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(54) **Set of extruded sections for the realization of door and window casings, frames and the like, provided with special hooking structures for gaskets, accessories and the like.**

(57) Set of extruded sections from light alloy, particularly from aluminium alloy, for the realization of door and window frames, casings and the like, comprising sections provided with hooking structures for gaskets constituted by a continuous "U"-channel-shaped seat, obtained on the sides and/or the flanges of said sections and provided with shaped flanges along the edges, suitable to pressure-house the peduncle of a continuous gasket having the part outside the seat variously shaped and constituting also a means for stably anchoring sections with other sections and the like in combination and/or in opposition with protrusions also obtained on the sides and/or flanges of the sections.

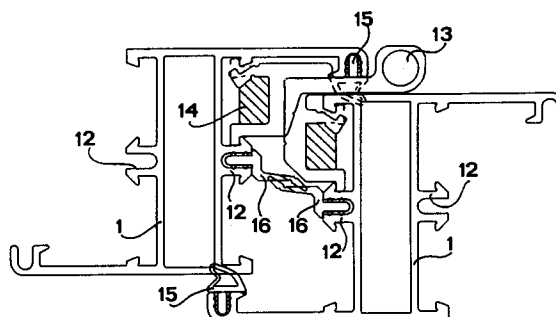


FIG.12

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Object of this invention is to provide a set of extruded sections from light alloy, particularly from aluminium alloy, for the realization of door- and window frames, casings and the like, provided with a particular structure for the pressure-hooking of seal and back stop gaskets and for the connection of accessories, or coupleable with sections provided with said particular structure.

As is known, light alloy frames with openable shutters, French windows either with shutters or sliding on rails, etc., are realized by connecting various types of extruded sections to one another. Said sections being suitably designed and realized and being provided with seats for anchoring the accessories, the seal gaskets between casings and glass pane-holding frame and between frame and glass-pane, the back stop gaskets for the shutters and for the locking of glass-panes through glass stop sections, etc. According to the known techniques, such seats are obtained during the extrusion of the section in various positions, either on the walls of the hollow body of the section or on the flanges protruding from the walls of said hollow body, and are constituted by grooves or throats having a constant, substantially "C"-shaped section, obtained in a protruding position from the walls or flanges of the section and developed along the full height of said section. Therefore, the various continuous gaskets are slipped into the "C"-shaped seats starting from an end of the section and the restraint is ensured by the part enclosed in the seat, while the part that protrudes outwards said seat constitutes the real gasket, which may have different shapes and sizes according to the function required.

These type of axial-plug gaskets have in practice the drawback that they cannot be taken out and replaced, once they have deteriorated, without having to disassemble the section from the other sections which compose the casings or the glass pan holding frame, i.e. without separating the section which holds the gasket, to allow to take it out from an end of same.

On the other hand, the "slip in" gaskets for door-and window frames are at present also non-conform with the regulations, which is why the slip-in hooking system has to be replaced by systems that do not involve the disassembly of the frame or the shutter.

Object of this invention is to provide a set of extruded sections from light alloy for the realization of door-and window frames, casings and the like, provided with seats or hooking structures for gaskets, which allow the hooking and/or removal of the gasket from its seat, without having to disassemble the frame or the shutter or the casing, should the need arise.

Another object of this invention is to provide a set of extruded sections from light alloy for the realization of door- and window frames, casings and the like, provided with seats or hooking structures for gaskets, such as to constitute also as many means for the restraint or locking for accessories, for different types of sections, for glass stops and the like.

These and still other objects and the relevant advantages that shall be stressed by the following description are obtained by a set of extruded sections from light alloy, particularly from aluminium alloy, for the realization of door- and window frames, casings and the like, which set, according to this invention, comprises sections provided with hooking structures for gaskets or coupleable with sections provided with said hooking structures constituted by a continuous channel-shaped seat having a constant substantially "U"-shaped through-section, obtained on the sides and/or flanges of said sections and provided with a shaped flange running along the longitudinal edge of at least one of the flanges of said seat, the channel-shaped hollow space of said seat being suitable to pressure-house the peduncle or stem of a continuous gasket having the part outside the seat variously shaped, said flanges protruding outwards of said seat constituting as many means for the stable hooking of sections with other sections and/or accessories of frames and the like in combination and/or in opposition with protrusions, protuberances or the like, also obtained on the sides and/or the flanges of said sections.

Further characteristics and advantages of this invention shall be stressed by the following description, made with reference to the attached drawings, which are only given by way of example, wherein:

Fig. 1 shows the through-view of a basic reversible section, utilizable both as a frame of a glass-pane-mobile-shutter, and as a fixed frame to be anchored to the wall by means of a sash-frame,

Fig. 2 shows a through-view of a basic section utilizable both as a mobile shutter, and as a fixed frame, as well as as a hanging stile and/or a rail of sash,

Fig. 3 shows a through-view of a basic section utilizable as a frame both for mobile shutters and for fixed glass panes,

Fig. 4 shows a through-view of a section utilizable for fixed frames, rail of sashes for sills of frame, and for frames of mobile shutters with slip-in glass pane,

Fig. 5 shows a through-view of a section for mobile shutters with the external back stop flange protruding in such a way as to remain fully aligned with the corresponding flange of the

fixed frame,

Figs. 6 and 7 show the through-view of two glass stops with rounded external corner,

Figs. 8 and 9 show the through-view of two sections utilizable as horizontal or vertical strips of mobile and fixed shutters,

Figs. 10 and 11 show the through-view of two sections having the function of bottom rails for mobile and fixed shutters,

Fig. 12 is a through-view of the reversible basic section of Fig. 1, coupled, through a hinge, with a similar section, always of Fig. 1,

Fig. 13 shows the through-view of the reversible basic section, coupled, through a hinge, with the section of Fig. 5,

Fig. 14 shows the internal perspective with the vertical section of a standard door- and window frame with shutters openable inwards and a fan-light transom, utilizing the sections according to this invention,

Fig. 15 shows the section of Fig. 6 coupled and during the coupling stage, for instance with the section of Fig. 5.

With reference to such figures and, more particularly, for instance, to Fig. 12, section 1 constituting the frame to be anchored to the wall by means of a sash frame of a known type, not shown, is connected to the hanging stile of a glass shutter, also constituted by another section 1, by means of hinge 2.

Section 1 is substantially constituted by a rectangular extruded hollow body from aluminium or its alloys (or from some other metal alloy) and by two flanges constituting extensions having the same shape, of the shorter walls of the hollow body.

Protruding "U"-shaped niches 12 are obtained on the external sides of the hollow body, which niches are provided with hook-like protruding triangular flanges, while analogous "U"-shaped niches as well as protrusions orientated towards the inside of the section are provided at the end of the flanges.

To realize the rotation anchorage between the casing-section and the hanging stile of the shutter, hinges 13 are utilized comprising two flat flanges rotatable around a pin head.

To realize the hooking of the flanges of the hinge to sections 1, metal blocks or bars 14 are inserted in the two forks of the hinge, which blocks or bars have a substantially quadrangular section and dimensions that allow them to freely translate between the prongs of the fork, pushing said bars 14 towards the relevant hollow bodies, for instance by tightening screws not shown in the figure; bars cause the prongs of the relevant forks to open out, exploiting the elasticity and plasticity properties of the material from which they are made; the open-

ing out of the prongs of each fork causes the snap-engagement of the teeth of the prongs with the teeth protruding from the flanges and with the teeth integral with the "U"-shaped seats or niches protruding from the walls of the sections, according to this invention.

The above described hinge-hooking structure, is completed by four seal and back stop gaskets; in particular, said gaskets are shrinking- or pressure-anchored in the various "U"-shaped seats and are differently shaped according to the function they have to perform.

In this way, the tubular gaskets 15 are, respectively, external elastic means of back stop and seal, while the internal gaskets 16 are sealing means inside the prechamber of the shutter.

Section 1 of Fig. 13 is equal to that of the preceding figures, while section 3 of the shutter has a flange which is integral with the hollow body through a part of flange of such length as to allow said flange, when the hinge is disassembled, to remain coplanary aligned with the flange of the other section. In this way, the external wall of the casing has not the configuration of a step, but is flat and continuous, which may prove more pleasant aesthetically. This solution involves the use of one only gasket of the type 16.

Fig. 14 shows by way of example the utilization of sections 1, 2, 3, 5, 6, 7 and 9 according to this invention, in association with other sections of a known type, to realize a door- and window casing with openable shutters and fanlight transom.

More particularly, the glass stop of Fig. 6 is provided with a foot 17 and a protrusion 18 suitable to elastically engage into the channel-shaped hollow space provided on the corresponding basic coupling section through the hooking of the ends of said foot on the one side with the shaped flange 19 running along the edge of said "U"-shaped flange 12, and on the other side with a special protrusion 20 obtained on the opposing side of said channel-shaped hollow space, said foot being so shaped as to cause, during the insertion, the shifting of the plane constituting the sole of foot 17a to slide on the inclined upper surface 19a of said flange of the "U"-shaped seat up to the snapping which realizes the hooking or coupling, as shown by the figure, wherein section 6 is shown also during the insertion stage (6a). In this way, the insertion of the glass stop on the opposing section is obtained without having recourse to special equipments or accessories, by simply causing the glass stop to rotate from the outside towards the inside; this prevents any interferences on the corners cut at 45° of the glass stop. The glass stop 7 of Fig. 7 is realized in the same way, always according to this invention.

Equivalent changes can be made in the sections according to this invention, as above described and illustrated, without exceeding the protection scope of same.

Claims

1. Set of extruded sections from light alloy, particularly aluminium alloy, for the realization of door- and window frames, casings and the like, characterized in that it comprises sections provided with hooking structures for gaskets or coupleable with sections provided with such hooking structures, constituted by a continuous channel-shaped seat having a constant substantially "U"-shaped through-section, obtained on the sides and/or flanges of said sections and provided with a shaped flange running along the longitudinal edge of at least one of the flanges of said seat, the channel-shaped hollow space of said seat being suitable to pressure-house the peduncle or stem of a continuous gasket having the part outside the seat variously shaped, said flanges protruding towards the outside of said seat constituting as many means for the stable hooking of sections with other sections and/or accessories of door- and window casings and the like, in combination and/or in opposition with protrusions, protuberances or the like, also obtained on the sides and/or the flanges of said sections.

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2. Set of extruded sections according to claim 1, characterized in that said sections are constituted by:

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 - a reversible basic section (1), utilizable both as a frame for glazed mobile shutters and as a fixed casing to be anchored to the wall by means of a sash frame,

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 - a basic section (2) utilizable both as a mobile shutter and as a fixed frame as well as a hanging stile and/or a rail of sash,
 - a basic section (3) utilizable as a frame both for mobile and fixed shutters,

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 - a section (4) utilizable for fixed frames, rail of sashes for sills of frame, and for frames of mobile shutters with slip-in glass pane,

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 - a section (5) for mobile shutters with an external back stop flange protruding in such a way as to remain fully aligned with the corresponding flange of the fixed frame of the door-or window,

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 - a glass stop (6) with a rounded external corner,

- a glass stop (7) with a rounded external corner,
- a section (8) utilizable as a horizontal or vertical strip for mobile and fixed shutters,
- a section (9) utilizable as a horizontal or vertical strip for mobile and fixed shutters,
- a section (10) having the function of a base bord for mobile and fixed shutters,
- a section (11) having the function of a base board for mobile and fixed shutters.

3. Glass stop (6) or (7), according to claim 1, characterized in that it is provided with a foot and a protrusion suitable to elastically engage in the channel-shaped hollow space provided on the corresponding basic coupling section, through the hooking of the end of said foot on the one side with the shaped flange running along the edge of said "U"-shaped seat, and on the other side with a special protrusion obtained on the opposing side of said channel-shaped hollow space, said foot being so shaped as to cause, during the insertion, the shifting of the plane constituting the sole of said foot on the inclined upper surface of said flange of said "U"-shaped seat up to the snapping which realizes the hooking or coupling, so that the insertion of said glass stop on said coupling section is obtained by simple rotation and without the utilization of special accessories or equipments.

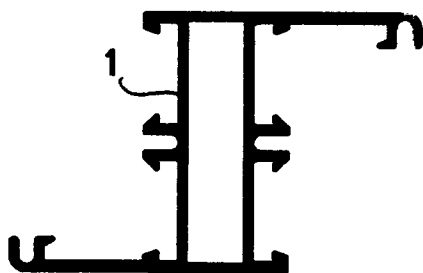


FIG. 1

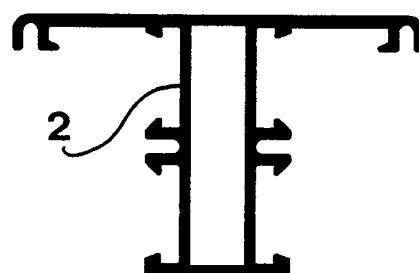


FIG. 2

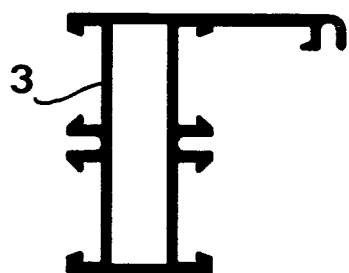


FIG. 3

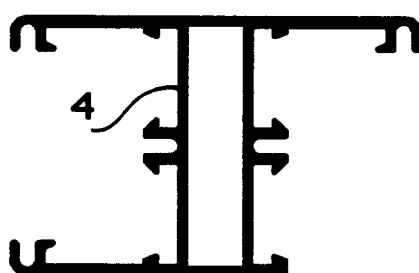


FIG. 4

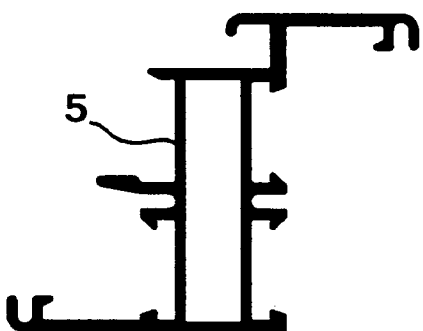


FIG. 5

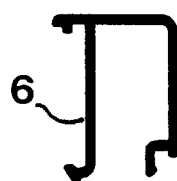


FIG. 6



FIG. 7

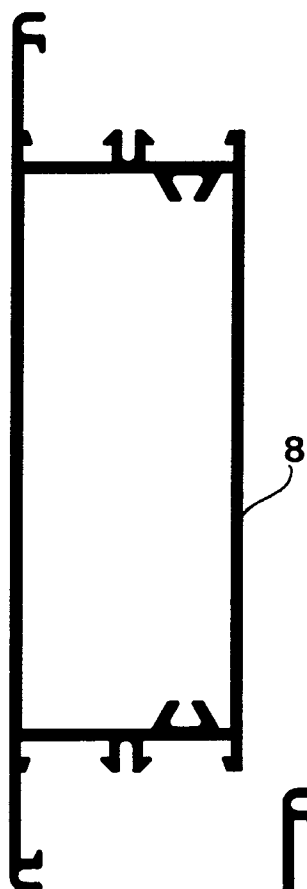


FIG. 8

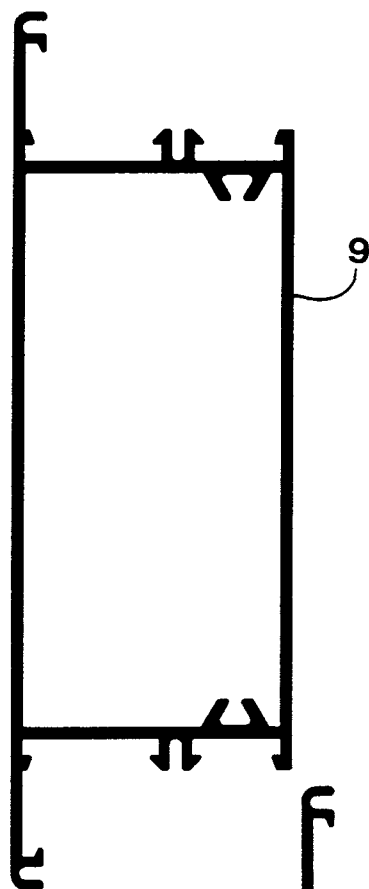


FIG. 9

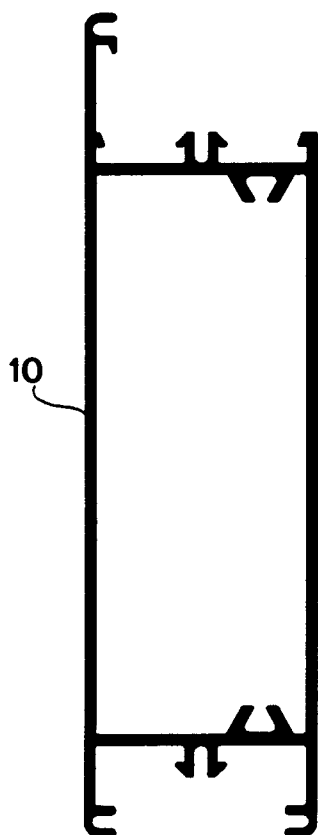


FIG. 10

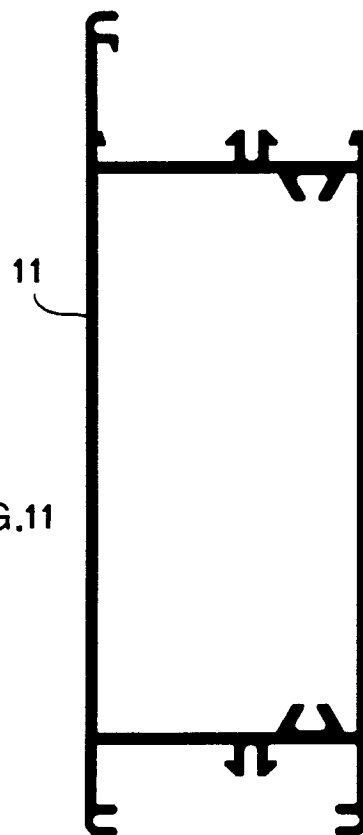


FIG. 11

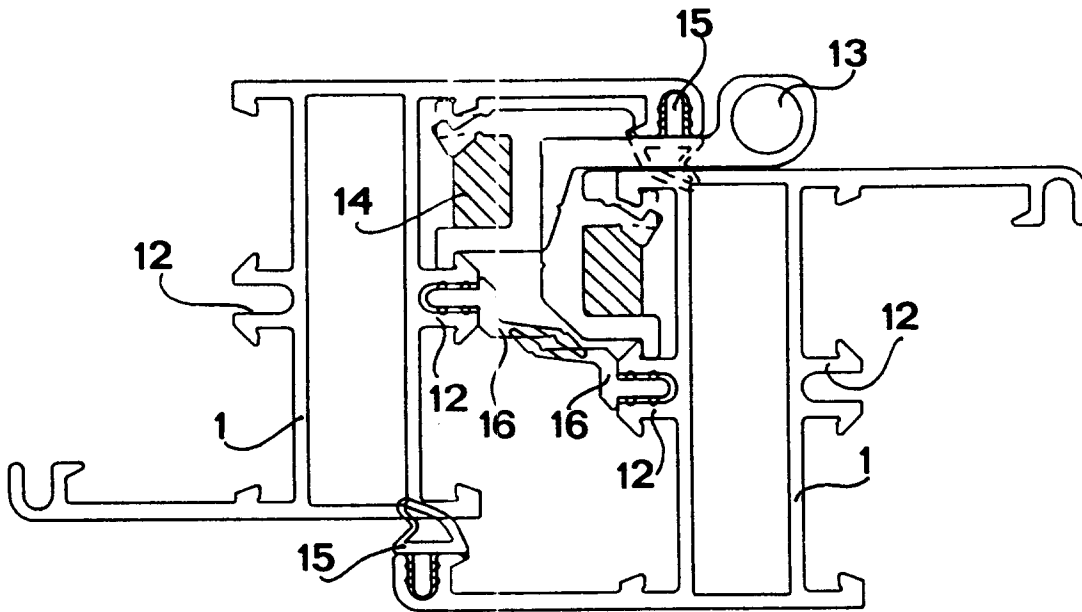


FIG.12

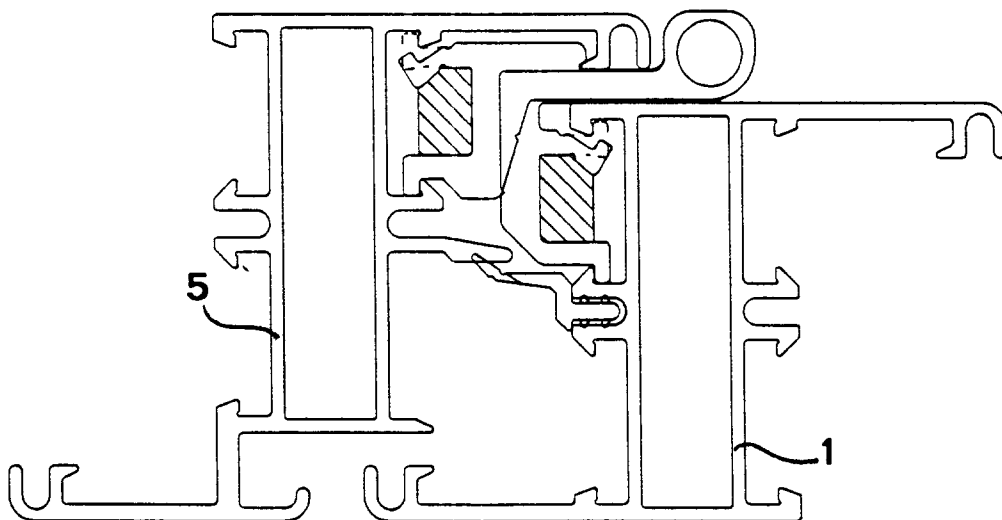


FIG.13

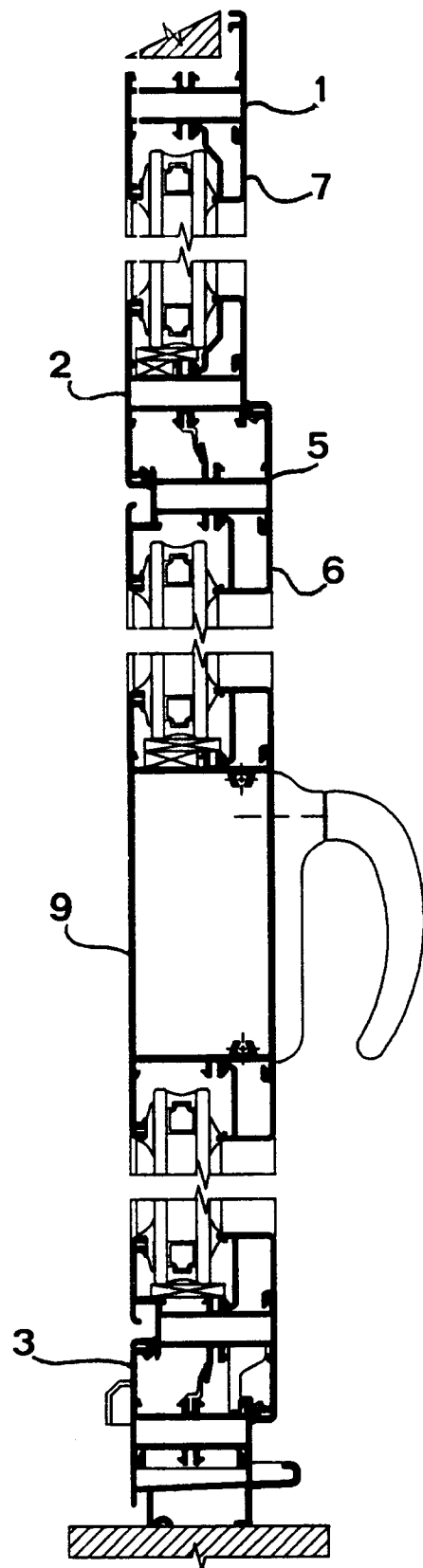


FIG.14

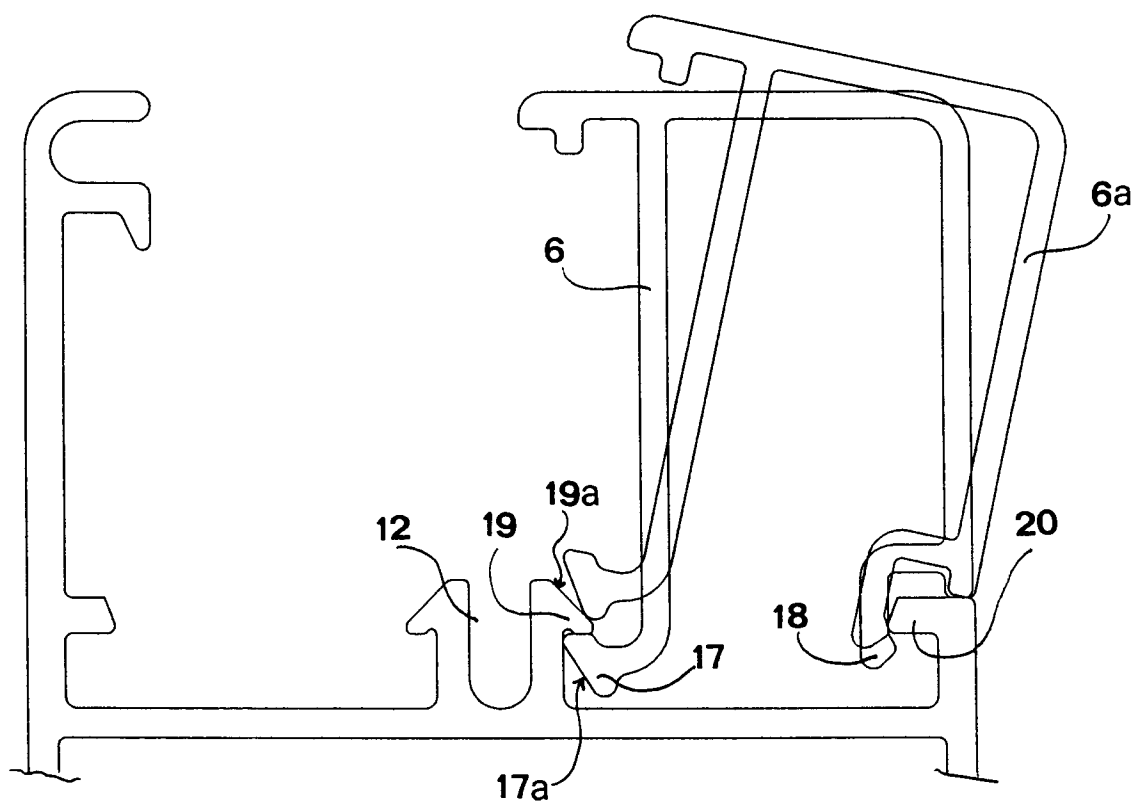


FIG.15