



(11) **EP 2 204 524 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the grant of the patent:
18.10.2017 Bulletin 2017/42

(51) Int Cl.:
E06B 1/34 (2006.01)

(21) Application number: **09179994.0**

(22) Date of filing: **18.12.2009**

(54) **A window or door assembly comprising a frame structure with a groove for receiving a lining structure**

Ein Fenster oder Tür mit einer Rahmenkonstruktion mit einer Nut für ein Innenfutter

Une fenêtre ou assemblage de porte comprenant un cadre avec une rainure pour recevoir une structure d'embrasure

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

(30) Priority: **30.12.2008 DK 200801850**

(43) Date of publication of application:
07.07.2010 Bulletin 2010/27

(73) Proprietor: **VKR Holding A/S
2970 Hørsholm (DK)**

(72) Inventor: **Tougaard, Christian
2100 København (DK)**

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

(56) References cited:
**EP-A2- 1 870 532 WO-A1-98/22682
WO-A1-02/057563 FR-A1- 2 729 174
US-A1- 2005 086 878**

EP 2 204 524 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

[0001] The present invention relates to a window or door frame structure, such as for a roof window, the frame structure comprising, at a side facing inwards in the mounted position of the window or door frame structure, at least one at least partially circumferential groove adapted for receiving an end portion of a lining structure.

[0002] A known window of this kind features a frame structure having a groove adapted for receiving an end portion of lining structure, the groove having a uniform rectangular cross section with a width fitting a lining with a standardized thickness. Furthermore it is known to provide such a groove with a chamfered side wall for easier reception of the end portion of the lining structure.

[0003] EP 0 738 806 features a lining structure, that is mounted in a reveal of a building in connection with a frame structure of a window by engaging a cut-out end portion of the frame structure of the window, the cut-out end portion being provided with a fitting engaging a corresponding slit in the lining structure. The cut-out end portion is formed by removal of a corner section of the frame structure facing outwards and towards the interior of the building, and thus the lining structure, when mounted. The cut-out section is provided with an L-shaped shape, the angle between the legs of the L-shape being somewhat above 90 degrees to enable sliding the lining past the part of the fitting engaging the slit in the lining until engagement becomes possible.

[0004] Another common use of linings fitted into a window frame is described in FR 2729174, where the lining is made out of a metal profile which are fitted to receive an end part of a lining. WO 02/057563 A1 discloses a window frame structure according to the preamble of claim 1 wherein a specific design of a groove is shown where the groove for adapting a lining comprises different depths.

[0005] As used in the following description the phrase "window structure" means a window comprising a frame structure, possibly a sash structure and/or a pane but no lining structure, whereas "window assembly" means a window structure furthermore comprising a lining structure. Similarly the phrase "door assembly" means a door structure comprising a lining structure.

[0006] When the need to exchange window structures becoming worn out eventually arises, the known window structures have several drawbacks, particularly when wanting to carry through such an exchange without exchanging the lining structure, that generally has a longer life time than the window structure, and thus may well be re-used with both practical and economic advantage. When removing the worn out window structure it often occurs that the corresponding lining structure has buckled, possibly as a result of the removal of the worn out window structure itself, whereby fitting the appropriate end portion of the lining structure into a groove of the known types become very strenuous.

[0007] Furthermore it may be desired to exchange the

worn out window structure for another type of window structure, for instance having a frame of a different thickness as compared with the existing window structure, or having a groove of a known type being adapted for a different thickness of lining structure, whereby it may easily turn out to be impossible to ensure a proper fit between window structure and lining structure or even to fit the end portion of the lining structure into the groove of the new window structure. This situation may in particular arise when standards for windows and/or for methods of manufacturing windows change over time, e.g. when employing new equipment in the manufacturing process, which may very well be the case over the span of life time of a window structure or window assembly. Furthermore such a situation may arise when it is merely desired to exchange an old window for a new, improved (e.g. with respect to heat isolating properties) window.

[0008] Therefore, it is the object of the invention to provide a window or door frame structure of the type mentioned in the introduction, whereby exchanging a window structure while preserving the lining structure becomes simplified, particularly in case of a buckled lining structure and/or change in the type of window structure, which it is desired to mount.

[0009] According to the invention, this is obtained by a window or door frame structure of the type described in the introduction, in which the groove in at least a part of its longitudinal extension is provided with a cross sectional surface profile comprising at least two sections, each said section comprising a substantially rectangular shape and that said at least two sections further comprise different depths, said groove comprises at least one positioning element arranged such as to provide the at least two sections, the positioning element being chosen from the group consisting of a slat, a strip and a fitting, preferably an angle fitting. Thereby is provided a window or door frame structure with which the dimensional adaptation of the sections may be performed separately from the shaping of the frame structure itself. This provides the possibility of customizing the groove to fit the structures present at a particular building or even for a particular individual window or door as well as converting a groove without a stepped cross section to one with a stepped cross section.

[0010] With such a window or door frame structure, the cross sectional profile of the groove allows for secure positioning of lining structures of different thicknesses and/or sizes due to the at least two sections of the groove. Furthermore it allows for secure positioning of lining structures being buckled or otherwise by wear forced somewhat out of their original shape due to the potentially larger combined width of the groove as compared to the prior art. Such a window or door frame structure thus enables obtaining a secure fit between lining structure and frame structure when exchanging a window structure while preserving the existing lining structure. Such a secure fit may be obtained even in case of a buckled lining structure or a difference in size between the old and the

new frame structure. Thereby the number of cases in which preservation of the existing lining structure is rendered possible is raised, thus greatly simplifying the process of exchanging windows. For instance, in case of exchange of a roof window a frame structure according to the invention renders preservation of the existing lining structure possible in situations where the frame structures of the old and new windows differ in size. This particular situation has at present rising relevance due to a change in the generally applied standard size of roof windows on the Scandinavian market, which now starts to reflect in current and upcoming exchanges of worn out roof windows.

[0011] In a preferred embodiment the at least two sections further comprise different widths, whereby the groove of the window or door frame structure according to the invention may be adapted to receive lining structures of different sizes and/or lining structure end portions of different thicknesses and in all cases to provide for sufficient support as well as proper fit.

[0012] In a particularly preferred embodiment the groove comprises a bottom surface having a stepped profile with at least two steps, whereby the above advantages may be provided in a particularly simple way with the possibility of providing the at least two steps with customized dimensions.

[0013] In a preferred embodiment the at least one positioning element comprises at least one means for attachment to the frame structure, such as a nail or a screw. In another preferred embodiment the at least one positioning element is glued or moulded onto said groove. In either of these embodiments the positioning element may thereby be firmly secured to the frame either during production or on site, whereby a window or door frame structure with a durable and resistant engagement between lining structure and frame structure is provided.

[0014] In another preferred embodiment the positioning element comprises position adjustment means, whereby the final position of the positioning element may be adjusted on site according to given circumstances. Adjustment may take place either prior to fastening the positioning element to the frame structure or subsequent to an initial partial fastening of the positioning element, according to the particular embodiment of the position adjustment means, examples of which will be given below. In a particularly preferred embodiment the cross sectional profile of the groove comprises an outer section and an inner section having respective widths corresponding to two different standard sizes of a end portion of a lining structure. Thereby a particularly advantageous window frame structure for use in connection with roof windows is provided in that the width of the inner sections corresponds to the thickness of presently used lining structures, whereas the width of the outer section corresponds to the difference in size between previously used and presently used frame structures on the Scandinavian market and thereby the difference in the size of the corresponding lining structures.

[0015] In a second aspect of the invention a window or door assembly, such as a roof window assembly, comprising a lining structure and a window or door frame structure according to the invention is provided.

5 **[0016]** In a third aspect of the invention a method for exchanging a frame structure and a sash structure of a window assembly, such as a roof window assembly, mounted in a reveal of a building structure while preserving a lining structure of the window assembly mounted in the reveal according to claim 12 is provided, the method comprising the steps of demounting the mounted frame structure and sash structure, preserving the mounted lining structure, providing a new window structure comprising a frame structure and a sash structure, 10 and mounting said new window structure in said reveal, wherein the frame structure of the new window structure comprises, at the side facing inwards in the mounted position of the window assembly, an at least partially circumferential groove adapted for receiving a end portion of a lining structure, which groove in at least a part of its longitudinal extension is provided with a cross sectional surface profile comprising at least two sections, each such section comprising a substantially rectangular shape, and wherein the step of mounting the new window assembly in the reveal further comprises bringing a end 15 portion of said preserved lining structure to occupy at least one of the at least two sections of said groove.

[0017] In a preferred embodiment the method according to the invention comprises the further subsequent step of jointing said groove, whereby a particularly satisfactory finish, aesthetically as well as functionally, may be achieved.

[0018] According to an example there is provided a window or door frame structure according wherein the width of the two sections combined is a width considerably larger than the width of an end portion of a lining and wherein the surplus width is configured to absorb the variations in the position of the end portion of different linings.

30 **[0019]** According to an example there is provided a window or door frame structure wherein an inner section is configured to accept an end portion of a first lining and an outer section is configured to accept an end portion of a second lining.

40 **[0020]** According to an example there is provided a window or door frame structure wherein the first lining end portion is closer to the window pane than the second lining end portion.

[0021] According to an example there is provided a window or door frame structure wherein the width of the sections extends about half or more of the width of the frame structure.

45 **[0022]** According to an example there is provided a window or door frame structure wherein an inner section is configured for fitting a first lining having a first smaller distance between the two opposite lining end portions and an outer section is configured for fitting a second lining having a second larger distance between the two

opposite lining end portions.

[0023] According to the previous examples a flexible frame structure is achieved which is compatible with both old and new linings. Hereby the number of parts is reduced which also reduces resources for transportation and reduces errors from ordering or assembly of two incompatible products. Further an old lining which is made according to an old size may be re-used and a new window configured for a new size is hereby also compatible with an old lining.

[0024] The invention will be described in more detail below by means of a non-limiting example of an embodiment and with reference to the schematic drawings, in which

Fig. 1 shows an assembly according to the invention in the embodiment of a roof window assembly in a perspective view,

Fig. 2 shows a cross sectional view of an enlarged detail of a vertical frame section of a roof window assembly not according to the invention,

Fig. 3 shows a cross sectional view of an embodiment of a groove of an assembly not according to the invention, the groove having a stepped cross section,

Figs. 4, 5 and 6 show cross sectional views of different embodiments of a groove of an assembly according to the invention, sections being achieved by the use of slats, and

Figs. 7, 8, 9 and 10 show cross sectional views of different embodiments of a groove of an assembly according to the invention, sections being achieved by the use of fittings wherein the embodiment shown in fig. 7 does not form part of the invention.

[0025] In the following elements having similar or analogous function carry the same reference numeral to which 100 has been added.

[0026] Fig. 1 shows a window or door assembly not according to the invention in the embodiment of a roof window assembly 1 in the assembled state. Such a roof window assembly 1 comprises at least a lining structure 2 and a frame structure 3, and in the embodiment shown further a sash structure 4 and a pane 5.

[0027] As can be seen from figure 1, the sash structure 4, the frame structure 3 and the lining structure 2 are all closed circumferential structures. As it is shown in further detail in fig. 2, when assembling a window assembly 1 according to fig. 1, the sash structure 4 is assembled with the pane 5 along the complete outer periphery of the pane 5 and the frame structure 3 is assembled with the sash structure 4 by joining a surface 4b of the sash structure 4 and a surface 3b of the frame structure 3, e.g. by the use of a hinge connection. Thereby a window structure is obtained.

[0028] The thus assembled window structure is intended for mounting in a reveal of a building structure, such as a roof in the case of a roof window assembly 1, by

fixing the frame structure 3 to the circumferential side wall of the reveal and by using the lining structure 2 to conceal the reveal, thus obtaining a satisfactory finish, with regard to factors such as i.a. aesthetics, durability, constructional strength and permeability (e.g. of heat and water) properties. The lining structure 2 is assembled with the frame structure 3 along a circumferential surface 3a of the frame structure 3 being perpendicular to the surface 3b and facing inwards in the mounted position of the window assembly 1.

[0029] In other embodiments a window or door assembly according to the invention may be a window or door assembly intended for mounting in a reveal in a vertical wall of a building structure.

[0030] With reference to fig. 2 a cross sectional view of a detail of the window assembly 1 not according to the invention can be seen showing how the window assembly 1 is mounted in a reveal 6a of a building structure 6, and how the pane 5, sash structure 4, frame structure 3 and lining structure 2 are related mutually when the window or door assembly has been assembled as described above. As is well known by persons skilled in the art, the dimensions of the frame structure 3 and the reveal 6a are adapted such that the frame structure 3 fits in the reveal 6a. The frame structure 3 comprises a circumferential side or surface 3a intended for facing inwards, i.e. towards the interior of the building structure 6, in the mounted position of the window assembly 1, i.e. when the window assembly 1 is mounted in the reveal 6a of the building structure 6. At the surface 3a the frame structure 3 comprises at least one groove 7, the groove 7 extending longitudinally over at least a part of the circumferential surface 3a and being adapted for receiving an end portion 8 of a lining structure 2 to assemble frame structure 3 and lining structure 2.

[0031] To assemble frame structure 3 and lining structure 2, the end portion 8 of the lining structure 2 is brought to engage the groove 7 at the surface 3a in such a way that the end portion 8 is supported, preferably with a tight fit, against the walls of the groove 7 along at least part of an end surface 8b and a side surface 8a.

[0032] Fig. 3 features the frame structure 3 with the groove 7 in an enlarged cross sectional view. As can be seen the groove 7 features two sections 9a and 9b each having a rectangular cross section. In other embodiments more than two sections may be provided. The sections 9a and 9b comprise different depths and different widths, although the depths and/or the widths may in other embodiments be the same. Preferably, however, the groove 7 comprises at least two sections at least having different widths. Preferably, and as shown on fig. 3 the width w_i of the section 9a, i.e. that of the two sections being nearest to the surface 3b of the frame structure 3, is larger than the width w_o of the section 9b, i.e. that of the two sections being farthest from the surface 3b of the frame structure 3. In a particularly preferred embodiment the width w_i of the section 9a amounts to 13 mm, while the width w_o of the section 9b amounts to 7 mm, as these

figures correspond to standard thicknesses of lining structures used in Scandinavia. Obviously the dimensions of the widths w_o and w_i may be adapted to correspond to any other standard lining thickness.

[0033] The sections 9a and 9b of the groove shown in fig. 3 are achieved by providing the groove 7 with a stepped cross sectional profile having two steps. However, more than two steps and thereby more than two sections may very well be provided. Each section 9a, 9b has a bottom surface 10a and 10b, respectively, and a side surface 11a and 11b, respectively. When the end portion 8 of the lining structure 2 - shown in fig. 3 as a rectangle drawn up in broken line - is brought to engage the groove 7 the end portion 8 will be positioned such that it occupies one of the available sections. In fig. 3 the end portion 8 of the lining structure 2 is placed in engagement with the groove 7 such that the end portion 8 occupies section 9b. That is to say, the end surface 8b of the end portion 8 abuts the bottom surface 10b of the section 9b and the side surface 8a abuts the side surface 11b of the section 9b, thus ideally providing for a tight fit between frame structure 3 and lining structure 2. As may further be seen, the end portion 8 of the lining structure 2 may, if its size so necessitates, have an overlap with an adjacent section, in fig. 3 with section 9a. Turning now to fig. 4, another embodiment of the groove 7 of the frame structure 3 is shown. In this embodiment the groove 7 comprises a positioning element 12 that is substantially rectangular in cross section and placed such as to provide two sections 9a and 9b, each having a bottom surface 10a and 10b, respectively, and a side surface 11a and 11b, respectively. As can be seen from fig. 4, the side surface 11a of the section 9a is provided by a side surface of the positioning element 12, while the bottom surface 10b of the section 9b is provided by another side surface of the positioning element 12. Thus, the cross sectional dimensions of the positioning element 12 are chosen such as to provide the sections 9a and 9b with suitable dimensions for providing a tight fit between frame structure 3 and lining structure 2, i.e. for corresponding with the dimensions of the end portion 8 of the lining structure 2.

[0034] The positioning element 12 is in the embodiment shown in fig. 4 a slat, a strip or the like, preferably made of wood or of a suitable plastics material, although any material suitable for providing a tight, substantially un-elastic fit between the frame structure 3 and an end portion 8 of the lining structure 2 may in principle be used. The positioning element 12 preferably extends throughout the whole longitudinal extension of the groove 7 along the circumferential surface 3a of the frame structure 3, which in fig. 4 corresponds to the direction into or out of the paper. The positioning element 12 may be one positioning element 12 extending throughout the longitudinal extension of the groove 7 or there may be provided several positioning elements 12 placed in continuation of each other along the longitudinal direction of the groove 7. Alternatively, in case of several positioning elements

12, the positioning elements 12 may be placed spaced apart along the longitudinal direction of the groove 7 with suitable, not necessarily uniform intervals. In this latter case, the positioning elements 12 may be a number of blocks or pieces of slats, strips or the like of suitable, but not necessarily identical, dimensions.

[0035] The positioning element 12 according to fig. 4 further comprises a means for attachment 14 to the frame structure 3. The means for attachment 14 is shown in the form of a nail, but may in principle be any suitable means for attachment such as a screw, a bolt or the like. Furthermore, more than one means for attachment 14 may be provided, e.g. along the longitudinal extension of the positioning element 12. Also, the means for attachment 14 may comprise one or more through holes (not shown) provided in the positioning element 12 for receiving a nail, screw, bolt or the like. Another feasible embodiment of the means for attachment 14 is spikes or like elements embedded in and protruding from a surface of the positioning element 12 in such a way as to enable the spikes to be forced into the bottom surface of the groove 7, thus attaching the positioning element 12 to the groove 7 of the frame structure 3.

[0036] Fig. 5 shows an embodiment of the invention similar to that of fig. 4, the only difference being that two positioning elements 12 placed side by side in the transversal direction of the groove 7 has been provided, resulting in three placing positions 9a, 9b and 9c being available. Obviously, more than two positioning elements 12, and thereby possibly more than three placing positions may be provided. Furthermore the use of more than one positioning element provides for the possibility of on site adaptation of the dimensions (i.e. width and depth) of the placing positions to fit the specific requirements arising, however within the limitations provided by the overall width and depth of the groove 7.

[0037] Fig. 6 shows another embodiment of the invention similar to that of fig. 4. In the embodiment according to fig. 6 the groove 7 is provided such that it extends transversally to a side 16 of the frame structure 3, and the positioning element 12 comprises a stepped cross section. The positioning element is placed such that its largest side surface 17 is lying in continuation of the side surface 16 of the frame structure, thus again providing the groove 7 with two placing positions 9a and 9b. Turning to fig. 7 yet another example not forming part of the invention is shown. In this example the groove 7 comprises a positioning element 112 in the form of a fitting attached to the bottom surface of the groove 7 with a means for attachment 14. The fitting is preferably made of a suitable metal such as e.g. aluminium or stainless steel. The means for attachment 14 may be of any of the embodiments described in the above, with or without through holes. The fitting 112 shown in fig. 7 is an angle iron type fitting comprising two legs 13a and 13b and is placed such as to provide two sections 9a and 9b of a rectangular cross section. The bottom surface 110a of the section 9a is provided by a surface of the leg 13a, whereas a surface

of the leg 13b provides for the side surface 111a of the section 9a. Likewise the bottom surface 110b and the side surface 111b of the section 9b are provided by the bottom surface and one of the side surfaces of the groove 7. The fitting 112 may be one fitting extending along at least a part of the longitudinal extension of the groove 7 of the frame structure 3, or there may be several fittings 112 placed in extension or placed spaced apart of each other along the longitudinal direction of the groove 7.

[0038] Fig. 8 shows an embodiment of the invention similar to that of fig. 7. Again the positioning element 112 is an angle iron type fitting, but now mounted by the use of a means for attachment 114 in the form of a tapering of the end edge of a leg 13b of the fitting being wedged into the bottom of the groove 7, thus providing the sections 9a and 9b. In this embodiment the leg 13a, providing the sections 9a, 9b with different depths, may in principle be omitted, the positioning element 112 then being a simple plate-shaped fitting wedged into the bottom of the groove 7. Furthermore, in the case of several positioning elements 112 placed along the longitudinal direction of the groove 7, the positioning elements 112 could in principle be nails, screws or the like possibly having two perpendicular legs.

[0039] Fig. 9 shows another embodiment of the invention similar to that of fig. 7, the positioning element 112, that is again a fitting, being provided with a stepped profile comprising four legs 13a, 13b, 13c and 13d. The leg 13c provides for the possibility of attaching the positioning element 112 that thus covers the entire width of the groove 7 to the groove 7 by friction, i.e. by pushing the positioning element 112 into the groove 7 such that it is fixed between the side surfaces of the groove 7. As can be seen a means for attachment 14 extending through the leg 13d is furthermore used to attach the positioning element 112 to the frame structure 3 at a side surface of the groove 7. Obviously it is, however, in principle possible to omit leg 13d and/or 13a.

[0040] Fig. 10 shows another embodiment of the invention similar to that of fig. 7, with a positioning element 112, being a fitting, having a stepped profile with five legs 13a - 13e. As in fig. 6 the groove 7 is provided such that it extends transversally to a side 16 of the frame structure 3, and the positioning element 112 is placed such that its largest side surface 17, being the side surface of the leg 13e, is lying in extension of the side surface 16 of the frame structure 3, thus again providing the groove 7 with two placing positions 9a and 9b.

[0041] As an alternative to a means for attachment 14, 114 the one or more positioning element may instead be e.g. glued or moulded to the frame structure 3 in the groove 7. Such an embodiment is particularly advantageous in case of a window assembly in which the frame structure 3 by moulding is made of or encased in a plastics material such as polyurethane (PUR).

[0042] In case of an encased frame structure 3, the frame structure 3 is preferably provided with the groove 7 before being encased, i.e. the groove 7 is provided in

the wooden core of the frame structure 3 and the frame structure 3 including the groove 7 is subsequently encased, the encasement thus following the outline of the groove 7. Alternatively the mould used for moulding or encasing the frame structure 3 may be shaped to provide the groove 7.

[0043] The groove 7 according to the invention may also be provided by providing an existing frame structure having a groove of a known type with a suitable recess or incision in the frame structure, which may be wooden or moulded, or in the outer shape of an encasement to be applied to a frame structure.

[0044] The one or more positioning element 12, 112 described above may be attached to the groove 7 of the frame structure 3 either during the production of the window assembly or at a later stage, such as on site by the installer. Furthermore the positioning element 12, 112 and/or the frame structure 3 may be provided with position adjustment means (not shown) such as markings for assistance when adjusting the position of the positioning element 12, 112 prior to attaching it to the frame structure 3. Such position adjustment means may for instance be provided as markings on the frame structure adjacent to or on the bottom of the groove 7, and/or by providing the one or more through holes (not shown) as oblong holes or slots, such that the positioning element 12, 112 may be kept in place in the groove 7 using the means for attachment 14 and its position adjusted prior to the final tensioning of the means for attachment 14. It should be noted that the above description of preferred embodiments serves only as an example, and that a person skilled in the art will know that numerous variations are possible without deviating from the scope of the claims.

Claims

1. A window or door frame structure (3), such as for a roof window, said frame structure (3) comprising, at a side surface (3a) facing inwards in the mounted position of the window or door assembly, at least one at least partially circumferential groove (7) adapted for receiving an end portion (8) of a lining structure (2), wherein said groove (7) in at least a part of its longitudinal extension has a cross sectional surface profile having at least two sections (9a, 9b), each said section (9a, 9b) having a substantially rectangular shape and that said at least two sections (9a, 9b) further comprise different depths, **characterized in that** said groove (7) comprises at least one positioning element (12) arranged such as to provide said at least two sections (9a, 9b), said positioning element (12) being chosen from the group consisting of a slat, a strip and a fitting, preferably an angle fitting.
2. Window or door frame structure according to claim 1, **characterized in that** said at least two sections

(9a, 9b) further comprise different widths (wi, wo).

3. Window or door frame structure according to claim 1 or 2, **characterized in that** said groove (7) comprises a bottom surface having a stepped profile with at least two steps. 5
4. Window or door frame structure according to any previous claims, **characterized in that** said at least one positioning element (12) comprises at least one means for attachment (14) to said frame structure (3). 10
5. Window or door frame structure according to any previous claims, **characterized in that** said at least one positioning element (12) is glued or moulded onto said groove (7). 15
6. Window or door frame structure according to any previous claims, **characterized in that** said positioning element (12) comprises position adjustment means. 20
7. Window or door frame structure according to any previous claims wherein an inner section (9a) is configured to accept an end portion of a first lining and an outer section (9b) is configured to accept an end portion of a second lining. 25
8. Window or door frame structure according to claim 7 wherein the first lining end portion (8) is closer to the window pane (5) than the second lining end portion. 30
9. Window or door frame structure according to any previous claims wherein the width of the sections extends about half or more of the width of the frame structure (3). 35
10. Window or door frame structure according to any previous claims wherein an inner section (9a) is configured for fitting a first lining having a first smaller distance between the two opposite lining end portions (8) and an outer section (9b) is configured for fitting a second lining having a second larger distance between the two opposite lining end portions (8). 40 45
11. A window or door assembly, such as a roof window assembly (1), comprising a lining structure (2) and a frame structure (3) according to any one of claims 1 to 10, said frame structure (3) comprising, at a side surface (3a) facing inwards in the mounted position of the window or door assembly, at least one at least partially circumferential groove (7) adapted for receiving an end portion (8) of said lining structure (2), **characterized in that** said groove (7) in at least a part of its longitudinal extension has a cross sectional surface profile having at least two sections (9a, 9b), 50

each said section (9a, 9b) having a substantially rectangular shape.

12. Method for exchanging a frame structure (3) and a sash structure (4) of a window assembly, such as a roof window assembly (1), mounted in a reveal (6a) of a building structure (6) while preserving a lining structure (2) of the window assembly mounted in said reveal (6a), the method comprising the steps of:

dismounting the mounted frame structure and sash structure,
preserving the mounted lining structure,
providing a new window structure comprising a frame structure (3) and a sash structure (4), and mounting said new window structure in said reveal (6a),

characterized in that said frame structure (3) of said new window structure comprises, at the side surface (3a) facing inwards in the mounted position of the window assembly, an at least partially circumferential groove (7) adapted for receiving an end portion of the lining structure (2), which groove (7) in at least a part of its longitudinal extension is provided with a cross sectional surface profile comprising at least two sections (9a, 9b), each said section comprising a substantially rectangular shape, and that said at least two sections (9a, 9b) further comprise different depths, and that said groove (7) comprises at least one positioning element (12) arranged such as to provide said at least two sections (9a, 9b), said positioning element (12) being chosen from the group consisting of a slat, a strip and a fitting, preferably an angle fitting and **in that** the step of mounting the new window assembly (1) in the reveal (6a) further comprises bringing an end portion of said preserved lining structure (2) to occupy at least one of the at least two sections (9a, 9b) of said groove (7), wherein an inner section is configured for fitting a first lining having a first smaller distance between the two opposite lining end portions and an outer section is configured for fitting a second lining having a second larger distance between the two opposite lining end portions.

Patentansprüche

1. Fenster- oder Türrahmenstruktur (3), wie für ein Dachfenster, wobei die Rahmenstruktur (3) an einer Seitenfläche (3a), die in der eingebauten Position des Fensters oder des Türzusammenbaus nach innen zeigt, wenigstens eine Nut (7) aufweist, die zumindest teilweise entlang des Umfangs der Rahmenstruktur (3) ausgebildet ist und die dazu angepasst ist, einen Endabschnitt (8) einer Verkleidungs-

- struktur (2) aufzunehmen, wobei die Nut (7) in wenigstens einem Teil ihrer länglichen Erstreckung ein Querschnittsflächenprofil mit wenigstens zwei Abschnitten (9a, 9b) aufweist, wobei jeder Abschnitt (9a, 9b) eine im Wesentlichen rechteckige Form aufweist und wobei die wenigstens zwei Abschnitte (9a, 9b) unterschiedlich tief sind, **dadurch gekennzeichnet**, dass die Nut (7) wenigstens ein Positionierungselement (12) aufweist, das so angeordnet ist, dass es die wenigstens zwei Abschnitte (9a, 9b) bereitstellt, wobei das Positionierungselement (12) aus der Gruppe ausgewählt ist, die aus einer Lamelle, einem Streifen und einem Beschlag, vorzugsweise einem Winkelbeschlag, besteht.
2. Fenster- oder Türrahmenstruktur nach Anspruch 1, **dadurch gekennzeichnet, dass** die wenigstens zwei Abschnitte (9a, 9b) unterschiedliche Breiten (wi, wo) aufweisen.
 3. Fenster- oder Türrahmenstruktur nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** die Nut (7) eine Bodenfläche mit einem gestuften Profil mit wenigstens zwei Stufen aufweist.
 4. Fenster- oder Türrahmenstruktur nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** das wenigstens eine Positionierungselement (12) wenigstens ein Mittel zur Befestigung (14) an der Rahmenstruktur (3) aufweist.
 5. Fenster- oder Türrahmenstruktur nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** das wenigstens eine Positionierungselement (12) auf die Nut (7) geklebt oder an die Nut (7) angeformt ist.
 6. Fenster- oder Türrahmenstruktur nach einem vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** das Positionierungselement (12) Positionseinstellmittel aufweist.
 7. Fenster- oder Türrahmenstruktur nach einem der vorhergehenden Ansprüche, wobei ein innerer Abschnitt (9a) dazu ausgebildet ist, einen Endabschnitt einer ersten Verkleidung aufzunehmen, und ein äußerer Abschnitt (9b) dazu ausgebildet ist, einen Endabschnitt einer zweiten Verkleidung aufzunehmen.
 8. Fenster- oder Türrahmenstruktur nach Anspruch 7, wobei der erste Verkleidungsabschnitt (8) näher an der Fensterscheibe (5) positioniert ist als der zweite Verkleidungsabschnitt.
 9. Fenster- oder Türrahmenstruktur nach einem der vorhergehenden Ansprüche, wobei die Breite der Abschnitte sich über die Hälfte der Breite der Rahmenstruktur (3) oder über mehr als die Hälfte der
- Breite der Rahmenstruktur (3) erstreckt.
10. Fenster- oder Türrahmenstruktur nach einem der vorhergehenden Ansprüche, wobei ein innerer Abschnitt (9a) für den Einbau einer ersten Verkleidung mit einem ersten, kleineren Abstand zwischen den zwei gegenüberliegenden Verkleidungsabschnitten (8) ausgebildet ist, und wobei ein äußerer Abschnitt (9b) für den Einbau einer zweiten Verkleidung mit einem zweiten, größeren Abstand zwischen den zwei gegenüberliegenden Verkleidungsabschnitten (8) ausgebildet ist.
 11. Fenster- oder Türanordnung wie eine Dachfensteranordnung (1), aufweisend eine Verkleidungsstruktur (2) und eine Rahmenstruktur (3) nach einem der Ansprüche 1 bis 10, wobei die Rahmenstruktur (3) an einer Seitenfläche (3a), die in der eingebauten Position der Fenster- oder Türanordnung nach innen zeigt, wenigstens eine Nut (7) aufweist, die zumindest teilweise entlang des Umfangs der Rahmenstruktur (3) ausgebildet ist und die dazu angepasst ist, einen Endabschnitt (8) einer Verkleidungsstruktur (2) aufzunehmen, **dadurch gekennzeichnet, dass** die Nut (7) in wenigstens einem Teil ihrer länglichen Erstreckung ein Querschnittsflächenprofil mit wenigstens zwei Abschnitten (9a, 9b) aufweist, wobei jeder Abschnitt (9a, 9b) eine im Wesentlichen rechteckige Form aufweist
 12. Verfahren zum Austauschen einer Rahmenstruktur (3) und einer Flügelstruktur (4) einer Fensteranordnung, wie einer Dachfensteranordnung (1), die in der Laibung (6a) einer Gebäudestruktur (6) verbaut ist, wobei eine Verkleidungsstruktur (2) der Fensteranordnung in der Laibung (6a) verbaut verbleibt, wobei das Verfahren die folgenden Schritte aufweist:
 - Demontieren der verbauten Rahmenstruktur und der Flügelstruktur,
 - Belassen der verbauten Verkleidungsstruktur,
 - Bereitstellen einer neuen Fensterstruktur mit einer Rahmenstruktur (3) und einer Flügelstruktur (4), und
 - Verbauen der neuen Fensterstruktur in der Laibung (6a),**dadurch gekennzeichnet, dass** die Rahmenstruktur (3) der neuen Fensterstruktur an der Seitenfläche (3a), die in der verbauten Position der Fensteranordnung nach innen zeigt, eine Nut (7) aufweist, die zumindest teilweise entlang des Umfangs der Rahmenstruktur (3) verläuft, wobei die Nut (7) dazu angepasst ist, einen Endabschnitt der Verkleidungsstruktur (2) aufzunehmen, wobei die Nut (7) zumindest in einem Teil ihrer Längserstreckung mit einem Querschnittsflächenprofil ausgestattet ist, das wenigstens zwei Abschnitte (9a, 9b) aufweist,

wobei die Abschnitte jeweils eine im Wesentlichen rechteckige Form aufweisen, und dass die wenigstens zwei Abschnitte (9a, 9b) unterschiedlich tief sind, und dass die Nut (7) wenigstens ein Positionierungselement (12) aufweist, das so angeordnet ist, dass es die wenigstens zwei Abschnitte (9a, 9b) bereitstellt, wobei das Positionierungselement (12) aus der Gruppe ausgewählt ist, die aus einer Lamelle, einem Streifen, einem Beschlag, vorzugsweise einem Winkelbeschlag besteht, und dass der Schritt des Montierens der neuen Fensteranordnung (1) in der Laibung (6a) ferner vorsieht, dass ein Endabschnitt der verbliebenen Verkleidungsstruktur (2) wenigstens einen der wenigstens zwei Abschnitte (9a, 9b) der Nut (7) belegt, wobei ein innerer Abschnitt für den Einbau einer ersten Verkleidung mit einem ersten, kleineren Abstand zwischen den zwei gegenüberliegenden Verkleidungsendabschnitten ausgebildet ist und wobei ein äußerer Abschnitt für den Einbau einer zweiten Verkleidung mit einem zweiten, größeren Abstand zwischen den zwei gegenüberliegenden Verkleidungsendabschnitten ausgebildet ist.

Revendications

1. Structure de cadre de fenêtre ou de porte (3), telle que pour une fenêtre de toit, ladite structure de cadre (3) comprenant, au niveau d'une surface de côté (3a) faisant face vers l'intérieur dans la position montée de l'ensemble fenêtre ou porte, au moins une rainure au moins partiellement circonférentielle (7) adaptée pour recevoir une portion d'extrémité (8) d'une structure de revêtement (2), dans laquelle ladite rainure (7) dans au moins une partie de son extension longitudinale a un profil de surface en coupe ayant au moins deux sections (9a, 9b), chaque dite section (9a, 9b) ayant une forme sensiblement rectangulaire et lesdites au moins deux sections (9a, 9b) comprennent en outre des profondeurs différentes, **caractérisée en ce que** ladite rainure (7) comprend au moins un élément de positionnement (12) agencé de façon à fournir lesdites au moins deux sections (9a, 9b), ledit élément de positionnement (12) étant choisi dans le groupe constitué d'une latte, d'une lame et d'un raccord, de préférence d'un raccord d'angle.
2. Structure de cadre de fenêtre ou de porte selon la revendication 1, **caractérisée en ce que** lesdites au moins deux sections (9a, 9b) comprennent en outre des largeurs différentes (wi, wo).
3. Structure de cadre de fenêtre ou de porte selon la revendication 1 ou 2, **caractérisée en ce que** ladite

rainure (7) comprend une surface de fond ayant un profil à décrochement avec au moins deux décrochements.

4. Structure de cadre de fenêtre ou de porte selon l'une quelconque des revendications précédentes, **caractérisée en ce que** ledit au moins un élément de positionnement (12) comprend au moins un moyen de fixation (14) à ladite structure de cadre (3).
5. Structure de cadre de fenêtre ou de porte selon l'une quelconque des revendications précédentes, **caractérisée en ce que** ledit au moins un élément de positionnement (12) est collé ou moulé sur ladite rainure (7).
6. Structure de cadre de fenêtre ou de porte selon l'une quelconque des revendications précédentes, **caractérisée en ce que** ledit élément de positionnement (12) comprend un moyen de réglage de position.
7. Structure de cadre de fenêtre ou de porte selon l'une quelconque des revendications précédentes, dans laquelle une section intérieure (9a) est configurée pour accepter une portion d'extrémité d'un premier revêtement et une section extérieure (9b) est configurée pour accepter une portion d'extrémité d'un second revêtement.
8. Structure de cadre de fenêtre ou de porte selon la revendication 7, dans laquelle la première portion d'extrémité de revêtement (8) est plus proche du carreau de fenêtre (5) que la seconde portion d'extrémité de revêtement.
9. Structure de cadre de fenêtre ou de porte selon l'une quelconque des revendications précédentes, dans laquelle la largeur des sections s'étend sur environ la moitié ou plus de la largeur de la structure de cadre (3).
10. Structure de cadre de fenêtre ou de porte selon l'une quelconque des revendications précédentes, dans laquelle une section intérieure (9a) est configurée pour installer un premier revêtement ayant une première distance plus petite entre les deux portions d'extrémité de revêtement (8) opposées et une section extérieure (9b) est configurée pour installer un second revêtement ayant une seconde distance plus grande entre les deux portions d'extrémité de revêtement (8) opposées.
11. Ensemble fenêtre ou porte, tel qu'un ensemble fenêtre de toit (1), comprenant une structure de revêtement (2) et une structure de cadre (3) selon l'une quelconque des revendications 1 à 10, ladite structure de cadre (3) comprenant, au niveau d'une surface de côté (3a) faisant face vers l'intérieur dans la

position montée de l'ensemble fenêtre ou porte, au moins une rainure au moins partiellement circonférentielle (7) adaptée pour recevoir une portion d'extrémité (8) de ladite structure de revêtement (2), **caractérisé en ce que** ladite rainure (7) dans au moins une partie de son extension longitudinale a un profil de surface en coupe ayant au moins deux sections (9a, 9b), chaque dite section (9a, 9b) ayant une forme sensiblement rectangulaire.

5

10

12. Procédé d'échange d'une structure de cadre (3) et d'une structure de châssis (4) d'un ensemble fenêtre, tel qu'un ensemble fenêtre de toit (1), monté dans un encadrement de baie (6a) d'une structure de bâtiment (6) tout en conservant une structure de revêtement (2) de l'ensemble fenêtre montée dans ledit encadrement de baie (6a), le procédé comprenant les étapes de :

15

démontage de la structure de cadre et de la structure de châssis montées,
conservation de la structure de revêtement montée,

20

fourniture d'une nouvelle structure de fenêtre comprenant une structure de cadre (3) et une structure de châssis (4), et
montage de ladite nouvelle structure de fenêtre dans ledit encadrement de baie (6a),

25

caractérisé en ce que ladite structure de cadre (3) de ladite nouvelle structure de fenêtre comprend, au niveau de la surface de côté (3a) faisant face vers l'intérieur dans la position montée de l'ensemble fenêtre, une rainure au moins partiellement circonférentielle (7) adaptée pour recevoir une portion d'extrémité de la structure de revêtement (2), laquelle rainure (7) dans au moins une partie de son extension longitudinale est pourvue d'un profil de surface en coupe comprenant au moins deux sections (9a, 9b), chaque dite section comprenant une forme sensiblement rectangulaire, et **en ce que** lesdites au moins deux sections (9a, 9b) comprennent en outre des profondeurs différentes, et **en ce que** ladite rainure (7) comprend au moins un élément de positionnement (12) agencé de façon à fournir lesdites au moins deux sections (9a, 9b), ledit élément de positionnement (12) étant choisi dans le groupe constitué d'une latte, d'une lame et d'un raccord, de préférence d'un raccord d'angle, et **en ce que** l'étape de montage du nouvel ensemble fenêtre (1) dans l'encadrement de baie (6a) comprend en outre le fait d'amener une portion d'extrémité de ladite structure de revêtement (2) conservée à occuper au moins l'une des au moins deux sections (9a, 9b) de ladite rainure (7), dans lequel une section intérieure est configurée pour installer un premier revêtement ayant une première distance plus

30

35

40

45

50

55

petite entre les deux portions d'extrémité de revêtement opposées et une section extérieure est configurée pour installer un second revêtement ayant une seconde distance plus grande entre les deux portions d'extrémité de revêtement opposées.

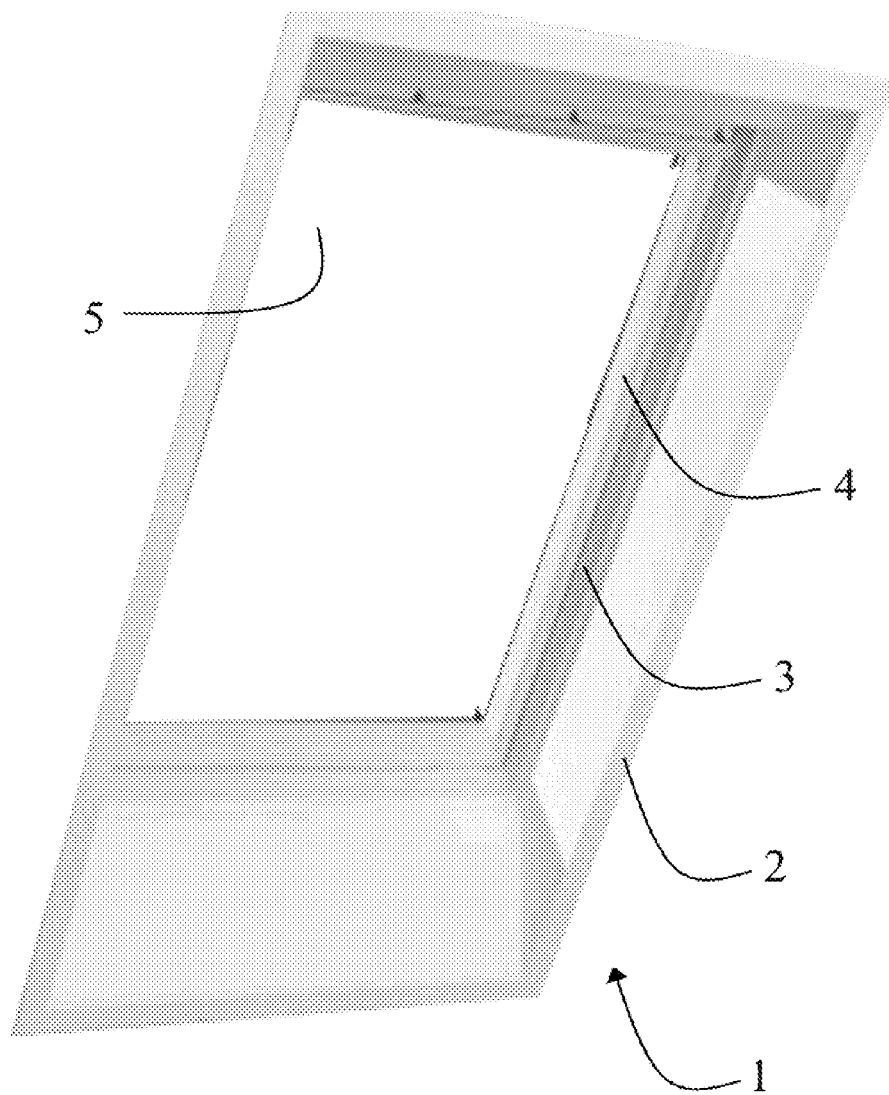


Fig. 1

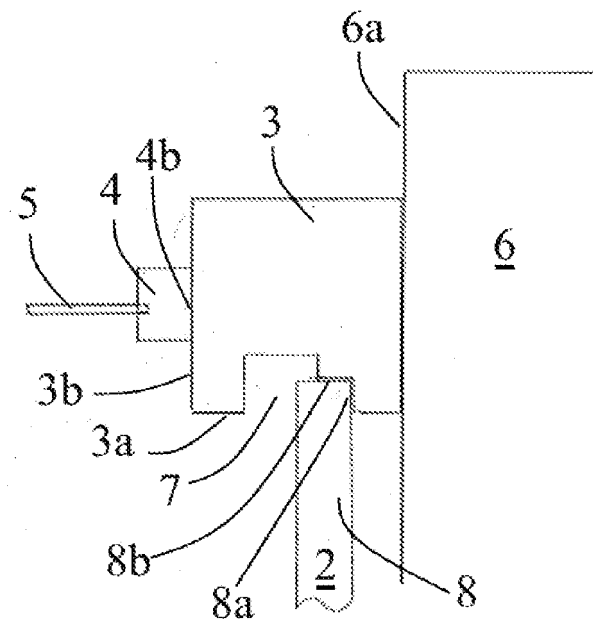


Fig. 2

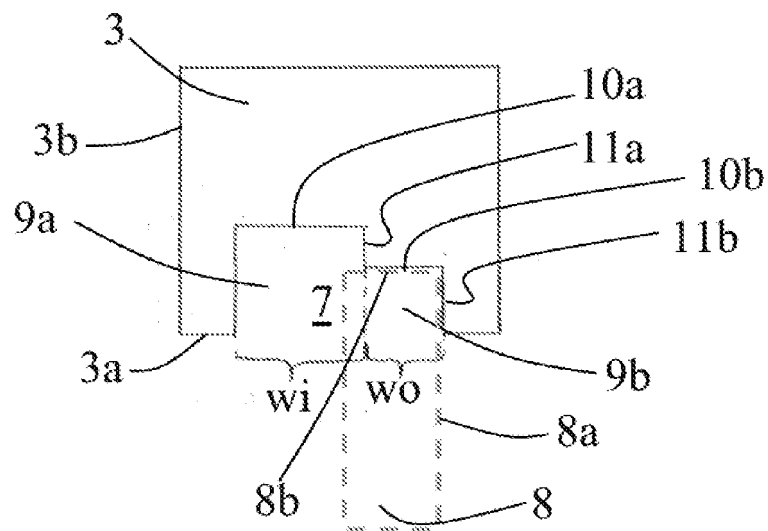


Fig. 3

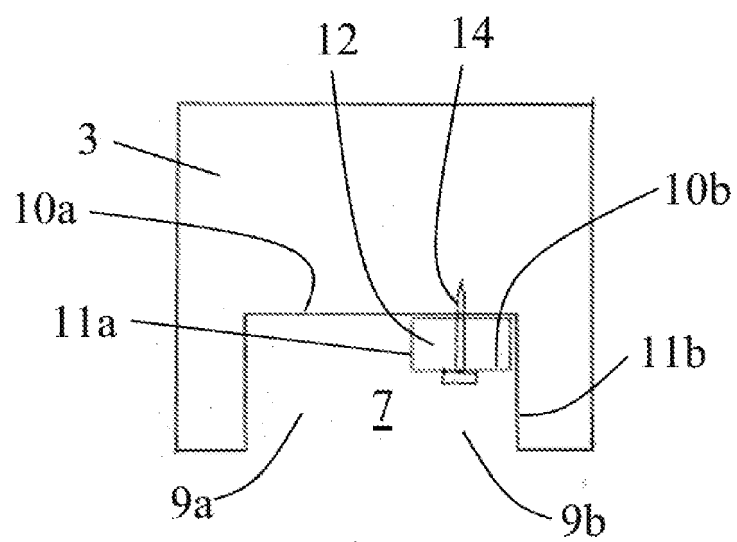


Fig. 4

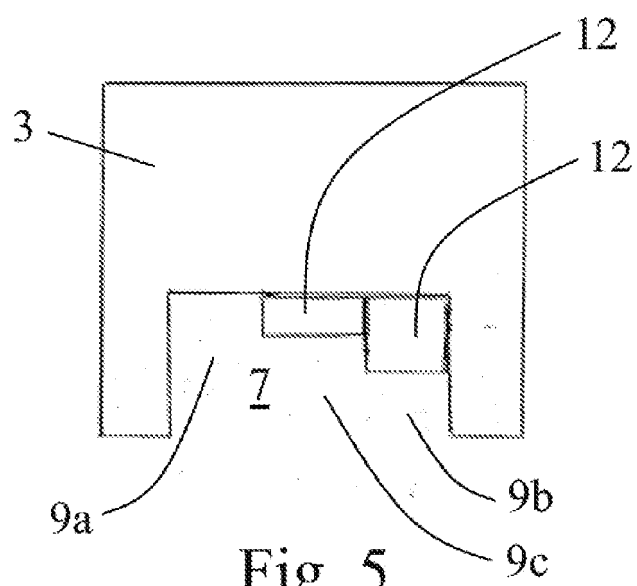


Fig. 5

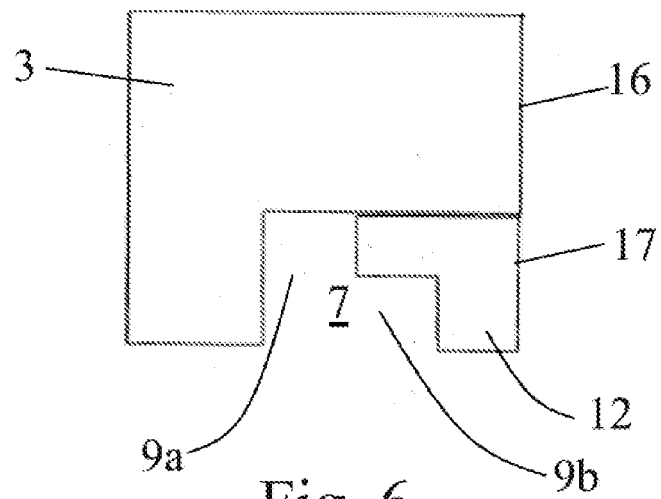
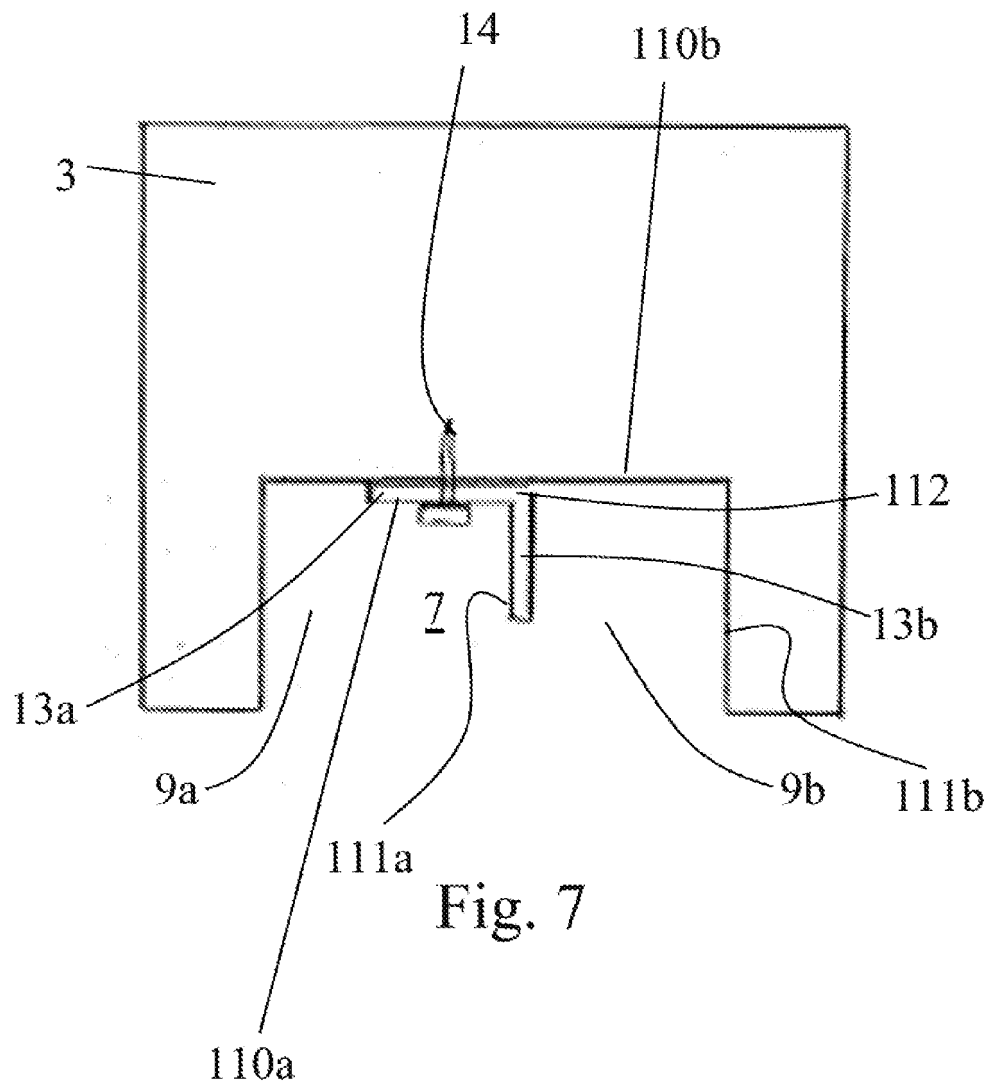
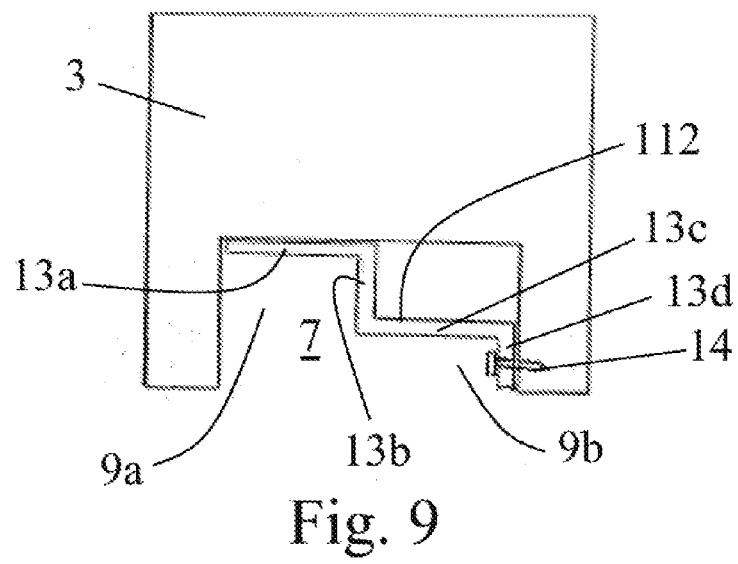
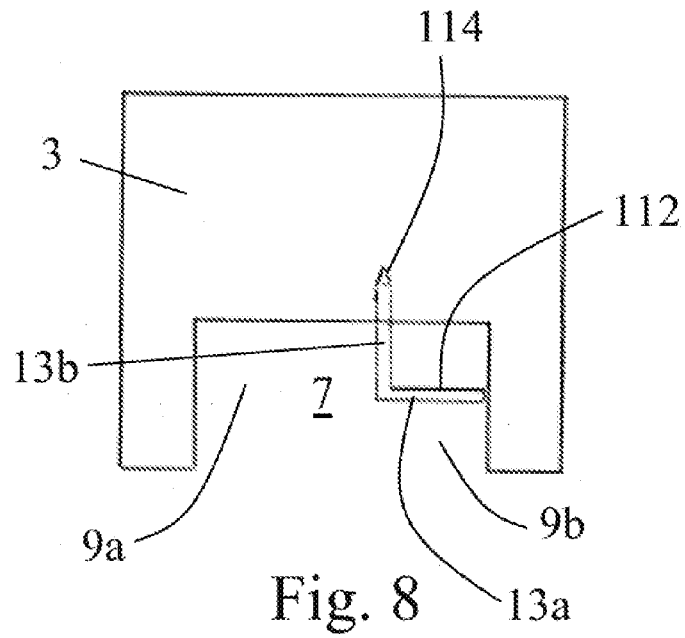


Fig. 6





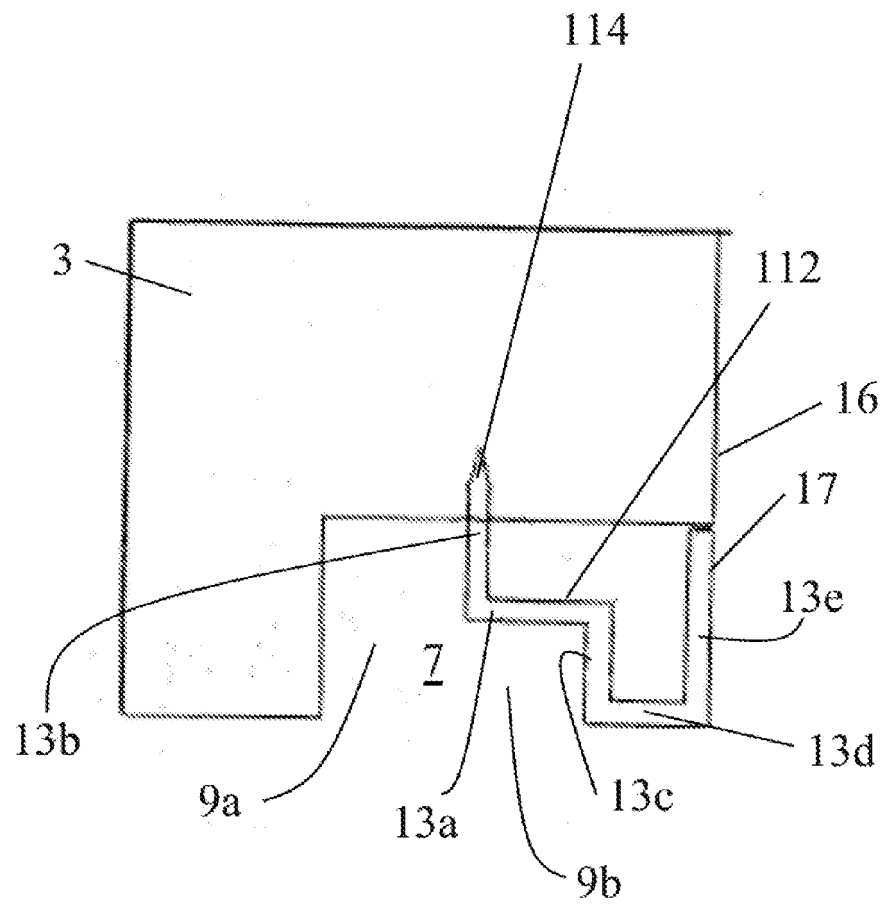


Fig. 10

REFERENCES CITED IN THE DESCRIPTION

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

Patent documents cited in the description

- EP 0738806 A [0003]
- FR 2729174 [0004]
- WO 02057563 A1 [0004]