

(19)



(11)

EP 3 354 839 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
01.08.2018 Bulletin 2018/31

(51) Int Cl.:
E06B 9/323 ^(2006.01) **E06B 9/50** ^(2006.01)

(21) Application number: **17208433.7**

(22) Date of filing: **19.12.2017**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
MA MD TN

(71) Applicant: **VKR Holding A/S**
2970 Hørsholm (DK)

(72) Inventor: **Birkkjær, Martin**
6731 Tjæreborg (DK)

(74) Representative: **AWA Denmark A/S**
Strandgade 56
1401 Copenhagen K (DK)

(30) Priority: **31.01.2017 DK 201770058**

(54) **SCREENING ARRANGEMENT AND METHOD OF INSTALLING SAID SCREENING**

(57) In the screening arrangement a screening device provided with end pieces (40) is adapted to be mounted on mounting brackets (6). At least one of the two end pieces (40) comprises a body portion (44), a top wall (41) extending perpendicular to the body portion (44) and a resilient arm (43) with a first end (435) and a second end (436), one or both of the first and second ends (435,

436) being connected to the top wall (41) in such a manner that the resilient arm (43) is capable of flexing in both in a direction (X) towards a first surface (411) of the top wall (41) being perpendicular to and facing away from the body portion (44) and in a direction (Y) perpendicular to the first surface (411) of the top wall (41).

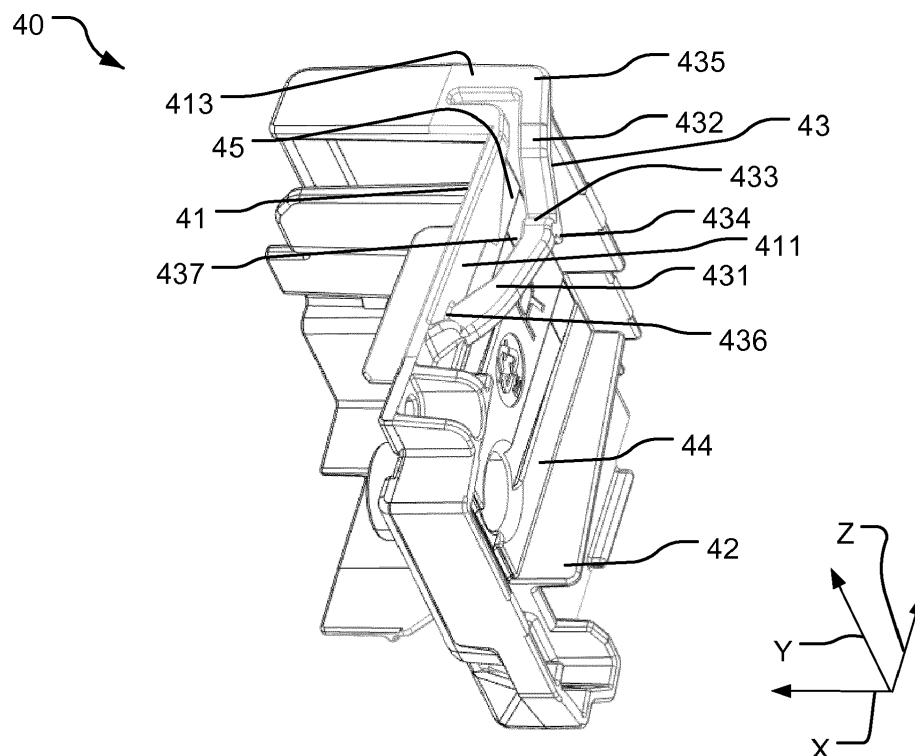


Fig. 3

EP 3 354 839 A1

Description

Field of the invention

[0001] The present invention relates to a screening arrangement comprising a screening device with a set of end pieces in which the screening device during mounting is configured to be connected with a set of two mounting brackets arranged on side members of a frame of a window, particularly a roof window. The invention furthermore relates to a window having a frame and such a screening arrangement. The invention furthermore relates to a method for mounting such a screening arrangement on a window having a frame.

Background of the invention

[0002] As such screening arrangements are provided in a supply condition, and the person performing the installation is most often not a craftsman, the mounting of the screening arrangement in the window frame must be able to be carried out without too many difficulties and with a low risk of erroneous installation. The window frame may be either a stationary frame or sash, or an openable sash.

[0003] Such support assemblies are described in Applicant's published international applications and counterpart European patents Nos WO 99/07974 A1 (EP 1003953 B1), WO 00/47858 A1 (EP 1151176 B1) and WO 2007/110072 A1 (EP 2002079 A1).

[0004] End pieces for a screening device of such screening arrangements are known from e.g. Applicant's international publication WO 2008/131757 A1 in which end pieces with mutually cooperating locking means in the form of snap locking means are provided. In general, the snap locking means comprise resilient engagement means of a male locking means constituted by a tongue and a retaining pawl to provide a spring bias. When the screening device is mounted on a window, the male locking means in the form of the retaining pawl snaps out into engagement with first and second female locking means of a mounting bracket arranged on the window. For instance, VELUX® windows are delivered from the factory with such mounting brackets pre-mounted on the windows for simple and straight forward mounting of the screening device. Alternatively, the mounting brackets may be delivered with the screening device and are to be mounted on the window on-site before mounting of the screening device.

[0005] An alternative end piece for cooperation with a mounting bracket is shown in EP 2474702 B1. Here, a flexible and elastic locking tab is provided at the lower edge of the end piece.

[0006] The end pieces described above are generally provided with both a locking element and several, particularly two, guiding elements and are therefore complex in construction.

[0007] In support assemblies of the kind mentioned in

the above, relatively safe temporary retention of the screening arrangement by means of the support assembly is vital to facilitate the installation.

[0008] Also, proper guiding of the end piece with respect to the locking elements is vital to provide for a simple and straight forward installation process. At the same time there is a need for an end piece with a simplified and more durable construction, which at the same time still provides for proper guiding of the end piece with respect to the locking elements.

Summary of the invention

[0009] With this background it is the object of the invention to provide facilitated installation of a screening arrangement, in which it is nevertheless possible to provide a proper guiding of the end piece with respect to the locking elements without the use of additional guiding elements.

[0010] In a first aspect, this and further objects are met by a screening arrangement for a window, in particular a roof window, having a frame encasing a pane and composed by a top member, two side members and a bottom member and defining a first direction, w, parallel to a longitudinal direction of the top and bottom members corresponding to a width direction of the frame, a second direction, h, parallel to a longitudinal direction of the side members corresponding to a height direction of the frame, and a third direction, d, perpendicular to the first and second directions corresponding to a depth direction of the frame, the screening arrangement comprising:

a screening device including an elongated top casing provided with a set of two end pieces and adapted to extend in parallel with said first direction in a mounted condition, each end piece having a body portion and a top wall extending perpendicular to the body portion, in which the screening device during mounting is configured to be connected with a set of two mounting brackets arranged on the side members of the frame by moving the screening device with its set of end pieces substantially in the third direction, d, from a point distant from the pane to a point proximate to the pane, and where at least one of the two end pieces further comprises a resilient arm with a first end and a second end, at least one of the first and second ends being connected to the top wall in such a manner that the resilient arm is capable of flexing in both in a direction, X, towards a first surface of the top wall being parallel with the body portion and in a direction, Y, perpendicular to the first surface of the top wall.

[0011] Thereby, and in particular as at least one of the two end pieces further comprises a resilient arm with a first end and a second end, at least one of the first and second ends being connected to the top wall in such a manner that the resilient arm is also capable of flexing in

a direction X towards a first surface of the top wall being parallel with the body portion, a screening device is provided with which the resilient arm during mounting of the screening device on a window is capable of flexing in a direction towards and away from the side frame member of the window, which in turn provides for a guiding function, guiding the end piece with respect to the side frame member of the window.

[0012] Thus, the resilient arm is hereby made capable of guiding the screening device with respect to a corresponding mounting bracket arranged on the side members of the frame during mounting the screening device without the need for further guiding members.

[0013] That the resilient arm is capable of flexing in a direction Y perpendicular to the first surface of the top wall provides for simple and easy locking of the end pieces to the mounting brackets.

[0014] This in turn provides for a screening device which is simple to mount, in particular with end pieces being simple to connect with a set of two mounting brackets arranged on the side members of the frame. Such a screening arrangement further comprises end pieces of a particularly simple construction at the resilient arm provides both a locking function and a guiding function.

[0015] In an embodiment both of the first and second ends, of the resilient arm are connected to the top wall in such a manner that the resilient arm is capable of flexing in both in the direction X towards the first surface of the top wall and in the direction Y perpendicular to the first surface of the top wall.

[0016] This provides for end pieces with a more durable and robust structure as the resilient arm is made less prone to breaking off the remaining part of the end piece.

[0017] In an embodiment the resilient arm is capable of flexing in the direction Y perpendicular to the first surface of the top wall from a second surface of the top wall perpendicular to the first surface towards a third surface of the top wall parallel and opposite to the second surface at least to a position in which the resilient arm is situated level with or beyond the second surface.

[0018] This provides for an end piece further simplifying the mounting of the screening arrangement since the resilient arm is capable of flexing sufficiently far in the direction Y to allow it to pass the mounting bracket during installation without having to use excess force. This in turn also provides for a more durable end piece.

[0019] In an embodiment the flexible arm is biased in the direction Y and/or in the direction X towards an initial, un-flexed position.

[0020] Such a bias in the direction Y provides for a further simplification of the mounting process as the end piece and the mounting bracket are automatically locked together when the flexible arm flexes back into its initial position.

[0021] Such a bias in the direction X provides for provides for a bias of the screening device towards the side frame member of the window during the installation process, thus enhancing the guiding function guiding the end

piece with respect to the side frame member of the window.

[0022] In an embodiment an edge of the resilient arm extending between the first and second ends and facing towards the top wall extends in a distance from the top wall, such that a gap is provided between the resilient arm and the top wall.

[0023] Thereby the flexibility in the direction X of the resilient arm is provided in a particularly simple manner as no further elements contributing to the flexibility are required.

[0024] In an embodiment, starting from the first end, the resilient arm comprises the first end, a first section extending away from the top wall in a direction opposite to the body portion, a second section extending back towards the top wall and the second end.

[0025] In an embodiment, starting from the first end, the resilient arm comprises the first end, a first section extending away from the top wall in a direction away from the first surface of the top wall, a second section extending back towards the top wall and the second end.

[0026] By any of the two above-mentioned embodiments a particularly simple manner of predefining the magnitude of the flexibility of the resilient arm in the direction X is provided for, since the said magnitude of flexibility may simply be defined by means of adjusting how far away from the top wall the first section of the resilient arm extends.

[0027] In an embodiment the first section and the second section meet in an elbow. This enables providing an engagement member for engagement of the end piece with the mounting bracket in a particularly simple manner.

[0028] Thus, in a further embodiment the resilient arm comprises an engagement member adapted for snapping engagement with the set of two mounting brackets, whereby a particularly simple engagement member is provided for. The engagement member may be provided by, on or at the elbow.

[0029] In an embodiment the engagement member is arranged substantially midway between the first end and the second end of the resilient arm. Put in other terms, the engagement member may be arranged on the transition between the first and second section of the resilient arm.

[0030] Thereby the flexibility of the resilient arm in the direction Y is exploited to the full to provide a durable and secure engagement of the end piece with the mounting bracket

[0031] In an embodiment at least one of the two end pieces further comprises a bottom flange.

[0032] Thereby a further guiding element for guiding the end piece with respect to the mounting bracket during mounting of the screening arrangement is provided, thus further simplifying the mounting process.

[0033] In an embodiment the screening arrangement further comprises a set of two mounting brackets, each mounting bracket having a thickness dimension, a height dimension, and a length dimension, and being adapted

to be mounted to a respective side member of the frame, such that the thickness dimension is parallel to the first direction w , the height dimension is parallel to the second direction h , and the length dimension is parallel to the third direction d , each mounting bracket having a top ledge defining an upper line, x_1 , of the mounting bracket and extending in the length dimension of the mounting bracket, in the third direction in the mounted condition of the mounting bracket, and the resilient arm of the end pieces of the screening device are adapted to ride on the top ledge during mounting and to be supported on the top ledge of the respective mounting bracket in the mounted condition of the screening device.

[0034] In a further embodiment the engagement member of the resilient arm is adapted for snapping engagement with a corresponding engagement member in the top ledge of the respective mounting bracket.

[0035] This in turn provides for a screening device which is particularly simple to mount, in particular with end pieces being particularly simple to connect with a set of two mounting brackets arranged on the side members of the frame.

[0036] In a second aspect, a window is provided. In a third aspect, a method for mounting a screening arrangement according to the first aspect of the invention on a window is provided. The advantages of the first aspect of the invention and further developed embodiments are also applicable to the second aspect and to the third aspect of the invention as have been described in the above and reference is made thereto.

[0037] Further details are described, and further advantages stated, in the description of particular embodiments of the invention.

Brief description of the drawings

[0038] In the following the invention will be described in further detail by means of examples of embodiments with reference to the schematic drawings, in which

Fig. 1 is a schematic perspective view of a window in an embodiment of the invention with a mounting bracket of a screening arrangement according to the invention;

Fig. 2 is a top front view of an end piece of a screening arrangement in an embodiment of the invention;

Fig. 3 is a perspective view of the end piece according to Fig. 2;

Fig. 4 is a side view of the end piece according to Fig. 2; and

Fig. 5 is a perspective view of the end piece according to Fig. 2, the angle of view differing from that of Fig. 3.

Description of detailed embodiments of the invention

[0039] In the drawing figures, parts of a screening ar-

rangment are shown. The screening arrangement comprises a screening device represented by one of its end pieces, namely end piece 40 shown separately in Figs 2-5, and a set of mounting brackets, typically of two mounting brackets, of which one is shown in Fig. 1.

[0040] As is known as such, the screening arrangement according to the invention is adapted to be mounted in a window frame of a window 1 as shown in Fig. 1. The window frame may be an openable sash 3 encasing a pane 5 and adapted to be mounted in a stationary frame 2 to be installed in an inclined roof surface. It is noted that the terms "sash" or "frame" are to be understood as incorporating any substantially rectangular structure positioned in any opening in a building, whether in a wall or the roof, and surrounding an aperture to be screened. The window frame needs not be composed of separate frame members but may be a coherent frame. Notwithstanding, the portions of the window frame are referred to as "top member" denoted by reference numeral 3a in Fig. 1, "side members", of which one side member 3b is shown in Fig. 1, and "bottom member" in order to facilitate reading. Thus, the window frame is substantially rectangular and has a top member, two side members and a bottom member.

[0041] The screening arrangement is provided in a supply condition and is configured to be installed in the window frame to attain a mounted condition.

[0042] Terms such as "left-hand" and "right-hand" refer to the orientation shown in the drawings and/or in the mounted condition, and are utilized for reasons of convenience only. Similarly, the terms "front" and "back" are utilized to denote the sides of the screening arrangement, "front" being the side intended to face inwards into the interior of a building, and "back" the outwards facing side. The terms "upper" or "top" and "lower" refer to the orientation of the screening arrangement installed in a frame, where "upper" and "top" refers to general direction towards the top member of the frame and "lower" refers to the direction towards the bottom member of the frame.

[0043] Furthermore, and referring still to Fig. 1, a first direction is defined as being parallel to a longitudinal direction of the top and bottom members corresponding to a width direction w of the frame. In Fig. 1 the first direction, w , extends perpendicular to the plane of view. A second direction is defined as being parallel to a longitudinal direction of the side members corresponding to a height direction h of the frame. A third, or transverse, direction is defined as being perpendicular to the first and second directions corresponding to a depth direction d of the frame.

[0044] Still referring to Fig. 1, the mounting bracket 6 forms part of a set of mounting brackets to be mounted at opposite frame side members. The mounting brackets of a set are typically identical, but variations are conceivable.

[0045] The mounting bracket 6 has a thickness dimension, a height dimension, and a length dimension. When connected to the frame of the window, the thickness di-

mension is parallel to the first direction, the height dimension is parallel to the second direction, and the length dimension is parallel to the third direction.

[0046] The mounting bracket 6 is provided as a moulded part of a suitable material such as a plastic material and the dimensions chosen for the length, height and thickness are chosen from the respective ranges of 20 to 45 mm (length); 15 to 25 mm (height); and 2 to 10 mm (thickness).

[0047] The mounting bracket 6 has a top ledge 7 extending in the length dimension of the mounting bracket 6, in the third direction in the mounted condition, substantially along an upper line x_1 .

[0048] In the embodiment shown, the mounting bracket is symmetrical around an axis extending in the length dimension, substantially corresponding to the arrow indicating the depth direction d in Fig. 1. Hence, at the side opposite the top ledge 7, the mounting bracket 6 has a bottom edge 8. In the embodiment shown, the bottom edge 8 thus has a certain thickness, corresponding to the thickness of the top ledge 7. Depending on the configuration of the window, it is also possible to have an asymmetrical shape with a bottom edge of very low thickness, the guiding of the end piece on the mounting bracket being assisted by the shape of the frame in which the screening arrangement is mounted.

[0049] At the top ledge 7, which defines an upper line x_1 of the mounting bracket, the mounting bracket 6 is provided with an engagement member 9 in order to provide engagement with the end piece 40 during installation of the screening arrangement. As will be described in detail further on, the end piece 40 is provided with a corresponding engagement member.

[0050] In the embodiment shown, the engagement member 9 comprises a shoulder. Alternatively, the engagement member may comprise a recess. The engagement member 9 is provided substantially below upper line x_1 parallel to the length dimension of the mounting bracket 6.

[0051] Referring now to Figs 2 to 5, the one end piece 40 of a set of end pieces of the screening device will be described in detail. The two end pieces of the set are positioned at opposite ends of an elongated top casing of the screening device, which extends in parallel with the first direction in the mounted condition. The opposite end piece has an outer side configured in a substantially mirror-inverted manner relative to the shown end piece 40.

[0052] The end piece 40 comprises a body portion 44 and a top wall 41 extending perpendicular to the body portion 44. The body portion 44 forms the surface of the end piece 40 that constitutes an end surface of the assembled screening device and that, in the mounted position of the screening device on a window, extends vertically and faces the side frame member 3b of the window. The top wall 41 forms a part of the end piece 40 that is intended to face the top frame member 3a of the window in the mounted position of the end piece and thus the

screening device. The end piece 40 further comprises a resilient arm 43. The resilient arm 43 comprises a first end 435, a first section 431, a second section 432 and a second end 436 opposite to the first end 435.

[0053] The end piece 40 is provided as a moulded part of a suitable material such as a plastic material. For instance, the resilient arm 43 may be moulded of a first suitable plastic material with a first hardness chosen to provide the necessary resilience, while the top wall 41 and for that matter the remaining parts of the end piece 40 may be made of a second plastic material with a second hardness being higher than the first hardness and moulded together with the resilient arm 43. Alternatively, the end piece 40 may be moulded of one and the same suitable plastic material. The top wall 41 comprises a first surface 411 being parallel to and facing in the same direction as the body portion 44, a second surface 412 being perpendicular to first surface 411 and facing towards the body portion 44 and a third surface 413 being parallel and opposite to the second surface 412 - cf. Figs. 2 to 4. In other words, the third surface 413 is perpendicular to first surface 411 and faces away from the body portion 44. In the embodiment shown on Figs. 2-5 the first surface 411 of the top wall 41 merges with or into the body portion 44 thus forming a continuous surface.

[0054] The first end 435 and the second end 436 are connected to the top wall 41. It is also feasible that only one of the first end 435 and the second end 436 is connected to the top wall 41, while the other one of first end 435 and the second end 436 is not connected to the top wall 41. In any event, the resilient arm 43 is capable of flexing in both in a direction X towards the first surface 411 of the top wall and in a direction Y perpendicular to the first surface 411 of the top wall 41 and away from the body portion 44. Furthermore, the flexible arm 43 is biased towards an initial, un-flexed position, in which it is shown in Figs. 2-5.

[0055] More particularly, the resilient arm 43 is sufficiently flexible and connected to the top wall 41 in such a manner that it is capable of flexing in the direction Y at least until reaching an outermost, i.e. maximally flexed, position where the resilient arm 43 is situated level with or possibly even beyond the second surface 412 of the top wall 41 in a direction towards the third surface 413.

[0056] The resilient arm 43 further comprises an edge 437 facing the first surface 411 of the top wall 41. The edge 437 of the resilient arm 43 extends between the first end 435 and the second end 436. The edge 437 extends in a distance from the top wall 41. Thereby a gap 45 is provided between the resilient arm 43 and the top wall 41.

[0057] The resilient arm 43 is sufficiently flexible and connected to the top wall 41 in such a manner that it is capable of flexing in the direction X at least until reaching an outermost, i.e. maximally flexed, position where the edge 437 of the resilient arm 43 is situated in abutment with the first surface 411 of the top wall 41.

[0058] The first section 431 extends from the first end

435 away from the top wall 41, and more particularly the first surface 411 thereof. In an embodiment, the first section 431 may extend sufficiently far away from the top wall 41 to allow the flexible arm 43 to abut or support on and, due to the resilience, also press against the side frame member 3b during installation of the screening arrangement. As this during installation will be the case at both opposite ends, the result is that the screening device will be centred or aligned during installation, thus further simplifying the installation process.

[0059] The second section 432 extends back towards the top wall 41, and more particularly the first surface 411 thereof, to the second end 436. The first section 431 and the second section 432 are connected or meet at their respective ends opposite the first end 435 and the second end 436, respectively. An elbow or angle 433 is provided where the first section 431 and the second section 432 meet. The elbow 433 is shaped in such a manner as to provide a locking means or an engagement means 434 adapted for engaging with the locking means or engagement means 9 of the mounting bracket 6. In the embodiment shown, the engagement means 434 is provided as a protrusion or nose on the resilient arm 43. Thereby the respective engagement means 434 and 9 provide for a snapping engagement between the end piece 40 and the mounting bracket 6, capable of locking the end piece 40 and the mounting bracket 6 together when mounting the screening arrangement on a window 1.

[0060] Referring to Fig. 1, the top frame member 3a of the window 1 is provided with a bevel of about 4°. Therefore, a wedge shaped space 10 is formed between the lower edge of the top frame member 3a of the window 1 and the top ledge 7 defining the upper line x_1 of the mounting bracket 6. Therefore, the end piece 40 is provided with a wedge shaped part 46 dimensioned to correspond to the said wedge shaped space 10. Referring to Fig. 2, this wedge shaped part 46 is shown between the lines L and M. As may furthermore be seen the resilient arm 43 is in the embodiment shown provided with a general outline being substantially parallel with the line M and is thus adapted for substantially corresponding to the bevelling of the top frame member 3b of the window 1. Thereby, when mounting the screening device, the end piece will be held between the top ledge 7 of the mounting bracket 6 and the lower edge of the top frame member 3a of the window 1 in such a way that it is substantially unable to move in the second direction h. This provides for a particularly simple installation process.

[0061] Furthermore, one or both of the two end pieces 40 may optionally comprise a bottom flange 42 for guiding the end piece 40 and thereby the screening arrangement into position with respect to the mounting bracket 6 when mounting the screening device. The bottom flange 42 is thus adapted for guiding engagement with the bottom edge 8 of the mounting bracket (Fig. 1). The bottom flange 42 may be provided in a manner known per se. Alternatively, the bottom flange 42 may be provided in the form of a further resilient arm, for instance being sim-

ilar or identical to the resilient arm 43 described above, albeit mirror-inverted in comparison thereto.

[0062] Furthermore, the end piece 40 may comprise spring means for cooperation with a cord system of a further screening arrangement (not shown).

[0063] Mounting of the screening device with the end pieces 40 on the mounting brackets 6 will be described below in some detail with reference to the figures.

[0064] Bringing the screening device of the screening arrangement to its mounted condition involves engaging the two end pieces 40 of the screening device with the two mounting brackets 6 mounted on opposing side members 3b of the frame 3 of the window 1. During mounting, the screening device with its set of end pieces 40 is moved substantially in the third direction d (Fig. 1) from a point distant from the pane 5 to a point proximate to the pane 5.

[0065] During the installation procedure, the female engagement means 9 is able to cooperate with the male engagement means 434, so that it is possible to provide engagement between each end piece 40 and the respective mounting bracket 6 in at least a terminal position.

[0066] In a first step, the resilient arms 43 of the end pieces 40 of the screening device are aligned with the top ledges 7 of the respective mounting bracket 6.

[0067] Secondly, the resilient arms 43 of the end pieces 40 of the screening device are supported on the top ledges 7 of the respective mounting bracket 6.

[0068] Third, the screening device is moved in the third direction. Thereby, the resilient arm 43 is flexed outwards in the direction Y to a position at least level with the second surface 412 of the top wall 41 to allow the flexible arm 43 to pass along the top ledge 7 of the mounting bracket 6.

[0069] Finally, the end pieces 40 are locked to the mounting brackets 6 in the terminal position to attain the mounted condition. In the mounted condition the male engagement means 434 in the form of a protrusion or nose on the resilient arm 43 interacts or engages with the shoulder or recess 9. This is obtained in that the flexible arm 43 flexes back to its initial, un-flexed position when the protrusion or nose 434 is aligned with the shoulder or recess 9.

[0070] The invention should not be regarded as being limited to the described embodiments. Several modifications and combinations of the different embodiments will be apparent to the person skilled in the art.

Claims

1. A screening arrangement for a window (1), in particular a roof window, having a frame (3) encasing a pane (5) and composed by a top member (3a), two side members (3b) and a bottom member and defining a first direction (w) parallel to a longitudinal direction of the top and bottom members corresponding to a width direction of the frame, a second

direction (h) parallel to a longitudinal direction of the side members corresponding to a height direction of the frame, and a third direction (d) perpendicular to the first and second directions corresponding to a depth direction of the frame, comprising:

- a screening device including an elongated top casing provided with a set of two end pieces (40) and adapted to extend in parallel with said first direction in a mounted condition, each end piece (40) having a body portion (44) and a top wall (41) extending perpendicular to the body portion (44),
 in which the screening device during mounting is configured to be connected with a set of two mounting brackets (6) arranged on the side members (3b) of the frame (3) by moving the screening device with its set of end pieces (40) substantially in the third direction (d) from a point distant from the pane (5) to a point proximate to the pane (5), **characterized in that**
 at least one of the two end pieces (40) further comprises a resilient arm (43) with a first end (435) and a second end (436), at least one of the first and second ends (435, 436) being connected to the top wall (41) in such a manner that the resilient arm (43) is capable of flexing in both in a direction (X) towards a first surface (411) of the top wall (41) being parallel with the body portion (44) and in a direction (Y) perpendicular to the first surface (411) of the top wall (41).
2. A screening arrangement according to claim 1, wherein both of the first and second ends (435, 436) of the resilient arm (43) are connected to the top wall (41) in such a manner that the resilient arm (43) is capable of flexing in both in the direction (X) towards the first surface (411) of the top wall (41) and in the direction (Y) perpendicular to the first surface (411) of the top wall (41).
 3. A screening arrangement according to any one of the above claims, wherein the resilient arm (43) is capable of flexing in the direction (Y) perpendicular to the first surface (411) of the top wall (41) from a second surface (412) of the top wall (41) perpendicular to the first surface (411) towards a third surface (413) of the top wall (41) parallel and opposite to the second surface (412) at least to a position in which the resilient arm (43) is situated level with or beyond the second surface (412).
 4. A screening arrangement according to any one of the above claims, wherein the flexible arm (43) is biased towards an initial, un-flexed position.
 5. A screening arrangement according to any one of the above claims, wherein an edge (437) of the resilient arm (43) extending between the first and second ends (435, 436) and facing towards the top wall (41) extends in a distance from the top wall (41), such that a gap (45) is provided between the resilient arm (43) and the top wall (41).
 6. A screening arrangement according to any one of the above claims, wherein, starting from the first end (435), the resilient arm (43) comprises the first end (435), a first section (431) extending away from the top wall (41) in a direction opposite to the body portion (44), a second section (432) extending back towards the top wall (41) and the second end (436).
 7. A screening arrangement according to any one of the above claims, wherein, starting from the first end (435), the resilient arm (43) comprises the first end (435), a first section (431) extending away from the top wall (41) in a direction away from the first surface (411) of the top wall (41), a second section (432) extending back towards the top wall (41) and the second end (436).
 8. A screening arrangement according to claim 5 or 6, wherein the first section (431) and the second section (432) meet in an elbow (433).
 9. A screening arrangement according to any one of the above claims, wherein the resilient arm (43) comprises an engagement member (434) adapted for snapping engagement with the set of two mounting brackets.
 10. A screening arrangement according to claim 9, wherein the engagement member (434) is arranged substantially midway between the first end (435) and the second end (436) of the resilient arm (43).
 11. A screening arrangement according to any one of the above claims, wherein at least one of the two end pieces (40) further comprises a bottom flange (42).
 12. A screening arrangement according to any one of the above claims, and further comprising a set of two mounting brackets (6), each mounting bracket having a thickness dimension, a height dimension, and a length dimension, and being adapted to be mounted to a respective side member (3b) of the frame, such that the thickness dimension is parallel to the first direction (w), the height dimension is parallel to the second direction (h), and the length dimension is parallel to the third direction (d), each mounting bracket having a top ledge (7) defining an upper line (x₁) of the mounting bracket and extending in the length dimension of the mounting bracket (6), in the third direction in the mounted condition of the mounting bracket,

the resilient arm (43) of the end pieces (40) of the screening device being adapted to ride on the top ledge (7) during mounting and to be supported on the top ledge (7) of the respective mounting bracket (6) in the mounted condition of the screening device. 5

13. A screening arrangement according to claim 12 when dependent on claim 9, wherein the engagement member (434) of the resilient arm is adapted for snapping engagement with a corresponding engagement member (9) in the top ledge (7) of the respective mounting bracket (6). 10

14. A window (1), in particular a roof window, comprising a screening arrangement according to any one of the above claims. 15

15. A method of installing a screening arrangement according to any one of claims 1 to 13 in a window according to claim 14, comprising the steps of: 20

- a) aligning the resilient arms (43) of the end pieces (40) of the screening device with the top ledges (7) of the respective mounting bracket (6),
- b) supporting the resilient arms (43) of the end pieces (40) of the screening device on the top ledges (7) of the respective mounting bracket (6), 25
- c) moving the screening device in the third direction (d) such that the resilient arm (43) is flexed in the direction (Y) perpendicular to the first surface (411) of the top wall (41), and 30
- d) aligning the engagement means (434) of the end pieces (40) with the engagement means (9) of the mounting bracket (6) thereby allowing the flexible arm (43) to flex back to its initial, unflexed position such as to lock the end pieces (40) to the mounting brackets (6) in a terminal position to attain the mounted condition. 35

40

45

50

55

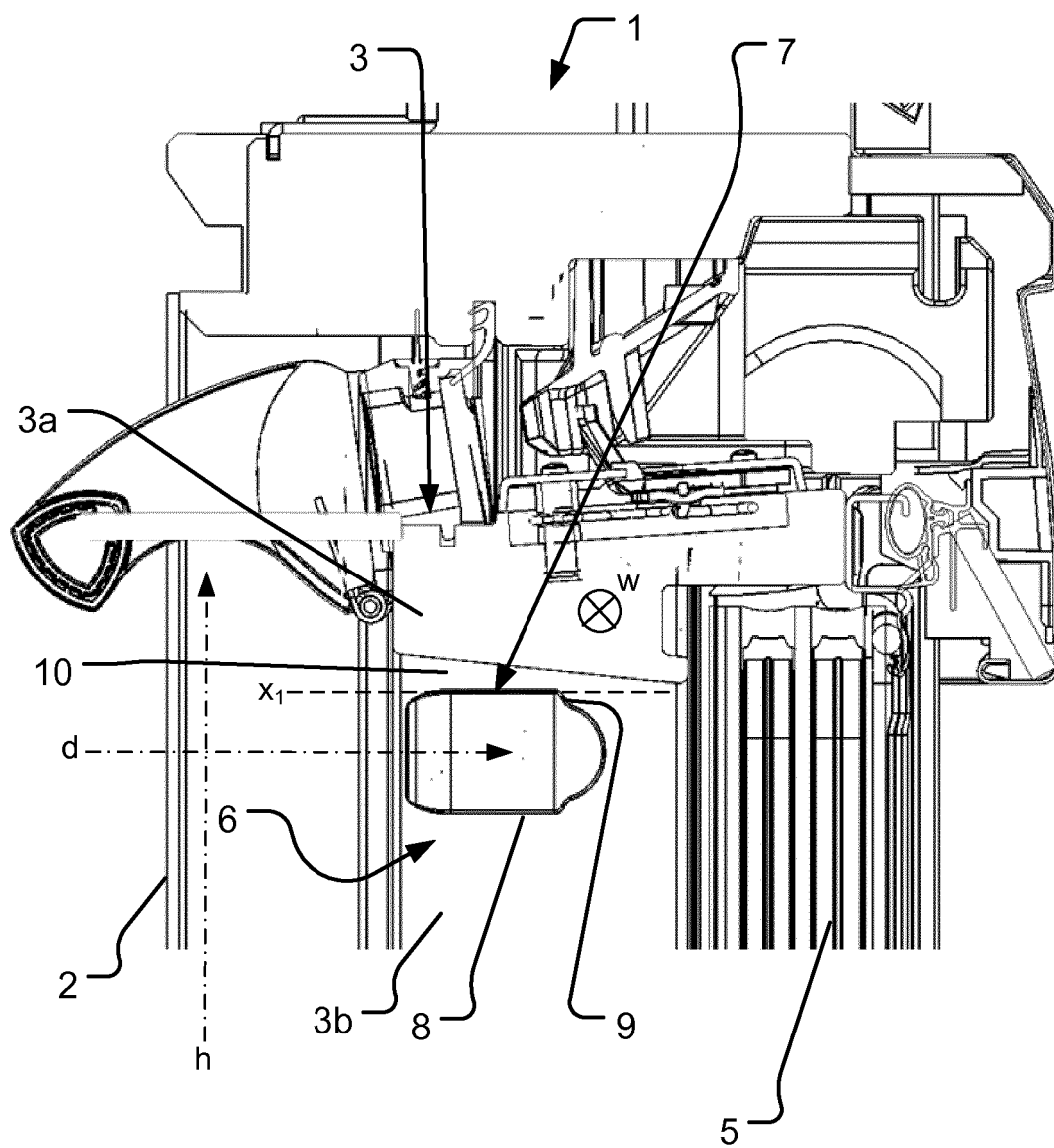


Fig. 1

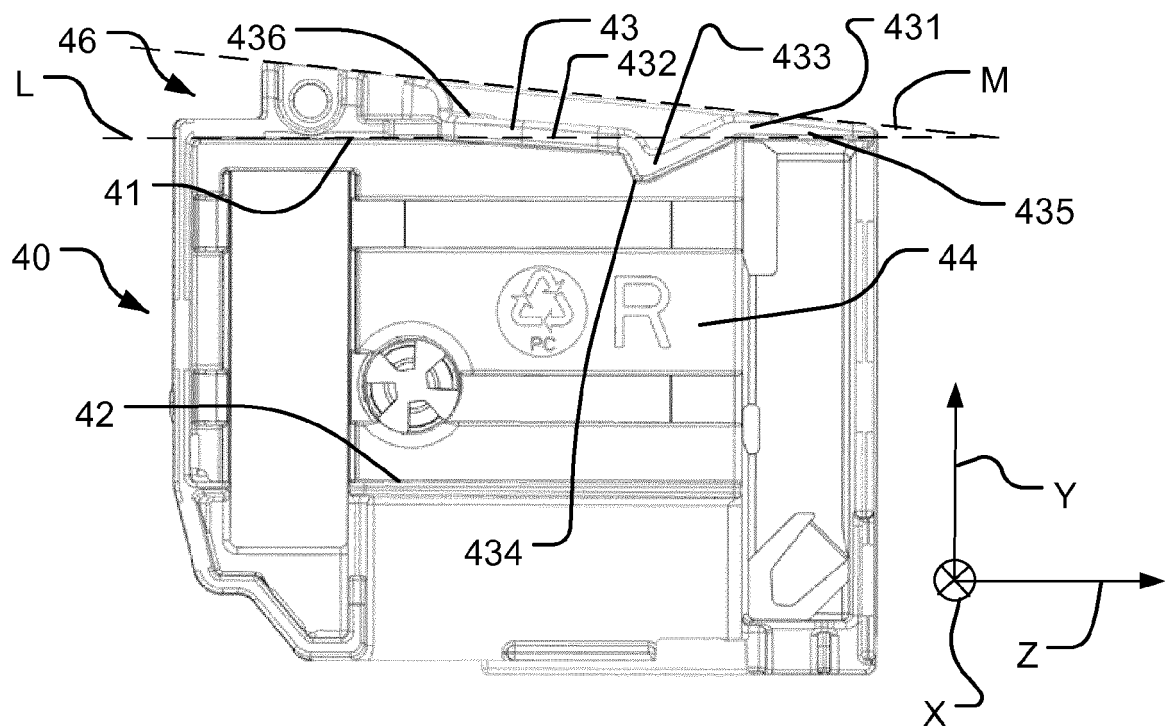


Fig. 2

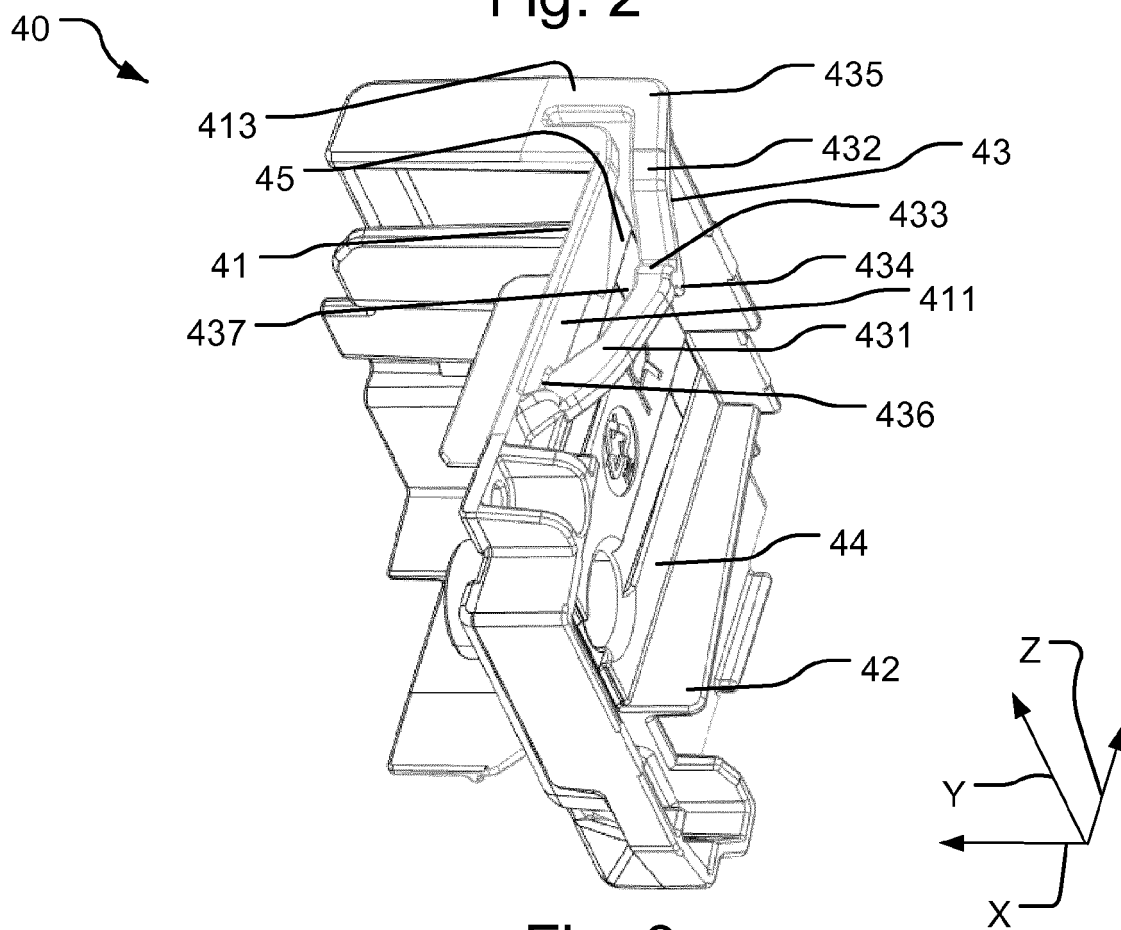


Fig. 3

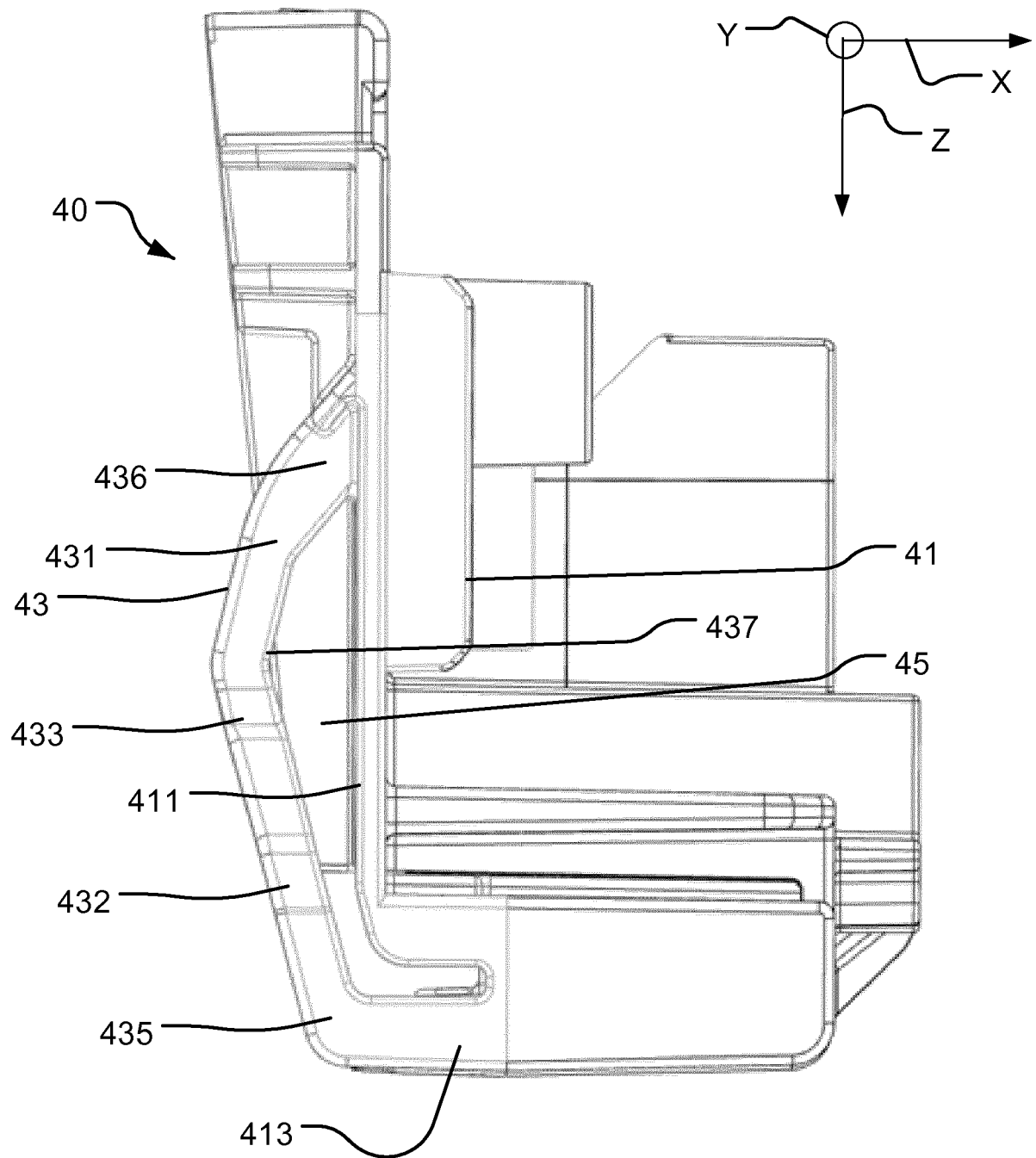


Fig. 4

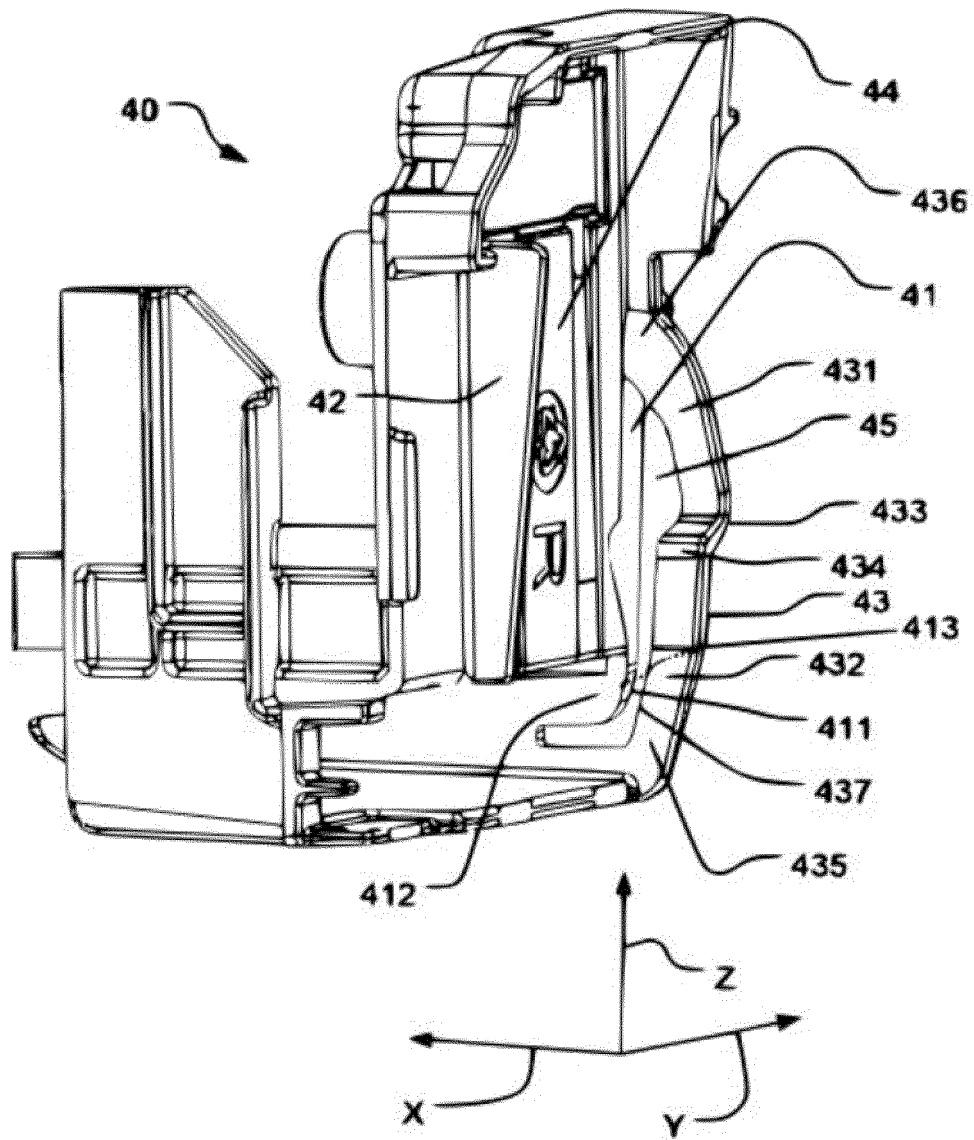


Fig. 5



EUROPEAN SEARCH REPORT

Application Number
EP 17 20 8433

5

10

15

20

25

30

35

40

45

50

55

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	WO 2007/110072 A1 (VKR HOLDING AS [DK]; BIRKKJAAER MARTIN [DK]) 4 October 2007 (2007-10-04) * page 7, lines 18-29; claim 1; figures 1,3,5,7,8 *	1,3-5,9,11-15	INV. E06B9/323 E06B9/50
A	EP 2 716 857 A2 (FOURDS LTD [GB]) 9 April 2014 (2014-04-09) * the whole document *	1-15	
A	WO 99/07974 A1 (VELUX IND AS [DK]; MOELLER BRENT [DK]; NIELSEN TORBEN HOLST [DK]; GRIN) 18 February 1999 (1999-02-18) * the whole document *	1-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			E06B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 23 April 2018	Examiner Bourgoin, J
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			

 1
EPO FORM 1503 03.02 (P04C01)

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

EP 17 20 8433

5

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

23-04-2018

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 2007110072	A1	04-10-2007	CN 101495710 A	29-07-2009
			DK 2002079 T3	22-05-2017
			EP 2002079 A1	17-12-2008
			EP 3203008 A1	09-08-2017
			ES 2624700 T3	17-07-2017
			HU E033120 T2	28-11-2017
			JP 4833332 B2	07-12-2011
			JP 2009531568 A	03-09-2009
			PL 2002079 T3	29-09-2017
			US 2009178772 A1	16-07-2009
			US 2012008301 A1	12-01-2012
			WO 2007110072 A1	04-10-2007

EP 2716857	A2	09-04-2014	NONE	

WO 9907974	A1	18-02-1999	AT 209294 T	15-12-2001
			AU 719979 B2	18-05-2000
			BG 63405 B1	31-12-2001
			BR 9808267 A	16-05-2000
			CA 2283826 A1	18-02-1999
			CN 1266472 A	13-09-2000
			CZ 20000487 A3	12-09-2001
			DE 69803296 D1	21-02-2002
			DE 69803296 T2	25-07-2002
			DK 1003953 T3	13-05-2002
			EA 199900782 A1	28-02-2000
			EE 9900484 A	15-06-2000
			EP 1003953 A1	31-05-2000
			ES 2168780 T3	16-06-2002
			HR P990412 A2	30-04-2000
			HU 0002865 A2	29-01-2001
			IL 131675 A	12-01-2003
			IS 5165 A	27-08-1999
			JP 4005148 B2	07-11-2007
			JP 2002510371 A	02-04-2002
			NO 994770 A	30-09-1999
			NZ 337581 A	22-12-2000
			PL 335932 A1	22-05-2000
			SK 119599 A3	16-05-2000
			US 6283427 B1	04-09-2001
			WO 9907974 A1	18-02-1999
			YU 48199 A	30-10-2000

EPO FORM P0459

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

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- WO 9907974 A1 [0003]
- EP 1003953 B1 [0003]
- WO 0047858 A1 [0003]
- EP 1151176 B1 [0003]
- WO 2007110072 A1 [0003]
- EP 2002079 A1 [0003]
- WO 2008131757 A1 [0004]
- EP 2474702 B1 [0005]