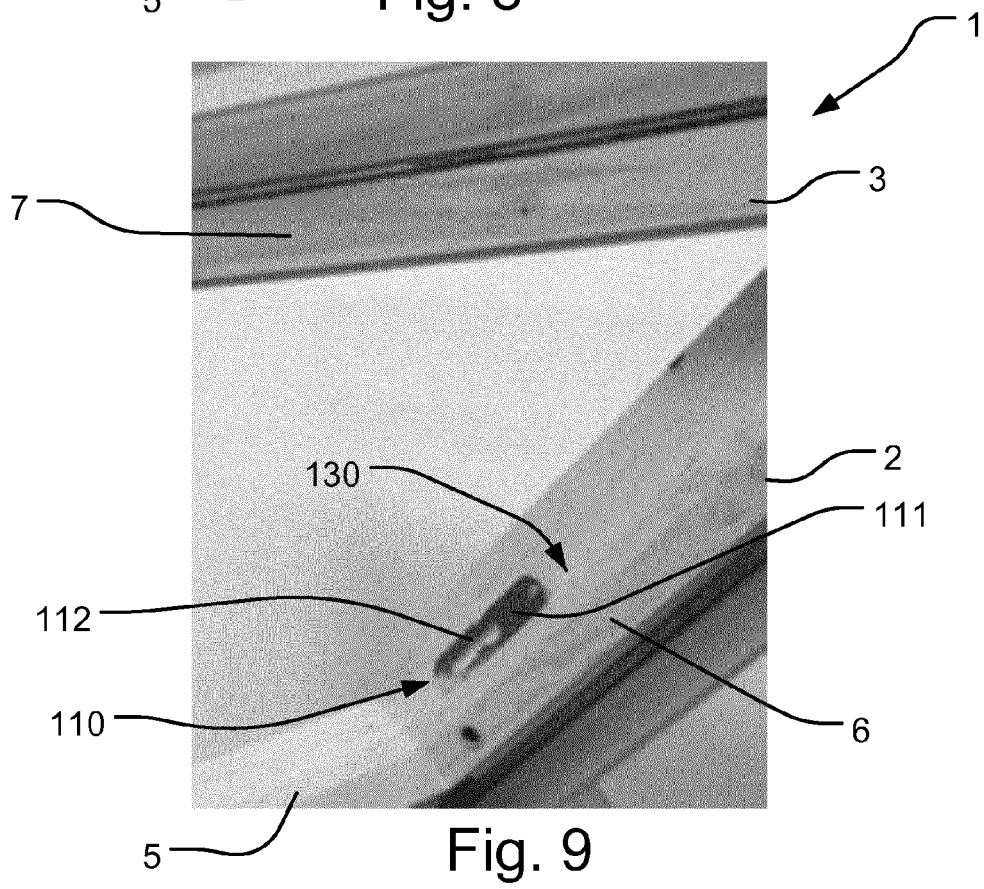
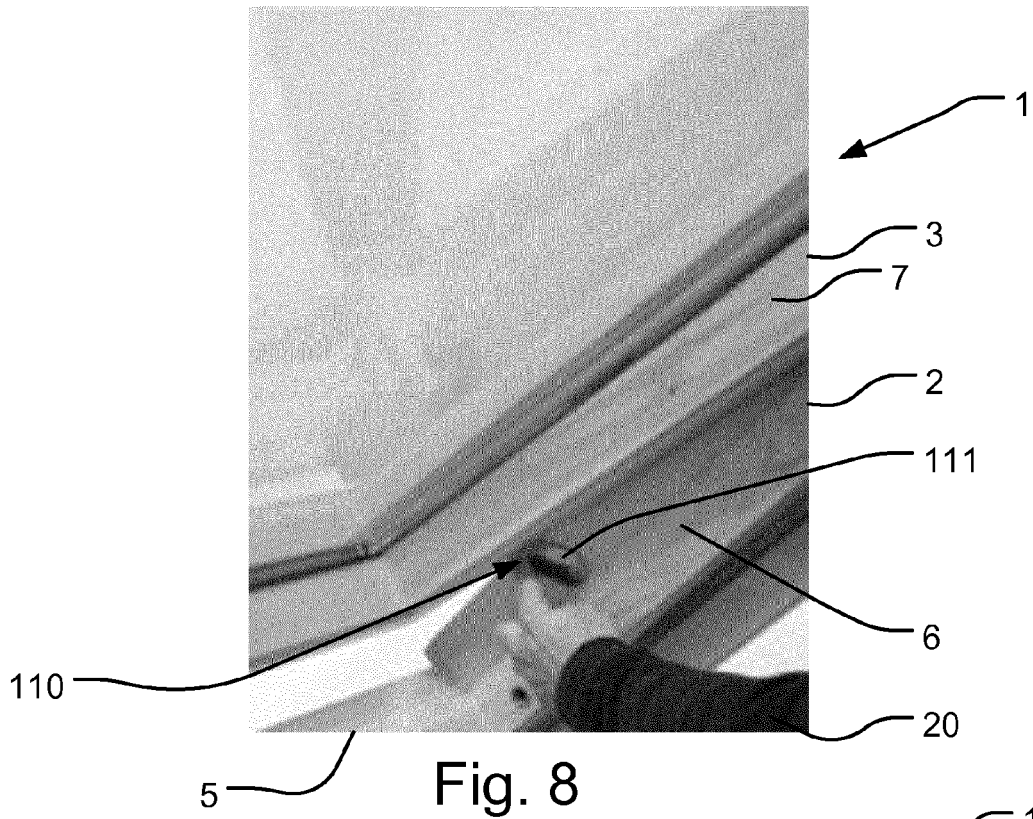
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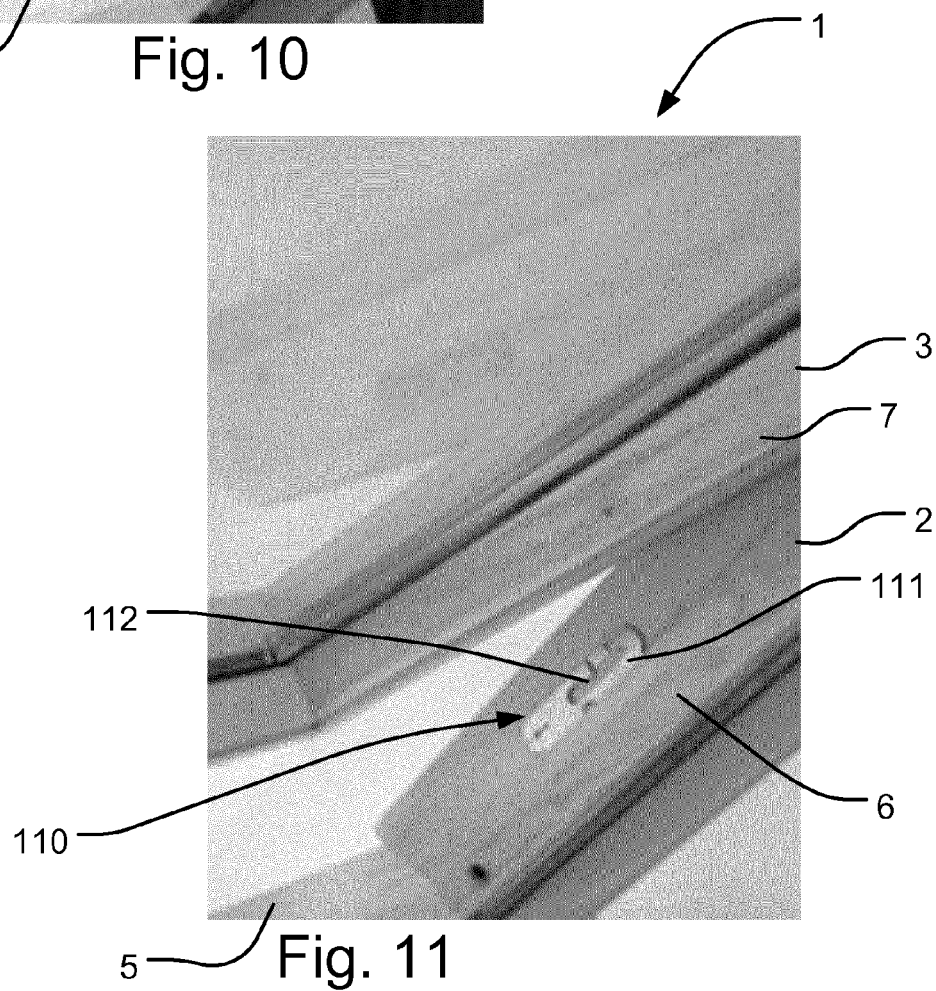
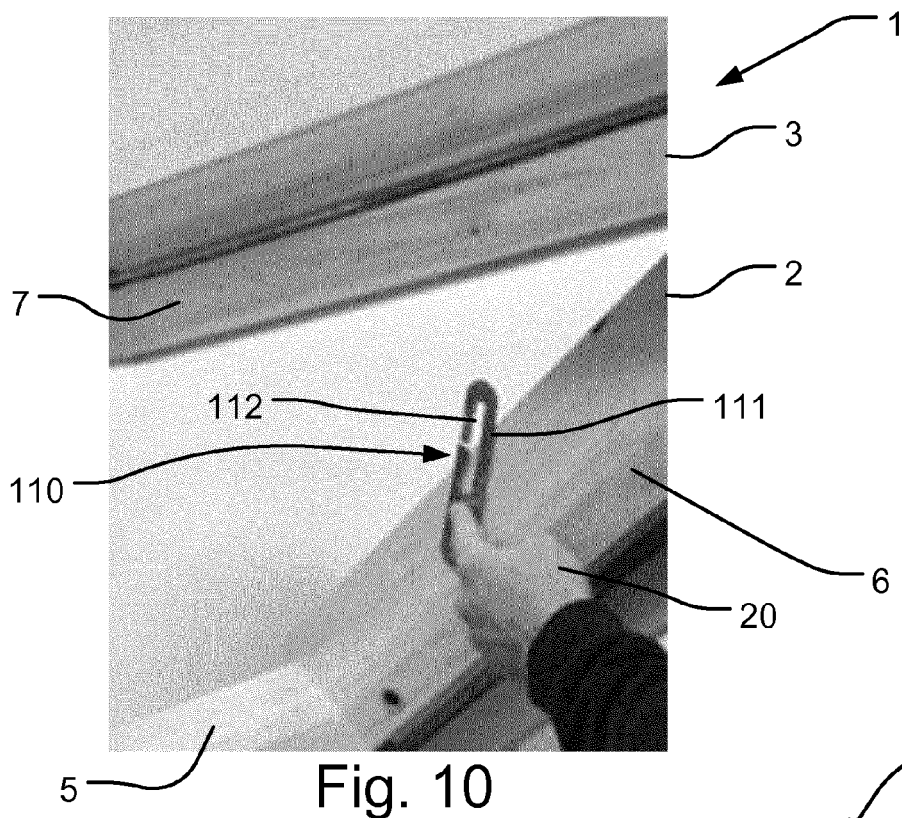


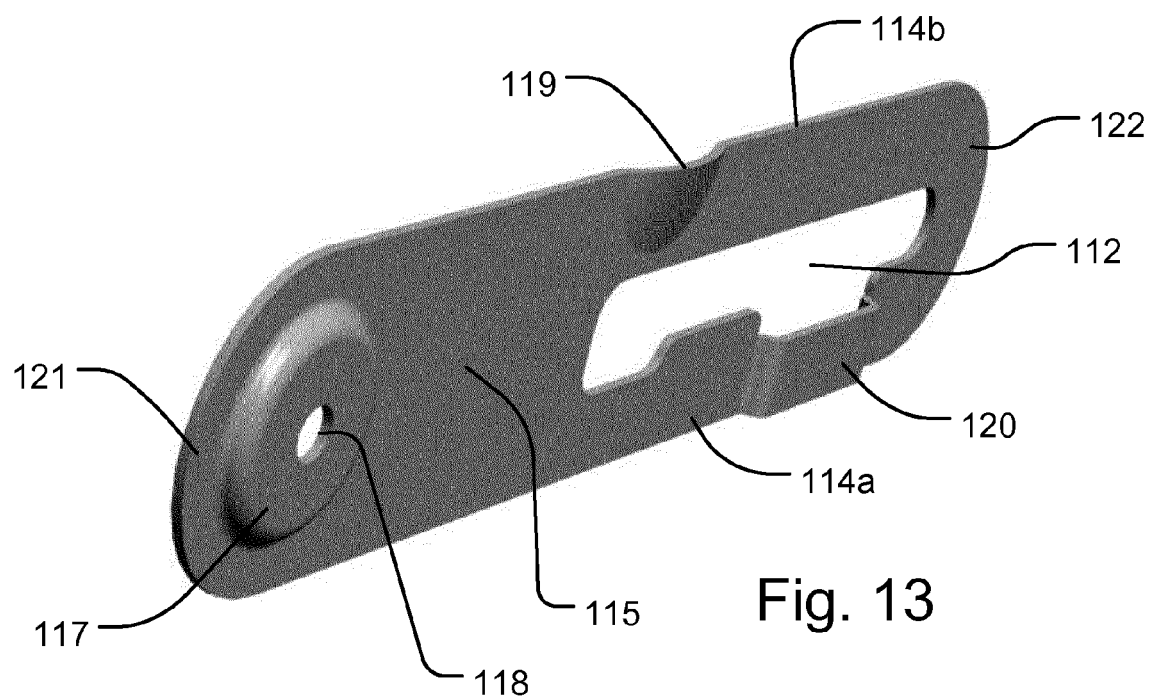
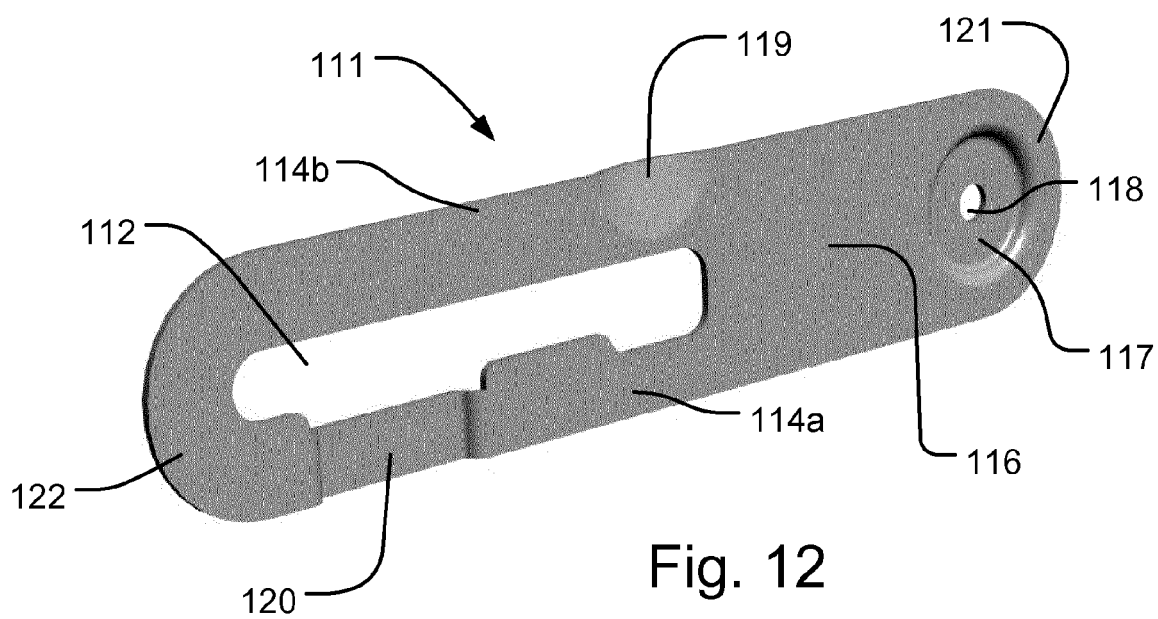
AWA#136951











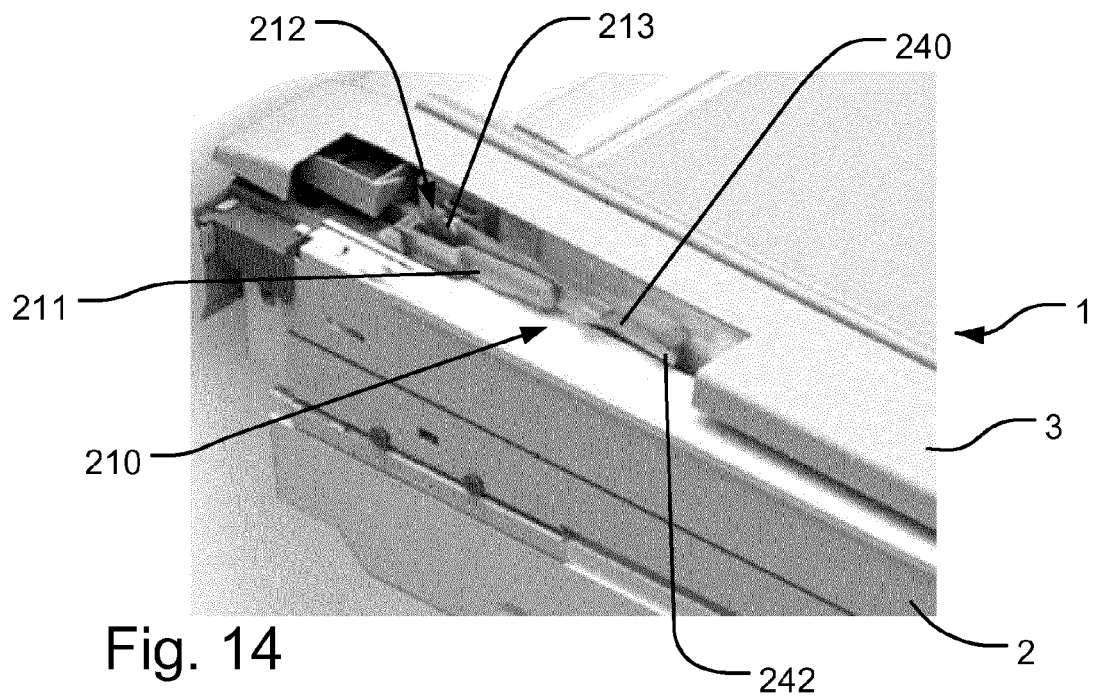


Fig. 14

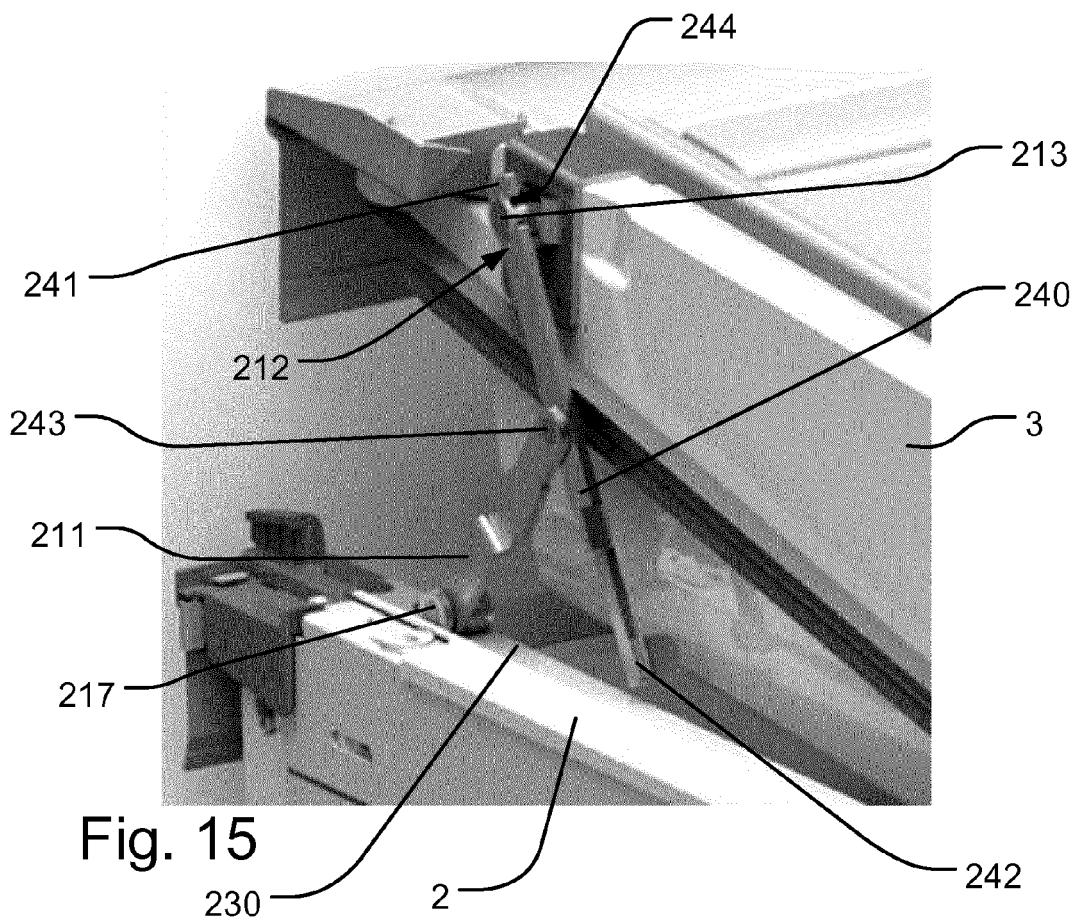


Fig. 15



EUROPEAN SEARCH REPORT

 Application Number
 EP 16 17 9684

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Place of search The Hague		Date of completion of the search 28 November 2016	Examiner Ansel, Yannick
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The members are as contained in the European Patent Office EDP file on
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