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(54) **Installing a viewing panel unit in a surface**

(57) A method of installing a viewing panel within a through-aperture into a substantially vertical surface is disclosed. The viewing panel comprises a plurality of panes, and at least a first pane has first and second ends opposed to one another and projecting relative to corresponding first and second opposed ends of other pane(s). At least two opposed slots are provided in the surface of the through-aperture. At least part of the first end of

the first pane is slid in a first of the at least two opposed slots. The pane is rotated relative to the substantially vertical surface until the second end of the first pane corresponds substantially to the second of the at least two opposed slots. The second end of the first pane is slid and abutted in the second slot, and at least a portion of the first end remains located in the first slot.

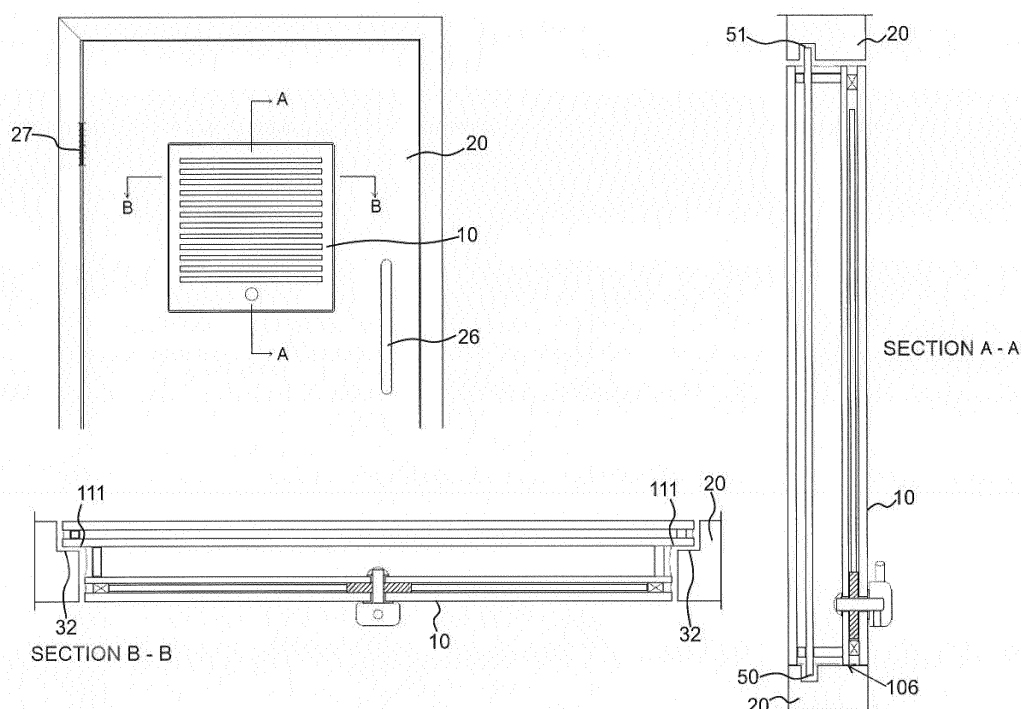


Fig. 6

Description

Field of the Invention

[0001] The present invention relates to a method of installing a viewing panel unit into a substantially vertical surface such as door or a wall. More particularly, the present invention relates to a method of installing a viewing panel unit into the surface for improving resistance to fire.

Background of the Invention

[0002] Viewing panel units, also referred to as privacy vision panels, are window-like units used in environments wherein privacy for the users in a room is required on an *ad hoc* basis. Accordingly, such viewing panel units are frequently installed in the doors of consulting room in medical and dental practices.

[0003] With reference to Figures 1 and 2 herein, a typical viewing panel unit 10 includes at least a first fixed pane 11 facing a corridor or thoroughfare outside a room, wherein the first pane 11 includes both transparent viewing sections and obscured sections, and a second movable pane 12 facing the room itself, likewise including both transparent viewing sections and obscured sections, wherein the first and second panes 11, 12 are substantially parallel and proximate one another.

[0004] The typical viewing panel further includes selective displacement means, typically a knob 13 apt to rotate a cam member located under the second pane 12 via a shaft transverse the panel unit 10, in order to selectively displace the second pane 12 up and down relative to the first pane 11, so that the obscured sections of the second panel occlude the transparent viewing sections of the first pane.

[0005] In the example shown, the viewing panel unit is double-glazed, having a third pane 11, wherein the second movable pane 12 is enclosed between the first and third panes, spacers 14 are used to distance individual panes 11, 12 from one another and the panes 11, 12 and spacers 14 are bonded to form an integral unit with relevant joints 15.

[0006] Known methods of installing vision panels 10 in doors or walls 20, whether at the time of manufacturing the door 20, building the wall 20 or for retro-fitting purposes, consistently teach to install the vision panel 10 into a conventional through-aperture 30 with substantially planar surfaces 31. Accordingly, the vision panel 10 is either located substantially equidistantly from the opposed surfaces 21, 22 of the door or wall 20 or, more infrequently, rested in part 111 against the surface 22 on one side if the through-aperture 30 is transversally stepped 32 on that side 22.

[0007] Methods are then used to secure the vision panel 10 in place, typically including a variety of retention members fastened into the or each surface 21, 22 about the vision panel. For instance, a pair of brackets may be

fitted, one on each of the opposed surfaces 21, 22 of the door or wall 20, sandwiching the vision panel 10 therebetween and within the aperture 30. WO211095983 and US8156699 disclose examples of such methods of installing vision panel.

[0008] These known methods of installing vision panels all result in a ledge or, alternatively, a crevice, between the surfaces of the door or wall and the installed viewing panel unit. These protuberances provide locations for dirt and bacteria to nest and become unhygienic. Accordingly, vision panel manufacturers have recently taken to manufacture flush-fit vision panels with a width, or thickness, corresponding substantially to the width, or thickness, of the door or wall to which they are fitted.

[0009] With reference to Figure 1 or 2 again, both of which are apt to illustrate a flush-fit vision panel 10 within an aperture 30 at the time of fitting, such flush-fit vision panels are typically fitted within through-apertures by bonding the panel 10 to the door 20, for instance with applying an intumescent compound to the surface 31 of the through-aperture 30.

[0010] Health and safety regulations and building standards increasingly require mitigation of fire risk, and there is a corresponding requirement for fire-rated doors.

Where vision panels are concerned, however, the above prior art does not properly accommodate this requirement, and vision panels thus still constitute a weak point in any fire-rated door to which they are fitted. Accordingly, there is a need for a new installation method, apt to improve the fire-retarding properties of a door or wall fitted with a vision panel and which preferably maintains at least some of the advantages of a flush-fit vision panel.

Summary of the Invention

[0011] According to a first aspect of the present invention, there is provided a method of installing a viewing panel within a through-aperture into a substantially vertical surface, wherein the viewing panel comprises a plurality of panes and at least a first pane has first and second ends opposed to one another and projecting relative to corresponding first and second opposed ends of other pane(s). The method comprises the steps of providing at least two opposed slots in the surface of the through-aperture, sliding at least part of the first end of the first pane in a first of the at least two opposed slots, rotating the panel relative to the substantially vertical surface until the second end of the first pane corresponds substantially to the second of the at least two opposed slots, and sliding and abutting the second end of the first pane in the second slot, wherein at least a portion of the first end remains located in the first slot.

[0012] In an embodiment of the method, the first and second ends of the first pane may be top and bottom edges, respectively, and the step of providing the at least two opposed slots preferably further comprises routing corresponding portions of the top and bottom surfaces of the through-aperture.

[0013] In an alternative embodiment of the method, the first and second ends of the first pane may instead be left and right edges, respectively, and the step of providing the at least two opposed slots preferably further comprises routing corresponding portions of the left and right surfaces of the through-aperture instead.

[0014] In an embodiment of the method, the step of providing the at least two opposed slots may further comprise providing continuous slots with dimensions corresponding to at least the edges.

[0015] In an alternative embodiment of the method, wherein at least one of the first or second edge is stepped, the step of providing the at least two opposed slots may instead further comprise providing at least one correspondingly-stepped slot.

[0016] In an embodiment of the method, the viewing panel dimensions may be such that outer panes of the vision panel sit substantially flush with the substantially vertical surface after abutting the second end of the first pane in the second slot.

[0017] In an embodiment of the method, the substantially vertical surface may be fire-rated, whereby at least the first pane of the viewing panel is preferably made from a fire-rated material.

[0018] According to another aspect of the present invention, there is also provided a viewing panel for use with the above method, and comprising a plurality of panes and wherein at least a first pane has first and second ends opposed to one another and projecting relative to corresponding first and second opposed ends of other pane(s).

[0019] According to a further aspect of the present invention, there is also provided a viewing panel comprising at least two panes, wherein the first and second panes are substantially parallel and proximate one another, each of the first and second pane includes both transparent viewing sections and obscured sections, the second pane is movable relative to the other so that the obscured sections of the second panel occlude the transparent viewing sections of the first panel, and wherein the first pane has first and second ends opposed to one another and projecting relative to corresponding first and second opposed ends of the second pane, and is made from a fire-rated material.

[0020] In an embodiment of either panel, the panel may comprise at least three panes, wherein the first pane is preferably located substantially between the remaining panes.

[0021] Embodiments of either panel may have a first pane that is either longer, or wider, or both, relative to other pane(s) of the viewing panel.

[0022] According to still another aspect of the present invention, there is also provided a door comprising a vision panel installed with the above method.

[0023] Embodiments of the door may preferably include an embodiment of a vision panel as described above.

[0024] Other aspects are as set out in the claims here-

in.

Brief Description of the Drawings

5 [0025] For a better understanding of the invention and to show how the same may be carried into effect, there will now be described by way of example only, specific embodiments, methods and processes according to the present invention with reference to the accompanying drawings in which:

10 Figure 1 is a top view of a vision panel being installed in a through-aperture of a door according to a prior art technique;

15 Figure 2 is a top view of a vision panel being installed in a stepped through-aperture of a door according to a prior art technique;

20 Figure 3 illustrates initial stages of a vision panel being installed in a through-aperture of a door according to the invention, as lateral views;

25 Figure 4 is illustrates concluding stages of a vision panel being installed in a through-aperture of a door according to the invention, as lateral views;

30 Figure 5 is a lateral view of a vision panel installed in a through-aperture of a door according to the invention, having asymmetrical slots; and

35 Figure 6 shows a vision panel installed in a stepped through-aperture of a door according to the invention, again having asymmetrical slots.

Detailed Description of the Embodiments

40 [0026] There will now be described by way of example a specific mode contemplated by the inventors. In the following description numerous specific details are set forth in order to provide a thorough understanding. It will be apparent however, to one skilled in the art, that the present invention may be practiced without limitation to these specific details. In other instances, well known methods and structures have not been described in detail so as not to unnecessarily obscure the description.

45 [0027] With reference to Figures 3 and 4, stages of a method of installing a vision panel 60 in a through-aperture 30 of a door 20 are illustrated as a succession of lateral views.

50 [0028] The viewing panel 60 comprises a plurality of panes 11, 61 and at least a first pane 61 has first and second ends B2, 63 opposed to one another and projecting relative to corresponding first and second opposed ends 64, 65 of other pane(s) 11. In the example, the first and second ends 62, 63 of the first pane 61 are top and bottom edges, respectively, although it will be readily understood by the skilled person upon reading

the present description, that the principle disclosed herein is equally capable of application in respect of left and right edges of the first pane 61 instead.

[0029] At least two opposed slots 50, 51 are provided in the surface 31 of the through-aperture 30. Such slot may be provided by relieving respective portions of the top and bottom surfaces 31 of the through-aperture 30 with a router or the like, wherein such slots correspond substantially to the first and second ends 62, 63 of the first pane 61 both in dimension, and in position relative to the width of the door 20 and the configuration of the vision panel 60 as will be described with reference to Figures 5 and 6 hereafter.

[0030] The respective dimensions of the first pane 61, having the longest dimension of the vision panel 60, and of the slots 51, 52 and the through-aperture 30 are preferably such as to offer absolute minimum clearance between the end surface of the top slot 51, the opposed surface 31 of the through-aperture 30 and the total length of the pane 61 as indicated at 102, 103 and 104.

[0031] Upon completing the required configuration of the through-aperture surface 31, the vision panel 60 is presented on either side 21, 22 of the door and centered relative to the through-aperture 30 as required, then slid upwards in the direction of arrow 100 so as to slide or engage at least part of the first end 63 of the first pane 60 within the top slot 51.

[0032] Whilst maintaining the at least part of the first end 63 within the top slot 51, the panel 60 is rotated in the direction of arrow 101 relative to the substantially vertical surface 22 towards the plane of the door 20, until the second end 62 of the first pane 61 corresponds substantially to the second, bottom slot 50 opposite the top slot 51 as indicated at 105, namely faces the bottom slot 50 of which it stands clear.

[0033] Thereafter, the vision panel 60 lowered in the direction of arrow 106, likewise the second end 62 of the first pane 61 which is correspondingly slid within the bottom slot 50. The respective bottom ends 64 of the panel shorter panes 11 come to rest upon the surface 31 of the through-aperture 30 on either side of the bottom end 62 of the first pane 61 within in the slot 50, optionally abutted to the end surface of the bottom slot 50 depending on the configuration of the vision panel 60 and as indicated at 106. At least a portion 631 of the first, top end 63 remains located in the top slot 51, such that the vision panel 60 is securely maintained in place in the door 20.

[0034] The above thus provides a mechanically strong and extremely simple method of holding a vision panel into a door and, when at least the first pane 61 of the viewing panel 60 is made from a fire-rated material, the panel 60 advantageously stays in place within the aperture 30 in case of fire despite any combustible failure of any optional sealing means and/or outer panes 11 that are not fire-retardant.

[0035] The method is susceptible of use with a wide variety of vision panels of differing configurations, provided that all such configurations conform to the common

requirement of a pane 61 which is longer, or wider, or both relative to the other, typically outer panes 11 of the vision panel.

[0036] With reference to Figure 5, one such configuration may result in a transversally asymmetrical panel unit 60, having a pane 61 located substantially between its outer panes 11 but not centered relative thereto, such that the width of the panel unit 60 differs on either side of the interstitial first pane 61. For instance, the double-glazed version of the panel shown in Figure 5 may extend further from the first pane 61 towards the room by a longer distance 1011, than it extends from the first pane 61 towards the corridor by a shorter distance 1012.

[0037] In this circumstance, the opposed slots 50, 51 are provided as before, however in asymmetrical manner relative to the distance between the first and second surfaces 21, 22 of the door or wall 20, so that each of the top and bottom slots 51, 50 are located by a longer distance 311 corresponding to the larger panel width 1011 from one surface 21 of the door, and by a shorter distance 312 corresponding to the smaller panel width 1012 from the other surface 22 of the door.

[0038] With reference to Figure 6 now, the asymmetric configuration of the panel 60 of Figure 5 is reprised in this example, however it is further adapted to a stepped through-aperture as shown in Figure 2. The first pane 61 in this example is thus both longer than the other panes 11 of the panel, in order to engage the opposed top and bottom slots 50, 51 of the through-aperture 30 as previously described, and, together with the outer pane 11 immediately adjacent thereto, wider than the other panes 11 of the panel, such that peripheral parts 111 of the first pane 61 come to rest against a step 32 in the through-aperture 30 on one side only of the door 20.

[0039] It will be readily understood by the skilled person upon reading the present description, that the embodiments shown and described herein are provided by way of non-limitative example only and that many variations may be devised without departing from the scope of the present disclosure.

[0040] For instance, the present principles may be equally capable of implementation with discontinuous first pane edges 62, 63 and correspondingly discontinuous slots 50, 51, i.e. wherein one or both of the projecting edges 62, 63 is castellated (not shown) and one or both of the corresponding slots 50, 51 is correspondingly implemented as a series of longitudinally-aligned discrete slots (not shown).

[0041] Moreover, all examples shown in the accompanying figures relate to a flush-fit vision panel unit 60 having a width corresponding substantially to the width and the door or wall 20 and through-aperture 30. It will nevertheless be readily understood that this should not be construed as a limitation of the present disclosure, and that the principles may be equally applied to achieve a flush-fit on one side 21, 22 only of a door or wall 20.

Claims

1. A method of installing a viewing panel within a through-aperture into a substantially vertical surface, wherein the viewing panel comprises a plurality of panes and at least a first pane has first and second ends opposed to one another and projecting relative to corresponding first and second opposed ends of other pane(s), the method comprising the steps of:
 - providing at least two opposed slots in the surface of the through-aperture;
 - sliding at least part of the first end of the first pane in a first of the at least two opposed slots;
 - rotating the panel relative to the substantially vertical surface until the second end of the first pane corresponds substantially to the second of the at least two opposed slots; and
 - sliding and abutting the second end of the first pane in the second slot, wherein at least a portion of the first end remains located in the first slot.
2. A method according to claim 1, wherein the first and second ends of the first pane are top and bottom edges, respectively, and wherein the step of providing the at least two opposed slots further comprises routing corresponding portions of the top and bottom surfaces of the through-aperture.
3. A method according to claim 1, wherein the first and second ends of the first pane are left and right edges, respectively, and wherein the step of providing the at least two opposed slots further comprises routing corresponding portions of the left and right surfaces of the through-aperture.
4. A method according to claim 2 or 3, wherein the step of providing the at least two opposed slots further comprises providing continuous slots with dimensions corresponding to at least the edges.
5. A method according to claim 2 or 3, wherein at least one of the first or second edge is stepped and the step of providing the at least two opposed slots further comprises providing at least one correspondingly-stepped slot.
6. A method according to any of claims 1 to 5, wherein the viewing panel dimensions are such that outer panes of the vision panel sit substantially flush with the substantially vertical surface after abutting the second end of the first pane in the second slot.
7. A method according to any of claims 1 to 6, wherein the substantially vertical surface is fire-rated and at least the first pane of the viewing panel is made from a fire-rated material.
8. A viewing panel for use with the method according to any of claims 1 to 7, comprising a plurality of panes and wherein at least a first pane has first and second ends opposed to one another and projecting relative to corresponding first and second opposed ends of other pane(s).
9. A viewing panel comprising at least two panes, wherein the first and second panes are substantially parallel and proximate one another, each of the first and second pane includes both transparent viewing sections and obscured sections, the second pane is movable relative to the other so that the obscured sections of the second panel occlude the transparent viewing sections of the first panel, and wherein the first pane has first and second ends opposed to one another and projecting relative to corresponding first and second opposed ends of the second pane, and is made from a fire-rated material.
10. A viewing panel according to claim 8 or 9, comprising at least three panes, wherein the first pane is located substantially between the remaining panes.
11. A viewing panel according to any of claims 8 to 10, wherein the first pane is either longer or wider or both, relative to other pane(s).
12. A door comprising a vision panel installed with the method according to any of claims 1 to 7.
13. A door according to claim 12, comprising a vision panel according to any any of claims 8 to 12.
14. The method of installing a vision panel as described herein with reference to and as shown in the accompanying figures.

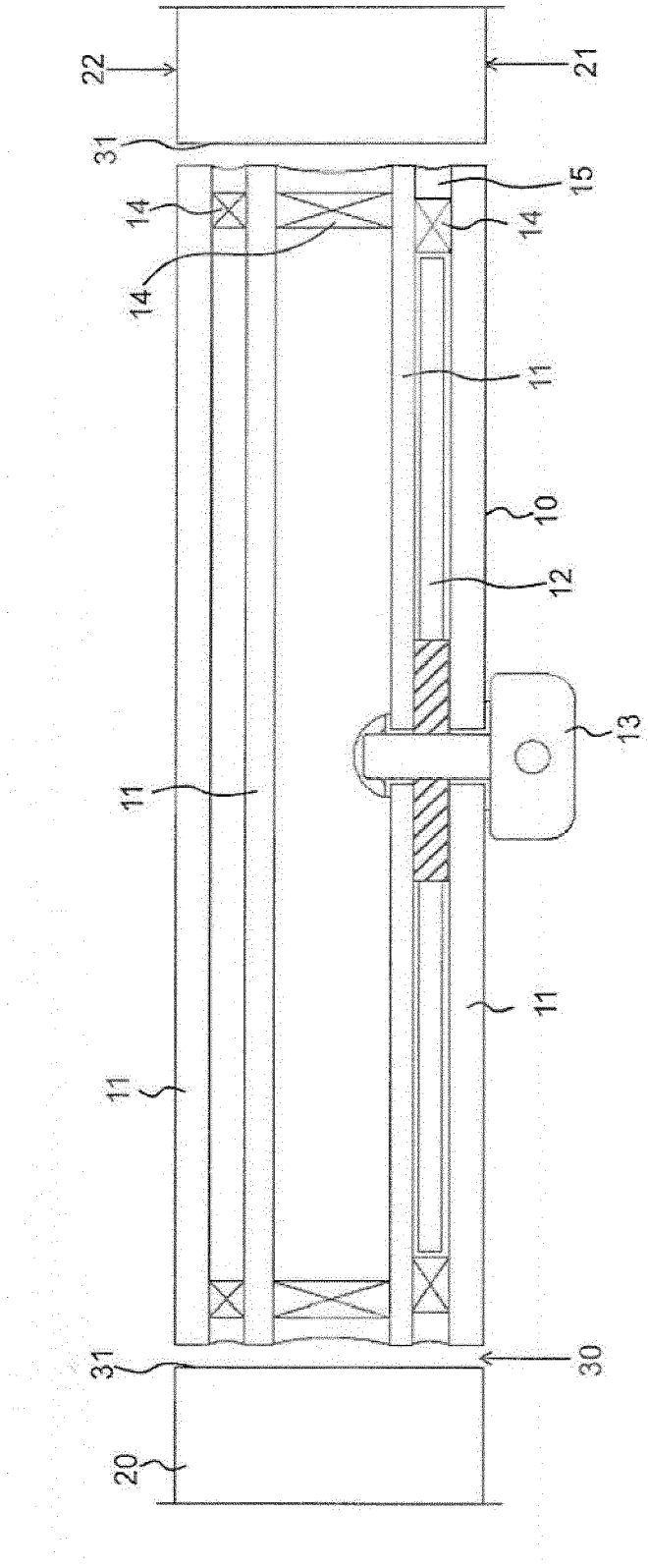
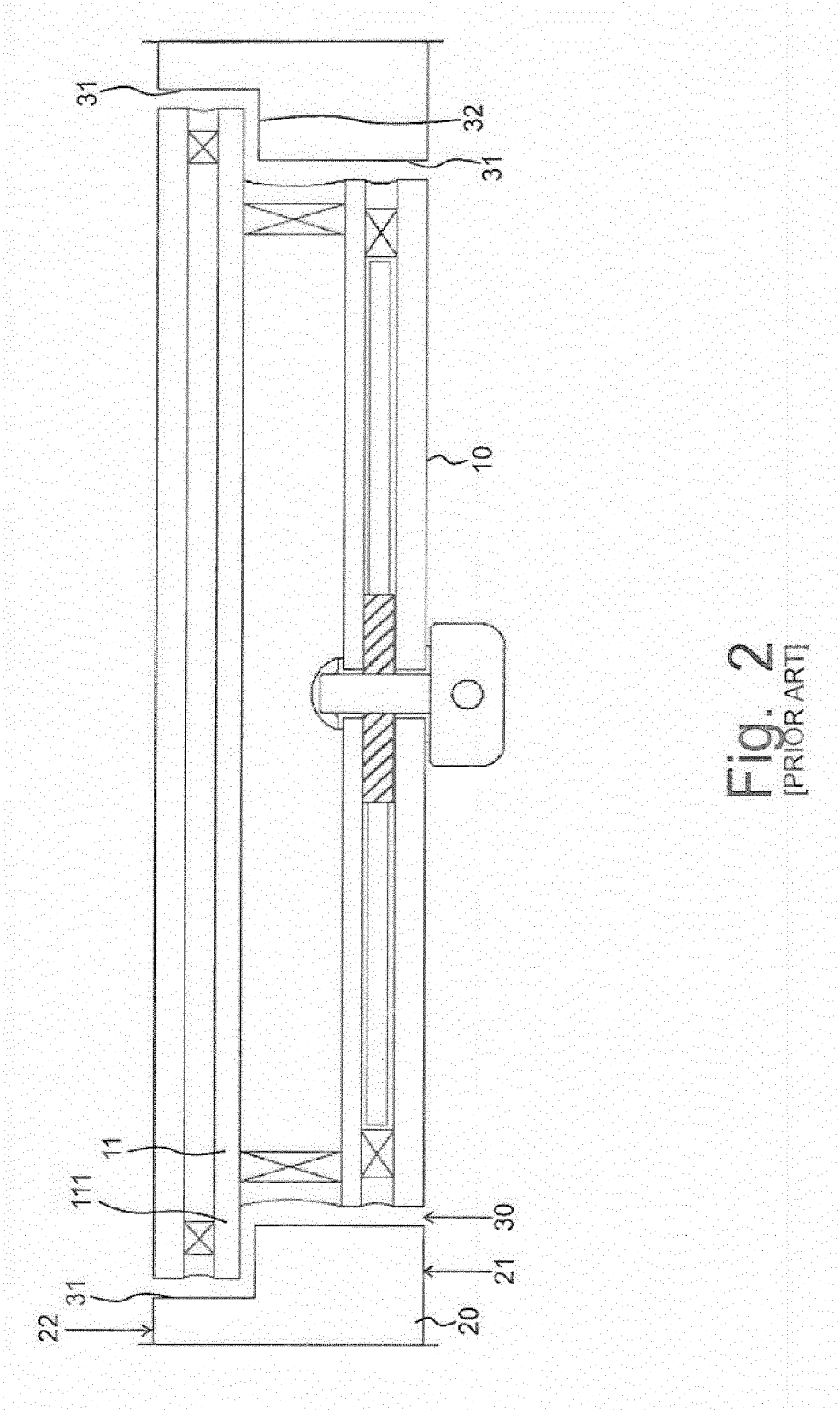


Fig. 1
[PRIOR ART]



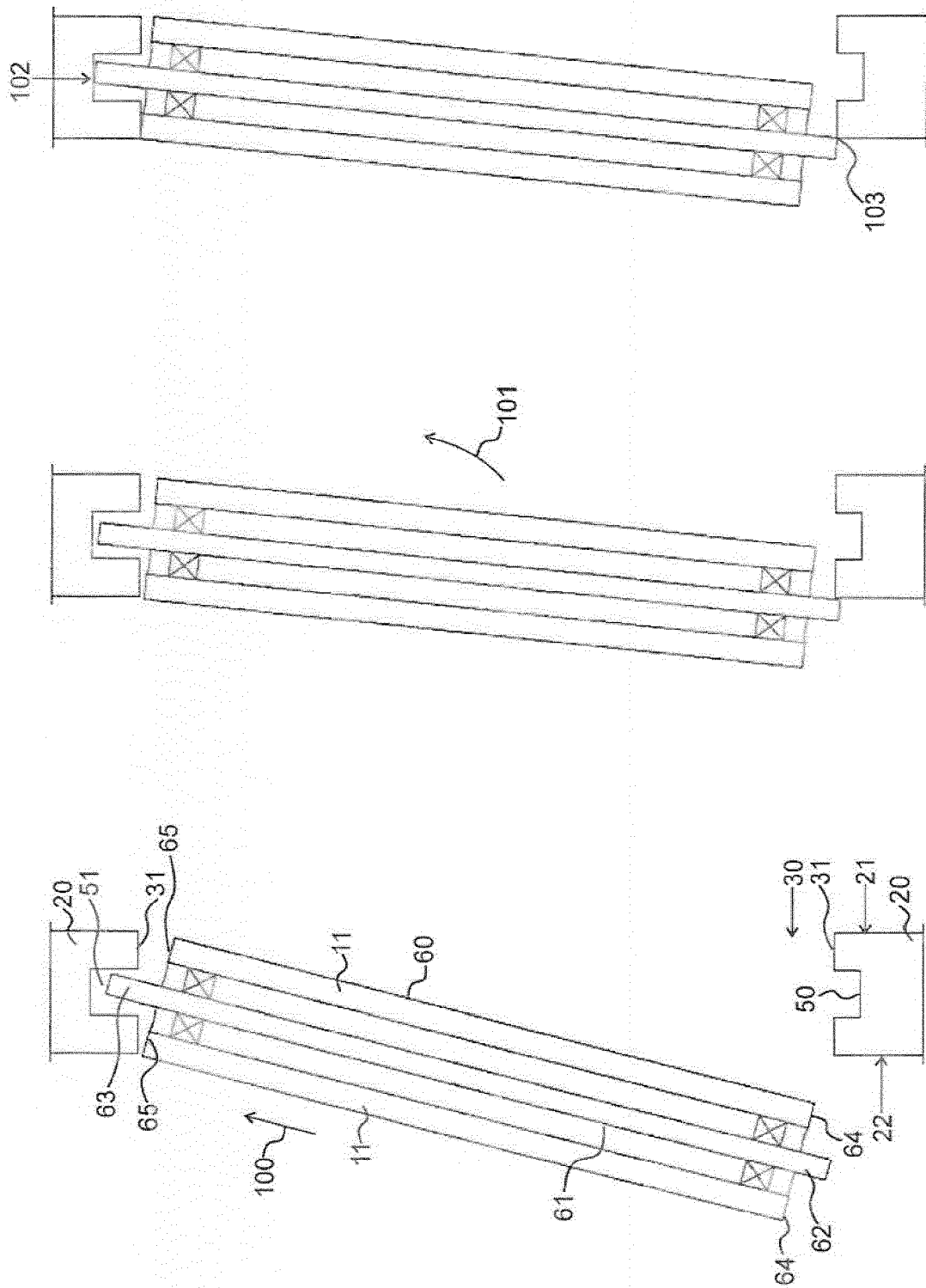


Fig. 3

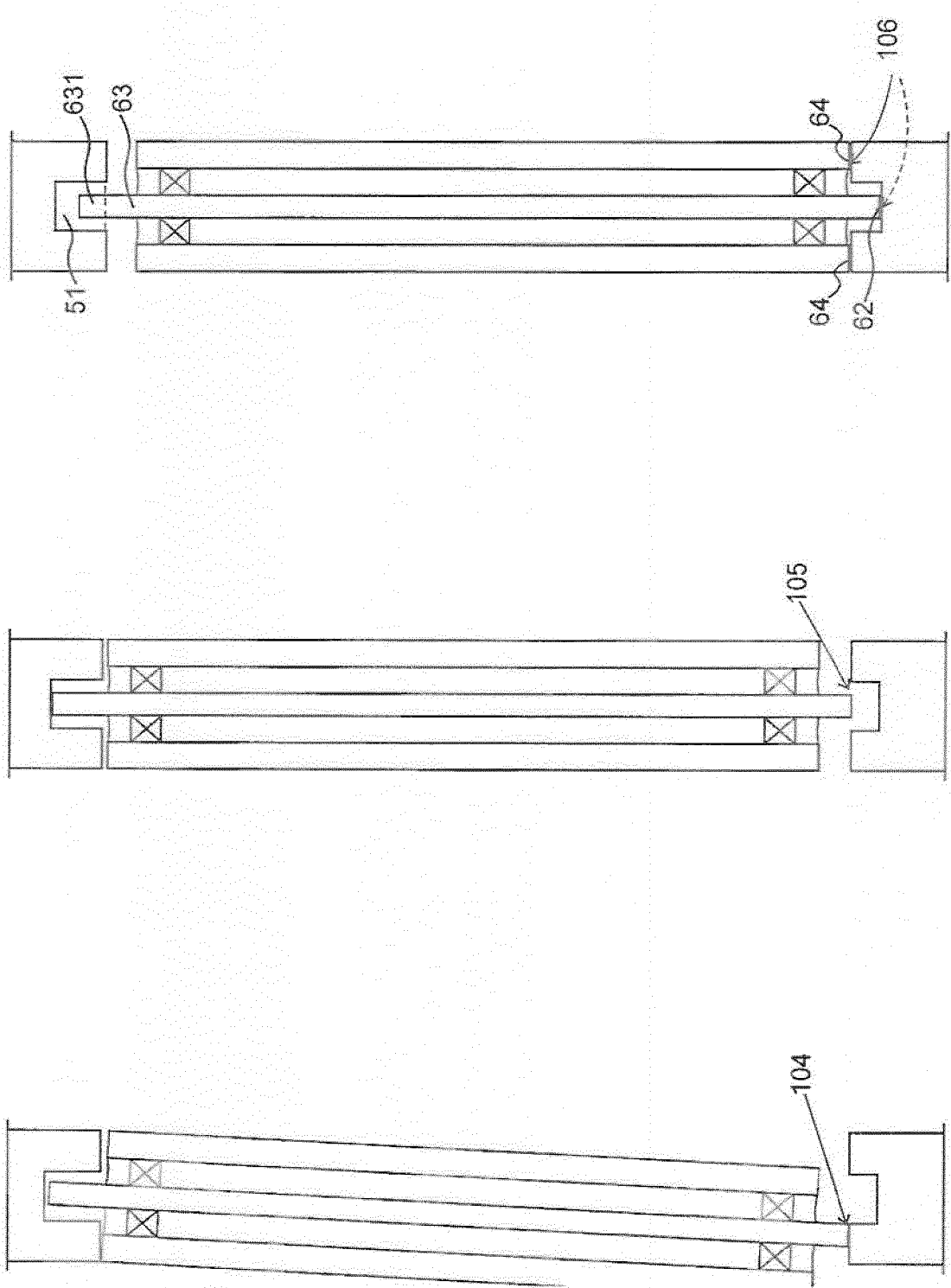


Fig. 4

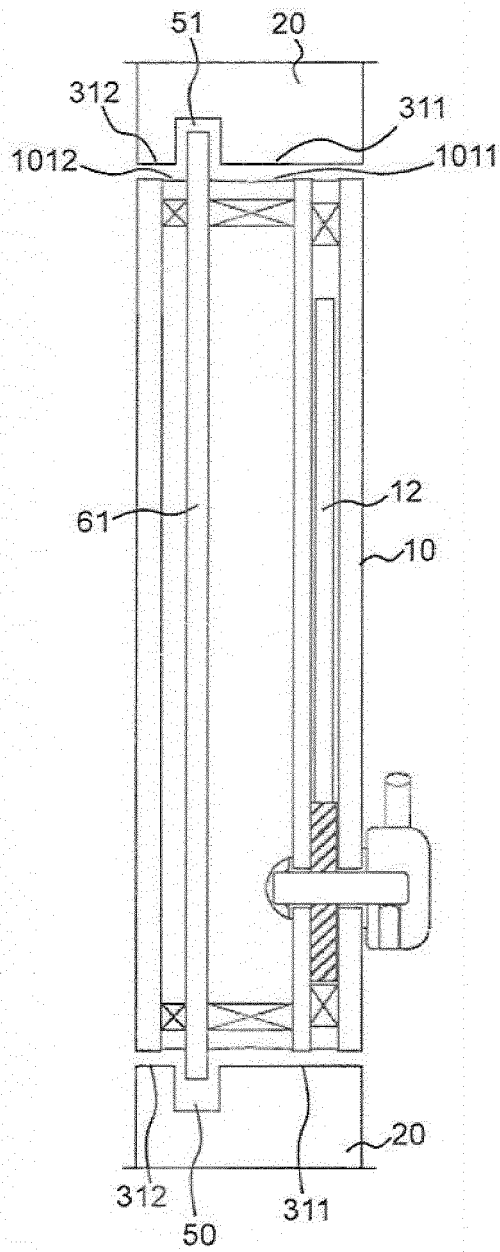


Fig. 5

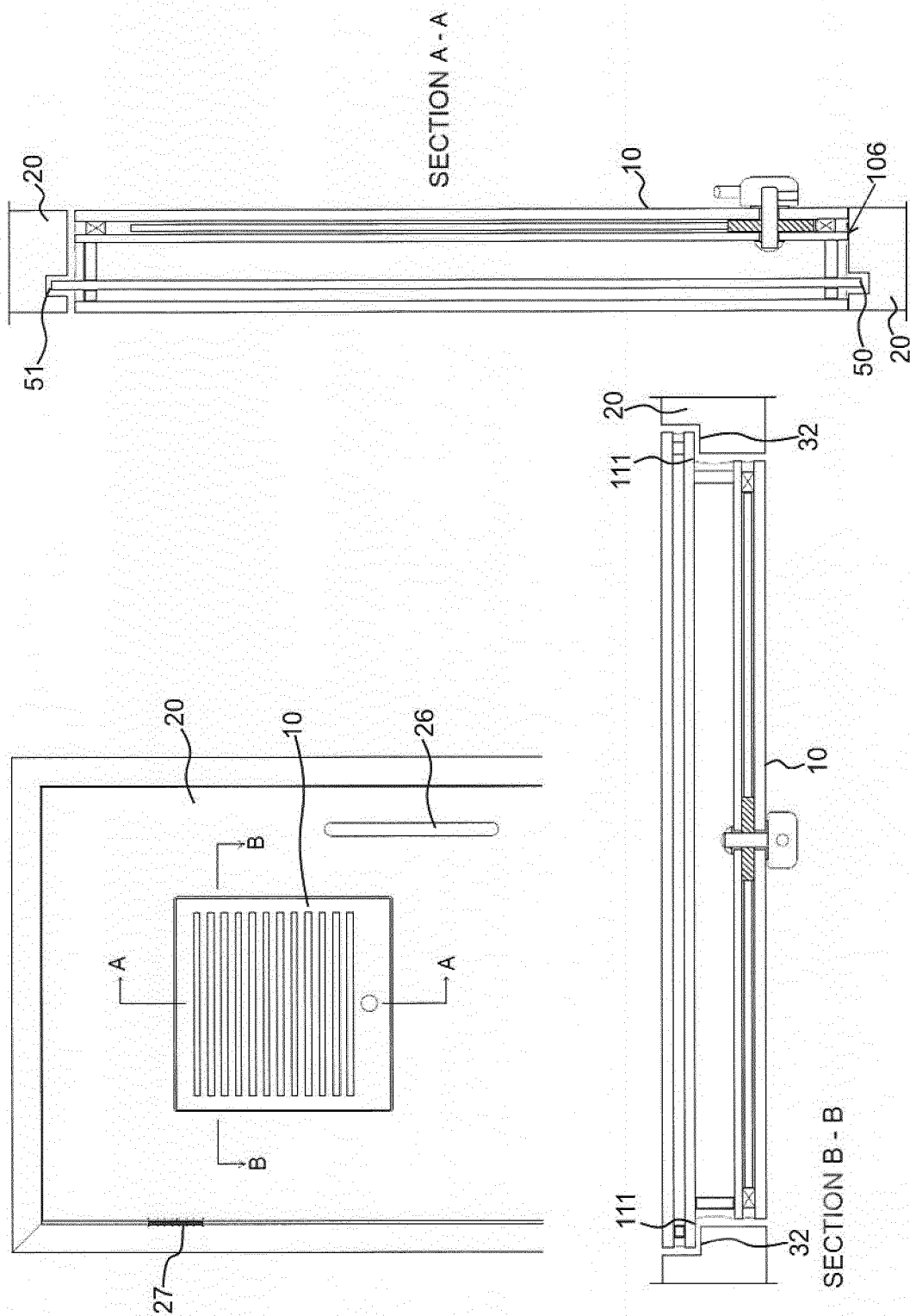


Fig. 6



EUROPEAN SEARCH REPORT

 Application Number
 EP 14 16 4681

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 10 July 2014	Examiner Blancquaert, Katleen
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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