(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 186 981 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
19.05.2010 Bulletin 2010/20

(51) Int Cl.:
E05D 15/24 *(2006.01)*

(21) Application number: **09425452.1**

(22) Date of filing: **09.11.2009**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR
Designated Extension States:
AL BA RS

(30) Priority: **13.11.2008 IT BS20080207**

(71) Applicant: **S.E.I.P.-Società Europea Industriale Porte S.r.l.**
25030 Roncadelle BS (IT)

(72) Inventor: **Tomasoni Rino Pierino**
25030 Roncadelle (Berscia) (IT)

(74) Representative: **Sangiacomo, Fulvia**
BIESSE S.r.l.,
Corso Matteotti 42
25122 Brescia (IT)

(54) Device for fixing guide tracks for section doors

(57) This invention concerns a device for fixing in place parts of the lateral guide tracks for section doors, where each of said lateral tracks has basically a vertical segment (15) and two horizontal guide segments (16, 17), parallel and superimposed forming a dual guide track (18) that extends from the summit of said vertical segment and which is supported by suspension plates (19). The device comprises a first supporting bracket (23) of the horizontal lower guide segment (16), a second supporting bracket (24) of the horizontal guide segment overhanging the dual guide track segment (17), and at least one blocking means (32) for fixing together at the same time said first bracket and second supporting bracket together with a suspension plate (19) of the dual guide track (18).

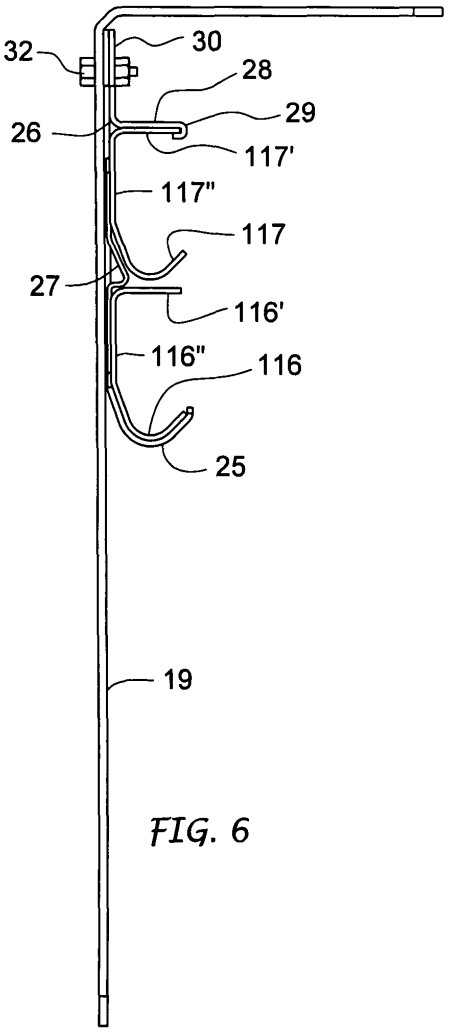

FIG. 6

EP 2 186 981 A1

Description

Field of the Invention

[0001] This invention concerns in general section doors which for their opening and closing movements have rollers guided along lateral guide tracks made up of vertical and horizontal guide segments, and concerns in particular an innovative device for the fixing in place of the horizontal segments of the lateral tracks of said doors.

State of the Technique

[0002] Section doors are usually made up of a plurality of horizontal panels, which are connected to each other by hinges and can follow, besides a rectilinear path, also a curved path.

[0003] Every section door is usually mounted and moveable between lateral guide tracks using interposed rollers fixed to the opposite ends of the horizontal panels. The guide tracks on the sides of the door have a basically C shaped transversal section, and each of them comprises a rectilinear track segment, that extends upwards and which connects on the upper part by means of a portion of curvilinear track, to at least one horizontal guide segment.

[0004] A section door is usually moveable between a closed position, where it is in a lowered vertical location between the vertical segments of the guide tracks, and an open position, where it is in a raised position between the horizontal segments of the guide tracks. Usually, then, the horizontal segment of every guide track is double, that is to say, made up of two horizontal and superimposed guide segments. In order to move between the closed and open positions, the section door is provided on each side with a first roller which is fixed to the top panel of the door and which couples with and travels along a horizontal segment, the overhanging one, of the double guide track, and the other sliding rollers are coupled to and travel along the vertical segment, the curved segment and the other horizontal segment, the one below, of the relative dual track.

[0005] Typically, the two superimposed segments of each horizontal double guide track are first fixed one to the other with the help of some screwed or welded plates and usually they are then fixed to the ceiling of the opening to be closed by the door, by means of suspension plates and screws. In other words, the two superimposed segments of every double horizontal guide track require different fixing means in different parts, which implies work and the employment of considerable labour.

[0006] Documents DE 201 00 536 U1 and EP 1 388 634 A are according to the state of technique corresponding to the introduction in claim 1.

Objectives and Summary of the Invention

[0007] It is however on the contrary an objective of this invention to propose an innovative fixing system that enables contemporary coupling and restriction between them of each suspension plate, of the two horizontal superimposed segments of every double guide track of a section door together with the possibility of stabilising the coupling using a single blocking screw.

[0008] A further objective of the invention is to propose therefore an efficient fixing system for the use within the ambit of the installation of section doors which is particularly simple, easy and cost-effective both to achieve and to use and be in a position to avoid the necessity to have to use a number of screws or to have to resort to welding.

[0009] Said objectives and the evident advantages which derive from them, are reached, according to the invention with a fixing device according to the introduction of claim 1 and comprising as a characterising aspect a first supporting bracket of the horizontal guide segment below, a second supporting bracket of the horizontal guide segment overhanging of the dual guide track, and at least a blocking means to fix at the same time said first bracket and said second supporting bracket between them and a suspension plate of the dual guide track.

[0010] In this way the assembly and the suspension of the horizontal dual guide track are in fact facilitated, carried out simply by associating the supporting brackets to the respective guide segments and blocking the brackets between them and a corresponding suspension plate.

[0011] Conveniently, both the first and the second supporting bracket can be made of a plastic material.

Brief description of the Drawings

[0012] Further details of the system according to the invention will become evident from the continuation of the description carried out in reference to the enclosed indicative and not limiting drawings, in which:

Fig. 1 shows a schematic view of guide track for a section door;

Figs. 2 and 3 show the fixing system of two horizontal segments of a dual guide track, seen in perspective between two opposite parts;

Figs. 4 and 5 show two front views from opposite sides of the fixing system; and

Fig. 6 shows a sectional view in the direction of arrows A-A in Fig. 4.

Detailed description of the invention

[0013] Fig. 1 represents indicatively a section door 11 made up of a plurality of horizontal panels 12 connected between them by hinges 13, assembled between lateral guide tracks 14 and movable, in the known manner, between a lowered closed vertical position, and a raised, open horizontal position.

[0014] Each lateral guide track 14 is made up of a vertical guide segment 15, which extends upwards from the ground, and on the upper part of two parallel superimposed horizontal guide segments 16, 17, forming a dual track 18 that is supported by suspension plates or brackets 19. The vertical segment 15 connects at the top, by means of a length of curved connection 20, to the horizontal lower guide segment 16 of the respective dual track. Laterally, the door 11 is conducted along the guide tracks 14 by means of rollers 21. When the door is raised, these rollers 21 follow the lower horizontal segments 16 of each dual track, whereas the upper horizontal segments 17 receive the opposite sides of the door thanks to lead-in rollers 22 on the sides of the top panel of the door.

[0015] Both the horizontal segments 16, 17 of each dual guide track 18 have a basically C shaped section defined for each of them, respectively, by a lower duct-shaped side 116, 117, by an upper flat side 116', 117'and by a dorsal vertical portion 116", 117"that connects the lower and upper sides.

[0016] According to the invention, the horizontal guide segments 16, 17 of every dual track 18 are kept parallel, fixed to each other and to each suspension plate 19 by means of a first bracket 23 and a second supporting bracket 24.

[0017] The first bracket 23 is basically L shaped and has a lower wing 25 that couples with, and supports from below, the lower duct-shaped side 116 of the horizontal lower guide segment 16, and a vertical portion 26 that extends upwards against the dorsal sides 116" and 117" of the two superimposed horizontal guide segments, extending above the overhanging guide segment 17. Furthermore, along the vertical portion 26 of said first bracket 23 is envisaged a crease or intermediate protrusion 27 that interposes and is established between the upper sides of the horizontal lower guide segment 16 and the lower side of the upper horizontal guide segment.

[0018] The second bracket 24, also basically L shaped, has a horizontal wing 28 with a terminal hook 29, and a vertical portion 30 facing upwards. The horizontal wing 28 rests above the upper side 117' of the overhanging guide segment 17; the terminal hook 29 engages with the longitudinal margin of said upper side 116' and the vertical portion 30 is alongside the summital part of the first bracket 23 -Figs. 3 and 6.

[0019] The suspension plate 19 has some slots 19' at various levels and is set up to be fixed to a stationary part, such as for example the ceiling of the opening in which the door is inserted. The first bracket 23 and the second bracket 24 have coincident bores 31 on a level with their coinciding summital vertical portions. In this way, once each one is coupled to the respective horizontal guide segment 16 and 17, said brackets 23, 24 can be positioned against and fixed, at the same time, together and to the suspension plate 19, by means of a bolt 32 inserted and constrained in any slot 19' in said plate and in the coincident bores 31 of the two brackets, ensuring the parallelism of said guide segments and in general the stability of the system.

Claims

1. A device for fixing in place parts of the lateral guide tracks for section doors, where each of said lateral tracks has on the whole a vertical segment (15) and two horizontal guide segments (16, 17), parallel and superimposed forming a dual guide track (18) that extends from the summit of said vertical segment and which is supported by at least one suspension plate (19), and where each of the horizontal guide segments (16, 17) has a bottom duct-shaped side, a top side and a dorsal vertical portion that connects said bottom and top sides, said device being **characterised**

   - **by** a first supporting bracket (23) having a lower wing (25), that engages and supports from below the lower duct-shaped side (116) of the horizontal lower guide segment (16), and which has a vertical portion (26) extending upwards against the dorsal sides of the superimposed horizontal guide segments and terminating with a summital part protruding above the overhanging horizontal guide segment (17), by a second supporting bracket (24) having a horizontal rest wing (28) above the top side (117') of the overhanging horizontal guide segment (17) and terminating with a hook (29) engaging with the longitudinal margin of said top side, and a vertical portion (30) facing upwards and adjacent to the summital part of said first bracket (23), and
   by at least a blocking means (32) mounted at level of the adjacent upper parts of said supporting brackets for fixing them together and to the suspension plate (19).

2. A device according to claim 1, **characterised by** the fact that said first supporting bracket (23) has a crease or a protrusion (27) in one intermediate part of its vertical portion (26) which interposes horizontally between the upper sides of the horizontal lower guide segment (16) and the lower side of the upper horizontal guide segment. (17).

3. A device according to the previous claims, **characterised by** the fact that on a level with the adjacent upper parts of the supporting brackets (23, 24) are provided some bores (31) coincident each other and with at least one slot provided along the suspension plate (19) in which to insert a blocking bolt (32) designed to fix said brackets together and to the suspension plate.

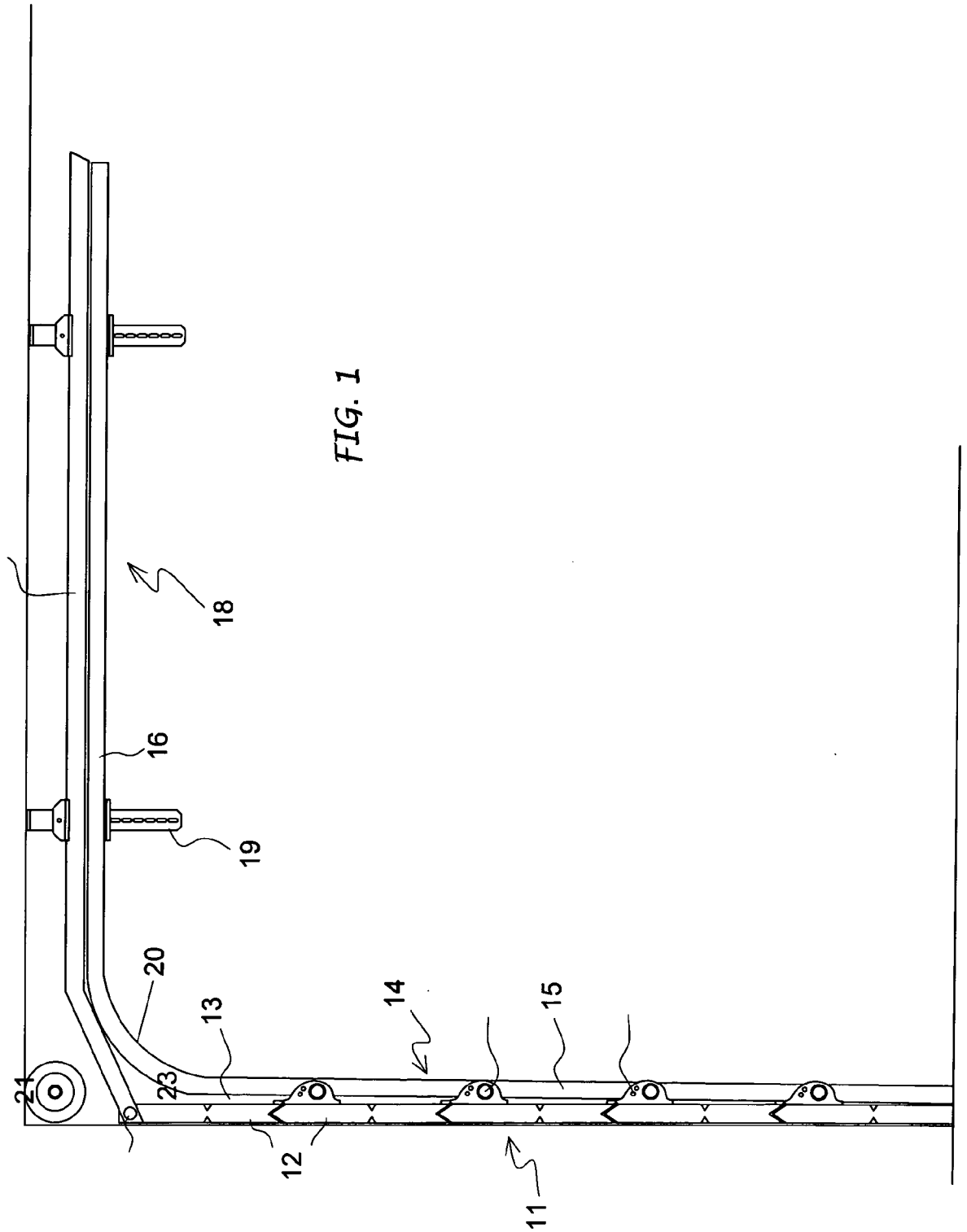

FIG. 1

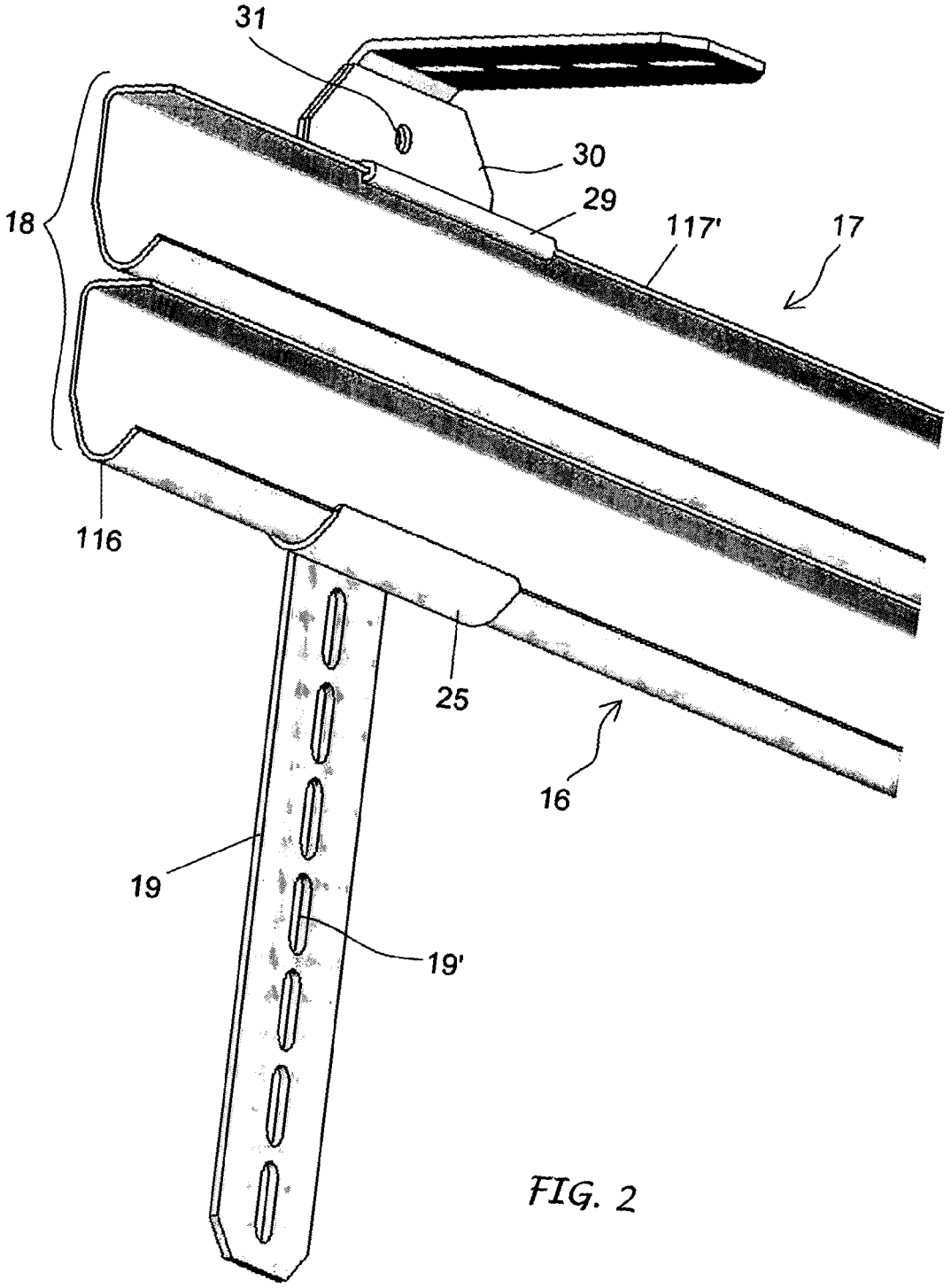

FIG. 2

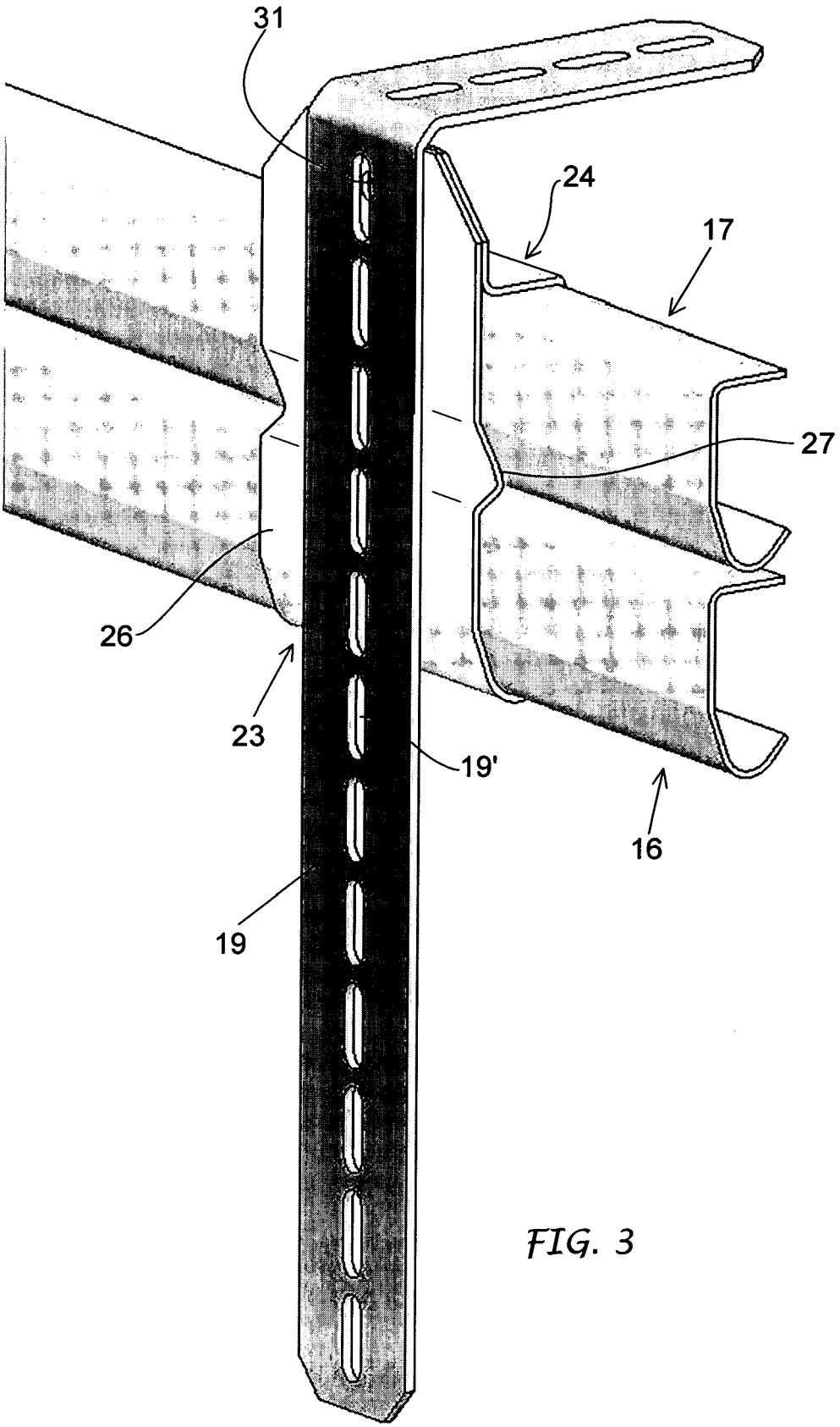

FIG. 3

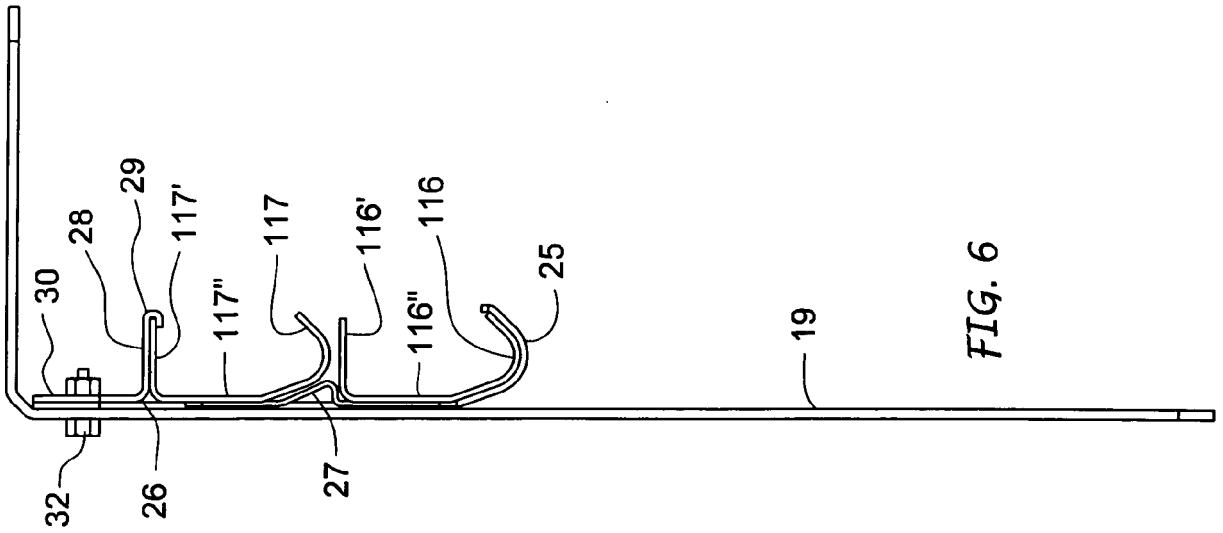

FIG. 6

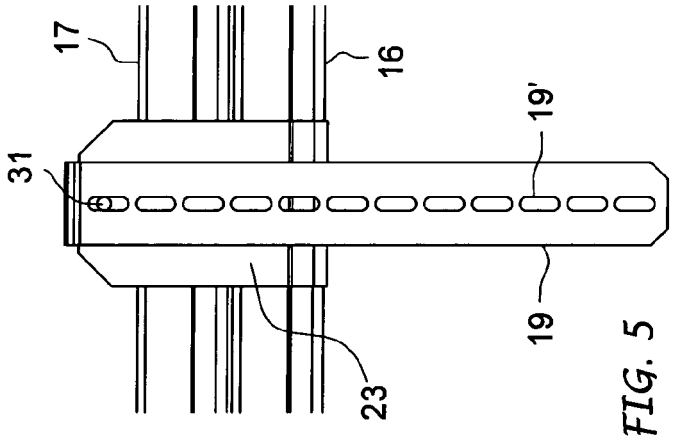

FIG. 5

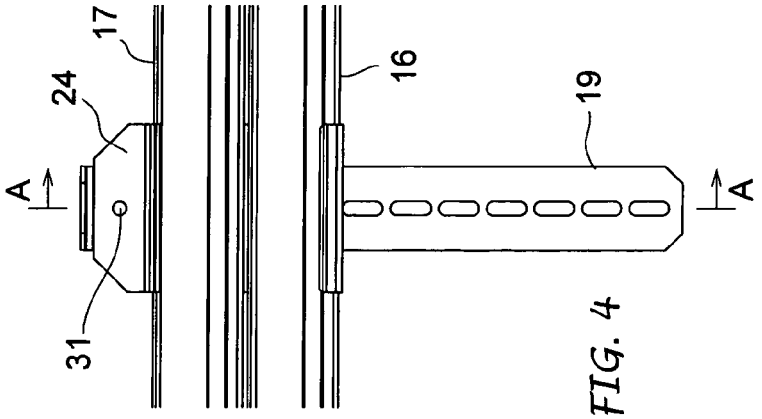

FIG. 4

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 09 42 5452

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	DE 201 00 536 U1 (NOVOFERM GMBH [DE]) 29 March 2001 (2001-03-29) * page 1, paragraph 2 * * page 1, paragraph 4 - page 2, line 16 * * page 4, lines 1-9 * * page 4, lines 24-31 * * page 5, paragraph 2 * * figures *	1-3	INV. E05D15/24
A	EP 1 388 634 A (HOERMANN KG [DE]) 11 February 2004 (2004-02-11) * paragraph [0018] * * paragraph [0020] * * figures *	1-3	
A	US 2005/189079 A1 (MULLET W J [US] ET AL) 1 September 2005 (2005-09-01) * paragraph [0041] * * figure 6 *	1,3	
A	US 2 686 926 A (SCHACHT JR C A [US] ET AL) 24 August 1954 (1954-08-24) * figure 3 * * column 2, lines 25-40 *	1	TECHNICAL FIELDS SEARCHED (IPC) E05F E05D
A	US 6 401 793 B1 (MARTIN D O [US]) 11 June 2002 (2002-06-11) * the whole document *	1	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	21 December 2009	Mund, André

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

1

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 09 42 5452

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

21-12-2009

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 20100536 U1	29-03-2001	NONE	
EP 1388634 A	11-02-2004	DE 20212086 U1	16-01-2003
US 2005189079 A1	01-09-2005	AT 446431 T	15-11-2009
		EP 1718833 A1	08-11-2006
		WO 2005083216 A1	09-09-2005
US 2686926 A	24-08-1954	NONE	
US 6401793 B1	11-06-2002	US 2003000655 A1	02-01-2003

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- DE 20100536 U1 **[0006]**
- EP 1388634 A **[0006]**