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

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

(74) Representative: **Awapatent A/S**
Rigensgade 11
1316 Copenhagen K (DK)

(54) SCREENING ARRANGEMENT WITH SIDE RAIL OF ADJUSTABLE LENGTH INCORPORATING A REINFORCEMENT PIECE AND METHOD OF MOUNTING SUCH A SCREENING ARRANGEMENT IN A WINDOW FRAME

(57) A screening arrangement (1) for a window and adapted to be mounted in a frame (2) of the window, having a supply condition and a mounted condition including at least two installation positions, the screening arrangement comprising a screening body (6) and two side rails (8) having a pre-defined length corresponding to a first installation position and at least one adjusted length corresponding to a respective at least one other installation position, the side rails (8, 9) being provided with a weakening portion (810) and a reinforcement member (60). Furthermore the invention relates to a method of mounting such screening arrangement in a window.

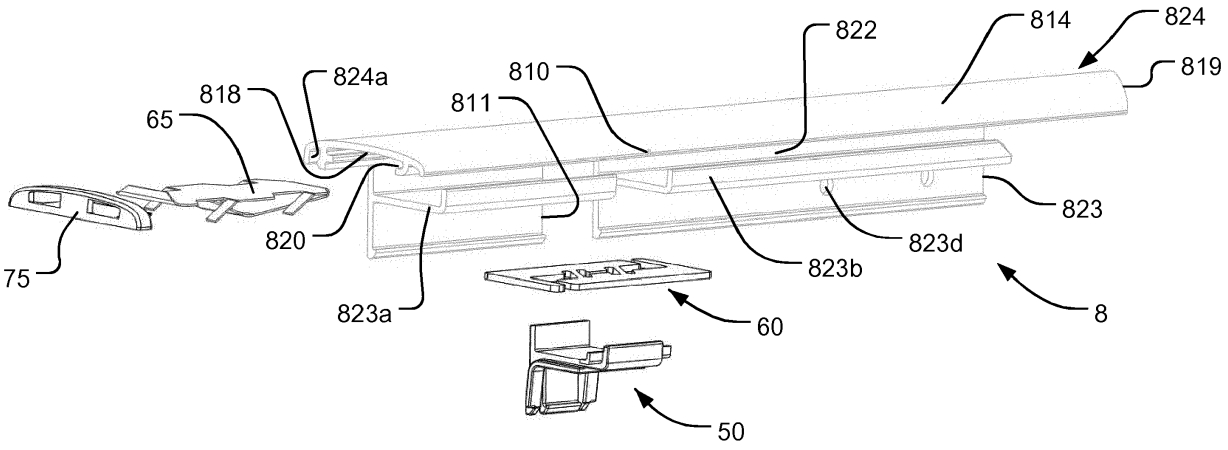

Fig. 1

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Description

[0001] The present invention relates to a screening arrangement for a window and adapted to be mounted in a frame of the window, having a supply condition and a mounted condition including at least two installation positions, the screening arrangement comprising a screening body and two side rails each defining a longitudinal direction between a lower end and an upper end, a front side and a back side, and having a pre-defined length corresponding to a first installation position and at least one adjusted length corresponding to a respective at least one other installation position. The invention furthermore relates to a method of mounting such a screening arrangement in a window frame.

[0002] In such screening arrangements the side rails positioned at the side pieces of the window serve i.a. the purpose of improving the light-proofing properties of the screening arrangement, as they overlap the side edges of the screening body. Furthermore, cords and other operating or guidance devices, which might be present in the screening arrangement, are hidden behind the side rails. Eventually, depending on the type of screening body and the installation situation, the side rails may contribute to holding the screening body in position. In its simplest form, such a side rail has a cross-section shaped substantially as an L or a T having two perpendicularly extending flanges, of which the first flange abuts the inner side face of the frame side piece, i.e. the face closest to the pane of the window. The second flange overlaps the side edges of the screening body etc. as described in the above, and possibly also part of the front face of the frame side piece. Furthermore, in a more complex configuration meeting higher requirements to the screening arrangement, a third flange is often provided to extend from the first flange in a plane parallel to the second flange so as to provide a track for the guiding of the screening body and for light proofing purposes, thus rendering the side rail substantially F-shaped in cross-section.

[0003] The fact that windows come in a number of different sizes entails that screening arrangements are traditionally delivered in a corresponding range of sizes. Even a window, which at first sight appears to be of identical size and model as another window, might require a particular screening arrangement different from that of the other window, just as there is a risk that the purchaser does not know exactly which type of window he or she is buying the screening arrangement for.

[0004] In the prior art, several attempts have been made in order to alleviate this problem.

[0005] One example is described in Applicant's earlier published international application No. WO 2006/039926 A1, in which adjusting means including an extension member for connection to the side rail is suggested along with further adjusting means for adapting the screening arrangement to the particular installation situation. However, although well-functioning, the presence of an extension member inevitably entails a joint, which regardless of the accuracy with which the joint is carried out is visible. This is not satisfactory in all fields of application. Even more important, the joint may impair the operation of the screening arrangement, as elements for steering the extension member relative to the actual side rail are practically indispensable.

[0006] With this background it is the object of the invention to provide a screening arrangement, which may be utilized in a number of different window sizes but which nevertheless, satisfies the need for an immaculate appearance and smooth operation in all possible installation situations.

[0007] In a first aspect, this and further objects are met by a screening arrangement of the kind mentioned in the introduction, which is furthermore characterized in that each side rail includes at least one weakening portion in the back side at a distance from the lower end and extending in a transverse direction substantially perpendicular to the longitudinal direction such that a break-off section and a remaining section are formed of the side rail, and that a reinforcement member is releasably connected to the side rail and bridges the break-off section and the remaining section of the side rail in the supply condition.

[0008] By providing a weakening portion in combination with a reinforcement member, the versatile applicability of one and the same side rail in more than one installation position aimed at is achieved, while at the same time maintaining security against damage or even unwarranted breaking of the side rail, as the reinforcement member protects the weakening portion. The breaking off may take place by simply bending the side rail about an axis parallel to the weakening portion, for instance by gripping the break-off section with one hand and the remaining section with the other, and then just snap the parts from each other. Bending may in principle take place in any direction, but bending the front sides of the break-off section and the remaining section towards each other results in the cleanest break surface.

[0009] The reinforcement member is preferably formed in such a way that it is possible to retain it in place, even if no adjustment of the length of the side rail is to take place. In such an embodiment, the reinforcement member thus bridges the break-off section and the remaining section of the side rail also in the first installation position. As an alternative, it may be removed, once it is no longer necessary to protect the side rail when mounted.

[0010] In one preferred embodiment, the reinforcement member is a plate-shaped element having a first plate section and a second plate section substantially parallel with each other and adapted to extend in the longitudinal direction of the side rail in the track in at least the mounted condition, and wherein the first plate section and the second plate section are separated from each other by a link section adapted to assume at least an expanded position corresponding to the first width of the reinforcement member and a collapsed position corre-

sponding to the second width of the reinforcement member. This provides for a reliable and easily manufactured piece which has furthermore only a slight thickness, thus meaning that it does not interfere with the guiding of the screening body side edges.

[0011] In a further development of this preferred embodiment, the first plate section and the second plate section are mirror images and the link section includes a pair of strips surrounding a slot. The slot makes it possible to insert a simple tool such as a screwdriver to activate and de-activate, respectively, the expanded and collapsed positions when the reinforcement member is initially locked into its position to obtain the supply condition, and when it is desirable to remove it to obtain a mounted condition in which it is required to break off the break-off section of the side rail.

[0012] In one preferred embodiment, a spacer member is releasably connected to the side rail in at least the supply condition and fits into the apertures of the first leg and the first and second flange portions of the first leg. The provision of the spacer member has the effect that the apertures in the first leg and its first and second flange portions are covered, which is advantageous from a cleaning and aesthetic point of view, but also provides a resistance to pressure and hence to bending of the side rail in one direction when in place, as it fits in the aperture, i.e. between facing edges of the relevant parts. Thus, bending the back sides of the break-off section and remaining section towards each other is prevented. This might otherwise cause bumps or dents in the front side of the side rail.

[0013] In a further development of this preferred embodiment, the reinforcement member bridges the break-off section and the remaining section of the side rail also in the first installation position, and the spacer member forms part of the guiding track for the side edges of the screening body. That is, not only does the spacer member cover the apertures, its backside, i.e. side facing the interior of the guiding track, has a function.

[0014] Specifically, the spacer member may comprise a first leg adapted to fit into the aperture of the first leg of the side rail, a second leg adapted to fit into the aperture of the first flange portion, and a third leg to fit into the aperture of the second flange portion. Hence, the spacer member has a shape following that of the cross-section of the side rail and may thus be virtually inconspicuous.

[0015] In order to ensure proper retention of the spacer member in the supply and first installation position, the spacer member is in one embodiment provided with first engagement means for engaging with the first and second flange portions of the first leg of the side rail, and second engagement means for engaging with the first leg of the side rail.

[0016] As the side rails will most often be formed as extruded profiles of a suitable material, typically metal, the end edges may be regarded as rough. This is for instance the case where the end of the side rail is not in direct abutment with the bottom piece of the window frame. When breaking off the break-off section, even though if carried out with great care, there is a risk that rugged portions or burrs occur. To that end, one embodiment is advantageous in that an end member is provided for closing the lower end of the break-off section of the side rail or the end of the remaining section. In those cases, in which breaking of the bottom element is foreseen, a brake device may be adapted to be connected to the end member.

[0017] In a second aspect, a method of mounting a screening arrangement in a window frame is provided.

[0018] The advantages of the second aspect of the invention and further developed embodiments also applicable to the second aspect of the invention have been described in the above and reference is made thereto.

[0019] Further details are described, and further advantages stated, in the description of particular embodiments of the invention.

[0020] 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 an exploded perspective view of details of a screening arrangement in an embodiment of the invention;

Fig. 2 is a view corresponding to Fig. 1, but from another angle;

Fig. 3 is a view of the embodiment of Fig. 1, but with the details assembled;

Figs 4 and 5 are views corresponding to Fig. 3, but from other angles;

Fig. 6 is a perspective view of the side rail of an embodiment of the invention, in a first installation position;

Fig. 7 is a sectional view of the side rail of Fig. 6, along a line corresponding to a weakening portion;

Fig. 8 is a view corresponding to Fig. 6 but in another installation position;

Figs 9 to 11 are perspective views from different angles, on a larger scale, of a spacer member of the screening arrangement in an embodiment of the invention;

Fig. 12 is a perspective view, on a larger scale, of a reinforcement member of the screening arrangement in an embodiment of the invention and

Fig. 13 is a perspective view of a screening arrangement in an embodiment of the invention, mounted in a window frame.

[0021] Referring initially to Fig. 13, details of a screening arrangement 1 according to the invention mounted in a window frame generally designated 2 and representing a window will be described. In the embodiment described, window frame 2 is an openable sash adapted to be mounted in a stationary frame to be installed in an inclined roof surface. It is noted that the terms "sash" or "frame" is 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. It is to be understood that the screening arrangement in the present invention is arranged on the inside of the window, i.e. the side intended to face the interior of a room. However, the screening arrangement 1 could be arranged in a similar manner on the outside of the window.

[0022] As shown in Fig. 13, the window frame 2 is substantially rectangular and has a top piece 21, two side pieces 22, 23 and a bottom piece 24. The screening arrangement 1 comprises two side rails 8 and 9 mounted at the side pieces 22, 23. In the following, reference will only be made to the left-hand side rail 8. The terms "left-hand" and "right-hand" refer to the orientation shown in for instance Figs 1 and 2, and are utilized for reasons of convenience only. Similarly, the terms "front" and "back" are utilized to denote the sides of the screening arrangement 1, "front" being the side intended to face inwards into the interior of a building, and "back" the outwards facing side. The terms "upper" and "lower" refer to the orientation of the screening arrangement installed in a frame, where "upper" refers to the top piece 21 of the frame and "lower" refers to the bottom piece 24 of the frame. Furthermore, the screening arrangement comprises a screening body 6, and a top element 4 and a bottom element 7, between which the screening body 6 extends as illustrated in Fig. 13.

[0023] In the most simple embodiment the screening arrangement 1 is adapted to be mounted in a frame 2 of a window, having a supply condition and a mounted condition including at least two installation positions, the screening arrangement comprising a screening body 6 and two side rails 8 each defining a longitudinal direction between a lower end 818 and an upper end 819, and having a pre-defined length corresponding to a first installation position and at least one adjusted length corresponding to a respective at least one other installation position, each side rail comprises a first leg 823 adapted to be mounted on an inner side face of a side piece of a window frame and a second leg 824 having a front side 814 and a back side 815 and extending in a general plane at an angle to the first leg 823 and adapted to cover side edges of the screening body 6 in the mounted condition, the first leg 823 of the side rail is provided with a first flange portion 823a extending substantially in parallel with the general plane of the second leg 824 to form a guiding track 821 for the side edges of the screening body 6 where each side rail 8 includes at least one break area at a distance from the lower end 818.

[0024] In principle, the break area could be provided by a number of cuts, for instance a first cut through the material of the first leg 823, and a second cut through the material of the first flange portion 823a along the plane corresponding to the first cut in the first leg 823, so as to form a slit in the material of the first leg 823 and first flange portion 823a, the second leg 824 includes at least one weakening portion or weakening groove 810 in the back side 815 thereof substantially along the general planes of the first and second cuts so that a break-off section 8a and a remaining section 8b are defined of the side rail. The interpretation of the term "substantially along the general planes of the first and second cuts" regarding the position of the weakening portion 810 in the longitudinal direction of the side rail 8 is to be interpreted as encompassing positions coinciding with one plane or the other, or at any position between these planes. Details regarding such a configuration are disclosed in Applicant's co-pending application filed on the same day as the present application.

[0025] In the embodiment shown, as the width of the slit is substantially larger than in the above conceived embodiment, the strength of the side rail 8 against deformation may be enhanced as will be described in further detail below.

[0026] Referring now especially to Figs 1 to 8 showing details of an embodiment of the side rail 8 of the invention. In Figs 1 to Fig 5 a side rail 8 comprising a spacer 50 and a reinforcement member 60 are illustrated in an exploded and assembled view. In these Figures it is seen how the reinforcement member 60 is intended to be placed in a track 821 of the side rail 8 and that the spacer member is intended to be placed in an aperture 811, 812, 813 of the first leg of first leg 823, to be explained in more detail. Furthermore it is seen how the side rail also comprises a brake device 65 which is intended to connect with an end of the side rail and an end member 75 for closing off the end of the side rail 8.

[0027] As can be seen from the Figs the side rail 8 defines a longitudinal direction between a lower end 818 and an upper end 819, and has a pre-defined length corresponding to a first installation position and at least one adjusted length corresponding to a respective at least one other installation position. In the embodiment shown, the upper end 819 is mitred to fit with a correspondingly mitred end (not shown in detail) of the top element 4. The side rails 8, 9 and a corresponding top rail of the top element 4 are connected with each other by means of an angular bracket at either end, which is received in one of the tracks at the back side 815 of the side rails. However, the present invention relates equally to screening arrangements in which no separate top element is provided and in which the upper end of the respective side rails is not mitred.

[0028] In the embodiment shown, the cross-section of the side rail 8 is basically L-shaped, with a first leg 823 and a second leg 824. The outer surface of the second leg 824 forms the front side 814 of the side rail 8, and the backwards facing surface constitutes the back side 815 of the side rail 8. The second leg 824 extends in a general plane which is substantially perpendicular to the first leg 823, but is slightly curved to provide a pleasant appearance, and consequently both the front side 814 and the back side 815 have a predefined curvature.

[0029] The first leg 823 is adapted to be mounted on an inner side face of a side piece of a window frame and the second leg 824 extending in a general plane at an

angle to the first leg and adapted to cover side edges of the screening body 6 in the mounted condition.

[0030] As can be seen from the Figures each side rail 8, wherein at least the second leg 824 is provided with a weakening portion 810 and the reinforcement member 60 is releasably connected to the second leg 824, includes at least one weakening portion 810 at a distance from the lower end 818 and extending in a transverse direction substantially perpendicular to the longitudinal direction such that a break-off section 8a and a remaining section 8b is formed of the side rail, and that a reinforcement member 60 is releasably connected to the side rail 8 and bridges the break-off section 8a and the remaining section 8b of the side rail 8 in the supply condition as for example illustrated in Fig. 5.

[0031] In a preferred embodiment, best illustrated in Fig. 6, the first leg 823 ends at a distance from the lower end 818 of the side rail and have a shorter length than the second leg 824 thus forming a recess 818a.

[0032] The first leg 823 is provided with attachment holes 823d provided for attachment of the side rail 8 of to the side pieces 22, 23 of the frame 2. The attachment holes 823d are provided in the remaining section 8b of the first leg 823.

[0033] The second leg 824 has a front side 814 and a back side 815 including a track 820 extending in the longitudinal direction, where the reinforcement member 60 is slidably accommodated in said track 820.

[0034] The second leg 824 is furthermore provided with a small flange portion 824a which in the mounted position of the rail 8 overlaps part of the frame side piece 22 to provide for an overlap between the side rail 8 and the frame side piece 22.

[0035] The mounted condition of the side rail 8 is illustrated in Fig. 13, where it is seen that the front side 814 of the second leg 824 covers the screening body 6 and the side pieces of the frame

[0036] With regard to the first leg, the first leg 823 of the side rail is provided with a first flange portion 823a extending substantially in parallel with the general plane of the second leg 824 to form a guiding track 821 for the side edges of the screening body and a second flange portion 823b at the free edge of the first flange portion 823a to form a longitudinally extending entrance 822 to the guiding track 821, the entrance 822 having a smaller transverse dimension than the guiding track 821. Thus the screening body is able to be guided in the side rail 8 without easily getting out of position and fall out of side rails.

[0037] In an embodiment the first leg 823 and the first and second flange portions 823a, 823b of the first leg 823 of the side rail 8 are provided with at least one weakening portion.

[0038] The weakening portion of the first leg 823 is best illustrated in Fig. 2, where the first leg 823 and the first and second flange portions 823a, 823b of the first leg 823 of the side rail 8 are each provided with an aperture 811, 812, 813 at the position of the weakening portion 810 of the second leg 824.

[0039] With the arrangement of the apertures 811, 812, 813 the reinforcement member 60 is positioned to be accessed through the apertures 811, 812, 813 so as to be released from at least the supply condition and or the installation position to be removed from the track 821 of the side rail 8.

[0040] With regard to the reinforcement member 60, illustrated in more detail in Fig. 12, the reinforcement member 60 is a plate-shaped element having a first plate section 61 and a second plate section 62 substantially parallel with each other and adapted to extend in the longitudinal direction of the side rail in the track 820 in at least the mounted condition, and wherein the first plate section 61 and the second plate section 62 are separated from each other by a link section 63 adapted to assume at least an expanded position corresponding to the first width of the reinforcement member 60 and a collapsed position corresponding to the second width of the reinforcement member 60.

[0041] Thus the reinforcement member 60 is movable between an engagement position in which it has a first width in the transverse direction and a release position in which it has a second width in the transverse direction, the second width being smaller than the first width.

[0042] In more detail the first plate section 61 and the second plate section 62 are mirror images and the link section 63 includes a pair of strips 63a, 63b surrounding a slot 63c.

[0043] The slot 63c surrounded by the strips 63a, 63b of the link section 63 may be provided in the form of a tilted H-shaped form. However other suitable shapes could be used.

[0044] With this configuration of the reinforcement member 60, a user may use a tool, for example a screw driver, to twist the slot 63c of the reinforcement member 60 so that the first plate section 61 and second plate section 62 is expanded in the transverse direction to obtain the first width of the reinforcement member 60 in which it engages in the track. The release position of the reinforcement member 60 may then be obtained by twisting the slot 63c of the reinforcement member 60 back to the second release position, where the reinforcement member 60 has a second width in the transverse direction.

[0045] Referring again to the Figs 1 to 8, the side rail is furthermore provided with a spacer member 50 which is releasably connected to the side rail 8 in at least the supply condition and fits into the apertures 811, 812, 813 of the first leg 823 and the first and second flange portions 823a, 823b of the first leg.

[0046] In more detail illustrated in Figs 9 to 11 the spacer member 50 comprises a first leg 51 adapted to fit into the aperture 811 of the first leg 823 of the side rail 8, a second leg 52 adapted to fit into the aperture 812 of the first flange portion 823a, and a third leg 53 to fit into the aperture 813 of the second flange portion 823b.

[0047] Furthermore for engaging in the apertures 811,

813 of the screening arrangement, the spacer member 50 is provided with first engagement means 54, 561, 562 provided for engaging with the first and second flange portions 823a, 823b of the first leg 823 of the side rail, and second engagement means 511-519 for engaging with the first leg 823 of the side rail 8.

[0048] The engagement means are formed so that the first engagement means comprises a stepped bar 54 protruding from either side of spacer member 50 at the transition 525 between the second leg 52 and the third leg 53 for introduction into the side rail 8 adjacent to the transition between the apertures 812, 813 in the first and second flange portions 823a, 823b.

[0049] The transition 525 of the third leg 53 provides an L-shaped form where the long leg of the L comprises a further stepped portion 560 providing the spacer member 50 with a flat portion 56 substantially resting on the second leg 52. In the mounted position, the flat portion 56 provides the spacer member with a track surface fitting the track 820 of the rail 8.

[0050] Furthermore the first engagement means comprises stepped portions 561, 562 for interaction with the aperture 812 of the first flange portion 823a of the first leg 823 of the side rail 8.

[0051] In more detail the second engagement means comprise stepped arm portions 511, 512 and shoulder portions 516, 517 for interaction with the first leg 823.

[0052] For snap engagement in the screening arrangement the stepped arm portions 511, 512 and shoulder portions 516, 517 are resilient relative to a main portion 514 of the first leg 51 the by the provision of an intermediate space 526, 527. The shoulder portions 516, 517 as such are thus separated by a flat portion 55 of the main portion 514 extending parallel with the height of the shoulder portions 516, 517.

[0053] The spacer member 50 may with this arrangement thus be snapped into the apertures 811, 812, 813 by engaging the stepped bar 54 with the apertures 812, 813 in the first and second flange portions 823a, 823b so that the stepped bar 54 extends on the interior side of the flange portion 823b so that the stepped bar 54 is in contact with the track 821. The second engagement means 511, 512, 516, 517 may thereafter be snapped into the first leg 823.

[0054] The spacer member 50 and reinforcement element 60 thus have a practical use during mounting and in the mounted position, in that the reinforcement member 60 bridges the break-off section 8a and the remaining section 8b of the side rail also in the first installation position, and wherein the spacer member 50 forms part of the guiding track 821 for the side edges of the screening body.

[0055] With regard to the weakening portion 810 this portion is illustrated more clearly in Figs 2, 4 and 6-8, where it is seen how the weakening portion 810 extends in a transverse direction along the width of the rail 8 substantially perpendicular to the longitudinal direction. Furthermore it is seen how the weakening portion 810 is positioned at a distance from the lower end 818 and at a distance from the upper end 819 so that the distance from the upper end 819 to the weakening portion 810 is greater than the distance to the lower end 818.

[0056] For the weakening portion to be able to break off the weakening portion comprises a groove, here denoted by reference numeral 810 for convenience. The groove 810 extends in depth into the front side 814 of the second leg 824 of the rail 8 so that a simple break along the line of the groove may break the rail 8 into the break off section 8a and the remaining section 8b as illustrated in Figs 7 and 8. These Figs show in more detail a cross-section of the rail 8 taken along the line of the weakening portion 810. It is here seen that the rail 8 has been broken along the weakening portion 810 so that two pieces, the break-off section 8a and a remaining section 8b is obtained. This provides the rail 8 to be adapted into use in different installation positions.

[0057] The dimension of the groove is so that the groove 810 has a width in the range of 0.01 to 4 mm, preferably 0.03 to 2 mm.

[0058] In a preferred embodiment the depth of the groove of the weakening portion 810 lies in the range 0.4 to 1.0 mm, preferably 0.5 to 0.7 mm, the material thickness of the side rail being in the range 0.8 to 1.5 mm

[0059] In another suggested dimension the width of the groove 810 lies in the range 0.01 to 0.1 mm and the groove is provided by laser cutting, preferably cut to match the front side of the side rail. The groove could be provided by other means such as be cut out in the rail 8.

[0060] For the weakening portion 810 to be stiffened during both mounting in the first installation position, where the weakening portion is not to be broken and for transportation the reinforcement member is provided in the rail so that the reinforcement member 60 bridges the break-off section 8a and the remaining section 8b of the side rail also in the first installation position.

[0061] For closing off the end 818, 818' of the rail 8 of the screening arrangement an end member 75 is provided for closing the lower end 818 of the break-off section 8a of the side rail 8 or the end 818' of the remaining section 8b.

[0062] Furthermore in order to fastening the end member to the lower end 818, 818' of the rail 8 a brake device 65 is adapted to be connected to the end member 75. In this way the end member closes of the end of the rail 8, whether being fastened to the end 818 of the break off section 8a or to the end of the 818' of the remaining section 8b.

[0063] In the following, one example of a method for bringing a screening arrangement 1 for a window from a supply condition to a mounted condition including at least two installation positions and adapted to be mounted in a frame 2 of the window including two side pieces 22, 23, comprising the steps of:

providing the screening arrangement in a supply condition,

selecting an installation situation,
releasing the connection between the reinforcement member 60 and the side rail 8,
breaking off the break-off section 8a from the remaining section 8b of each side rail 8 at the weakening portion 810 thereby providing a free end 818' of the remaining section 8b of the side rail 8, and
connecting the remaining section 8b of the respective side rails 8 with the side pieces 22, 23 of the window frame.

[0064] In case a spacer member 50 is included in the screening arrangement in the supply condition, the additional step of releasing the connection between the spacer member and the side rail is carried out before releasing the connection between the reinforcement member and the side rail.

[0065] In case an end member 75 is provided, the additional step of connecting the end member with the free end 818' of the remaining section 8b of the side rail 8, and optionally connecting a brake device 65 with the end member 65.

[0066] Although the screening arrangement of the embodiments shown comprise one screening device having two operating elements, other configurations are conceivable. For instance, there may be more than two operating elements.

[0067] 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 (1) for a window and adapted to be mounted in a frame (2) of the window, having a supply condition and a mounted condition including at least two installation positions, the screening arrangement comprising a screening body (6) and two side rails (8) each defining a longitudinal direction between a lower end (818) and an upper end (819), a front side (814) and a back side (815), and having a pre-defined length corresponding to a first installation position and at least one adjusted length corresponding to a respective at least one other installation position,
characterized in that each side rail (8) includes at least one weakening portion (810) in the back side (815) at a distance from the lower end (818) and extending in a transverse direction substantially perpendicular to the longitudinal direction such that a break-off section (8a) and a remaining section (8b) are formed of the side rail, and that a reinforcement member (60) is releasably connected to the side rail (8) and bridges the break-off section (8a) and the remaining section (8b) of the side rail (8) in the supply condition.

2. A screening arrangement according to claim 1, wherein the reinforcement member (60) bridges the break-off section (8a) and the remaining section (8b) of the side rail also in the first installation position.

3. A screening arrangement according to claim 1 or 2, wherein the side rail (8) comprises a first leg (823) adapted to be mounted on an inner side face of a side piece of a window frame and a second leg (824) extending in a general plane at an angle to the first leg and adapted to cover side edges of the screening body (6) in the mounted condition, and wherein at least the second leg (824) is provided with a weakening portion (810) and the reinforcement member (60) is releasably connected to the second leg (824).

4. A screening arrangement according to claim 3, wherein the second leg (824) has a front side (814) and a back side (815) including a track (820) extending in the longitudinal direction, the reinforcement member (60) being slidably accommodated in said track (820).

5. A screening arrangement according to claim 4, wherein the reinforcement member (60) is movable between an engagement position in which it has a first width in the transverse direction and a release position in which it has a second width in the transverse direction, the second width being smaller than the first width.

6. A screening arrangement according to any one of claims 3 to 5, wherein the first leg (823) of the side rail is provided with a first flange portion (823a) extending substantially in parallel with the general plane of the second leg (824) to form a guiding track (821) for the side edges of the screening body and a second flange portion (823b) at the free edge of the first flange portion (823a) to form a longitudinally extending entrance (822) to the guiding track (821), the entrance (822) having a smaller transverse dimension than the guiding track (821).

7. A screening arrangement according to claim 6, wherein the first leg (823) and the first and second flange portions (823a, 823b) of the first leg (823) of the side rail (8) are provided with at least one weakening portion.

8. A screening arrangement according to claim 6, wherein the first leg (823) and the first and second flange portions (823a, 823b) of the first leg (823) of the side rail (8) are each provided with an aperture (811, 812, 813) at the position of the weakening portion (810) of the second leg (824).

9. A screening arrangement according to claim 5 or 6 and 8, wherein the reinforcement member (60) is

positioned to be accessed through the apertures (811, 812, 813).

10. A screening arrangement according to any one of claims 5 to 9, wherein the reinforcement member (60) is a plate-shaped element having a first plate section (61) and a second plate section (62) substantially parallel with each other and adapted to extend in the longitudinal direction of the side rail in the track (820) in at least the mounted condition, and wherein the first plate section (61) and the second plate section (62) are separated from each other by a link section (63) adapted to assume at least an expanded position corresponding to the first width of the reinforcement member (60) and a collapsed position corresponding to the second width of the reinforcement member (60).

11. A screening arrangement according to claim 10, wherein the first plate section (61) and the second plate section (62) are mirror images and the link section (63) includes a pair of strips (63a, 63b) surrounding a slot (63c).

12. A screening arrangement according to any one of claims 8 to 11, wherein a spacer member (50) is releasably connected to the side rail (8) in at least the supply condition and fits into the apertures (811, 812, 813) of the first leg (823) and the first and second flange portions (823a, 823b) of the first leg.

13. A screening arrangement according to claim 12, wherein the reinforcement member (60) bridges the break-off section (8a) and the remaining section (8b) of the side rail also in the first installation position, and wherein the spacer member (50) forms part of the guiding track (821) for the side edges of the screening body.

14. A screening arrangement according to any one of claims 12 and 13, wherein the spacer member (50) comprises a first leg (51) adapted to fit into the aperture (811) of the first leg (823) of the side rail (8), a second leg (52) adapted to fit into the aperture (812) of the first flange portion (823a), and a third leg (53) to fit into the aperture (813) of the second flange portion (823b).

15. A screening arrangement according to claim 14, wherein the spacer member (50) is provided with first engagement means (54, 561, 562) for engaging with the first and second flange portions (823a, 823b) of the first leg (823) of the side rail, and second engagement means (511-519) for engaging with the first leg (823) of the side rail (8).

16. A screening arrangement according to claim 15, wherein the first engagement means comprises a stepped bar (54) protruding from either side of spacer member (50) at the transition (525) between the second leg (52) and the third leg (53) for introduction into the side rail (8) adjacent the transition between the apertures (812, 813) in the first and second flange portions (823a, 823b).

17. A screening arrangement according to claim 15 or 16, wherein the first engagement means comprises stepped portions (561, 562) for interaction with the aperture (812) of the first flange portion (823a) of the first leg (823) of the side rail (8).

18. A screening arrangement according to any one of claims 15 to 17, wherein the second engagement means comprise stepped arm portions (511, 512) and shoulder portions (516, 517) for interaction with the first leg (823).

19. A screening arrangement according to claim 18, wherein the stepped arm portions (511, 512) and shoulder portions (516, 517) are resilient relative to a main portion (514) of the first leg (51) the by the provision of an intermediate space (526, 527).

20. A screening arrangement according to any one of the preceding claims, wherein an end member (75) is provided for closing the lower end (818) of the break-off section (8a) of the side rail (8) or the end (818') of the remaining section (8b).

21. A screening arrangement according to claim 20, wherein a brake device (65) is adapted to be connected to the end member (75).

22. A screening arrangement according to any one of claims 3 to 21, wherein the first leg (823) ends at a distance from the lower end (818) of the side rail and has a shorter length than the second leg (824) thus forming a recess (818a).

23. A screening arrangement according to any one of the preceding claims, wherein the weakening portion comprises a groove (810).

24. A screening arrangement according to claim 23, wherein the groove (810) has a width in the range of 0.01 to 4 mm, preferably 0,03 to 2 mm.

25. A screening arrangement according to claim 23 or 24, wherein the depth of the groove of the weakening portion (810) lies in the range 0.4 to 1.0 mm, preferably 0.5 to 0.7 mm, the material thickness of the side rail being in the range 0.8 to 1.5 mm.

26. A screening arrangement according to any one of claims 23 to 25, wherein the width of the groove lies in the range 0.01 to 0.1 mm and the groove is pro-

vided by laser cutting, preferably cut to match the front side of the side rail.

27. A method of mounting a screening arrangement (1) according to any one of claims 1 to 26 in a window frame (2) including two side pieces (22, 23), comprising the steps of:

providing the screening arrangement in a supply condition,
selecting an installation situation,
releasing the connection between the reinforcement member (60) and the side rail (8),
breaking off the break-off section (8a) from the remaining section (8b) of each side rail (8) at the weakening portion (810) thereby providing a free end (818') of the remaining section (8b) of the side rail (8), and
connecting the remaining section of the respective side rails (8) with the side pieces (22, 23) of the window frame.

28. The method of claim 27, wherein a spacer member (50) is included in the screening arrangement in the supply condition, comprising the additional step of releasing the connection between the spacer member and the side rail before releasing the connection between the reinforcement member and the side rail.

29. The method of any one of claims 27 and 28, comprising the steps of providing an end member (75) and connecting the end member with the free end (818') of the remaining section (8b) of the side rail (8), and optionally connecting a brake device (65) with the end member (75).

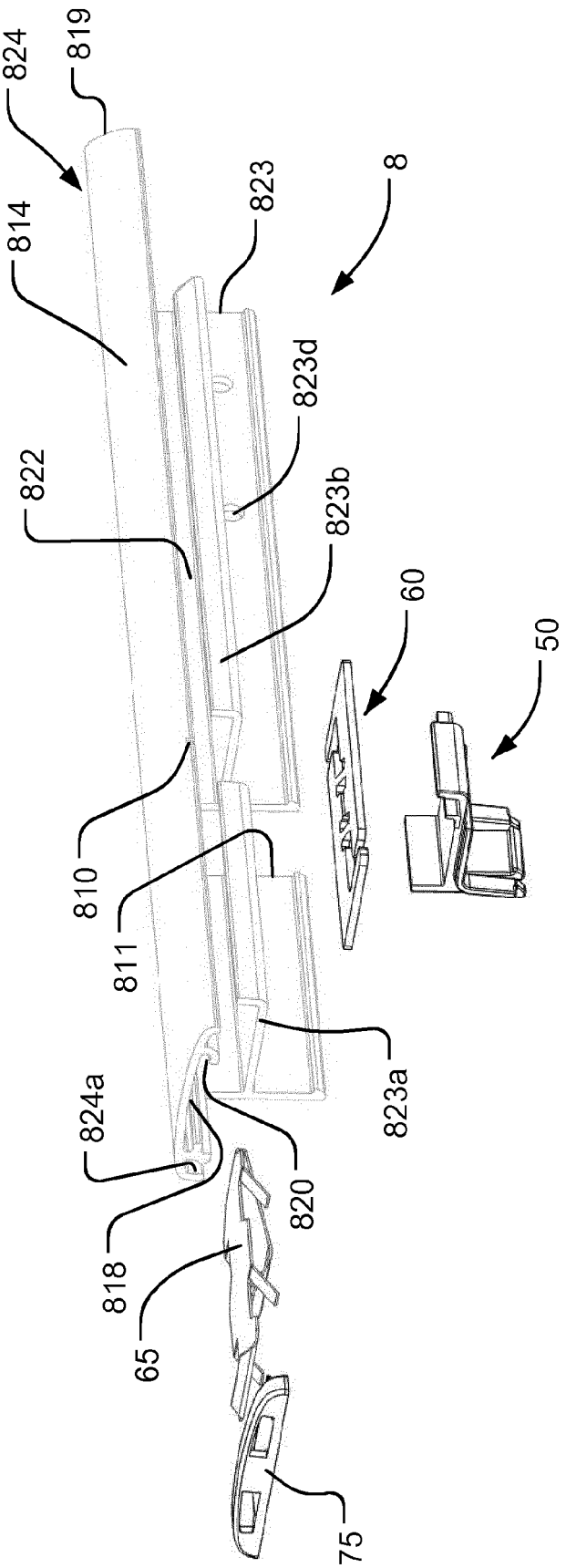

824
819
814
823
8
822
823d
823b
60
50
810
811
823a
824a
820
818
65
75

Fig. 1

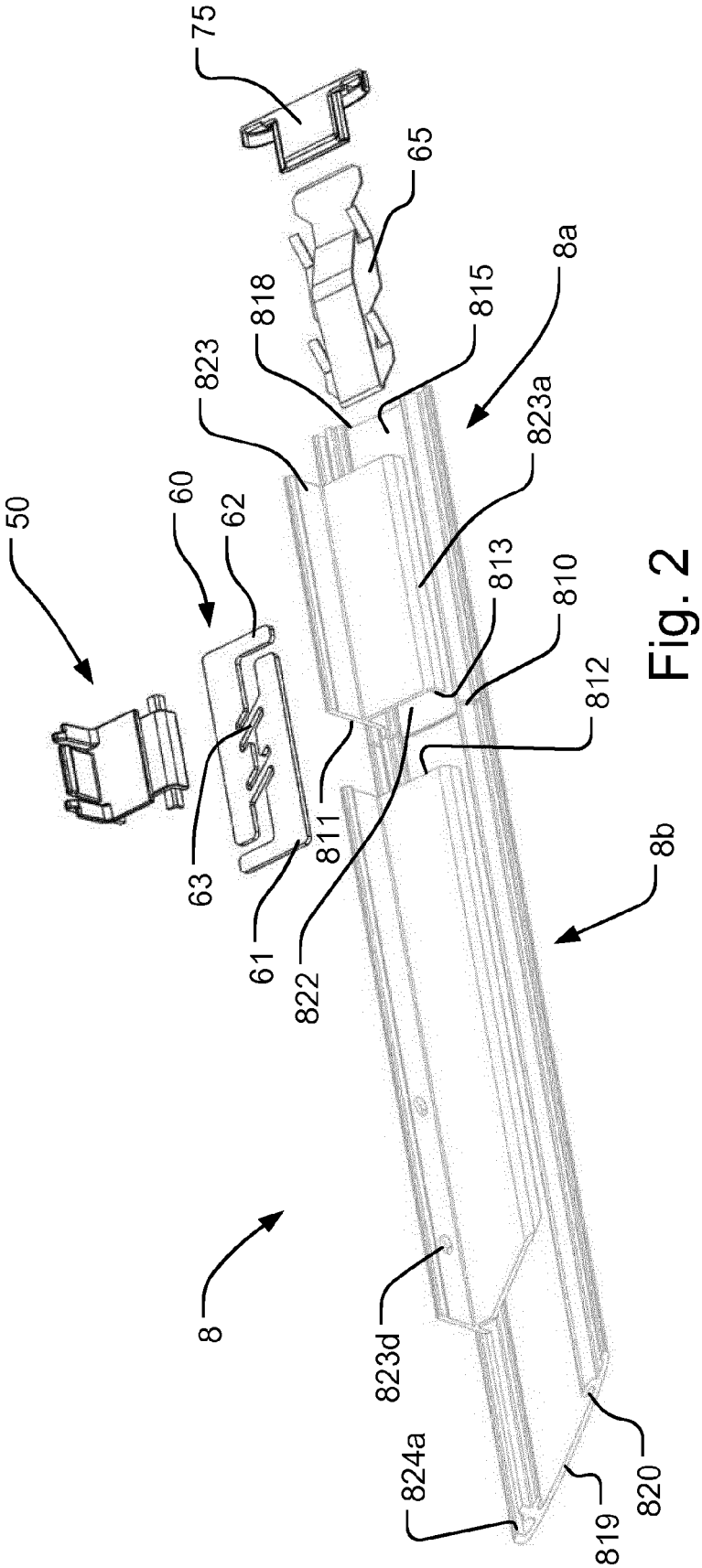

75
65
818
815
8a
823
823a
60
62
50
813
810
812
811
63
61
822
8b
8
823d
824a
819
820

Fig. 2

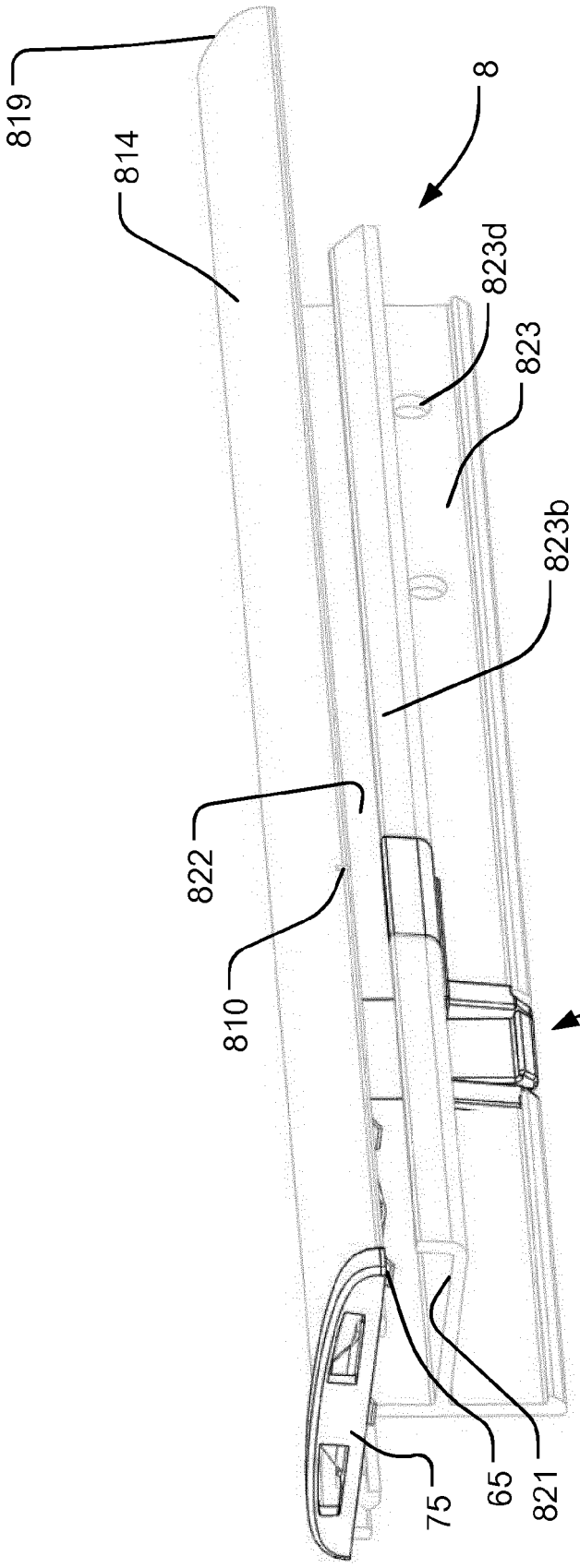
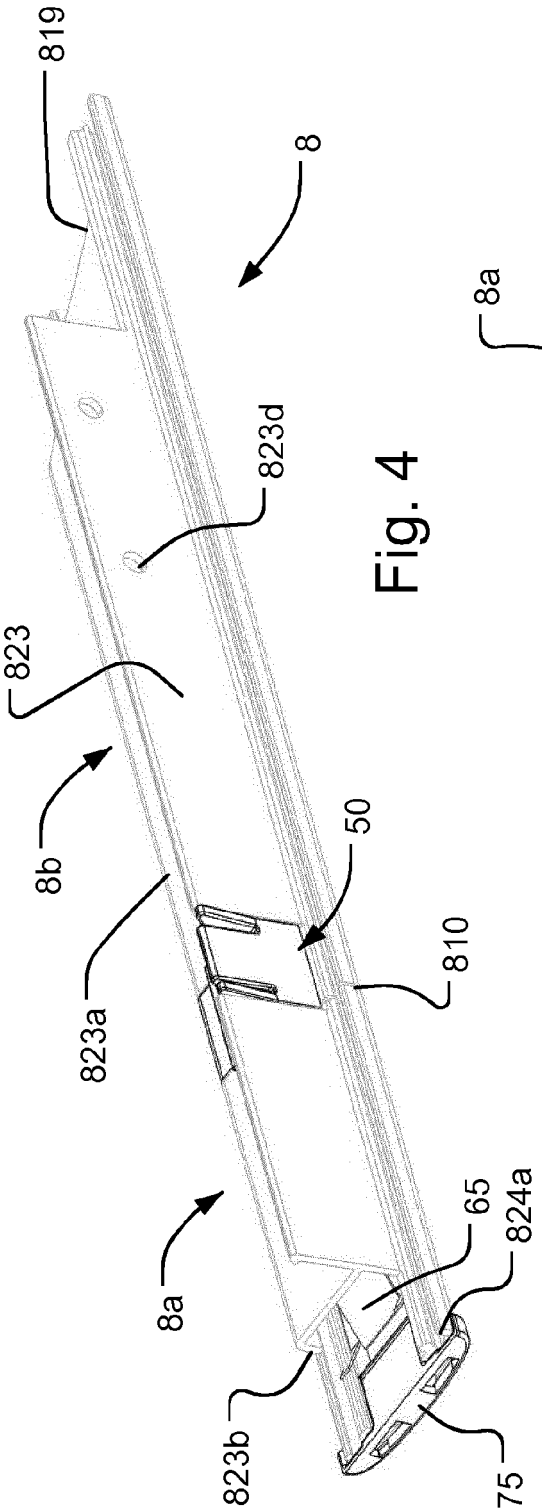


Fig. 3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8
823d
823
8b
50
823a
810
65
824a
8a
823b
75

Fig. 4

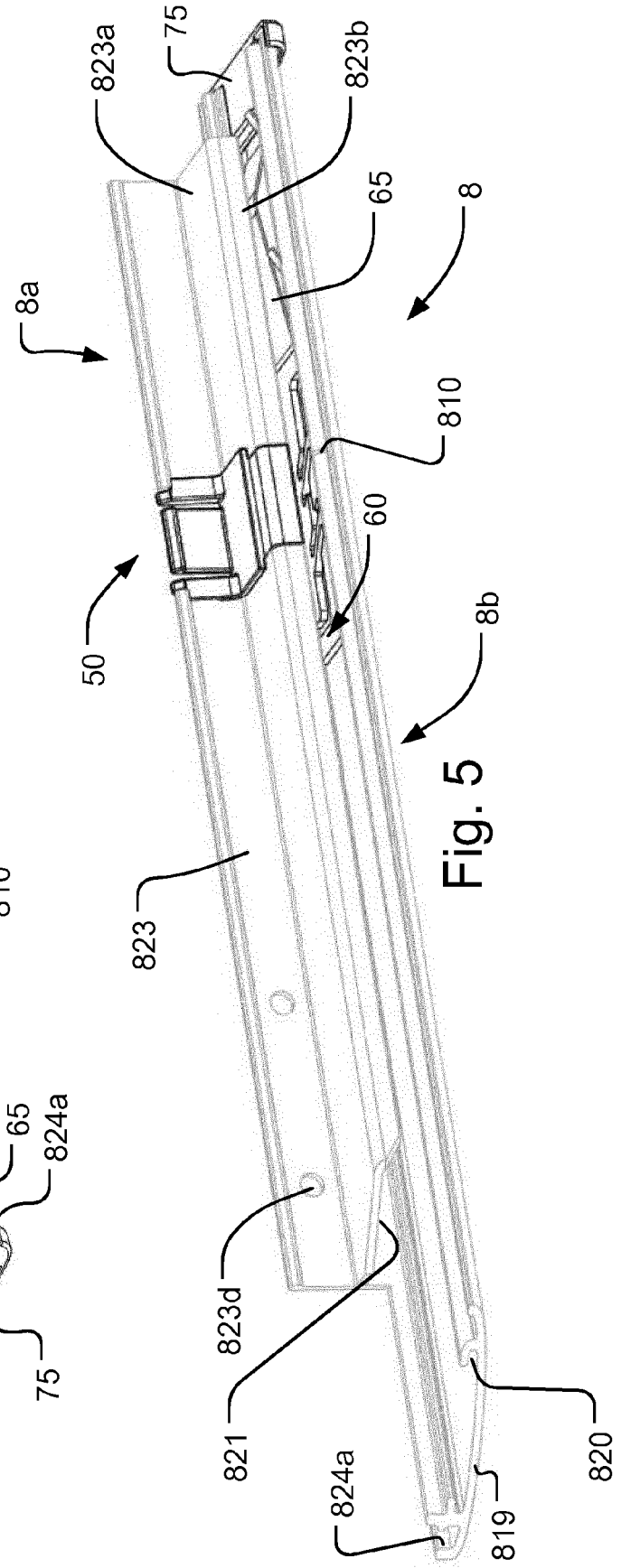

823a
75
823b
65
8
8a
810
60
50
8b
823
823d
821
824a
819
820

Fig. 5

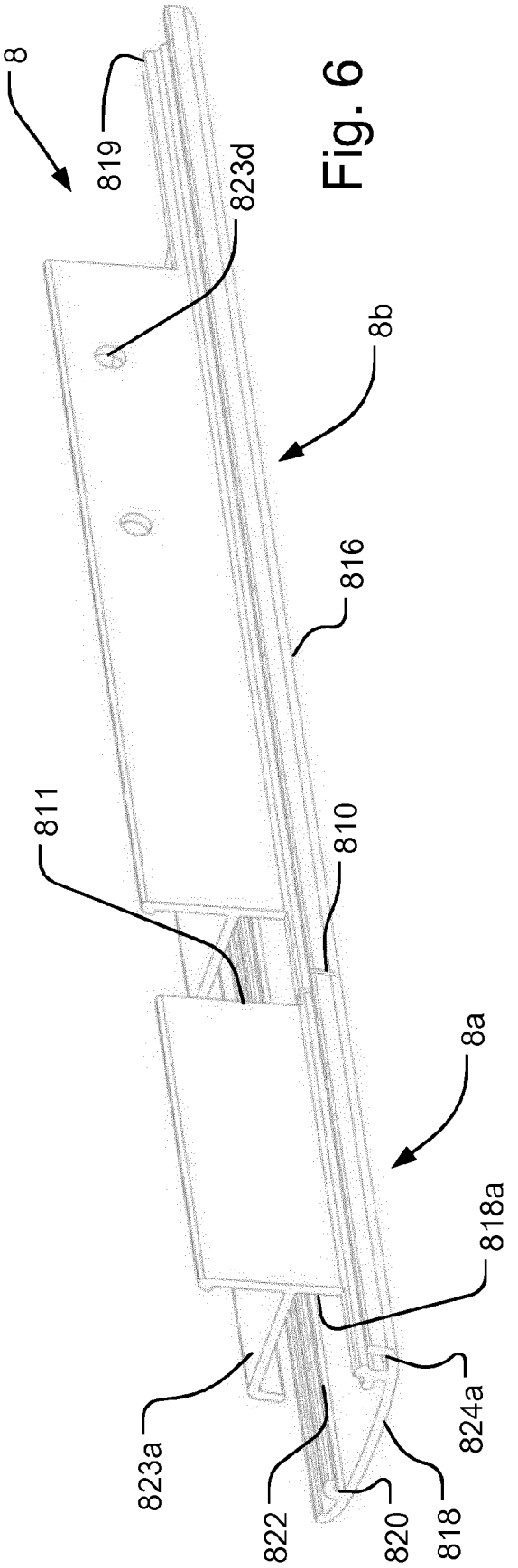


Fig. 6

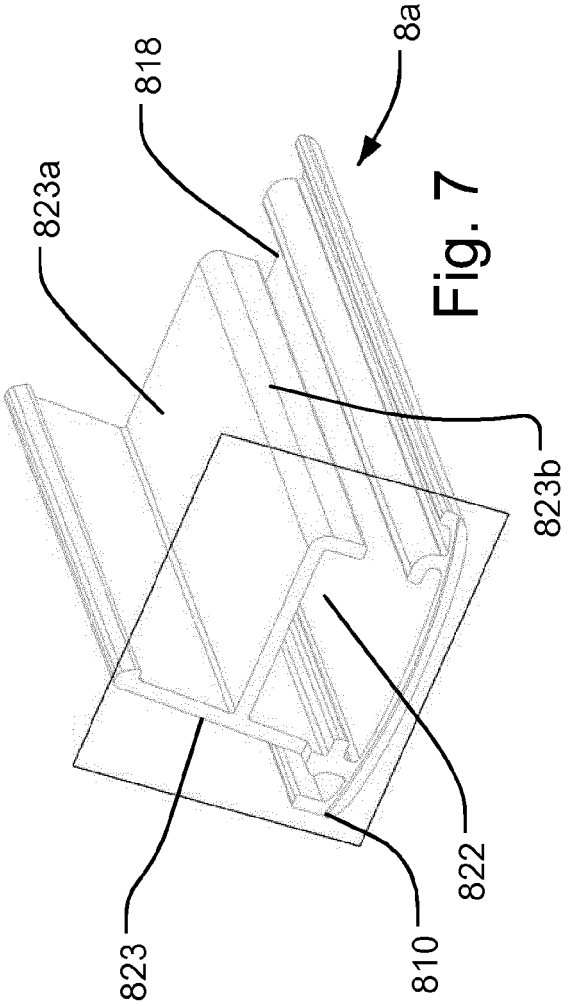

823a
818
8a
823b
823
810
822

Fig. 7

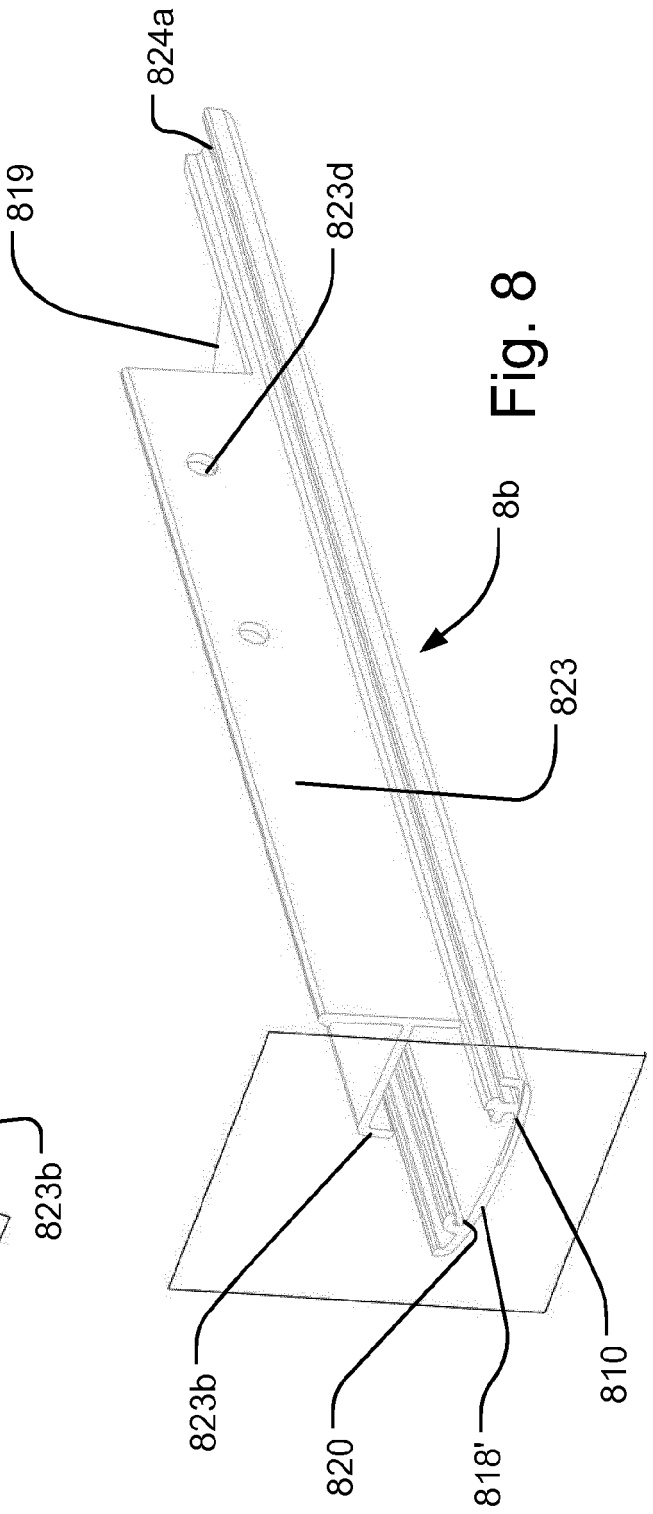
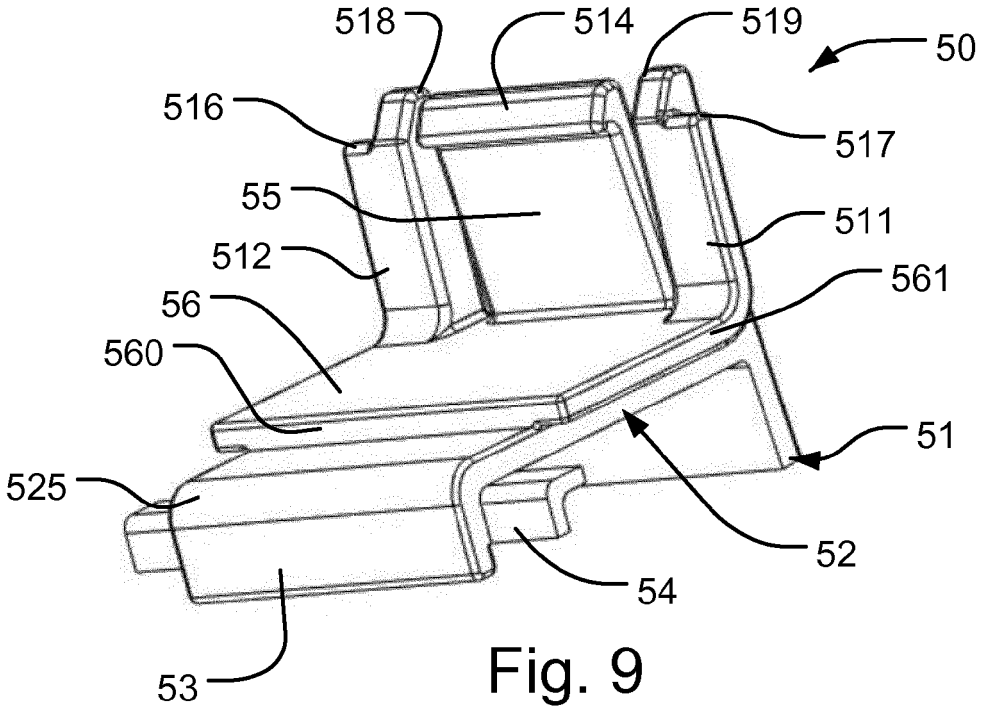

824a
819
823d
8b
823
823b
820
818'
810

Fig. 8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516
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55
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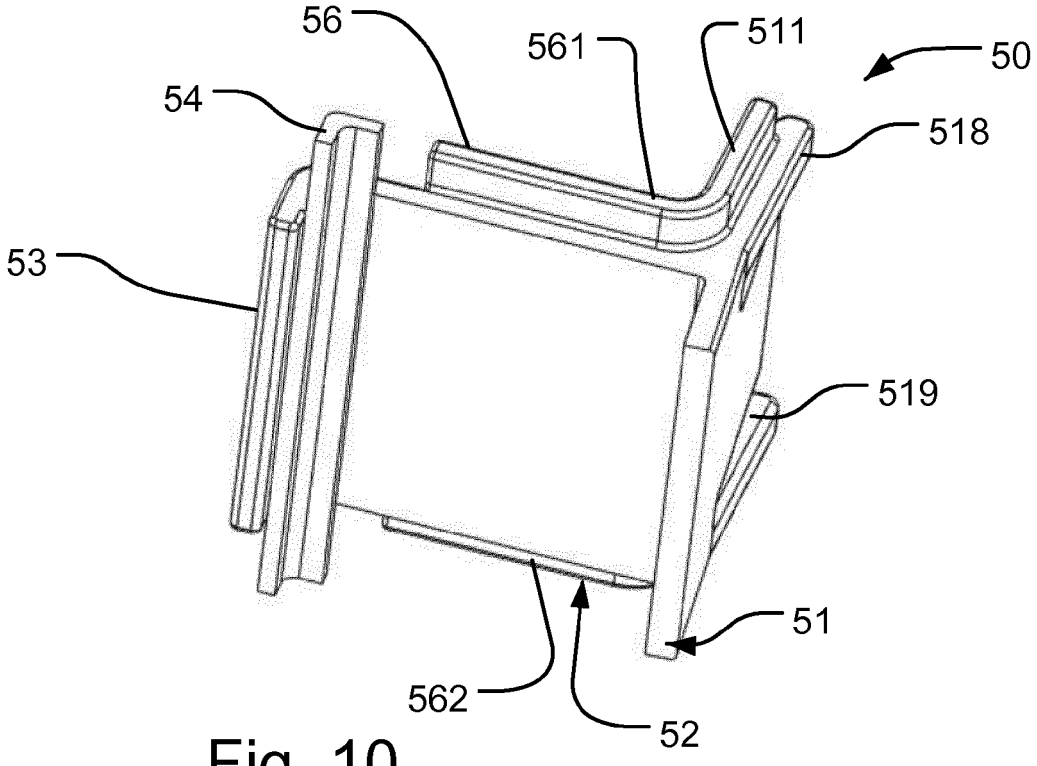
561
56
560
51
525
52
54
53

Fig. 9


56
561
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54
518
53
519
51
562
52

Fig. 10

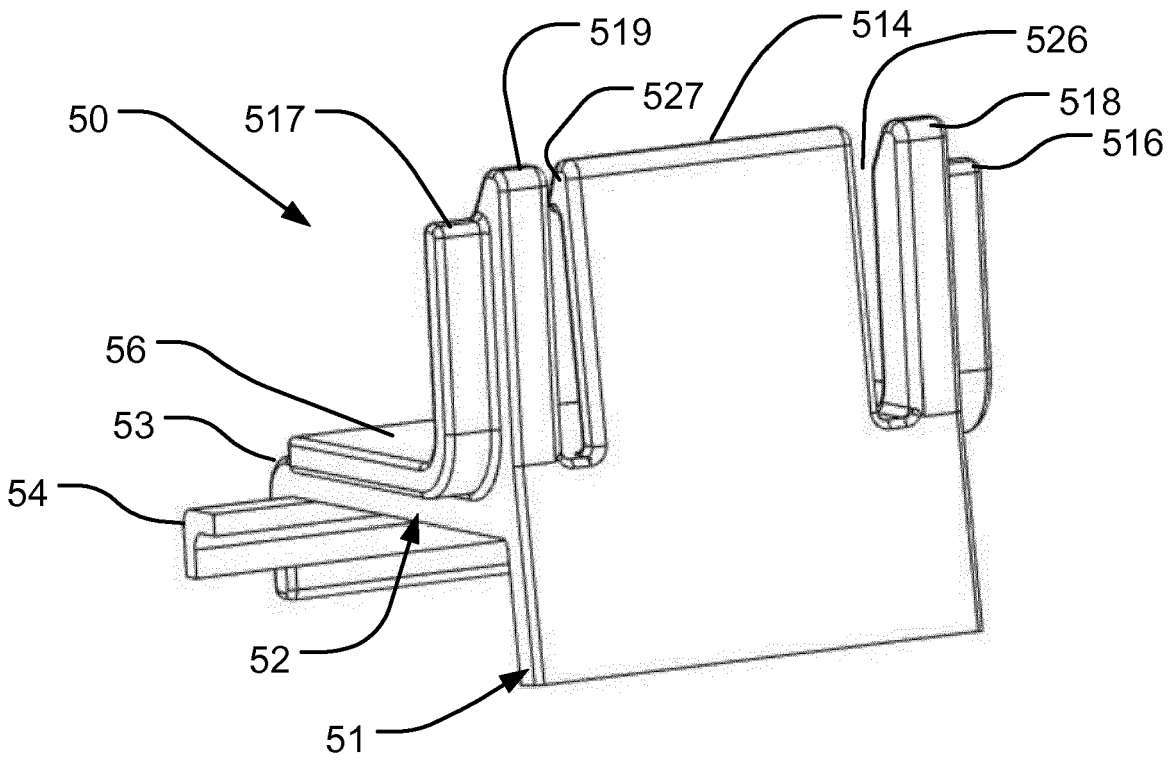
519
514
526
50
517
527
518
516
56
53
54
52
51

Fig. 11

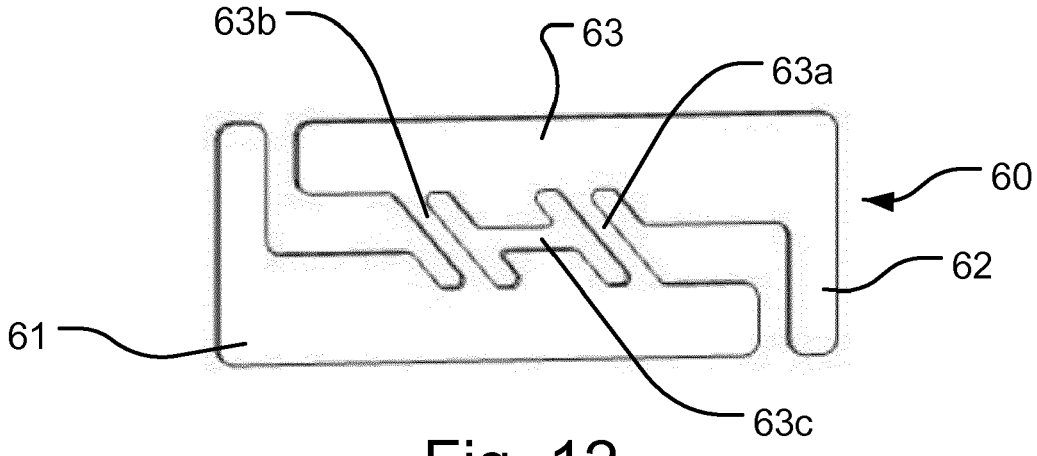
63b
63
63a
60
62
61
63c

Fig. 12

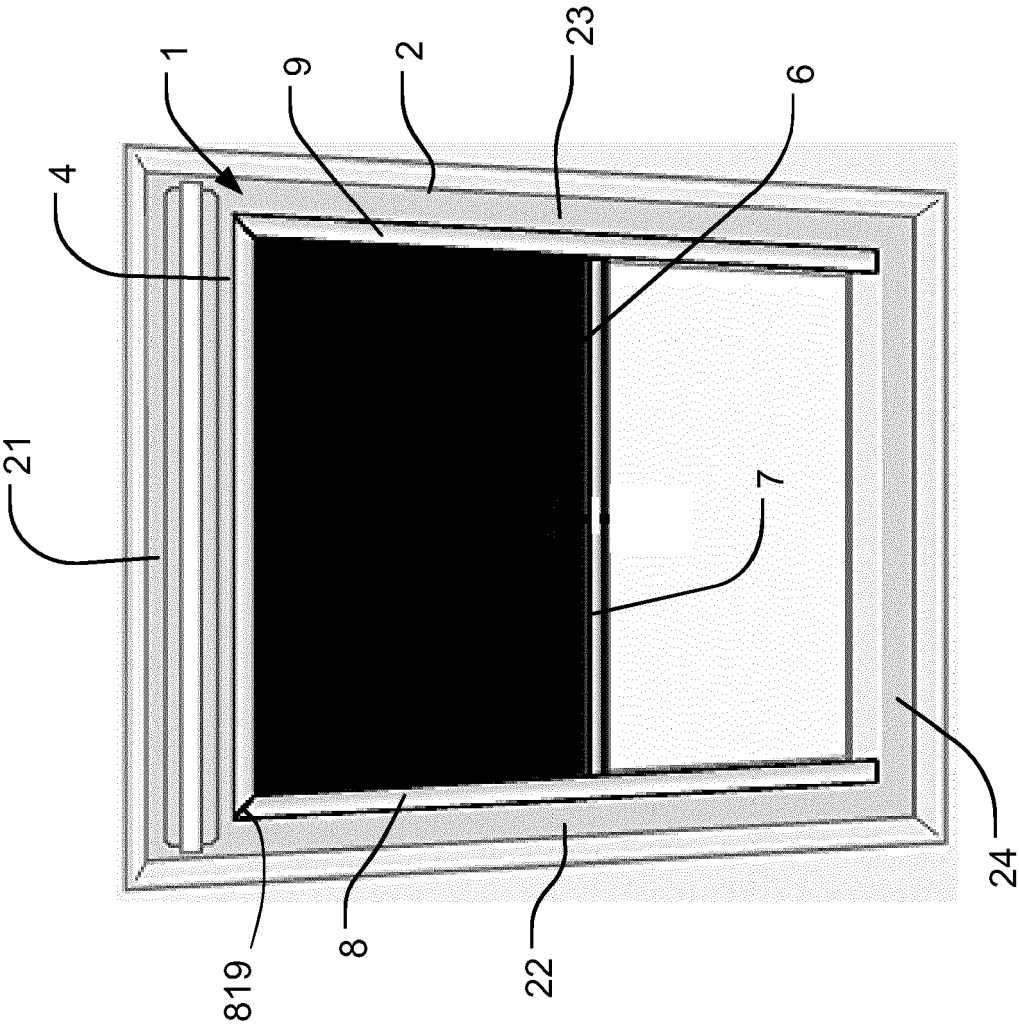

Fig. 13

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European Patent Office
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EUROPEAN SEARCH REPORT

Application Number
EP 15 18 1358

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	US 2001/035268 A1 (DESROCHERS DON [US]) 1 November 2001 (2001-11-01) * paragraphs [0018], [0086]; figures 1,2 * -----	1	INV. E06B9/58
A	US 5 520 234 A (SIMMONS DAVID O [US]) 28 May 1996 (1996-05-28) * column 6, line 15 - line 42; figures 4B, 5A * -----	1	

TECHNICAL FIELDS SEARCHED (IPC)

E06B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	26 October 2015	Knerr, Gerhard

CATEGORY OF CITED DOCUMENTS

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EPO FORM 1503 03.82 (P04C01)

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26-10-2015

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2001035268 A1	01-11-2001	NONE	
US 5520234 A	28-05-1996	NONE	

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