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(54) **Fastening clamps for fastening frames to brick walls, specific frame and form of assembly**

(57) The invention relates to fastening clamps for fastening frames to brick walls, specific frame and form of assembly, consisting of a set of clamps which are fixed to frames without the need for screws, brads or adhesives, rendering the vertical plane of the clamp parallel to the vertical wall of the frame. The first clamp is installed by clipping or embedding under pressure by means of side flanges in the specific frame provided with a groove suited to such purpose, allowing in its groove movements in the longitudinal direction and being firmly fixed in the transverse direction, and the second clamp is installed by nailing under pressure to a common frame by means of prongs with the aid of an assembly tool.

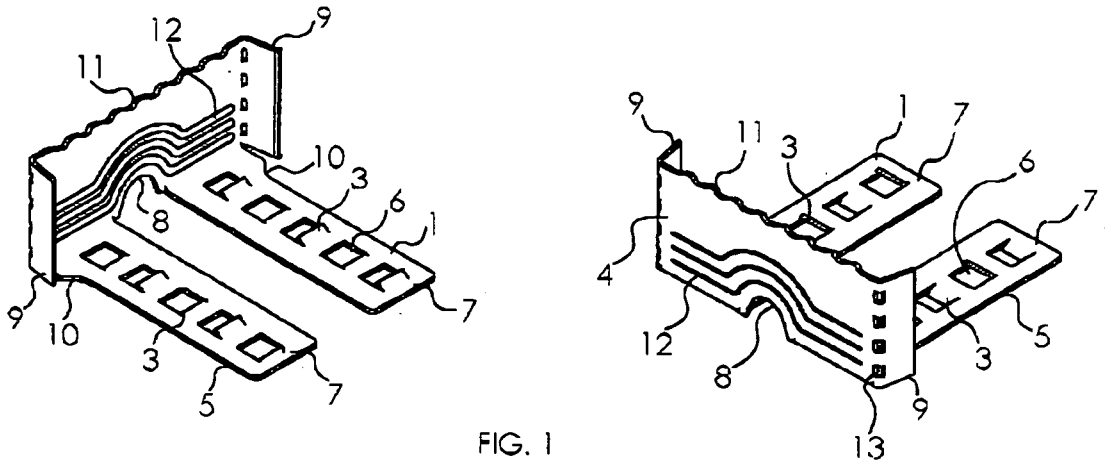

FIG. 1

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Description

Object of the Invention

[0001] As indicated by the title, the invention relates to a fastening clamp for fastening frames or casings to brick walls to obtain the perfect attachment of the frame to the bricks without damaging the frame or breaking the brick, directly installing same as the partition is being raised.

[0002] In a first version, the specific frame object of the invention has dovetail-shaped grooving and does not need to be made of a soft material such as wood, since the grooving allows the assembly of the fastening clamp of the invention either by clipping or embedding, being able to freely regulate the height at the time of installation so as to be located between two courses of bricks.

[0003] Conventional wooden frames are used in a second version and the assembly element of the clamp of the invention is nailed by pressure without any impact, without needing added fixing elements such as screws, brads or adhesives. They are installed in the moment of construction, when the partition is raised, in each course of bricks of such that the clamp of the invention is located in or between the joint or heading joint between two rows of bricks.

[0004] In both cases, the clamp is installed on the installed and plumbed frame, without needing to exert any forces thereon that may shift it, damage the setting of the bricks of the lower courses or weaken the already formed unions.

Background of the Invention

[0005] The union between partitions and frames is currently done by means of nails, anchor bars, fastening irons or anchors for partitioning. In the case of nailing with brads and of the anchor bars fixed to the frame also with brads, the members are previously installed in the frame so that they do not coincide with the joints or heading joints, therefore having to break the bricks. Breaking bricks creates rubble, causes such bricks to lose both acoustic and mechanical strength, as well as making it difficult to perform plasterwork since the parts received with plaster or mortar create an area with high moisture content. The latest anchoring device for partitions described in Utility Model ES 1 063 237 U belonging to SIPOR-PLAC, S.L., which defines three basic members made from thin malleable sheet metal with multiple functions, is characterized by the need for an external fixing member, such as brads or screws, for their fixing to the frames, but is fundamentally thought, and thus explained in the explanation and examples provided, for the union between partition parts when the partition is raised with large plates in which mortar has a less integrating function than small bricks.

Inventive Step

[0006] The advantageous purpose of the invention as can be summarized from the explanation relating to the object thereof in the first paragraphs of this specification is that which provides an essential element of fastening frames to brick walls, with considerable advantages for the builder, the installer and applicr of wall covering because it is a member with important mechanical and functional features, it is self-sufficient and does not require other fixing devices such as brads or screws, which is installed as the partition is being raised, being perfectly placed in the joint without needing to break the brick and having additional anchoring means to improve the attachment to the partition.

Description of the Invention

[0007] Accordingly, the invention is essentially based on a set of clamps, preferably metal clamps, designed both for being assembled in a specific frame and for being fixed in a common frame, the latter being able to be made of a soft material and the former of any type of material, including hard material In the first case, the clamp is simply and easily assembled without the need of mechanical aid either by guiding it in the specific frame, having a suitable section, or by adapting it laterally by means of a slight coupling movement, whereas the second case requires a tightening tool for its assembly provided by the invention, or by means of another common tool, such as a grip or vise.

[0008] The clamps according to the invention have the mentioned adaptation configurations and means as well as the features for being placed and located correctly on the plane or edges of the bricks as the wall, partition or the like is raised, such that the part joined to the bricks is firmly held by the mortar joint or heading joint serving as a union to the brick bond. Therefore when the operator finishes the course in which the clamp is to be installed, he or she locates it, applies the mortar mass and places the brick of the following course such that in the first case, the brick is housed in the specific frame in the space set aside for such purpose, and in the second case the brick is housed against the common frame.

We will now carry out a broader idea of the features of the invention by referring to the sheets of the drawings accompanying this specification where the preferred details of the invention are shown in a schematic manner and only as an example.

Drawings

[0009]

Figure 1 is a front and another rear perspective view of a model of the fastening clamp of the invention (1) for a frame with dovetail-type grooving or the like.

Figure 2 is a front and another rear perspective view of a model of the fastening clamp (2) for a traditional wood frame.

Figure 3 is a perspective view of a preferred assembly of the fastening clamp (1) with the specific frame (16).

Figure 4 is a section on the central axis of the leg (7) of the view in Figure 3 with the application of the joint (21).

Figures 5A, 5B and 5C depict the mode of installing the fastening clamp (2) for a traditional wood frame (22).

Description of a Preferred Embodiment of the Invention

[0010] The description of the preferred embodiment is centered on the corresponding illustration of the figures of the invention, as follows:

[0011] The clamp (1) (Figure 1) is clipped or embedded in the frame (16) by means of side flanges (9) rendering its vertical plane (4) parallel to the vertical wall of the frame. Two legs (7) of said clamp (1) and the notch (8) between both legs (7) leave a space for the tongue and groove rib of the brick, the planes (5) of the legs (7) of the clamp (1) being coplanar with the upper edge of the brick. The legs (7) have attachment flanges (3) alternately raised in both directions, a hole (6) in font of or behind each flange (3) and also a notch (10) at the outer part. The vertical support plane (4) has in its upper central part tangential indentations or corrugations (11) and in its center perpendicular ribs (12) to make the clamp (1) stronger. The corners formed by the side flanges (9) and the support plane (11) have perforations (13).

[0012] In the model of the fastening clamp (2) (Figure 2) for a traditional wood frame, the clamp (2) is nailed into the frame by means of prongs (14a) and (14b), rendering its plane (4) parallel to the vertical wall of the common frame. The two outer prongs (14a) have a retaining point or fluke (15). The two legs (7) and the notch (8) leave a space for the tongue and groove rib of the brick, the planes (5) of the clamp (2) being coplanar with the upper edge of the brick. The legs (7) have attachment flanges (3) alternately raised in both directions and a hole (6) in front of or behind each flange (3).

[0013] The preferred assembly of the fastening clamp (1) (Figure 3) is carried out with the specific frame (16) provided with a dovetail-shaped inner groove (17). The clamp (1) is clipped or embedded by inserting the flanges (9) in the groove (17), which flanges place the plane (4) of the clamp (1) against the plane (20) of the groove, being located above the brick (18), which is also inserted in the groove (17). The tongue and groove rib (19) of the brick (18) is housed between the two legs (7) and the notch (8) of the clamp (1).

[0014] The section of Figure 4 is located in the central axis of the leg (7) of the view shown in Figure 3 with the application of the joint (21). The legs (7) of the clamp (1) are completely covered by the mortar joint or heading joint (21) for joining the bricks, the holes (6) being filled.

[0015] The mode of installing the fastening clamp (2) by nailing, Figures 5A, 5B and 5C, for a traditional wood frame (22) is with the aid of tool (23). The tool (23) is formed by an actuation lever (24), an eccentric wheel (27) supported on the frame (22) by the part opposite that for the assembly of the clamp (2) and the gripping device (25) with its end (26) equipped with magnets to seek the automatic prc-placement of the clamp (2) therewith. First, as can be seen in Figure 5A, the clamp (2) is arranged on the magnets (26) of the gripping device (25), and the assembly is placed embracing the frame (22), the legs (7) of the clamp (2) being supported on the brick (18) with the teeth (14a) and (14b) aimed towards the frame (22). The lever (24) is actuated to nail the teeth (14a) and (14b) into the frame (22) until reaching the position described in Figure 5B. Figure 5C shows the final placement of the clamp (2) nailed into the frame (22).

[0016] Having suitably described the nature of the invention, it is stated for the suitable purposes that the invention is not limited to the express details of this description, but rather that those modifications which do not alter the essential features of the invention could be introduced thereto, in which, all its parts and pieces, except for the fixing elements and pin for releasing the previous anchoring, are manufactured of resistant and aseptic plastics materials, and in which the metering receptacles can be replaced, restored or refilled with absolute ease.

Claims

1. Fastening clamps for fastening frames to brick walls, specific frame and form of assembly consisting of a set of clamps that are **characterized in that** the clamp (1) is installed by clipping or embedding and another clamp (2) is assembled by nailing; the first case is carried out by means of side flanges (9) in a specific frame (16) provided with a dovetail-shaped groove (17) without the need for screws, brads or adhesives, rendering the vertical plane (4) of the clamp (1) parallel to the vertical wall (20) of the specific frame (16), which grooving allowing movements in its groove (17) in the longitudinal direction and being firmly fixed in the transverse direction, and the second case is carried out in a common frame (22) by means of prongs (14a) and (14b) with the aid of an assembly tool (23).

2. Fastening clamps for fastening frames to brick walls, specific frame and form of assembly according to claim 1, wherein the clamp (1) applied in a specific frame (16) is **characterized by** having a central void between the legs (7) and a notch (8) in the vertical plane (4) to allow the tongue and groove connection

of the bricks (18) and to render the planes (5) of the clamp (1) coplanar with the upper edge of the brick (18).

3. Fastening clamps for fastening frames to brick walls, specific frame and form of assembly according to claims 1 and 2, wherein the legs (7) of the clamp (1) are **characterized by** having attachment flanges (3) alternately raised in both directions and holes (6) in front of or behind each of them for the penetration of the joint mortar and assuring the correct fastening of the clamp (1) in the union of the bricks, as well as a notch (10) in both outer sides to leave the legs in the width of the brick (18).

4. Fastening clamps for fastening frames to brick walls, specific frame and form of assembly according to claims 1 to 3, wherein the vertical support plane (4) of the clamp (1) for the specific frame (16) is **characterized in that** it has in its upper central part several tangential corrugations (11) and in its center perpendicular ribs (12) to make the clamp (1) stronger and the corners formed by the flanges (9) and the vertical support plane (4) have perforations (13) in their vertexes to favor the clipping action as well as to allow the material or mortar of the joint (21) to penetrate therein.

5. Fastening clamps for fastening frames to brick walls, specific frame and form of assembly according to claim 1, wherein the clamp (2) for conventional wood frames (22) is **characterized in that** it is installed by nailing it into the frame (22) by means of inner prongs (14b) and outer prongs (14a) provided with a retaining point or fluke (15), rendering its vertical plane (4) parallel with the vertical wall of the frame (22) without the need for screws, brads or adhesives.

6. Fastening clamps for fastening frames to brick walls, specific frames and form of assembly according to claims 1 and 5, wherein the clamps (1) and (2) are **characterized by** having a central void between the legs (7) and a notch (8) in the vertical plane (4) to allow the tongue and groove connection of the bricks (18) and to render the planes (5) of the clamp (2) coplanar with the upper edge of the brick (18).

7. Fastening clamps for fastening frames to brick walls, specific frame and form of assembly according to claims 1 to 6, wherein the legs (7) and the clamps (1) and (2) are **characterized by** having attachment flanges (3) alternately raised in both directions and holes (6) in front of or behind each of them for the penetration of the joint mortar or mass therein and assuring the correct fastening of the clamp (2) in the union of the bricks (18).

8. Fastening clamps for fastening frames to brick walls, specific frame and form of assembly according to claims 1 and 2, wherein the specific frame (16) is **characterized by** having a dovetail-shaped inner groove (17) wherein the flanges (9) of the clamp (1) are clipped or embedded, the vertical plane (4) of the clamp (1) being placed against the vertical wall (20) of the groove (17).

9. Fastening clamps for fastening frames to brick walls, specific frame and form of assembly according to claims 1, 2 and 8, **characterized in that** the brick (18) is inserted in the groove (17) of the specific frame (16).

10. Fastening clamps for fastening frames to brick walls, specific frame and form of assembly according to claim 1, wherein the installation of the clamp (1) and (2) is **characterized by** being clipping or nailing as the courses of bricks (18) are added, always coinciding with the mortar joint (21).

11. Fastening clamps for fastening frames to brick walls, specific frame and form of assembly according to claim 1, wherein the installation of the clamp (2) is **characterized by** being nailing of the prongs (14a) and (14b) by pressure without striking which may damage or move the plumbed frame (22), by means of tool (23) which is formed by a lever (24), an eccentric wheel (27) supported on the frame (22) by the part opposite that of the assembly of the clamp (2), a grip (28) and the gripping device (25) with its end (26) equipped with magnets to facilitate the positioning of the clamp (2).

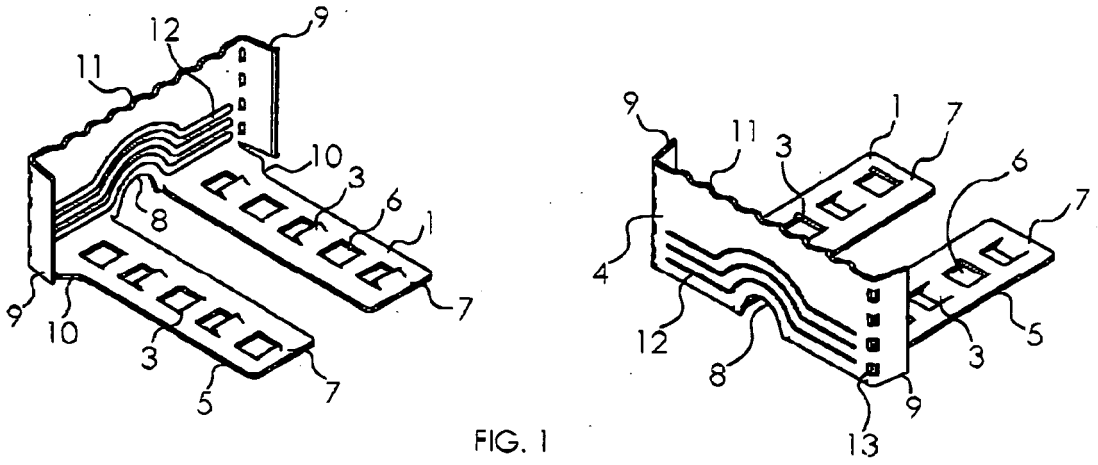
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FIG. 1

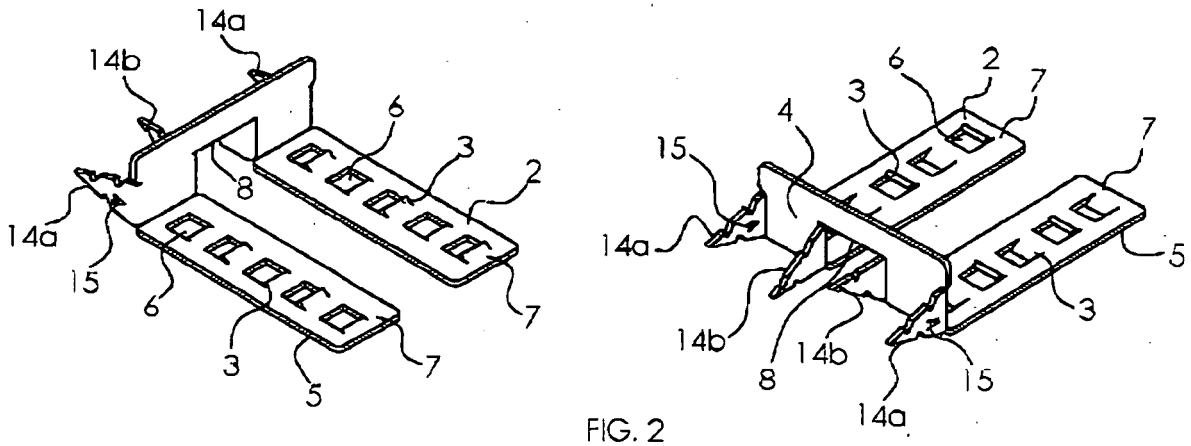
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FIG. 2

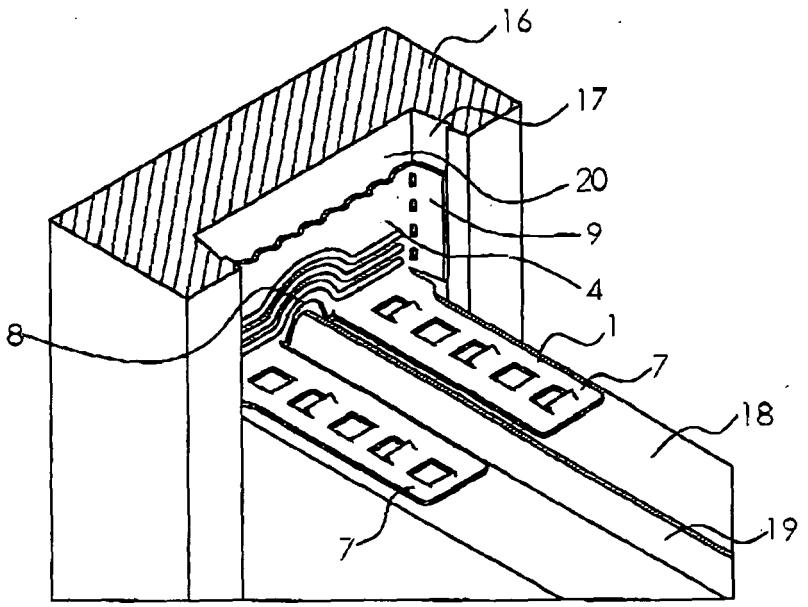

FIG. 3

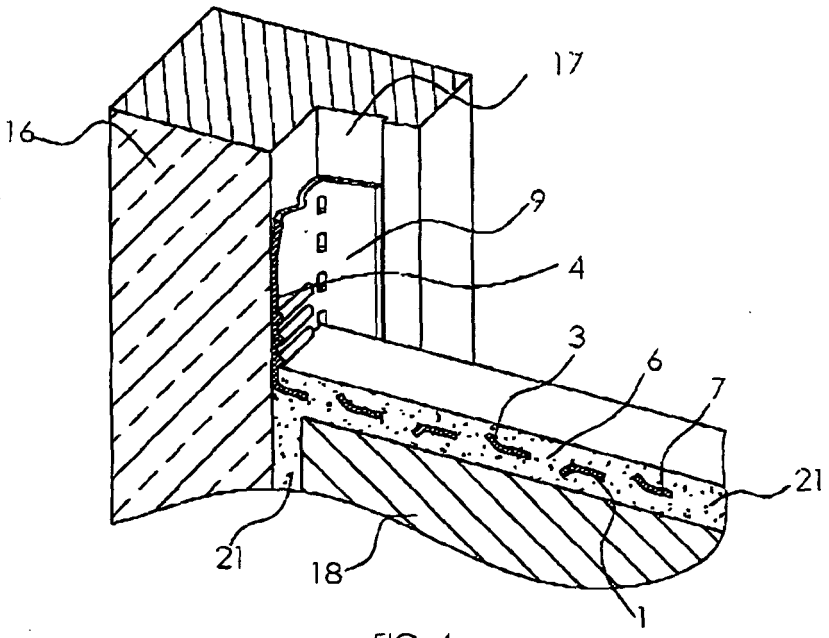

FIG. 4

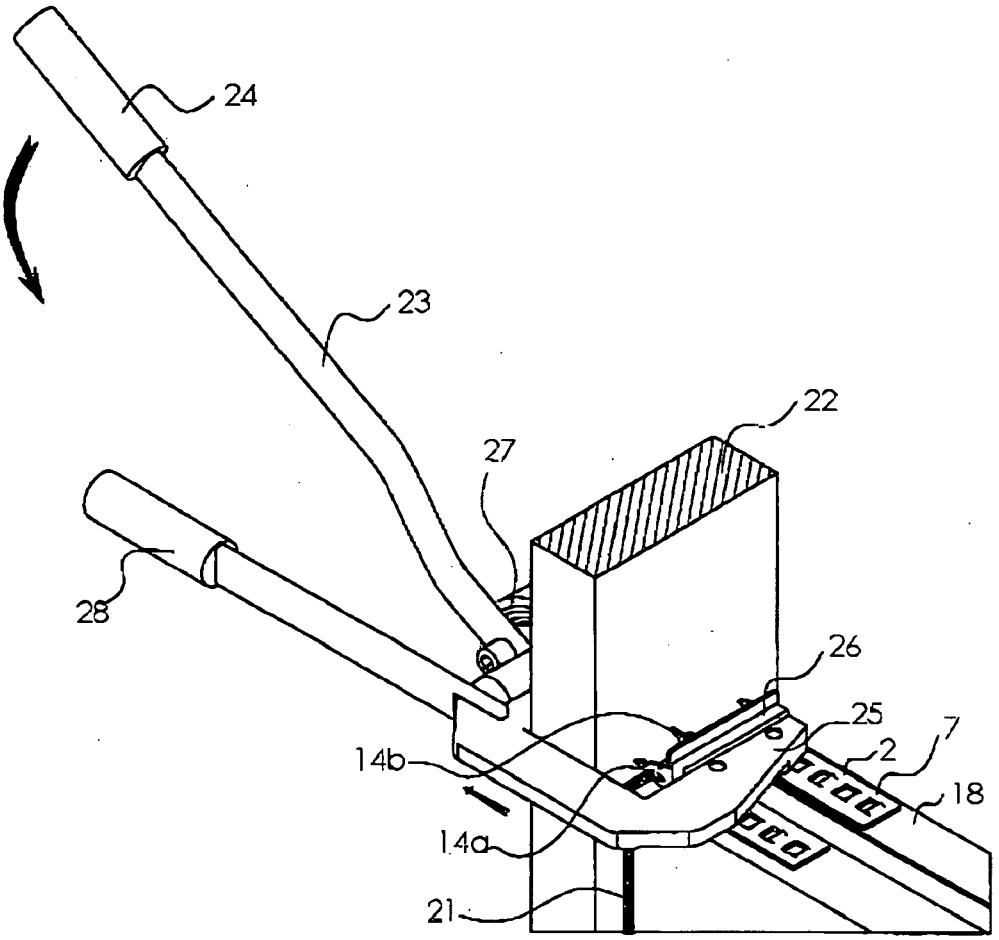

FIG. 5A

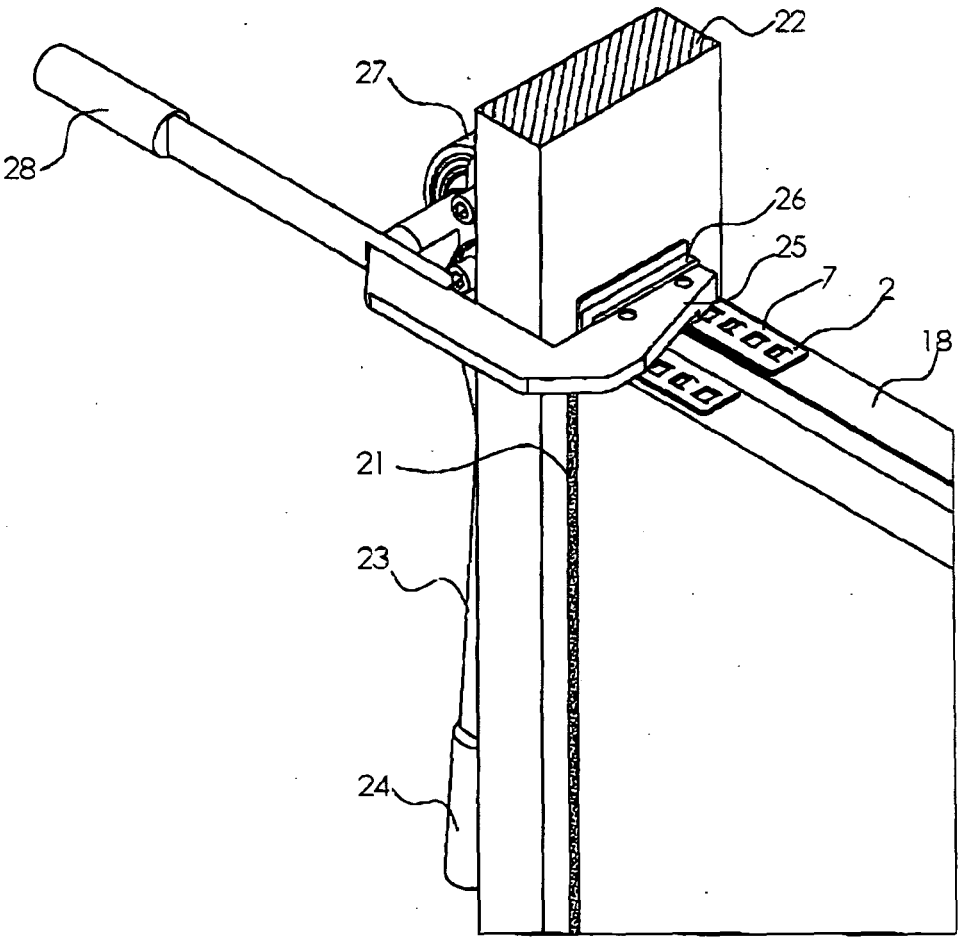

FIG. 5B

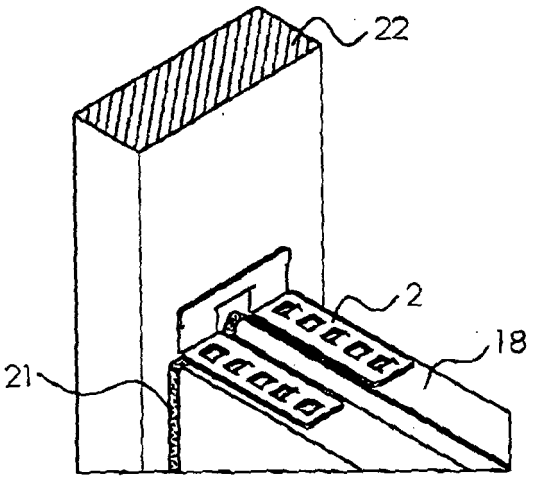

FIG. 5C

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EUROPEAN SEARCH REPORT

Application Number
EP 08 38 0106

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A	CA 1 137 777 A1 (CATNIC COMPONENTS LTD) 21 December 1982 (1982-12-21) * figure 21 *	1-11	
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			TECHNICAL FIELDS SEARCHED (IPC) E04B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	19 September 2008	Topcuoglu, Sadik Cem

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