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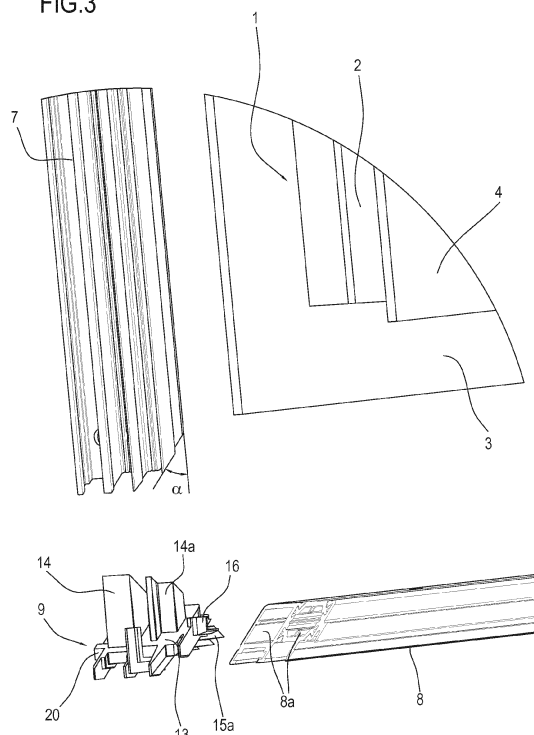
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(54) **Door or window sash**

(57) A door or window sash comprises a main body (1) having an insulating chamber (2) bilaterally obtained from corresponding glazing panels (3, 4) whose size is larger than the size of the chamber (2) so as to form a perimetric compartment (5) open towards the outside; the first glazing panel (3) is larger in the dimensions of its perimeter than the second glazing panel (4) so that it projects from the bottom of the compartment (5) to a depth (P3) which is greater than the depth (P4) of the second glazing panel (4); a rigid inner frame (6) composed of a profiled section (7, 8) for each side of the compartment (5) and housed inside the selfsame perimetric compartment (5); each profiled section (7, 8) is joined at the ends of it to corresponding contiguous profiled sections (8, 7) through the agency of respective joint means (9); each of the profiled sections (7, 8) defines an accessorized zone, open to the outside, housing hinge means (10) which, in use, connect the main body (1) along a vertical axis (Z) to a fixed frame (11), and housing also means (12) which, in use, operate and/or drive the sash (100) in such a way as to allow it at least to turn about the vertical axis (Z); the joint means comprise a reference and joining member for each pair of ends of the profiled sections (7, 8); each reference and joining member (9) has a central body (13) provided with two contact surfaces, at an angle to each other, for the corresponding ends of the profiled sections (7, 8) to be joined and in such a way as to form a corner for joining the frame (6); a first wing (14) and a second wing (15), protruding from the angled surfaces of the central body (13) and configured to be coupled within tubular chambers (7a, 8a) formed by the corresponding profiled sections (7, 8);

a third wing (16) protruding laterally from one end of the central body (13) and configured to contain, in abutment, the edges of the corner of the second glazing panel (4) in such a way as to define an external reference point when the reference and joining member (9) is placed in the compartment (5).

FIG.3



Description

[0001] This invention relates to a door or window sash.

[0002] By way of an example, this invention addresses a side-hung sash but without thereby limiting the solution to this type of use.

[0003] In the door and window trade, side-hung doors and windows are very well known and basically comprise:

- a fixed frame;
- at least one movable sash connected (for example by hinges) to the fixed frame and movable to an open and a closed position relative to the fixed frame itself;
- a control handle mounted on the movable sash for controlling the drive means by which it is possible to drive the sash in the closing/opening directions in order to open or close the sash relative to the fixed frame.

[0004] At present, according to traditional standards for their construction, sashes of this kind comprise a frame of metallic or synthetic material which runs round and seals an inner insulating chamber defined by the glazing.

[0005] The sash frame normally comprises four tubular profiled sections (forming the two uprights and the two crosspieces) fixed together and on which the glazing (having a flat perimetric profile) is applied.

[0006] The respective ends of the profiled sections of the frame are normally cut at predetermined angles (usually 45°) so that they can be mechanically joined (by specific inner corner devices of known type) to the corresponding end of the contiguous profiled section.

[0007] Once this frame is complete, a set of machining operations is performed on it (cutting, slotting, boring, recessing, etc.) to create the housings or suitable passages for:

- the control handle,
- the closing means (catches or housings for them),
- insertion of transmission means, if any,
- lengths of operating rod for insertion in specific ducts.

[0008] According to a new trend for the construction of sashes of this kind, the fixed frame of the sash is substantially built into/hidden in a compartment created by a component known as "double glazing" composed of a body comprising an insulating chamber bilaterally obtained from glazing panels whose size is larger than the size of the chamber.

[0009] In the case, for example, of a side-hung sash, the two glazing panels differ in their extensions relative to the inside base of the compartment to define the internal/external abutments of the sash on the fixed frame which are traditionally obtained with wings of varying length present on the profiled sections of the frame.

[0010] In other words, a perimetric compartment open towards the outside is formed in which to house the pairs

of profiles constituting the uprights and crosspieces which in this configuration act as an inner frame which must then be accessorized using the operating and closing components.

[0011] This trend arises out of aesthetic requirements where the presence of a visible frame is not always acceptable in the context where the frame is to be installed.

[0012] Indeed, this structure creates a sash whose aesthetic appearance is much improved compared to conventional sashes and which can also be used on all-glass building structures known as "curtain walls".

[0013] This new structure has some disadvantages, however.

[0014] One disadvantage is due to the practical impossibility of using traditional mechanical corner joints which are normally coupled within the cut ends of the tubular profiled sections constituting the crosspieces and uprights of the frame.

[0015] That is because these frame components must be fitted in the compartment one by one or, at most, in contiguous pairs set at an angle to each other within the compartment.

[0016] Alternatively, the components may be assembled to each other by gluing, for example with structural silicone material.

[0017] This assembly-joining procedure does not, however, guarantee:

- correct alignment of the frame components relative to the bottom inside surface of the insulating chamber; and
- correct alignment between contiguous profiles of the wings which define both the ducts for the passage of the drive rods and the housings for the closing or transmission means.

[0018] This is also because the installer does not have any references which can guarantee that the joints between the profiles within the compartment are correctly positioned and maintained, even if the profiled sections are precisely cut to size.

[0019] For the assembled sash, this may mean problems both of an aesthetic nature (misalignment between double glazing and frame) and with the reliability and assembly precision and operation of the functional components of the sash.

[0020] This invention has for an aim to provide a door or window sash that overcomes the above mentioned disadvantages of the prior art.

[0021] More specifically, the aim of this invention is to provide a door or window sash which is technically more reliable in operation and aesthetically more pleasant in appearance than sashes of traditional type.

[0022] Another aim of the invention is to provide a door or window sash that is quick and easy to assemble without necessitating further processing of the profiled sections of the frame.

[0023] These aims are fully achieved by a door or win-

dow sash according to this invention, as characterized in the appended claims.

[0024] More specifically, the door or window sash of the invention is of the side-hung type or of the tilt and turn type.

[0025] This is accomplished by the connection along a vertical axis of the sash to a fixed frame along a vertical side (or upright) thereof through the agency of hinge means.

[0026] The sash comprises a main body having an insulating chamber bilaterally obtained from respective glazing panels whose size is larger than the size of the chamber so as to form a perimetric compartment open towards the outside.

[0027] The glazing panels differ in the dimensions of their perimeters.

[0028] More specifically, the first glazing panel is larger in the dimensions of its perimeter than the second glazing panel so that it projects from the bottom of the compartment to a depth which is greater than the depth of the second glazing panel.

[0029] The main body also comprises a rigid inner frame composed of a profiled section for each side of the compartment and housed within the selfsame perimetric compartment.

[0030] Each profiled section is joined at the ends of it to corresponding contiguous profiled sections through the agency of respective joint means. According to the invention, the joint means comprise a reference and joining member for each pair of ends of the profiled sections. Each reference and joining member has: one central body provided with two contact surfaces, at an angle to each other, for the corresponding ends of the profiled sections to be joined and in such a way as to form a corner for joining the frame; a first wing and a second wing, protruding from the angled surfaces of the central body and configured to be coupled within tubular chambers formed by the corresponding profiled sections; a third wing protruding laterally from one end of the central body and configured to contain, in abutment, the edges of the corner of the second glazing panel in such a way as to define an external reference point when the reference and joining member is placed in the compartment.

[0031] The joining and reference member makes it possible to position and assemble the inner frame quickly and precisely (thanks also to the third contact wing) and without further processing the ends of the profiled sections used.

[0032] These and other features of the invention will become more apparent from the following detailed description of a preferred, non-limiting embodiment of it, illustrated by way of example in the accompanying drawings, in which:

- Figure 1 is a schematic front view of a window unit equipped with the door or window sash according to the invention;
- Figure 2 is a top plan view, with some parts cut away

to better illustrate others, of an end corner part of the two sashes forming part of the window unit of Figure 1;

- Figure 3 is an exploded perspective view, with some parts cut away in order to better illustrate others, of a corner part of one of the two sashes illustrated in the preceding figures;
- Figure 4 is a perspective view of the corner part of the sash of Figure 3, assembled and rotated compared to Figure 3;
- Figure 5 illustrates a corner part of a frame forming the sash in an assembled configuration and in a perspective view;
- Figures 6 and 7 are a side view and a perspective view, respectively, illustrating a first embodiment of a corner reference and joining member forming part of the sash of the invention;
- Figure 8 is an exploded perspective view, with some parts cut away in order to better illustrate others, of a corner part of one of the two sashes of Figures 1 and 2;
- Figure 9 is a perspective view of the corner part of the other sash of Figure 8, assembled and rotated compared to Figure 8;
- Figures 10 and 11 are a side view and a perspective view, respectively, illustrating a second embodiment of a corner reference and joining member forming part of the sash of the invention.

[0033] With reference to the accompanying drawings, and in particular Figures 1 and 2, the sash of the invention (labelled 100 in its entirety), may be used to make doors or windows.

[0034] In the case illustrated, purely by way of non-limiting example of the invention, the window illustrated is of the type with two, side-hung sashes (a primary sash 100 and a secondary sash 101).

[0035] It should be noted, however, that the sash used might also be of the tilt and turn type without thereby limiting the scope of the invention, since only the operating mechanisms change.

[0036] The sash 100 or 101 comprises a main body 1 having an insulating chamber 2 bilaterally obtained from respective glazing panels 3 and 4 whose size is larger than the size of the chamber 2 so as to form a perimetric compartment 5 open towards the outside.

[0037] In light of this, the first glazing panel 3 is larger in the dimensions of its perimeter than the second glazing panel 4 so that it projects from the bottom of the compartment 5 (that is, from the outside wall of the insulating chamber 2) to a depth P3 greater than the depth P4 of the second glazing panel 4.

[0038] In substance, the first glazing panel 3 is the inside one; that is, the panel which, in use, constitutes the inside glass pane of the window or door.

[0039] The second glazing panel 4 (the smaller one) is the outside panel; that is, the panel which, in use, constitutes the outside glass pane of the window or door.

The sash 100 or 101 also comprises a rigid inner frame 6 composed of a profiled section 7, 8 for each side of the compartment 5. The profiled sections 7, 8 are housed within the selfsame perimetric compartment 5.

[0040] Each of the profiled sections 7, 8 is joined at the ends of it to corresponding contiguous profiled sections 8, 7 through the agency of respective joint means 9.

[0041] It should be noted that each profiled section 7, 8 defines an accessorized zone, open to the outside, housing means 10 for connecting the main body 1 to a fixed frame 11 in use, and means 12 for operating and/or driving the sash 100 or 101.

[0042] In other words, the main body 1 forming the sash 100 or 101 is of the type known as "frameless" where the load-bearing part of the sash is the double glazing structure.

[0043] The frame 6 composed of the metallic profiled sections 7, 8 (in this case four, that is, one on each side) is "hidden" inside the main body 1 and is used mainly to apply the connecting means 10 (in this case, a pair of hinges by which the upright of the sash is articulated to the upright of the fixed frame) and the rest of the drive and/or connecting means 12 such as closing contact pins, drive rods with closing bolts and striker elements which are then connected to a control handle M fixed to one of the glazing panels 3, 4 of the sash 100 (the primary sash in this embodiment). According to the invention (see Figures 2 to 11), the joint means 9 comprise a reference and joining member for each pair of ends of the profiled sections 7, 8.

[0044] Also according to the invention, each reference and joining member 9 has at least:

- one central body 13 provided with two contact surfaces, at an angle to each other, for the corresponding ends of the profiled sections 7, 8 to be joined and in such a way as to form a corner for joining the frame 6.

[0045] Also according to the invention, the central body 13 has a first wing 14 and a second wing 15, protruding from the angled surfaces of the central body 13 and configured to be coupled within tubular chambers 7a, 8a formed by the corresponding profiled sections 7, 8.

[0046] Again according to the invention, the central body 13 has a third wing 16 protruding laterally from one end of the central body 13 and configured to contain, in abutment, the edges of the corner of the second glazing panel 4 in such a way as to define an external reference point when the reference and joining member 9 is placed in the compartment 5.

[0047] The reference and joining member 9 allows the profiled sections to be positioned correctly and quickly in the compartment 5 by coupling the central body to the profiled sections and without necessitating visual checks, thanks in particular to the third wing which is set as a reference in the corner of the outer glazing panel.

[0048] Preferably the surfaces by which the central

body 13 comes into contact with the ends of the profiled sections 7, 8 are spaced from each other by a distance at least equal to a thickness S, S1 of the central body 13 in order to allow the central body 13 itself to form an external and visible part of the corner of the frame 6 by being placed, in use, between the two ends of the profiled sections 7, 8.

[0049] In light of this, the perimeter size of each contact surface is greater than the perimeter surface of the ends of the profiled sections 7, 8. This allows the profiled sections to be positioned correctly in abutment against the central body 13.

[0050] The thickness S, S1 of the central body 13, combined with the larger perimeter size of its two surfaces, allows the central body 13 to be placed between the two ends of the profiled sections 7, 8 at the corner made by its components to define the frame 6.

[0051] Preferably, each central body 13 is provided, on its free surfaces (located, in use, towards the outside of the compartment 5), with profiled fittings 17 connecting the accessorized zones of the tubular profiled sections 7, 8 in such a way as to create continuity, in use, between the two accessorized zones of the tubular profiled sections 7, 8 themselves.

[0052] It should be noted that these profiled fittings 17 may be lengths of ducts (see Figures 2, 5 and 9) similar to those present in the profiled sections to create duct continuity and provide space where the accessories used for sash operation can be fitted.

[0053] Preferably, each central body 13 is provided, on further free surfaces of it (again located, in use, towards the outside of the compartment 5), with tracks 18 defining zones for connection with corresponding zones for receiving sealing means 19 for the sash 100 present on the tubular profiled sections 7, 8.

[0054] In other words, the central body 13 has formed on it two distinct accessorized zones to create continuity of the accessorized zones of the profiled sections 7, 8 to which functional or sealing elements for the sash are applied.

[0055] This structure prevents further accessory processing from having to be performed on the ends of the profiled sections 7, 8, before and after fitting the frame 6 to the main body 2, which would otherwise be necessary, in a traditional corner joint, to provide space for the passage of the functional and sealing elements.

[0056] It should be noted, therefore, that with this solution, all the installer has to do is cut the profiled sections to size, without further processing them in any other way.

[0057] Preferably, the central body 13 comprises a front inside wall 13a configured for stable contact, in use, with at least one corner surface of the insulating chamber 2.

[0058] More specifically, see Figures 6 and 7, the front inside wall 13a is shaped to come into contact with a stretch of both of the corner surfaces of the insulating chamber. This, together with the third wing 16, allows immediately finding and stabilizing the correct position

of the joining member 9.

[0059] Preferably, the central body 13 comprises a fourth wing 20 protruding at the other end of it (the end opposite the one with the third wing 16) to come into contact, when it is fitted, with one face of the first glazing panel 3 (the larger one) in such a way as to centre the central body 13 relative to the compartment 5 inside the main body 1 and in combination with the third wing 16.

[0060] In light of this, the fourth wing 20 (Figures 7 and 11) is a straight-profiled protruding strip for face-to-face contact with the inside of the first glazing panel 3.

[0061] For the installer, the presence of the fourth wing 20 guarantees that the central body 13 will sit securely in the corner of the compartment 5 without having to specially adapt it by hand in any way.

[0062] Preferably, (see Figures 3 to 11), the first wing 14 and the second wing 15 of the central body 13 each comprise a pair of shaped connectors 14, 14a and 15, 15a parallel to each other and protruding perpendicularly from the corresponding surface of the central body 13.

[0063] Each pair of connectors 14, 14a and 15, 15a may be shaped or formed differently from the other pair, depending on the type of profiled section 7, 8.

[0064] In light of this, the elements of even just one pair of connectors 14, 14a or 15, 15a may have profiles with differently shaped sections, again depending on the profiles of the tubular chambers of the profiled sections themselves.

[0065] Preferably, the third wing 16 has a bracket-like form, with two surfaces perpendicular to each other for abutting against the corner edge of the second glazing panel 4.

[0066] More specifically, the bracket defining the third wing 16 also comprises a shim 16a protruding from the main body 13 to define a third reference abutment on the inside of the second glazing panel 3.

[0067] In light of this, the third wing 16 acts as reference and positioner for the joining member 9 relative to the glazing panel 3 and to the compartment 5 during assembly.

[0068] The third wing 16 is assisted by the fourth wing 20 which acts as an internal reference for abutment against the other glazing panel 4, thus guaranteeing position stability and centring of the joining member 9.

[0069] The simultaneous presence of the three references:

- third wing 16 on second glazing panel 4,
- the fourth wing 20 on first glazing panel 3 and
- the front inside wall 13a on the main body 13, guarantees three different reference points for securely positioning the joining member 9 relative to the glazing panels 3 and 4 and relative to the insulating chamber 2.

[0070] There are two reference points in a transversal direction (that is, widthways across the gap defined by the two glazing panels 3 and 4 which form the compart-

ment 5) provided by the third and fourth wings 16 and 20. There are one or two reference points in depth (that is, towards the bottom of the compartment 5) provided by the third wing 16 with the aid, if necessary, of the front wall 13a.

[0071] The joining member 9 can thus be positioned quickly, firmly, precisely and steadily: this allows the profiled sections to be coupled firmly and without necessarily having to check each time the joining member 9 is coupled to a single profiled section.

[0072] Preferably, the frame 6 may be composed of profiled sections 7, 8 whose ends are cut or shaped at an angle α of 45° relative to a reference plane defined by an inside surface of the compartment 5 (see Figures 3 to 5).

[0073] In light of this, the contact surfaces of the central body 13 extend at an angle to be parallel to the ends of the profiled sections 7, 8 during assembly (see Figures 6 and 7).

[0074] It should be noted that, in use, the central body 13 has a thickness S, that is, a distance between its two contact surfaces, which, in use, defines the visible corner part of the frame 6 thus formed.

[0075] In an alternative embodiment, the frame 6 may be formed from profiled sections 7, 8 whose ends are cut or shaped at an angle β of 90° , that is, perpendicular to a reference plane defined by an inside surface of the compartment 5.

[0076] In light of this, the contact surfaces of the central body 13 extend at an angle to be parallel to the ends of the profiled sections 7, 8 during assembly.

[0077] It should be noted that, in use, the central body 13 has a thickness S1, that is, a distance between its contact surfaces, which defines the visible corner part of the frame 6 thus formed.

[0078] The choice of profiled sections with ends cut at 45° or at 90° depends on the structural choices which the installer wants to make on the type of window.

[0079] Such a choice, however, makes no difference to the structural advantages of the solution provided by the invention since the features described up to here apply to whatever type of profiled section is chosen.

[0080] As already mentioned, but not necessarily, the two glazing panels 3, 4 differ in size and protrude to different extents relative to the bottom surface of the compartment 5 formed, that is to say, one glazing panel 3 is larger than the other glazing panel 4 (see Figures 2, 3, 4, 8 and 9).

[0081] This solution, purely by way of example, is used on some types of window with two side-hung sashes but without thereby limiting the scope of the solution of the invention.

[0082] Preferably, a substance for creating firm joints is spread between each reference and joining member 9 for the tubular profiled sections 7, 8 joined and the compartment 5.

[0083] Preferably, this substance is also applied between the third wing 16 and the corner of the correspond-

ing glazing panel 4.

[0084] In light of this, one of the gluing substances may be structural silicone which has sealing and protective properties and which is spread between the profiled sections and the bottom surface of the compartment 5 during assembly.

[0085] Preferably, the joining and reference member is made of an insulating material or, in any case, any material with low thermal conductivity.

[0086] This invention also provides a process for assembling the door or window sash 100 or 101.

[0087] The process comprises at least the following steps:

- preparing a tubular profiled section 7, 8 for each side of the main body 1; 15
- preparing a reference and joining member 9 for every pair of ends of profiled sections 7, 8 prepared;
- placing the reference and joining member 9 at a corner of the main body 1 by making the third wing 16, which protrudes laterally from one end of the central body, rest on and abut against the corner edges of the second glazing panel 4 in such a way as to define an external reference point when the reference and joining member 9 is placed in the compartment 5; 20
- joining each profiled section 7, 8 to the central body 13 by housing the first wing 14 and the second wing 15 in the tubular chambers 7a, 8a until coming into contact with the surfaces of the central body 13 and in such a way as to form a corner for joining the frame 6 where a part of the central body 13 is placed between the two ends of the profiled sections 7, 8 to form a part of the corner of the selfsame frame 6. 25 30

[0088] Preferably, in the step of joining the profiled sections 7, 8 to the central body 13, the corner joint of each corner sector of the frame 6 is also formed by a part of the central body 13 interposed between the two ends of the profiled sections 7, 8. 35

[0089] A sash structured in this way achieves the above mentioned aims thanks to the presence of a reference and joining member of the inner frame. This assembly element has numerous advantages: 40

- speed and precision of positioning each profiled section in the compartment; 45
- reducing the processing required on the profiled sections both before and after they are assembled to the main body;
- maintaining the aesthetic quality of the sash; 50
- structural continuity of the frame thanks to the presence of profiled fittings and tracks on the joining member;
- ease and speed with which the sash control, drive and closing components can be assembled even on the joining member. 55

Claims

1. A door or window sash comprising at least:

- a main body (1) having an insulating chamber (2) bilaterally obtained from corresponding glazing panels (3, 4) whose size is larger than the size of the chamber (2) so as to form a perimetric compartment (5) open towards the outside; the first glazing panel (3) being larger in the dimensions of its perimeter than the second glazing panel (4) so that it projects from the bottom of the compartment (5) to a depth (P3) which is greater than the depth (P4) of the second glazing panel (4);
- a rigid inner frame (6) composed of a profiled section (7, 8) for each side of the compartment (5) and housed inside the selfsame perimetric compartment (5); each profiled section (7, 8) being joined at the ends of it to corresponding contiguous profiled sections (8, 7) through the agency of respective joint means (9);
- each of the profiled sections (7, 8) defining an accessorized zone, open to the outside, housing hinge means (10) which, in use, connect the main body (1) along a vertical axis (Z) to a fixed frame (11), and housing also means (12) which, in use, operate and/or drive the sash (100) in such a way as to allow it at least to turn about the vertical axis (Z) in order to define an open and a closed configuration of the door or window,

characterized in that the joint means (9) comprise a reference and joining member for each pair of ends of the profiled sections (7, 8); each reference and joining member (9) having at least:

- a central body (13) provided with two contact surfaces, at an angle to each other, for the corresponding ends of the profiled sections (7, 8) to be joined and in such a way as to form a corner for joining the frame (6);
- a first wing (14) and a second wing (15), protruding from the angled surfaces of the central body (13) and configured to be coupled within tubular chambers (7a, 8a) formed by the corresponding profiled sections (7, 8);
- at least a third wing (16) protruding laterally from one end of the central body (13) and configured to contain, in abutment, the edges of the corner of the second glazing panel (4) in such a way as to define an external reference point when the reference and joining member (9) is placed in the compartment (5).

2. The sash according to claim 1, wherein the surfaces by which the central body (13) comes into contact

with the ends of the profiled sections (7, 8) are spaced from each other by a distance at least equal to a thickness (S, S1) of the central body (13) in order to allow the central body (13) itself to form an external and visible part of the corner of the frame (6) by being placed, in use, between the two ends of the profiled sections (7, 8).

3. The sash according to claim 1 or 2, wherein each central body (13) is provided, on its free surfaces, with profiled fittings (17) connecting the accessorized zones of the tubular profiled sections (7, 8) in such a way as to create continuity, in use, between the two accessorized zones of the tubular profiled sections (7, 8) themselves.
4. The sash according to any of the preceding claims, wherein each central body (13) is provided, on its free surfaces, with tracks (18) defining zones for connection with corresponding zones for receiving sealing means (19) for the sash (100) present on the tubular profiled sections (7, 8).
5. The sash according to any of the preceding claims, wherein the central body (13) comprises a fourth wing (20) protruding at the other end of it, to come into contact, when it is fitted, with an inside face of the first glazing panel (3) in such a way as to provide a second reference point for centring the central body (13) relative to the compartment (5) inside the main body (1) in combination with the third wing (16).
6. The sash according to any of the preceding claims, wherein the first wing (14) and the second wing (15) each comprise a pair of shaped connectors (14, 14a, 15, 15a) parallel to each other and protruding perpendicularly from the corresponding surface of the central body (13).
7. The sash according to any of the preceding claims, wherein the third wing (16) has a bracket-like form, with two surfaces perpendicular to each other for abutting against the corner edge of the second glazing panel (4).
8. The sash according to any of the preceding claims, wherein the central body (13) comprises a front inside wall (13a) configured for stable contact, in use, with at least one corner surface of the insulating chamber (2) in such a way as to define a third reference point during placement in the compartment (5).
9. The sash according to any of the preceding claims, wherein each end of the profiled sections (7, 8) making up the inner frame (6) are cut or shaped at an angle (α) of 45° to a reference plane defined by the bottom surface of the compartment (5), and wherein the contact surfaces of the central body (13) extend

at an angle to be parallel to the ends of the profiled sections (7, 8) during assembly; the central body (13) having, in use, a thickness (S), that is, a distance between its two contact surfaces, which, in use, defines the visible corner part of the frame (6) thus formed.

10. The sash according to any of the claims from 1 to 8, wherein each end of the profiled sections (7, 8) making up the inner frame (6) are cut or shaped at an angle (β) of 90°, that is perpendicular, to a reference plane defined by the bottom surface of the compartment (5), and wherein the contact surfaces of the central body (13) extend at an angle to be parallel to the ends of the profiled sections (7, 8) during assembly; the central body (13) having a thickness (S1), that is, a distance between the two contact surfaces, which, in use, defines the visible corner part of the frame (6) thus formed.
11. The sash according to any of the preceding claims, wherein a substance for creating firm joints is spread between each reference and joining member (9) and the corresponding ends of the tubular profiled sections (7, 8) to be joined.
12. A process for assembling a door or window sash (100) comprising a main body (1) having an insulating chamber (2) bilaterally obtained from corresponding glazing panels (3, 4) whose size is larger than the size of the chamber (2) so as to form a perimetric compartment (5) open towards the outside, the first glazing panel (3) being larger in the dimensions of its perimeter than the second glazing panel (4) so that it projects from the bottom of the compartment (5) to a depth (P3) which is greater than the depth (P4) of the second glazing panel (4);
characterized in that it comprises at least the following steps:
 - preparing a tubular profiled section (7, 8) for each side of the main body (1);
 - preparing a reference and joining member (9) for every pair of ends of profiled sections (7, 8) prepared; the reference and joining member (9) comprising a central body (13) provided with two contact surfaces, at an angle to each other, for the corresponding ends of the profiled sections (7, 8) to be joined and a first wing (14) and a second wing (15), protruding from the angled surfaces of the central body (13) and configured to be coupled within tubular chambers (7a, 8a) formed by the corresponding profiled sections (7, 8);
 - placing the reference and joining member (9) at a corner of the main body (1) by making the third wing (16), which protrudes laterally from one end of the central body (13), rest on and

abut against the corner edges of the second glazing panel (4) in such a way as to define an external reference point when the reference and joining member (9) is placed in the compartment (5);

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- joining each profiled section (7, 8) to the central body (13) by housing the first wing (14) and the second wing (15) in the tubular chambers (7a, 8a) until coming into contact with the surfaces of the central body (13) to form corner sectors of the frame (6).

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13. The process according to claim 12, wherein in the step of joining the profiled sections (7, 8) to the central body (13), the corner joint of each corner sector of the frame (6) is also formed by a part of the central body (13) interposed between the two ends of the profiled sections (7, 8).

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FIG.1

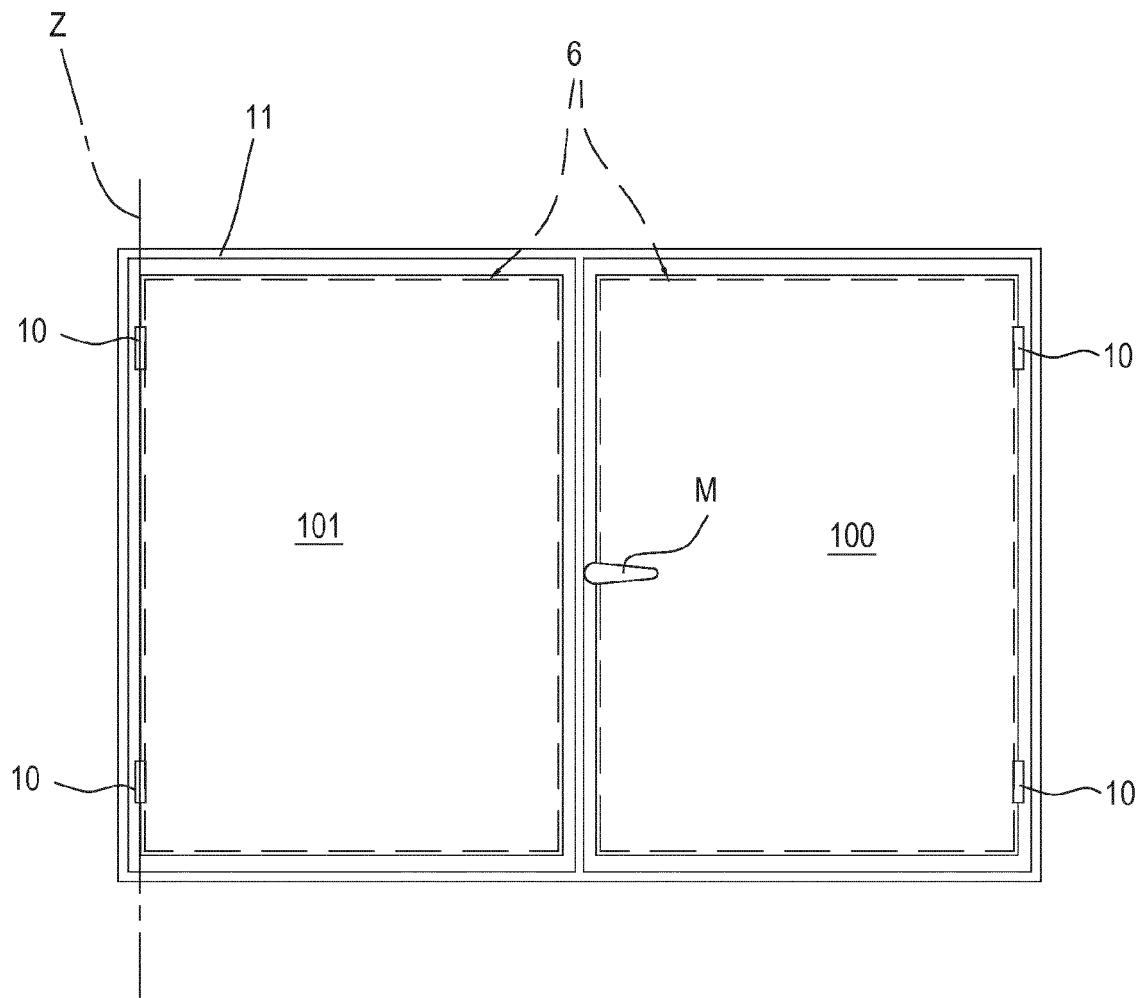


FIG.2

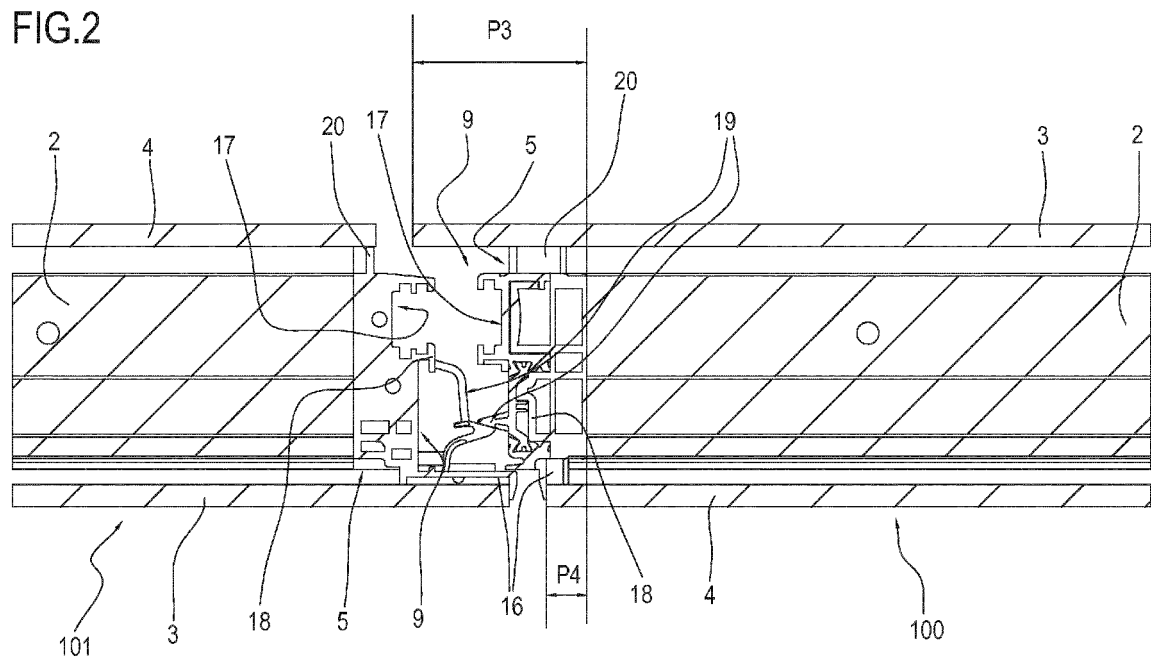


FIG.3

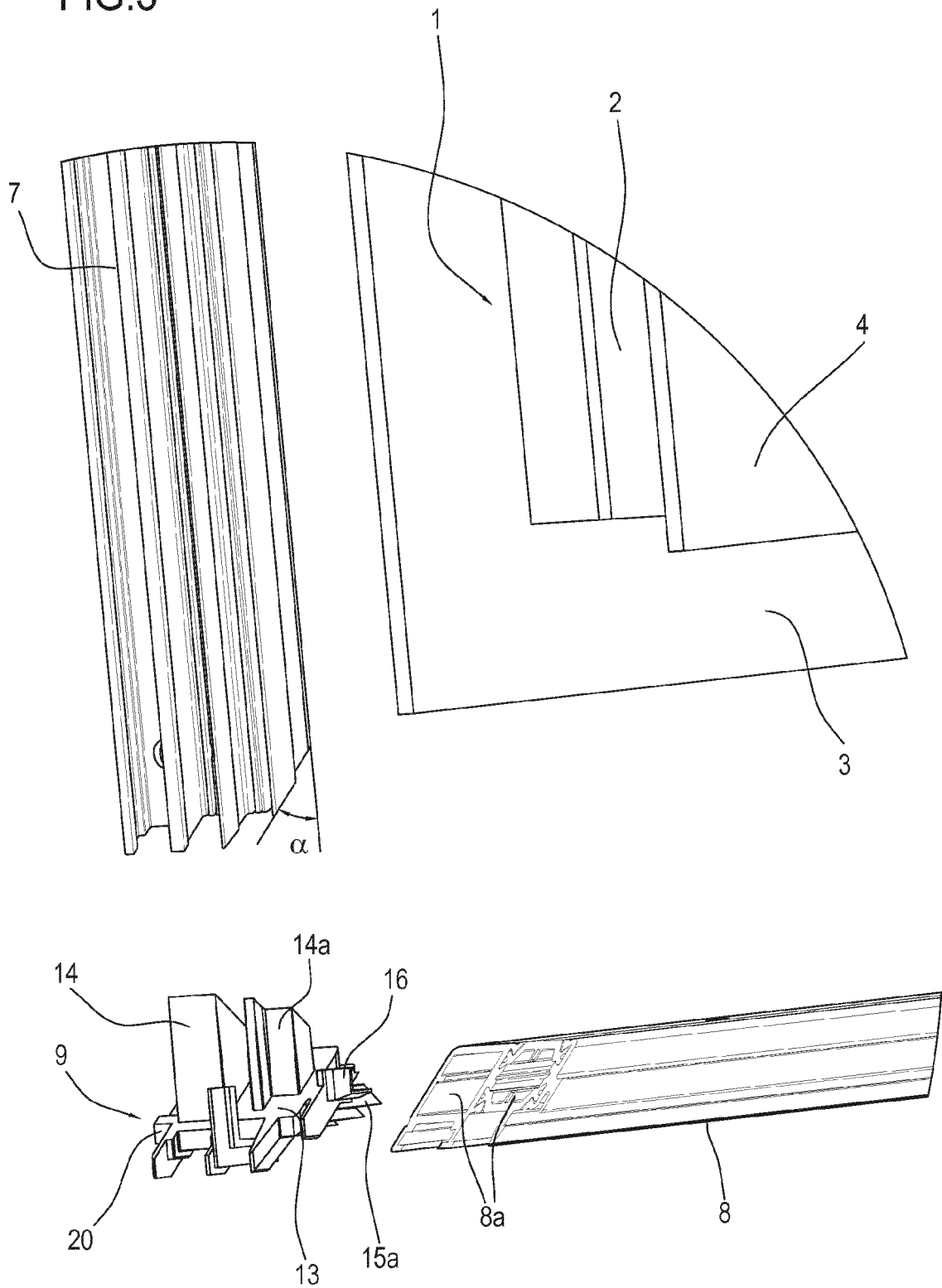


FIG.4

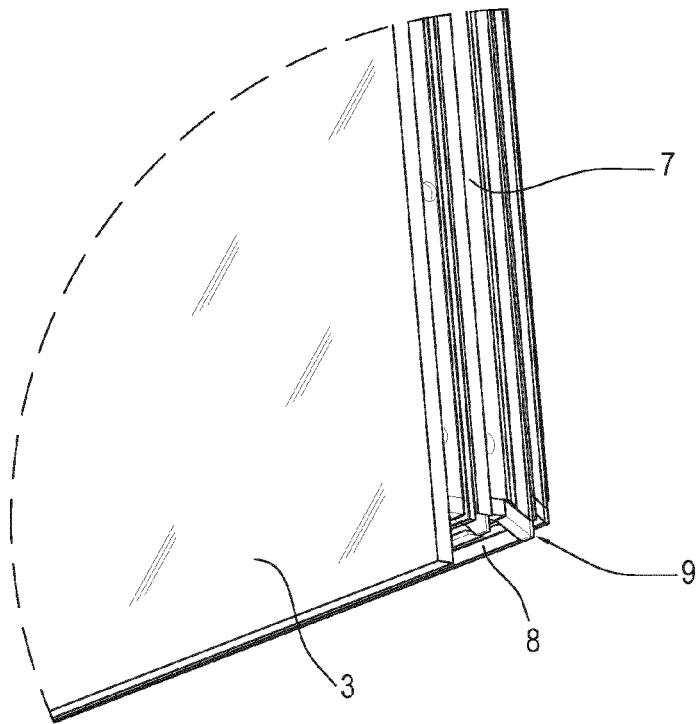


FIG.5

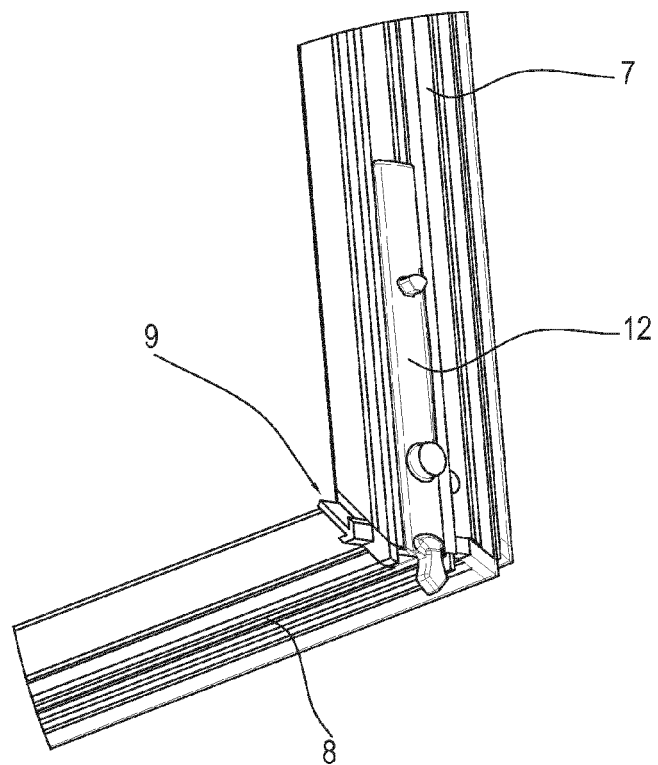


FIG.6

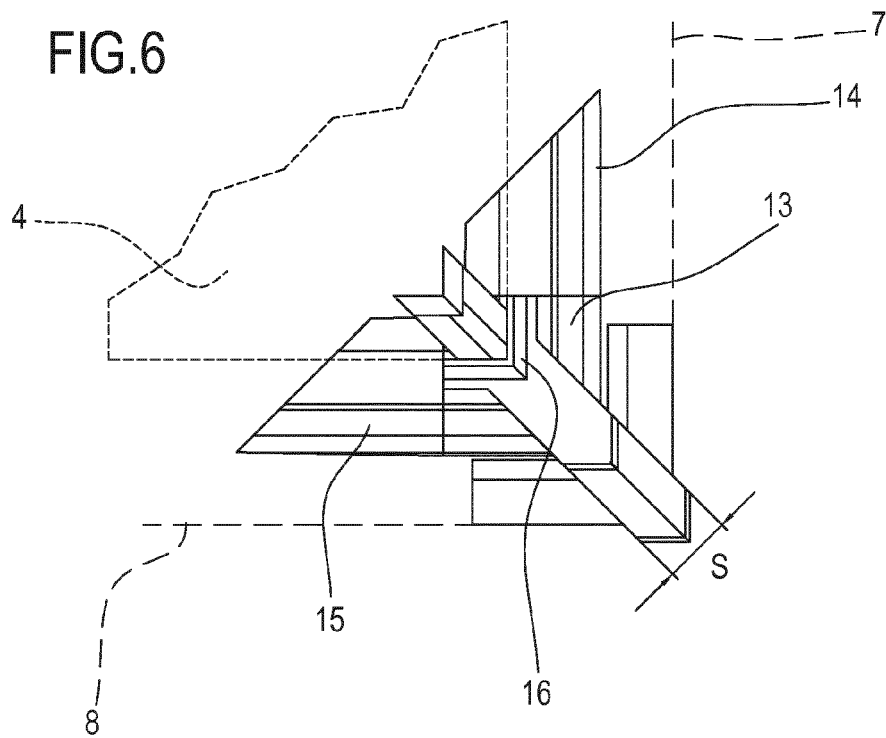


FIG.7

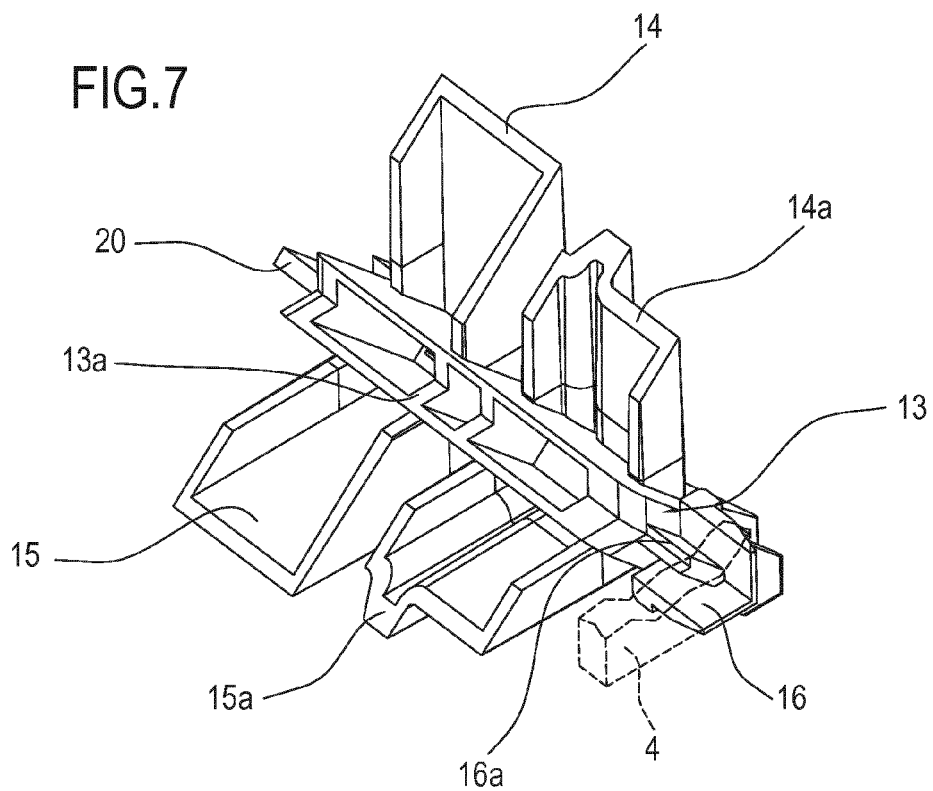


FIG.8

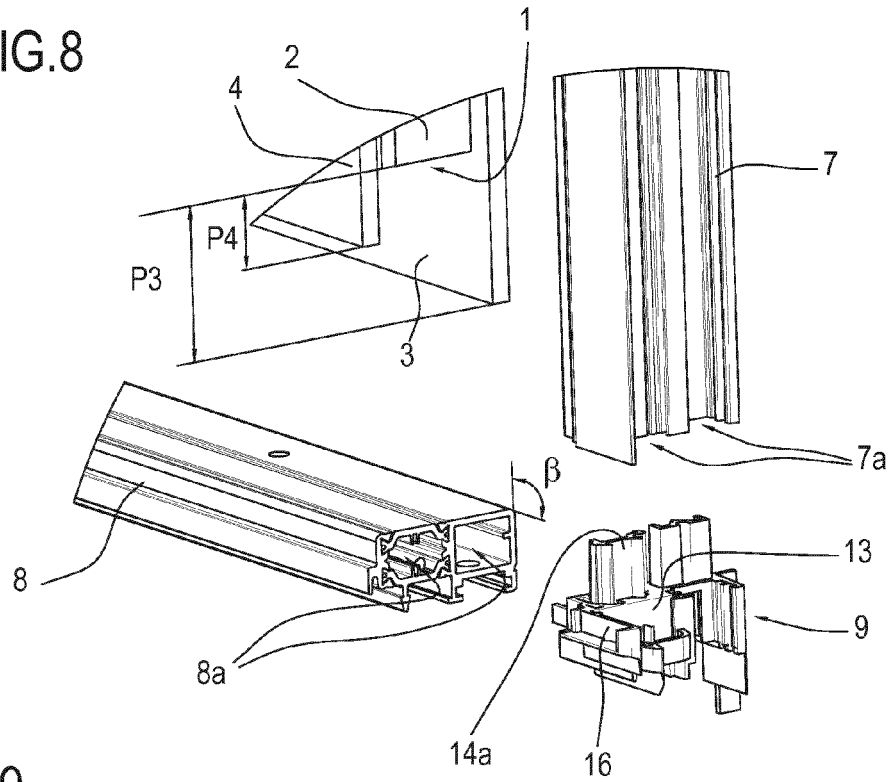


FIG.9

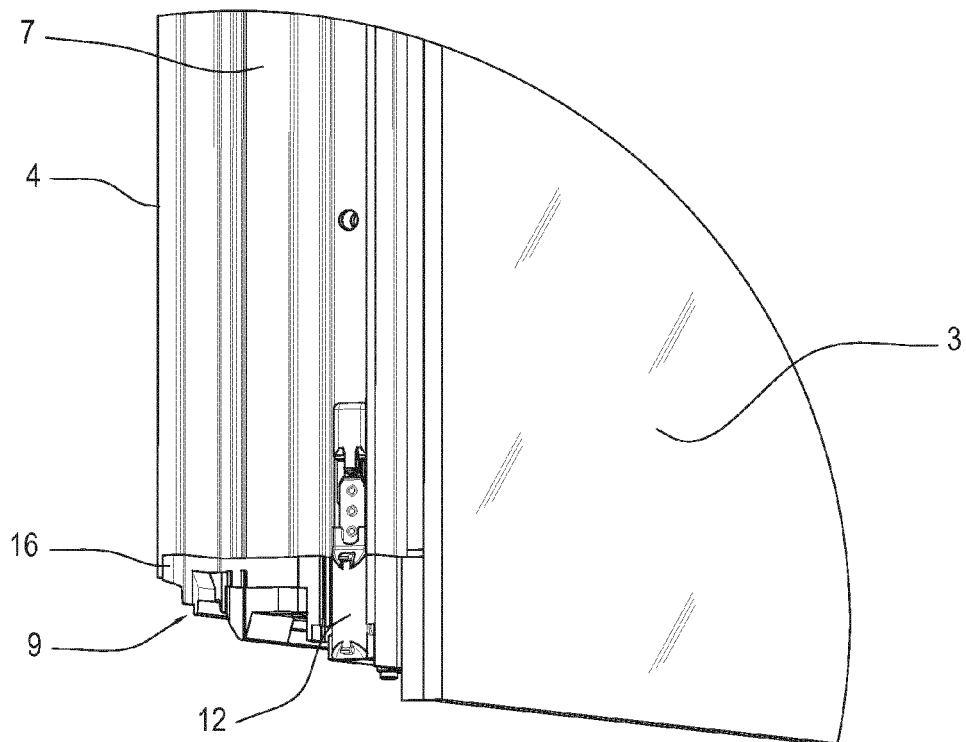


FIG.10

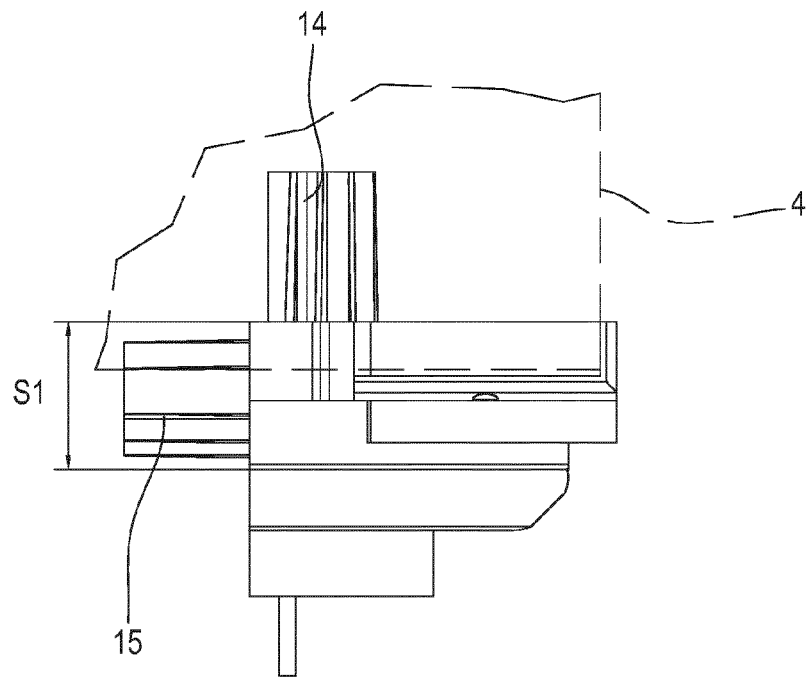


FIG.11

