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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**

Bausatz aus Strangpressprofilen zur Herstellung von Tür- und Fensterrahmen, Zargen und dgl., ausgestattet mit Rastvorrichtungen für Dichtungsstreifen und anderem Zubehör

Ensemble d'extrusions pour la fabrication de cadres de portes, fenêtres et similaires, pourvus de moyens d'accrochage pour joints et autres accessoires

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## Description

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.

EP-A-0460514 (VALCASA) discloses sections comprising "C" shaped seatings for the application of a packing to support a pane or to provide a seal against another section.

FR-A-2626931 (O.C.M.A.) discloses sections provided, onto one of their sides, respectively in proximity of the ends, of a couple of parallel wings orthogonal in respect of said sides and a "L" bent protrusion turned opposite in respect of these two wings. The two wings end, on their internal surface, with angular grooves opposite to each other and, on their external surface with protrusions having a form sensibly quadrangular. Between the couple of wings, a seal is inserted by means of restraint.

FR-A-2504183 (INDINVEST SPA) discloses sections provided with couples of parallel wings ending, on their internal surface, with grooves opposite to each other and, on their external surface with protrusions having a forma sensibly quadrangular.

EP-A-0387204 (METRA METALLURGICA TRAFILATI ALLUMINIO S.p.A.) discloses sections comprising "C" shaped seatings provided on their external surface with protrusions having a form sensibly quadrangular.

These type of seatings have in practice the drawback that the restrained gaskets 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 nonconform 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 fo 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 uti-

lizable 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 fanlight 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 opening 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, as defined by the appendant claims.

**Claims**

1. Set of extruded sections from light alloy, particularly aluminium alloy, for the realization of door- and window frames, casings and the like, comprising sections provided with hooking structures for gaskets or coupleable with sections provided with such hooking structures, characterized in that said hooking structures are constituted by a continuous channel-shaped seat (12) having a constant substantially "U"-shaped through-section, provided with hook-like outwardly protruding in cross-section triangular flanges (19) running externally along the longitudinal edge of the flanges of said seat (12), the channel-shaped hollow space (12) of said seat being suitable to pressure-house the peduncle or stem (16a) of a continuous gasket (16) having the part outside the seat variously shaped, said flanges (19) 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.

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

   - 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,
   - 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,
   - 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,
   - 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,
   - a glass stop (6, 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. Set of extruded sections, according to claim 1, characterized in that the set comprises a glass stop (6, 7) provided with a foot (17) and a protrusion (18) 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 (17) on the one side with the hook-like outwardly protruding triangular flange (19) running along the edge of said "U"-shaped seat (12), and on the other side with a special protrusion (20) obtained on the opposing side of said channel-shaped hollow space, said foot (17) being so shaped at to cause, during the insertion, the shifting of the plane constituting the sole (17a) of said foot (17) on an inclined upper surface (19a) of said flange (19) 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.

**Patentansprüche**

1. Bausatz aus Strangpressprofilen aus leichter Legierung, insbesondere Alluminiumlegierung, zur Herstellung von Tür- und Fensterrahmen, Zargen und dergleichen, welche Rastvorrichtungen für Dichtungsstreifen aufweisende Profile enthalten oder welche mit solchen Rastvorrichtungen aufweisenden Profilen kupplerisch sind, dadurch gekennzeichnet, daß solche Rastvorrichtungen aus einem kontinuierlichen kanalförmigen Sitz (12) bestehen, der ein wesentliches "U"-förmiges Durchprofil besitzt, und der im Kreuzabschnitt nach draußen schwenkbaren dreieckige Flanschen (19) aufweist, die auf der Außenseite entlang dem longitudinalen Randabschnitt der Flanschen solches Sitzes (12) laufen, indem der kanalförmige konkave Platz (12) dieses Sitzes für das Zusammenpressen des Stengels oder Stiels (16a) von einem kontinuierlichen Dichtungsstreif (16), dessen Teil außen des Sitzes unterschiedlich ausgeformet ist, geeignet ist, wobei solche nach die Außenseite dieses Sitzes verschwenkenden Flanschen (19) so viele Mittel für das feste Verankerung der Profile mit anderen Profilen und/oder Zubehör von Tür und Fensterrahmen und dergleichen, in Verbindung mit und/oder im Gegensatz zu Vorsprüngen und Höcker und dergleichen ausbilden, welche ebenso auf den Seiten und/oder Flanschen dieser Profile erhalten wurden.

2. Bausazt aus Srangpressprofilen gemäß Anspruch 1, dadurch gekennzeichnet, daß solche Profile:

   - ein reversibles Grundprofil (1), welches sowohl als eine Zarge für glättere bewegliche Fensterläden, als auch als ein auf der Wand mittels einer Flügelzarge zu hakender fester Rahmen, anwendbar ist,
   - ein Grundprofil (2), welches sowohl als eine bewegbare Fensterladen als auch als eine feste Zarge, ebenso als ein hangender Pfosten und/ oder ein Flügelsstab anwendbar ist,
   - ein Grundprofil (3) welches als eine Zarge für bewegbare und feste Fensterläden anwendbar ist,
   - ein Profil (4), welches für feste Zargen, Flügelsstäbe für Fensterbanken von Zargen, und für Zargen von bewegbaren Fensterläden mit gläserner Gleitplatte anwendbar ist,
   - ein Profil (5) für bewegbare Glasfensterläden mit einem äußerlichen rückwärtigen Rasteflansch, welches so beschwenkbar ist, daß es völlig ausgerichtet am entsprechenden Randabschnitt der festen Zarge der Tür oder des Fensters bleibt,
   - eine gläserne Raste (6,7) mit einer rundgemachten Außenecke,
   - ein Profil (8), welches als ein horizontaler oder vertikaler Streif für bewegbare oder feste Fensterläden anwendbar ist,
   - ein Profil (9), welches als einem horizontalen oder vertikalen Streif für bewegbare und feste Fensterläden anwendbar ist,
   - ein Profil (10), welches die Funktion eines Grundbordes für bewegbare und feste Fensterläden übernimmt,
   - ein Profil (11), welches die Funktion eines Grundbordes für bewegbare und feste Fensterläden übernimmt,

   enthalten.

3. Bausazt aus Strangpressprofilen gemäß Anspruch 1, dadurch gekennzeichnet, daß solcher Bausazt ein gläserne Raste (6,7) enthält, welches mit einem Fuß (17) und einem Verschwenken (18) ausgestattet ist, wobei dieser Verschwenken für die elastische Einseztung in den kanalförmigen konkaven Platz, der auf dem entsprechenden Kupplungsprofil angeordnet ist, geeignet ist, durch Verankerung der Endabschnitte dieses Fußes (17), einerseits mit dem nach draußen verschwenkenden hakigen dreieckigen Flansch, laufend dem Rand dieses "U"-förmigen Sitzes (12) entlang, und andererseits mit einer auf der gegenüberliegenden Seite solches kanalförmigen konkaven Platzes erhaltenen besonderen Vorsprung (20), wobei solcher Fuß (17) so ausgeformet ist, daß er während der Einsetzung die Verschiebung des Bordes verursacht, das die Schwelle (17) solches Fußes (17), auf der obigen gelenken Flächen (19a) solches Flansches (19) dieses "U" förmigen Sitzes bis zum Bruch, der die Verankerung oder Kupplung durchführt, bildet, so daß die Einsetzung solcher gläserne Raste über solchem Kupplungsprofil durch einfaches Drehen und ohne Anwendung besonderes Zubehörs oder Werkzeugen erhalten wird.

**Revendications**

1. Ensemble d'extrusions en alliage léger en particulier en alliage d'aluminium pour la fabrication de cadres de portes, fenêtres, encadrements et similaires comprenant des profilés munis de structures d'accrochage pour des garnitures ou en connexion avec des profilés munis dedites structures d'accrochage caractérisé en ce que lesdites stuctures d'accrochage sont constituées d'un siège continu en forme de canal (12) ayant une section transversale constante substantiellement en forme de "U" muni de flanges triangulaires en forme de crochet (19) faisant saillie extérieurement qui courent extérieurement lelong du bord longitudinal des flanges dudit siège (12), la cavité en forme de canal dudit siège (12) étant apte à accueillir sous pression le pédicule (16a) ou tige d'une garniture continue (16) dont la partie extérieure au siège est en forme variée, lesdites flanges (19) en saillie vers l'exteriéur dudit siège constituent des moyens pour l'accrochage stable de profilés avec d'autres profilés et/ou accessoires d'encadrements de portes et fenêtres et similaires en combinaison et/ou en opposition avec des saillies, protuberances et similaires obtenus aussi sur les côtés et/ou les flanges desdites profilés.

2. Ensemble d'extrusions selon la revendication 1 caracterisé en ce que:

   - un profilé de base réversible (1) utilisable soit comme huisserie pour volet mobile vitré soit comme huisserie fixe à accrocher à la paroi au moyen de contre-huisserie;
   - un profilé de base (2) utilisable soit comme huisserie mobile soit comme châssis fixe aussi bien que comme montant et/ou traverse de huisserie;
   - un profilé de base (3) utilisable comme huisserie soit pour volet mobile soit pour vitrage fixe
   - un profilé (4) utilisable pour huisserie fixe, traverse de huisserie pour seuil et pour huisserie de volet mobile avec vitrage à introduire
   - un profilé (5) pour huisserie mobile avec une flange exterieure d'arrêt susceptible d'être complètement alignée avec la flange corres-

pondante de la huisserie fixe de la fermeture (porte ou fenêtre)
- une règle fixe-vitrage (6, 7) avec coin extérieur arrondi
- un profilé (8) utilisable comme barre horizontale ou verticale pour huisseries mobiles et fixes
- un profilé (9) utilisable comme barre horizontale ou verticale pour huisseries mobiles et fixes
- un profilé (10) ayant le rôle de socle pour huisseries mobiles et fixes
- un profilé (11) ayant le rôle de socle pour huisseries mobiles et fixes.

**3.** Ensemble d'extrusions selon la revendication 1 caractérisé en ce que l'ensemble comprend une règle fixe-vitrage (6, 7) muni d'un pied (17) et d'une saillie (18) apte à engager élastiquement dans la cavité en forme de canal existant dans le profilé de base correspondant de connexion au moyen d'accrochage de l'extremité dudit pied (17) d'une part avec la flange triangulaire en forme de crochet sailliant vers l'extérieur (19) qui court lelong du bord du siège en forme de "U" et d'autre part avec la protuberance spéciale (20) obtenue sur le côté opposée de ladite cavité en forme de canal, ledit pied (17) étant façonné de sorte que, pendant la phase d'insertion le plan qui constitue la plante (17a) dudit pied (17) glisse sur la surface inclinée supérieure (19a) de ladite flange (19) dudit siège en forme de "U" jusqu'au déclic qui réalise l'accrochage ou accouplement de sorte que l'insertion dudit fixe-vitrage sur ledit profilé d'accouplement a lieu simplement par rotation et sans emploi d'accessoires ou équipements spéciaux.

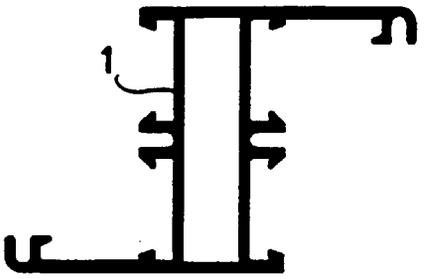


FIG.1

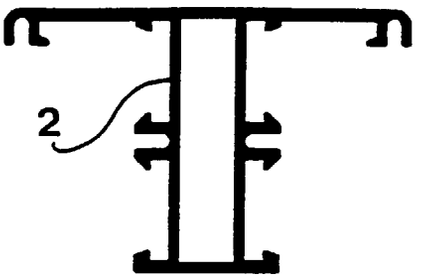


FIG.2

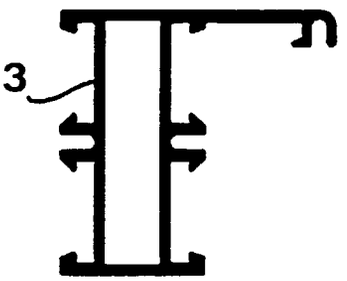


FIG.3

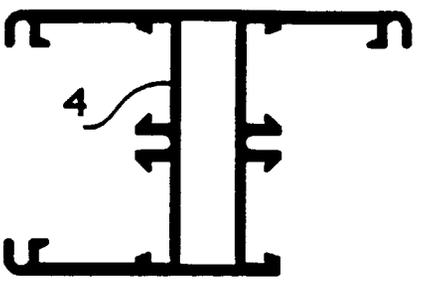


FIG.4

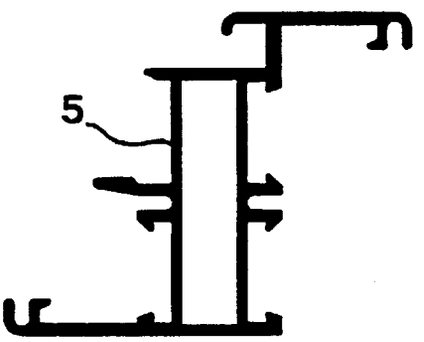


FIG.5

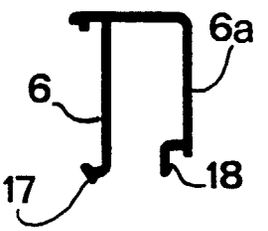


FIG.6

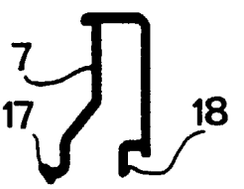


FIG.7

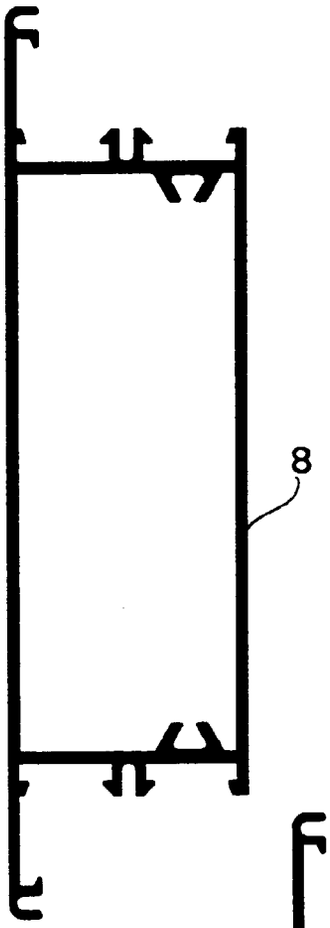


FIG.8

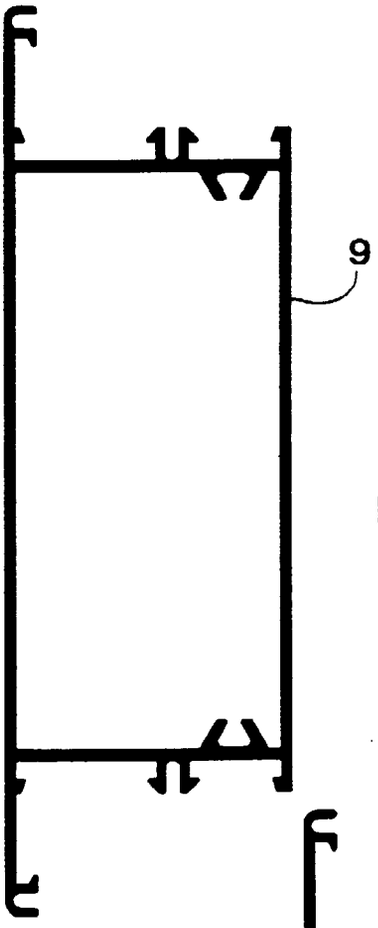


FIG.9

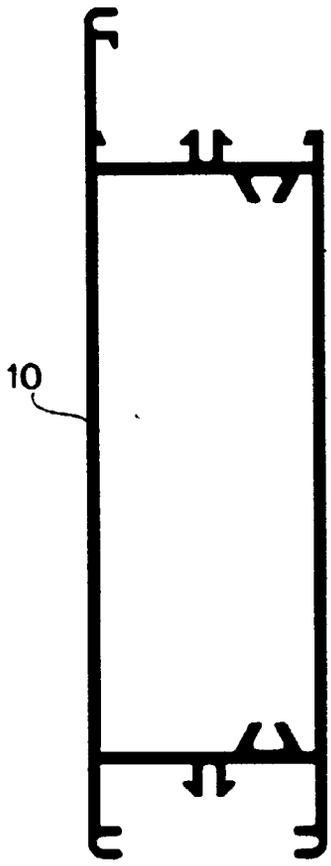


FIG.10

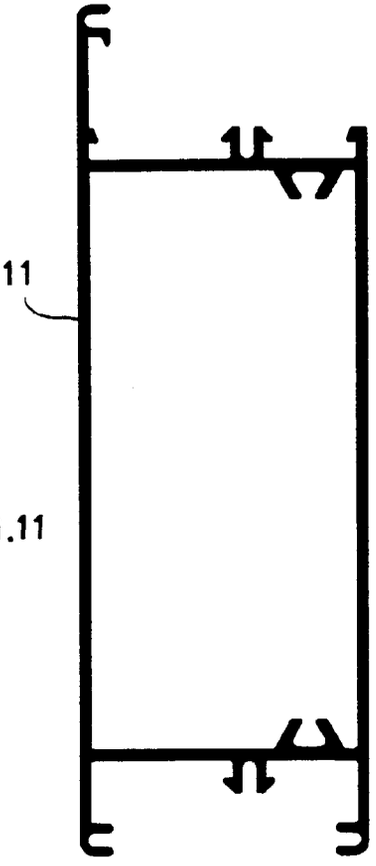


FIG.11

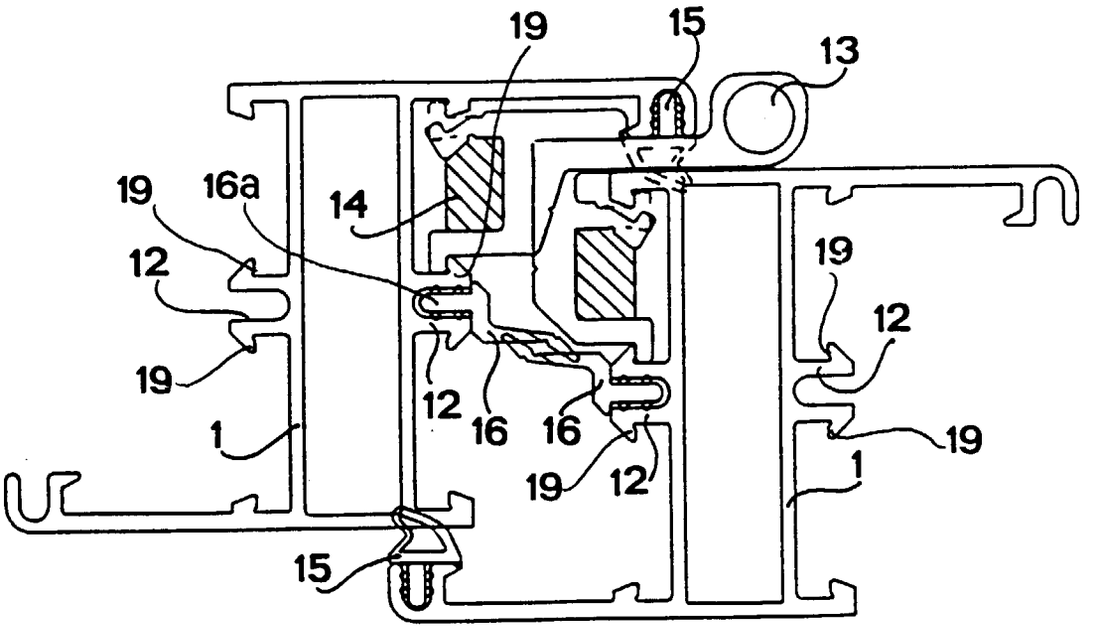


FIG.12

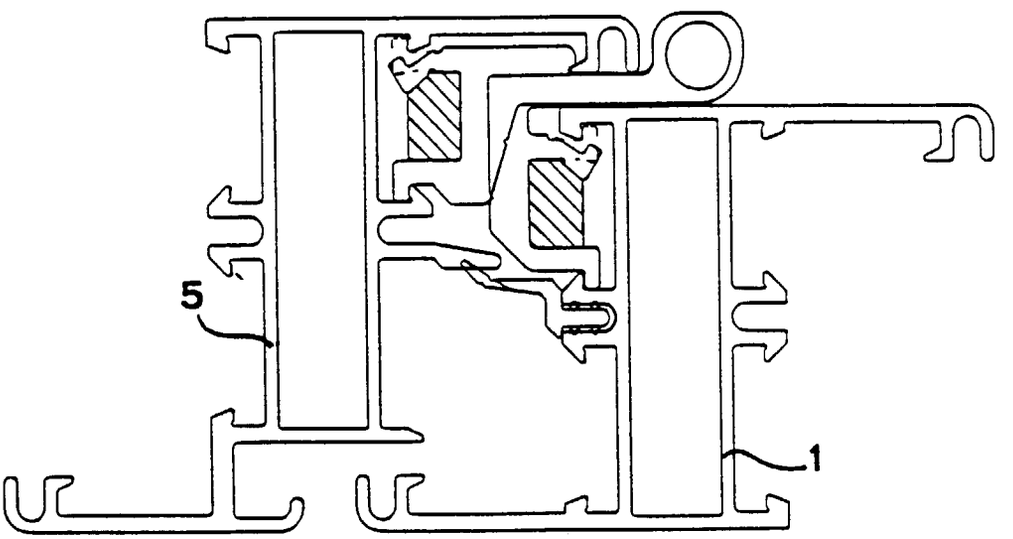


FIG.13

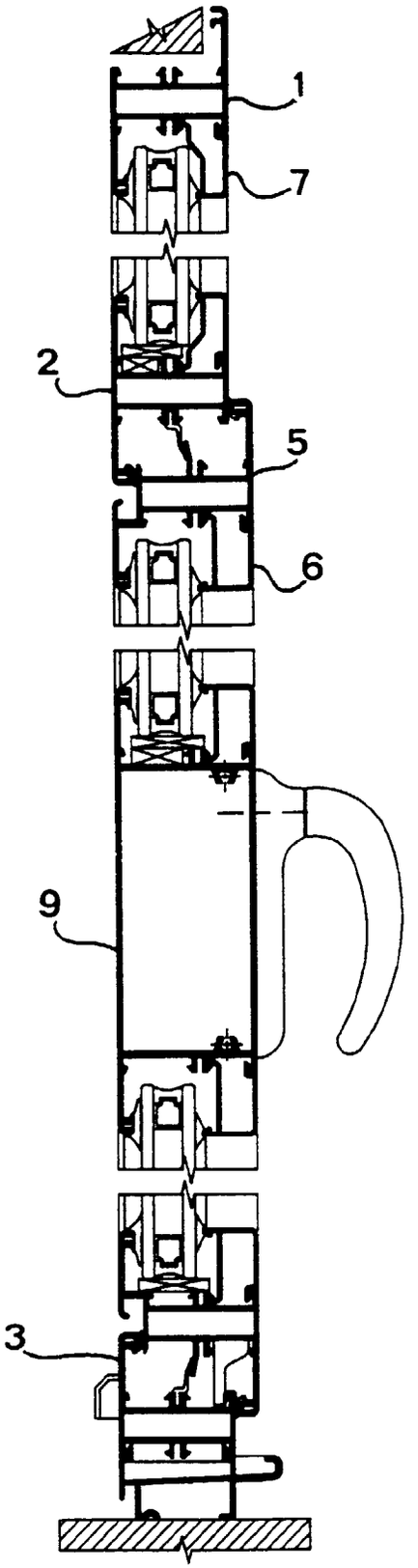


FIG.14

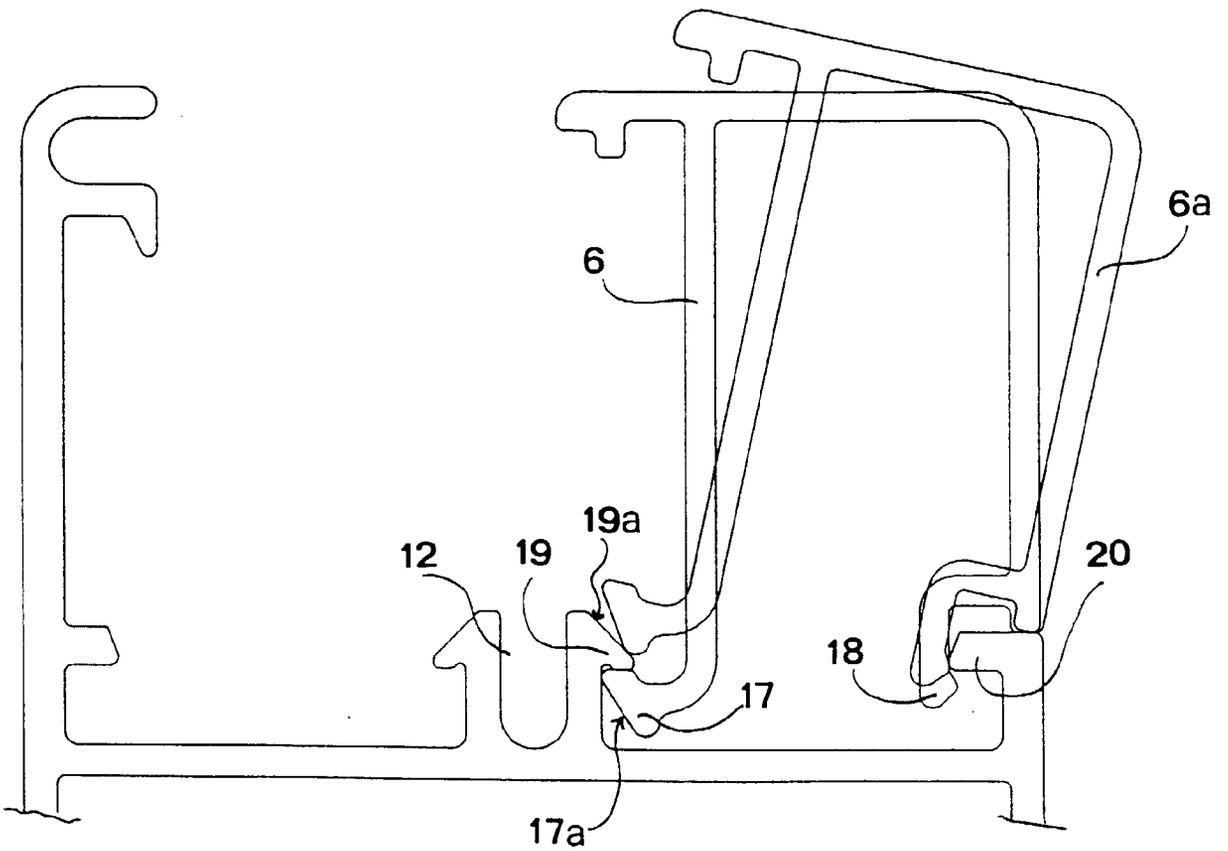


FIG.15