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(54) **PACKED ROOF WINDOW PRODUCTS AND A METHOD FOR INSTALLATION OF A ROOF WINDOW PRODUCT**

(57) A packed roof window product comprising a plurality of differently sized roof window related product components and packaging material components contained in a cardboard box (1), wherein the plurality of differently sized roof window related product components includes a plurality of fasteners (65), such as screws, nails or clamps, and wherein a collection of fasteners is interconnected by a paper ribbon (7). A method for installation of a roof window product is also disclosed.

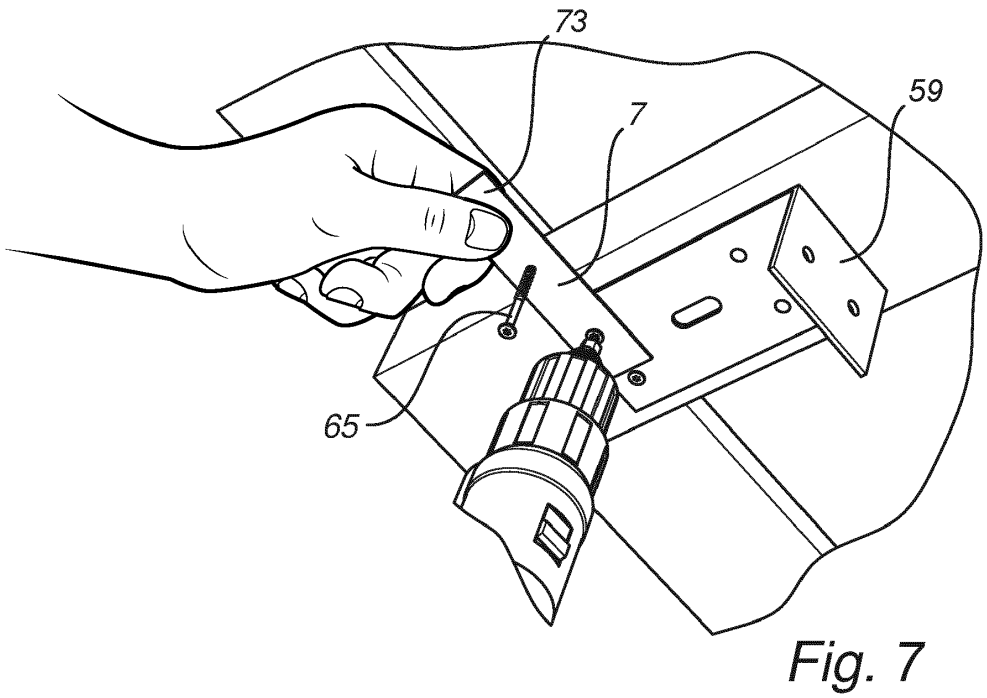

Fig. 7

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Description

Technical Field

[0001] The present invention relates to a packed roof window product comprising a plurality of differently sized roof window related product components and packaging material components contained in a cardboard box, wherein the plurality of differently sized roof window related product components includes a plurality of fasteners, such as screws, nails, or clamps. The invention further relates to a method for installation of such a roof window product.

Background Art

[0002] When installing windows in a roof it is vital to ensure that the roof window itself is securely attached to the roof structure and that the joint between the roof window and the roof structure is properly weatherproofed. It is therefore important that all components of roof window products, such as the roof window itself or a flashing assembly for a roof window, are used and are installed in the right way. To facilitate this, the product components are typically arranged in the cardboard box in an intended order of use and small components, such as screws, are kept in plastic bags. Furthermore, blocks of expanded polystyrene or similar shock absorbing material are used for protecting the product and/or for keeping the components in the intended position within the box. An example of a packed roof window, where these principles are used, is known from EP2748071B1, and an example of a packed flashing assembly for a roof window is known from EP1710163B1.

[0003] While these have worked very well, there is an ever-increasing demand for delivering products that are more environmentally friendly.

Summary of Invention

[0004] With this background, it is an object of the invention to provide a packed roof window product, which has a smaller climate footprint, without increasing the risk of errors in the installation of the product and maintaining a good protection of the product during transportation. It is noted that "roof window product" is intended to cover not only a roof window, but also products associated with the installation of a roof window, such as flashing assemblies, and products intended for being installed on a roof window, such as shutters.

[0005] This and further objects are achieved with a packed roof window product of the kind mentioned in the introduction, which is furthermore characterised in that a collection of fasteners is interconnected by a paper ribbon.

[0006] Traditionally small components, such as fasteners, have been contained in plastic bags, which in some instances have been attached to the cardboard box or to larger components, for example by means of an adhesive, to prevent them from becoming lost, either inside the box or when removed from the box. The use of plastic and adhesives, however, requires that the packaging material will have to be separated in different fractions for recycling. A paper ribbon on the other hand belongs to the same fraction as the cardboard box, which considerably increases the likelihood of the packaging material being recycled instead of just being disposed of as combustible waste and reduces the risk of recycled material being polluted by other materials.

[0007] Another potential advantage of using a paper ribbon instead of a plastic bag is that it may be biologically degradable. Light-weight packaging items, such as bags, plastic wrappings, and strips, are easily caught by wind when installing a roof window product on a roof of building and may end up in nature or other places where it cannot be collected by the installer. While it is of course not the intention to leave packaging material behind, a biodegradable paper ribbon does little harm.

[0008] In one embodiment the paper ribbon is also used for retaining the collection of fasteners in relation to the cardboard box. This may for example be advantageous if the roof window product comprises flashing or covering components. Flashing or covering components are typically made of sheet metal, such as aluminium and copper, and flashing or covering components made from aluminium are typically painted and lacquered. As flashing or covering components will be at least partially visible in the installed state of the roof window product, it is important that they are not scratched. By attaching the collection of fasteners to the cardboard box, the fasteners are prevented from moving too much around in the box, thus reducing the possibility for contact with other components, which might result in scratching.

[0009] Alternatively, the collection of fasteners and/or the paper ribbon interconnecting them may be attached to the cardboard box by other means, such as a secondary paper ribbon or an adhesive.

[0010] Similar considerations apply to other components of roof window products and in particular to mounting brackets and fasteners, such as screws, nails or clamps, which are typically made of metal and may damage other components if provided loose in the box.

[0011] In one embodiment, the paper ribbon forms part of the cardboard box or of a packaging material component. In this way the collection of fasteners is attached to the cardboard box or the packaging material component in the state of delivery of the packed roof window and can be released by removing the paper ribbon from the cardboard box or the packaging material component. As an example, a section of the cardboard box or of a carton or a paper bag serving as a packaging material component may be separated from the rest of the box, carton or bag by a perforation or similar weakening, allowing the section to be easily torn off when the collection of fasteners is to be used.

[0012] In one embodiment the paper ribbon is used for

retaining the collection of fasteners in a folded or rolled-up state. If the collection comprises a large number of fasteners, the paper ribbon can be folded or rolled, thereby arranging the fasteners in a compact, yet orderly state. A secondary paper ribbon or an adhesive may be used for keeping the collection in the folded or rolled-up state.

[0013] While paper ribbons are primarily described for use with a collection of components of a particular type made from the same or similar materials, it is to be understood that a paper ribbon may also be used for retaining a collection of fasteners of different type and/or size, such as nails and screw. The paper ribbon may then carry information regarding the intended use of the different fasteners, for example in the form of a colour coding and/or printed information. As an example, shorter screws may be intended for attaching mounting brackets to the frame of a roof window and longer screws may be intended for attaching the mounting brackets to a roof structure.

[0014] The paper ribbon can be a simple strip of material, which is attached to itself, to the cardboard box and/or to another item by an adhesive or glue, by one or more mechanical fasteners, and/or by physical engagement, such as a by tying a knot. The paper ribbon may also be a paper tape, i.e. a strip of paper provided with an adhesive or a glue on one or both sides, either as a continuous layer or as local depositions. The adhesive may be a pressure sensitive adhesive. The glue may be a dry glue activated by exposure to water.

[0015] The fasteners may penetrate through the paper ribbon, so that the fasteners extend substantially perpendicular to the major surfaces of the paper ribbon, or they may be attached to one side of the paper ribbon, for example by means of an adhesive, so that they extend substantially in parallel with the major surfaces of the paper ribbon. In one embodiment paper ribbon is provided on both sides of the fasteners, either by interconnecting two ribbons or by providing fasteners on approximate half of length of the ribbon and then folding it onto itself.

[0016] In one embodiment, where the fasteners penetrate through the paper ribbon, so that the fasteners extend substantially perpendicular to the major surfaces of the paper ribbon, the paper ribbon is made of carton or cardboard and an end section of the paper ribbon is left without fasteners. This allows the paper ribbon to serve as a holder and the end section to serve as a handle, so that an installer can hold onto the end section and use the paper ribbon for positioning one of the fasteners for installation, for example arranging it over an opening in a mounting bracket.

[0017] The paper ribbon may be provided with local or continuous reinforcements, for example in the form of fibres integrated in the paper or additional material applied on a surface of the ribbon. Reinforcement may for example be provided where the paper ribbon is in contact with each fastener or reinforcement may extend over the length of the paper ribbon to provide stiffness facilitating the use of the paper ribbon as a holder as will be described in further detail below.

[0018] The paper ribbon may be made wholly or partially of a heat-sealable paper, so that the ribbon can be attached to itself or to another item by heating the paper, for example by welding.

[0019] It is to be understood that while paper and cardboard are usually made from wood fibres, other plant fibres including fibres originating from straw, bamboo, bagasse, esparto, other grasses, hemp, flax and cotton may also be used, including combinations of different types of fibres. In Europe, up to 5% of alternative materials, such as the glue or adhesive, is acceptable, but a maximum of 3% is recommended for recycling.

[0020] Paper ribbon may also be used for:

- retaining a product component in relation to one or more other components, for example by attaching a smaller flashing or covering component to a larger flashing or covering component,
- retaining components, such as wires, cables, sealing strips, insulating members, underroof collars and vapour barriers, in a folded state,
- retaining a component, such as a sealing or insulating component, in a compressed state,
- attaching a packaging material component, preferably a shock absorbing material, to a product component,
- attaching a bag or a box containing a first product component to a second product component,
- attaching a bag or a box containing a first product component to a bag or a box containing a second product component, and/or
- retaining a tool for use in the installation of a roof window product in relation to the cardboard box.

[0021] A second aspect of the invention relates to a method for installation of a roof window product, wherein the paper ribbon of the collection of fasteners is used as a holder when mounting at least one of the fasteners. Instead of taking one fastener at a time and having to hold it by hand, the installer will then only have to grab hold of the paper ribbon and use this for positioning the fastener. In addition to reducing the risk of dropping the fastener, this may also allow a larger distance between the hand of the installer and the position of installation of the fastener. This may allow the installer to better see if the fastener is positioned correctly and to keep a safe distance to tools used for driving the fasteners into the material to which they are to be attached.

[0022] A section of the paper ribbon may become jammed between the fastener and the material into which it is inserted. This particularly applies when the fasteners penetrate through the paper ribbon. As the ribbon is made of paper, this will usually not be a problem and the jammed section can simply be torn off from the remainder of the paper ribbon. In this way the paper ribbon will become gradually shorter as the fasteners are used. Perforations or similar weakening may be provided for facil-

itating tearing of the paper ribbon at predefined locations, so that the fasteners are not unintentionally detached from the paper ribbon.

[0023] The paper ribbon may also be used for ensuring that fasteners are inserted with an intended mutual distance by providing them with the intended distance on the paper ribbon.

[0024] Embodiments and advantages described with reference to one aspect of the invention also applies to the other aspect of the invention.

Brief Description of Drawings

[0025] In the following description embodiments of the invention will be described with reference to the schematic drawings, in which

Fig. 1 is a perspective view of a cardboard box containing a packed roof window product,
Fig. 2 is a perspective exploded view of a roof window with packaging material components,
Fig. 3 corresponds to Fig. 2 but showing the packaging material components in the positions, in which they will be located when inside a cardboard box as the one shown in Fig. 1, and where elements underneath the pane of the roof window are also seen,
Fig. 4 is a perspective view of a cardboard box containing a packed roof window product in the form of a flashing assembly, where some components of the flashing assembly are retained by a paper ribbon,
Figs 5 and 6 are perspective views of collections of screws retained by paper ribbons, and
Fig. 7 is a perspective view showing the use of the paper ribbon in Fig. 5 as a holder.

Description of Embodiments

[0026] Referring initially to Fig. 1, a cardboard box 1 for containing a roof window product comprising a plurality of differently sized roof window related product components and packaging material components is shown. In this embodiment the cardboard box 1 is of a rectangular configuration having two major sides 11 and four minor sides 13, 14 extending between the two major sides (only one of the major sides and two of the minor sides being visible in this view). The shorter of the minor sides 13 is here shown in a partially assembled state. In the assembled state, the side sections 13' of minor sides 13 will extend perpendicular to the major side 11. In this embodiment the cardboard box 1 is configured for being opened as illustrated by the arrows P. This type of cardboard box 1 is typically used for heavy products such as roof windows with glass panes.

[0027] It is to be understood that the cardboard box 1 shown in Fig. 1 is merely an example of the invention, and that the cardboard box may have another shape to better fit the shape and dimensions of the roof window product and/or be configured for being opened in a different way.

[0028] Furthermore, it is to be understood that in the following, the same reference numbers will be used for elements having substantially the same function, even if not identical.

[0029] Figs 2 and 3 show how packaging material components in the form of blocks 42-47 of shock absorbing material are arranged around and on a roof window 5 to protect it from damage before it is arranged in a cardboard box as the one shown in Fig. 1.

[0030] Rectangular blocks 42, 43 of shock absorbing material extend alongside frame members 51 and a top frame member of the window frame of the roof window 5, and side liners 61 made from cardboard compensate for irregularities in the shape of the sides of the roof window 5. A block 44 of a more complex shape extends along a bottom frame member 52 and makes room for a cardboard carton 62 containing smaller product components, such as mounting brackets and/or fasteners. These four blocks 42-44 of shock absorbing material will be arranged at the four minor sides of the cardboard box 1 in the packed state of the roof window 5.

[0031] The pane 53 of the roof window 5 is protected by two elongate blocks 45 of shock absorbing material, which are arranged on the pane, so that they will be located between the roof window 5 and the major side 11 of the cardboard box 1 in the packed state. A paper liner (not shown) may be provided between the elongate blocks 45 and the pane 53 to protect the pane from scratching.

[0032] In Fig. 3 the pane 53 has been shown as transparent so that additional blocks 46, 47 of shock absorbing material arranged on a handlebar 54 of the roof window product are visible. These blocks 46, 47 serve to retain the handle bar 54, keeping it in an intended position in relation to the pane 53 and to the cardboard box in the packed state. One or both blocks 46, 47 could be replace by a carton or a box, and may then be used for containing smaller product components, such as wires and/or a remote control.

[0033] Another cardboard box 2 packed with another roof window related product, namely a flashing assembly 3, which is typically less heavy than a roof window and consists of a large number of product components, is shown in Fig. 4. This cardboard box is also of a rectangular configuration having two major sides 21, 22 and four minor sides 23, 24 extending between the two major sides.

[0034] Two blocks 41 of a shock absorbing material are arranged at component 31 of the roof window product 3 to protect it from damage, which might result from the product component moving vigorously around in the cardboard box during handling or transportation. Flashing assemblies are particularly sensitive to damages caused by deformation but should also be protected from scratching as such damage might make the product aesthetically unacceptable.

[0035] A component 32 of the roof window product 3

is retained by a paper ribbon 7, which retains the product component 32 in relation to the cardboard box 2. This is achieved by the paper ribbon 7 being attached at both ends by means of an adhesive to the major side 22 forming the bottom of the cardboard box 2.

[0036] The detail marked C shows two fasteners 65 attached to one of the minor sides 23 by means of a paper ribbon 7 in the form of a paper tape. Here, the fasteners 65 extend substantially in parallel with the major surface of the paper ribbon 7.

[0037] Figs 5 and 6 show examples of collections of fasteners 65 being retained by a paper ribbon 7. In both cases, the fasteners are screws, but it is to be understood that this is only an example and that it could also have been of another type of fastener, for example nails.

[0038] In Fig. 5 the paper ribbon is paper tape, corresponding to the one shown in Fig. 4, except for the fasteners 65 being arranged further from each other. If not attached to a side of the cardboard box, another piece of paper could be provided on the opposite side of the fasteners to retain them on both sides. Having a paper ribbon only on one side, however, makes it easier to detach the fasteners, when they are to be used.

[0039] In Fig. 6 the fasteners 65 penetrate through the paper ribbon 7, so that they extend substantially perpendicular to the major surfaces of the paper ribbon. Whereas the paper ribbon 7 in Fig. 5 is adapted to the shape of the fasteners 65, the paper ribbon in Fig. 6 is relatively stiff, being made from for example carton or cardboard.

[0040] In Fig. 6 the fasteners 65 are distributed substantially evenly, but it is also possible to leave an end section 73 of the paper ribbon 7 without fasteners so that the paper ribbon can be used as a holder as illustrated in Fig. 7. As shown in Fig. 7, the installer uses the end section 73 as a handle and positions the fastener furthest from the end section opposite to an opening in a mounting bracket 59 before driving the fastener into the material below the mounting bracket using an electric screwdriver. This is just one example. The advantage of using the paper ribbon as a holder is not limited to a particular sequence of use of the fasteners, to the attachment of mounting brackets, or to the use of a particular tool or type of fasteners.

[0041] As will be understood from Fig. 7, the insertion of the fastener will result in the paper ribbon 7 being jammed between the head of the screw and the mounting bracket 59. The paper ribbon 7 therefore needs to be torn if the remaining fastener 65 is to be used somewhere else. As a mounting bracket will not be visible in the mounted state of a roof window, the section of the paper ribbon jammed between the head of the screw and the mounting bracket can simply be left there. Depending on the material used for the paper ribbon 7, perforations or similar weakening (not shown) may be provided to facilitate tearing at an appropriate location of the paper ribbon 7.

List of reference numerals

[0042]

1	Cardboard box
11	Major side
13	Minor side
13'	Section of minor side
14	Minor side
2	Cardboard box
21	Major side
22	Major side
23	Minor side
24	Minor side
3	Flashing assembly
31	Component
32	Component
41-47	Blocks of a shock absorbing material
5	Roof window
51	Side frame member
52	Bottom frame member
53	Pane
54	Handle bar
59	Mounting bracket
61	Side liner
62	Cardboard carton
65	Fastener
7	Paper ribbon
73	End section
P	Opening of box

Claims

1. A packed roof window product comprising a plurality of differently sized roof window related product components and packaging material components contained in a cardboard box (1, 2), wherein the plurality of differently sized roof window related product components includes a plurality of fasteners (65), such as screws, nails or clamps,
characterised in that
a collection of fasteners (65) is interconnected by a paper ribbon (7).

2. A packed roof window product according to claim 1, wherein the paper ribbon (7) forms part of the cardboard box (1, 2) or of a packaging material component.

3. A packed roof window product according to claim 1 or 2, wherein the paper ribbon (7) is used for retaining the collection of fasteners (65) in relation to the cardboard box (1, 2) and/or in a folded or rolled-up state.

4. A packed roof window product according to one or more of the preceding claims, wherein the paper ribbon (7) is a paper tape.

5. A packed roof window product according to one or more of the preceding claims, wherein the paper ribbon (7) is made of carton or cardboard and an end section (73) of the paper ribbon (7) is left without fasteners (65).

6. A packed roof window product according to one or more of the preceding claims, wherein the paper ribbon (7) has local or continuous reinforcements.

7. A packed roof window product according to one or more of the preceding claims, wherein perforations or similar weakening are provided for facilitating tearing of the paper ribbon (7) at predefined locations.

8. A method for installation of a roof window product according to one or more of claims 1-7, wherein the paper ribbon (7) for the collection of fasteners (65) is used as a holder when mounting at least one of the fasteners (65).

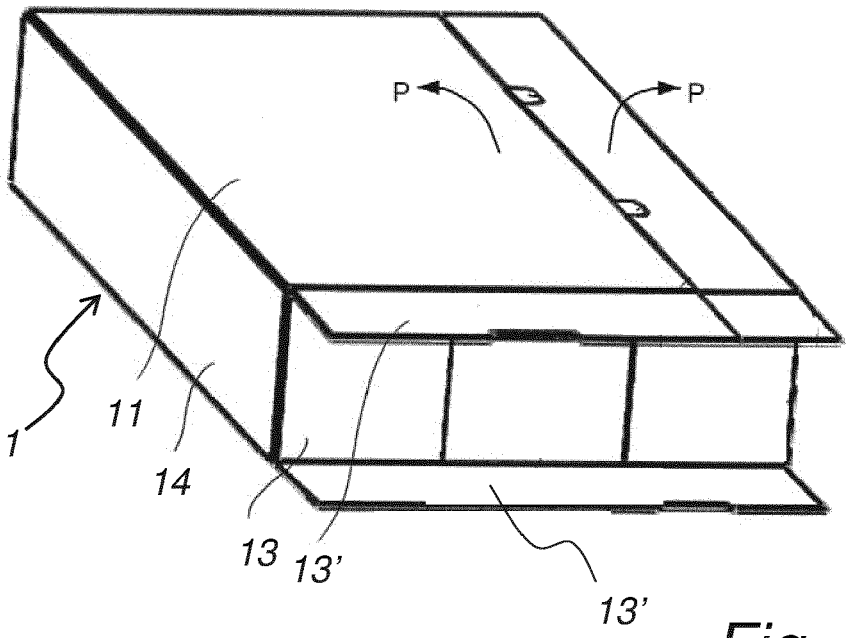

Fig. 1

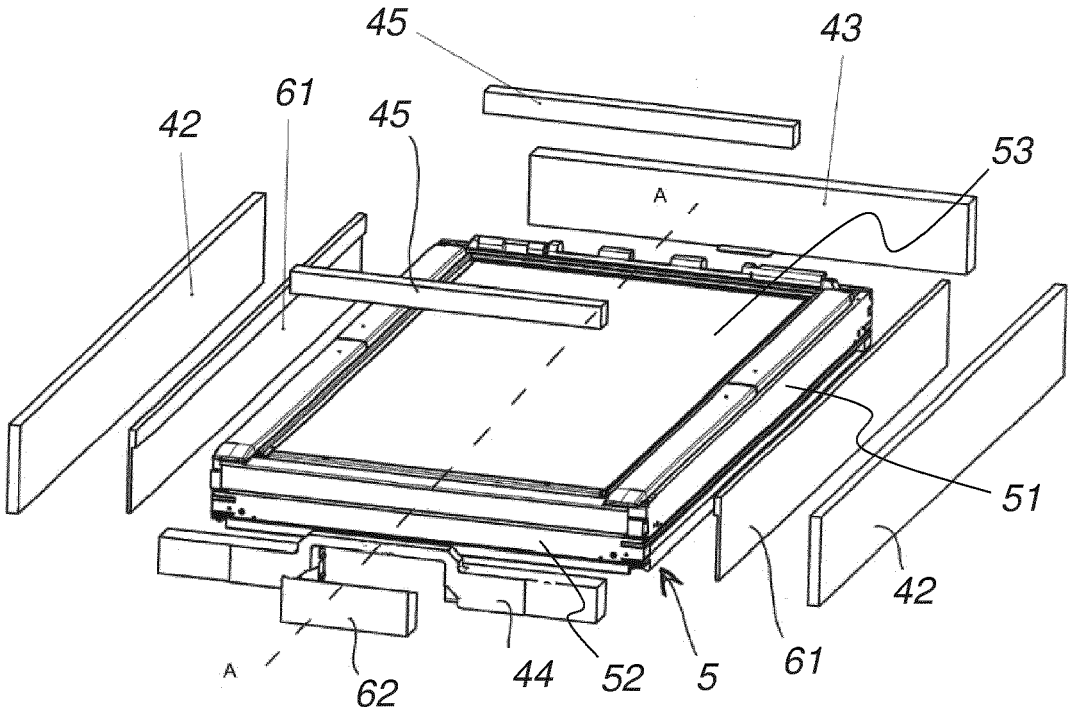

Fig. 2

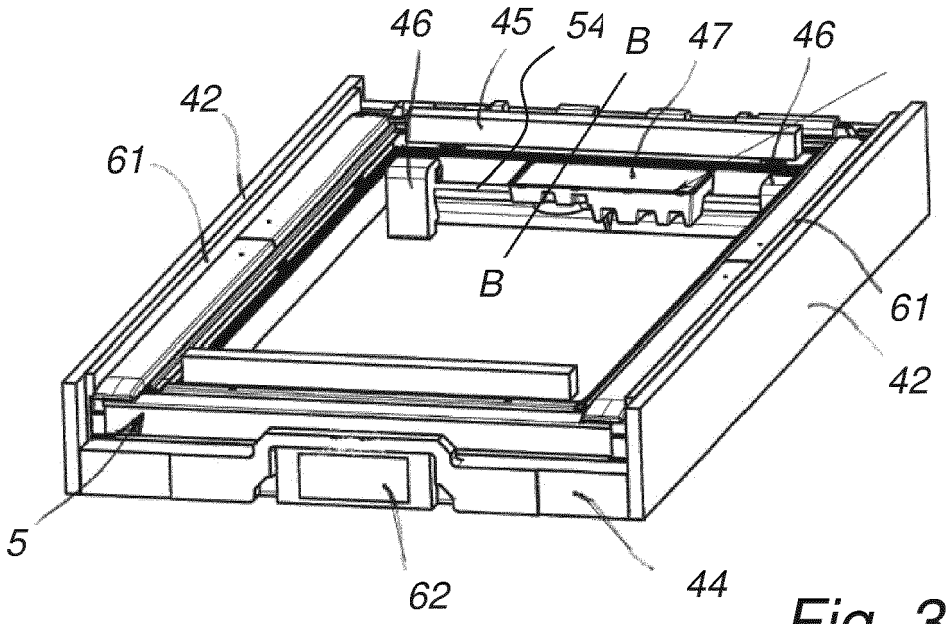
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Fig. 3

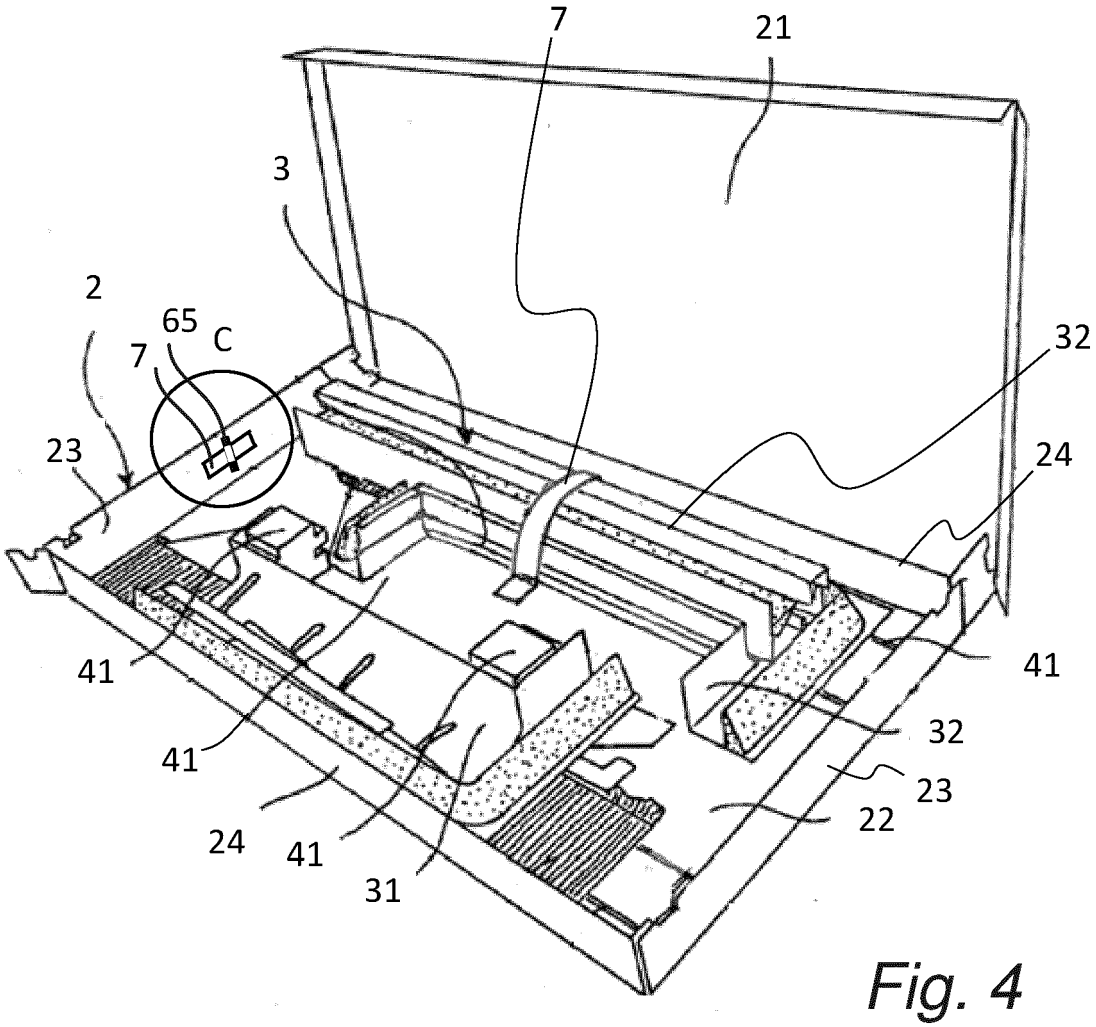
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Fig. 4

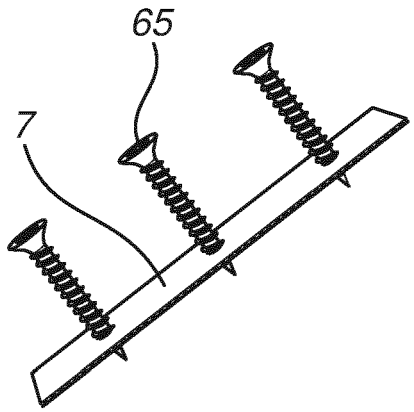

Fig. 6

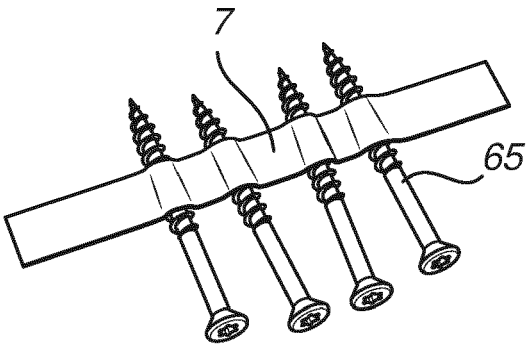

Fig. 5

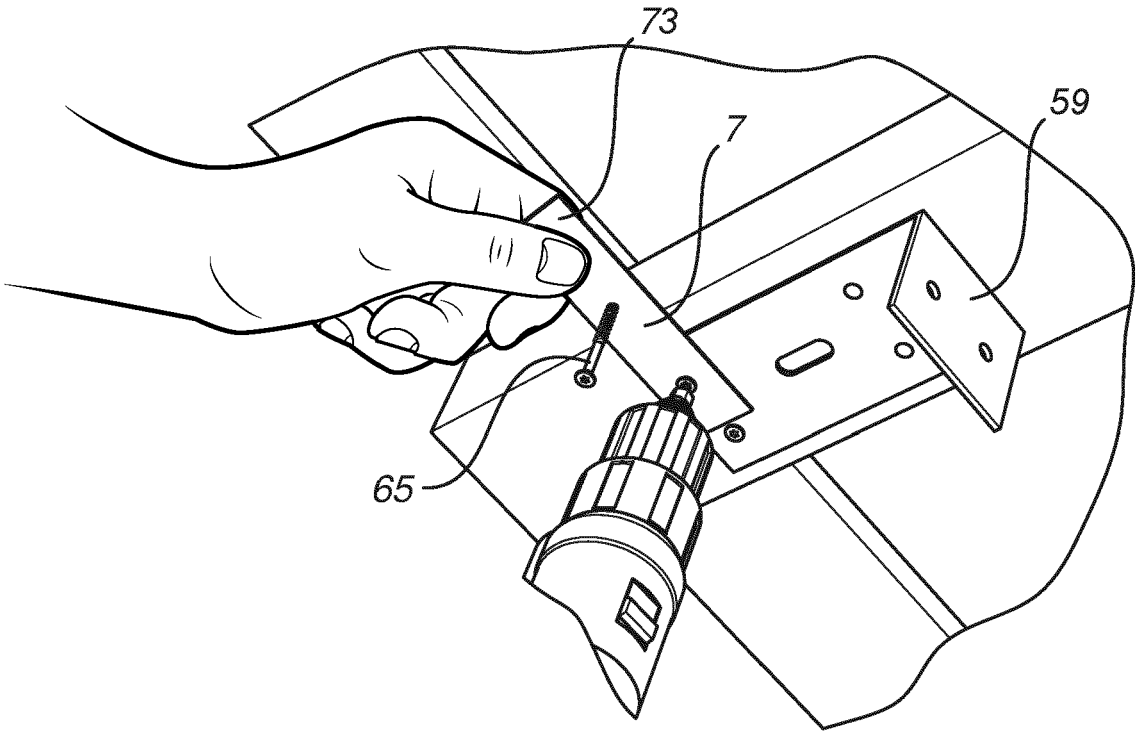

Fig. 7

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 2748071 B1 **[0002]**
- EP 1710163 B1 **[0002]**