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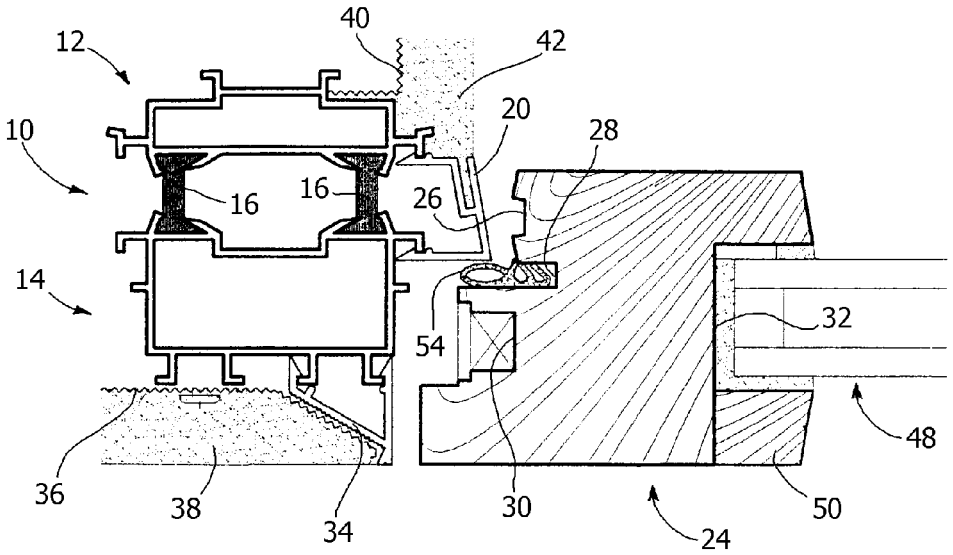
(54) A frame for windows, french windows and the like

(57) A frame for windows, French windows and the like, comprising a fixed part and a movable part, in which the fixed part is not visible when the frame is in place and is made of a different material from the material constituting the movable part.

FIG. 5



EP 1 643 069 A2

Description

[0001] The present invention relates to frames for windows, French windows and the like, usable for residential spaces, offices, commercial or industrial facilities, etc. The frames currently available on the market are constituted by a fixed part and by a movable part. Both parts are made of the same material, e.g. iron, wood, aluminium, plastic or others. The fixed part of the frame normally comprises a further fixed frame portion incorporated in the wall and an outer frame fastened to the further fixed frame portion and projecting from the edges of the wall opening. The movable frame is connected to the fixed frame in various ways, depending on the type of opening of the window or door. In particular, the movable frame can be rotatable or slidable relative to the fixed frame. The most common opening mechanisms provide a wing, swivel, wing and swivel opening, or a sliding in the horizontal or vertical direction. The outer portion of the fixed frame and the movable frame are constituted by the same material and have the same surface finish because these parts are visible when the window or door frame is mounted. The further fixed frame portion instead is buried in the masonry and it is not visible from outside.

[0002] The object of the present invention is to provide a frame comprising a lower number of components, which simplifies the production and installation and which, when installed, has innovative aesthetics.

[0003] According to the present invention, said object is achieved by a frame having the characteristics set out in the claims.

[0004] The characteristics and the advantages of the frame according to the invention shall become readily apparent in the detailed description that follows, provided purely by way of non limiting example, with reference to the accompanying drawings, in which:

- Figure 1 is a cross section of a section bar for the fixed frame according to the present invention for a one-wing window or door frame,
- Figure 2 is a cross section of a section bar of the fixed frame according to the invention for a two-wing window or door frame,
- Figure 3 is a cross section of the section bar of the fixed frame for a two-wing angle window or door frame,
- Figure 4 is a partial section showing the section bar of the fixed frame of the window or door frame according to the invention,
- Figure 5 is a partial section in a horizontal plane of a window or door frame according to the invention in place,
- Figure 6 is a partial section in a vertical plane showing the window or door frame of Figure 5 in place,
- Figure 7 is a horizontal section of a window or door frame according to the invention with two wings,
- Figure 8 is a horizontal section of a window or door frame according to the invention with two wings at an angle,
- Figure 9 is a horizontal section showing a variant of the window or door frame of Figure 7,
- Figure 10 is a schematic front view of a window or door frame according to the invention, and
- Figure 11 is a schematic front view showing a combination of frames according to the invention.

[0005] With reference to Figure 1, the number 10 designates a section bar for the construction of the fixed part of a frame according to the present invention. The section bar 10 comprises two extruded elements 12, 14 made of aluminium or alloys thereof connected to each other by means of elements 16 made of plastic material or of another thermally insulating material, able to form a thermal cut-off between the extruded elements 12, 14. The extruded elements 12, 14 are provided on their outer part with continuous ribs with L profile 18, usable for example to fasten accessory elements. For instance, as shown in Figure 1, an abutment section bar 20 constituted by an extruded element made of aluminium or alloys thereof can be anchored in snap-on fashion on two lateral ribs 18 of the extruded elements 12, 14.

[0006] Four segments of section bar 10 are fastened to each other by traditional work processes to form a quadrangular frame.

[0007] Figure 2 shows a section bar 10 of the kind described above, usable as a central upright of a window or door with double wing. In the version shown in Figure 2, two abutment profiles 20 are provided, engaged in snap-on fashion between the extruded elements 12, 14 on opposite sides of the section bar 10.

[0008] Figure 3 shows a modified section bar 10, to be used as an angular upright. The section bar 10 shown in Figure 3 comprises two extruded elements 12, identical to the extruded elements of Figure 1 and 2, and a third extruded element 22. The extruded elements 12 are connected to the third extruded element 22 by means of elements 16 made of plastic material. As in the versions of Figures 1 and 2, abutment section bars 20 are engaged in snap-on fashion between the extruded elements 12, 22. The extruded elements 12 and 22 have closed cross section, whilst the abutment section bars 20 have an open shape which makes elastically deformable the lateral portions, which are provided with engagement teeth co-operating with the ends of the ribs 18.

[0009] With reference to Figure 4, the number 24 designates a wooden section bar usable to obtain the movable part of a window or door frame to the present invention. The section bar 24 can be constituted by solid or laminar wood, or wood derivatives. The section bar 24 is provided with a groove 26 forming a drip, with a seat 28 for a rubber gasket, with a seat 30 for the accessories (hinges, opening controls, etc.) and with a contour 32 forming the seat for the crystal.

[0010] Figure 5 shows a partial horizontal section of a frame according to the invention, in place. According to a characteristic of the present invention, the section bars

10 constituting the fixed frame are incorporated in the masonry works and are not visible from the exterior when the window or door frame is in place.

[0011] Figure 5 shows an extruded section bar 34 anchored on the side oriented towards the interior of the element 14, which serves as a section bar for containing the plaster. In Figure 5, the reference number 36 designates a net made of micro-stretched sheet metal which supports a layer of inner coating 38 of plaster or other material. There can be a second net of micro-stretched sheet metal 40 that supports an outer coating layer 42.

[0012] Figure 6 shows a section in a vertical plane, in which it can be observed that on the fixed frame can be mounted a drainage section bar 44 which constitutes an extension of the lower abutment section bar 20. Figure 6 also shows a window sill 46 made of stone or other material.

[0013] As is readily apparent in Figures 5 and 6, the fixed part of the frame is not visible from the exterior with the movable part in the closed position. From the internal side of the house, only the section bars 24 of the movable frame are visible and they are flush with the surface of the plasterwork, without the traditional interposition of the outer section bar of the fixed frame. This provides a highly innovative aesthetic appearance to the window frame according to the present invention. The fact that the fixed frame is not visible allows to use different materials for the fixed frame and for the movable frame. In traditional solutions in which the fixed frame is visible, instead, it is necessary for the fixed and the movable frame to be made of the same material and to have the same surface finish. In the solution according to the invention, the fixed frame can be made of aluminium or alloys thereof, whilst the movable frame can be made of wood or derivatives thereof. Different combinations of materials can also be used.

[0014] In Figures 5 and 6, the movable frame 24 is provided with a chamber glass structure 48 fastened in the seat 32 by means of a glass-securing section bar 50. Figures 5 and 6 also show a rubber gasket 54 housed in the seat 28 of the section bar 24 of the movable frame which, in the position with the window closed, is compressed against a frontal surface of the abutment section bar 20.

[0015] Figures 7 and 8 show two examples of mountings for free facades, in which the fixed frame is covered by coatings made of wood or another material instead of being inserted in the masonry structure. Figure 7 refers to a window with double abutment with coplanar openable wings and Figure 8 refers to a window with double angular abutment. On the inner side of the section bars 10 forming the fixed frame are applied finishing strips 56, 58, e.g. made of wood. This solutions allows to cover the fixed frame with strips with a surface finish that is identical to that of the movable frames, in order to obtain a uniform appearance of the fixed frame and of the movable frame. Covering elements 60, 62 can be used, made of wood or other materials, also on the outer side of the section bars 10 forming the fixed frame. The external covering elements 60, 62 can have extensions 64 that are joined to the abutment section bars 20.

[0016] Figure 9 shows a vertical section of an window frame in which the lower horizontal section bar 10 of the fixed frame is covered on the upper side by a drainage section bar 44 joined to the abutment profile 20 and which covers the upper part of the covering element 60.

[0017] Figure 10 shows a frame according to the present invention in place in a masonry structure. Figure 10 is a front view from the inner side. As is readily apparent, the fixed frame comprising the section bars 10 is not visible once it is installed because it is buried in the masonry structure and it serves as a fixed part of the frame and as a further fixed frame portion. From the exterior it is possible to see only the openable wooden frame composed by the section bars 24 which are flush with the plasterwork or other material forming the inner surface finish of the masonry structure.

[0018] Figure 11 shows an example of mounting of frames according to the present invention on free facades. In this case, too, the metallic fixed frame is not visible in place. Only the openable wooden frame is visible, which is flush with the finishing elements that cover the fixed frame.

[0019] Naturally, without altering the principle of the invention, the construction details and the embodiments may be widely varied from what is described and illustrated herein, without thereby departing from the scope of the invention, as defined by the appended claims.

Claims

1. A frame for windows, French windows and the like, comprising a fixed part and a movable part, **characterised in that** the fixed part is not visible when the frame is in place and it is made of a different material from the material constituting the movable part.

2. Frame as claimed in claim 1, **characterised in that** the fixed part is constituted by section bars (10) made of aluminium or alloys thereof.

3. Frame as claimed in claim 1, **characterised in that** the movable part is constituted by section bars (24) made of wood or derivatives thereof.

4. Frame as claimed in claim 1, **characterised in that** the fixed part is constituted by section bars (10) which serve the function of fixed frame and of a further fixed frame portion.

5. Frame as claimed in claim 1, **characterised in that** the fixed part is composed of section bars (10) each of which comprises at least two extruded elements (12, 14) connected to each other by elements (16) made of thermally insulating material.

6. Frame as claimed in claim 5, **characterised in that** the fixed frame comprises abutment element (20) fastened in snap-on fashion to said extruded elements (12, 14, 22).

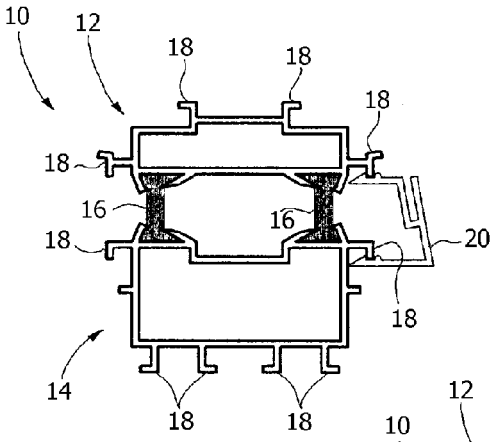


FIG. 1

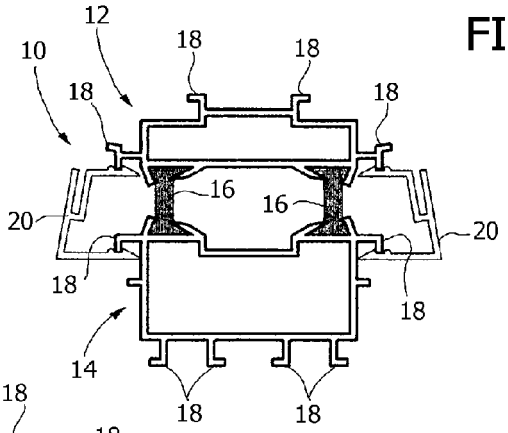


FIG. 2

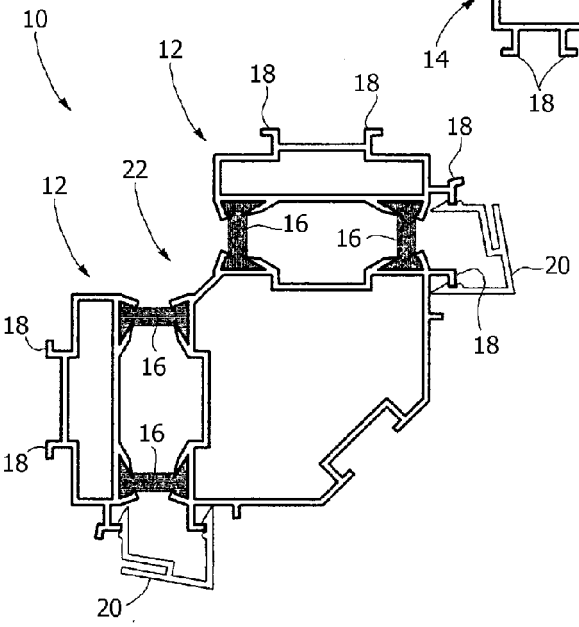


FIG. 3

FIG. 4

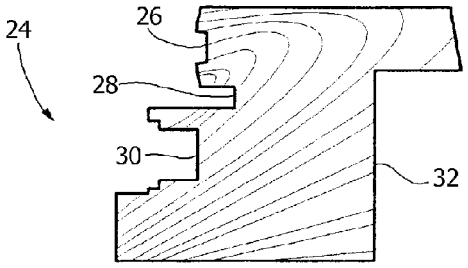


FIG. 5

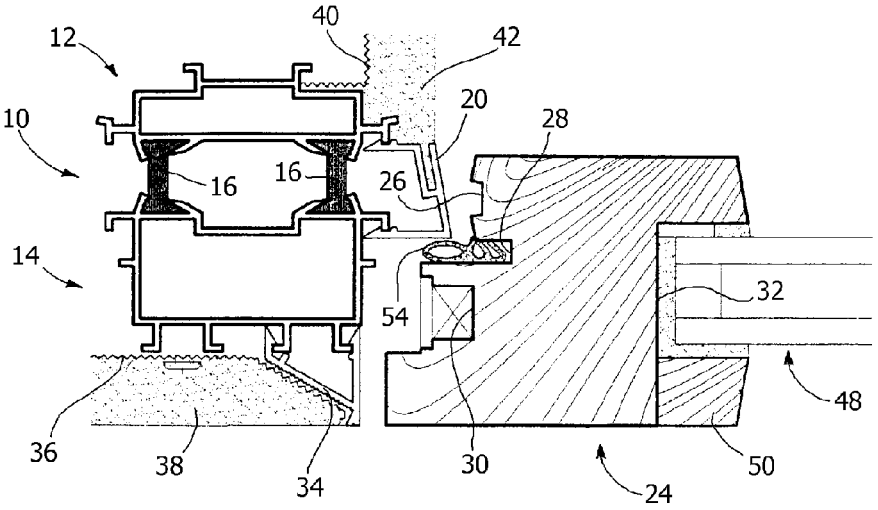

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FIG. 6

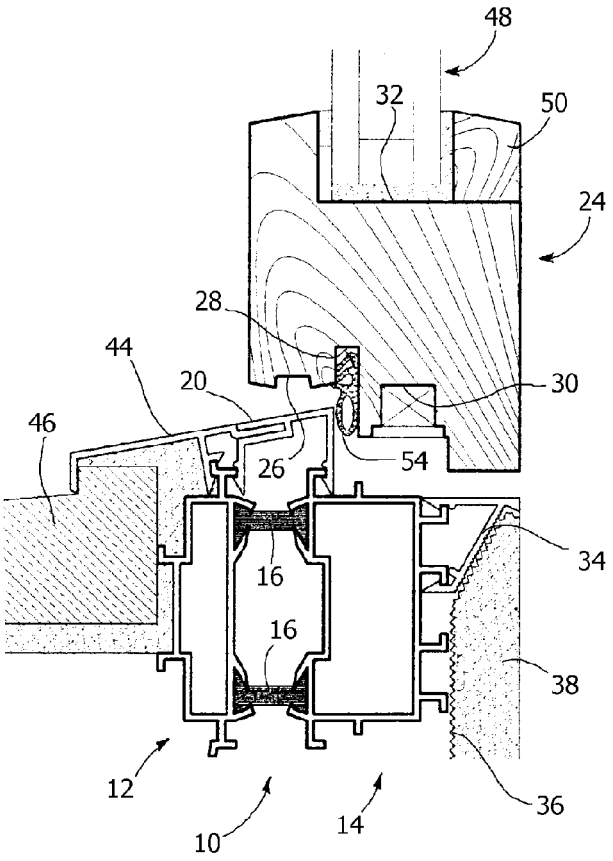
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FIG. 7

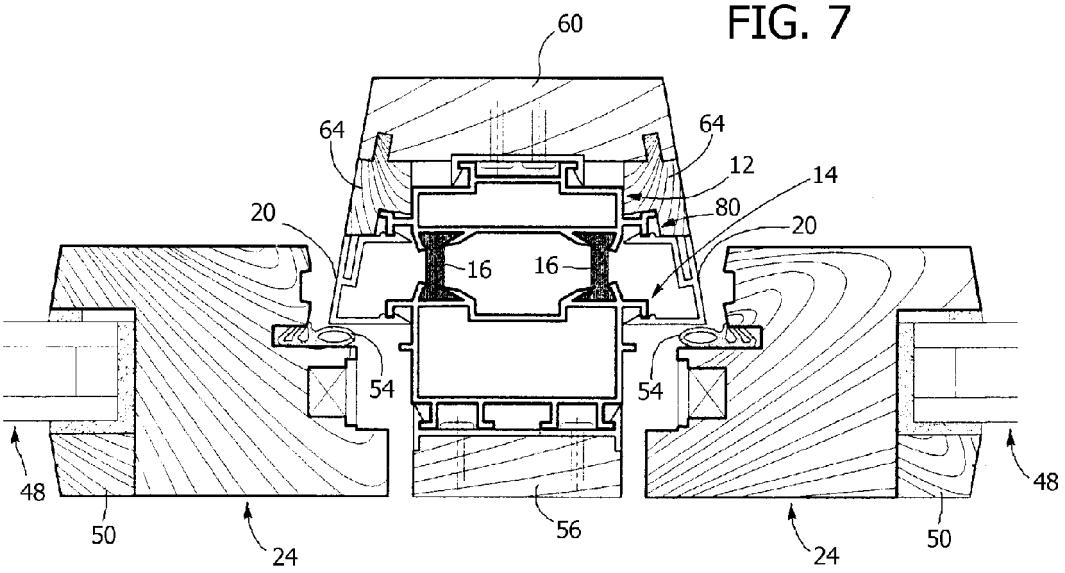
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FIG. 8

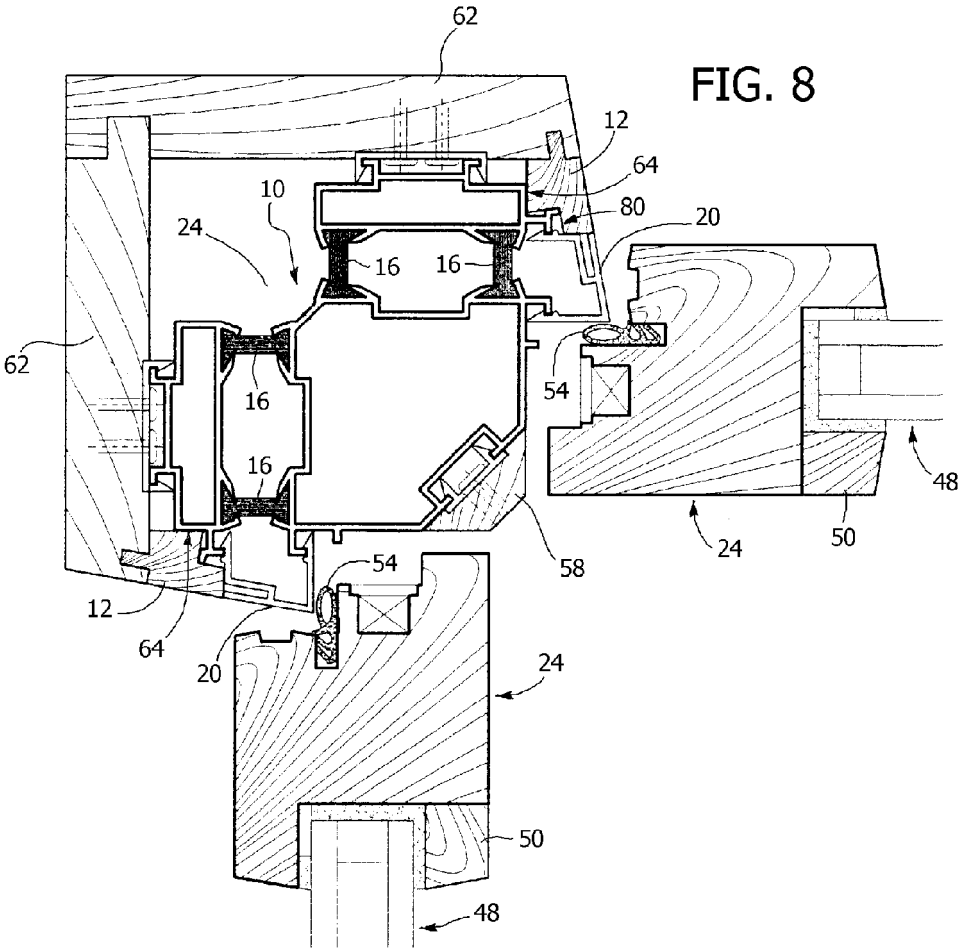
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FIG. 9

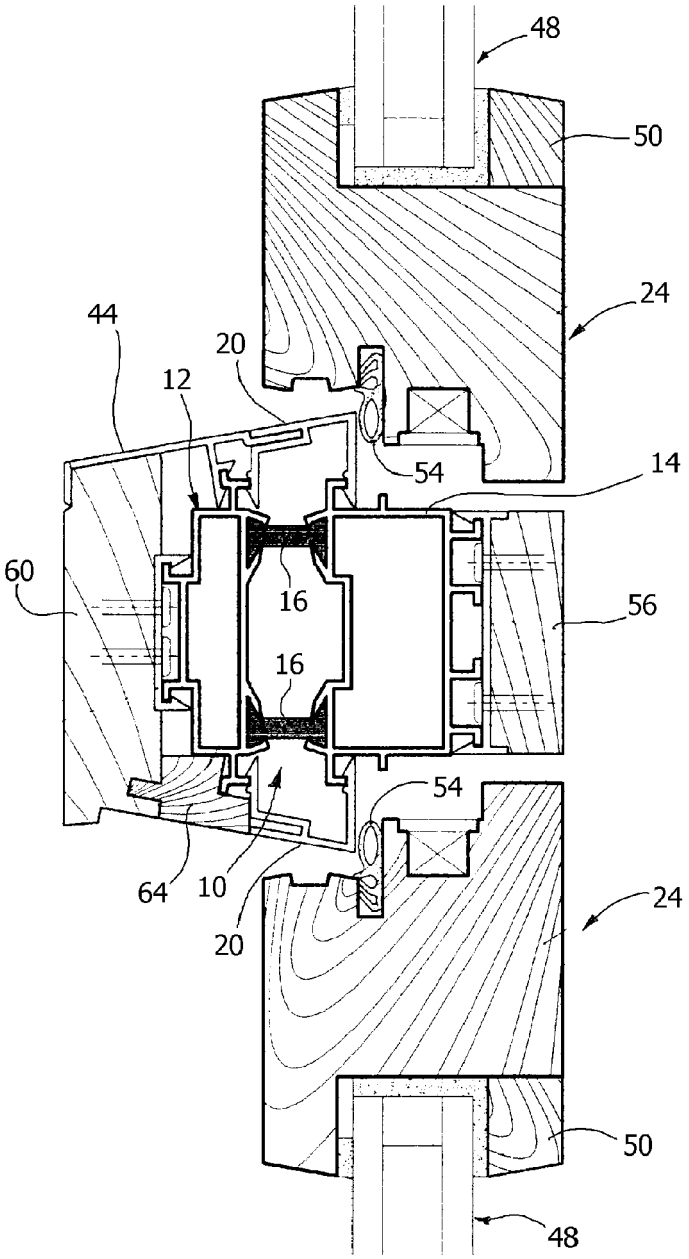

FIG. 10

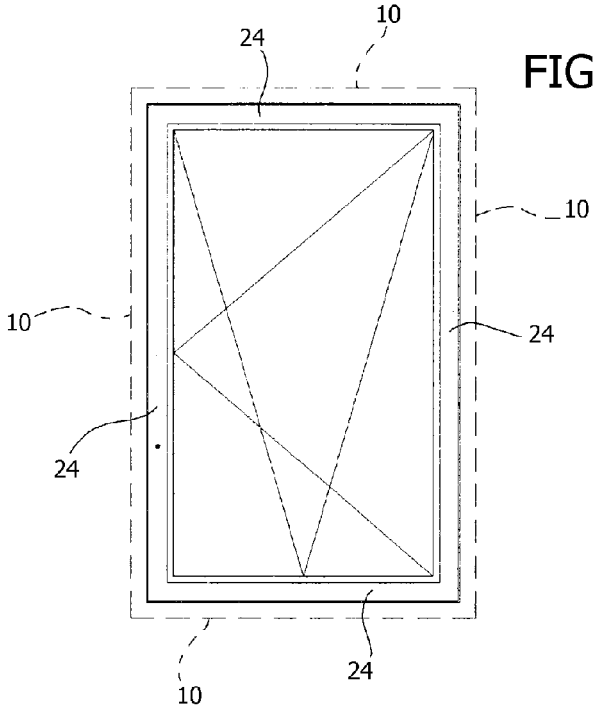
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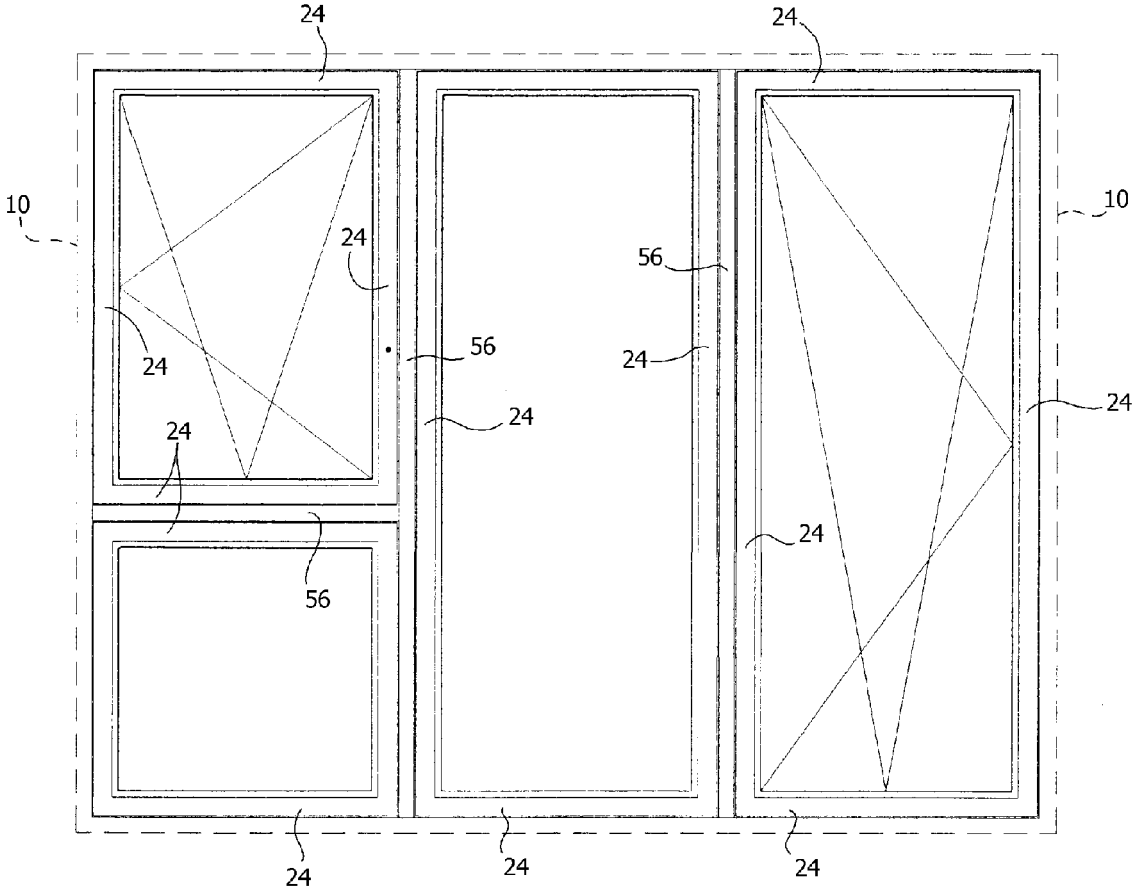
FIG. 11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