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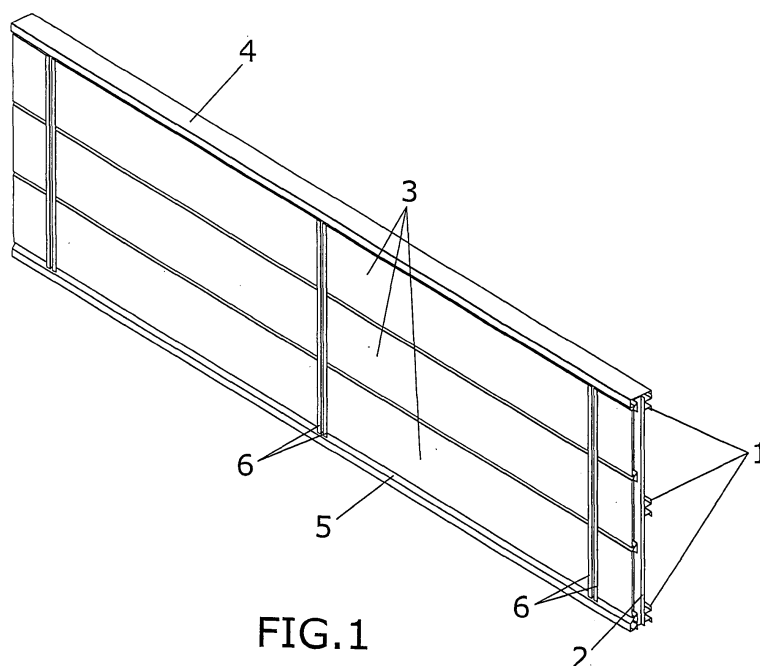
Remarks:

- A request for correction of the translation copy of 06.06.07 has been filed pursuant to Rule 88 EPC on 28.06.07. A decision on the request will be taken during the proceedings before the Examining Division (Guidelines for Examination in the EPO, A-V, 3.).
- Amended claims in accordance with Rule 137(2) EPC.

(54) **Metal covering system for facades**

(57) Metal covering system for facades provided with a frame for affixing to the facade which acts as a support for a series of coating panels (3). The frame consists of at least one series of vertical omega profiles (2) made from plating on which connection profiles of the vertical edges of the panels are affixed. The vertically placed panels are interlocked to prevent the entry of water, while

their vertical edges are joined to the wings (6) of a connection profile at its back part. The whole arrangement of panels is supported on a lower closure profile (5) and covered by an upper closure profile (4). The connection is sealed by means of adhesive polyethylene tape and the application of silicon. The covering system enables to achieve a speedy assembly, structural rigidity and prevent water from entering, as well as a reticular assembly.



Description

OBJECT OF THE INVENTION

[0001] The object of the present invention is a metal coating system for façades characterised by its ease of assembly, the hermetic sealing of the arrangement, as well as the rigidity and structural durability of the whole arrangement once it has been assembled and affixed.

[0002] The present invention is characterised by the special configuration and design of the elements which make up the coating system which is the object of the invention, thus covering a complete façade with a modulated reticular aspect, and designed in such a way that water cannot enter through any of its joints.

[0003] Therefore, the present invention is circumscribed by the scope of protection of façade coating systems, and more specifically by those systems used with smooth metal panels.

BACKGROUND TO THE INVENTION

[0004] To date, various metal façade coatings are known, all of which have some type of disadvantage.

[0005] In some cases the means for affixing the metal coating are not ideal, thus the coating can become detached. In other cases, the joints of the coating elements are not sufficiently hermetically sealed. Finally, they do not comprise a coating which provides the façade with a reticular rectangular aspect, with measures based on the chosen modulation of the panels.

[0006] Therefore, the object of the present invention is to overcome the previous disadvantages, developing a system of metal coating for façades such as that described in the first claim, and which overcomes previous disadvantages of faults in the means for affixing the façade, the failure to provide sufficiently hermetic sealing or a failure to provide a reticular configuration.

DESCRIPTION OF THE INVENTION

[0007] The present invention of a metal coating system for façades, as the title of the invention suggests, refers to metal means providing a coating for a façade, arranged on the vertical plane of said façade.

[0008] The metal coating system for façades comprises a support frame and a series of panels which are arranged on the vertical plane of the façade and are installed in an interlocked manner in a vertical direction

[0009] The support frame comprises omega profiles made from plating and arranged vertically affixed to the wall or face and regularly distributed, spaced at a distance equal to the length of the panels.

[0010] In addition to the vertical profiles, the frame may also be provided with another group of omega profiles also made from plating and arranged transversally with respect to the vertical profiles, and therefore arranged horizontally. The use of the horizontal omega profiles is

complementary in the event that it is deemed necessary to reinforce or facilitate fixation of the coating to the façade.

[0011] The panels are smooth, with a general rectangular configuration and their upper and lower edge is provided with a particular folding which enables arrangement of the panels in the upper and lower edges, so that water cannot enter the space between the coating and the façade.

[0012] The vertical connection between the panels is made by means of profiles so that the wings of the connection profiles affix the ends of the panels. This connection should be sealed with polyethylene adhesive and silicon where required.

[0013] The whole arrangement of panels is supported on its lower edge in a lower closure profile which presents its upper part as equal to the upper edge of the panels, whereas above both the panels and the upper edges of the vertical profiles of the frame are covered by an upper closure profile.

[0014] Due to this configuration, the arrangement is easy to assemble given the speed and alignment of the vertical profiles of the frame, also water cannot enter as a result of the specific form of the panels, and in addition a general reticular configuration is obtained.

[0015] The material used in the manufacture of the panels is prelacquered steel, however any other material may be used as the nature of the material is not restrictive, furthermore the omega profiles are made from plating.

[0016] The dimensions of the panels both in terms of length and height may vary, the only requirement being that in those cases in which the length of the panels is relatively large it may be necessary to use intermediate omega profiles arranged between the vertical omega profiles of the frame, so that the plate does not soften or become sunken and ensuring that it has as smooth a configuration as possible.

DESCRIPTION OF THE DRAWINGS

[0017] In order to complement the description which follows and to provide a better understanding of the characteristics of the invention, the present descriptive report is accompanied by a set of drawings which are illustrative and not restrictive any way, representing the most significant details of the invention.

Figure 1 shows a perspective diagram of a metal coating for a façade such as that which is the subject of the invention.

Figure 2 shows an elevation view of the previous coating.

Figure 3 shows a representation of the section obtained of the previous coating when cut on an A-A plane.

Figure 4 shows a representation of the section obtained of the previous coating when cut on a B-B plane.

PREFERRED EMBODIMENT OF THE INVENTION

[0018] In the light of the figures, a preferred embodiment of the invention proposed is described below.

[0019] Figure 1 shows how the coating system is formed as mentioned previously, by a frame for affixing to the façade and acting as support to a series of panels (3).

[0020] The frame for supporting and affixing to the façade comprises at least one series of vertical omega profiles (1), and optionally and additionally by another series of horizontal profiles (2) affixed firstly to the façade or face and on which the vertical profiles are attached (1).

[0021] The vertical omega profiles (1) are distributed regularly and spaced apart by a distance equal to the length of the panels used (3).

[0022] The panels (3) are installed by interlocking in a vertical direction so that the upper part of a panel is linked to the lower edge of the upper plate, and in this way water is unable to enter the internal space between the coating and the façade.

[0023] The lower and upper ends of the panels (3) are provided with a specific profile as shown and explained in figure 4.

[0024] The complete arrangement of interlocked panels (3) is supported on a lower closure profile (5) and the upper edge of the panels (3) with the vertical omega profiles (2) is covered by an upper closure profile (6).

[0025] Between figures 2 and 3 it may be seen that the vertical connection between sections of panels (3) is made by a connection profile (7) directly fixed on the vertical omega profiles (2). On the wings (6) of the connection profiles (7) the ends of the edges of the panels are affixed (3), this attachment should be duly sealed using adhesive polyethylene tape and applying silicon where required.

[0026] Figure 3 also shows that a reinforcement or support profile is arranged between the vertical omega profiles (2) which shall be used and provided when the length of the panels (3) so requires.

[0027] Figure 4 which is the representation of a section of the coating on a B-B plane, shows the specific geometry of the upper and lower edge of the panels in order to enable the panels to be interlocked without water entering.

[0028] Thus, the upper edge of the panels (3) provides an inclined emerging section (3.1) which culminates in a downward vertical section (3.2) whereas the lower end of the panels (3) is provided at its free end with an initial horizontal section (3.2) towards the interior of the plate, followed by an inclined upward section (3.4) finalised by a downward vertical section (3.5). The first horizontal section (3.3) connects with the inclined section (3.1) of the upper edge, while the inclined section (3.4) together

with the vertical section (3.5) define a concave recess where the projection defined by the inclined section (3.1) followed by the vertical section (3.2). Furthermore the length of the vertical section (3.5) is greater than that of the vertical section (3.2) in order to achieve a more effective closure, so that the interlocking is obtained between the lower edge of an upper panel with the upper edge of the panel immediately arranged beneath the former, thus ensuring that water does not penetrate the part behind the panels.

[0029] Finally, it is important to draw attention to how the lower closure profile (5) has an upper geometry equal to that of the upper edge of the panels (3) in order to obtain an interlock similar to the remaining panels.

[0030] The essential nature of this invention is not altered in any way by variations in materials, form, shape and arrangement of the component elements, which are described in a manner which is in no way restrictive but which is sufficient for an expert to proceed to its reproduction.

Claims

1. Metal coating system for façades which is provided with a frame supporting the façade and a series of smooth closure panels, **characterised in that** the frame is formed by at least one series of vertical omega profiles (2) regularly distributed and separated by a distance equal to the length of the panels, and where the panels (3) are interlocked in a vertical direction, while the vertical connection between the panels is made by means of a connection profile (7) directly attached to the vertical omega profiles (2) and on whose wings (6) in the back part, the vertical free edges of the panels (3) are affixed, with the whole arrangement of panels (3) supported on a lower closure profile, while above it is covered by an upper closure profile (4).
2. Metal coating system for façades according to claim 1 **characterised in that** in order to interlock the panels (3) the upper edge of the panels (3) presents an inclined emerging section (3.1) which ends in a vertical downward section (3.2) whereas the lower edge of the panels (3) presents on its free end an initial horizontal section (3.2) towards the interior of the panels, followed by an inclined upward section (3.4) where the first horizontal section (3.3) contacts with the inclined section (3.1) of the upper edge, while the inclined section (3.4) together with the vertical section (3.5) define a concave recess where the projection defined by the inclined section (3.1) followed by the vertical section (3.2) is fitted.
3. Metal façade coating system according to claim 1 **characterised in that** the connection between the vertical free edges of the panels (3) and the connec-

tion profile (7) is duly sealed, using adhesive polyethylene tape and applying silicon where required.

4. Metal façade coating system according to claim 1 **characterised in that** the lower closure profile (5) has an upper geometry equal to that of the upper edge of the panels (3) in order to obtain an interlocking similar to the remaining panels. 5
5. Metal façade coating system according to claim 1 **characterised in that** the frame, in addition to being provided with vertical omega profiles (2) also has another series of horizontal omega profiles (1) directly attached to the façade or face to be coated, and on which the omega profiles are affixed. 10 15
6. Metal façade coating system according to claim 1 **characterised in that** a reinforcement or support omega profile (8) is arranged between the vertical omega profiles (8). 20

Amended claims in accordance with Rule 137(2) EPC.

1. Metal cladding system for façades which is provided with a frame supporting the façade and a series of smooth closure panels, wherein the frame is formed by at least one series of vertical omega profiles (2) regularly distributed and separated by a distance equal to the length of the panels, and where the panels (3) are interlocked in a vertical direction **characterized in that**, the vertical connection between sections of panels (3) is made by means of a connection profile (7) directly attached to the vertical omega profiles (2) and on whose wings (6) in the back part the vertical free edges of the panels (3) are fixed, with the whole arrangement of panels (3) supported on a lower flashing (5), which has an upper geometry equal to that of the upper edge of the panels (3) in order to obtain an interlocking similar to the rest of the panels, while the whole arrangement of panels (3) in its upper part is covered by an upper flashing (4). 25 30 35 40

2. Metal cladding system for façades according to claim 1 **characterised in that** in order to interlock the panels (3) the upper edge of the panels (3) presents an inclined emerging section (3.1) which ends in a vertical downward section (3.2) whereas the lower edge of the panels (3) presents on its free end an initial horizontal section (3.3) towards the interior of the panels, followed by an inclined upward section (3.4) where the first horizontal section (3.3) contacts with the inclined section (3.1) of the upper edge, while the inclined section (3.4) together with the vertical section (3.5) define a concave recess where the projection defined by the inclined section 45 50 55

(3.1) followed by the vertical section (3.2) is fitted.

3. Metal façade cladding system according to claim 1 **characterised in that** the connection between the vertical free edges of the panels (3) and the connection profile (7) is duly sealed, using adhesive polyethylene tape and applying silicon where required.

4. Metal façade cladding system according to claim 1 **characterised in that** the frame, in addition to being provided with vertical omega profiles (2) also has another series of horizontal omega profiles (1) directly attached to the façade or face to be cladded, and on which the omega profiles are fixed.

5. Metal façade cladding system according to claim 1 **characterised in that** a reinforcement or support omega profile (8) is arranged between the vertical omega profiles (2).

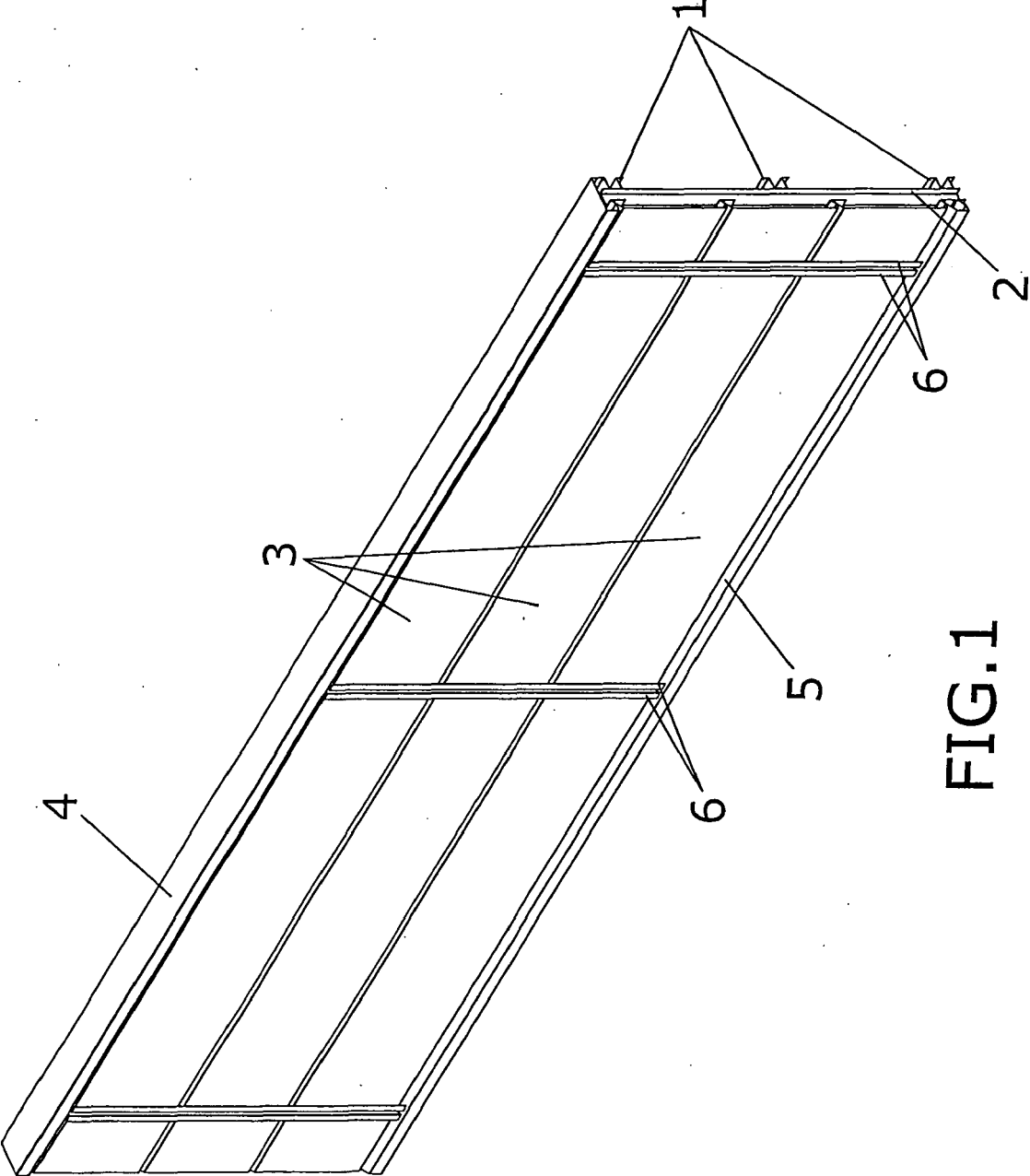


FIG.1

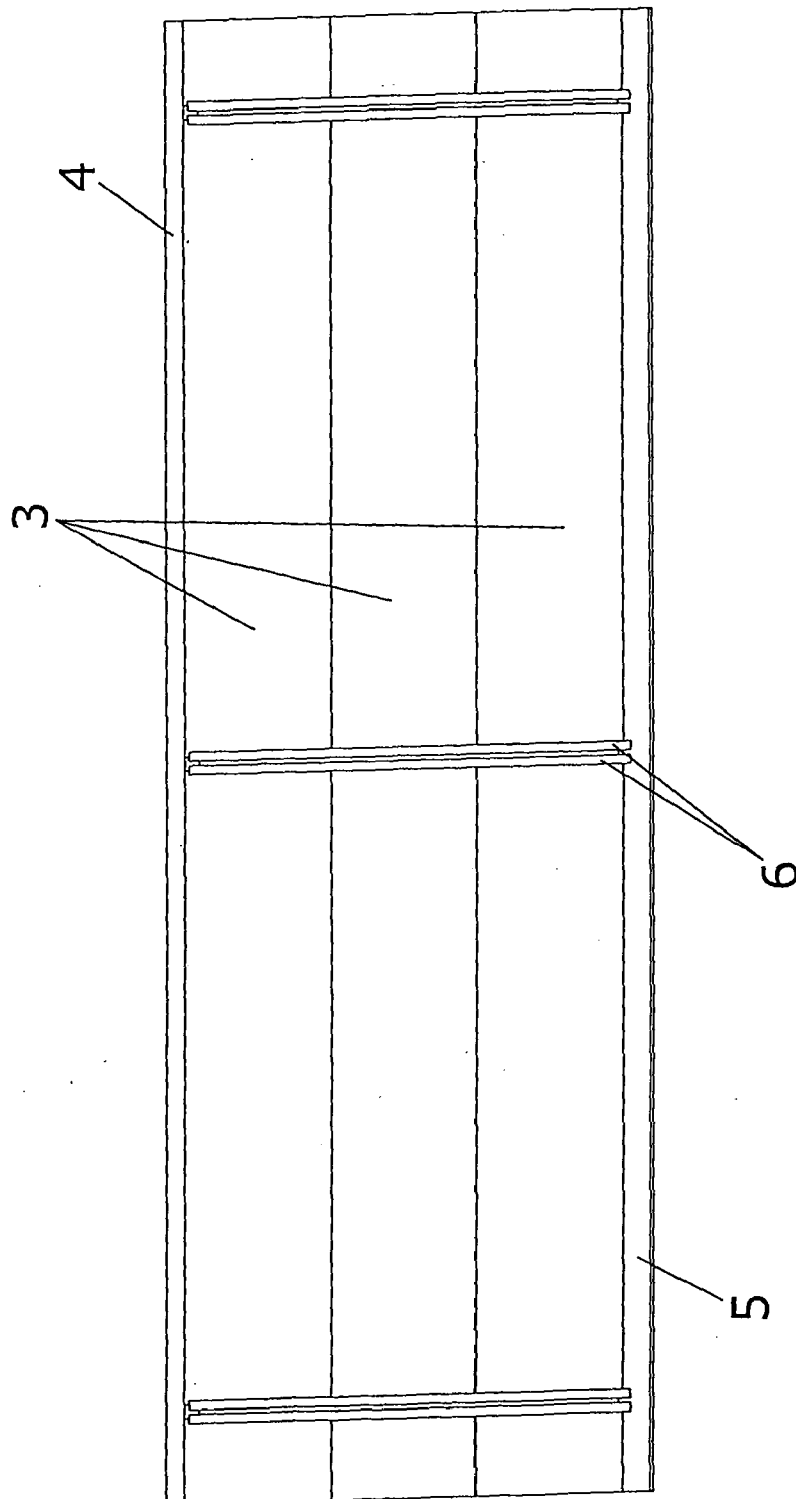


FIG.2

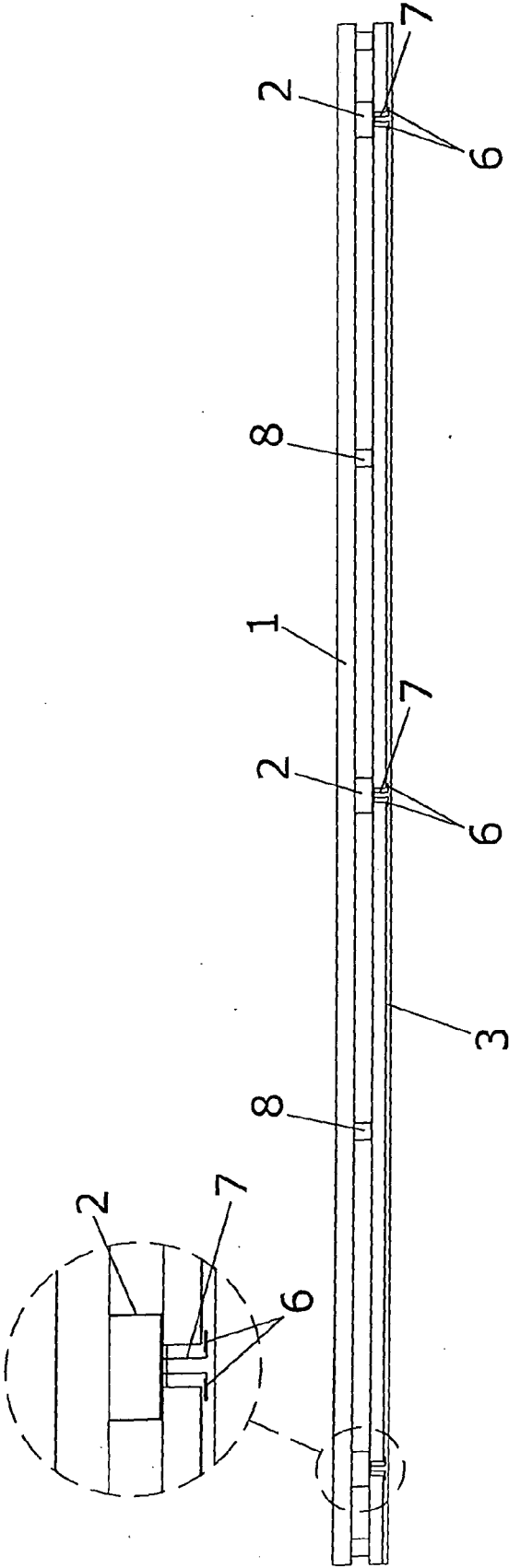


FIG.3

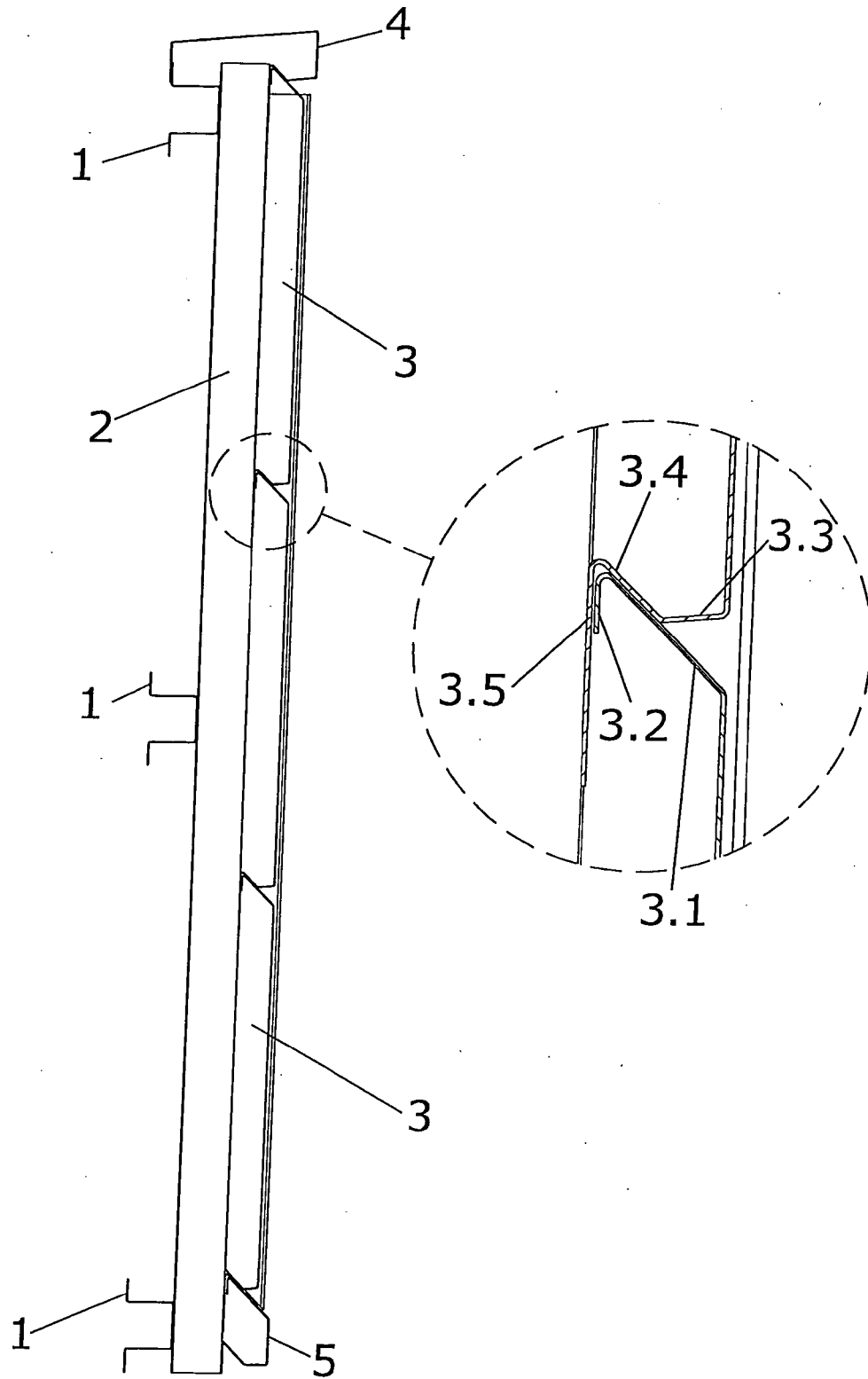


FIG.4



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Application Number
EP 07 38 1040

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 24 October 2007	Examiner Bastian, Almut
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	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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