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(54) **SCREENING ARRANGEMENT COMPRISING A TRANSPORTATION ASSEMBLY AND METHOD OF MOUNTING A SCREENING ARRANGEMENT**

(57) In the screening arrangement (10), a top casing (11) with a front rail (114) is configured to be mounted at the top member (2.1) of the frame (2) of a roof window (1). A bottom element (14) extends substantially in parallel with the top casing (11) and movable relative to the top casing (11) in the height direction (L) in the condition of use. A parallel guidance cord system (28) comprising a set of cords configured to extend from one end of the top casing (11), through the bottom element (14), and to a position near the bottom member (2.4) at an opposite side member of the frame (2) in the mounted condition. A transportation assembly (16) comprises means for holding the cords of the parallel guidance cord system (28) in the supply condition of the screening arrangement (10). The bottom element (14) is positioned in close proximity, in the height direction (L), to the top casing (11) in the supply condition. The transportation assembly comprises a set of cord holders (17), each cord holder (17) comprising a substantially planar base (171) provided with cord holding means and being held in abutment with a front side of the bottom element (14) in the supply condition of the screening arrangement (10), and each cord holder (17) is made substantially from a paper-based material.

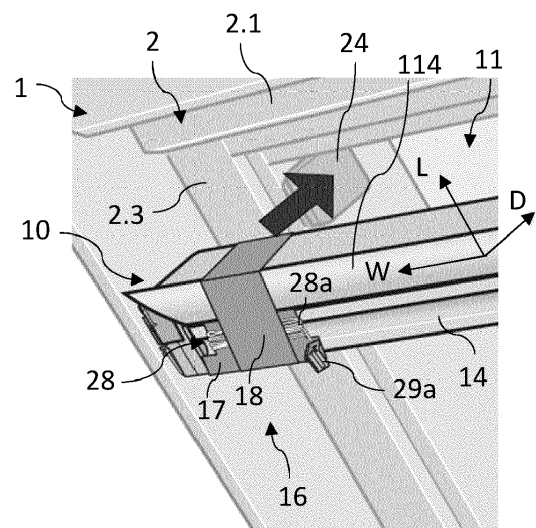


FIG. 3

Description

Technical Field

[0001] The present invention relates to a screening arrangement for a roof window, said roof window comprising a frame with a top member, a bottom member and two mutually parallel side members, the screening arrangement being configured to assume a supply condition, a mounted condition in which the screening arrangement is mounted in the frame of the roof window, and a condition of use, said screening arrangement comprising a top casing comprising a front rail defining a first direction corresponding to a width direction, the first direction being perpendicular to a second direction corresponding to a height direction, the first and second directions being perpendicular to a third direction corresponding to a depth direction, said top casing being configured to be mounted at the top member of the frame, a bottom element extending substantially in parallel with the top casing and being movable relative to the top casing in the height direction in the condition of use, a screening body having a top portion accommodated in the top casing and a bottom portion fastened to the bottom element, a parallel guidance cord system comprising a set of cords, each cord being configured to extend from a first longitudinal end of the top casing at one side member, through the bottom element, and to a position near the bottom member at the other side member of the frame in the mounted condition, and a transportation assembly comprising means for holding the cords of the parallel guidance cord system in the supply condition of the screening arrangement. The invention furthermore relates to a method of mounting a screening arrangement.

Background Art

[0002] Screening arrangements of this kind are known in the art. Such screening arrangements are retailed through a variety of channels including web shops and DIY stores. The screening arrangement is to be installed on the interior side of the roof window and the mounting of the screening arrangement in the frame of the roof window is traditionally carried out by the customers themselves. Thus, it is the task of the customer to bring the screening arrangement from the supply condition to the mounted condition, and subsequently to the condition of use in which the screening arrangement provides suitable screening.

[0003] The presence of the parallel guidance cord system with the set of cords renders not only mounting but also transportation of the screening arrangement complicated. Applicant's European patent No. 2412916 shows and describes a screening arrangement with a fitting which is releasably connected with the top element and the bottom element in the supply condition. Two such fittings are provided, and each fitting includes an insert part to receive the associated cord. Once the mounting

procedure has been completed, the fittings are discarded.

[0004] The provision of such fittings, typically made from a plastic material, has worked very well, both in terms of safe transportation and ease of installation as proven for instance by commercially available blackout blind "DKL" by VELUX®.

[0005] However, there is an ever-increasing demand for providing products that are more environmentally friendly on several parameters.

Summary of Invention

[0006] With this background, it is an object of the invention to provide a screening arrangement, which has a smaller climate footprint, while maintaining safe and easy transportation and mounting.

[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 characterised in that the bottom element is positioned in close proximity, in the height direction, to the top casing in the supply condition, that said transportation assembly comprises a set of cord holders, each cord holder comprising a substantially planar base provided with cord holding means and being held in abutment with a front side of the bottom element in the supply condition of the screening arrangement, and in that each cord holder is made substantially from a paper-based material.

[0008] By providing the screening arrangement in a more compact supply configuration, resources are saved not only on the material of the packaging and the cord holder, but also in terms of transportation costs. The cord holders of the transportation assembly are easily accessible on the bottom element, which renders installation of the screening arrangement logical and easy. Furthermore, as the components of the screening arrangement needed only for transportation and mounting are made of a paper-based material, these components are able to be collected with other recycling material, for instance together with any cardboard packaging material.

[0009] By the term "paper-based material" is meant such materials that are produced from vegetable or plant material. Typically, such plant materials comprise a suitable content of cellulose fibres. While paper is usually made from wood fibres, other plant fibres including fibres originating from straw, bamboo, bagasse, esparto, other grasses, hemp, flax, manila, jute, and cotton may also be used, including combinations of different types of fibres. The term "substantially from a paper-based material" encompasses a content of plant materials of at least 95%. The components of the transportation assembly may comprise small amounts of non-paper material, such as glue or adhesive, used for example for giving them a desired shape or for attachment to themselves or to other items; coatings for giving them desired surface properties; mixed in polymers serving as reinforcement or for making them weldable; or other non-plant material typi-

cally employed in paper sizing processes, etc. These non-paper materials, however, preferably do not constitute more than a maximum of 5% by weight of the component, and it is preferred that these materials are biodegradable.

[0010] By the term "close proximity", it is meant that the bottom element is located at or near the top casing in the supply condition. Typical ranges for any distance between the bottom element and the top casing are 0 to 10 mm, in particular 1 to 5 mm, including configurations in which one or more portions of the bottom element overlap one or more portions of the top casing.

[0011] In principle, it is possible to form the cord holders of the transportation assembly such that they are able to be retained in abutment with the bottom element on its own. However, in one embodiment the bottom element is provided with retention means for holding the cord holders of the transportation assembly in abutment with the front side of the bottom element. This reduces the risk of inadvertent relocation of the cord holders during transportation and mounting, in particular in the first direction, along the top casing, which could lead to entanglement of the cords.

[0012] In one embodiment, a top edge of the bottom element is located substantially along a bottom edge of the front rail of the top casing in the supply condition of the screening arrangement, and wherein an upper portion of the base of the cord holder is positioned between a back side of the front rail and the front side of the bottom element and of the screening body such that the cord holder is press-fit between the back side of the front rail and the front side of the bottom element. This provides for a particularly simple and compact configuration. Since the base of the cord holder is planar, it is easily inserted between the front rail and the bottom element, without any risk of damaging the screening body.

[0013] In a presently preferred embodiment, the transportation assembly comprises at least one strap made from a paper-based material, wrapped around the top casing and the bottom element about an axis parallel to the width direction in the supply condition. The provision of one or more straps makes it possible to retain a compact configuration regardless of the type of the screening arrangement and thus provides more flexibility. Furthermore, the strap or straps may support the retention of the cord holders on the front side of the bottom element, by pulling the bottom element and the top casing together.

[0014] In further developments of this embodiment, the transportation assembly comprises two straps, preferably positioned at or near respective cord holders as seen in the width direction, more preferably such that each strap overlaps at least a part of a respective cord holder. By applying two suitably located straps, retention of the bottom element and top casing in close proximity is improved even further, just as the cord holders may be held more securely in abutment with the front side of the bottom element.

[0015] Each strap may be formed by a paper band with overlapping end portions configured to be brought into engagement with each other to form a ring-shaped strap in the supply condition. This makes it possible to obtain a reliable connection while at the same time facilitating assembly during manufacture of the screening arrangement.

[0016] The overlapping end portions are preferably sealed or welded together but may also be connected by mechanical engagement means including interlocking slit(s) and/or flap(s). This provides for improved flexibility in the manufacturing process.

[0017] In order to facilitate mounting of the screening arrangement, each strap may be provided with a weakening line positioned outside the overlapping end portions of the paper band, preferably at such a position so as to be accessible to a user during mounting of the screening arrangement.

[0018] In one embodiment, the cord holder is substantially L-shaped comprising a leg protruding from the base at a lower portion thereof, the leg abutting a bottom edge of the bottom element in the supply condition. By this configuration, the substantially planar base is kept in safe abutment with the front side of the bottom element throughout handling of the screening arrangement, thus reducing the risk of skewing the cord holder. Furthermore, the leg provides a stop for the cord holder during assembly, such that the cord holder is positioned correctly on the bottom element.

[0019] As an alternative, the cord holder may be composed of the base including the cord holding means. By this configuration, it is possible to form the cord holder as an entirely planar component, which among other things saves material resources.

[0020] In one presently preferred embodiment, the cord holding means of each cord holder comprise at least one recess in a side edge of the base of the cord holder. This provides for easy and reliable winding up of the cords during assembly of the screening arrangement, and also for satisfactory performance during mounting when the cords are unwound from the cord holder.

[0021] In alternative embodiments, the cord holding means of each cord holder comprise at least one flange protruding from a side edge of the base of the cord holder, or the cord holding means of each cord holder comprise at least one flap provided in the base and configured to be bent out of the plane of the base to accommodate the cords of the parallel guidance cord system in the supply condition. These configurations allow for improved flexibility during manufacture and mounting of the screening arrangement.

[0022] In another embodiment, each cord holder comprises at least one flap provided in the base and configured to be bent out of the plane of the base to abut a front side of the front rail of the top casing in the supply condition. Thus, a fork-like configuration is formed between the bent-out flap and the base of the cord holder. This provides suitable positioning means for the cord holders

on the front side of the bottom element.

[0023] The cord holding means of each cord holder advantageously comprise locking means for the cord of the parallel guidance cord system, preferably in the form of a cut in the base, more preferably the cut adjoins other portions of the cord holding means. This improves the safe retention of the cords during transportation and mounting until the cords need to be released intentionally for the appropriate mounting step.

[0024] In one embodiment, which is particularly beneficial in screening arrangements for roof windows, more specifically in blackout roller blinds, the screening arrangement furthermore comprises two side rails configured to be connected to the top casing during mounting, the top casing preferably comprising a set of angular brackets at the longitudinal ends of the top casing configured to interact with a track in the side rails. In the mounted condition of the screening arrangement, the cords of the parallel guidance cord systems are hidden behind the side rails.

[0025] To ensure proper guidance of the bottom element in such side rails, the bottom element comprises a set of side guidance elements at the longitudinal ends of the bottom element configured to interact with a track in the side rails.

[0026] To facilitate mounting of the screening arrangement, it is preferred that the top casing at its longitudinal ends is provided with a set of end pieces comprising engagement means configured to be brought into engagement with a set of mounting brackets connected to or connectable to the side members of the frame, near the top member, during mounting of the screening arrangement.

[0027] In an embodiment, which is particularly advantageous in terms of mounting, a free end of each cord of the parallel guidance cord system is provided with a cord end fitting configured to be brought into engagement with a set of foot fittings connected to or connectable to the side members of the frame, near the bottom member, during mounting of the screening arrangement.

[0028] In a presently preferred embodiment, the top casing, the bottom profile, the screening body, and the parallel guidance cord system form a screening device constituting a roller blind, more preferably a blackout roller blind, and wherein a roller assembly is accommodated in the top casing, the roller assembly comprising a spring-biased roller bar and preferably a guide bar. Since the bottom element is at all times biased towards the top casing, the provision of the cord holders on the bottom element is particularly easy in this embodiment.

[0029] In a second aspect, a method of mounting a screening arrangement is devised.

[0030] In such a method, the top casing of the screening arrangement will be connected to the frame of the roof window. Only after the top casing is in place, the cord holders of the transportation assembly will be removed from the position they assume in the supply condition. This makes it possible to perform the connecting

operation without the risk of the cords of the parallel guidance cord system becoming entangled, thus complicating the mounting, or even endangering the integrity of the cords.

[0031] In case the screening arrangement is provided with a set of side rails, the side rails are preferably connected to the top casing before the cord holders are removed.

[0032] Depending on the configuration of the transportation assembly of the screening arrangement, the step of removing the cord holders may involve tearing any strap(s) present.

[0033] Other presently preferred embodiments and further advantages will be apparent from the subsequent detailed description and drawings.

[0034] A feature described in relation to one of the aspects may also be incorporated in the other aspect, and the advantage of the feature is applicable to all aspects in which it is incorporated.

Brief Description of Drawings

[0035] In the following description embodiments of the invention will be described with reference to the drawings, in which

FIG. 1 is a plan view of a screening arrangement in an embodiment of the invention, mounted in a frame of a window;

FIG. 2 is a perspective view of a screening arrangement in an embodiment of the invention, mounted in a frame of a roof window, and in a condition of use; FIGS. 3 to 10 are partial perspective views of a screening arrangement in an embodiment of the invention during mounting in a frame of a roof window; FIG. 11 is a perspective view of a screening arrangement in an embodiment of the invention;

FIG. 12 is a view corresponding to FIG. 11, of a further embodiment of the invention;

FIG. 13 is a view corresponding to FIG. 11, of an alternative embodiment of the invention;

FIG. 14 is a partial perspective view, on a larger scale, of the screening arrangement of FIG. 11;

FIG. 15 is an exploded view of the details shown in FIG. 14;

FIG. 16 is an end view of the embodiment of FIG. 12;

FIG. 17 is an end view of the embodiment of FIG. 11;

FIGS. 18 and 19 are perspective views of a cord holder in an embodiment of the screening arrangement, without and with a cord, respectively;

FIG. 20 is a perspective view of a cord holder in another embodiment of the screening arrangement;

FIG. 21 is a perspective view of a cord holder in a still further embodiment of the screening arrangement;

FIG. 22A is a plan view of a cord holder in yet another embodiment of the screening arrangement;

FIG. 22B is an end view of the cord holder of FIG.

22A;

FIGS. 23A and 23B are views corresponding to FIGS. 22A and 22B;

FIG. 24A is a plan view of a cord holder in still yet another embodiment of the screening arrangement; FIG. 24B is an end view of a top casing of the screening arrangement in a supply condition, with the cord holder of FIG. 24A;

FIG. 25 is an exploded perspective view of a top casing of the screening arrangement, with a cord holder and a strap;

FIG. 26 is a partial plan view of a strap in an alternative embodiment of the screening arrangement;

FIG. 27 is a partial plan view of a strap in a further alternative embodiment of the screening arrangement;

FIG. 28 is a perspective view of a screening arrangement in an embodiment of the invention, provided in a packaging in the supply condition; and

FIG. 29 is a partial perspective, exploded view of the screening arrangement and packaging of FIG. 28.

Description of Embodiments

[0036] In the following detailed description, preferred embodiments of the present invention will be described. However, it is to be understood that features of the different embodiments are exchangeable between the embodiments and may be combined in different ways, unless anything else is specifically indicated. It may also be noted that, for the sake of clarity, the dimensions of certain components illustrated in the drawings may differ from the corresponding dimensions in real-life implementations.

[0037] It is noted that terms such as "up", "down", "left-hand", "right-hand", "exterior", "interior", "outer", "inner" are relative and refers to the viewpoint in question. By "front side" and "back side", respectively, are meant sides of elements facing the interior and the exterior, respectively. Correspondingly, terms such as "top", "bottom", "side" etc. denote the position of components in a mounted condition.

[0038] Referring initially to FIGS. 1 and 2, an embodiment of a screening arrangement generally designated 10 is shown, mounted in a frame 2 representing a window. In the shown configuration, the frame 2 constitutes a pane-carrying sash of a roof window 1 and may be pivotable about a centre axis, or top-hung, relative to a stationary frame (not shown) of the roof window 1.

[0039] The frame 2 may likewise be a stationary frame, which in a mounted position of the window lines an aperture in a building. It is noted that the term "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 opening 3 to be screened. The screening arrangement 10 may thus be utilised in connection with e.g. windows having a frame only, windows having a sash frame and a sta-

tionary frame, or in doors.

[0040] In the present context, the screening arrangement 10 will be described as an interior screening arrangement to be mounted on the interior side of a roof window, i.e., the side facing an inside room of a building, and in which the frame 2 is a pane-carrying sash connected to a stationary frame connected to a roof structure (not shown).

[0041] The frame 2 has a top member 2.1, two mutually parallel side members 2.2, 2.3, and a bottom member 2.4, surrounding the opening 3 to be screened, covered by a suitable panel element such as insulating glazing in the form of a pane 4.

[0042] The screening arrangement 10 comprises a screening device including a top casing 11, a bottom element 14, and a screening body 15 having two side edges and a top and bottom portion. The top portion of the screening body 15 is accommodated in the top casing 11 and the bottom portion is fastened to the bottom element 14. The top portion of the screening body 15 is typically fastened to a winding, folding, or rotating structure accommodated in the top casing 11. In the embodiments to be described, the top casing 11, the bottom profile 14, the screening body 15, and a parallel guidance cord system 28 form a screening device constituting a roller blind, for instance a blackout roller blind. A roller assembly 20 (shown in FIG. 16) is provided, including a spring-biased roller bar 21 on which the screening body 15 is wound, and a guide bar 22 over which the screening body 15 is guided.

[0043] The screening body 15 is typically made from cloth or fabric, which is here flexible to allow rolling up. In principle, the screening body could be any feasible type for use in other screening devices such as roller screens, lamella blinds, curtains, and shades. If made by cloth or fabric, the screening body may be formed by a percentage of recycled or reused material which has proven to reduce the carbon footprint to a significant extent. The material and the manufacturing process may adhere to certified standards including OEKO-TEX® Standard 100 (2276-378) and STeP by OEKO-TEX® (22002567).

[0044] In the embodiment shown, the screening device of the screening arrangement 10 comprises two side rails 12, 13 connected to a respective side member 2.2, 2.3 of the frame 2 in the mounted condition. The side rails 12, 13 are also connected to the top casing 11.

[0045] In FIG. 1, the screening arrangement 10 is shown during a step of mounting. Here, the top casing 11 has been connected to the frame 2 and is located at the top member 2.1 of the frame 2, parallel thereto. The bottom element 14 is positioned in close proximity to the top casing 11. The screening body 15 (not visible in FIG. 1) is accommodated in its entirety in the top casing 11. Further elements indicated in FIG. 1 include the parallel guidance cord system 28 and a transportation assembly 16 comprising means for holding a set of cords of the parallel guidance cord system 28 as will be described in

further detail below.

[0046] In FIG. 2, the screening arrangement 10 is in a condition of use, in which the bottom element 14 is able to move to an arbitrary screening position thereby deploying the screening body 15 to cover a desired portion of the opening 3. During the movement, the parallel guidance cord system 28 keeps the bottom element 14 parallel to the top casing 11 at all times. This makes it possible for a user to grip the bottom element 14 at virtually any position along the length of the bottom element 14 and move the bottom element 14.

[0047] One example of a prior art screening arrangement with this functionality is shown and described in the embodiments of the above-mentioned EP2412916B1, and also in Applicant's WO 2008/131757 A1 and WO 2008/131761 A1.

[0048] Referring now to FIGS. 3 to 11, an embodiment of a screening arrangement 10 of the present invention will be described in detail, including a description of how the screening arrangement 10 is brought from a supply condition to a mounted condition.

[0049] Initially, reference is also briefly made to FIGS. 28 and 29, showing an example of a packaging 40 suitable for transportation and supply of the screening arrangement 10. The packaging 40 comprises a cardboard box 41 having a general form of a rectangular prism. The cardboard box 41 may be provided from a blank and may as shown have an openable lid 411. The top casing 11, the bottom element 14, and the screening body (not visible) form one unit together with the parallel guidance cord system 28 and the transportation assembly 16 in the cardboard box 41. This unit is sub-packaged in end blocks 42, 43 which may be formed of a paper-based material such as folded cardboard, moulded pulp etc. One of or both end blocks 42, 43 may be temporarily fixated to the bottom of the cardboard box 41 so as to remain stationary relative to the cardboard box 41. Side rails 12, 13 are packaged in a sub-packaging 44 which may also be from a paper-based material such as folded cardboard. Since the height of roof windows is most often larger than the width, the side rails are typically the components dimensioning the length of the cardboard box 41, whereas the width and the height of the cardboard box 41 are typically constant throughout the size range of the screening arrangements 10. Finally, a manual 45 is included in the packaging 40 in the embodiment shown, containing installation guidance to the user in order to allow the screening arrangement 10 to be brought from the supply condition to the mounted condition in which the screening arrangement 10 is ready to assume a condition of use.

[0050] As shown in FIG. 3, the top casing 11 comprises a front rail 114 defining a first direction corresponding to a width direction W, the first direction being perpendicular to a second direction corresponding to a height direction L. The first and second directions are perpendicular to a third direction corresponding to a depth direction D.

[0051] The top casing 11 is configured to be mounted

at the top member 2.1 of the frame 2. In the embodiment shown, the top casing 11 is, at its longitudinal ends, provided with a set of end pieces 25 (shown in FIG. 11) comprising engagement means configured to be brought into engagement with a set of mounting brackets 24 connected to the side members 2.2, 2.3 of the frame 2, near the top member 2.1. In case such mounting brackets 24 are not pre-mounted on the frame 2, it is possible to order and fasten such mounting brackets separately. The unit comprising the top casing 11, the bottom element 14, the screening body 15 (not visible), the parallel guidance cord system 28, and the transportation assembly 16, is mounted in the frame 2 by moving the unit in the depth direction D to engage the end pieces 25 with the mounting brackets 24. The position shown in FIG. 4 is now attained.

[0052] Referring now to FIG. 5, the top casing 11 comprises a set of angular brackets 26 at the longitudinal ends of the top casing 11 configured to interact with a track in the side rails 12, 13. A counterpart track is typically provided on a back side of the front rail 114. The side rails 12, 13 have a profile corresponding to the front rail 114 of the top casing 11 such that a U-shaped configuration with mitred joints is able to be formed.

[0053] To ensure proper sliding of the bottom element 14 in the side rails 12, 13 when moving the bottom element 14 to a desired screening position in the condition of use, the bottom element 14 comprises a set of side guidance elements 144 at the longitudinal ends of the bottom element 14 configured to interact with a track in the side rails 12, 13.

[0054] As shown in FIG. 6, the screening arrangement 10 furthermore comprises a set of foot fittings 27 in the embodiment shown, connected to or connectable to the side members 2.2, 2.3 of the frame 2, near the bottom member 2.4. Typically, the foot fittings 27 are not pre-mounted on the frame 2 but supplied with the screening arrangement 10, for the user to fasten to the side members 2.2, 2.3 of the frame 2, here as indicated by a screw.

[0055] One after the other, the side rails 12, 13 are slid onto the respective angular brackets 26 and side guidance elements 144 while moving the side rails 12, 13 upwards. Once engaged with the foot fittings 27, the position of the side rails 12, 13 is adjusted such that the mitred top ends of the side rails 12, 13 are brought into contact with correspondingly mitred ends of the front rail 114 of the top casing 11. The side rails 12, 13 are, in the embodiment shown, mechanically fastened to the side members 2.2, 2.3 of the frame 2 by means of screws as indicated in FIG. 7.

[0056] Throughout the above steps, from the supply condition to the condition shown in FIG. 7, which may be denoted an intermediate mounted condition, the transportation assembly 16 has kept the cords of the parallel guidance cord system 28 stationary relative to the bottom element 14 and the top casing 11.

[0057] To bring the screening arrangement 10 from the intermediate mounted condition to a final mounted condition, the cords of the parallel guidance cord system 28

need to be brought into a position in which they form an H-formed configuration in a manner known *per se*, namely in that one cord 28a of the set of cords of the parallel guidance cord system 28 extends from a first longitudinal end of the top casing 11 at one side member 2.2 (the right-hand side member in the drawings) through the bottom element 14, and to a position near the bottom member 2.4 at the other side member 2.3 (the left-hand side member of the frame 2, and the other cord 28b (cf. FIG. 11) extends in a mirror-inverted way, namely from a second longitudinal end of the top casing 11 at the other side member 2.3, through the bottom element 14, and to a position near the bottom member 2.4 at the one side member 2.2. In the supply condition, the cords of the set of cords 28a, 28b have already been guided through the bottom element 14, and the only cord readily accessible at the respective ends of the bottom profile 14 is the cord intended to be connected at the associated side member of the frame 2.

[0058] To keep the cords 28a, 28b of the parallel guidance cord system 28 in place in the supply condition, the transportation assembly 16 comprises a set of cord holders 17. Referring now also to FIGS. 14 to 19, each cord holder 17 comprises a substantially planar base 171 provided with cord holding means. Each cord holder 17 is held in abutment with a front side of the bottom element 14 in the supply condition of the screening arrangement 10. It is appreciated that one cord holder 17 is provided for each cord 28a, 28b of the parallel guidance cord system 28. The left-hand and right-hand cord holders may be identical, or with variations. In the embodiments shown, the cord holders 17 are symmetric; however, it is possible to design the cord holders in a left-hand and a right-hand version. In the following, reference will be made to one cord holder 17.

[0059] The cord holder 17 is made substantially from a paper-based material. One way of forming the cord holder 17 is from cardboard of a certain thickness, for instance 2 to 5 mm, to allow the substantially planar base 171 to be held in abutment with the front side of the bottom element 14 and to retain the associated cord, 28a or 28b, without rupturing or bending unintentionally.

[0060] In the embodiment shown in FIGS. 14 to 19, the cord holding means of the cord holder 17 comprise two recesses 173, in opposite side edges 171c, 171d of the base 171 of the cord holder 17. Locking means for the cord 28a, 28b in question are here provided in the form of a cut 174 in the base 171, the cut 174 here adjoins the respective recess 173.

[0061] It is furthermore noted that the bottom element 14 is positioned in close proximity, in the height direction L, to the top casing 11 in the supply condition. By the term "close proximity", it is meant that the bottom element is located at or near the top casing in the supply condition. Typical ranges for any distance between the bottom element and the top casing are 0 to 10 mm, in particular 1 to 5 mm, including configurations in which one or more portions of the bottom element 14 overlap one or more

portions of the top casing 11.

[0062] In the embodiment shown, in which the roller assembly 20 comprises a spring-biased roller bar 21, the bottom element 14 will be pulled into its uppermost position relative to the top casing 11 by means of the spring bias. A detailed description of the configuration of the top casing 11 in the embodiment shown is given in Applicant's co-pending application published under No. EP4177437A1. Elements shown in FIG. 16 but not described in further detail include a top portion 110 and a cover 113 forming the back of the top casing 11. A flange portion 111 and a track 112 provide connection of the end pieces 25. Finally, a light proofing element 30 is provided.

[0063] Thus, the bottom element 14 assumes its uppermost position both in the supply condition, but also in a non-screening position in the condition of use. As shown in FIGS. 16 and 17, a top edge 141 of the bottom element 14 is in the embodiment shown located substantially along a bottom edge 114b of the front rail 114 of the top casing 11.

[0064] In the embodiment shown, the cord holder 17 is substantially L-shaped comprising a leg 172 protruding from the base 171 at a lower portion 171b thereof, the leg 172 abutting a bottom edge 142 of the bottom element 14 in the supply condition.

[0065] In the supply condition of the screening arrangement 10, an upper portion 171a of the base 171 of the cord holder 17 is positioned between a back side of the front rail 114 and the front side of the bottom element 14 and of the screening body 15. In this position, the cord holder 17 is press-fit between the back side of the front rail 114 and the front side of the bottom element 14.

[0066] By suitable dimensioning of the cord holder 17 relative to the front rail 114 and the bottom element 14, the press-fit may constitute the sole retention means to hold the cord holder 17 in abutment with the front side of the bottom element 14. This corresponds to the embodiment shown in FIG. 12, in which the two cord holders 17 constitute the sole constituents of the transportation assembly 16, or the embodiment of FIG. 13, in which straps 18 are provided, but not overlapping the cord holders 17. In the embodiment of FIG. 13, the straps 18 function to hold the bottom element 14 and the top casing 11 together in the supply condition, for instance no spring-bias is present to pull the bottom element 14 to its uppermost position. The enveloping effect could be obtained also by a single strap 18, for instance placed at a central position in the width direction W.

[0067] The height of the base 171 of the cord holder 17 will typically exceed the height of the bottom element 14 in order to ensure appropriate abutment with the front side of the bottom element 14, but a lower height is conceivable as well, in particular in the embodiment shown, in which the bottom element 14 has a longitudinal groove 143 into which a user can insert their fingers, or insert a tool, in the condition of use to operate the screening arrangement 10. Alternative or additional retention means

may then be provided if for instance flanges folded out from the base 171 are accommodated in the longitudinal groove 143. This also reduces the risk of inadvertent skewing of the cord holders 17 on the bottom element 4.

[0068] In the embodiments in which two straps 18 are provided to overlap respective cord holders 17 at least partly, the straps 18 also function as alternative or additional retention means to hold the cord holders 17 in abutment with the front side of the bottom element 14.

[0069] The straps 18 are made from a paper-based material, wrapped around the top casing 11 and the bottom element 14 about an axis parallel to the width direction W in the supply condition.

[0070] In the embodiments shown, in which the straps 18 overlap the cord holders 17, the straps 18 need to be broken before accessing the cord holders 17. Since the position of the transportation assembly 16 close to the cords 28a, 28b, and to the screening body 15, it is considered unsuitable to cut the straps 18 by a knife or scissors. Hence, the straps 18 need to be able to be torn manually. To this end, the strap or straps 18 is/are made from relative thin paper strip, for instance of banding paper. One example of a suitable commercially available product is TruePaper from manufacturer Ubro System Pac A/S.

[0071] Reverting now to FIG. 8, the screening arrangement 10 is shown during the mounting step in which the left-hand strap 18 is torn. The strap 18 is then pulled out from behind the top casing 11 and collected for recycling in an environmentally sustainable manner. Since the strap 18 is paper-based, the strap 18 allows recycling as high-grade paper-based material.

[0072] As shown in FIG. 9, the cord holder 17 with the cord 28a wound on the cord holding means provided by the recesses 173 in the base 171 is subsequently removed from the abutment with the front side of the bottom element 14. The cord 28a is unwound from the cord holder 17. In the embodiment shown, the free end of the cord 28a is provided with a cord end fitting 29a which fits into the foot fitting 27 as shown in FIG. 10. The cord holders 17 are then collected of for recycling, also as high-grade paper-based material.

[0073] The screening arrangement 10 is now in its mounted condition. The bottom element 14 is ready to be moved by a user to obtain a desired screening position.

[0074] Further alternative embodiments will now be described with reference to FIGS. 20 to 27. Only differences from the above embodiments will be described in detail. Elements having the same or analogous function as in the above embodiments are denoted by the same reference numerals. To distinguish, the cord holder of the embodiments are denoted 17.1, 17.2, ... and the strap 18.1, 18.2.

[0075] In the embodiment of FIG. 20, the cord holder 17.1 is composed of the base 171 including the cord holding means, that is, no leg is present.

[0076] In the embodiment of FIG. 21, the cord holding

means of the cord holder 17.2 comprise at least one flange, here two flanges 17.21 protruding from a respective side edge 171c, 171d of the base 171 of the cord holder 17.2.

[0077] In the embodiment of FIGS. 22A and 22B, the cord holding means of the cord holder 17.3 comprise a flap 17.31 provided in the base 171 and configured to be bent out of the plane of the base 171 to accommodate the cords 28a, 28b of the parallel guidance cord system 28 in the supply condition.

[0078] In the embodiment of FIGS. 23A and 23B, the cord holding means of the cord holder 17.4 comprise two flaps 17.41, 17.42 provided in the base 171 and configured to be bent out of the plane of the base 171 to accommodate the cords 28a, 28b of the parallel guidance cord system 28 in the supply condition.

[0079] In the embodiment of FIGS. 24A and 24B, the cord holding means of the cord holder 17.5 comprises a flap 17.53 provided in the base 171 and configured to be bent out of the plane of the base 171 to abut a front side of the front rail 114 of the top casing 11 in the supply condition.

[0080] Referring now to FIG. 25, the strap 18 is formed by a paper band 180 with overlapping end portions 181, 182 configured to be brought into engagement with each other to form a ring-shaped strap 18 in the supply condition. If the paper band 180 is made of a suitable material, such as the TruePaper mentioned in the above, the overlapping end portions 181, 182 are sealed or welded together. Also shown in FIG. 25 is the feature that the strap 18 is provided with a weakening line 183 positioned outside the overlapping end portions 181, 182 of the paper band 180. The position is chosen such that the weakening line 183 is accessible to a user during mounting of the screening arrangement 10.

[0081] Alternative embodiments are shown in FIGS. 26 and 27, the strap 18.1, 18.2 comprises mechanical engagement means including interlocking slits 18.11, 18.12 as in FIG. 26, or a slit 18.21 and a flap 18.22.

[0082] Combinations between the various embodiments are conceivable.

[0083] Steps of an inventive method of mounting a screening arrangements as described in the above comprise the following:

connecting the top casing 11 to the frame 2 of the roof window 1,
removing the cord holders 17 from the abutment with the front side of the bottom element 14, and
releasing the cords 28a, 28b from the cord holders 17, and connecting free ends of the cords 28a, 28b to the frame 2 of the roof window 1, thereby attaining the mounted condition of the screening arrangement 10.

[0084] Any side rails 12, 13 present in the screening arrangement are preferably connected to the top casing 11 before the step of releasing the cord holders 17.

[0085] In a further aspect, an alternative method of mounting a screening arrangement from a supply condition to a mounted condition in a frame 2 of a roof window 1 is provided. Referring to the screening arrangement 10 described in the above embodiments, namely as comprising a top casing 11, a bottom element 14, a screening body 15, a parallel guidance cord system 28 comprising a set of cords 28a, 28b, and a transportation assembly 16 comprising a set of cord holders 17 of a paper-based material and provided with means for holding the cords 28a, 28b and held in abutment with the top casing 11 and/or the bottom element 14, and at least one strap 18 of a paper-based material wrapped around the top casing 11 and the bottom element 14, the alternative method comprises the steps of:

connecting the top casing 11 to the frame 2 of the roof window 1,
tearing the straps 18,
removing the straps 18 from the top casing 11 by pulling one end of each torn strap 18,
removing the cord holders 17 from the abutment with the front side of the bottom element 14, and releasing the cords 28a, 28b from the cord holders 17, and connecting free ends of the cords 28a, 28b to the frame 2 of the roof window 1, thereby attaining the mounted condition of the screening arrangement 10.

[0086] In case the screening arrangement 10 furthermore comprises a set of side rails 12, 13, the side rails 12, 13 are connected to the top casing 11 before the step of tearing the straps 18 and releasing the cord holders 17.

[0087] Specific embodiments of the invention have now been described. However, several alternatives are possible, as would be apparent for someone skilled in the art.

[0088] Such and other obvious modifications must be considered to be within the scope of the present invention, as it is defined by the appended claims.

List of reference numerals

[0089]

1 roof window
2 frame
2.1 top member
2.2 side member
2.3 side member
2.4 bottom member
3 window opening
4 pane
10 screening arrangement

11 top casing
110 top portion
111 flange portion
112 track
5 113 cover
114 front rail
12 side rail
13 side rail
14 bottom element
10 141 top edge
142 bottom edge
143 longitudinal groove
144 side guidance element
15 screening body
15 16 retention means
17 cord holder
171 base
171a upper portion
171b lower portion
20 171c side edge
171d side edge
172 leg
173 cord holding means / recess
174 cut
25 17.1 cord holder (alternative embodiment)
17.2 cord holder (alternative embodiment)
17.21 flange
17.3 cord holder alternative embodiment)
17.31 flap
30 17.4 cord holder
18 strap
180 paper band
181 overlapping end portion
182 overlapping end portion
35 183 weakening line
18.1 strap alternative embodiment
18.11 slit
18.12 slit
18.2 strap alternative embodiment)
40 18.21 slit
18.22 flap
20 roller assembly
21 roller bar
22 guide bar
45
24 mounting bracket
25 end piece
26 angular bracket
27 foot fitting
50 28 parallel guidance cord system
28a cord
28b cord
29a cord end fitting
55 30 light proofing element
40 packaging
41 cardboard box

411 lid
 42 end block
 43 end block
 44 sub-packaging
 45 installation manual
 L longitudinal direction
 W width direction
 D depth direction
 T arrow

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Claims

1. A screening arrangement (10) for a roof window (1), said roof window comprising a frame (2) with a top member (2.1), a bottom member (2.4) and two mutually parallel side members (2.2, 2.3), the screening arrangement (10) being configured to assume a supply condition, a mounted condition in which the screening arrangement is mounted in the frame (2) of the roof window, and a condition of use, said screening arrangement comprising:

a top casing (11) comprising a front rail (114) defining a first direction corresponding to a width direction (W), the first direction being perpendicular to a second direction corresponding to a height direction (L), the first and second directions being perpendicular to a third direction corresponding to a depth direction (D), said top casing (11) being configured to be mounted at the top member (2.1) of the frame (2),

a bottom element (14) extending substantially in parallel with the top casing (11) and being movable relative to the top casing (11) in the height direction (L) in the condition of use,

a screening body (15) having a top portion accommodated in the top casing (11) and a bottom portion fastened to the bottom element (14),

a parallel guidance cord system (28) comprising a set of cords (28a, 28b), each cord (28a, 28b) being configured to extend from a first longitudinal end of the top casing (11) at one side member (2.2, 2.3), through the bottom element (14), and to a position near the bottom member (2.4) at the other side member (2.3, 2.2) of the frame (2) in the mounted condition, and

a transportation assembly (16) comprising means for holding the cords (28a, 28b) of the parallel guidance cord system (28) in the supply condition of the screening arrangement (10),

characterised in that

the bottom element (14) is positioned in close proximity, in the height direction (L), to the top casing (11) in the supply condition, that

said transportation assembly comprises a

set of cord holders (17), each cord holder (17) comprising a substantially planar base (171) provided with cord holding means and being held in abutment with a front side of the bottom element (14) in the supply condition of the screening arrangement (10), and **in that**

each cord holder (17) is made substantially from a paper-based material.

2. A screening arrangement according to claim 1, wherein the bottom element (14) is provided with retention means for holding the cord holders (17) of the transportation assembly (16) in abutment with the front side of the bottom element (14)

3. A screening arrangement according to any one of the preceding claims, wherein a top edge (141) of the bottom element (14) is located substantially along a bottom edge (114b) of the front rail (114) of the top casing (11) in the supply condition of the screening arrangement (10), and wherein an upper portion (171a) of the base (171) of the cord holder (17) is positioned between a back side of the front rail (114) and the front side of the bottom element (14) and of the screening body (15) such that the cord holder (17) is press-fit between the back side of the front rail (114) and the front side of the bottom element (14).

4. A screening arrangement according to any one of the preceding claims, wherein the transportation assembly (16) comprises at least one strap (18) made from a paper-based material, wrapped around the top casing (11) and the bottom element (14) about an axis parallel to the width direction (W) in the supply condition the transportation assembly (16) preferably comprising two straps (18), more preferably positioned at or near respective cord holders (17) as seen in the width direction (W), more preferably such that each strap (18) overlaps at least a part of a respective cord holder (17).

5. A screening arrangement according to claim 4, wherein each strap (18) is formed by a paper band (180) with overlapping end portions (181, 182) configured to be brought into engagement with each other to form a ring-shaped strap (18) in the supply condition, and wherein the overlapping end portions (181, 182) are sealed or welded together, or each strap (18.1, 18.2) comprises mechanical engagement means including interlocking slit(s) (18.11, 18.12; 18.21) and/or flap(s) (18.22).

6. A screening arrangement according to any one of the preceding claims, wherein each strap (18) is provided with a weakening line (183) positioned outside the overlapping end portions (181, 182) of the paper

band (180), preferably at such a position so as to be accessible to a user during mounting of the screening arrangement (10).

7. A screening arrangement according to any one of the preceding claims, wherein the cord holder (17) is substantially L-shaped comprising a leg (172) protruding from the base (171) at a lower portion (171b) thereof, the leg (172) abutting a bottom edge (142) of the bottom element (14) in the supply condition.
8. A screening arrangement according to any one of claims 1 to 6, wherein the cord holder (17.1) is composed of the base (171) including the cord holding means.
9. A screening arrangement according to any one of the preceding claims, wherein the cord holding means of each cord holder (17) comprise at least one recess (173) in a side edge (171c, 171d) of the base (171) of the cord holder (17).
10. A screening arrangement according to any one of the preceding claims, wherein the cord holding means of each cord holder (17.2) comprise at least one flange (17.21) protruding from a side edge (171c, 171d) of the base (171) of the cord holder (17.2).
11. A screening arrangement according to any one of the preceding claims, wherein the cord holding means of each cord holder (17.3; 17.4) comprise at least one flap (17.31; 17.41, 17.42) provided in the base (171) and configured to be bent out of the plane of the base (171) to accommodate the cords (28a, 28b) of the parallel guidance cord system (28) in the supply condition.
12. A screening arrangement according to any one of the preceding claims, wherein each cord holder (17.5) comprises at least one flap (17.53) provided in the base (171) and configured to be bent out of the plane of the base (171) to abut a front side of the front rail (114) of the top casing (11) in the supply condition.
13. A screening arrangement according to any one of the preceding claims, wherein the cord holding means of each cord holder (17) comprise locking means for the cord (28a, 28b) of the parallel guidance cord system (28), preferably in the form of a cut (174) in the base (171), more preferably the cut (174) adjoins other portions of the cord holding means.
14. A screening arrangement according to any one of the preceding claims, wherein the screening arrangement (10) furthermore comprises two side rails (12, 13) configured to be connected to the top casing

(11) during mounting, the top casing (11) preferably comprising a set of angular brackets (26) at the longitudinal ends of the top casing (11) configured to interact with a track in the side rails (12, 13) the bottom element (14) more preferably comprising a set of side guidance elements (144) at the longitudinal ends of the bottom element (14) configured to interact with a track in the side rails (12, 13).

15. A screening arrangement according to any one of the preceding claims, wherein the top casing (11) at its longitudinal ends is provided with a set of end pieces (25) comprising engagement means configured to be brought into engagement with a set of mounting brackets (24) connected to or connectable to the side members (2.2, 2.3) of the frame (2), near the top member (2.1), during mounting of the screening arrangement (10).
16. A screening arrangement according to any one of the preceding claims, wherein a free end of each cord (28a, 28b) of the parallel guidance cord system (28) is provided with a cord end fitting (29a) configured to be brought into engagement with a set of foot fittings (27) connected to or connectable to the side members (2.2, 2.3) of the frame (2), near the bottom member (2.4), during mounting of the screening arrangement (10).
17. A screening arrangement according to any one of the preceding claims, wherein the top casing (11), the bottom profile (14), the screening body (15), and the parallel guidance cord system (28) form a screening device constituting a roller blind, more preferably a blackout roller blind, and wherein a roller assembly (20) is accommodated in the top casing (11), the roller assembly (20) comprising a spring-biased roller bar (21) and preferably a guide bar (22).
18. A method of mounting a screening arrangement according to any one of claims 1 to 17, comprising the steps of:
 - connecting the top casing (11) to the frame (2) of the roof window (1),
 - removing the cord holders (17) from the abutment with the front side of the bottom element (14), and
 - releasing the cords (28a, 28b) from the cord holders (17), and connecting free ends of the cords (28a, 28b) to the frame (2) of the roof window (1), thereby attaining the mounted condition of the screening arrangement (10).
19. The method of claim 18, wherein the screening arrangement (10) furthermore comprises a set of side rails (12, 13), and wherein the side rails (12, 13) are connected to the top casing (11) before the step of

releasing the cord holders (17).

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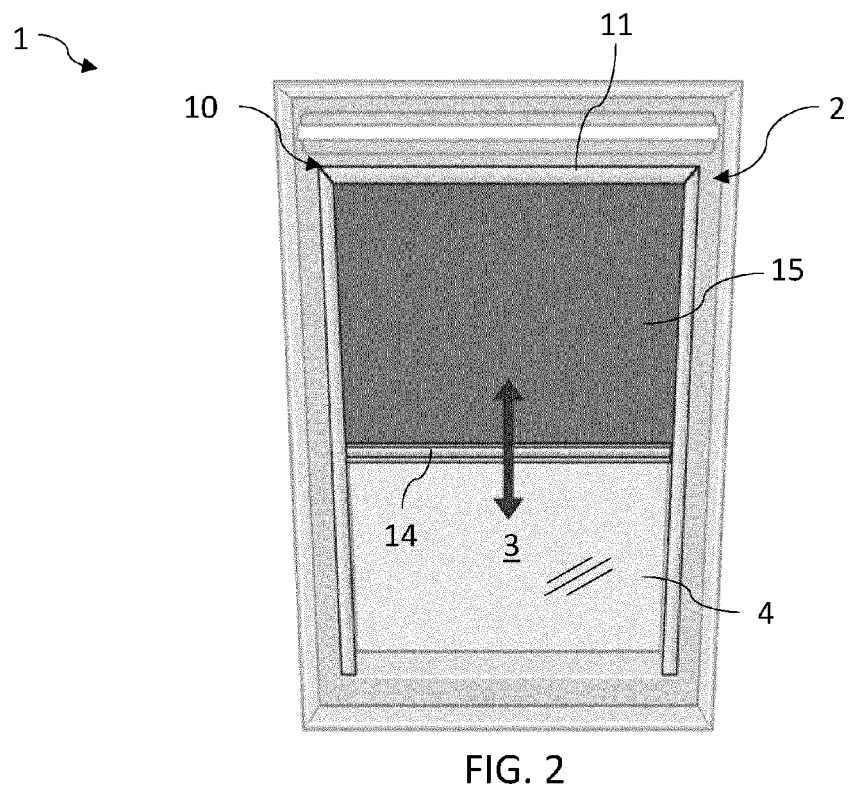
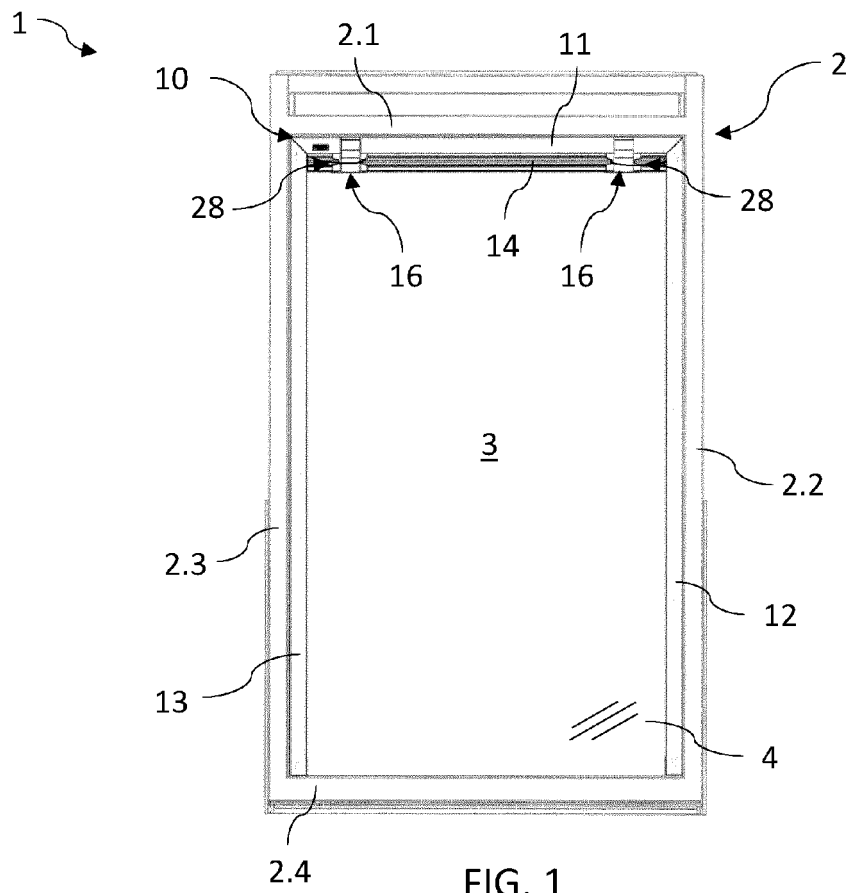
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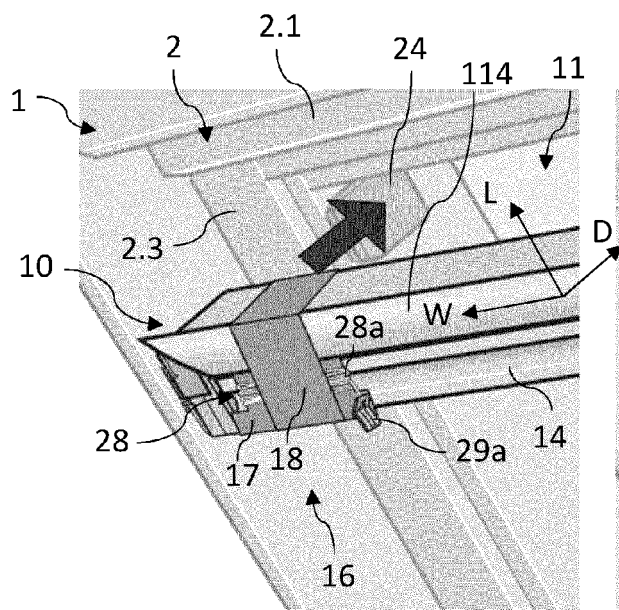


FIG. 3

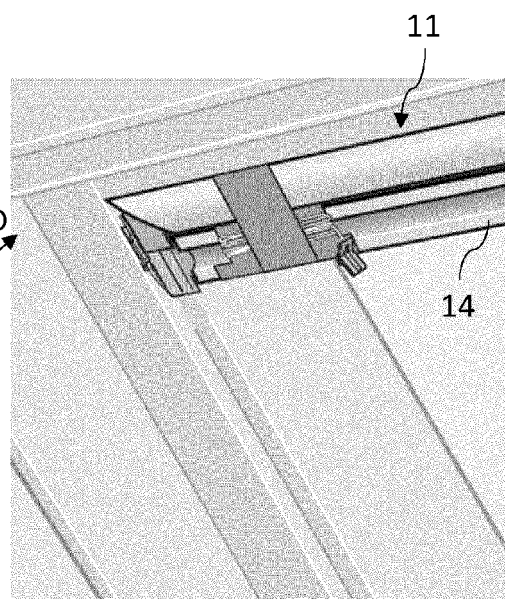


FIG. 4

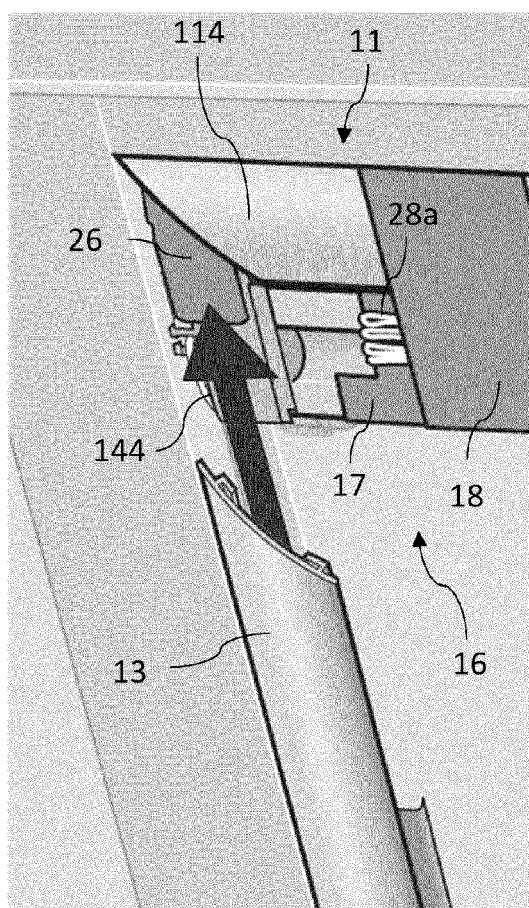


FIG. 5

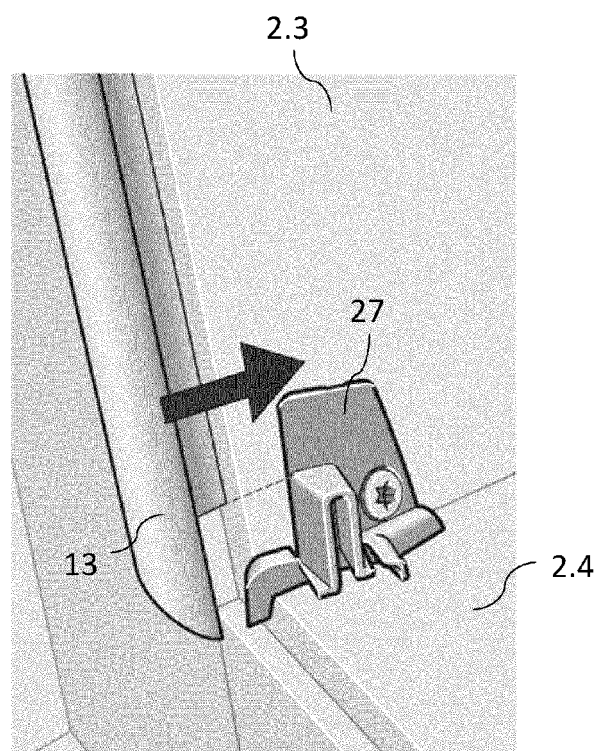


FIG. 6

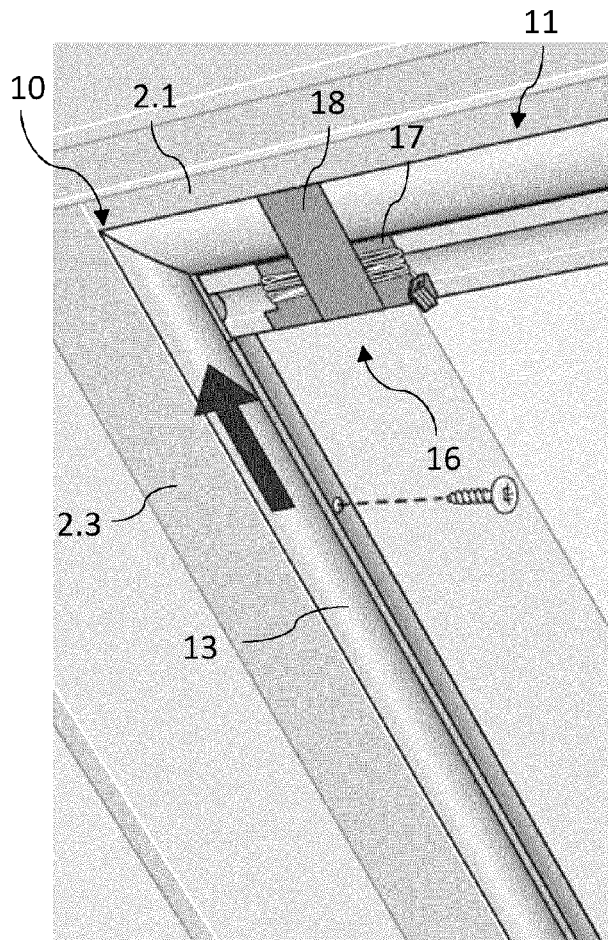


FIG. 7

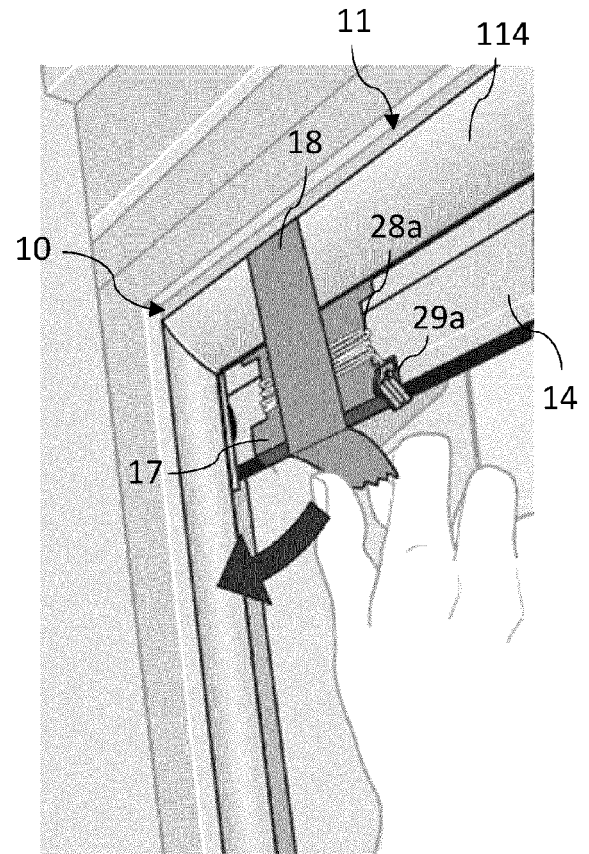


FIG. 8

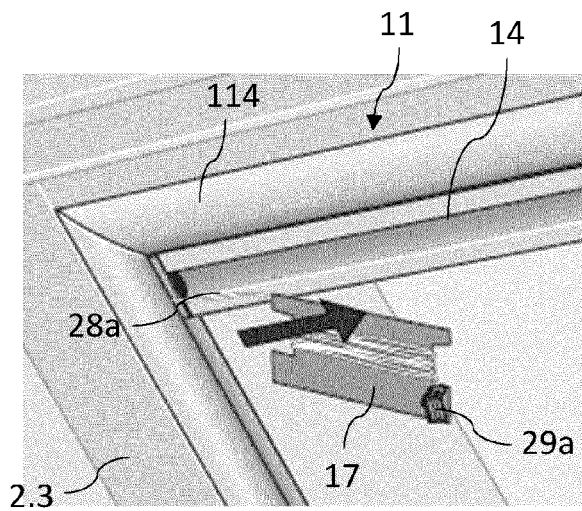


FIG. 9

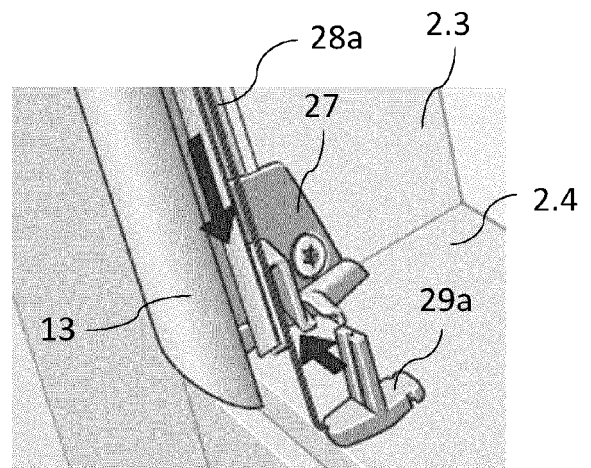
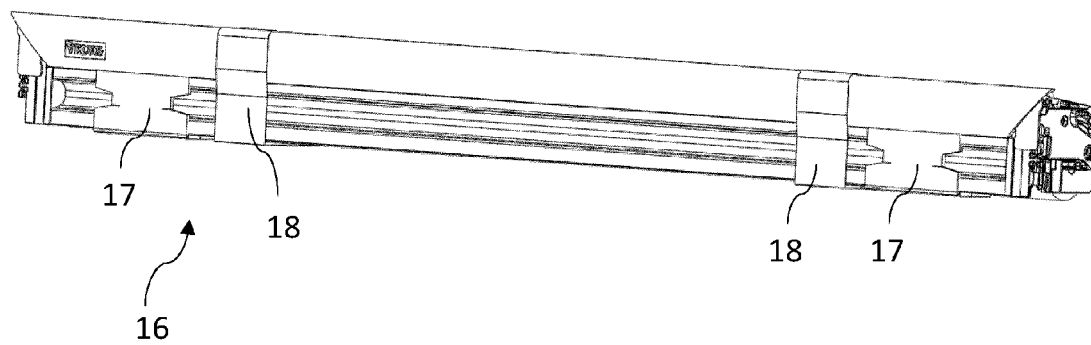
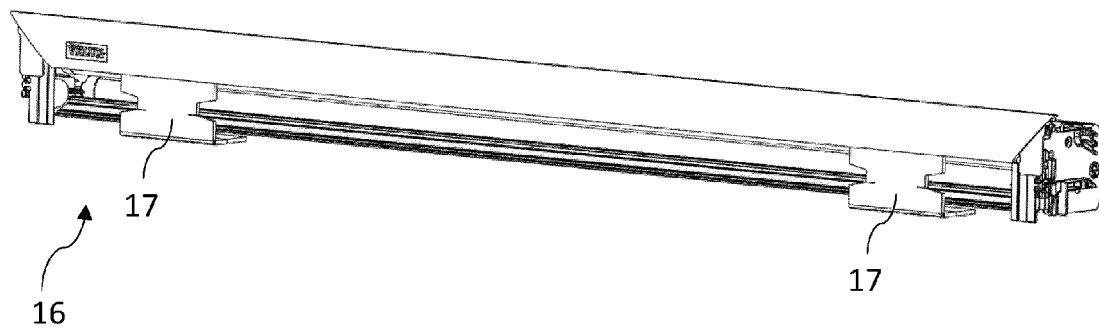
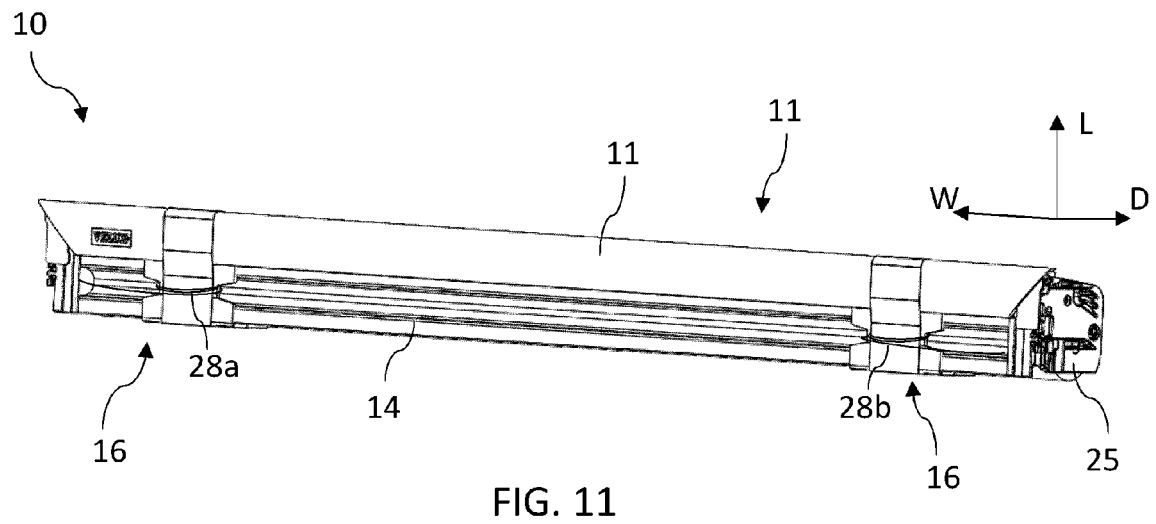


FIG. 10



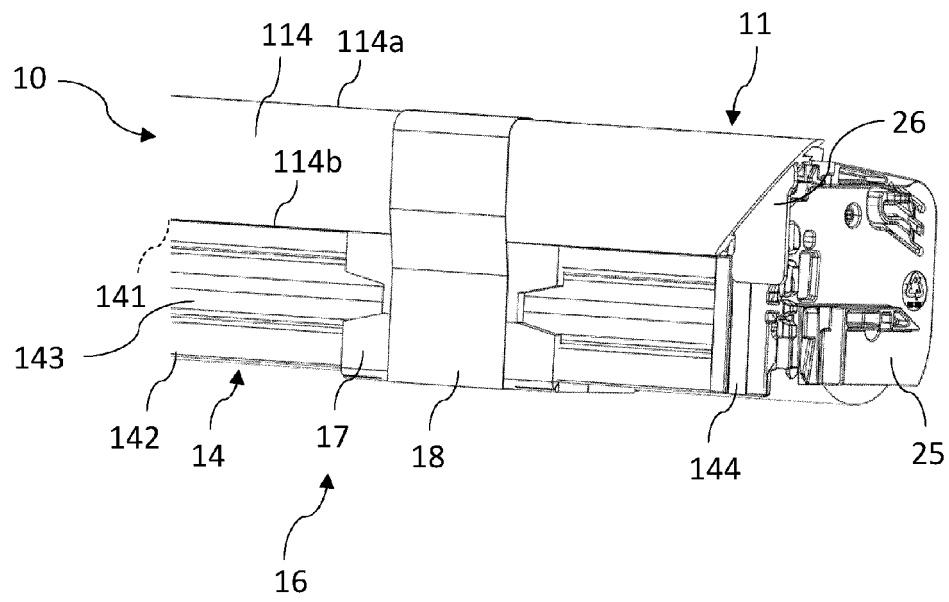


FIG. 14

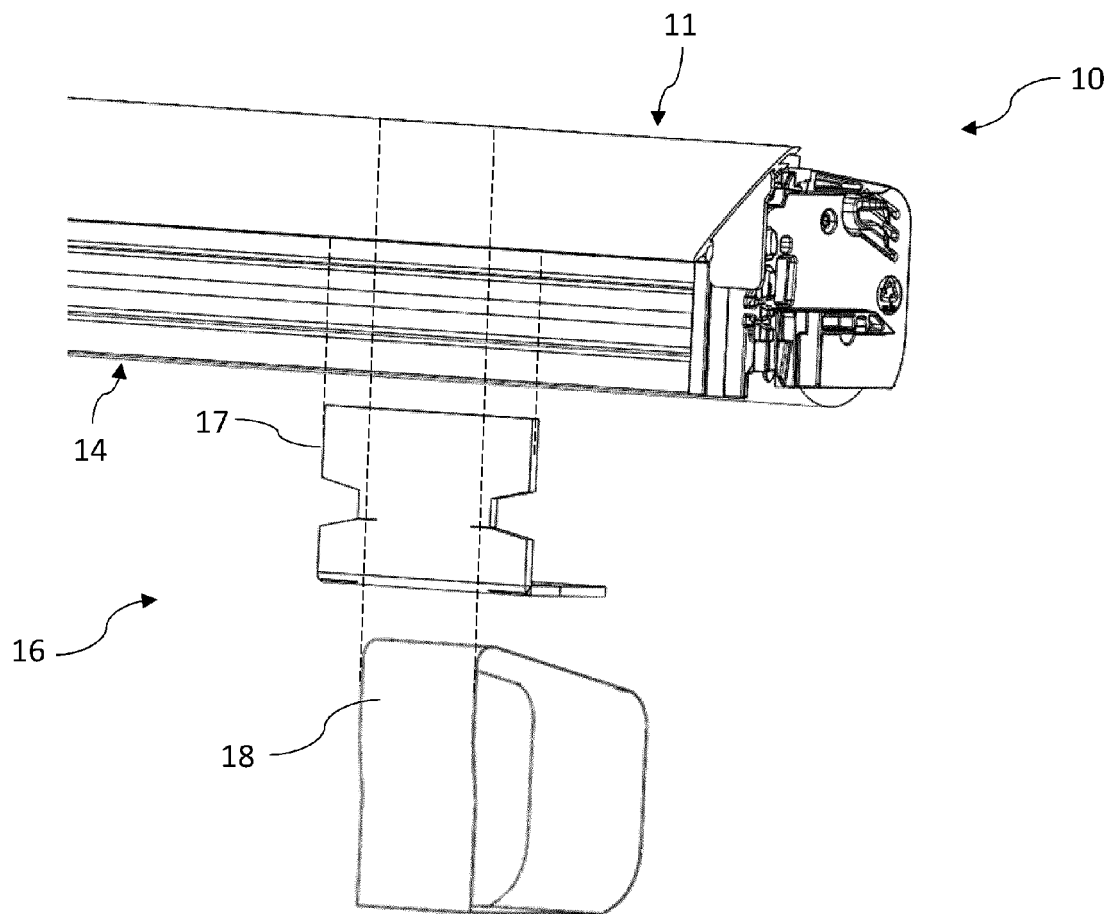


FIG. 15

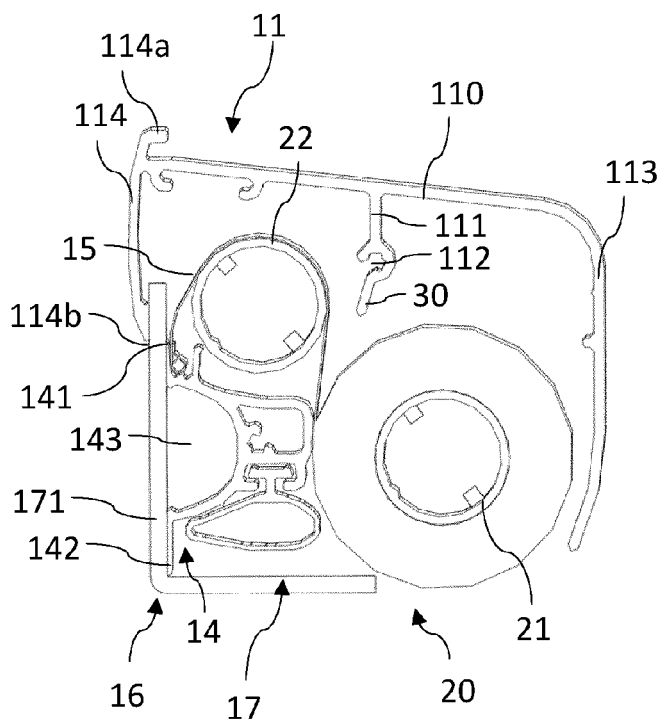


FIG. 16

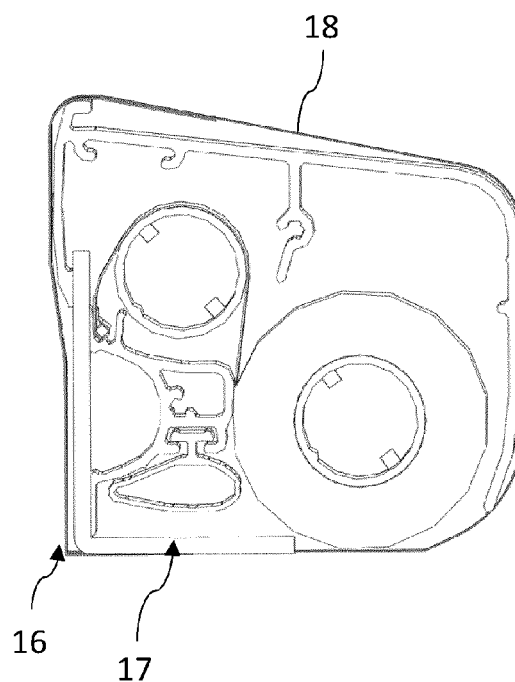


FIG. 17

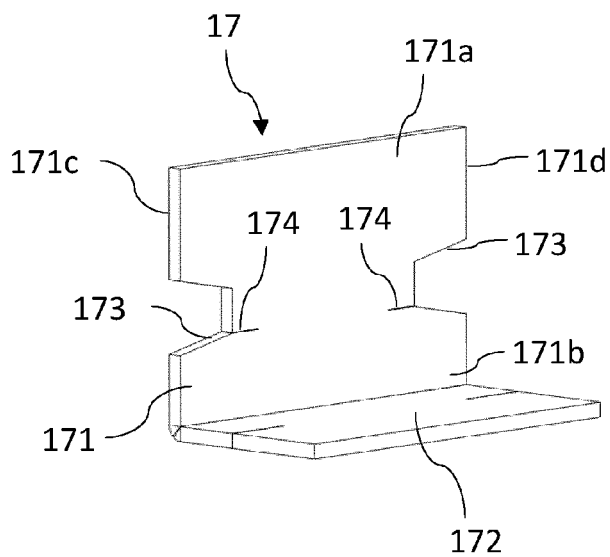


FIG. 18

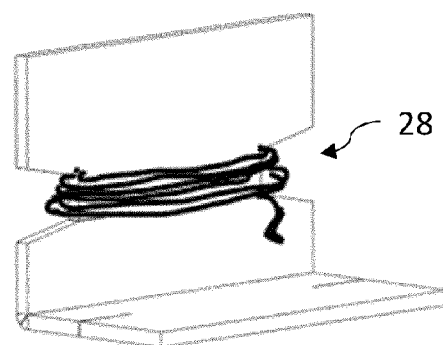


FIG. 19

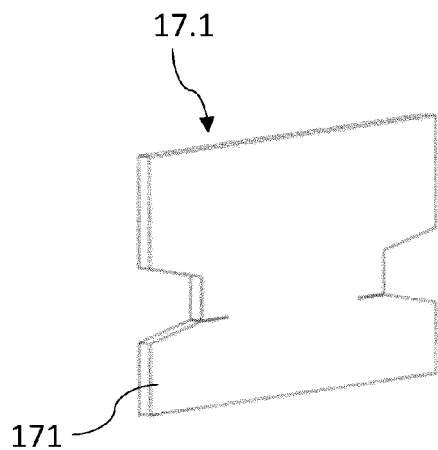


FIG. 20

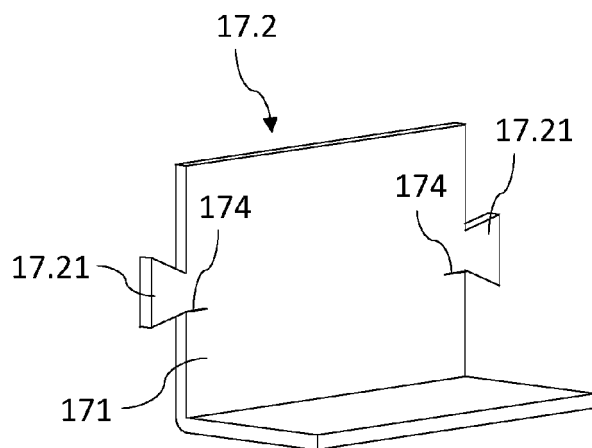


FIG. 21

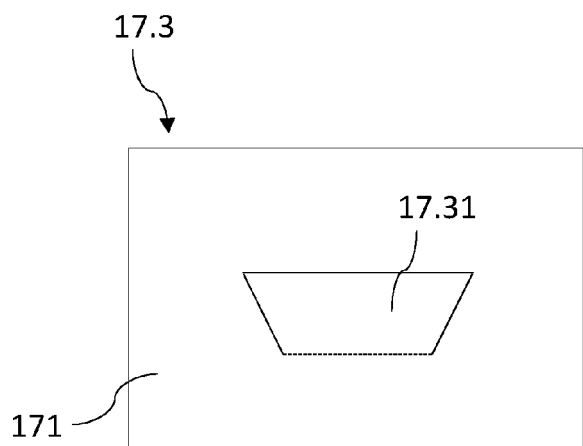


FIG. 22A

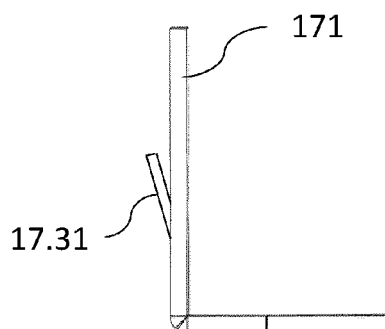


FIG. 22B

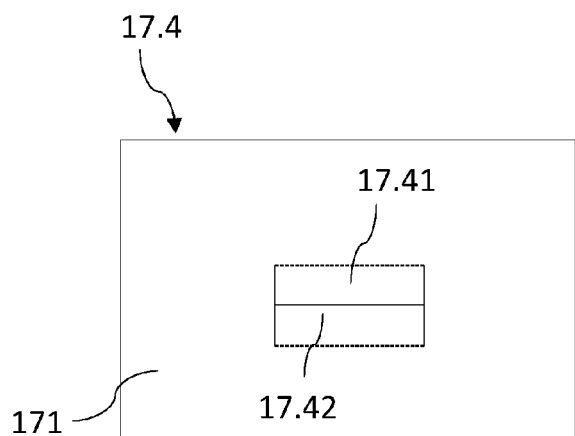


FIG. 23A

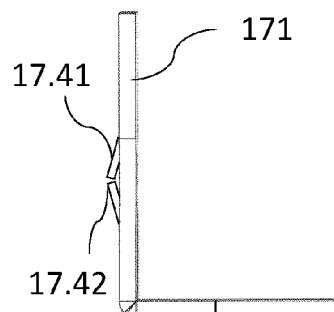


FIG. 23B

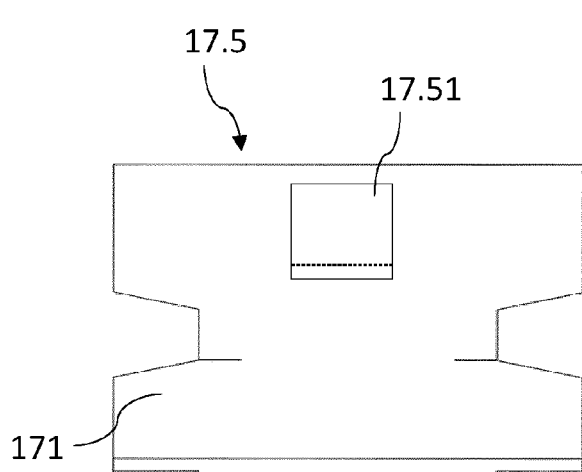


FIG. 24A

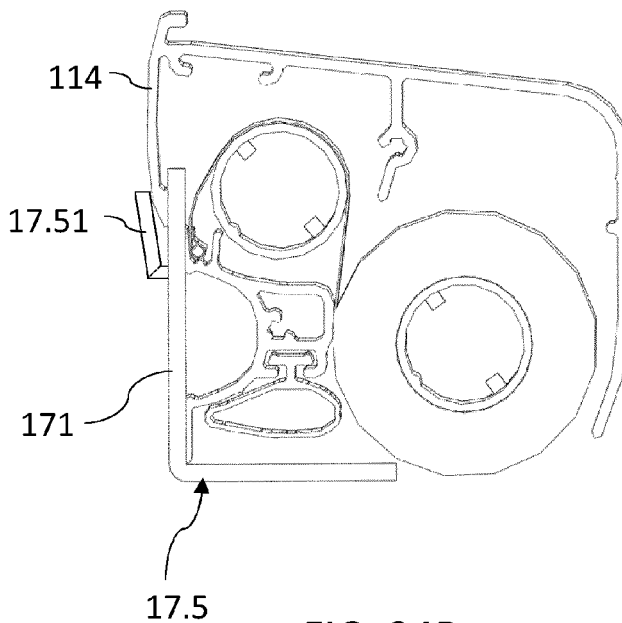


FIG. 24B

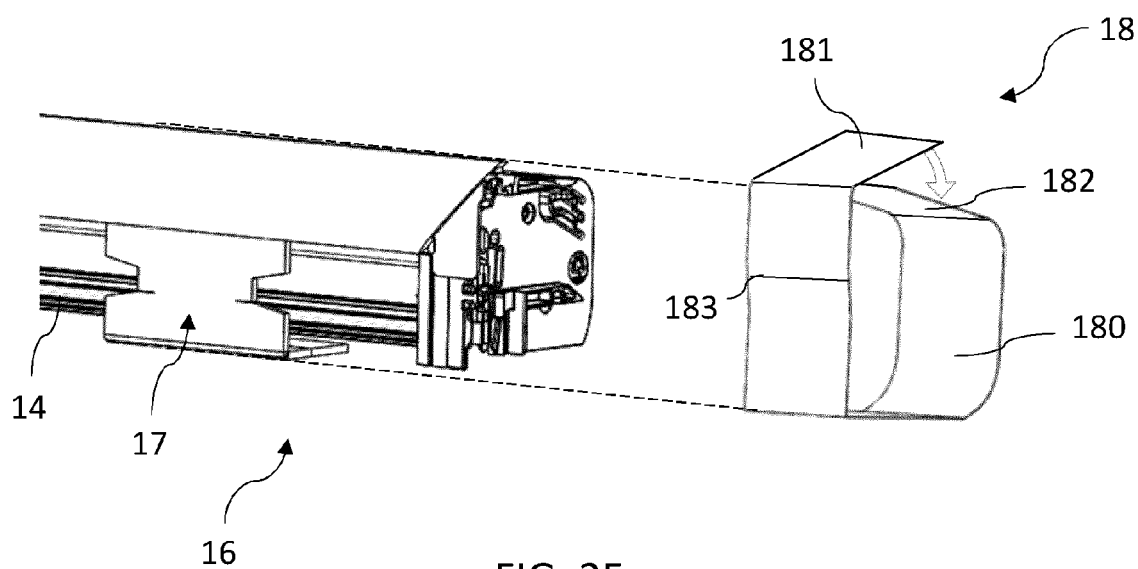


FIG. 25

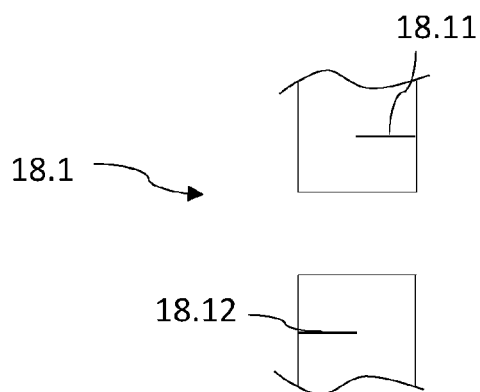


FIG. 26

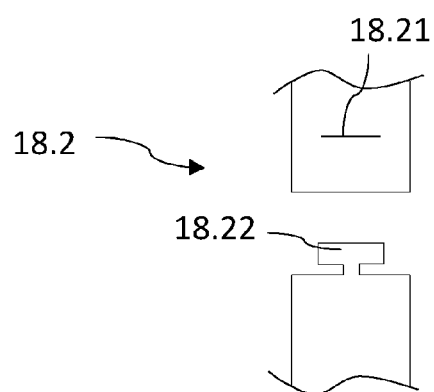


FIG. 27

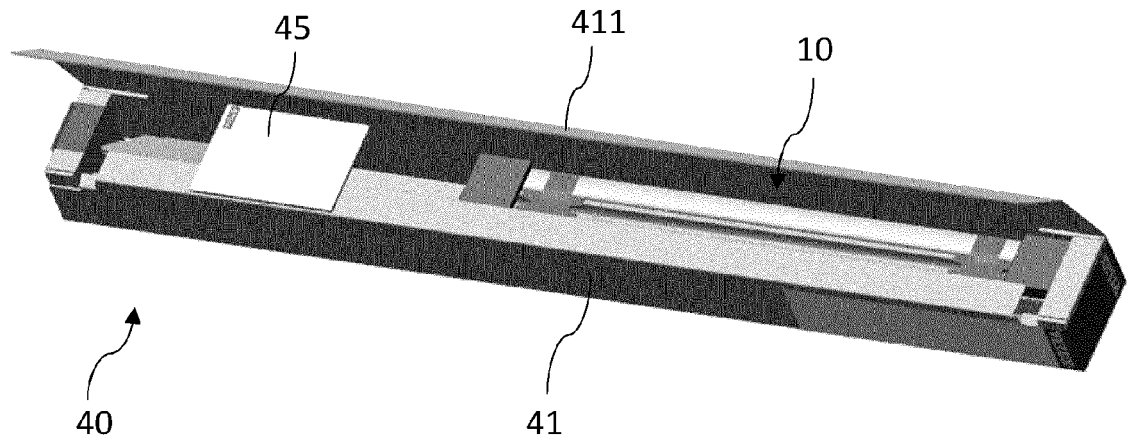


FIG. 28

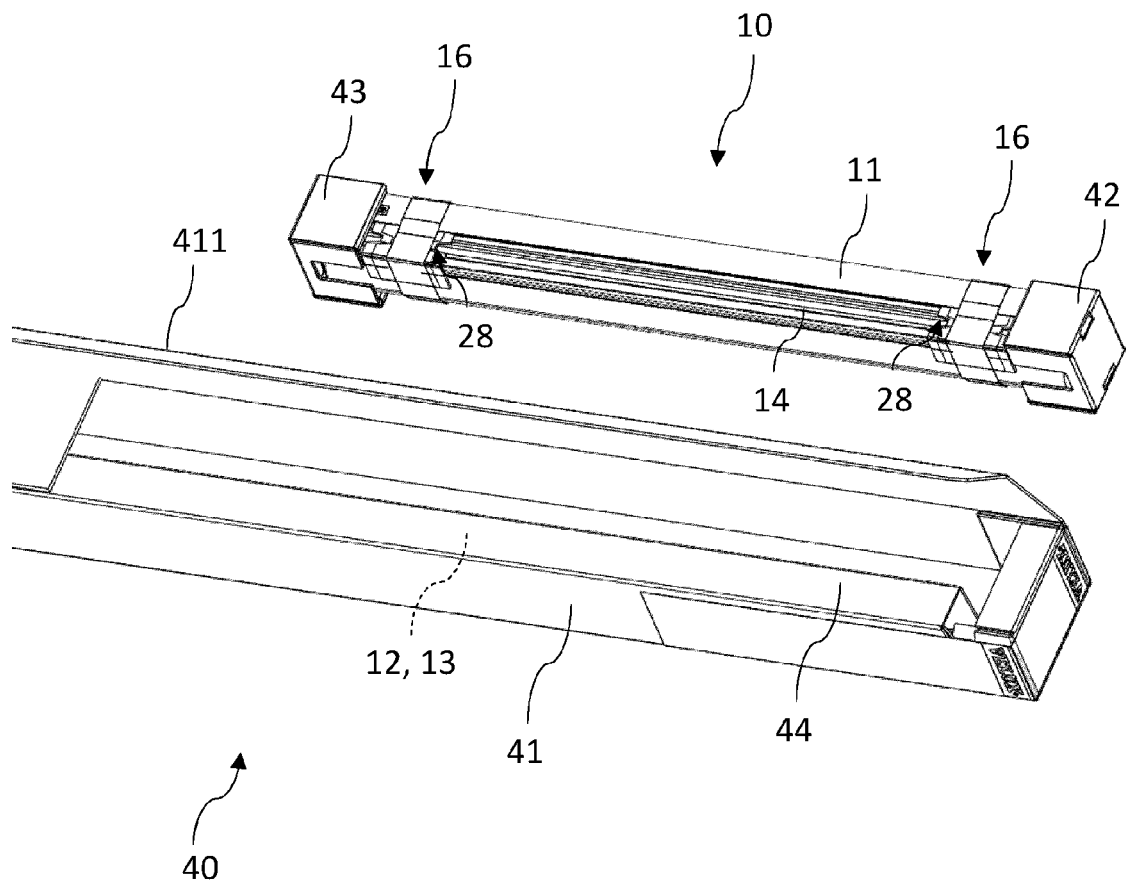


FIG. 29



EUROPEAN SEARCH REPORT

Application Number

EP 24 15 1427

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EPO FORM 1503 03.82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	EP 2 412 916 A2 (VKR HOLDING AS [DK]) 1 February 2012 (2012-02-01) * paragraphs [0015], [0017], [0022], [0027]; figures 1-6 *	1-19	INV. E06B9/42 E06B9/58 E04D13/03
A	EP 2 963 228 A1 (VKR HOLDING AS [DK]) 6 January 2016 (2016-01-06) * figures 1,2,12-14 *	1-19	
A	JP 2012 241310 A (NICHIBEI KK) 10 December 2012 (2012-12-10) * figure 10 *	1-19	
A	DE 10 2018 211634 A1 (CENTOR DESIGN PTY LTD [AU]) 17 January 2019 (2019-01-17) * the whole document *	1-19	
A	US 8 205 657 B2 (BOHLEN JORG [DE]; HUNTER DOUGLAS IND BV [NL]) 26 June 2012 (2012-06-26) * the whole document *	1-19	
			TECHNICAL FIELDS SEARCHED (IPC)
			E06B E04D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 31 May 2024	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	

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

EP 24 15 1427

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.

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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 2412916	A2	01-02-2012	AT	E520855	T1	15-09-2011
			CN	101874145	A	27-10-2010
			DK	2220328	T3	14-11-2011
			EP	2220328	A1	25-08-2010
			EP	2412916	A2	01-02-2012
			PL	2220328	T3	31-01-2012
			PL	2412916	T3	31-03-2014
			WO	2009052822	A1	30-04-2009

EP 2963228	A1	06-01-2016	EP	2963228	A1	06-01-2016
			PL	2963228	T3	31-01-2018

JP 2012241310	A	10-12-2012	JP	5696939	B2	08-04-2015
			JP	2012241310	A	10-12-2012

DE 102018211634	A1	17-01-2019	AU	2018204907	A1	31-01-2019
			CN	109252803	A	22-01-2019
			DE	102018211634	A1	17-01-2019
			US	2019017318	A1	17-01-2019

US 8205657	B2	26-06-2012	AU	2007256365	A1	13-12-2007
			CN	101501291	A	05-08-2009
			DK	2027356	T3	04-01-2016
			EP	2027356	A1	25-02-2009
			IL	195663	A	28-06-2012
			JP	5308332	B2	09-10-2013
			JP	2009540150	A	19-11-2009
			KR	20090026798	A	13-03-2009
			RU	2008152428	A	20-07-2010
			TW	200809074	A	16-02-2008
			US	2009199977	A1	13-08-2009
			US	2013037227	A1	14-02-2013
			WO	2007141031	A1	13-12-2007

EPO FORM P0459

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 2412916 A [0003]
- EP 2412916 B1 [0047]
- WO 2008131757 A1 [0047]
- WO 2008131761 A1 [0047]
- EP 4177437 A1 [0062]