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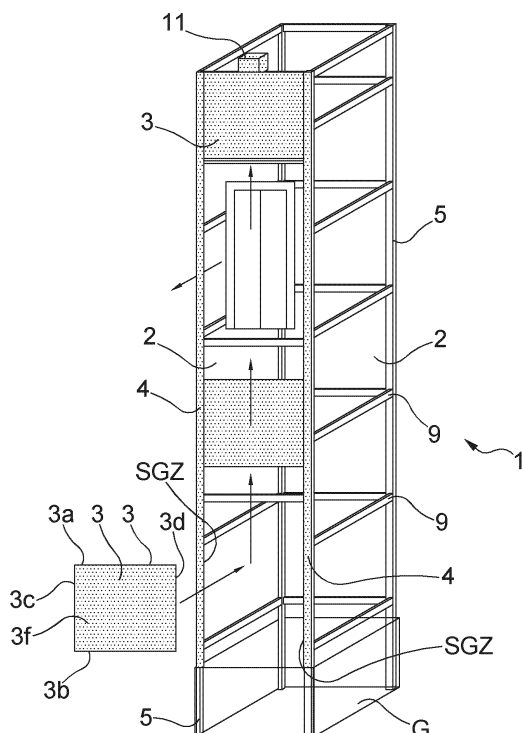
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(54) **METHOD AND EQUIPMENT FOR CLADDING ONE OR MORE FACADES OF A CONSTRUCTION OR BUILDING UNIT WITH PANELS OR FOR OBTAINING A CONSTRUCTION OR BUILDING UNIT WITH ONE OR MORE FACADES EQUIPPED WITH PANELS**

(57) The present invention relates to a method for cladding one or more facades (2) of a construction or building unit with panels (3) or for obtaining a construction

or building unit with one or more facades (2) equipped with panels (3).

FIG. 1



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Description**TECHNICAL FIELD OF THE INVENTION**

[0001] The present invention concerns a method and equipment for cladding one or more facades of a building or construction unit with panels or for obtaining a building or construction unit with one or more facades provided with panels. The present invention also relates to a building or construction unit with one or more facades provided with cladding or obtaining panels.

STATE OF THE PRIOR ART

[0002] To date, for the assembly of panels, for example for cladding, for building components, such as in particular external elevators, it is necessary to use scaffolding thanks to which the operators are able to apply the panels on multiple levels starting from the ground upwards.

[0003] Although these solutions allow the operations to be carried out correctly, they require considerable time for assembling and disassembling the scaffolding, which, naturally, is reflected in the installation costs.

[0004] FR3120888A1 teaches a solution according to the prior art.

OBJECTS OF THE INVENTION

[0005] One object of the present invention is to provide a new method and equipment for cladding one or more facades of a building or construction unit with panels or for obtaining a building or construction unit with one or more facades provided with panels.

[0006] Another object of the present invention is to provide a method and equipment as aforesaid that allow for simple, rapid and safe assembly of panels or of a building or construction unit.

[0007] Another purpose of the present invention is to provide a method and equipment as indicated above that do not require the use of scaffolding.

[0008] Another object of the present invention is to provide a method and equipment as indicated above that do not require the use of scaffolding.

[0009] According to one aspect of the invention, a method is provided for cladding one or more facades of a building or construction unit with panels or for obtaining a building or construction unit with one or more facades provided with panels according to claim 1.

[0010] According to another aspect of the present invention, equipment is provided for cladding one or more facades of a building or construction unit with panels or for obtaining a building or construction unit with one or more facades provided with panels.

[0011] The depending claims refer to preferred and advantages embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] Other features and advantages of the invention will be more evident from the description of an embodiment of a method and equipment, illustrated by way of example with reference to the attached drawings in which:

- figure 1 is a perspective view of a step of a method according to the present invention for obtaining a building or construction unit in accordance with the present invention;
- figure 2 is a perspective view showing a step of a method with relative equipment according to the present invention,
- figure 3 is a sectional view along line III-III of figure 2,
- figure 4 is a top view of figure 3 illustrating a step of a method with related equipment in accordance with figure 2,
- figure 5 is a sectional view along line V-V of figure 4,
- figures 6 to 9 are views similar, respectively, to figures 2 to 5, but relative to another example according to the present invention.

[0013] In the attached drawings, identical parts or components are identified by the same reference numbers.

EMBOBIMENTS OF THE INVENTION

[0014] In a building or construction unit or structure 1 it is possible to identify an "interior" and an "exterior", where the interior is the face or part that in use is internal or not visible, while the exterior is the face or part that is visible or exposed in use. This premise must be taken into account in the interpretation of the terms internal and external used in this description.

[0015] With reference to the attached figures, a method for cladding one or more facades 2 of a building or construction unit or structure 1 with panels 3 or for obtaining a building or construction unit or structure 1 with one or more facades 2 provided with panels 3 has been illustrated and is described below.

[0016] In relation to this aspect, such a method can thus be envisaged to clad one or more facades 2 of an existing construction or building unit 1 with panels 3, in which case the construction or building unit 1 can comprise two or more uprights 5 for one or more facades 2, possibly four uprights 5 placed at the vertices of a square plan of the construction or building unit 1 to define three (if one face of the unit is herded to another building) or four facades 2 of the latter, although clearly a different section or plan could be envisaged for the unit 1.

[0017] The uprights 5 could be tubular or not and have any suitable section, for example polygonal, possibly square (as in the figures), rectangular or of another configuration. Such components 5 are naturally arranged with their main extension dimension, in use, vertical.

[0018] Of course, each upright 5 could be in one piece or comprise several parts connected to each other, for example fitted or welded or bolted or screwed together.

[0019] Clearly, the unit 1 can also comprise one or more crosspieces 9 for bridge-connecting two respective uprights 5 of one, two or more facades of the unit. The crosspieces 9 could be tubular or not and have any suitable section, for example polygonal, square, rectangular (as in the figures) or with other configuration.

[0020] The crosspieces 9, if provided, are arranged with their main extension dimension, in use, horizontal.

[0021] Alternatively, the method is aimed at obtaining a construction or building unit 1 with one or more facades 2 provided with panels 3, in which case the method also provides for the installation or assembly of the uprights 5, for example arranged as indicated above, and of any crosspieces 9.

[0022] Well, a method according to the present invention comprises the following steps, preferably, in sequence:

- a) preparing at least two shaped guide elements 4,
- b) applying or constraining the at least two shaped guide elements 4 to at least two respective uprights 5 of a construction or building unit 1 to be cladded or obtained, which at least two uprights 5 are fixed to the ground G appropriately spaced, so as to define between them a same facade 2 or side of such construction or building unit 1, so that following this step of applying or constraining, each of the at least two shaped guide elements 4, alone or together with a respective upright 5 to which such shaped guide element 4 is applied or constrained defining a sliding or guiding zone SGZ for a lateral, in use, edge 3c, 3d of panels 3 for cladding or obtaining at least one facade or side 2 of a construction or building unit 1 or for a component 8 mounted on and integral in movement with that edge,
- c) providing a panel 3 arranged with an upper, in use, edge 3a, a lower, in use, edge 3b, two lateral, in use, edges 3c, 3d as well as two main extension faces 3e, 3f, one 3e facing inwards and the other 3f facing outwards of the unit, and then insert, preferably from below, but if desired even from the side (this would result in a configuration of the shaped elements 4 different from that illustrated in the figures), each lateral edge 3c, 3d of the panel 3 into a respective sliding or guiding zone SGZ defined between each of the at least two shaped guiding elements 4 and, if desired, a respective upright 5 or insert a component 8 mounted on and integral in movement with such edge,
- d) lifting the panel 3, so that each lateral edge 3c, 3d

of the same or a component 8 mounted on and integral in movement with such edge slides in the respective sliding or guiding zone SGZ,

e) once the panel 3 has been brought to a certain height, fixing or locking in position, by means of fixing or locking means 6, 7, the panel 3 itself or in any case applying or providing means to prevent its sliding backwards or downwards,

f) repeating operations c), d) and e) for another or other panels 3, which will thus be fixed or locked in position below the first fixed or locked panel 3, at a certain vertical distance from the latter, so as to clad or complete a facade of a construction or building unit.

[0023] Thus, panels 3 are obtained stacked or aligned one above the other, so as to actually define what in jargon is called the cladding of a respective facade 2.

[0024] Advantageously, operations a) to f) are repeated for cladding or obtaining at least two facades 2 of a construction or building unit 1 or even more advantageously for three or all the facades 2, although the fourth may not be needed since the unit 1 could have a face leaning against or opening into another building, for example as happens in external elevators for buildings. Clearly, it is also possible to proceed to make two or more facades substantially simultaneously.

[0025] Of course, if it is necessary to make or clad two or more adjacent facades 2 of a building or construction unit 1, it is possible that at least one upright 5 is common to two facades 2, in which case, at least one shaped guide element 4 would preferably be provided on one face or portion of such upright 2 belonging to a first facade and at least one shaped guide element 4 on another face or portion of upright 2 belonging to a facade adjacent to the first.

[0026] Each shaped guide element 4 could be in a single piece or comprise several parts connected to each other, for example inserted or welded or bolted or screwed together.

[0027] Preferably, at least one of the at least two shaped guide elements 4 (preferably at least two) consists of a profile or shaped sheet, so as to have at least two lengths 4a, 4b inclined to each other, that is, moving away from the upright 5 to which a shaped guide element 4 is applied or constrained, a first length 4a designed to be applied or constrained, for example by means of screws, bolts, pins or welding, to at least one upright 5 as well as a second length 4b inclined or orthogonal to the first length 4a.

[0028] Preferably, the first length 4a is supported against a side of an upright 5 with polygonal section, for example square or rectangular, and then constrained with screws, bolts, pins or welding.

[0029] Even more advantageously, the shaped guide elements 4 have at least three lengths including, moving away from the upright 5 to which a shaped guide element 4 is applied or constrained, the first length 4a, the second

length 4b and then a third length 4c orthogonal or inclined with respect to the second length 4b.

[0030] Preferably, at least one of the lengths 4a, 4b and/or 4c is flat and rectilinear, although preferably this applies to all of them.

[0031] With specific reference first to the non-limiting embodiment of figures 2 to 5, one or more of the shaped guide elements 4 comprises/comprise the second length 4b orthogonal to the first 4a and the third 4c length, with the second length 4b extending between one end of the first length 4a and one end of the third length 4c. In this case, if desired, all or some of the shaped guide elements 4 are substantially S-shaped, that is to say with the first 4a and the third 4c length moving away from the second length 4b in opposite directions to each other.

[0032] With specific reference first to the non-limiting embodiment of figures 2 to 5, one or more of the shaped guide elements 4 comprises/comprise the second length 4b orthogonal to the first 4a and the third 4c lengths, with the second length 4b extending between one end of the first length 4a and one end of the third length 4c. In this case, if desired, the shaped guide elements 4 are configured all or some substantially in an S-shape, that is to say with the first 4a and the third 4c lengths moving away from the second length 4b in the opposite direction to each other.

[0033] In this case, the first 4a and third 4c lengths, with reference to a horizontal, in use, plane could have substantially the same extension away from the second length 4b, but this is clearly not a necessary condition, so one could also be larger than the other, for example between 3/2 and 3 times.

[0034] In relation to the example of figures 6 to 9, if desired, one or more of the shaped guide elements 4 is substantially U-shaped, that is, with the first 4a and the third 4c lengths moving away from the second length 4b in the same direction.

[0035] In this case, the first 4a and third 4c lengths, with reference to a horizontal, in use, plane could have different extensions, for example one larger than the other, possibly between 3/2 and 3 times, moving away from the second length 4b, but this is clearly not a necessary condition, so they could also have substantially the same extension.

[0036] According to this variant, the third length 4c could also have a free end 4d bent in an L shape towards the respective upright 5.

[0037] If desired, the first 4a and/or the third 4c length may have an extension, with reference to a horizontal, in use, plane, smaller, equal to or larger than a respective side of an upright 5, i.e. a side of an upright 5 on which the respective shaped guide element 4 (or rather the first length 4a) is applied or constrained.

[0038] Possibly, the second length 4b alone or with the third length 4c, if the latter is provided, defines together with the upright 5 a respective sliding or guiding zone SGZ for a lateral edge 3c, 3d of panels 3 stacked or aligned (with edges 3a-3d and faces 3e, 3f as indicated

above) one above the other or a component 8 mounted on and integral in movement with such edge.

[0039] In relation to this aspect, with reference to the embodiment of figures 2 to 5, a respective sliding or guiding zone SGZ is defined between the second length 4b, the third length 4c and a respective portion of an upright 5, for example of the side to which the guiding element 4 is applied, in particular a portion of such side starting from the second length 4b and moving away from the first length 4a.

[0040] In the case of the embodiment of figures 6 to 9, a respective sliding or guiding zone SGZ is defined between the second length 4b, the third length 4c and a respective side of the upright 5 to which the guiding element 4 is applied, in particular a portion of such side starting from the second length 4b and in the direction of extension of the first length 4a. In this case, if a free end 4d bent in an L shape is provided, then it also contributes to defining a respective sliding or guiding zone SGZ.

[0041] Clearly, the shaped guide elements 4 comprise a sectional configuration as indicated above, but then they have a constant longitudinal extension, that is to say that the shaped guide elements 4 have a certain constant or unchanged configuration in the direction of longitudinal extension, that is to say their main extension dimension. In relation to this aspect, the shaped guide elements 4 comprise a main longitudinal extension dimension which, in use, is vertical.

[0042] The shaped guide elements 4 are made of any suitable material, for example metal. Preferably, the shaped guide elements 4 are made in one piece.

[0043] The panels 3 could be structured in any suitable way and with any suitable material. Thus, for example, they could be single-layer or even a sandwich or multi-layer.

[0044] The panels 3 are preferably substantially flat, i.e. with two main dimensions, width and length, and a thickness as the lower dimension.

[0045] According to the non-limiting embodiment illustrated in figures 2 to 5, at least one panel 3 (some or all if desired) could be provided at one or each of its lateral edges 3c, 3d with a shaped counter-guide element 8 designed to slidably engage a respective shaped guide element 4 or in any case to be inserted and slide in a respective sliding or guiding zone SGZ during the insertion and lifting steps of the panel 3. Clearly, this engagement also remains at the end of the method and the engagement between the shaped guide element 4 and the counter-guide element 8 ensures the maintenance of the positioning of the panels once the construction or building unit 1 has been completed or clad.

[0046] This component 8 is thus integral in movement, in particular, in use, vertical movement, with the respective edge 3c, 3d on which it is provided or mounted.

[0047] Preferably, the counter-guide elements 8 comprise profiles or shaped sheets, so as to have at least two terminal segments 8a, 8b, if desired U-shaped, one for engagement or fitting or interlocking of a lateral edge 3c,

3d and the other for engagement by insertion and sliding with a sliding or guiding zone SGZ.

[0048] A connecting segment 8c of the terminal segments 8a, 8b may also be provided. In relation to this aspect, the connecting segment 8c is preferably flat and aligned with a respective portion of the terminal segments 8a, 8b from which it departs, so that in fact the counter-guide elements 8 may have an intermediate flat segment 8c with two L-shaped ends, one extending in one direction starting from the intermediate flat segment 8c and the other extending in the opposite direction from the intermediate flat segment 8c.

[0049] With reference to the embodiment illustrated in figures 2-5, the counter-guide elements 8 comprise a first U-shaped terminal segment 8a with a concavity facing or better open in one direction, the connection segment 8c preferably flat and then a U-shaped terminal segment 8b with a concavity facing or better open in the direction opposite to the first, the terminal segments 8a, 8b extending one 8a, starting from the connection segment 8c approaching the respective upright 5 and the other, always starting from the connection segment 8c, away from the respective upright 5.

[0050] Furthermore, the counter-guide elements 8 are each mounted on a respective terminal edge 3c, 3d of a panel 3 in such a way, for example, that a first terminal segment 8a is fitted or interlocked onto a lateral edge 3c, 3d of the panel, the connection segment 8c is flush and substantially parallel to an internal, in use, face 3e (with reference to the respective construction or building unit) of a panel 3 and the second end segment 8b is inserted and slides in a sliding or guiding zone SGZ.

[0051] With particular reference to the engagement between the shaped guide elements 4 and the lateral edges 3c, 3d of the panels 3, possibly with the interposition of any counter-guide elements 8, this is a sliding engagement, in the sense that it does not prevent the sliding, in use, upwards or downwards of the panels 3.

[0052] In this regard, this engagement preferably occurs with slack and is mainly aimed at guiding the upward sliding of the panels 3, preventing, among other things, that the panels 3 may fall or tilt excessively towards the outside of the construction or building unit.

[0053] In this regard, advantageously, the or each sliding or guiding zone SGZ for a lateral edge 3c, 3d or a component 8 mounted on and integral in movement with such edge 3c, 3d is closed away from the respective upright 5 and open only towards the other sliding zone SGZ of the at least two respective uprights 5 as well as traversable in the direction from bottom upwards and, if desired, vice versa, although it could be closed at the bottom and at the top.

[0054] In this regard, the two sliding or guiding zones SGZ for the lateral edges 3c, 3d of panels 3 or a component 8 mounted on and integral in movement with such edge, each defined by a shaped guiding element 4 and, if desired, by a respective upright 5 of a pair of uprights 5 between which the same facade 2 or side of a construc-

tion or building unit 1 to be cladded or made is defined, are open towards each other so that it is possible to engage by sliding both lateral edges 3c, 3d of a panel 3 to be lifted.

[0055] With reference now in particular to the step of fixing or locking in position the panel 3 at a given level or height, it can be carried out in any suitable way.

[0056] Clearly, fixing or locking means 6, 7 or means to prevent its sliding backwards or downwards could be preferably provided for one, some or all of the panels 3.

[0057] In this regard, this step can be, for example, carried out by means of at least one elastically loaded element 6 or an automatically operated element (if desired remotely) slidably or movably mounted within or relatively to a respective upright 5 or a crosspiece 9 of the construction or building unit 1 (see figures 2 to 5).

[0058] In this case, the at least one elastically loaded or automatically operated element 6 could be movable, possibly in contrast with the action of an elastic loading element, such as a spring of any suitable type, between a working position, in which the at least one elastically loaded or automatically operated element 6 protrudes with respect to the upright 5 or crosspiece 9 or in any case protrudes into the lifting zone of the panels 3 of the facade 2 being built or cladded so as to be able to engage from below or support an overlying panel 3, and at least one retracted position, in which the at least one elastically loaded or automatically operated element 6 is at least partially inserted into the respective upright 5 or crosspiece 9 or in any case is less protruding from the upright 5 or crosspiece 9 with respect to the working position or, alternatively, is set back with respect to the lifting zone of the panels 3, so as to allow the lifting of a panel 3 up to a level higher than the at least one elastically loaded or automatically operated element 6.

[0059] Of course, the elastically loaded element 6, in use, is arranged in the zone between two panels 3 one above the other (except for the lowest panel) and extends towards the outside of the construction or building unit 1.

[0060] Clearly, one or more elastically loaded elements 6 could preferably be provided for each panel or even for just some of the panels.

[0061] According to this possible variant, the at least one elastically loaded element 6 is moved from the working position to the retracted position by a panel 3 raised upwards which engages a respective lower portion 6b of the elastically loaded element 6 and pushes it towards the at least one retracted position so as to allow the upward movement of the same panel 3 up to a level higher than the elastically loaded element 6.

[0062] According to the non-limiting embodiment illustrated in the figures, the elastically loaded element 6 is configured as a strip or bar with a section, in a vertical in use plane and in which the direction from the outside to the inside of the construction or building unit lies, substantially triangular or in any case with a dimension tapered moving away from the respective upright 5 or crosspiece 9. In this case, according to the non-limiting embodiment illustrated in the figures, the elastically

loaded element 6 could have a flat upper, in use, face 6a with a substantially horizontal lying, and a flat lower, in use, face 6b with a lying substantially inclined with respect to the vertical and the horizontal and with a lower level close to the respective upright 5 or crosspiece 9 and an upper level far from the latter.

[0063] Clearly, as an alternative or in addition to at least one elastically loaded element 6, it would be possible to have an automatically operated element (if desired remotely) slidingly or movably mounted as now indicated, in which case an actuator for moving such element would also be provided.

[0064] As an addition or alternative to what has now been described, the step of fixing or locking in position the panel or better the panels 3 can be achieved by means of at least one bracket 7 connected, if desired removably, to a respective upright 5 or a crosspiece 9 of the construction or building unit 1 so as to partially protrude so as to engage from below or support an overlying panel 3 (see figures 6 to 9), when the latter has been brought to a predetermined or desired level or height.

[0065] With reference to the non-limiting embodiment illustrated in the figures, the bracket 7 comprises, in use from the inside to the outside, a first constraint section 7a, optionally with a main horizontal extension, to an upright 5 or a crosspiece 9, a second section 7b, optionally with a main vertical extension, for enclosing or flanking, preferably from the inside, a lower edge 3b of a panel 3, and then a third section 7c, optionally with a main horizontal extension, for supporting a panel 3 from below.

[0066] The first 7a and the second 7b section of the at least one bracket 7, if provided, can be mounted at the level of the lower edge 3c and could extend entirely above, entirely below or astride that level. With reference to the non-limiting embodiment illustrated in the figures, the first section 7a is below the level of the lower edge 3c, while the second section 7b is partly above that level and partly below.

[0067] In this case, the at least one bracket 7 could, for example, also comprise a free end 7d emerging from the third section 7c, which, once the at least one bracket 7 has been installed, could be bent or inclined downwards so as to constitute a means of drainage for the water. The free end 7d would in this case extend from a zone between two panels 3 one above the other and towards the outside of the construction or building unit 1.

[0068] The bracket 7, according to the embodiment illustrated in the figures, is made up of a single piece, such as a suitably shaped and folded sheet. In this case, the second section 7b would be made up, at least for part of its extension, of two adjacent and successive portions of the sheet folded on itself.

[0069] Clearly, one or more brackets 7 could preferably be provided for the support from below of each panel 3 or even just for some of the panels 3.

[0070] For the assembly of the bracket(s) to an upright 5 or crosspiece 9 of a construction or building unit 1 to be cladded or made, any suitable means can be used. Thus,

for example, the upright 5 or the crosspiece 9 could be provided with one or more holes or a slot 12, if desired at a lower part or face of a crosspiece 9, to be aligned with a hole or slot in a bracket 7, and then a screw, bolt, pin or other connecting means is inserted into the thus aligned holes/slots.

[0071] Furthermore, the insertion or fitting or connection of the bracket 7 can be carried out by an operator who is positioned, for example on a platform or the like, removably or not, constrained to the uprights 5 and/or the crosspieces 9 or on a ladder or on another suitable support surface. This operation could be carried out after a panel 3 to be supported by one or more brackets 7 has been brought above the level of the same, for example of the respective third section 7c or even before this step, although in this case appropriate measures should be taken with regard to the configuration or elasticity of this section to allow the passage of the panel 3 and then prevent it from returning downwards or backwards.

[0072] The bracket 7 and in particular one or more of its sections 7a, 7b, 7c, 7d (preferably at least the section 7c and the free end 7d) thereof are preferably elastically deformable so as to facilitate the assembly of the bracket 7 in position.

[0073] Advantageously, the construction or building unit 1 is an external elevator of a building, such as a residential, shop and/or warehouse building. In this case, one, two or three facades 2 cladded or with panels 3 are preferably provided, while the fourth is the one leaning against or opening or in common with another building, for example a residential, shop and/or warehouse building.

[0074] Clearly, the subject-matter of the present invention is also a building, such as a residential building, for shops and/or for warehouses, provided with an external elevator 1 according to the present invention, which has a facade attached to or leading out or in common with the building.

[0075] As regards the lifting step, the panel 3 is preferably maintained with the lying indicated above, thus with an upper, in use, edge 3a, a lower, in use, edge 3b, two lateral, in use, edges 3c, 3d as well as two main extension faces 3e, 3f one 3e facing inwards and the other 3f facing outwards of the unit, which faces are in fact vertical.

[0076] With regard to this aspect, the panel 3, after being inserted, preferably from below, but also from the side if desired (this would lead to a configuration of the shaped elements 4 different from that illustrated in the figures), with its lateral edges 3c, 3d or components 8 mounted on and integral in movement with such edges in two sliding or guiding zones SGZ of two uprights 2 defining the same facade 2 to be made or cladded, is lifted while maintaining it in the same position and is thus not overturned or turned.

[0077] If desired, the lifting step can be performed by any suitable lifting means, for example by means of a winch (not shown in the figures) acting on the panel 3 or

on the panels 3 in sequence by means of a rope or cable or chain sent around at least one pulley 11 or wheel mounted for example on a crosspiece 9 or other component of the unit 1, if desired at the top of the unit. Clearly, the panels can be lifted by other suitable means and furthermore, according to a less preferred alternative, they are lifted manually.

[0078] In a method according to the present invention, the at least two shaped guide elements 4 are preferably applied or constrained starting from a specific height from the ground G, for example between 10 cm and one meter, of respective uprights 5, so as to allow the insertion from below of each lateral edge 3c, 3d of the panel 3 (or better of the panels 3) or components 8 integral in movement with such edges in a respective sliding or guiding zone SGZ and up to at least 70% or 80% of the height of such uprights 5.

[0079] With regard to this aspect, for a side or portion of an upright 5, two or more shaped guide elements 4 could also be provided, mounted one on top of the other or better at different heights so as to cover or affect the desired length of the upright 5 as a whole.

[0080] The present invention also relates to an equipment for cladding of one or more facades 2 of a construction or building unit 1 with panels 3 or for the obtaining of a construction or building unit 1 with one or more facades 2 provided with panels 3.

[0081] Such equipment comprises at least two shaped guide elements 4 as indicated above, which are clearly intended to be applied or constrained to at least two respective uprights 5 of a construction or building unit 1 to be cladded or made, so as to define by each of the at least two shaped guide elements 4, alone or together with a respective upright 5 to which such shaped guide element 4 is applied, a sliding or guiding zone SGZ for a lateral edge 3c, 3d of panels 3 for cladding or obtaining of at least one facade or side 2 of the construction or building unit 1 or for a component 8 mounted on and integral in movement with such edge.

[0082] The equipment then comprises at least two panels 3 or better a plurality, if desired a number between four and ten or more of panels 3, with an upper, in use, edge 3a, a lower, in use, edge 3b, two lateral, in use, edges 3c, 3d as well as two main extension faces 3e, 3f.

[0083] The equipment also includes means for lifting panels, for example a winch designed to act on a panel 3 by means of a rope or cable sent around at least one pulley 11 (always of the equipment).

[0084] The equipment then comprises means for fixing or locking 6, 7 in position or means for preventing the panels 3 from sliding downwards.

[0085] For the shaped guide elements 4, the means for lifting panels and the fixing or locking means 6, 7 of the equipment, essentially what was said previously applies with reference also to the advantageous or preferred or possible features or configurations for such elements.

[0086] Of course, the equipment could also comprise at least two uprights 5 that can be fixed to the ground so as

to define between them the same facade or side 2 of a construction or building unit 1. In this case, as already stated previously, the at least two shaped guide elements 4 are designed to be applied or constrained to the at least two respective uprights 5 of a construction or building unit 1 to be cladded or obtained, so as to define between each of the at least two shaped guide elements 4 and, if desired, a respective upright 5, a sliding or guiding zone SGZ for a lateral edge 3c, 3d of panels 3 for cladding or obtaining at least one facade or side 2 of the construction or building unit 1 or for a component 8 mounted on and integral in movement with such edge.

[0087] Subject-matter of the present invention is also clearly a construction or building unit 1 with one or more facades 2 provided with cladding or construction panels 3, which unit 1 comprises:

- at least two uprights 5 (three or four according to the non-limiting example in the figures) fixed to the ground G so as to define between them a single facade 2 or side of such construction or building unit 1,
- at least two shaped guide elements 4 applied or constrained to the at least two uprights 5 in such a way that each of the at least two shaped guide elements 4, alone or together with a respective upright 5 to which such shaped guide element 4 is applied or constrained, defines a sliding or guiding zone SGZ for an edge, in use lateral 3c, 3d, of panels 3 for cladding or obtaining of at least one facade or side 2 of the construction or building unit 1 or for a component 8 mounted on and integral in movement with such edge 3c, 3d,
- at least two panels 3 each arranged with an upper, in use, edge 3a, a lower, in use, edge 3b, two lateral, in use, edges 3c, 3d as well as two main extension faces 3e, 3f one facing inwards and the other facing outwards of the unit, with each lateral edge 3c, 3d of the panels 3 inserted in a respective sliding or guiding zone SGZ defined by each of the at least two shaped guiding elements 4, alone or together with a respective upright 5 to which each shaped guiding element 4 is applied, the panels 3 being arranged one above the other, i.e. stacked or aligned one above the other, so as to define, actually, what in jargon is called the cladding of a respective facade 2, and fixing or locking means 6, 7 being then provided to fix or lock the panels 3 in position or to prevent them from sliding downwards.

[0088] Advantageously, at least two or three facades 2 of the construction or building unit 1 are made as now indicated, possibly two by two with a common upright 5.

[0089] As regards the shaped guide elements 4, the uprights 5, any crosspieces 9, the panel lifting means 3 and the fixing or locking means 6, 7 of the unit 1, what was said previously is substantially valid with reference also to the advantageous or preferred or possible character-

istics or configurations for such elements, and it is not considered useful to repeat what has already been indicated.

[0090] However, if the panels 3 are provided at each of their lateral edges 3c, 3d with a shaped counter-guide element 8, it is arranged so as to slidably engage a respective shaped guide element 4 or in any case is inserted and slides in a respective sliding or guiding zone SGZ.

[0091] Advantageously, a construction or building unit 1 according to the present invention consists of an external elevator of a building.

[0092] As it will be understood, thanks to the present invention it is possible to clad or obtain one or more facades of a construction or building unit with panels, in an easy and fast manner.

[0093] Moreover, the present invention also ensures installation safety.

[0094] Furthermore, thanks to the presence of the guide elements structured and constrained as indicated above it is possible to proceed with the desired construction or cladding even without scaffolding or with less cumbersome and less complex scaffolding than the state of the prior art.

[0095] Modifications and variations of the invention are possible within the scope defined by the claims.

Claims

1. Method for cladding one or more facades (2) of a construction or building unit with panels (3) or for obtaining a construction or building unit with one or more facades (2) equipped with panels (3), comprising the following steps:

- a) providing at least two shaped guide elements (4),
- b) applying or constraining said at least two shaped guide elements (4) to at least two respective uprights (5) of a construction or building unit to be cladded or made, which at least two uprights (2) are fixed to the ground so as to define between them the same facade (2) or side of said construction or building unit, so that following said step of applying or constraining, each of said at least two shaped guide elements (4), alone or together with a respective upright (5) to which each shaped guide element (4) is applied or constrained, defining a sliding or guiding zone (SGZ) for a lateral, in use, edge (3c, 3d) of panels (3) for cladding or obtaining at least one facade (2) or side of a construction or building unit or for a component (8) mounted on and integral in movement with this edge,
- c) providing a panel (3) arranged with an upper, in use, edge (3a), a lower, in use, edge (3b), two lateral, in use, edges (3c, 3d) as well as two

extension faces (3e, 3f) facing one (3e) inwards and the other (3f) outwards of the unit, and then inserting each side edge (3c, 3d) of the panel (3) or a component (8) mounted on and integral in movement with this edge (3c, 3d) in a respective sliding or guiding zone (SGZ) defined by each of said at least two shaped guide elements (4), alone or together with a respective upright (5) to which each shaped guide element (4) is applied or constrained,

d) lifting said panel (3), so that each lateral edge (3c, 3d) of the same or a component (8) mounted on and integral in movement with said lateral edge (3c, 3d) slides in the respective sliding or guiding zone (SGZ),

e) once the panel (3) has been brought to a certain height, fixing or locking in position, by means of fixing or locking means (6, 7), the panel (3) itself or in any case applying or providing means to prevent its sliding backwards or downwards,

f) repeating operations c), d) and e) for another or other panels (3), which will thus be fixed or locked in position below the first panel (3) fixed or locked, so as to clad or complete a facade (2) of a construction or building unit.

2. Method according to claim 1, wherein at least one of said at least two shaped guide elements (4) consists of a profile or shaped sheet, so as to include at least two lengths (4a, 4b, 4c) inclined with respect to each other, i.e., moving away from the upright (5) to which a shaped guide element (4) is applied or constrained, i.e. a first length (4a) designed to be applied or constrained to at least one upright (5) as well as a second length (4b) inclined or orthogonal with respect to the first length (4a).
3. Method according to claim 2, wherein at least one of said at least two shaped guide elements (4) has at least three lengths (4a, 4b, 4c) including, moving away from the upright (5) to which a shaped guide element (4) is applied or constrained, said first length (4a), said second length (4b) and then a third length (4c) orthogonal or inclined with respect to the second length (4b).
4. Method according to claim 2 or 3, wherein for one or more of said at least two shaped guide elements (4), said second length (4b) alone or with a possible third length (4c) defines together with a respective upright (5) a respective sliding or guiding zone (SGZ) for a lateral edge (3c, 3d) of panels (3) stacked or aligned one above the other or for a component (8) mounted on and integral in movement with this edge (3c, 3d).
5. Method according to any one of the preceding claims, wherein said step of fixing or locking in posi-

tion said at least one panel (3) is carried out by means of at least one elastically loaded or automatically operated element (6) slidingly or movably mounted within or relative to a respective upright (5) or a crosspiece (9) of said construction or building unit, said at least one elastically loaded or automatically operated element (6) being movable, optionally in contrast with the action of an elastic loading element, between a working position, in which said at least one elastically loaded or automatically operated element (6) protrudes with respect to said upright (5) or crosspiece (9) or in any case protrudes into the lifting zone of the panels (3) so as to be able to engage from below or support an overlying panel (3), and at least one retracted position, in which said at least one elastically loaded or automatically operated element (6) is at least partially inserted into the respective upright (5) or crosspiece (9) or in any case is less protruding from said upright (5) or crosspiece (9) with respect to the working position or, alternatively, it is set back with respect to the lifting zone of the panels (3), so as to allow the lifting of a panel (3) up to a level higher than said at least one elastically loaded or automatically operated element (6).

6. Method according to claim 5, wherein said at least one elastically loaded element (6) is moved from said working position to said retracted position by means of a panel (3) raised upwards which engages a respective lower portion (6b) of said elastically loaded element (6) and pushes it towards said at least one retracted position so as to allow the upward movement of the same panel (3) up to a level higher than said elastically loaded element (6).
7. Method according to any one of the preceding claims, wherein said construction or building unit is an external elevator of a building.
8. Method according to any one of the preceding claims, wherein said at least two shaped guide elements (4) are applied or constrained starting from a specific height from the ground of respective uprights (5), so as to allow the insertion from below of each lateral edge (3c, 3d) of the panel (3) or of a component (8) mounted on and integral in movement with this edge (3c, 3d) in a respective sliding or guiding zone (SGZ).
9. Equipment for cladding one or more facades (2) of a construction or building unit with panels (3) or for obtaining a construction or building unit with one or more facades (2) equipped with panels (3), said equipment including:

- at least two shaped guide elements (4) designed to be applied or constrained to at least two respective uprights (5) of a construction or

building unit to be cladded or made, so that each of said at least two shaped guide elements (4) defines, alone or together with a respective upright (5) to which each shaped guide element (4) is applied or constrained, a sliding or guiding zone (SGZ) for a lateral edge (3c, 3d) of panels (3) for cladding or obtaining at least one facade (2) or side of the construction or building unit or for a component (8) mounted on and integral in movement with this edge (3c, 3d),

- at least two panels (3) with an upper, in use, edge (3a), a lower, in use, edge (3b), two lateral, in use, edges (3c, 3d) as well as two main extension faces (3e, 3f),

- lifting means (11) of said at least two panels (3),
- means for fixing or locking (6, 7) in position or means for preventing panels from sliding downwards.

10. Equipment according to claim 9, comprising at least two uprights (5) fixable to the ground so as to define between them the same facade (2) or side of said construction or building unit, said at least two shaped guide elements (4) being designed to be applied or constrained to said at least two respective uprights (5) of a construction or building unit to be cladded or obtained, so that each of said at least two shaped guide elements (4) defines, alone or together with a respective upright (5) to which each shaped guide element (4) is applied or constrained, a sliding or guiding zone (SGZ) for a lateral edge (3c, 3d) of panels (3) for cladding or obtaining at least one facade (2) or side of a construction or building unit or for a component (8) mounted on and integral in movement with this edge (3c, 3d).

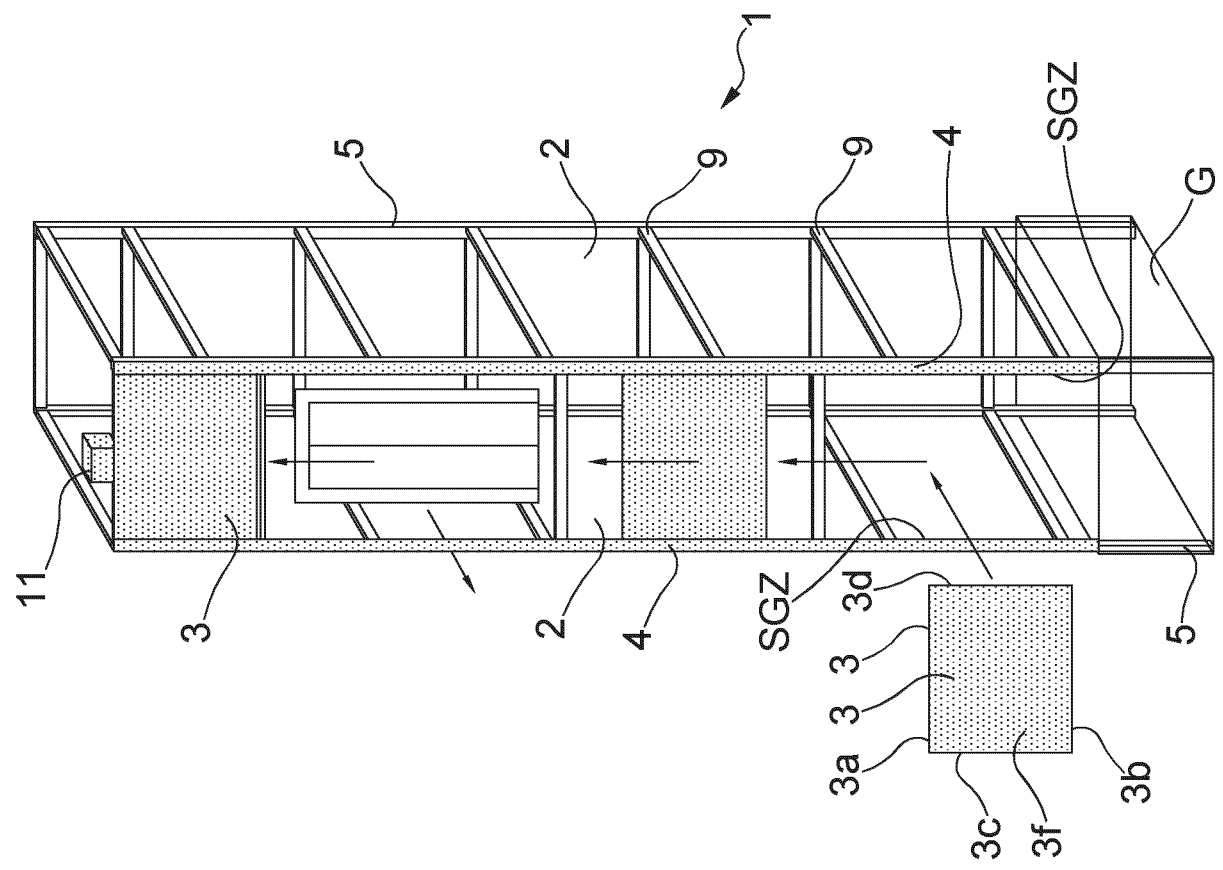
11. Equipment according to claim 9 or 10, wherein said means for fixing or locking in position comprise at least one elastically loaded or automatically operated element (6) slidingly or movably mounted within a respective upright (5) or a crosspiece (9) of a construction or building unit or at least one bracket (7) connectable to a respective upright (5) or a crosspiece (9) of a construction or building unit.

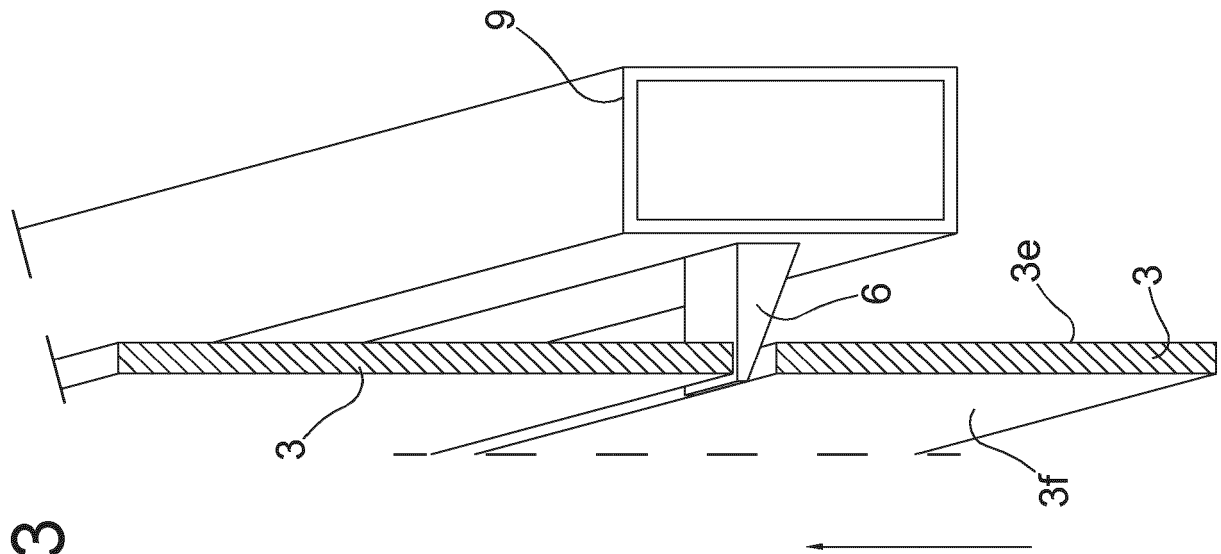
12. Construction or building unit with one or more facades (2) equipped with cladding or obtaining panels (3), said unit including:

- at least two uprights (5) fixed to the ground so as to define between them the same facade (2) or side of this construction or building unit,
- at least two shaped guide elements (4) applied or constrained to said at least two uprights (5) so that each of said at least two shaped guide elements (4), alone or together with a respective upright (5) to which each shaped guide element (4) is applied or constrained, defines a sliding or

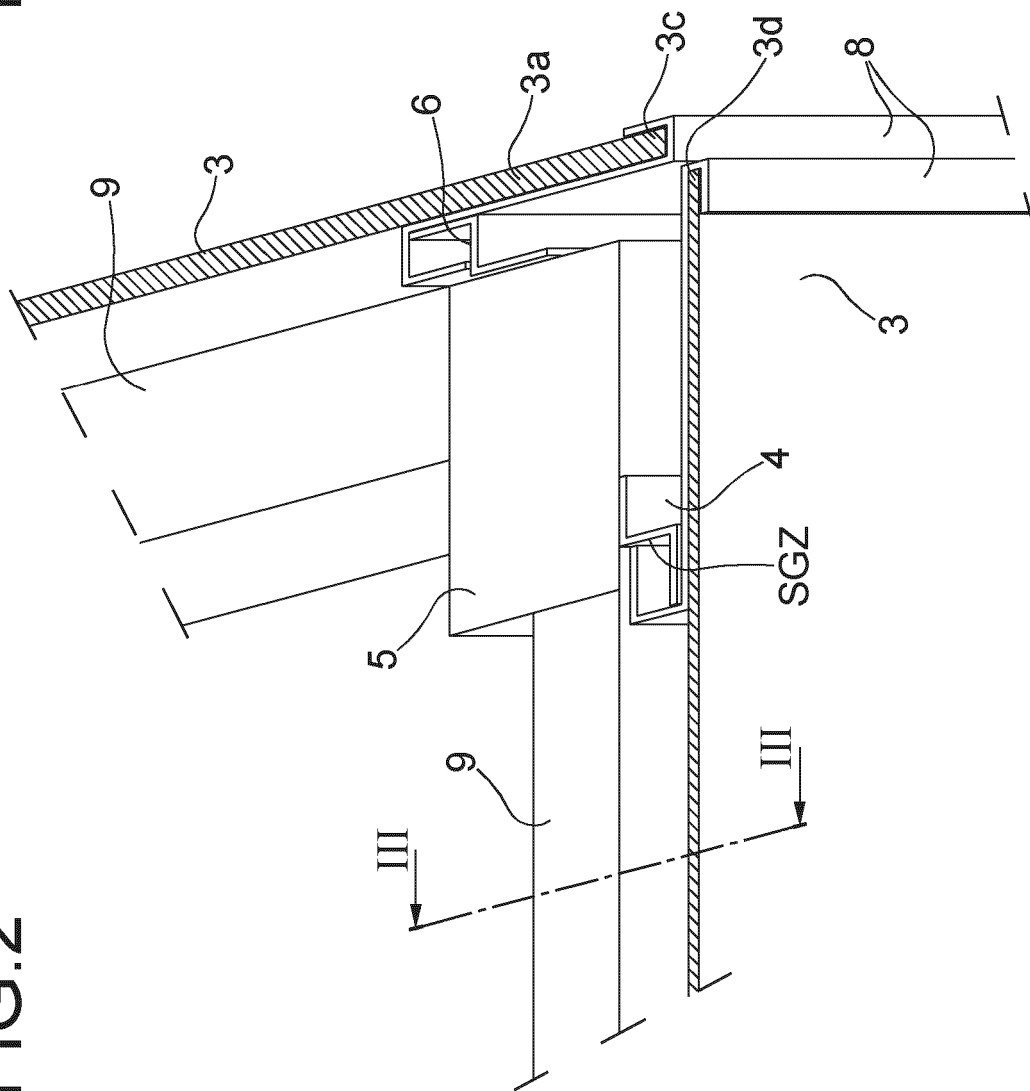
- guiding zone (SGZ) for a lateral, in use, edge (3c, 3d), of panels (3) for cladding or obtaining at least one facade (2) or side of the construction or building unit or for a component (8) mounted on and integral in movement with this edge (3c, 3d),
 - at least two panels (3) each arranged with an upper, in use, edge (3a), a lower, in use, edge (3b), two lateral, in use, edges (3c, 3d) as well as two main extension faces (3e, 3f) facing one inwards and the other (3f) outwards of the unit, with each lateral edge (3c, 3d) of the panels (3) or of a component (8) mounted on and integral in movement with this edge (3c, 3d) inserted in a respective sliding or guiding zone (SGZ) defined by each of the at least two shaped guide elements (4), alone or with a respective upright (5), said at least two panels (3) being arranged one in a position higher than the other and fixing or locking means (6, 7) being then provided to fix or lock the panels (3) in position or to prevent their sliding downwards.
- 13.** Equipment according to claim 9, 10 or 11 or construction or building unit according to claim 12, wherein at least one of said at least two shaped guide elements (4) consists of a profile or shaped sheet, so as to present at least two lengths (4a, 4b, 4c) inclined with respect to each other, i.e., moving away from the upright (5) to which a shaped guide element (4) is applied or constrained or applicable or constrainable, a first length (4a) designed to be applied or constrained to at least one upright (5) as well as a second length (4b) inclined or orthogonal to the first length (4a).
- 14.** Equipment or unit according to claim 13, wherein at least one of said at least two shaped guide elements (4) has at least three lengths (4a, 4b, 4c) including, moving away from the upright (5) to which a shaped guide element (4) is applied or constrained or applicable or constrainable, said first length (4a), said second length (4b) and then a third length (4c) orthogonal or inclined with respect to the second length (4b).
- 15.** Construction or building unit according to any one of claims 12 to 14, consisting of an external elevator of a building.

FIG.1





3. Ge



2. GEF

FIG.4

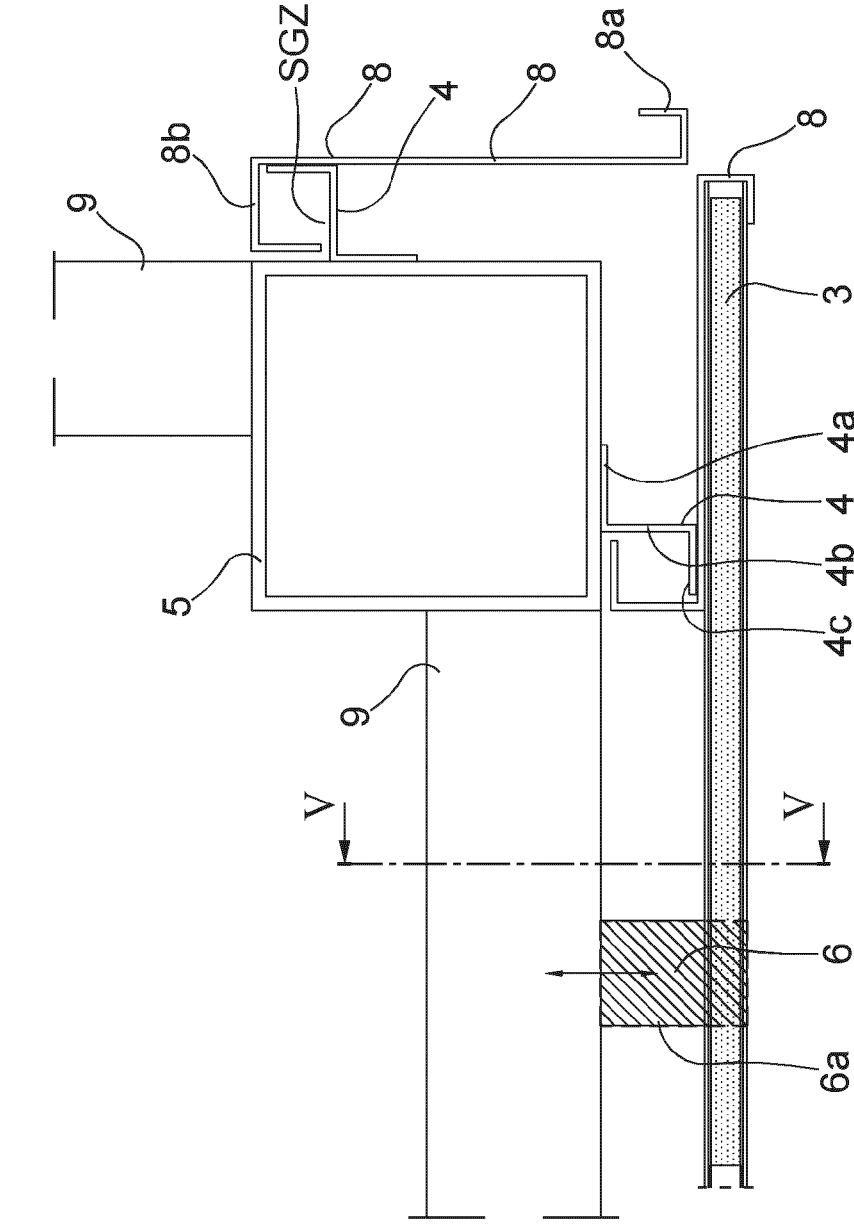


FIG.5

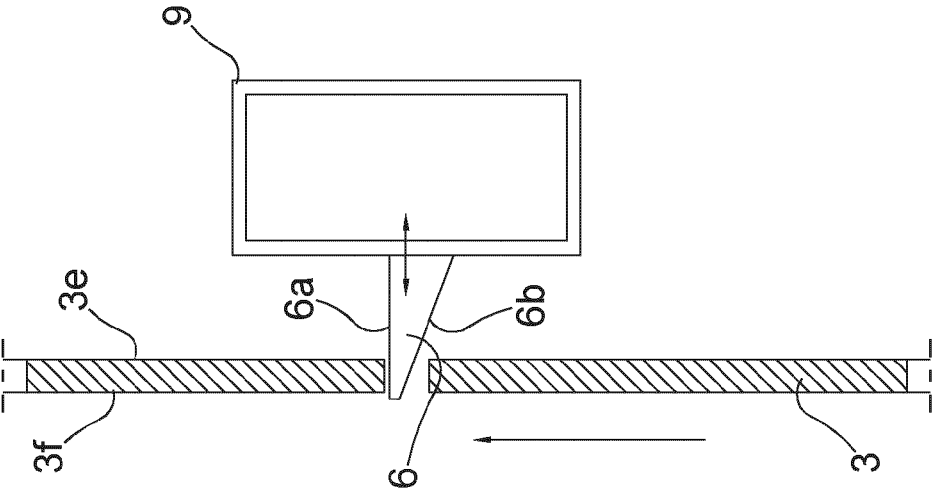


FIG.6

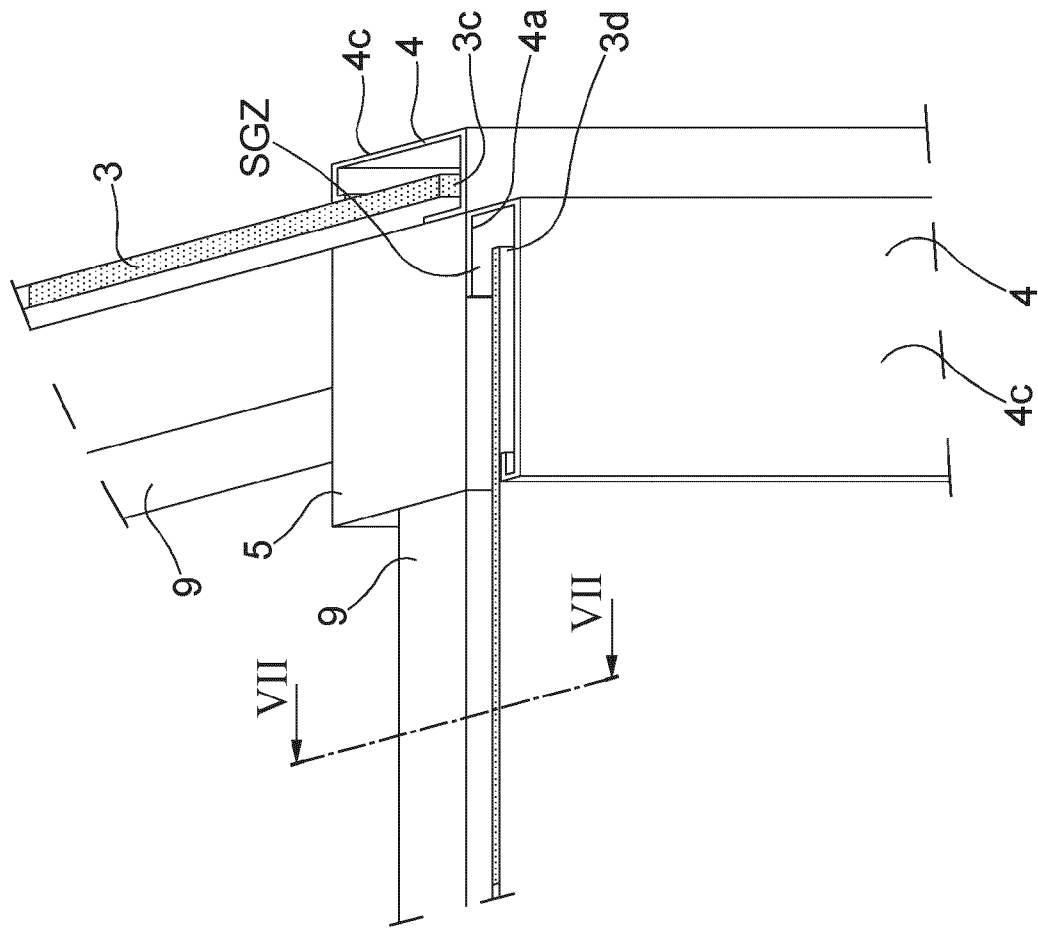


FIG.7

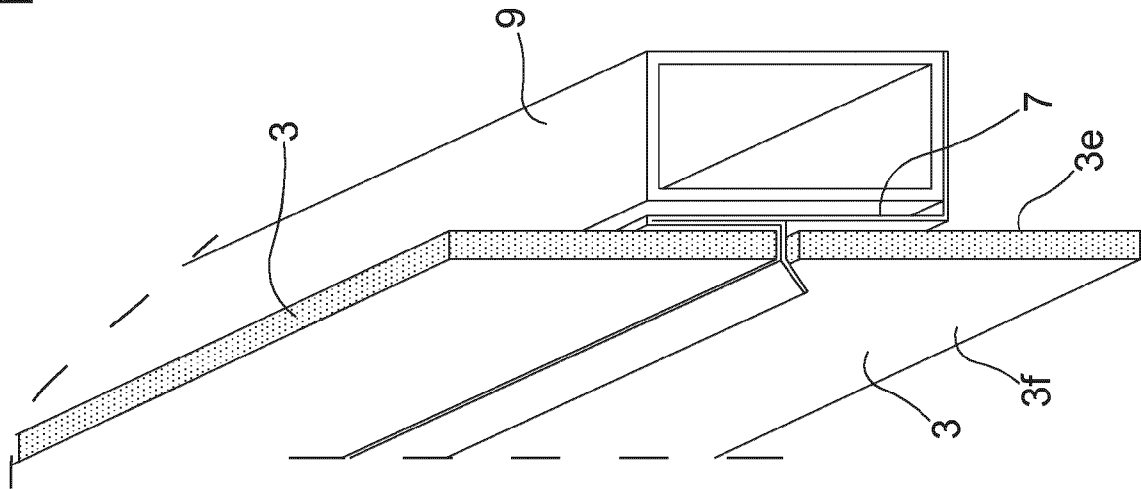


FIG.8

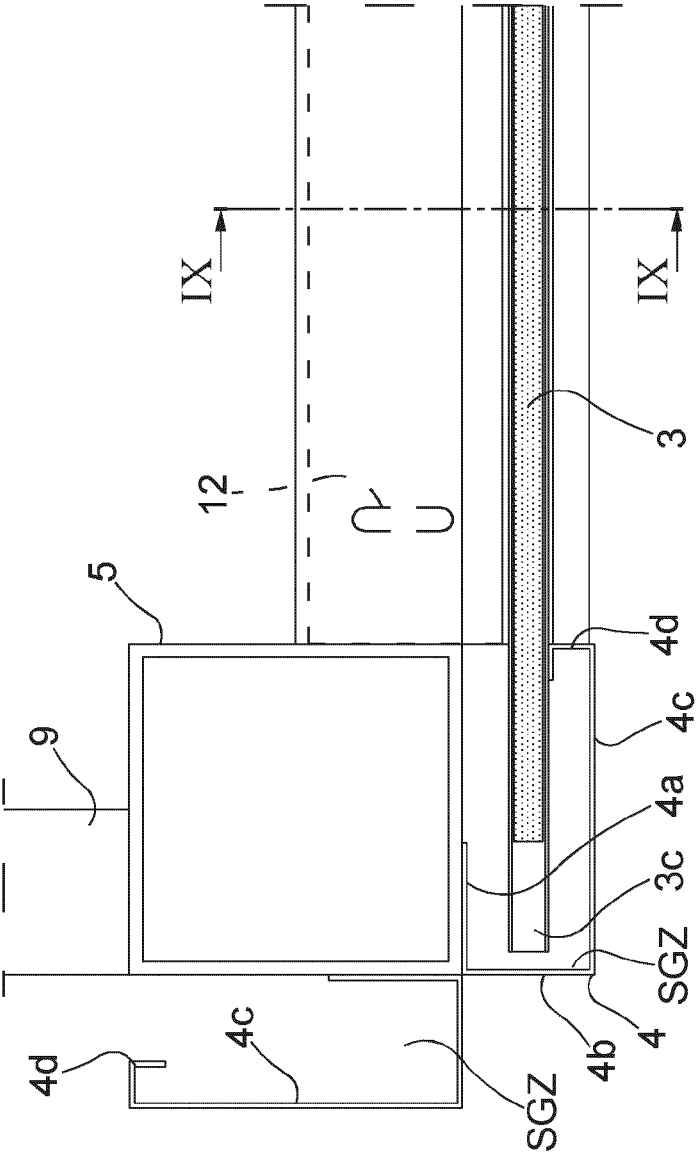
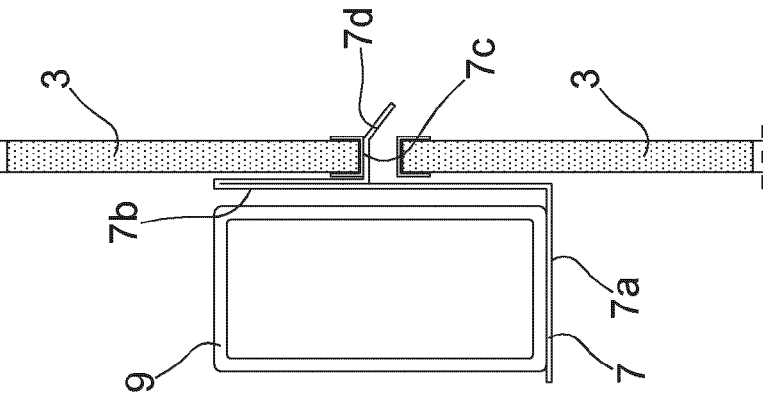


FIG.9





EUROPEAN SEARCH REPORT

Application Number

EP 24 20 4609

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	FR 3 120 888 A1 (CITYNOX [FR]) 23 September 2022 (2022-09-23) * figures 3-6 * -----	1 - 15	INV. E04F13/08 E04F17/00 E04F21/18
			TECHNICAL FIELDS SEARCHED (IPC)
			E04F
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		5 February 2025	Fournier, Thomas
CATEGORY OF CITED DOCUMENTS			
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05-02-2025

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		FR 3134830 A1	27-10-2023

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