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⑤④ **Load-bearing frame for closure elements in internal dividing walls and the like.**

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Description

The subject of the present invention is a load-bearing frame for closure elements, for example transparent elements, in internal dividing walls and the like.

In many building applications, especially in the case of offices and the like, an enormous number of applications can be found for internal dividing or partition walls, adapted for permitting the subdividing of a single room, of huge dimensions, into smaller parts, for example for the purpose of separating several offices, or internal rooms intended for various purposes, and so on.

Such internal dividing walls are usually constructed of a unit-composed structure, for the purpose of enabling them to be brought into use at any time after construction of the fixed walling of the room in which they are placed and easy dismantling if the internal subdivision is to be shifted or modified.

Walls of this class must have particular characteristics, among these to provide effective insulation against noise, dust and so on, and they must be capable of accommodating doors, transparent elements, openings or other features, as well as carrying brackets or possessing a sufficient thickness to receive shelves and the like, constituting not only a wall but also a container.

It is also required of dividing walls that they shall offer special aesthetic requirements, both in the obscured zones and in the zones equipped with transparent elements, doors and the like, thereby matching the equipment of the spaces defined by them.

One element of particular importance in internal dividing walls is provided by the support frames for the transparent elements or elements of other type, either opaque or translucent, adapted for closing the bays formed by the load-bearing grid of the wall, which require a frame for their support, both for functional reasons and for reasons of peripheral finishing or trimming ; said frames make up the main frame, to which is secured the closure element, for example composed of a plate of transparent material such as glass.

These frames are hereinafter termed, for short, "pane-holding" or "pane-fixing" frames, independently of the nature of the plate element carried by them. Said frames must possess adequate stiffness and therefore must be dimensioned with that objective and, at the same time, for aesthetic reasons must be scarcely visible from the outside, so that they do not give the partition a heavy appearance.

The pane-holding frames, moreover, in general have the characteristic of being composed of a plurality of rectilinear segments, mounted at angles to one another, equipped with joint elements at the corners and with sealing profiles or gaskets for securing the plate of glass or similar material : the preparation and assembly of such components proves to be a

complex operation, difficult to carry out automatically, which therefore influence the overall cost of the product.

US-A-2989788 discloses a load bearing frame according to the first portion of claim 1 and providing joints which are hold in place by friction of barbs laterally bent : this structure, due to the lateral flexibility of these barbs and to the play between the remaining part of the joint and the framings, cannot assure a complete rigidity ; since the holding in place of the joints is only granted by friction it cannot prevent a loosening of the joint.

This patent, moreover, does not disclose gaskets suitable to secure panels of different thickness.

BE-A-735446 deals about a gasket to hold in place the panels, but these gaskets too are not suitable to hold in place panels of different thickness.

The need therefore arises for providing a pane holding frame which shall offer the best possible characteristics of rigidity, combined with the aesthetic requirements of small bulk and of the parts that are externally visible, which shall moreover be especially rapid to assemble, with a reduced number of operations and limited tools necessary for the manual operations, thus offering a reduced cost of production.

Said results are achieved by the present invention by means of elastic clamping means comprising teeth elastically insertable in corresponding recesses of the metal profiles, said throat portions of the metal profiles being adapted for seating a gasket for securing a closure plate, which possesses a portion of U section of rigid plastics material and at least one flexible lip facing towards the interior of the U section, the lip being adapted for elastically pressing a plate of small or large thickness inserted into the gasket.

The metal profiles are composed of a tubular portion, having a principal part of substantially square cross-section and a secondary part, oriented towards the outside of the frame formed of the profiles, having a quadrangular shape contiguous to the principal part, from which secondary part there projects, also outwardly form the frame and in its part, facing towards the front, a throat shaped limb, possessing associated retaining portions, forming the fixity seating for a gasket for securing the closure plate, there being also present a flat limb, extending towards the rear part of the frame, and adapted for concealing the members for securing the frame to the wall.

The securing gasket for the closure plate is inserted fixedly into the corresponding throat of the metal profile before said profile is cut to length for forming the frame, the gasket being cut together with the metal profile in a single operation.

The shaped joints that can be inserted into the tubular parts of the metal profiles for securing the profiles at an angle to form the frame, are composed of an L-shaped body having equal, perpendicular arms, with a substantially square cross-section, the arms

being adapted to be inserted into the part of square cross-section of the tubular portion of the profile, from which there projects outwards a peripheral limb, adapted to be inserted into the secondary part of the tubular portion of the metal profile, for the purpose of increasing the flexural rigidity of the joint, transverse projections being present on the arms of the body of the joint, adapted to be inserted into the tubular part of the profile with elastic deformation, securing the joint by friction to the metal profiles pushed onto it, there being also present curved elastic hook elements, projecting beyond the profile of the body of the joint, in correspondence with which there are present recesses in the metal profiles, into which the elastic elements are inserted, when the joint is inserted into position in the corresponding tubular part of the metal profiles.

The recesses of the metal profiles are in a position that determines the insertion into them of the elastic hook elements in conditions of clamping, the one onto the other, of the converging metal profiles fitted onto the arms of the joint.

In the load-bearing frame for closure elements in internal dividing walls and the like, there are provided, in the metal profiles and in the arms of the joints, corresponding holes for coupling together if desired, by means of screws, especially in the case of frames of large dimensions or plates of considerable weight.

The elements for concealing the members for securing the frame to the structure of the wall, and/or the load-bearing structure itself of the wall, comprise a metal frame composed of a shaped profile having a tubular portion and a limb for connecting to the structure, there being present corner joints, adapted for connecting the profiles of the frame, which can be inserted into the tubular portions of the profiles.

The corner joints are formed of an L-shaped element of shaped plastics material, having arms that can be inserted by force into the seatings of two converging, mutually perpendicular profiles, the arms being secured by friction in them, the L-shaped member being equipped, in addition, on the arm that is orientated vertically, with a tongue carrying a projecting pin, adapted for engaging into a corresponding hole of the uprights and cross-members of the structure, thus carrying the weight of the concealing frame.

Further details will become apparent from the following description, given with reference to the attached drawings, in which there are shown :

in Figure 1, a front view of a dividing wall, equipped with a pane-holding frame according to this invention ;

in Figure 2, a section on the plane II-II of Figure 1 ;

in Figure 3, the frame of Figure 2, applied to an alternative form of dividing wall ;

in Figure 4, an exploded view of the frame according to this invention, at a right-angled connection;

in Figure 5, a right-angled connecting bracket for the pane-holding frame, in front view ;

in Figure 6, a section on the plane VI-VI of Figure 5 ;

in Figure 7, a right-angled connecting bracket for the concealing and connecting frame, in front view ;

in Figure 8, a section on the plane VIII-VIII of Figure 7 ;

in Figure 9, the bracket of Figure 7 in lateral view.

As Figure 1 shows, a dividing wall or partition extends between a pair of mutually facing walls 1, a floor 2 and a ceiling 3, for the purpose of separating two parts of a room of larger dimensions.

The dividing wall substantially comprises a peripheral frame 4, secured to said walls 1, floor 2 and ceiling 3, to which there are connected a plurality of uprights 5 carrying respective cross-members 6, defining bays of various dimensions, in which there are disposed wall panels 7, of the opaque type and closure elements 8, for example transparent, doors 9 and the like.

The closure elements 8 are composed of a "pane-holding" frame 10, constructed of an extruded light alloy profile 11, the shape of which can be seen more clearly in section in Figures 2, 3, and in the exploded view of Figure 4.

The profile 11 possesses a central tubular portion, comprising a zone of substantially square section 12 and a rectangular zone 13, of smaller thickness, facing outwardly from the quadrilateral formed of the four profile segments making up the frame adapted for carrying a closure plate, for example of glass or the like ; into said tubular portion, as shown in Fig. 4, at the ends of the profiles 11 cut to length with a 45° mitre to form the corners of the frame, there is inserted an angle joint 14, of moulded plastics material, by means of which the connection of the mutually perpendicular profiles of said frame is effected.

Said joint, more clearly illustrated in Figures 5, 6, comprises an angled body having a substantially square section 15, adapted to be inserted into the zone 12 of the profile 11, and a peripheral limb 16, adapted to be inserted into the zone 13 of the tubular part of the profile 11 ; the extension of the limb 16 assures to the joint the bending stiffness necessary for guaranteeing perpendicularity between the contiguous profiles 11 connected by it.

The surface of the body 15 of the joint possesses projections 17, adapted for permitting the joint to be inserted with friction into the zone 12 of the profile 11, thus facilitating the holding of this joint in its seating ; the securing of the profile 11 to the joint 14 is furthermore assured by the end portions of the arms of the joint itself, possessing at their ends a raised elastic tooth 18, projecting, as shown in Figure 6, from the surface of the body 15, in correspondence with which tooth a recess 19 is formed in the profile 11 ; in this

manner, the profiles 11 can be fitted onto the joint with an elastic force fit, until blockage is obtained by the emergence of the tooth 18 from the recess 19, as can be seen in Figure 4 ; this assures rigidity of the connection, by keeping the coupling surfaces, mitred at 45°, of the profiles 11 clamped elastically onto each other, and assembly may be carried out in an especially rapid manner without the use of special equipment, in particular without the use of screws.

In the case of closure elements with plates of glass of large dimensions, however, it is also possible to arrange, if necessary, for the profiles 11, especially for the vertical profiles that carry the weight of the associated plate, to be secured to the joint, by reinforcement with a pair of screws inserted into the holes 20, 21, provided for this purpose on the joints 14 and profiles 11 respectively.

As the Figures show, the profiles 11 have a seating 22, adapted for housing a gasket or seal 23, substantially of U-section, into which there is inserted a closure plate 24, for example a transparent plate, of glass or the like.

The gasket 23 possesses a flexible lip 25 and a corresponding raised flange 26, appropriately formed of a material that is elastically more deformable than the remaining part of the gasket ; said lip 25, and partly also the raised flange 26, as shown in Figure 2 in its right-hand and left-hand parts respectively, can deflect to a lesser or greater extent towards the interior of the profile of the gasket, so that it is possible to receive, without change of gasket, either plates 24a of small thickness, for example 3 mm, or plates 24b of greater thickness, for example 7 mm.

The gasket 23 is designed to be inserted into the respective seating 22 before the profiles 11 are cut to length, by using automatic machines to operate on entire bars comprising profiles 11 and gaskets 23 ; during assembly, the cutting to size of the profiles 11 and of the associated pane-fixing gaskets takes place in one single operation, thus providing a considerable saving in time, both as a result of the possibility of automating the fitting of the gasket to the profile, and as a result of the simultaneous cutting to dimensions of the profile and the gasket, thereby achieving higher accuracy in execution.

The arrangement of the seating 22 and of the gasket 23, the flexible lip of which is disposed, as shown in the Figures, towards the inside, also enables the external surface of the closure plate to be kept substantially flush with the remaining part of the surface of the wall, with associated advantages in respect of aesthetics and cleaning, thereby avoiding the presence of re-entrant angles at the support frame for the transparent plates, where dust and the like could accumulate.

Furthermore, the shape of the profile 11 allows the closure plate to be secured in the vicinity of the perimeter of the frame which supports it, keeping the

remaining part of the frame, the size of which is determined by the requirements for providing adequate stiffness to the whole assembly, in a position that is more internal and set back with respect to the closure plate, with consequent aesthetic improvements.

The profile 11, finally, possesses a limb 27 projecting towards the median plane of the wall for which it is intended, having in the case of a wall of small thickness serving solely for partitioning functions, an end near to that of the corresponding limb of the profile of the opposite face of the same partition, as shown in Figure 2 : said limbs enable the members for supporting and assembling the frame and the load-bearing structure of the wall to be concealed from sight, thereby assuring the aesthetic appearance of the whole.

Said support and assembly members are, for example, constituted of respective hooks 28, secured by means of screws or the like to the profiles 11 forming the vertical faces of the frame 10, by means of which said frame is secured to bolts 29 projecting from the uprights ; as Figure 2 shows, after the frame has been mounted in position, said hook elements or other similar elements are no longer visible, being entirely obscured by the limbs 27.

In the case of a partition of great thickness, as illustrated in Figure 3, adapted for constituting not only a partition means but also a container element, the dimension of uprights and cross-members transversely to the wall being larger for this purpose, the pane-holding frame is equipped with corresponding members for fixing to the uprights, for example in the form of angles 30 resting on associated pins 31 of said uprights ; in such a case, for the purpose of concealing the fixing members from view, an auxiliary covering frame 32 is provided, extending from the limb 27 of the profile 11 of the pane-holding frame opposite the surface of cross-beams and uprights.

Said covering frame 32 is composed of profiles of light alloy or similar material, the form of which in cross-section is shown in Figures 3 and 4 and is composed of a quadrilateral portion 33, having its larger dimension in the plane of the frame, which extends towards the limb 27 with an associated connecting limb 34.

For the purpose of achieving, in an especially rapid manner, the connection of the profile segments constituting the frame, the use is provided of a corner joint 35, of moulded plastics material, by means of which the connection together of the mutually perpendicular profiles of said frame is achieved.

Said joint, shown more clearly in Figures 7, 8 and 9, has an angled body having a substantially rectangular section 36, adapted to be inserted into the quadrilateral portion 33 of the profile of the frame ; the surface of the body 36 of the joint possesses projections 37, adapted for allowing it to be inserted with friction into the portion 33, thereby ensuring holding by

friction ; in this manner, assembly may be carried out in an especially rapid manner and without the use of special tools, in particular without the use of screws or other retaining elements.

The quadrilateral portion 33 of the profile of the frame 32 possesses an aperture 38, and in correspondence therewith the joint 35 possesses a longitudinal projection 39 ; from this projection 39 there extends a shaped tongue 40, equipped with a projecting pin 41, which moreover projects outside the frame 32.

As Figures 7, 8, 9 show, the tongue 40 is present on only one of the two mutually perpendicular arms of the body of the joint 35, in particular on the arm intended to be mounted vertically in the frame.

The pins 41 are provided for insertion into corresponding holes of the adjacent uprights, in this manner supporting the self-weight of the frame 32 ; said holes may be formed for this purpose on the uprights or, preferably, they are constituted of the same holes provided along the edges of the uprights for seating support pins and the like for the cross-members, for the pane-holding frames, for shelves and the like, as illustrated in Figure 3, or they may be constituted of analogous fixing members, to which the tongues 40 and pins 41 are shaped to correspond.

Claims

1. Load-bearing frame for closure elements in internal dividing walls and the like, constituted of metal profiles (11) having at least one tubular portion (12) and one throat portion (22), in which a plurality of profile segments are secured to one another, forming the frame, by means of shaped joints (14), having portions that can be inserted into the tubular portions of the metal profiles at their corresponding ends to be secured at an angle, said shaped joints having friction elements (17), characterized by elastic clamping means comprising teeth (18) elastically insertable in corresponding recesses (19) of the metal profiles, said throat portions (22) of the metal profiles being adapted for seating a gasket (23) for securing a closure plate (24), said gasket possessing a portion of U-section of rigid plastics material and at least one flexible lip (25) facing towards the interior of the U-section, the lip being adapted for elastically pressing a plate (24) of small or large thickness inserted into the gasket.

2. Load-bearing frame for closure elements in internal dividing walls and the like according to claim 1, characterised by the fact that the metal profiles (11) are composed of a tubular portion (12) having a principal part (12) of substantially square cross-section and a secondary part (13), orientated towards the outside of the frame formed of the profiles, having a quadrangular shape contiguous to the principal part,

from which secondary part there projects, also outwardly from the frame and in its part, facing towards the front, a throat shaped limb (22), possessing associated retaining portions, forming the fixity seating for a gasket (23) for securing the closure plate, there being also present a flat limb (27), extending towards the rear part of the frame, and adapted for concealing the members for securing the frame to the wall.

3. Load-bearing frame for closure elements in internal dividing wall and the like according to claim 1, characterised by the fact that the gasket (23) for securing the closure plate is fixedly inserted into the corresponding throat (22) of the metal profile (11) before said profile is cut to shape for forming the frame, the gasket being cut together with the metal profile in one single operation.

4. Load-bearing frame for closure elements in internal dividing walls and the like according to Claim 1, characterized by the fact that the shaped joints (14) which can be inserted into the tubular portions (12) of the metal profiles (11) for securing said profiles at a corner for the formation of the frame (10), are constituted of an L-shaped body (15), having mutually perpendicular, equal arms, of substantially square cross-section, the arms being adapted to be inserted into the part of square cross-section of the tubular portion (12) of the profile (11), from which arms there projects outwardly a peripheral limb (16), adapted to be inserted into the secondary part of the tubular portion (13) of the metal profile (11), increasing the flexural rigidity of the joint, transverse projections (17) being present on the arms of the joint body, adapted to be inserted into the tubular part of the profile (11) with elastic deformation, thereby fixing the joint by friction to the metal profiles fitted onto it, there being also present curved elastic hook means (18), projecting beyond the profile of the body of the joint, in correspondence with which recesses (19) are present in the metal profiles, into which recesses (19) the elastic elements (18) engage when the joint is inserted into position in the corresponding tubular portion of the metal profiles.

5. Load-bearing frame for closure elements in internal dividing walls and the like according to Claim 5, characterized by the fact that the recesses (19) of the metal profiles are in a position that determines the engagement into them of the elastic hook elements (18) in conditions of clamping, the one onto the other, of the converging metal profiles fitted onto the arms of the joint (14).

6. Load-bearing frame for closure elements in internal dividing walls and the like according to Claim 5, characterized by the fact that corresponding holes (20) for coupling, if necessary, by means of screws are provided in the metal profiles and in the arms of the joints (14).

7. Load-bearing frame for closure elements in

internal dividing walls and the like according to Claim 1, characterized by the fact that the concealing elements for the members for securing the frame to the structure of the wall and/or the load-bearing structure itself to the wall, comprise a metal frame (32), formed of a shaped profile having a tubular portion (33) and a limb (34) for connection to the structure, corner joints (35) being present, adapted for connecting together the profiles of the frame (32), these joints being able to be inserted into the tubular portions (33) of the profiles (32).

8. Load-bearing frame for closure elements in internal dividing walls and the like according to Claim 8, characterized by the fact that the corner joints (35) are formed of an L-shaped element of moulded plastics material, having arms that can be inserted with force into the seatings of two mutually perpendicular, converging profiles (32), being secured by friction in them, the L-shaped element being furthermore equipped, on that one of its arms that is disposed vertically, with a tongue (40) carrying a projecting pin (41), adapted for engaging into a corresponding hole of uprights and cross-beams of the structure, thus supporting the weight of the concealing frame (32).

Patentansprüche

1. Stützrahmen für Abdeckelemente in Raumteilerwänden oder dergleichen, bestehend aus Metallprofilen (11) mit mindestens einem rohrförmigen Abschnitt (12) und einem Kehlabschnitt (22), wobei mehrere Profilssegmente unter Bildung des Rahmens aneinander mittels Formverbindungsteilen (14) befestigt sind, die mit Abschnitten versehen sind, die in die rohrförmigen Abschnitte der Metallprofile an deren in einem Winkel miteinander zu befestigenden, entsprechenden Enden einschiebbar sind, wobei die Formverbindungsteile Reibungselemente (17) aufweisen, gekennzeichnet durch elastische Klemmmittel mit Zähnen (18), die elastisch in entsprechende Ausnehmungen (19) der Metallprofile einsetzbar sind, wobei die Kehlabschnitte (22) der Metallprofile als Sitz für eine Dichtung (23) zum Festlegen einer Abdeckplatte (24) ausgelegt sind, die Dichtung einen Abschnitt U-förmigen Querschnitts aus starrem Kunststoffmaterial und mindestens eine flexible Lippe (25), die dem Inneren des U-Querschnitts zugewandt ist, aufweist, wobei die Lippe eine in die Dichtung eingesetzte Platte (24) kleiner oder großer Dicke elastisch anzudrücken vermag.

2. Stützrahmen nach Anspruch 1, gekennzeichnet durch die Tatsache, daß die Metallprofile (11) sich zusammensetzen aus einem rohrförmigen Abschnitt (12) mit einem Hauptteil (12) von im wesentlichen quadratischem Querschnitt und einem Nebenteil (13), der von dem durch die Profile gebildeten Rahmen nach außen orientiert ist, eine an den Hauptteil, von

dem der Nebenteil ebenfalls nach außen von dem Rahmen absteht, angrenzende quadratische Form aufweist, und in seinem nach vorn weisenden Teil einen gekehlten Schenkel (22) mit zugehörigen Halteabschnitten besitzt, wodurch der feste Sitz für eine Dichtung (23) zum Festlegen der Abdeckplatte gebildet wird, wobei außerdem ein flacher Schenkel (27) vorhanden ist, der sich in Richtung auf den hinteren Teil des Rahmens erstreckt und so ausgebildet ist, daß er die Mittel zum Festlegen des Rahmens an der Wand verdeckt.

3. Stützrahmen nach Anspruch 1, gekennzeichnet durch die Tatsache, daß die Dichtung (23) zum Festlegen der Abdeckplatte fest in die entsprechende Kehle (22) des Metallprofils (11) eingesetzt ist, bevor das Profil zur Bildung des Rahmens zugeschnitten wird, wobei die Dichtung zusammen mit dem Metallprofil in einem einzigen Arbeitsvorgang geschnitten wird.

4. Stützrahmen nach Anspruch 1, gekennzeichnet durch die Tatsache, daß die Formverbindungsteile (14), die in die rohrförmigen Abschnitte (12) der Metallprofile (11) einschiebbar sind, um die Profile an einer Ecke der Rahmenkonstruktion (11) festzulegen, durch einen L-förmigen Körper (15) mit zueinander senkrechten, gleichen Armen und etwa quadratischem Querschnitt gebildet sind, wobei die Arme derart ausgebildet sind, daß sie in den Teil des quadratischen Querschnitts des rohrförmigen Abschnitts (12) des Profils (11) einschiebbar sind, wobei von den Armen ein Umfangsschenkel (16) nach außen absteht, der in den Nebenteil des rohrförmigen Abschnitts (13) des Metallprofils (11) hineingelangt, um die Biegesteifigkeit der Verbindung zu erhöhen, wobei Quervorsprünge (17) an den Armen des Verbinderkörpers vorhanden sind, welche in den rohrförmigen Teil des Profils (11) unter elastischer Verformung einsetzbar sind, um so die Verbindung durch die Reibung mit den auf sie aufgepaßten Metallprofilen zu fixieren, wobei außerdem gekrümmte elastische Hakenanordnungen (18) vorhanden sind, die über das Profil des Verbindungskörpers abstehen, und denen entsprechende Ausnehmungen (19) in den Metallprofilen entsprechen, in welche Ausnehmungen (19) die elastischen Elemente (18) eingreifen, wenn das Verbindungsteil in seine Stellung in dem entsprechenden rohrförmigen Abschnitt der Metallprofile eingesetzt ist.

5. Stützrahmen nach Anspruch 5, gekennzeichnet durch die Tatsache, daß die Ausnehmungen (19) der Metallprofile sich an einer Stelle befinden, welche das Eingreifen der elastischen Hakenelemente (18) in klemmendem Zustand bedingt, und zwar eines der zusammengehörenden, auf den Armen des Verbindungsteils (14) aufgepaßten Metallprofile an dem anderen.

6. Stützrahmen nach Anspruch 5, gekennzeichnet durch die Tatsache, daß in den Metallprofilen und

in den Armen der Verbindungsteile (14) entsprechende Löcher (20) für eine bedarfsweise Kopplung mittels Schrauben vorgesehen sind.

7. Stützrahmen nach Anspruch 1, gekennzeichnet durch die Tatsache, daß die Abdeckelemente für die Befestigungsmittel des Rahmens an der Wandstruktur und/oder der lasttragenden Struktur selbst an der Wand einen Metallrahmen (32) umfassen, der ein Profil mit einem rohrförmigen Abschnitt (33) und einem Schenkel (34) für die Verbindung mit der Struktur aufweist, wobei Eckverbindungen (35) vorhanden sind, die so ausgebildet sind, daß sie die Profile des Rahmens (32) miteinander verbinden, wobei die Verbindungen in die rohrförmigen Abschnitte (33) der Profile (32) einsetzbar sind.

8. Stützrahmen nach Anspruch 8, gekennzeichnet durch die Tatsache, daß die Eckverbindungen (35) gebildet werden durch ein L-förmiges Element aus Kunststoff-Formmaterial, und Arme aufweisen, die mit Kraft in die Sitze von zwei zueinander senkrechten, zusammenlaufenden Profilen (32) einschickbar sind, um reibschlüssig in den Profilen festzuliegen, wobei das L-förmige Element weiterhin an demjenigen Arm, der vertikal angeordnet ist, mit einer Zunge (40) ausgestattet ist, die einen vorstehenden Stift (41) trägt, der in ein entsprechendes Loch der Ständer und Querträger der Struktur eingreifen, um so das Gewicht des Abdeck-Rahmens (32) zu halten.

Revendications

1. Cadre de support de charges destiné à des éléments de fermeture de cloisons internes de séparation et analogues, constitué de profilés métallique (11) ayant au moins une partie tubulaire (12) et une partie (22) formant une gorge, dans lequel plusieurs segments de profilé sont fixés les uns aux autres afin qu'ils forment le cadre, à l'aide de joints (14) de forme particulière ayant des parties qui peuvent être introduites dans les parties tubulaires des profilés métalliques à leurs extrémités qui se correspondent et qui sont destinées à être fixées à un angle, les joints ayant des éléments de frottement (17), caractérisé par des dispositifs élastiques de serrage comprenant des dents (18) qui peuvent être introduites élastiquement dans des cavités correspondantes (19) des profilés métalliques, les parties (22) de gorge des profilés métalliques étant destinées à loger une garniture (23) de fixation d'un plateau de fermeture (24), la garniture ayant une partie de section en U formée d'une matière plastique rigide et au moins une lèvre flexible (25) tournée vers l'intérieur de la section en U, la lèvre étant destinée à repousser élastiquement un plateau (24) d'épaisseur faible ou importante, qui a été introduit dans la garniture.

2. Cadre de support de charges pour éléments de

5 fermeture de cloisons internes de séparation et analogues selon la revendication 1, caractérisé par le fait que les profilés métalliques (11) sont composés d'une partie tubulaire (12) ayant une partie principale (12) de section sensiblement carrée et une partie secondaire (13) orientée vers l'extérieur du cadre formé des profilés, ayant une forme de quadrilatère contigu à la partie principale dont dépasse la partie secondaire, vers l'extérieur du cadre, et, dans sa partie tournée vers l'avant, d'une branche (22) destinée à former la gorge et possédant des parties associées de retenue, formant le siège de fixation d'une garniture (23) destinée à fixer le plateau de fermeture, une branche plate (27) tournée vers la partie arrière du cadre étant aussi destinée à cacher les organes de fixation du cadre sur un mur.

3. Cadre de support de charges pour éléments de fermeture de cloisons internes de séparation et analogues selon la revendication 1, caractérisé en ce que la garniture (23) de fixation du plateau de fermeture est introduite à demeure dans la gorge correspondante (22) du profilé métallique (11) avant la découpe du profilé à la configuration permettant la formation du cadre, la garniture étant découpée avec le profilé métallique en une seule opération.

4. Cadre de support de charges destiné à des éléments de fermeture de cloisons internes de séparation et analogues selon la revendication 1, caractérisé par le fait que les joints (14) de forme particulière qui peuvent être introduits dans les parties tubulaires (12) des profilés métalliques (11) pour la fixation des profilés à un coin permettant la formation du cadre (10) sont constitués par un corps en L (15) ayant des bras égaux et perpendiculaires de section sensiblement carrée, les bras étant destinés à pénétrer dans la partie de section carrée de la partie tubulaire (12) du profilé (11), une branche périphérique (16) dépassant des bras et étant destinée à pénétrer dans la partie secondaire de la partie de la tubulaire (13) du profilé métallique (11) et augmentant la rigidité à la flexion du joint, des saillies transversales (17) étant présentes sur les bras du corps du joint et étant destinées à pénétrer dans la partie tubulaire du profilé (11) par déformation élastique, si bien que le joint est fixé par frottement aux profilés métalliques placés sur lui, un dispositif élastique courbe (18) d'accrochage dépassant aussi du profilé du corps du joint, des cavités (19) étant présentes dans les profilés métalliques à des emplacements correspondant au dispositif d'accrochage, les éléments élastiques (18) pénétrant dans les cavités (19) lorsque le joint est introduit en position dans la partie tubulaire correspondante des profilés métalliques.

5. Cadre de support de charges destiné à des éléments de fermeture de cloisons internes de séparation ou analogues selon la revendication 5, caractérisé en ce que les cavités (19) des profilés métalliques sont en position qui détermine leur coo-

pération avec les éléments élastiques d'accrochage (18) dans des conditions de serrage l'un contre l'autre des profilés métalliques convergents montés sur les bras du joint (14).

6. Cadre de support de charges destiné à des éléments de fermeture de cloisons internes de séparation et analogues selon la revendication 5, caractérisé en ce que des trous correspondants (20) d'accouplement le cas échéant par des vis sont formés dans les profilés métalliques et dans les bras du joint (14). 5
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7. Cadre de support de charges pour éléments de fermeture de cloisons internes de séparation et analogues selon la revendication 1, caractérisé par le fait que les éléments destinés à cacher les organes de fixation du cadre à la structure du mur et/ou de la structure de support de charges elle-même au mur, comportent un cadre métallique (32) formé d'un profilé de configuration particulière ayant une partie tubulaire (33) et une branche (34) destinée à assurer le raccordement à la structure, des joints (35) de coin étant destinés à raccorder les profilés du cadre (32), ces joints étant destinés à pénétrer dans les parties tubulaires (33) des profilés (32). 15
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8. Cadre de support de charges pour éléments de fermeture de cloisons internes de séparation et analogues selon la revendication 8, caractérisé en ce que les joints de coin (35) sont formés d'un élément en L constitué d'une matière plastique moulée ayant des bras qui peuvent être introduits à force dans les sièges de deux profilés convergents perpendiculaires (32), en étant fixés par frottement dans ces profilés, l'élément en L comportant en outre, sur celui des bras qui est disposé verticalement, une languette (40) qui porte un ergot (41) destiné à pénétrer dans un trou correspondant des montants et des traverses de la structure afin qu'il supporte le poids du cadre (32) qui est destiné à le cacher. 25
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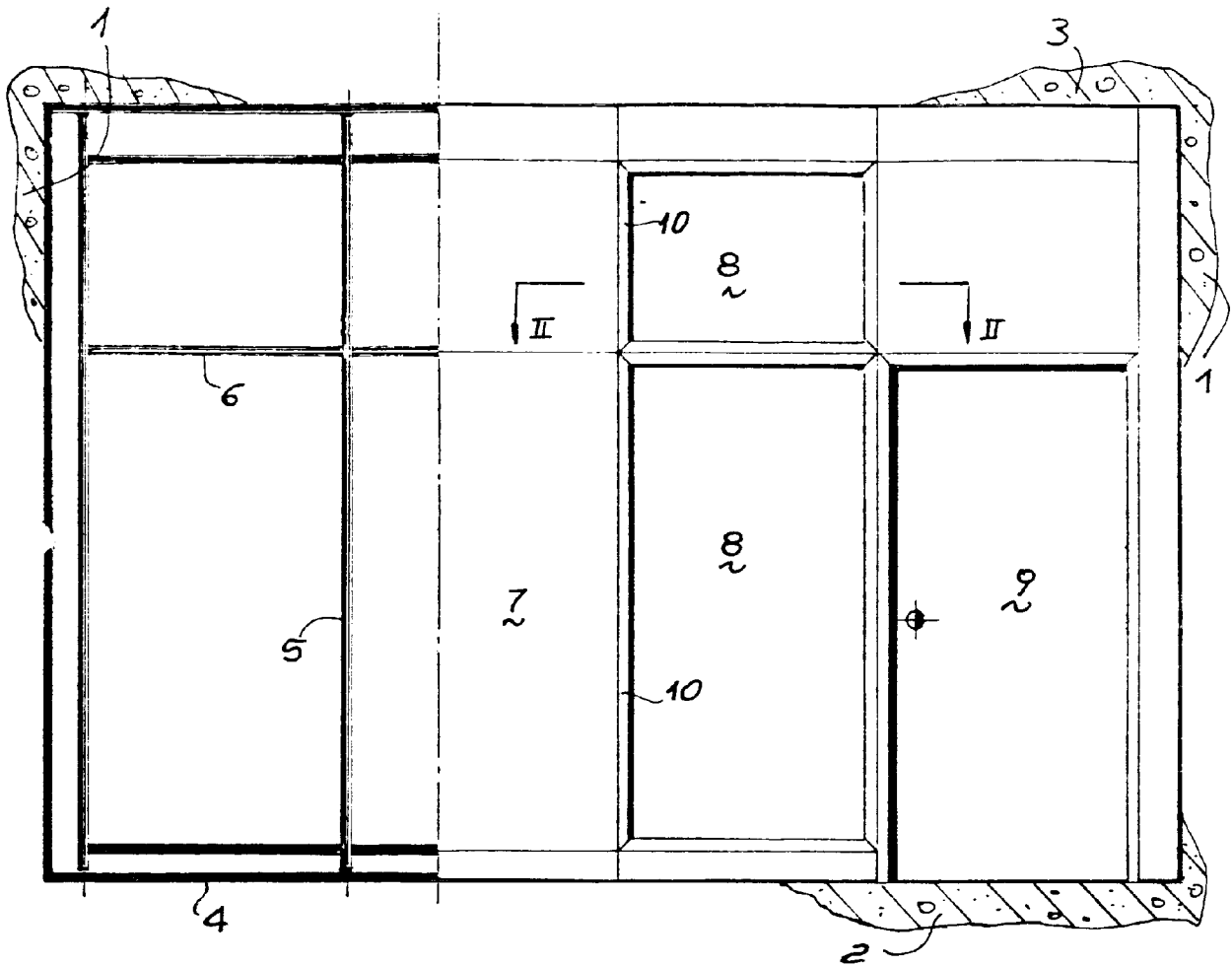


Fig. 1

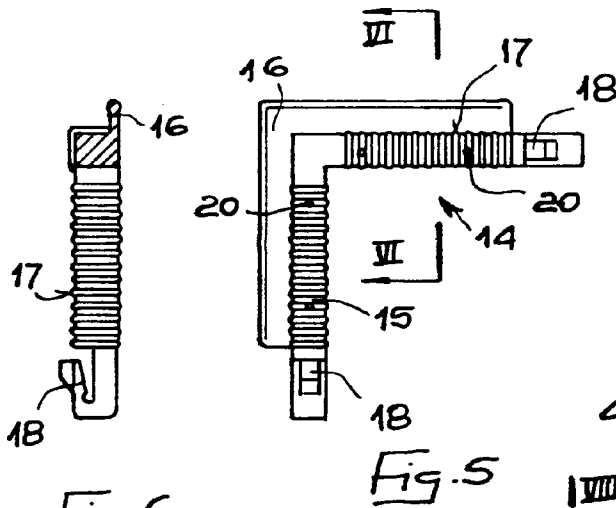


Fig. 6

Fig. 5

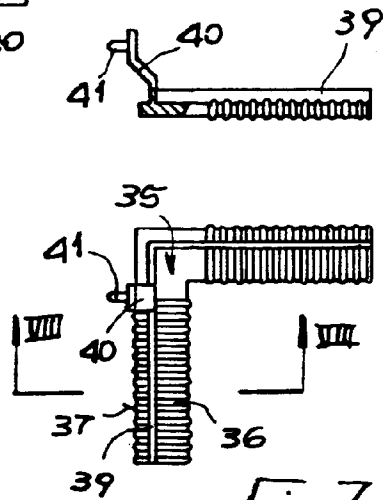


Fig. 7

Fig. 8

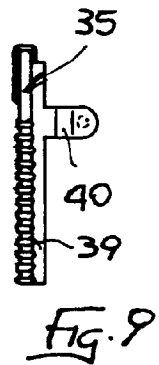


Fig. 9

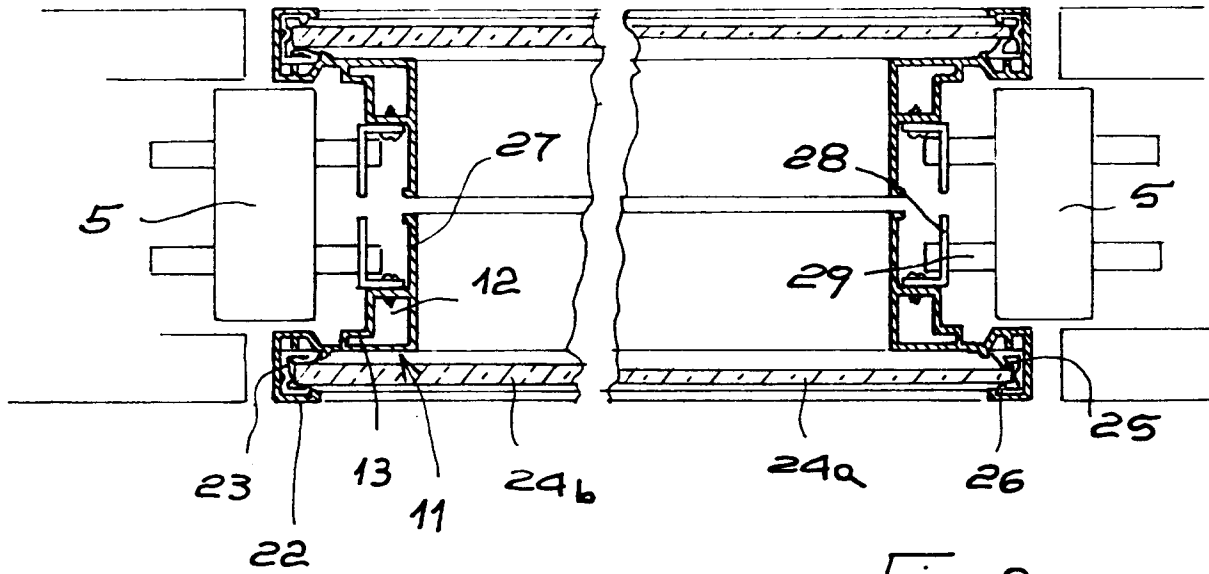


Fig. 2

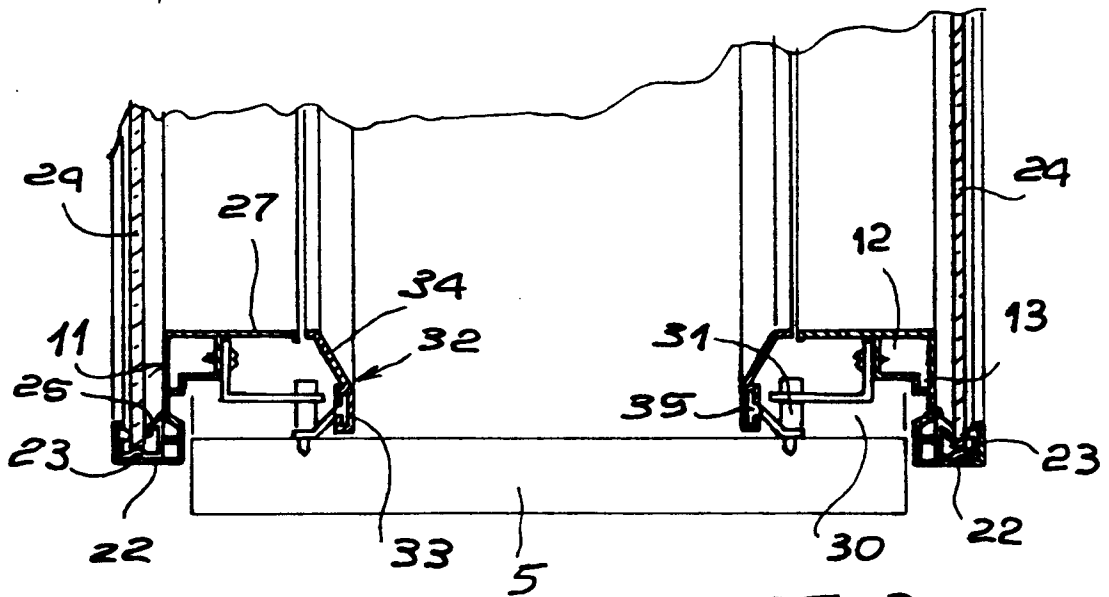


Fig. 3

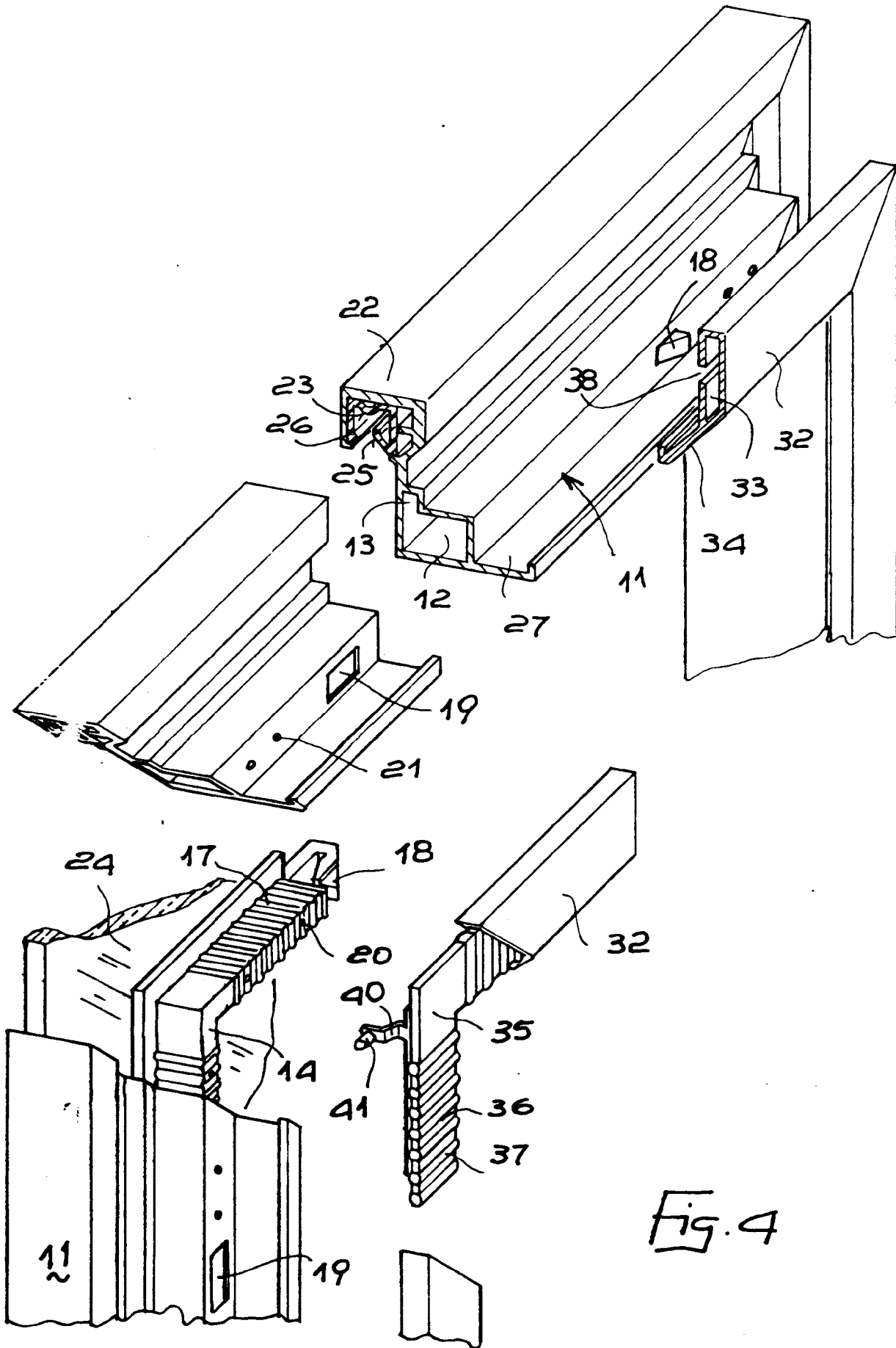


Fig. 4