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(54) INSECT SCREEN, KIT OF PARTS FOR PROVIDING AN INSECT SCREEN, AND METHOD FOR MOUNTING AN INSECT SCREEN

(57) A flat roof window or inclined roof window insect screen (1) for shielding a window opening of a flat roof window or an inclined roof window mounted in a roof of a building. The insect screen (1) comprises at least two corner assemblies (20, 30, 40, 50) each comprising one or more corner elements (21, 31, 41, 51) and one or more associated connection pieces (22), wherein the at least two corner assemblies (20, 30, 40, 50) form corners of the insect screen (1). Each connection piece (22) is configured to be connected to part of the flat roof window or the inclined roof window. Each corner element (21, 31, 41, 51) comprises an extension element (211, 411) configured to extend at least partly over to overlap and engage with a ledge (221) of the associated connection piece (22) by gravitational force. All components of the insect screen (1) are comprised within the pre-defined outer periphery of the rectangular frame formed by first to fourth elements (11, 12, 13, 14).

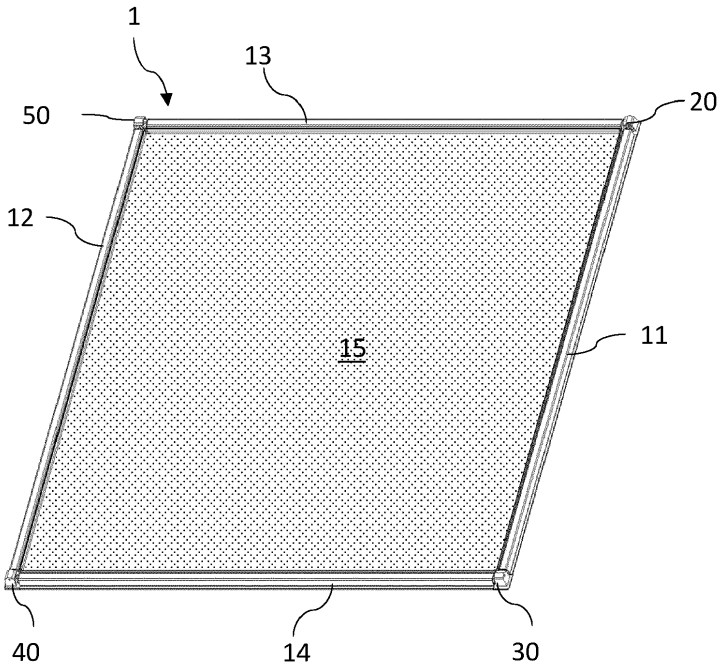

Fig. 1

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Description

Technical Field

[0001] The present invention relates to a flat roof window or inclined roof window insect screen for shielding a window opening of a flat roof window or an inclined roof window mounted in a roof of a building in a mounted condition of the insect screen, the insect screen comprising a first element, a second element, a third element and a fourth element, and a screening body, in which the first element, the second element, the third element and the fourth element form a rectangular frame with a predefined outer periphery of the insect screen and such that the first element and the second element extend substantially in parallel to each other, and that the third element and the fourth element extend substantially in parallel to each other, wherein the screening body comprises four side edges connected to a respective one of the first, second, third and fourth elements, wherein the insect screen further comprises at least two corner assemblies each comprising one or more corner elements and one or more associated connection pieces, wherein the at least two corner assemblies form corners of the rectangular frame, and wherein the at least two corner elements are connected to the first element, the second element, the third element, and the fourth element respectively, to form the rectangular frame. The invention furthermore relates to a kit of parts for providing an insect screen, and to a method for mounting an insect screen.

Background Art

[0002] Insect screens are used all over the world for keeping insects from entering into homes. Especially insect screens for windows in general are well known, insect screen allows the window to be opened to ventilate or control the temperature of a room without letting insects enter into the room.

[0003] The installation of insect screen is normally a simple to execute task, especially for fagade windows. However, when insect screens are required to be installed for roof windows the complexity of the task increases exponentially. When installing an insect screen in a fagade window access to the insect screen is available both from an interior and an exterior. Furthermore, it is possible to let the bottom of insect screen rest against the façade window itself, or a window sill, while mounting the top part of the insect screen, thus freeing up hands for an installer of the insect screen. None of these conveniences are available when installing an insect screen for a roof window. The insect screen for a roof window is only accessible from the interior while installing it, or at least hardly accessible from an exterior. Furthermore, no possibility is granted of letting the insect screen rest against something as gravity works against an installer. Consequently, the installer has to control the whole insect screen at once. In some cases it might even be required for two people to install an insect screen for a roof window, one for holding the insect screen in place and another for mounting the insect screen.

[0004] Examples of prior art documents are found in US 2014/0174021 A1 and DE 2017 103 279 U1. The screening devices of these devices are both dependent on having access to structure surrounding the screening device itself for fastening, and their use is thus limited to specific mounting positions.

Summary of Invention

[0005] It is therefore the object of the invention to provide an improved flat roof window or inclined roof window insect screen in which the mounting is facilitated and which may be used within a wider range of mounting positions.

[0006] In a first aspect, this and further objects are met by an insect screen of the kind mentioned in the introduction, which is furthermore characterised in that each connection piece is configured to be connected to a part of the flat roof window or the inclined roof window, that each connection piece comprises a ledge, that each corner element comprises an extension element configured to extend at least partly over to overlap and engage with the ledge of the associated connection piece by gravitational force in a mounted condition of the insect screen, and that the connection pieces and the corner elements of the corner assemblies are substantially comprised within the outer periphery of the insect screen in the mounted condition.

[0007] Consequently, an insect screen is provided which is easy to install and easy to handle. The connection pieces may first be connected to the flat roof window or the inclined roof window, which may be advantageous as the connection pieces are small and easy to handle compared to the rest of the insect screen, this is especially advantageous for roof windows as limited space and manoeuvrability are available. Especially in cases where the insect screen is to be mounted in a light shaft, space can be limited. The rest of the insect screen may then easily be connected to the connection pieces by inserting the extension elements over the respective ledges, thus obviating the need for holding the whole insect screen at once and then try to connect it by screws or similar. By the term "extend at least partly over" is meant such mutual positions between the extension element and the ledge that the corner element in question is able to rest on the ledge by means of the overlapping portion of the extension element. This is made possible by the horizontal or inclined position of the roof window. As the corner assemblies are all comprised within the outer periphery of the insect screen, it is possible to place the insect screen close to walls of the light shaft substantially without gaps and with no protruding parts. The presence of the connection pieces within the outer periphery ensures that fastening of the connection pieces themselves and in turn the entire insect screen may take place

in a well-defined and secure way. This also makes it possible to render the corner assemblies inconspicuous in the mounted condition and thus provide the insect screen with an aesthetic appearance from the interior of the building.

[0008] In an embodiment the insect screen comprises at least four corner assemblies, each comprising a corner element and an associated connection piece, wherein the corner assemblies each form a corner of the rectangular frame, wherein the corner elements are connected to respective adjacent elements of the first element, the second element, the third element and the fourth element to form the rectangular frame. Consequently, each corner may be associated with a corner assembly. Having four corner assemblies also allows for smaller and easier to handle corner assemblies. Alternatively, the insect screen may comprise two corner assemblies, where each corner assembly forms two corners of the rectangular frame. This may be advantageous to reduce the amount of parts required to be handled to install the insect screen. In case each corner assembly forms two corners, the connection piece associated with the corner assembly may be provided with a ledge extending in parallel with a side of the rectangular frame and a length corresponding to a side of the rectangular frame, correspondingly the associated corner element may be provided with an extension element extending in parallel with a side of the rectangular frame and a length corresponding to a side of the rectangular frame.

[0009] In an embodiment at least two of the extension elements are formed as a first movable extension element and a second movable extension element movable between an assembled position and a disassembled position, wherein in the assembled position the first movable extension element and the second movable extension element are configured to extend over and rest on the ledge of the associated connection piece by gravitational force, and wherein in the disassembled position the first movable extension element and the second movable extension element are configured to being disengaged from the ledge of the associated connection piece. Consequently, the ease of mounting the insect screen is further enhanced. After connecting the connection pieces, an installer may put the movable extension elements into the disassembled position, afterwards the installer may move the rest of insect screen towards the connection pieces. When the corner elements and the connection pieces are aligned the installer may move the movable extension elements from the disassembled condition to the assembled condition, thus bringing the insect screen to the mounted condition.

[0010] In an embodiment the first movable extension element and the second movable extension element are movable between the assembled position and the disassembled position by rotation and/or by linear displacement. The movable extension elements may be formed as bolts are similar. In a preferred further development of this embodiment the first movable extension element and the second movable extension element are biased towards the assembled position. Consequently, unwanted movement of the movable extension elements is prevented. Unwanted movement of the movable extension element may in worst case scenarios lead to the extension elements disengaging from their associated ledges. The movable extension elements may be biased via one or more springs, or magnets. It is furthermore advantageous if the first movable extension element and the second movable extension element are lockable in the assembled position. Locking the movable extension elements provides an alternative manner of preventing unnecessary movement of the movable extension elements. The movable extension elements may be locked in the assembled position by friction, e.g. frictional engagement between the associated ledge and the movable extension element. Alternatively, the movable extension elements may be provided with a snap-lock, or similar.

[0011] In an embodiment each corner element comprises a cover element configured to cover a corner of the rectangular frame, wherein a first side of the cover elements faces towards an interior of the building in the mounted condition of the insect screen, the corner element preferably extending over or abutting respective adjacent elements of the first element, the second element, the third element, and the fourth element. Consequently, by providing a cover element improved coverage is achieved by the insect screen. Preferably, the perimeter of the first side of the cover element extends to cover the connection piece, when viewing the insect screen from the interior of the building. The perimeter of the first side of the cover element may be configured to extend to abut the part of the window of the flat roof window or the inclined roof window which the connection piece is configured to be connected to. The first side of the cover element may be substantially planar.

[0012] In a development of this embodiment, and in which two movable extension elements are present, the first side of each cover element of the corner elements comprising the first movable extension element and the second movable extension element comprises one or more indicators for indicating whether the associated movable extension element of the corner element is in the assembled position or the disassembled position. Consequently, when installing the insect screen, it is easy for an installer to perceive whether the movable extension elements are in the assembled position or the disassembled position. The one or more indicators may be provided as one or more symbols on the first side of the cover element. The indicators are especially advantageous for insect screens for roof windows as it is only possible to monitor one side of the insect screen when mounting it.

[0013] In an embodiment the corner elements associated with the first movable extension element and the second movable extension element each comprises activation means connected to the associated movable ex-

tension element, wherein the activation means is configured to allow delivery of a force to the associated movable extension element to move the associated movable extension element between the assembled position and the disassembled position. The activation means may be provided as a tool interface configured to allow insertion of a tool, or as a grip portion. Consequently, an installer of the insect screen may move the movable extension elements by interacting with the associated tool interface or by handling the grip portion. The tool interfaces may comprise one or more slots configured to receive a tool.

[0014] In an embodiment each connection piece forms a receiving space for receiving and delimiting movement of the associated extension element. This ensures safe lodging of the extension element on the ledge during installation and in the mounted condition.

[0015] In an embodiment each receiving space of the connection pieces is formed by a first receiving surface, a second receiving surface, and the ledge of the connection piece, wherein the first receiving surface, the second receiving surface and the ledge are connected to each other, and wherein the first receiving surface and the second receiving surface extends with an angle to the plane defined by the rectangular frame and perpendicularly to each other. This ensures appropriate positioning at or near the corners of the part of the roof window in question. The first receiving surface and/or the second receiving surface may comprise an aperture for receiving a screw for connecting the associated connection piece to part of a roof window, for instance a frame or sash structure of the flat roof window or the inclined roof window. As an alternative to a connection by screws, adhesion or interlocking elements-type engagement may be used.

[0016] In an embodiment, in which at least four corner assemblies are provided, the first element, the second element, the third element, and the fourth element each comprises a longitudinal track, wherein each corner element comprises two connection portions, wherein one of the connection portions is configured to be received in the longitudinal track of either the third element or the fourth element and the other connection portion is configured to be received in the longitudinal track of the first element or the second element. This provides for even further facilitated assembly of the insect screen. This arrangement also provides for improved stability of the rectangular frame thus formed. Preferably, each connection portion comprises a centring device extending within the longitudinal track and being resiliently deformable in a direction perpendicular to the longitudinal track, wherein the centring device is kept in tension to centre the rectangular frame relative to the corner assemblies. This ensures proper engagement at all times. The centring device may comprise an abutment portion abutting an end surface of the third element, the fourth element, the first element or the second element, wherein the end surface is defined by the longitudinal track.

[0017] In an embodiment each corner assembly further comprises a break-off positioning part removably connected to the connection piece of the corner assembly, and configured to aid in positioning and connection of the connection piece relative to the roof window. The break-off positioning part thus acts as an aid element during installation and may easily be discarded after use.

[0018] In an embodiment at least two of the extension elements are formed as a first stationary extension element and a second stationary element. Stationary extension elements are fixed during installation, and thus are not able to move unpredictably during installation.

[0019] In an embodiment, in which at least four corner assemblies are provided, the two corner elements comprising the first stationary extension element and the second stationary extension are element are connected to either the first element, the second element, the third element, or the fourth element, and wherein the two corner elements comprising the first movable extension element and the second movable extension element are connected to an opposing element of the first element, the second element, the third element, and the fourth element. Consequently, one side of the insect screen formed by for instance the first element is provided with the two stationary extension elements while the opposing side, for instance formed by the second element, will be provided with the two movable extension elements. This arrangement may facilitate easy installation of the insect screen. Firstly, the two stationary extension elements may be arranged over their associated ledges, hence one side of the insect screen is installed and kept under control, which frees resources for an installer. Subsequently, the rest of the insect screen may be moved so the corner elements with the movable extension elements are aligned with their associated connection pieces. Then the movable extension elements are moved from their disassembled position to their assembled position. The mounted condition of the insect screen is thus achieved.

[0020] In a second aspect of the invention, the invention relates to a kit of parts for providing an insect screen according to the first aspect of the invention, as defined in claim 14.

[0021] The kit of parts provides for the possibility of providing all parts necessary for assembly and installation of the insect net, for instance in a supply condition suitable for transportation and handling.

[0022] In a third aspect of the invention, the invention relates to a method for mounting an insect screen for shielding a window opening of a roof window mounted in a roof of a building, as defined in claim 15.

[0023] Consequently, a method is provided for mounting an insect screen in a simple manner which may be carried out by a single person. In further developments of the method for insect screens comprising two corner elements each comprising a stationary extension element and two corner elements each comprising a movable extension element connected to opposing elements of the rectangular frame, the stationary extension elements of the corner elements are arranged to extend

over and engage with the ledge of the associated connection piece by gravitational force in a first step. Following a possible move of the movable extension elements from an assembled position to a disassembled position, the corner elements comprising the movable extension elements are aligned and engaged with the respective connection pieces, and the movable extension elements are finally moved from the disassembled position to the assembled position to allow the movable extensions elements to extend over and engage with the ledge of the associated connection piece by gravitational force. By arranging the stationary extension elements extending over and engaging their respective ledges it allows for one side of the insect screen to be held in place in a first step, without an installer having to interact with the insect screen. Thus, freeing up resources for an installer when mounting the insect screen.

[0024] Other presently preferred embodiments and further advantages will be apparent from the subsequent detailed description and drawings.

[0025] 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

[0026] In the following description embodiments of the invention will be described with reference to the schematic drawings, in which

Fig. 1 is a schematic perspective view of an insect screen according to an embodiment of the invention.

Fig. 2 is a schematic perspective view of a first embodiment of a kit of parts for providing an insect screen.

Fig. 3 is a schematic exploded perspective view from an exterior of a corner assembly including a corner element and a connection piece of an insect screen according to an embodiment of the invention.

Fig. 4 is a schematic perspective view of the corner element shown in Fig. 3.

Fig. 5 is a schematic perspective view of the connection piece shown in Fig. 3.

Fig. 6 is a schematic exploded perspective view from an interior of a corner assembly of an insect screen according to an embodiment of the invention.

Fig. 7 is a schematic top view from an exterior of another corner element of an insect screen according to an embodiment of the invention.

Fig. 8 is an exploded perspective view of the corner element of Fig. 7.

Fig. 9 is a schematic exploded perspective view from an interior of a corner assembly of the insect screen according an embodiment of the invention.

Fig. 10 is an exploded view of the corner assembly of Fig. 9.

Fig. 11 is a top view of a second embodiment of a kit of parts for providing an insect screen.

Fig. 12 is a perspective view of a third embodiment of a kit of parts for providing an insect screen.

Fig. 13 is a partial perspective view of light shaft with a representative part of a roof window and connection pieces of an insect screen in an embodiment of the invention.

Figs 14 to 19 show steps of installation of an embodiment of an insect screen during various steps of installation.

Description of Embodiments

[0027] In the following detailed description, a preferred embodiment 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.

[0028] 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. In general, when referred to an exterior side, this relates to a side of the insect screen in the mounted condition facing the outdoors or external side of the building. Conversely, an interior side refers to a side facing the internal side of the building, i.e. typically a subjacent room including any light shaft. Terms such as "outwards" and "inwards" are directions generally perpendicular to an interior-exterior direction, taking as its base point a centre of the insect screen.

[0029] Referring initially to Fig. 1, showing a schematic perspective view of an insect screen 1 according to an embodiment of the invention. The insect screen 1 is intended for shielding a window opening of a flat roof window or an inclined roof window mounted in a roof of a building. The roof window may be openable or fixed and take the form of a skylight. The window opening may be a window shaft, a light shaft or tunnel, or similar. One exemplary mounting position is shown in Fig. 13, in which a roof window 2 is schematically indicated by one of its parts mounted in a light shaft 3. The light shaft 3 here has the form of a substantially rectangular prism extending between a ceiling 4 and a substantially flat roof (not indicated) to the exterior. The light shaft 3 could also be shaped as a frustum of a pyramid. The part of the roof window 2 could be the frame or sash or the roof window 2.

[0030] The insect screen 1 comprises a first element 11, a second element 12, a third element 13 and a fourth element 14. The first element 11, the second element 12, the third element 13 and the fourth element 14 are, in the embodiment shown, provided as extruded aluminium profiles. The insect screen 1 further comprises a screening body 15 extending in-between the first element

11, the second element 12, the third element 13 and the fourth element 14. The screening body 15 may be formed as a mesh structure. Preferably, the screening body 15 is chosen with a mesh structure which allows light to pass through the screening body and hinders insects from passing through the screening body 15. The first element 11, the second element 12, the third element 13 and the fourth element 14 are connected to form a rectangular frame. The rectangular form defines an outer periphery of the insect screen 1. The outer periphery is pre-defined to fit the roof window 2 in question and, in the exemplary mounting position shown in Fig. 13, within the light shaft 3. The first element 11 and the second element 12 extend substantially in parallel to each other, and the third element 13 and the fourth element 14 extend substantially in parallel to each other. Opposing element pairs are substantially perpendicular to each other, i.e. the pair of the first element 11 and the second element 12 are perpendicular to the pair of the third element 13 and the fourth element 14. The screening body 15 comprises four side edges connected to a respective one of the first, second, third and fourth elements 11, 12, 13, 14. The screening body 15 has the form of a rectangle of a size such that the screening body 15 cover the opening encased by the rectangular frame formed by elements 11-14 when connected. As is customary, the term "rectangular" includes a square configuration in which all elements 11-14 have the same lengths. In the case of a square frame, the positioning of the insect screen 1 to cover the opening of the roof window 2 is arbitrary, whereas the positioning in case of non-equal lengths needs to take into account the respective longer and shorter sides of the insect net 1.

[0031] In the shown embodiment the insect screen further comprises four corner assemblies 20, 30, 40, 50. The four corner assemblies 20, 30, 40, 50 form corners of the rectangular frame. The four corner assemblies 20, 30, 40, 50 are connected to respective adjacent elements, such that corner assembly 20 is connected to the first element 11 and the third element 13, corner assembly 30 to the first element 11 and the fourth element 14, corner assembly 40 to the second element 12 and the fourth element 14, and corner assembly 50 to the second element 12 and the third element 13, to form the rectangular frame. As is apparent already from Fig. 1, the corner assemblies 20, 30, 40, 50 are substantially comprised within the outer periphery of the insect screen in the mounted condition, as defined by the rectangular form of the first, second, third and fourth elements 11, 12, 13, 14.

[0032] Referring to Fig. 2, showing a schematic perspective view of a first embodiment of a kit of parts 10 for providing an insect screen 1. In the kit of parts 10, the first element 11, the second element 12, the third element 13 and the fourth element 14 are provided separately from each other, for instance in a supply condition, and are configured to be connected to form a rectangular frame, typically at the installation site as a step in the assembly and installation of the insect screen 1. The kit of parts 10 further comprises the four corner assemblies 20, 30, 40, 50. The corner assemblies 20, 30, 40, 50 are configured to form corners of the rectangular frame.

[0033] Some parts of the kit of parts may have been pre-assembled as will be described in the following. Thus, the corner assemblies 20 and 50 are both shown connected to the third element 13, whereas corner assemblies 30 and 40 are connected to the fourth element 14. In the kit of parts 10, the screening body 15 could be provided either separately from the elements which will form the rectangular frame of the insect net, or pre-connected to one or two of the elements. For instance, one side edge of the screening body 15 is in the first embodiment shown in Fig. 2 connected to the first element 11 and another side edge to the second element 12, for subsequent connection of the remaining side edges to the third element 13 and the fourth element 14.

[0034] Reference is briefly made to Figs 11 and 12 showing a second and third embodiment of a kit of parts comprising the same basic components as in the first embodiment of the kit of parts shown in Fig. 2: Elements 11, 12, 13, 14, corner assemblies 20/30/40/50 and screening body 15.

[0035] For simplicity, the insect screen will denoted by reference numeral 1 and the kit of parts by reference numeral 10 throughout the description, although variations in the composition and form of components may vary between embodiments.

[0036] Referring now to Figs 3 to 6, of which Fig. 3 shows a schematic perspective view from an exterior of a corner of the insect screen 1, namely the corner of the insect screen 1 provided with the corner assembly 20. The corner assembly 20 comprises a corner element 21 and an associated connection piece 22. The corner assembly 20 forms a corner of the insect screen 1, more specifically the corner assembly 20 forms the corner between the first element 11 and the third element 13. The corner element 21 is connected to the first element 11 and the third element 13. The connection piece 22 is configured to be connected to a part of the flat roof window or the inclined roof window, for instance to the above-mentioned roof window 2 placed in the light shaft 3 as shown in Fig. 13. The connection piece 22 may be connected to a part of the flat roof window or the inclined roof window by screws, snap-fit, adhesive, double-adhesion tape, Velcro®, or similar. The connection piece 22 comprises a ledge 221. The ledge 221 is formed as a shelf. The ledge 221 is configured for receiving an extension element 211 formed on the corner element 21. The extension element 211 is configured to extend over and engage with the ledge 221 of the associated connection piece 22 by gravitational force in the mounted condition of the insect screen 1. As is apparent from the drawing figures, the extension element 211 extends from a base portion 210 outwards relative to a centre of the insect screen 1.

[0037] In the shown embodiment, the insect screen 1 comprises four corner assemblies 20, 30, 40, 50. Each

corner assembly 20, 30, 40, 50 comprises an associated corner element 21, 31, 41, 51 and an associated connection piece 22. The corner assemblies 20, 30, 40, 50 each forms a corner of the rectangular frame. The corner elements 21, 31, 41, 51 of the corner assemblies are connected to the first element 11 and the third element 13, to the first element 11 and the fourth element 14, to the second element 12 and the fourth element 14, and to the second element 12 and to the third element 13, respectively, to form the rectangular frame. As is apparent, each of the corner elements 21, 31, 41, 51 and the connection pieces 22 of the corner assemblies 20, 30, 40, 50 are substantially comprised within the outer periphery of the insect screen 1 in the mounted condition, as defined by the rectangular form of the first, second, third and fourth elements 11, 12, 13, 14.

[0038] The corner element 21 comprises a cover element 212. The cover element 212 is configured to cover a corner of the rectangular frame. The cover element 212 comprises a first side 2122. The first side 2122 faces towards an interior of the building in the mounted condition of the insect screen 1. The cover element 212 is configured to cover a corner of the rectangular frame, i. e. when viewing the insect screen 1 from the interior of the building the cover element 212 covers the rest of the corner assembly 20. In the shown embodiment, the first side 2122 of the cover element 212 extends slightly over the third element 13 and the first element 11. In other non-shown embodiments, the cover element could abut the third element 13 and the first element 11. The cover element 212 further comprises a cover flange 2123. The cover flange 2123 extends perpendicularly to the first side 2122 from the perimeter of the first side 2122. The cover flange 2123 extends to define a space for receiving the connection piece 22. Opposite the first side 2112, a second side 2124 faces towards the exterior in the mounted condition. The base portion 210 of the extension element 211 is anchored to the second side 2124 of the cover element 212, typically by moulding the entire corner element 21 by a suitable plastic or composite material.

[0039] The extension element 211 is formed with a tip part 216 at the outwards directed, free end of the extension element 211. The tip part 216 is configured to extend over the ledge 221 of the associated connection piece 22. In the embodiment shown, the tip part 216 extends towards an exterior of the building in which the insect screen 1 is mounted. During mounting, the tip part 216 may act as a guide in cases where the extension element 211 is not perfectly aligned with the ledge 221, thus further easing installation of the insect screen. In the corner element 21 of the corner assembly 20, the extension element 211 is formed as a first stationary extension element 211, i.e. fixed in relation to the rest of the corner element 21.

[0040] As shown in Figs 4 and 5, the corner element 21 comprises two connection portions 217. The connection portions 217 are configured to be received in longitudinal tracks 111, 131 formed in the first element 11 and the third element 13. The connection portions 217 may form friction fits with the longitudinal tracks 131, alternatively the connection portions 217 may form a snap-fit connection with the longitudinal tracks 131. Each connection portion 217 comprises a centring device 218. The centring device 218 is configured to extend within the longitudinal track 131 in which the connection portion 217 is arranged. The centring device 218 is configured to resiliently deform in a direction perpendicular to the longitudinal track 131. The centring device 218 is formed as an arm configured to extend within the associated longitudinal track. The arm is biased by a spring force (not indicated in detail) in direction away from the rectangular frame, when the connection portion 217 is connected with the longitudinal track. Thus, the centring device 218 is kept in tension. The tensioning of the centring devices 218 arranged on their associated connection portions 217 helps to centre the rectangular frame relative to the corner assembly 20. The centring device 218 further comprises an abutment portion 219. The abutment portion 219 is arranged at one end of the arm. When the connection portion 217 is connected with the longitudinal track 131, the abutment portion 219 abuts an end surface 132 of the third element 13. The end surface 132 being defined by the longitudinal track 131.

[0041] The first stationary extension element 211 is seen formed with a substantial L-shape, where the short leg formed by the base portion 210 is connected to the cover element 212 and extends perpendicularly from the cover element 212. The long leg of the first stationary extension element 211 extends perpendicularly to the short leg, in the outwards direction of the insect screen 1, and is configured to extend over the ledge 221 of the connection piece 22 in the mounted condition of the insect screen 1. Preferably, the long leg extends in a plane parallel to a screening plane defined by the screening body 15. Preferably, the long leg extends in a plane parallel to the first side 2122 of the cover element 212. The extension element 211 is configured to extend longitudinally away from the rectangular frame formed by the first element 11, the second element 12, the third element 13, and the fourth element 14. Preferably, the extension element 211 extends longitudinally away from the rectangular frame with an angle of substantially 135 degrees relative to the longitudinal extension of the adjacent first element 11 and the third element 13. Having the extension element 211 extending away with an angle of substantially 135 degrees opens up for the corner element 21 to be applicable to any of the four corners, as the corner element 21 is not limited to any corners by the extension element 211.

[0042] Furthermore, the cover element 212 is seen comprising a cover ledge 2121. The cover ledge 2121 being configured for receiving part of the third element 13 and to extend over part of the third element 13. The cover ledge 2121 may facilitate a smooth transition from the third element 13 to the cover element 212.

[0043] In the embodiment shown, the corner assembly 30 joining the first element 11 and the fourth element 14 has a corner element 31 (see Figs 11 and 12) formed identically to corner element 21. The corner element 31 is thus also provided with a stationary extension element (not indicated), constituting a second stationary extension element.

[0044] It would also be possible to provide mirror-inverted versions in case it is more desirable to have an extension element which is for instance parallel with one of the adjacent elements of the rectangular frame.

[0045] While forming all the extension elements of the insect screen as stationary extension elements extending longitudinally away from the rectangular frame with an angle of substantially 135 degrees relative to the longitudinal extension of the respective adjacent elements would lead to a simplified initial step of assembling the insect screen 1, since the corner elements are not bound to any specific corner of the insect screen, thus removing the risk of arranging the corner elements at the wrong corners during installation, later steps of the installation would be complicated, since installing the insect screen would then require that each corner element be connected with the respective connection piece before fastening the entire insect screen to the roof window.

[0046] Referring to Fig. 5, showing a schematic perspective view of the connection piece 22 shown in Fig. 3. The connection piece 22 forms a receiving space 222 for receiving and delimiting movement of the associated extension element 211 of the corner element 21 of corner assembly 20. The receiving space 222 is formed by a first receiving surface 223, a second receiving surface 224, and the ledge 221 of the connection piece 22. The first receiving surface 223, the second receiving surface 224 and the ledge 221 are connected to each other, and the first receiving surface 223 and the second receiving surface 224 extend with an angle to the plane defined by the rectangular frame and perpendicularly to each other. In the shown embodiment, the first receiving surface 223 comprises an aperture 225 for receiving a screw (for instance as indicated as screw 81 in the exemplary installation situation in Fig. 13) for connecting the associated connection piece 22 to a part of an inclined roof window or a flat roof window 2.

[0047] In this way, back sides of the first and second receiving surfaces 223, 224 are in abutment with the corner surfaces of the part of the roof window 2. In turn, this means that it is possible to provide the connection piece 22 with an abutment surface on the ledge 221 which forms an angle with the support surface provided by the part of the roof window 2. Depending on a possible inclination of the inwards facing walls of part of the roof window 2, the angle may be for instance 85 to 95 degrees, i.e. the ledge 221 extends substantially perpendicular to the walls of the part of the roof window 2 in the mounted condition.

[0048] Fig. 6 shows a schematic perspective view from an interior of the corner of the insect screen 1. Fig. 6 is exploded in order to illustrate the connection between the connection portions 217 of the corner element 21 and the respective first and third elements 11, 13 as indicated by the longitudinal track 111, 131 configured for receiving the connection portion 217, to connect the corner element 21 to the first element 11 and the third element 13. The longitudinal tracks 111, 131 may extend fully through the first and third elements 13 or only partly through the respective element.

[0049] Also visible in Fig. 6 is the first side 2122 of the cover element 212. The first side 2122 faces towards an interior of the building in a mounted condition of the insect screen 1. In the shown embodiment, the first side 2122 of the cover element 212 is configured to extend over the third element 13 and the first element 11. Furthermore, a perimeter of the first side 2122 of the cover element 212 is configured to extend to allow the first side 2122 of the cover element 212, to cover the connection piece 22 and the rest of the corner element 21. Consequently, when viewing the corners of the insect screen 1 from an interior of a building in which the insect screen 1 is mounted only the first side 2122 of the cover element 212 of the corner assembly 20 is seen.

[0050] It also emerges from Fig. 6 that the connection piece 22 is completely comprised within the outer periphery of the insect screen 1, as defined by the rectangular frame formed by the first to fourth elements 11-14. No components of the insect screen 1 thus protrude outside this periphery to interact with the surrounding, i.e. there are no engagement means on the insect screen 1 that require counterpart engagement means on the roof window 2, neither does fastening of the insect screen 1 require portions of components extending beyond the periphery for fastening to a subjacent structure such as an inner wall of the building itself.

[0051] Referring now to Figs 7 to 10 for a description of another type of corner element than corner element 21 described in the above, Fig. 7 shows a schematic top view from an exterior of a corner element 41 of the insect screen 1. The extension element 411 of corner element 41 is formed as a first movable extension element 411. The first movable extension element 411 is movable between an assembled position and a disassembled position. The first movable extension element 411 is in Fig. 7 arranged in the assembled position. In the assembled position the first movable extension element 411 is directed outwards, i.e. away from the centre of the insect screen 1, and is configured to extend over and rest on the ledge of the associated connection piece by gravitational force. In the disassembled position the first movable extension element 411 is configured to being disengaged from the ledge of the associated connection piece. In the embodiment shown, the first movable extension element 411 is movable between the assembled position and the disassembled position by rotation. In this way the first movable extension element 411 may rotated by a suitable angle, typically 90 degrees, to assume the disassembled position.

[0052] Furthermore, in the shown embodiment the first movable extension element 411 is lockable in the assembled condition and the disassembled condition. The first movable extension element 411 comprises a wing 4113 connected to and protruding from the first movable extension element 411. The corner element 41 further comprises a locking cavity 4111. The wing 4113 in the disassembled condition is arranged in the locking cavity 4111. The locking cavity 4111 is formed with a complementary shape to that of the wing 4113, thus when the first movable extension element 411 is rotated to the disassembled position, the wing 4113 is aligned with the locking cavity 4111 and falls into the locking cavity 4111, thus locking the first movable extension element 411 in the disassembled condition. To unlock the first movable extension element 411 from the disassembled condition, the wing 4113 may pushed out of the locking cavity 4111, e.g. by applying a pressure to the first movable extension element 411 from an interior of a building in which the insect screen 1 is mounted.

[0053] The corner element 41 further comprises a pair of locking pins 4112. The wing 4113 in the assembled condition is arranged in-between the locking pins 4112. The locking pins 4112 are arranged at a distance from each other complementary to a width of the wing 4113. When the first movable extension element 411 is rotated to the assembled position, the wing 4113 moves past a locking pin 4112, and into the space in-between the locking pins 4112, thus locking the first movable extension element 411 in the assembled position. The wing 4113 when moving past the locking pin 4112 may slightly elastically deform and slide onto the locking pin and when the wing 4113 passes the locking pin 4113 it snaps back to a relaxed state.

[0054] Details of the corner element 41 are shown in Fig. 8. Here, it is shown how the wing 4113 of the first movable extension element 411 is provided on a base portion 4114 lodged in an opening 4115 of the corner element 41.

[0055] Referring to Fig. 9, showing a schematic perspective view from an interior of a corner of the insect screen 1 according an embodiment of the invention. Fig. 9 is exploded in order to illustrate the connection between the connection portions 417 of the corner element 41 and the respective second and fourth elements 12, 14 as indicated by the longitudinal tracks 121, 141 configured for receiving the connection portions 417, to connect the corner element 41 to the respective second and fourth element 121, 141. As in the above-described embodiment of the corner element 21, the corner element 41 is provided with a centring device 418 an an abutment portion 419. The abutment portion 419 is arranged at one end of the arm. When the connection portions 417 are connected with longitudinal tracks 121, 141, the abutment portions 419 abut end surfaces 122, 142.

[0056] A first side 4122 of a cover element 412 of the corner elements 41 comprising the first movable extension element 411 comprises one or more indicators 414. The indicators 414 being for indicating whether the associated movable extension element 411 of the corner element 40 is in the assembled position or the disassembled position. In the shown embodiment, the indicators 414 is provided as symbols on the first side 4122 of the cover element 412. The corner elements 42 further comprises a tool interface 415 connected to the first movable extension element 411. The tool interface 415 is configured to allow a tool to deliver a force to the first movable extension element 411 to move the first movable extension element 411 between the assembled position and the disassembled position. The tool interface is in the embodiment shown provided as a slot 415. When the first movable extension element 411 is in the assembled position, the slot 415 is aligned with the symbol indicating the first movable extension element 411 is in the assembled position. When the first movable extension element 411 is in the disassembled position, the slot 415 is aligned with the symbol indicating the first movable extension 411 element is in the disassembled position. The interface 415 extends through the first side 4122 of the cover elements 412 to allow the tool to be introduced via the interior to interact with the tool interface 415.

[0057] The corner assembly 50 is provided with a corner element 51 corresponding to the corner element 41 and comprises the second movable extension element in the embodiments shown and described. As with the stationary extension elements, it is possible to design the corner elements 41 and 51 as identical or mirror-inverted components.

[0058] Referring now briefly again to Fig. 12 showing the third embodiment of the kit of parts 10, it is seen that a set of tools 60 is provided at each end of a package containing the third element 13, the fourth element 14 and the screening body 15. The tools 60 fulfil the dual function of acting as transportation holding means and as a tool for connecting the screening body 15 to the first element 11 and the second element 12, namely by laying a respective cord of a set of cords 70 in a track (not shown in detail) of the first element 11 and the second element 12 in which an edge of the screening body 15 has been introduced to provide a spline connection between the cords 70 and the respective elements 11, 12. Finally, the kit of parts 10 also comprises a packaging 80 with fastening means, here shown as comprising screws (including screw 81 shown in Figs 13 and 14 below) and a screw driver (not indicated in detail).

[0059] Assembly and installation of an insect screen provided by the kit of parts 10 shown in Fig. 12 is shown in subsequent Figs 13 to 19. It is to be understood that corresponding steps with suitable modifications are carried out also if starting from another configuration of the kit of parts. It is also possible to provide only the connection pieces 22 separately and the remaining parts of the insect screen 1 pre-assembled.

[0060] In an initial step, the parts of the kit are prepared for assembly. This may include steps such as removing any packaging, disengaging tools 60 from the rolled-up

package containing the third element 13, the fourth element 14 and the screening body 15, and unfolding this package to flatten the screening body 15.

[0061] Subsequently, corner elements 21, 31 are connected to the first element 11 and corner elements 41, 51 to the second element 12. Then, the corner elements 21, 31 are connected to one end of respective adjacent elements 13 and 14 to provide the connection with the first element 11, and corner elements 41, 51 to the other end of respective adjacent elements 13 and 14 to provide the connection with the second element 12. A rectangular frame has now been formed. The step of connecting the corner elements 21, 31, 41, 51 includes inserting the connection portions 217, 417 (and corresponding for the other two corner elements 31, 51) into the longitudinal tracks 111, 121, 131, 141 of the respective elements 11, 12, 13, 14. Optionally, it is possible to secure the engagement also by form-locking engagement such as for instance introducing screws through the ends of the elements 11-14 and into the connection portion 217, 417.

[0062] The free edges of the screening body 15 are then connected to the first element 11 and the second element 12. In the kit of parts 10 utilised for the exemplary installation situation, this includes application of the set of cords 70 and the tools 60.

[0063] With the insect net 1, except for the connection pieces 22, now ready to be installed, the connection pieces 22 are positioned and fastened to the part of the roof window 2. The positioning is facilitated by a break-off positioning part 226 connected to the connection piece 22 itself, see Fig. 14, which ensures that the connection piece 22 is located at the correct position in the interior-exterior direction. Positioning in the perpendicular plane takes place by moving the connection piece into the corner of the part of the roof window 2 until the back sides of the first and second receiving surfaces 223, 224 are in abutment with the corner surfaces of the part of the roof window 2. Fastening is carried out by introducing screw 81 through aperture 225 and then into the material of the part of the roof window 2. As mentioned, the fastening may be carried out in alternative ways. The break-off positioning part 226 is broken off from the connection piece 22 and discarded, preferably recycled by appropriate environmentally responsible disposal means. This process is repeated at all four corners of the part of the roof window 2.

[0064] The remaining, assembled parts of the insect screen 1 forming the rectangular frame are now grabbed by the installer who eases the side of the insect screen 1 formed by the first element 11 and corner elements 21, 31 into connection with the connection pieces in that the first and second stationary extension elements 211 are brought to rest on the respective ledge 221 of the connection pieces 22.

[0065] It is then ensured that the activation means of the corner elements 41, 51 are in the correct position such that the first and second movable extension elements 411 are in the dissembled state as indicated in Fig. 18. In the kit of parts 10 of Fig. 12, these activation means comprise a grip portion 416 interacting with the movable extension element 411, cf. Fig. 19.

[0066] The installer now lifts the rectangular frame of the insect screen 1 such that the second element 12 with corner elements 41, 51 are aligned with the connection pieces at the opposing corners of the part of the roof window 2. During this operation, the rectangular frame of the insect screen 1 undergoes a rotating movement which is accommodated for by the engagement of the stationary extension elements 211 in the receiving space 222 of the respective connection pieces 22.

[0067] Finally, the first movable extension element 411 is rotated by the grip portion 416 such that the first movable extension element 411 is brought to rest on the ledge 221 of the connection piece 22. This operation is repeated at the corner element 51.

[0068] The insect net 1 is now in its mounted condition in which it is supported at each of the four corners by the corner assemblies provided by the corner elements 21, 31, 41, 51 and the associated connection pieces 22.

[0069] The person skilled in the art realizes that the present invention by no means is limited to the preferred embodiments described above. On the contrary, many modifications and variations are possible within the scope of the appended claims. For example, the features described in relation to one corner of the insect screen 1 is equally applicable to the other corners of the insect screen 1. In addition to the embodiments described in the above, in which the insect screen comprises two stationary extension elements 211 and two movable extension elements 411, and in which the two corner elements 21, 31 comprising the two stationary extension elements 211 are connected to either the first element 11, the second element 12, the third element 13, or the fourth element 14, and the two corner elements 41, 51 comprising the two movable extension elements 411 are connected to the opposing element of the rectangular frame, other configurations are conceivable.

[0070] The insect screen may easily be dismounted and disassembled for its components to be exchanged, reused or responsibly disposed of.

List of reference numerals

[0071]

1	Insect screen
2	Roof window
3	Light shaft
4	Ceiling
10	Kit of parts
11	First element

111	Longitudinal track
112	End surface
12	Second element
121	Longitudinal track
122	End surface
13	Third element
131	Longitudinal track
132	End surface
14	Fourth element
141	Longitudinal track
142	End surface
15	Screening body
20	Corner assembly
21	Corner element
210	Base portion
211	First stationary extension element
212	Cover element
2121	Cover ledge
2122	First side
2123	Cover flange
2124	Second side
216	Tip part
217	Connection portion
218	Centring device
219	Abutment portion
22	Connection piece
221	Ledge
222	Receiving space
223	First receiving surface
224	Second receiving surface
225	Aperture
226	Break-off positioning part
30	Corner assembly
31	Corner element
40	Corner assembly
41	Corner element
411	First movable extension element
4111	Locking cavity
4112	Locking pin
4113	Wing
4114	Base portion
4115	Opening
414	Indicator
415	Activation means / Tool interface / Slot
416	Activation means / Grip portion
417	Connection portion
418	Centring device
419	Abutment portion
50	Corner assembly
51	Corner element
60	Tool
70	Set of cords
80	Packaging with fastening means
81	Screw

Claims

1. A flat roof window or inclined roof window insect screen (1) for shielding a window opening of a flat roof window or an inclined roof window mounted in a roof of a building in a mounted condition of the insect screen (1), the insect screen comprising a first

element (11), a second element (12), a third element (13) and a fourth element(14), and a screening body (15), in which the first element (11), the second element (12), the third element (13) and the fourth element (14) form a rectangular frame with a pre-defined outer periphery of the insect screen and such that the first element (11) and the second element (12) extend substantially in parallel to each other, and that the third element (13) and the fourth element (14) extend substantially in parallel to each other, wherein the screening body (15) comprises four side edges connected to a respective one of the first, second, third and fourth elements (11, 12, 13, 14), wherein the insect screen (1) further comprises at least two corner assemblies (20, 30, 40, 50) each comprising one or more corner elements (21, 31, 41, 51) and one or more associated connection pieces (22), wherein the at least two corner assemblies (20, 30, 40, 50) form corners of the rectangular frame, and wherein the at least two corner elements (21, 31, 41, 51) are connected to the first element (11), the second element (12), the third element (13), and the fourth element (14) respectively, to form the rectangular frame,

characterised in that

each connection piece (22) is configured to be connected to a part of the flat roof window or the inclined roof window, that each connection piece (22) comprises a ledge (221), that each corner element (21, 31, 41, 51) comprises an extension element (211, 411) configured to extend at least partly over to overlap and engage with the ledge (221) of the associated connection piece (22) by gravitational force in the mounted condition of the insect screen, and that the connection pieces (22) and the corner elements (21, 31, 41, 51) of the corner assemblies (20, 30, 40, 50) are substantially comprised within the outer periphery of the insect screen (1) in the mounted condition.

2. An insect screen according to claim 1, comprising at least four corner assemblies (20, 30, 40, 50), each comprising a corner element (21, 31, 41, 51) and an associated connection piece (22), wherein the corner assemblies (20, 30, 40, 50) each forms a corner of the rectangular frame, and wherein the corner elements (21, 31, 41, 51) are connected to respective adjacent elements of the first element (11), the second element (12), the third element (13), and the fourth element (14) to form the rectangular frame.

3. An insect screen according to claim 1 or 2, wherein at least two of the extension elements (411) are formed as a first movable extension element (411) and a second movable extension element movable between an assembled position and a disassembled position, wherein in the assembled position the first movable extension element (411) and the second movable extension element are configured to extend over and rest on the ledge (411) of the associated connection piece by gravitational force, and wherein in the disassembled position the first movable extension element (411) and the second movable extension element are configured to being disengaged from the ledge of the associated connection piece (22).

4. An insect screen according to claim 3, wherein the first movable extension element (411) and the second movable extension element are movable between the assembled position and the disassembled position by rotation and/or by linear displacement, the first movable extension element (411) and the second movable extension element being preferably biased towards the assembled position and/or are lockable in the assembled position.

5. An insect screen according to any of the proceeding claims, wherein each corner element (21, 31, 41, 51) comprises a cover element (212, 412) configured to cover a corner of the rectangular frame, wherein a first side of the cover elements (212, 412) faces towards an interior of the building in the mounted condition of the insect screen (1), the corner element (21, 31, 41, 51) preferably extending over or abutting respective adjacent elements of the first element (11), the second element (12), the third element (13), and the fourth element (14).

6. An insect screen according to claim 5 and any of claims 3 or 4, wherein the first side (2122) of each cover element (412) of the corner elements (41, 51) comprising the first movable extension element (411) and the second movable extension element comprises one or more indicators (414) for indicating whether the associated movable extension element (411) of the corner element (40) is in the assembled position or the disassembled position.

7. An insect screen according to claim 6, wherein the corner elements (41, 51) associated with the first movable extension (411) element and the second movable extension element each comprises an activation means (415, 416) connected to the associated movable extension element (411), wherein the activation means (415, 416) is configured to allow delivery of a force to the associated movable extension element (411) to move the associated movable extension element (411) between the assembled position and the disassembled position, said activation means comprising a tool interface (415) configured to allow insertion of a tool, or a grip portion (416).

8. An insect screen according to any of the preceding claims, wherein each connection piece (22) forms a receiving space (222) for receiving and delimiting movement of the associated extension element

(211, 411).

9. An insect screen according to claim 8, wherein each receiving space (222) of the connection pieces (22) is formed by a first receiving surface (223), a second receiving surface (224), and the ledge (221) of the connection piece (22), wherein the first receiving surface (223), the second receiving surface (224) and the ledge (221) are connected to each other, and wherein the first receiving surface (223) and the second receiving surface (224) extends with an angle to the plane defined by the rectangular frame and perpendicularly to each other, the first receiving surface (223) and/or the second receiving surface (224) preferably comprising an aperture (225) for receiving a screw for connecting the associated connection piece (22) to a part of a roof window (1).

10. An insect screen according to claim 2, wherein the first element (11), the second element (12), the third element (13), and the fourth element (14) each comprises a longitudinal track (111, 121, 131, 141), wherein each corner element (21, 31, 41, 51) comprises two connection portions (217, 417), wherein one of the connection portions (217, 417) is configured to be received in the longitudinal track (131, 141) of either the first side element (13) or the second side element (14) and the other connection portion (217, 417) is configured to be received in the longitudinal track (111, 121) of the first element (11) or the second element (12), each connection portion (217, 417) preferably comprising a centring device (218, 418) extending within the longitudinal track (111, 121, 131, 141) and being resiliently deformable in a direction perpendicular to the longitudinal track, wherein the centring device (218, 418) is kept in tension to centre the rectangular frame relative to the corner assemblies (20, 30, 40, 50), the centring device (218, 418) more preferably comprising an abutment portion (219, 419) abutting an end surface (112, 122, 132, 142) of the first element (11), the second element (12), the third element (13) or the fourth element (14), wherein the end surface (112, 122, 132, 142) is defined by the longitudinal track (111, 121, 131, 141).

11. An insect screen according to any of the preceding claims, wherein each corner assembly (20, 30, 40, 50) further comprises a break-off positioning part (226) removably connected to the connection piece (22) of the corner assembly (20, 30, 40, 50), and configured to aid in positioning and connection of the connection piece (22) relative to the roof window.

12. An insect screen according to any of the preceding claims, wherein at least two of the extension elements (211) are formed as a first stationary extension element (211) and a second stationary element.

13. An insect screen according to claims 2 and 12 and any of claims 3 or 4, wherein the two corner elements (21, 31) comprising the first stationary extension (211) element and the second stationary extension are element are connected to either the first element (11), the second element (12), the third element (13), or the fourth element (14), and wherein the two corner elements (41, 51) comprising the first movable extension element (411) and the second movable extension element are connected to an opposing element of either the first element (11), the second element (12), the third element (13), and the fourth element (14).

14. A kit of parts for providing an insect screen (1) according to any of claims 1 to 13, comprising a first element (11), a second element (12), a third element (13) and a fourth element (14), and a screening body (15), and in which the first element (11), the second element (12), the third element (13) and the fourth element (14) are configured to form a rectangular frame such that the first element (11) and the second element (12) extend substantially in parallel to each other, and that the third element (13) and the fourth element (14) extend substantially in parallel to each other, wherein the screening body (15) comprises a first side edge connected to or connectable to the third element (13), a second side edge connected to or connectable to the fourth element (14), a third side edge connected to or connectable to the first element (11), and a fourth side edge connected to or connectable the fourth element (12), wherein the kit of parts further comprises at least two corner assemblies (20, 30, 40, 50) each comprising a corner element (21, 41) and an associated connection piece (22), wherein the corner assemblies (20, 30, 40, 50) are configured to form corners of the rectangular frame, wherein the corner elements (21, 31, 41, 51) are connected to or connectable to respective adjacent elements of the first element (11), the second element (12), the third element (13) and the fourth element (14), to form the rectangular frame,
characterised in that
each connection piece (22) is configured to be connected to a part of a roof window, wherein each connection piece (22) comprises a ledge (221), wherein each corner element (21, 41) comprise an extension element (211, 411) configured to extend over and engage with the ledge (221) of the associated connection piece (22) by gravitational force in the mounted condition of the insect screen (1).

15. Method for mounting an insect screen for shielding a window opening of a roof window mounted in a roof of a building, wherein the method comprises the steps of:

providing an insect screen according to any one

of claims 1 to 13,
connecting the connection pieces of the corner assemblies to a part of the roof window, and
arranging the extension elements of the corner elements to extend over and engage with the ledge of the associated connection piece by gravitational force,
whereby the connection pieces and the corner elements of the corner assemblies are substantially comprised within the outer periphery of the insect screen in the mounted condition.

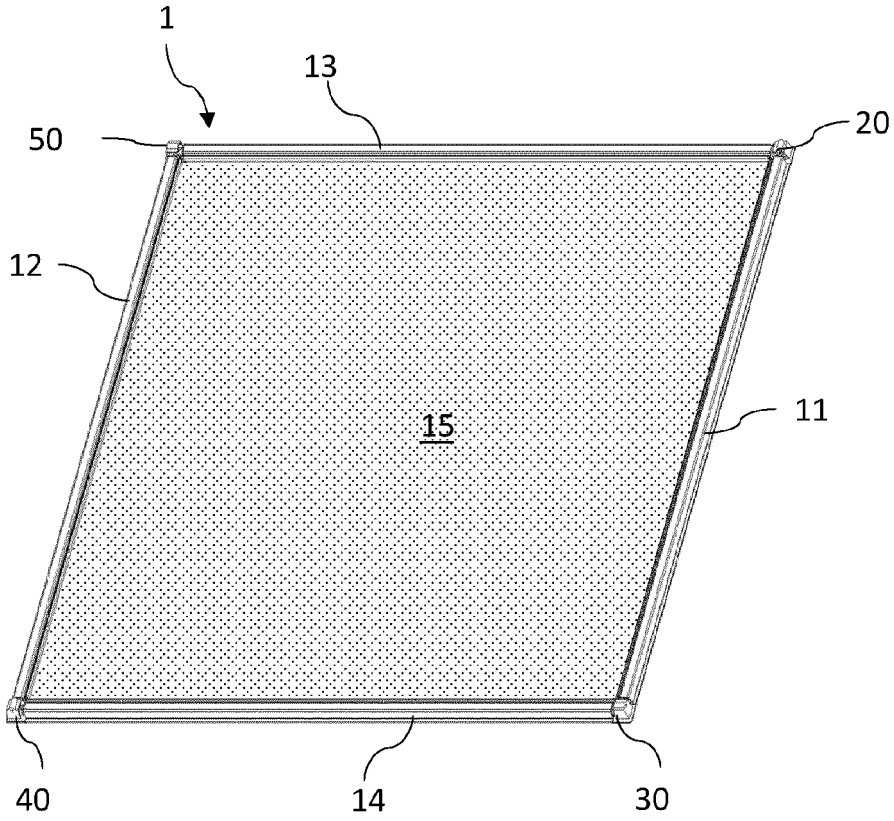

Fig. 1

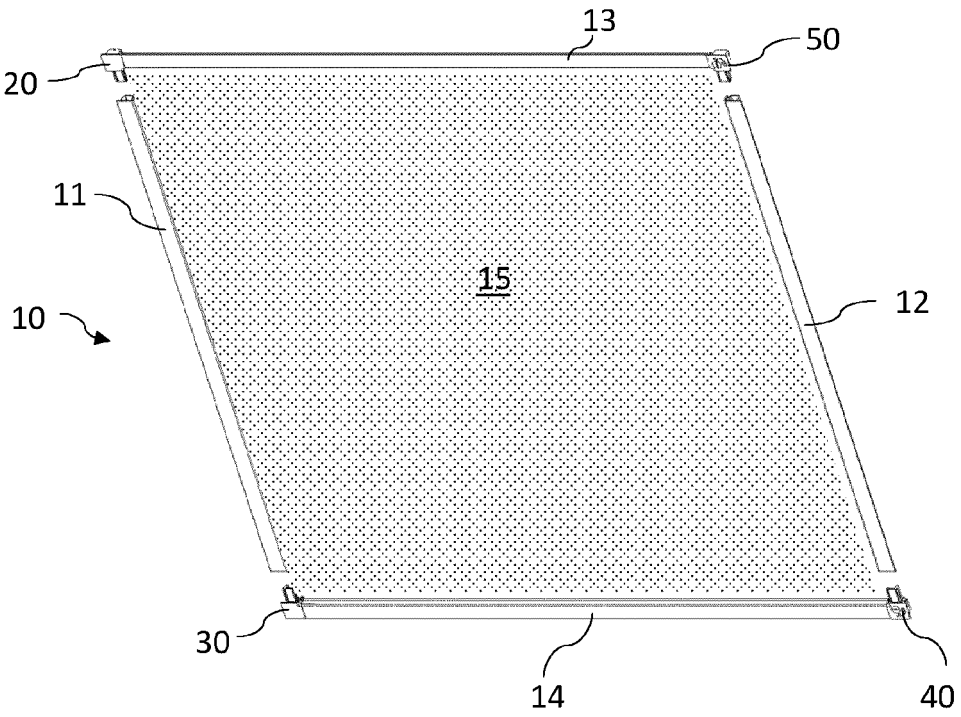

Fig. 2

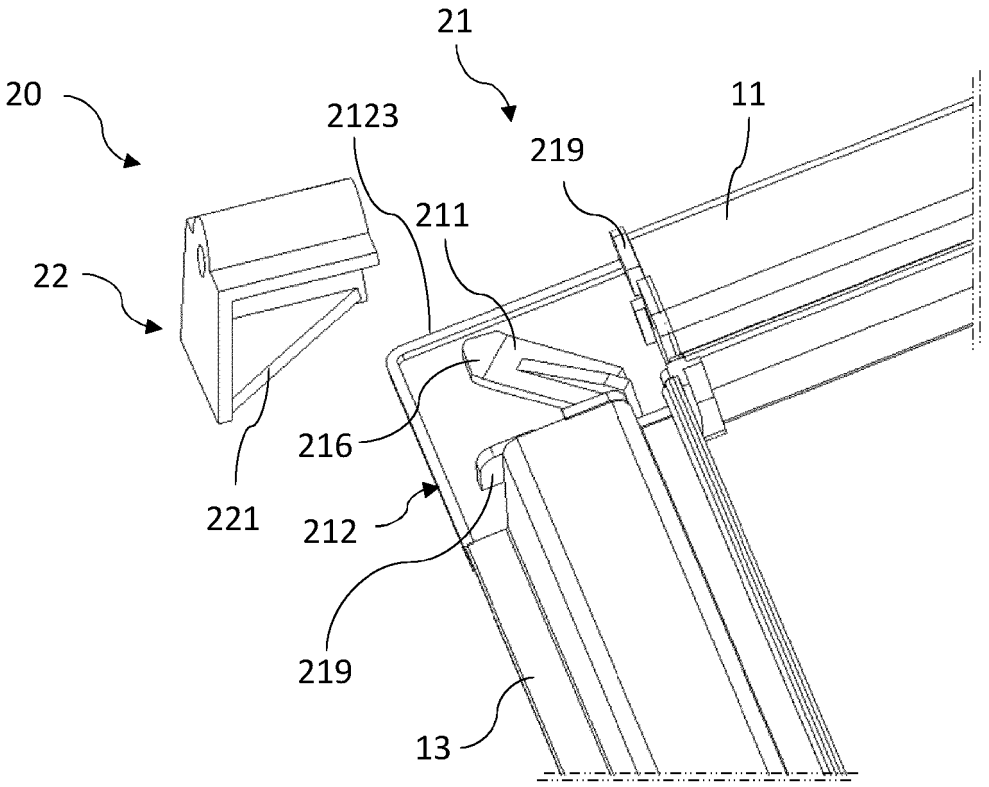
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Fig. 3

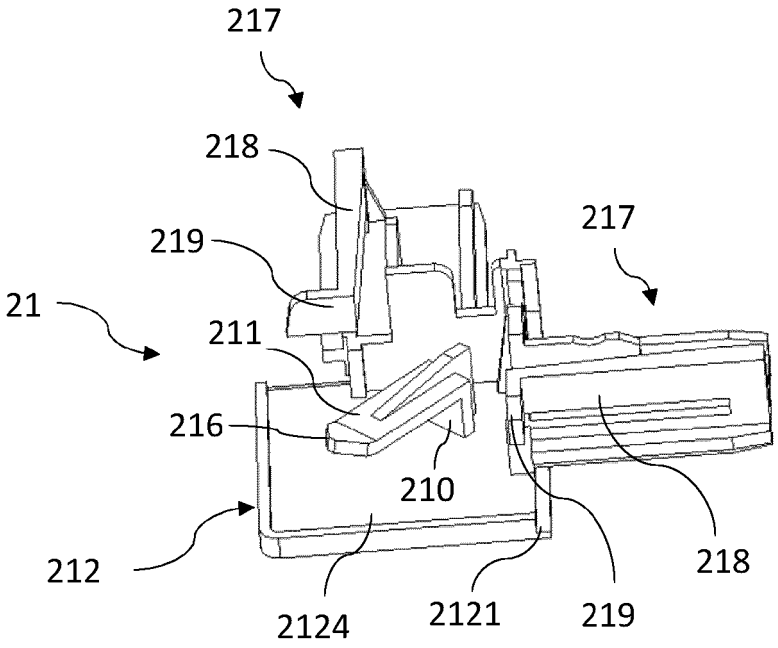
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Fig. 4

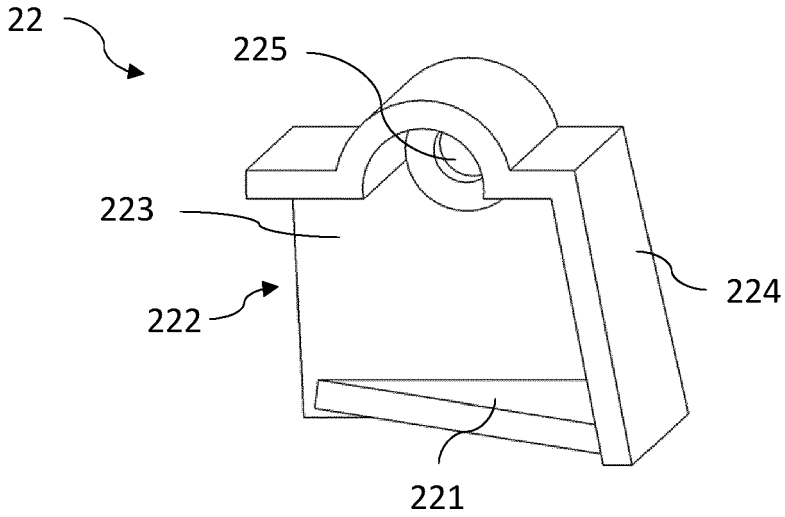
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Fig. 5

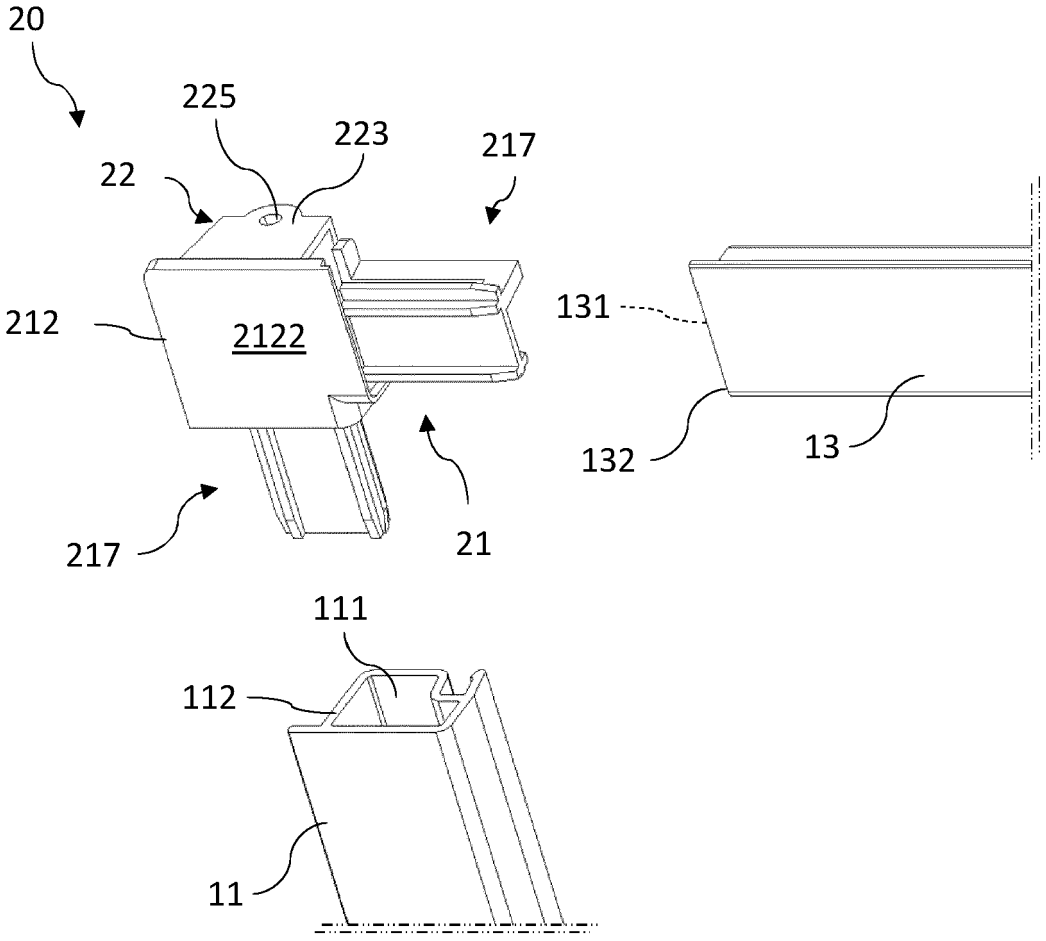
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Fig. 6

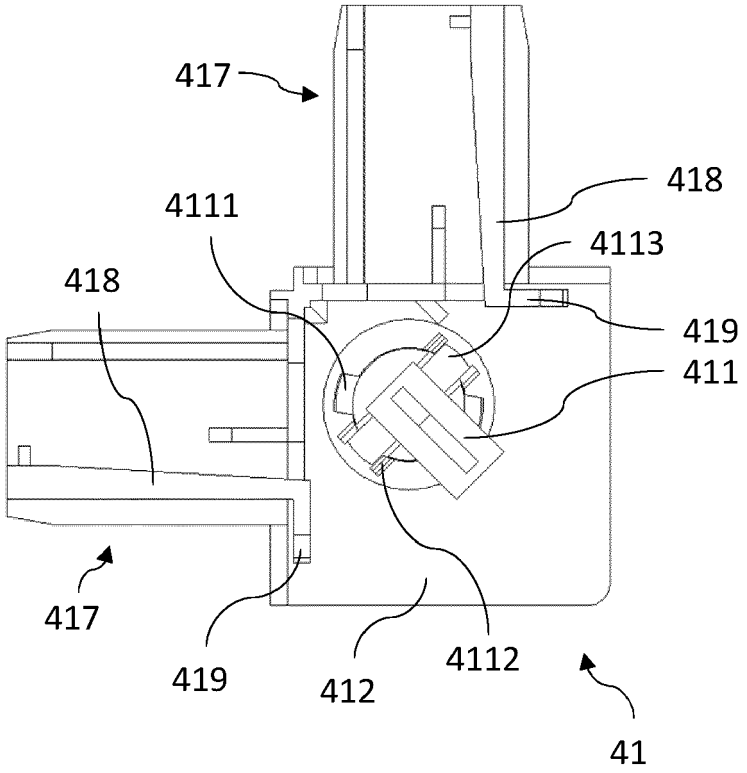
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Fig. 7

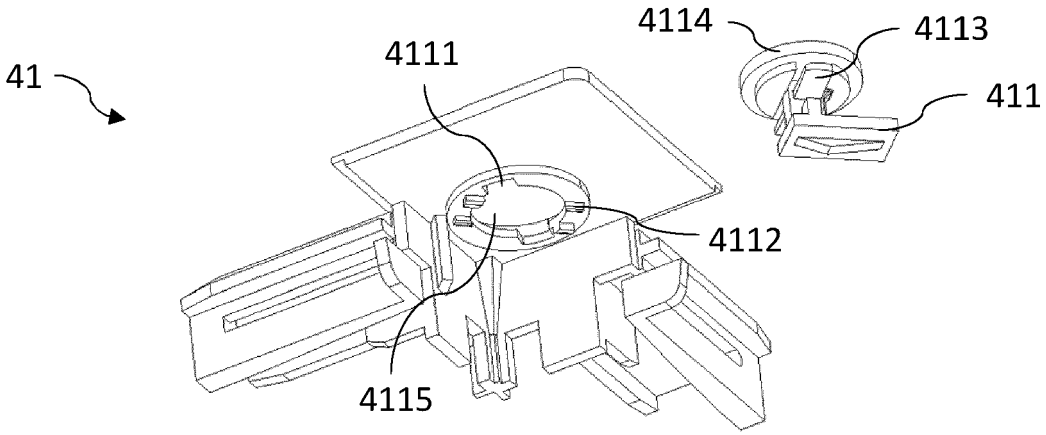
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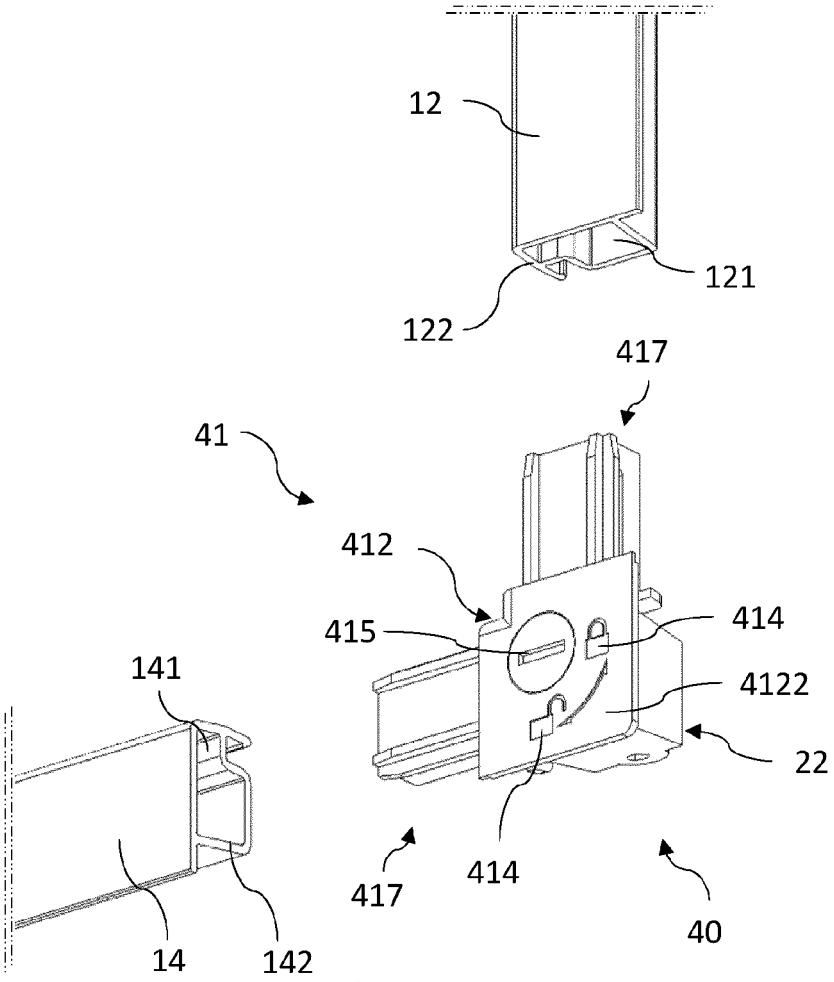
Fig. 8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4122
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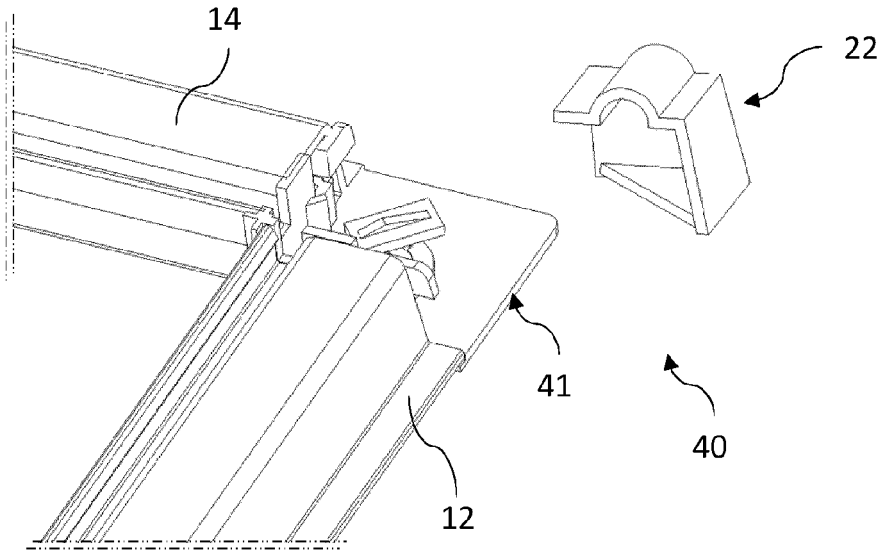
142

Fig. 9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22
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12

Fig. 10

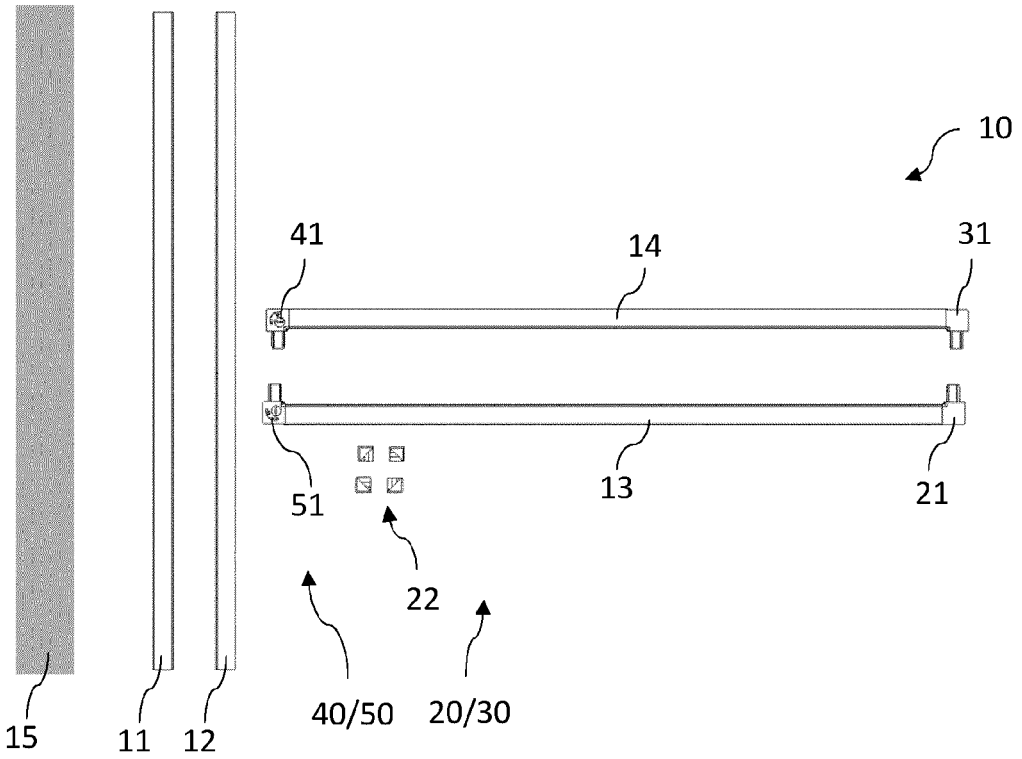
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Fig. 11

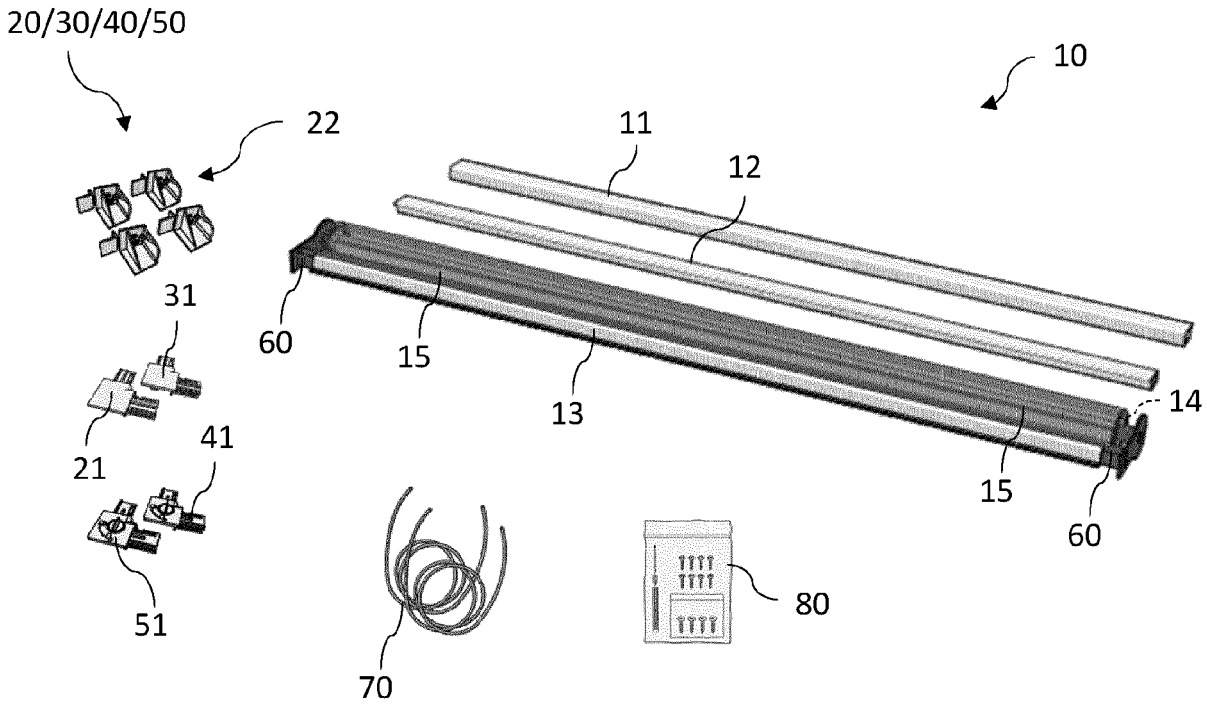
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Fig. 12

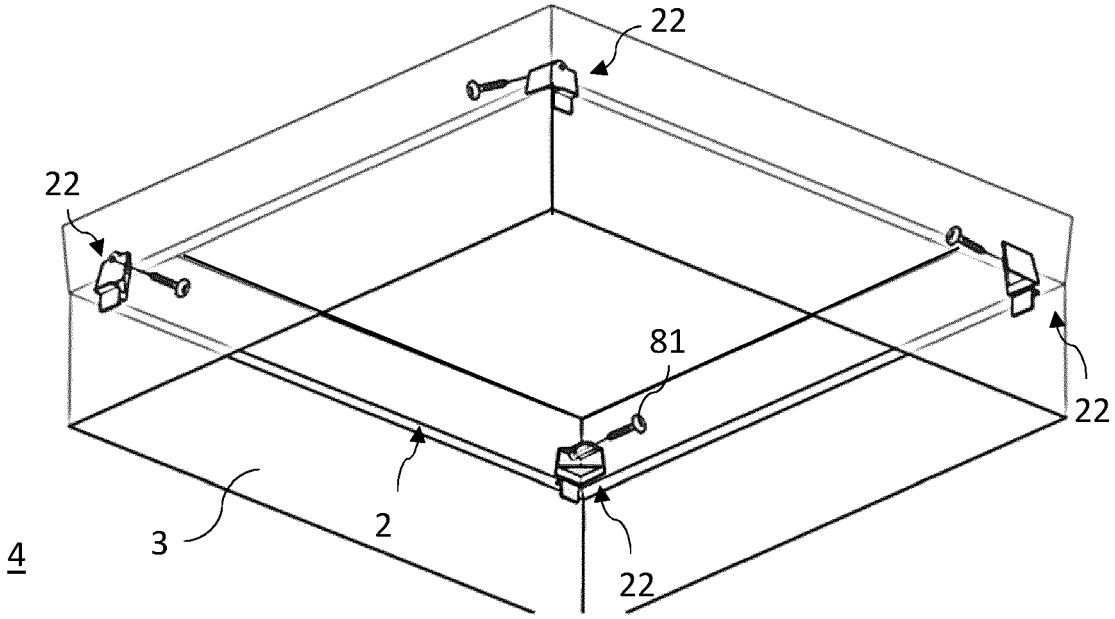

Fig. 13

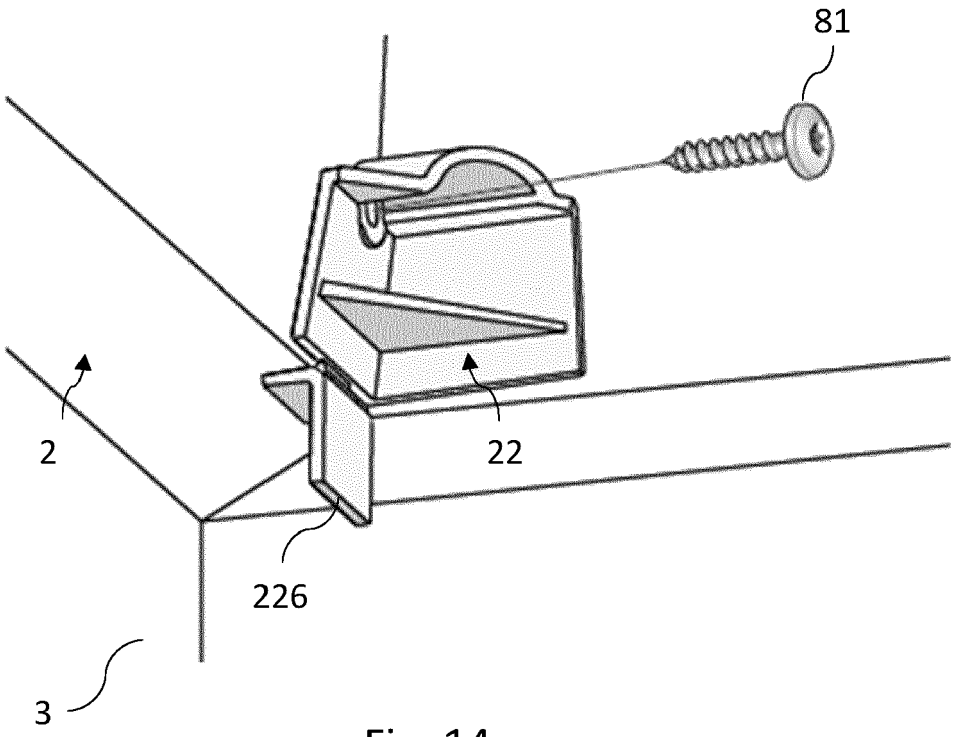

Fig. 14

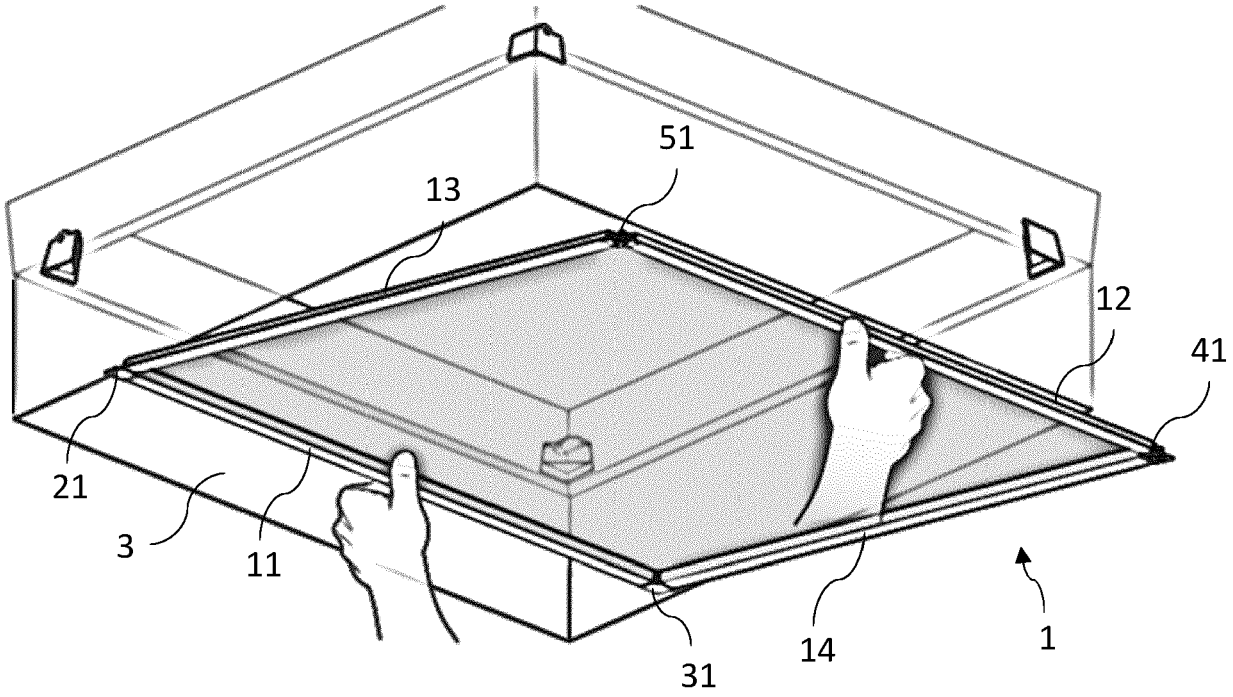

Fig. 15

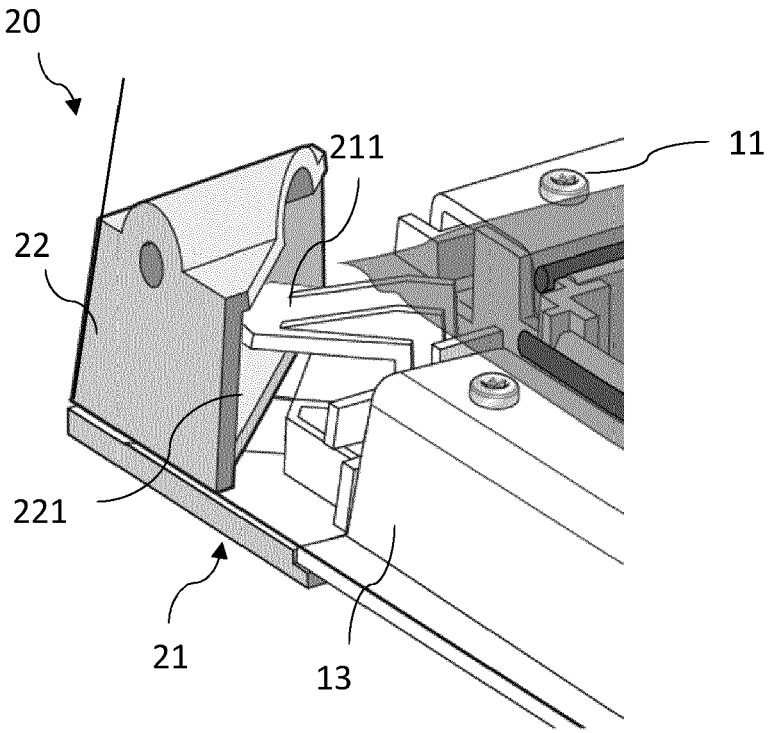

Fig. 16

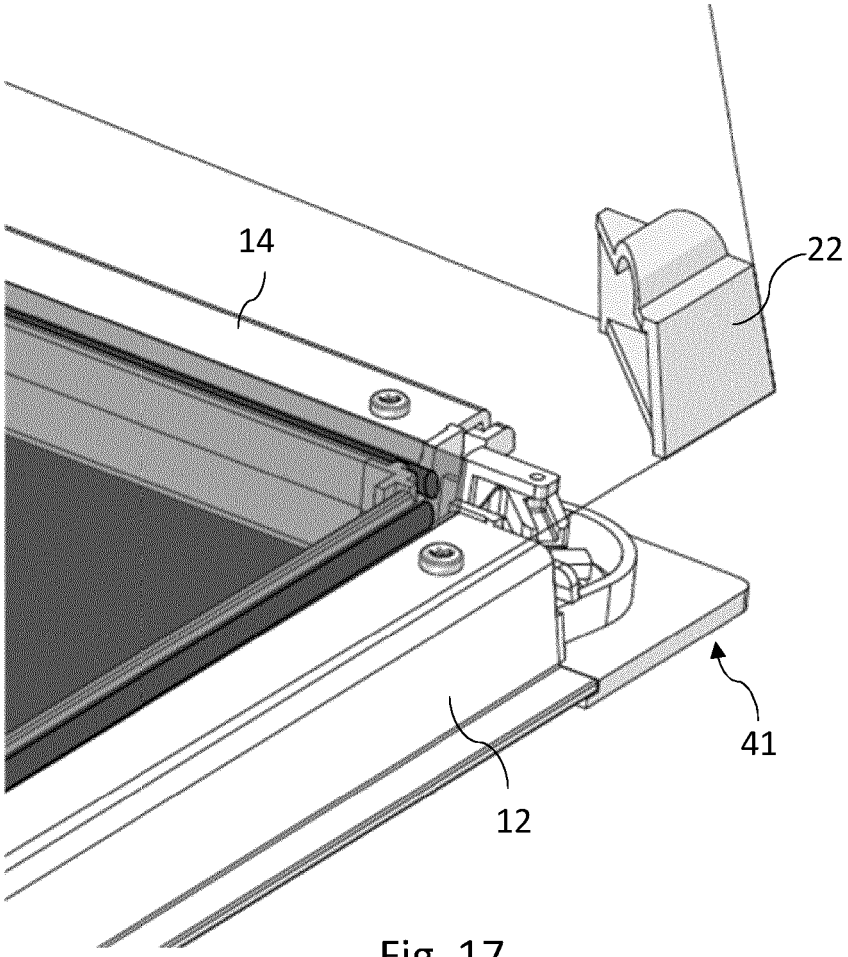

Fig. 17

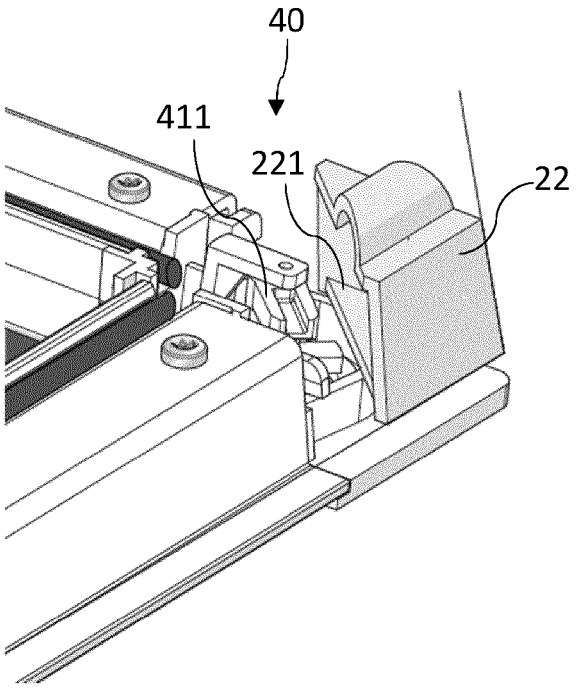

Fig. 18

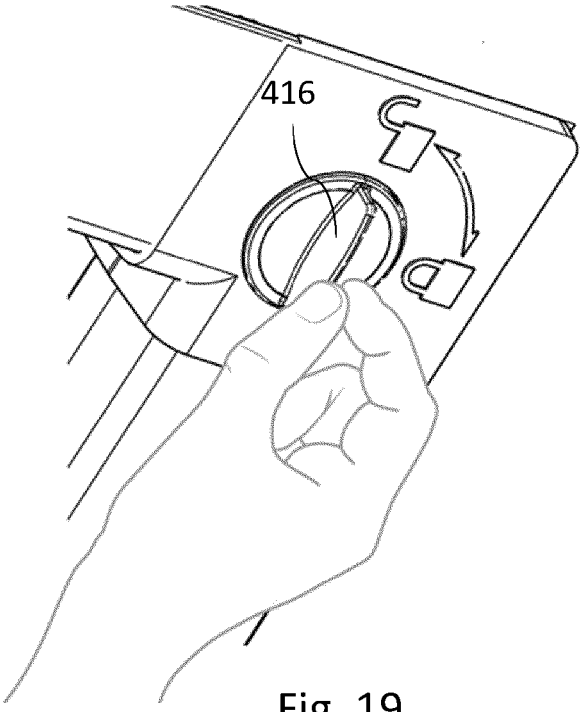

Fig. 19

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EUROPEAN SEARCH REPORT

Application Number
EP 22 15 4169

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	DE 20 2017 103279 U1 (MACS HOLDING GMBH [DE]) 3 September 2018 (2018-09-03) * the whole document *	1-15	INV. E06B9/52
A,D	US 2014/174021 A1 (MASSEY VICTOR [US]) 26 June 2014 (2014-06-26) * the whole document *	1-15	
A	JP 4 833158 B2 (YKK ARCHITECTURAL) 7 December 2011 (2011-12-07) * the whole document *	1-15	

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	12 July 2022	Bourgoin, J

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12-07-2022

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 202017103279 U1	03-09-2018	NONE	
US 2014174021 A1	26-06-2014	CA 2832539 A1	21-06-2014
		MX 347873 B	16-05-2017
		US 2014174021 A1	26-06-2014
JP 4833158 B2	07-12-2011	JP 4833158 B2	07-12-2011
		JP 2009002048 A	08-01-2009

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Patent documents cited in the description

- US 20140174021 A1 **[0004]**
- DE 2017103279 U1 **[0004]**