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(54) **A PANEL AND CLADDING SYSTEM**

(57) The invention relates to a panel that can be used on internal and external surfaces and can be easily installed to each other, and to a system that enables these panels to be installed to each other.

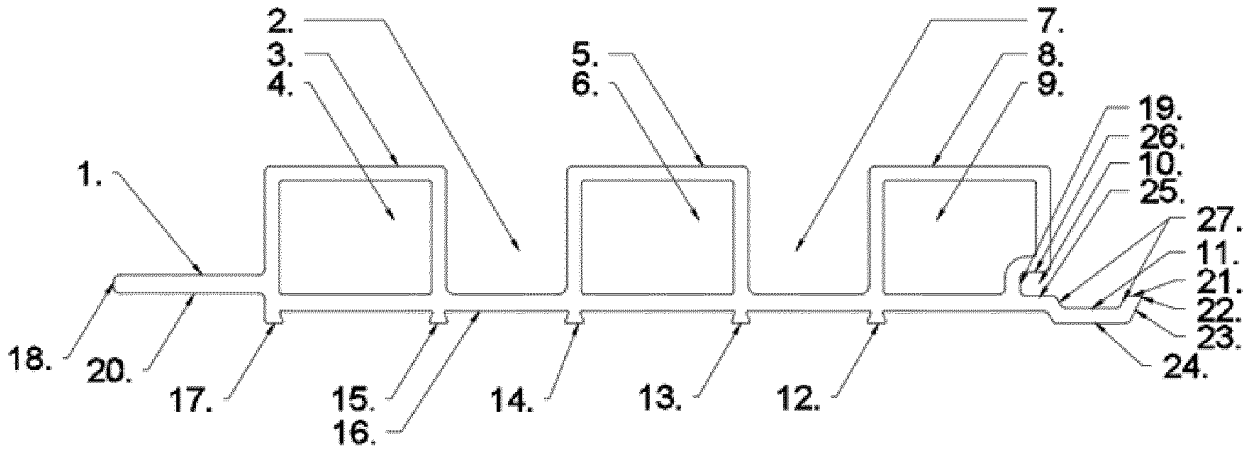

Figure-2

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Description

Technical Field

[0001] The invention relates to a panel and surface cladding system.

[0002] In particular, the invention relates to a panel that can be used on internal and external surfaces and can be easily installed to each other, and to a system that enables these panels to be installed to each other.

State of the Art

[0003] Today, claddings are made on interior and exterior surfaces by installing the panels to each other. These claddings are highly preferred due to the fact that they can be installed quickly and easily and provide insulation to the surface on which they are applied.

[0004] In presently practiced applications, cladding materials are generally started from the ground and the cladding process is carried out upwards. When the cladding process is desired to be applied from top to bottom or side by side, the design of the cladding material is not always suitable for this, and it cannot be installed as desired if needed.

[0005] In the current applications, the cladding material is fixed to the surface on which it is applied with a screw-like tool, and the installation is completed by sequentially lining up the cladding materials. Since there is no lock system between the cladding materials, dust and water can pass between the cladding materials. This can cause undesirable results both on the cladding material and on the surface on which the cladding material is applied.

[0006] In the current applications, there is no structure that ensures the protection of screws or similar unit that provide for fixing of the cladding materials to the surface on which it is applied, for this reason, this fixing unit can cause undesirable situations over time such as rusting and molding due to factors such as water and humidity.

[0007] In the current applications, after the installation of the cladding materials to the surface, the joints between the cladding materials are visible and there is no continuity in the appearance. This causes the surface cladding not to have an aesthetic appearance.

[0008] In the current applications, there is no structure to ensure that the cladding materials are positioned parallel to each other during installation, and the ability of the cladding materials to be positioned in line and parallel is up to the skill of the person who makes the application process. In some cases, this causes claddings to have an unaesthetic appearance. In addition, the heads of the screw-like fixing unit that fix the surface on which it is applied in the cladding materials are also a factor that disrupts the parallelism between the cladding materials.

[0009] In the current applications, there may be lock forms that allow the installation of cladding materials to each other, but these are simple systems, usually called female and male edges. There is no structure to install the male and female edges mentioned here in an easy manner, and there is no structure for them to be locked to each other. The folds on the male and female edges used today are in a structure that can be easily deformed or broken during assembly or transportation. For this reason, in some cases, they may cause the cladding material to become unusable.

[0010] In the current applications, the cladding material used for the beginning and end points of the surface cladding assembly is cut to the appropriate size for installation. This causes both an unaesthetic appearance and a decrease in working efficiency as it increases the amount of time and labor.

[0011] In the current applications, cladding materials generally do not serve as insulation materials, so insulation on the surface must be completed before cladding.

[0012] In the research conducted on the subject, the utility model application titled "PVC and interlocking floor cover element" numbered TR2011/07860 was found. The application is about the interlocking floor cover element made of PVC resistant to water and moisture, which is used for covering the floors, especially providing sound insulation.

[0013] Therefore, the existence of the above problems and the inadequacy of the existing solutions made it necessary to make an improvement in the related technical field.

Object of the Invention

[0014] The invention is inspired by current situations and aims to solve the problems described above.

[0015] The invention is related to a panel that can be used on walls and ceilings indoor and outdoor locations, that can be easily installed to each other by means its geometry on its surface, that can be produced in different models and geometries for decorative purposes, that makes it possible to connect multiple panels to each other to cover surfaces, and the lock system that enables the installation of these panels to each other.

[0016] The panels to be used in the invention are made of polymer-based materials.

[0017] Another objective of the invention is to facilitate joining the panels tightly, laying them and installing them with the quick-fit method.

[0018] Another objective of the invention is to provide the installation of the panels by interlocking the tabs and engagement spaces on the panel.

[0019] In the invention, it is possible to select the direction of installation of the panels can be from bottom to top or vice versa or side by side according to the surface to be applied.

[0020] In the invention, after the panels are placed in contact with the surface to be applied, the panel can be fixed to the applied surface with a screw, pin, nail or a similar fixing apparatus.

[0021] Another objective of the invention is to eliminate the unaesthetic appearance by concealing the fixing el-

ements that fix the panels to the surface on which they are applied by means of the other panel installed on the panel.

[0022] Another objective of the invention is to make sure that the parts of the nail and engagement gaps on the panel that will contact each other are parallel to each other so that the panels that are installed to each other are also parallel.

[0023] In the invention, the head parts of the fixing unit that fix the panels to the surface on which they are applied are in a slot so that they do not disturb the parallelism of the other panels.

[0024] Another objective of the invention is to prevent adverse situations such as rusting, corrosion, mold growth of the fastening unit by covering the fixing unit on the panel fixed to the surface by the installed panel.

[0025] Another objective of the invention is to ensure that the tabs that provide interlocking on the panel have special curves which are designed in a deep and thick structure so that the placement of the tab part into the engagement gap is made in a practical way.

[0026] Another objective of the invention is to provide the tabs with high strength, so that workflow is not interrupted by breaking the tabs during installation, thus providing saving in time and labor.

[0027] Another objective of the invention is to enable the locking system to be implemented in a simple way by bringing the other panel, which will enter the insertion cavity during assembly, close to the panel at an angle of approximately ten degrees and then pushing its base on the surface.

[0028] Another objective of the invention is to eliminate the adverse situations related to the mastery skill, since the installation technique does not require high learning skills.

[0029] Another objective of the invention is to ensure the continuity of the image between the panels with the presence of the starting panel that can be used at the beginning of the application and the end panel that can be used at the end of the application, and to prevent visual pollution at the beginning and end of the applied surface.

[0030] Another objective of the invention is to eliminate the need for cutting the profile in some cases, using its starting panel and end panel.

[0031] Another objective of the invention is to provide the same locking system for the starting panel and the end panel, so that integrity can be achieved in the surface cladding.

[0032] Another objective of the invention is to provide opportunity for adjustment by shortening the decorative indentation surface in the joint part by including a margin for shortening, because it may be necessary to shorten the joint margin in some necessary situations during installation. Thus, it is ensured that the aesthetic appearance is not deteriorated at the end of the assembly.

[0033] Another objective of the invention is to allow shortening of the product by cutting from the previously specified parts by means of various surface designs.

[0034] Another objective of the invention is to provide protection from harmful rays coming from the sunrays with the decorative top layer.

[0035] In the invention, the decorative top layer can have a wood pattern, stone pattern and it can be single color and multicolor.

[0036] In the invention, the cladding material is thermoplastic

[0037] In the invention, LED lighting system can be installed without disturbing the product form, using the LED channels on the panel

[0038] Another objective of the invention is to make the surface from polymer material so that the surface is smooth, resistant to water, rotting, corrosion and various chemicals.

[0039] Another objective of the invention is to increase the insulation by making the cells on the panel maintain the existing heat.

[0040] Another objective of the invention is to prevent the passage of water and dust with its bottom wall.

[0041] Another objective of the invention is to ensure that the panels can be personalized by painting them with colored, fire-resistant paints.

[0042] In the invention, the surface has high UV resistance for outdoors due to its surface cladding feature.

[0043] Another objective of the invention is to provide protection from harmful rays by means of its UV refraction feature.

[0044] The invention is environmentally friendly as it is produced from 100% recyclable material.

[0045] The invention is waterproof, unaffected by water, mold-proof, mothproof and antibacterial.

[0046] The invention can stand without abrasion for many years where it is applied.

[0047] The invention is fire-resistant and does not propagate fire.

[0048] Another objective of the invention is to prevent the unwanted protrusion tendency by keeping the heights of the covering material the same.

[0049] Another objective of the invention is to shorten the installation time, saving labor and time, by means of its interlocking system.

[0050] To achieve the objectives listed above, the system comprises:

- insertion gap, integrated with the third cell, and having:
    - ◦ insertion gap lower groove on the underside of the inlet,
    - ◦ insertion gap upper groove on the underside of the inlet,
    - ◦ inner flat part of insertion gap
- screwing point, located on the side of the panel with the insertion gap, to ensure that the panel can be fixed to the surface to which it will be applied with a

fixing element, and having:

◦ screwing point floor that, when positioned on the surface to which it will be applied, is in contact with the relevant surface and is aligned with first support foot, second support foot, third support foot, fourth support foot and fifth support foot,
◦ screwing point walls positioned on both sides to increase strength and to conceal the fixing element to be used,
◦ screwing point outer wall,
◦ panel end point at the intersection of the outer surface of the screwing point outer wall and the tab support point on the far side from the third cell,
◦ tab support point located at the top of the screwing point outer wall on the far side of the third cell so that the panels can stand parallel to each other

- the tab, integrated with the first cell so as to enter the said insertion gap and to ensure that the panels are locked together, and having:

◦ the flat end part of the tab positioned at the end, which progresses to the inner flat part of the insertion gap during installation,
◦ tab lower surface, which is located at the bottom, which contacts the tab support point during installation, to ensure that the heights of the panels are the same with each other and prevent the tendency of the panels to protrude outwards,

- a decorative surface:

◦ that is intended to change the appearance of the applied cladding,

◦ that is used to protect the panel and the surface on which the panel is applied from harmful rays coming from sun, and

◦ that may have of wood pattern, stone pattern, single color or multi-color design options,

◦ that is positioned on sections visible from outside when panels are installed to each other,

◦ that is not positioned on the underside of the insertion gap, the insertion gap lower groove, the screwing point wall, the screwing point, the tab support point, the panel end point, the screwing point outer wall, the screwing point floor, the bottom wall, the first support foot, the second support foot, the third support foot, the fourth support foot, fifth support foot and tab bottom surface

- the shortening margin, so as to be able to shorten the joint margin during installation of the panels.

[0051] The structural and characteristic features of the invention and all its advantages will be understood more clearly by means of the figures given below and the detailed description written with reference to these figures, and therefore the evaluation should be made by taking these figures and detailed description into account.

Figures to Help Understand the Invention

[0052]

Figure 1a is the shape of the panel of the invention during interlocking.
Figure 1b is the interlocked form of the panel of the invention.
Figure 1c is the view of the interlocking system of the panel of the invention.
Figure 2 is the sectional view of the panel of the invention.
Figure 3 is the perspective view of the panel of the invention.
Figure 4 is the view of the panel of the invention when installed to each other.
Figure 5 is the view of the panel of the invention when not installed to each other.
Figure 6 is the perspective view of the panel of the invention with the decorative surface applied.
Figure 7 is the cross-sectional view of the panel of the invention, with the decorative surface applied.
Figure 8 is the view of the LED channel of the panel of the invention.
Figure 9 is the side installation view of the panel of the invention.
Figure 10 is the view of superposition of the panel of the invention.
Figure 11 is a view of the end panel.
Figure 12 is an image of the starting panel.

Description of References

[0053]

A. Panel
B. Starting panel
C. End panel
1. Tab
2. First decorative recess surface
3. First decorative protrusion surface
4. First cell
5. Decorative protrusion surface
6. Second cell
7. Second decorative recess surface
8. Second decorative protrusion surface

9. Third cell
10. Insertion gap
11. Screwing point
12. First support foot
13. Second support foot
14. Third support foot
15. Fourth support foot
16. Bottom wall
17. Fifth support foot
18. End flat part of tab
19. Insertion gap inner flat part
20. Tab bottom surface
21. Tab support point
22. Panel end point
23. Screwing point outer wall
24. Screwing point floor
25. Insertion gap lower groove
26. Insertion gap upper groove
27. Screwing point wall
28. LED channel
29. Decorative surface
30. Shortening margin

Detailed Description of the Invention

[0054] In this detailed description, the preferred embodiments of the panel (A) and the locking system of the panels (A), which are the subject of the invention, are described only for a better understanding of the subject.

[0055] The invention relates to the panel (A) used for cladding purposes especially on indoor and outdoor wall and ceiling surfaces. The said panel (A) comprises a first cell (4), a second cell (6) and a third cell (9) on a bottom wall (16). The bottom wall (16) keeps the said cells together. On the bottom wall (16), the first decorative recessed surface (2) is disposed between the first cell (4) and the second cell (6), a second decorative recessed surface (7) is disposed between the second cell (6) and the third cell (9). In the invention, the protrusion formed by the first cell (4) on the bottom wall (16) is the called the first decorative protrusion surface (3); the protrusion formed by the second cell (6) on the bottom wall (16) is called the second decorative protrusion surface (5), the protrusion formed by the third cell (9) on the bottom wall (16) is called the third decorative protrusion surface (8).

[0056] The first cell (4), the second cell (6) and the third cell (9) provide insulation by maintaining the existing heat on the surface on which the panel (A) is applied. The bottom wall (16) prevents the passage of water and dust.

[0057] In the preferred embodiment of the invention, three cells, namely the first cell (4), the second cell (6) and the third cell (9); two decorative recessed surfaces, namely the first decorative recessed surface (2) and the second decorative recessed surface (7); three decorative protrusion surfaces, namely the first decorative protrusion surface (3), the second decorative protrusion surface (5) and the third decorative protrusion surface (8). are used and the detailed description of the invention and the figures are explained according to this embodiment. The panel (A), which is the subject of the invention, can be manufactured with the desired number of cells, decorative recessed surfaces, and decorative protruding surfaces, depending on the surface on which it will be used.

[0058] The first support foot (12), the second support foot (13), the third support foot (14), the fourth support foot (15), and the fifth support foot (17) are located at the bottom of the bottom wall (16); these support feet will be in contact with the surface on which the panel (A) will be applied.

[0059] The panel (A) of the invention has basically the feature of being installed to each other, as it contains a tab (1) and an insertion gap (10) formed at the ends.

[0060] The panel (A) of the invention is preferably made of polymer-based materials and has thermoplastic properties. As the panel (A) is made of polymer material, surface of the panel (A) is made smooth and the ability to be resistant to water, rotting, corrosion, and various chemicals are provided.

[0061] The end flat part of the tab (18) is disposed at the tip of the tab (1) and the lower surface of the tab (20) is disposed on the lower part of the tab (1). The first cell (4) is integrated with the tab (1). The distance between the tab (1) and the first cell (4) is designed by considering that the decorative indentation formed at the jointing part of the installation has the same width as the width of the surface.

[0062] The insertion gap (10), which is integrated with the third cell (9), is limited by the inner flat part of the insertion gap (19). The insertion gap lower groove (25) is disposed on the underside of the inlet portion of the insertion gap (10) and upper groove (26) is formed on the upper side. The lower groove (25) and the upper groove (26) of the insertion gap, with its groove structure, ensure that the tab (1) engages without difficulty during insertion of the tab (1) into the insertion gap (10).

[0063] The tab (1) mentioned in the invention engages the said insertion gap (10), and the end flat part of the tab (18) merges in such a way that the inner flat part (19) of the insertion gap is parallel to each other, and the lower surface of the tab (20), the tab supporting point (21) are placed in parallel.

[0064] The tab (1) mentioned in the invention has a fast-fitting feature. The panel (A) is clamped and fixed after it easily engages the insertion gap (10) opposite the tab (1). The tabs (1) are designed in a deep and thick structure with their unique curves. Installation takes place in a practical way by inserting the tab (1) into the insertion gap (10). The tab (1) does not break during installation by means of its high strength. Thus, since there is no disruption in the workflow; time and labor are saved and efficiency is increased.

[0065] The screwing point (11), the screwing point outer wall (23), the screwing point floor (24) and the screwing point walls (27) are located on the side of the panel (A) with the insertion gap (10). When the panel (A) is posi-

tioned on the surface on which it will be applied, the screwing point floor (24) contacts the corresponding surface. From here, the screwing point floor (24) is aligned with the first support foot (12), the second support foot (13), the third support foot (14), the fourth support foot (15) and the fifth support foot (17). The panel (A) can be fixed to the surface to which it will be applied with a fixing unit from the screwing point (11) on it. Here, the fixing unit can be chosen as a screw, pin, nail, or similar apparatus. The fixing unit mounted from the screwing point (11) exits from the screwing point floor (24) and passes to the surface on which the panel (A) is applied. This, way a high-strength fixing is achieved between the panel (A) and the surface on which it is applied. In the invention, the screwing point (11) is in the form of a depression and there are screwing point walls (27) on both sides. Screwing point walls (27) provide concealing of the head of the said fixing unit when the fixing element is installed at the screwing point (11). In addition to the aesthetic appearance, this ensures that the fixing unit does not get wet in the rain and prevents rust, corrosion, and mold formation. The height of the screwing point walls (27) is preferably 2 millimeters

[0066] In the invention, there is a tab support point (21) on the upper part of the screwing point outer wall (23), which is far from the third cell (9). The panel end point (22) is located at the intersection of the outer surface of the screwing point outer wall (23) and the tab support point (21) on the far side of the third cell (9).

[0067] Panels (A) can be installed to each other by placing the tab (1) on their ends into the insertion gap (10) and tightening them. The tab (1) easily enters the insertion gap (10) with the help of the lower groove (25) of the insertion gap formed on the insertion gap (10) and the insertion gap of the upper groove (26). During this process, firstly, the end flat part (18) of the tab is placed by bringing it close to the insertion gap (10) preferably at an angle of 10 degrees. Then, the panel (A) is positioned to be parallel with the other panel (A). When the panels (A) are installed to each other, the end flat part (18) of the tab on the panel (A) advances to the inner flat part (19) of the insertion gap, and the lower surface of the tab (20) contacts the tab support point (21). The tab support point (21) together with the insertion gap (10) ensures that the panels (A) can stand parallel to each other. After parallelism is provided and the panels (A) are aligned, the panel (A) is fixed to the surface on which it is applied, with a fixing unit from the screwing point (11) on the panel (A). The tab bottom surface (20) that fits on the tab support point (21) ensures that the heights of the panel (A) are the same and counteracts the undesired tendency to protrude outwards.

[0068] The panel (A) can be installed from bottom to top, from top to bottom, from left to right or from right to left according to the surface to which it will be applied.

[0069] There is a decorative surface (29) on the panel (A). The decorative surface (29) is on the parts that will be visible from the outside when the panels (A) are installed to each other. Therefore, there is no decorative surface (29) on the lower part of the insertion gap (10), the insertion gap lower thread (25), the screwing point wall (27), the screwing point (11), the tab support point (21), the panel end point (22), the screwing point outer wall (23), screwing point floor (24), bottom wall (16), first support foot (12), second support foot (13), third support foot (14), fourth support foot (15), fifth support foot (17) and the tab bottom surface (20). The decorative surface (29) makes it possible to change the appearance of the applied cladding. The decorative surface (29) also protects the panel (A) and the surface on which the panel (A) is applied from harmful rays from the sun' s rays. The decorative surface (29) can have endless design options, such as wood pattern, stone pattern, single color or multicolor. Decorative surface (29) can be personalized by painting it with colored non-flammable paints.

[0070] The panels (A) of the invention are preferably rectangular in shape and they are joined with each other at their long edges.

[0071] There is a shortening margin (30), as it may be necessary to shorten the joint space in some necessary situations during the installation of the panels (A). This shortening margin (30) provides the possibility of adjustment by shortening the tab (1) on the junction part. This ensures that application can be made at the end of assembly without disturbing the aesthetics.

[0072] There is a starting panel (B) that can be used when starting to apply the panels (A) of the invention to a surface, and an end panel (C) that can be used when the application is finished. By means of the starting panel (B) and the end panel (C), image continuity is achieved, and visual pollution is avoided at the beginning and end of the applied surface. Also, by means of the starting panel (B) and the end panel (C) installation can be completed without the need for cutting profiles in some cases. In the said starting panel (B) and end panel (C), the same locking system is used as in the panel (A). There is a tab (1) configuration on the start panel (B), and an insertion gap (10) on the end profile (C). All of the tab (1) and the insertion gap (10) structures on the panel (A), the start panel (B) and the end panel (C) are compatible with each other. Therefore, when installing on a surface, the surface cladding can be completed without disturbing the continuity of the image.

[0073] In an embodiment of the panel (A) of the invention, there are LED channels (28) on the sides of the first cell (4), the second cell (6) and the third cell (9). Thus, LED lighting system can be added on the panel (A) without disturbing the form.

[0074] In order to apply the panel (A) of the invention, first of all, the first panel (A) must be installed on the surface to be applied, then the tab (1) of a second panel (A) is brought close to the insertion gap (10) of the first panel (A) at an angle of approximately 10 degrees and the panels (A) are made parallel, then they are fixed to the surface with a fixing unit from the screwing point (11) and the installation process of the two panels (A) is com-

pleted. When the two panels (A) are installed together, the tab (1) of one panel (A) will cover the screwing point (11) of the other panel (A), so that the head of the fixing unit inside the screwing point (11) will not be visible. Thus, an aesthetic appearance will be provided.

[0075] Panel (A) has high UV resistance for outdoors due to its surface cladding feature and protects it from harmful rays by means of its UV refraction feature. Panel (A) is environmentally friendly, as it is 100% recyclable. Panel (A) is waterproof, unaffected by water, mold-proof, mothproof, anti-bacterial, and can survive for many years without deterioration where it is used. Panel (A) has non-combustible and does not propagate fire.

Claims

1. A panel (A), developed for use in indoor and outdoor surface cladding applications, the panel (A) comprises:

- a bottom wall (16), which prevents water and dust from passing behind the panel (A) and on which the parts that make up the panel (A) are located,
- the first cell (4), the second cell (6) and the third cell (9), which stand together through the said bottom wall (16) and are located on the bottom wall (16), to maintain the existing heat on the surface on which the panel (A) is applied,
- the first decorative recess surface (2) located between the first cell (4) and the second cell (6),
- the second decorative recess surface (7) located between the second cell (6) and the third cell (9),
- the first decorative protrusion surface (3) formed by the first cell (4) on the bottom wall (16),
- the second decorative protrusion surface (5) formed by the second cell (6) on the bottom wall (16),
- the third decorative protrusion surface (8), formed by the third cell (9) on the bottom wall (16),
- first support foot (12), second support foot (13), third support foot (14), fourth support foot (15) and fifth support foot (17) located underside of the bottom wall (16) that will come into contact with the surface where panel (A) will be installed,

characterized by comprising:

- insertion gap (10), integrated with the third cell (9), and having:
  - insertion gap lower groove (25) on the underside of the inlet,
  - insertion gap upper groove (26) on the underside of the inlet,
  - inner flat part of insertion gap (19);
- screwing point (11), located on the side of the panel (A) with the insertion gap (10), to ensure that the panel (A) can be fixed to the surface to which the panel (A) will be applied with a fixing element, and having:
  - screwing point floor (24), when positioned on the surface to which the panel (A) will be applied, is in contact with the relevant surface and is aligned with first support foot (12), second support foot (13), third support foot (14), fourth support foot (15) and fifth support foot (17),
  - screwing point walls (27) positioned on both sides to increase strength and to conceal the fixing element to be used,
  - screwing point outer wall (23),
  - panel end point (22) at the intersection of the outer surface of the screwing point outer wall (23) and the tab support point (21) on the far side from the third cell (9),
  - tab support point (21) located at the top of the screwing point outer wall (23) on the far side of the third cell (9) so that the panels (A) can stand parallel to each other;
- the tab (1), integrated with the first cell (4) so as to enter the said insertion gap (10) and to ensure that the panels (A) are locked together, and having:
  - the flat end part of the tab (18) positioned at the end, which progresses to the inner flat part of the insertion gap (19) during installation,
  - tab lower surface (20), which is located at the bottom, which contacts the tab support point (21) during installation, to ensure that the heights of the panels (A) are the same with each other and prevent the tendency of the panels (A) to protrude outwards;
- a decorative surface (29):
  - that is intended to change the appearance of the applied cladding,
  - that is used to protect the panel (A) and the surface on which the panel (A) is applied from harmful rays coming from sun, and
  - that may have of wood pattern, stone pattern, single color, or multi-color design options,
  - that is positioned on sections visible from outside when panels (A) are installed to each other,
  - that is not positioned on the underside of

the insertion gap (10), the insertion gap lower groove (25), the screwing point wall (27), the screwing point (11), the tab support point (21), the panel end point (22), the screwing point outer wall (23), the screwing point floor (24), the bottom wall (16), first support foot (12), second support foot (13), third support foot (14), fourth support foot (15) and fifth support foot (17) and tab bottom surface (20),

• the shortening margin (30), so as to be able to shorten the joint margin during installation of the panels (A).

2. The panel (A) according to claim 1, **characterized in that** the panel (A) is made of polymer-based material.

3. The panel (A) according to claim 1, **characterized in that** the panels (A) are rectangular or in any other geometrical figure and are joined to each other by their long sides.

4. The panel (A) according to claim 1, **characterized by comprising** LED channels (28) on the sides of the first cell (4), the second cell (6) and the third cell (9) so as to allow installation of the LED lighting system on the panel (A) without disturbing the form.

5. A surface cladding system, **characterized in that** the end flat part (18) of the tab (1) is brought to close to the insertion gap (10) at an angle of 10 degrees and the panels (A) are positioned parallel to each other and the tab (1) is inserted into the insertion gap (10) to ensure locking.

6. The surface cladding system according to claim 5, **characterized in that** when starting to apply the panels (A) to a surface, the starter panel (B) is used, which has the same tab (1) and insertion gap (10) structure as the panel (A).

7. The surface cladding system according to claim 5, **characterized in that** when finishing the application of the panels (A) onto a surface, the end panel (C) is used, which has the same tab (1) and insertion gap (10) structure as the panel (A).

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

1. A panel (A), developed for use in indoor and outdoor surface cladding applications, the panel (A) comprising:

• a bottom wall (16), which prevents water and dust from passing behind the panel (A) and on which the parts that make up the panel (A) are located,
• a first cell (4), a second cell (6) and a third cell (9), which stand together through the said bottom wall (16) and are located on the bottom wall (16), to maintain the existing heat on the surface on which the panel (A) is applied,
• a first decorative recess surface (2) formed by the bottom wall (16) located between the first cell (4) and the second cell (6),
• a second decorative recess surface (7) formed by the bottom wall (16) located between the second cell (6) and the third cell (9),
• a first decorative protrusion surface (3) formed by the first cell (4) on the bottom wall (16),
• a second decorative protrusion surface (5) formed by the second cell (6) on the bottom wall (16),
• a third decorative protrusion surface (8), formed by the third cell (9) on the bottom wall (16),
• a first support foot (12), a second support foot (13), a third support foot (14), a fourth support foot (15) and a fifth support foot (17) located on the underside of the bottom wall (16) that will come into contact with the surface on which the panel (A) will be installed,

characterized by comprising:

• an insertion gap (10), integrated with the third cell (9), and having:

◦ an inlet,
◦ an insertion gap lower groove (25) on the underside of the inlet,
◦ an insertion gap upper groove (26) on the underside of the inlet,
◦ an inner flat part of insertion gap (19);

• a screwing point (11), located on the side of the panel (A) with the insertion gap (10), to ensure that the panel (A) can be fixed to the surface to which the panel (A) will be applied with a fixing element, and having:

◦ a screwing point floor (24), which, when positioned on the surface to which the panel (A) will be applied, is in contact with the relevant surface and is aligned with first support foot (12), second support foot (13), third support foot (14), fourth support foot (15) and fifth support foot (17),
◦ screwing point walls (27) positioned on both sides to increase strength and to conceal the fixing element to be used,
◦ a screwing point outer wall (23),

◦ a panel end point (22) at the intersection of the outer surface of the screwing point outer wall (23) and the tab support point (21) on the far side from the third cell (9),
◦ a tab support point (21) located at the top of the screwing point outer wall (23) on the far side of the third cell (9) so that the panels (A) can stand parallel to each other;

• a tab (1), integrated with the first cell (4) so as to be adapted to enter the said insertion gap (10) and to ensure that the panels (A) can be locked together, and having:

◦ a flat end part of the tab (18) positioned at the end, which progresses to the inner flat part of the insertion gap (19) during installation,
◦ a tab lower surface (20), which is located at the bottom, which contacts the tab support point (21) during installation, to ensure that, in use, the heights of adjacent panels (A) are the same and prevent the tendency of the panels (A) to protrude outwards;

• a decorative surface (29):

◦ that is intended to change the appearance of the applied cladding,
◦ that is used to protect the panel (A) and the surface on which the panel (A) is applied from harmful rays coming from sun, and
◦ that may have of wood pattern, stone pattern, single color, or multicolor design options,
◦ that is positioned on sections visible from outside when panels (A) are installed to each other,
◦ that is not positioned on the underside of the insertion gap (10), the insertion gap lower groove (25), the screwing point wall (27), the screwing point (11), the tab support point (21), the panel end point (22), the screwing point outer wall (23), the screwing point floor (24), the bottom wall (16), first support foot (12), second support foot (13), third support foot (14), fourth support foot (15) and fifth support foot (17) and tab bottom surface (20),

• a shortening margin (30), so as to be able to shorten the joint margin during installation of the panels (A).

2. The panel (A) according to claim 1, **characterized in that** the panel (A) is made of polymer-based material.

3. The panel (A) according to claim 1, **characterized in that** the panel (A) is rectangular and the insertion gap (10) and the tab (1) are provided along its long sides.

4. The panel (A) according to claim 1, **characterized by comprising** LED channels (28) on the sides of the first cell (4), the second cell (6) and the third cell (9) so as to allow installation of the LED lighting system on the panel (A) without disturbing the form.

5. A method of realizing a surface cladding comprising a plurality of panels according to any of claims 1 to 4, **characterized in that** the end flat part (18) of the tab (1) is brought close to the insertion gap (10) at an angle of 10 degrees and the panels (A) are positioned parallel to each other and the tab (1) is inserted into the insertion gap (10) to ensure locking.

6. The method of realizing a surface cladding according to claim 5, **characterized in that** when starting to apply the panels (A) to a surface, a starter panel (B) is used, which has the same tab (1) and insertion gap (10) structure as the panel (A).

7. The method of realizing a surface cladding according to claim 5, **characterized in that** when finishing the application of the panels (A) onto a surface, an end panel (C) is used, which has the same tab (1) and insertion gap (10) structure as the panel (A).

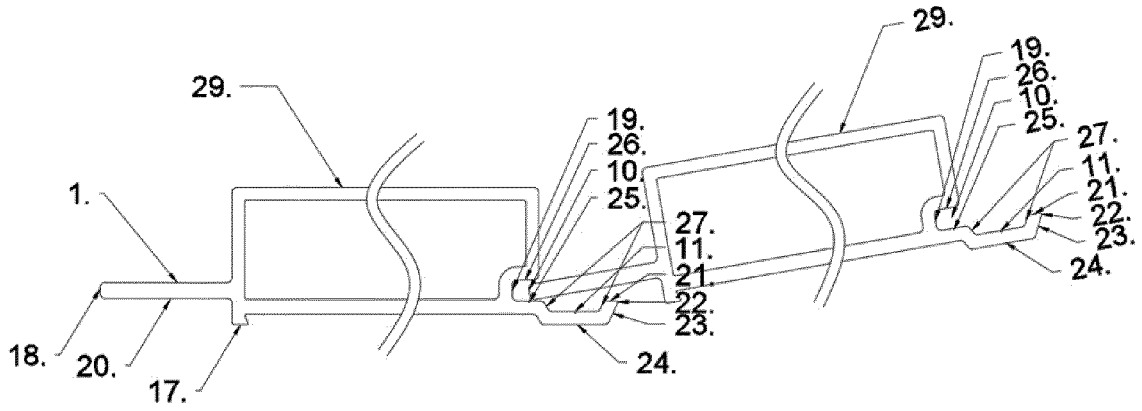

Figure-1a

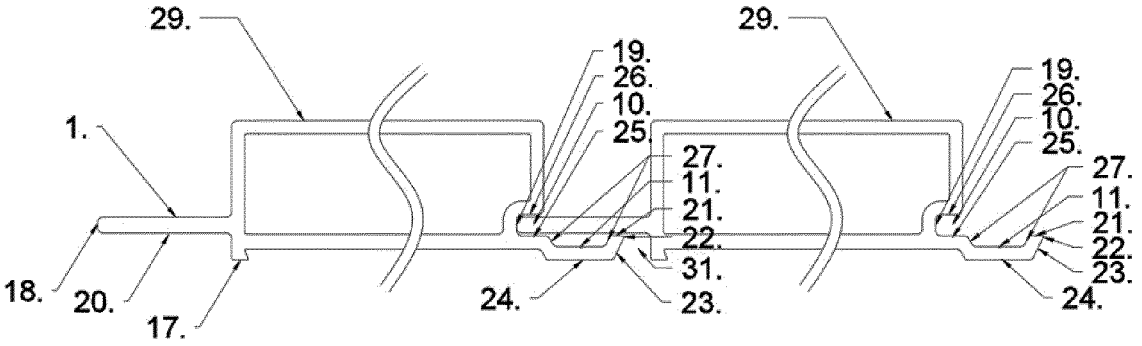

Figure-1b

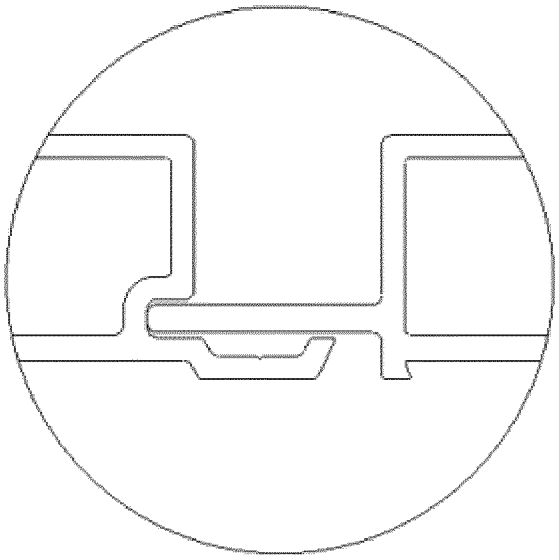

Figure-1c

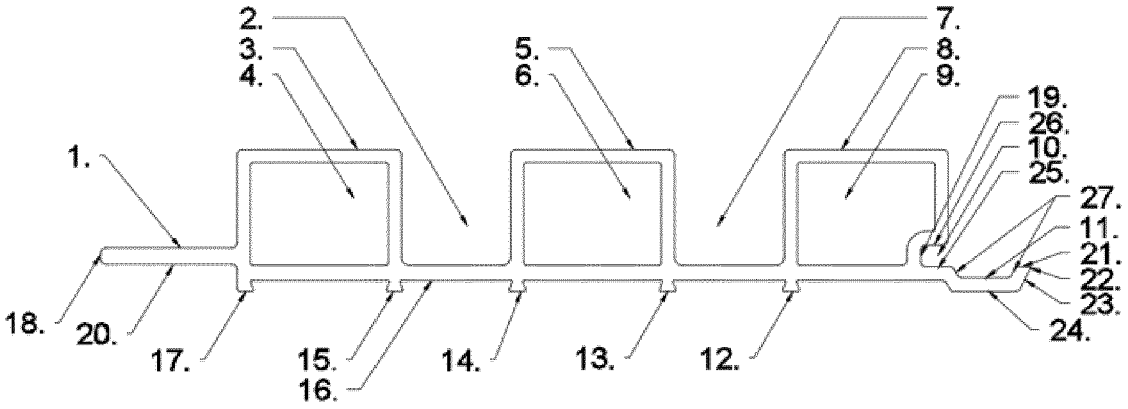

Figure-2

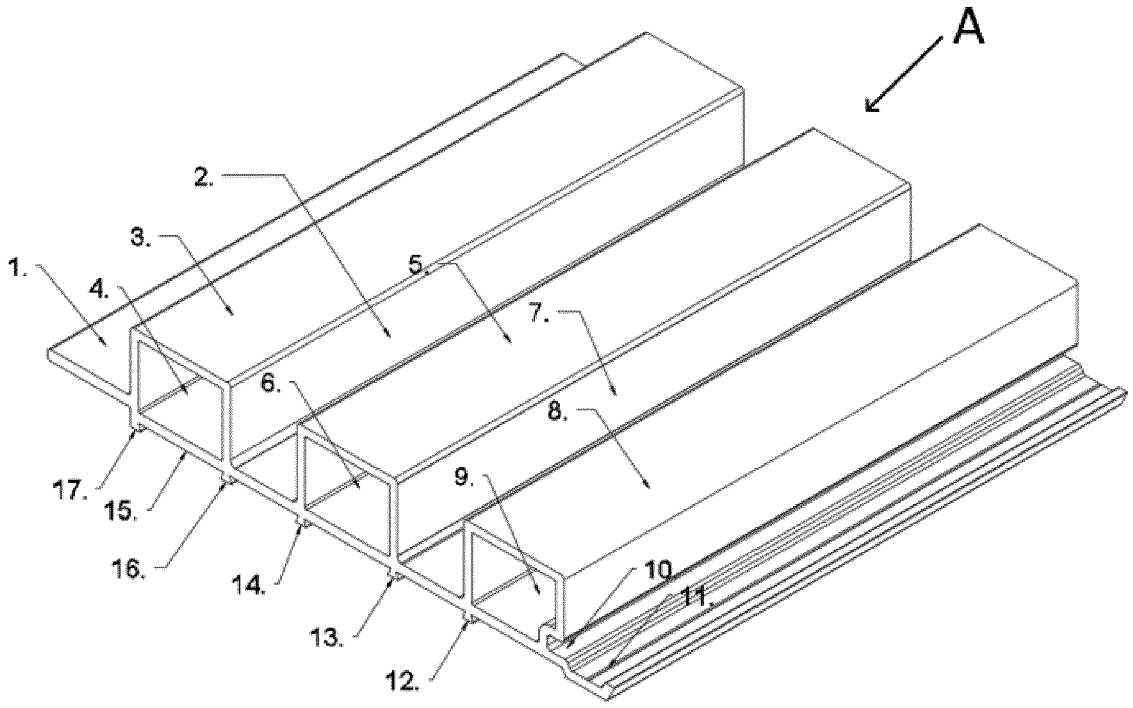

Figure-3

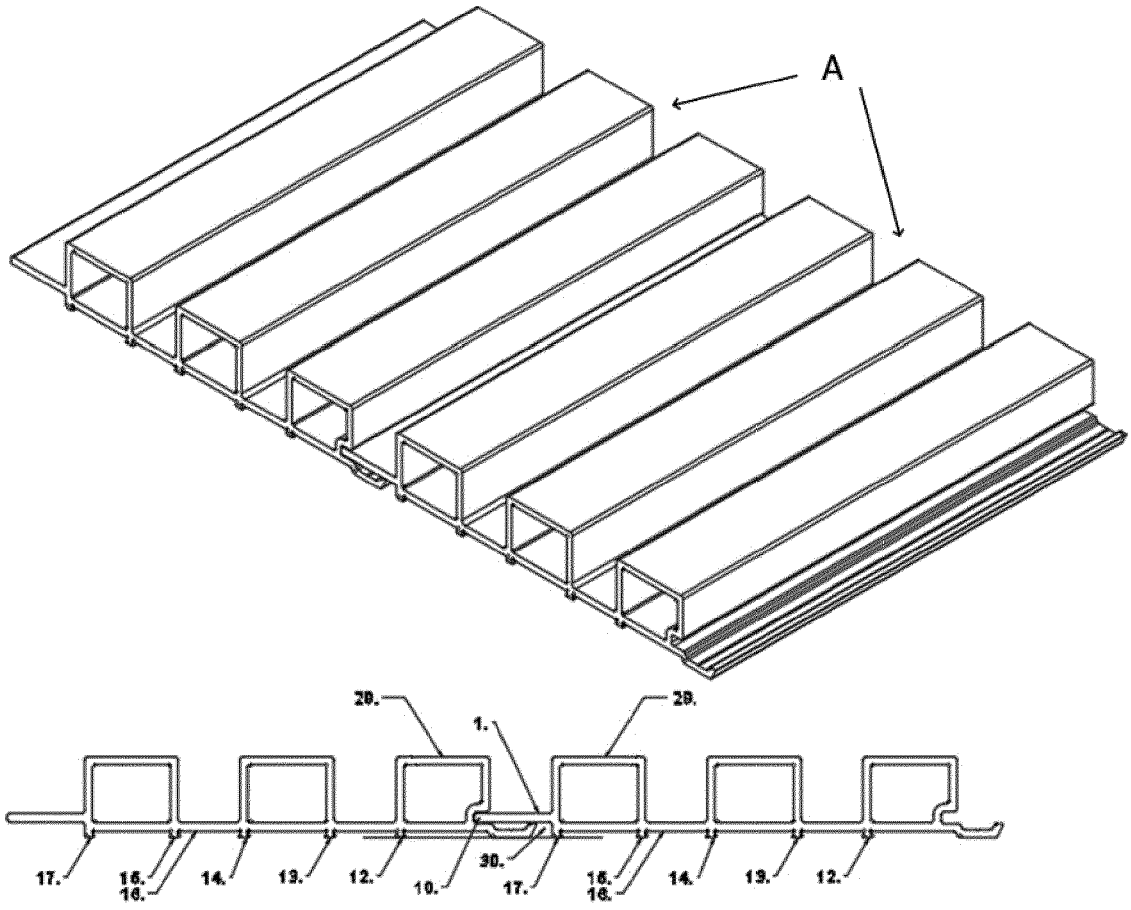

Figure-4

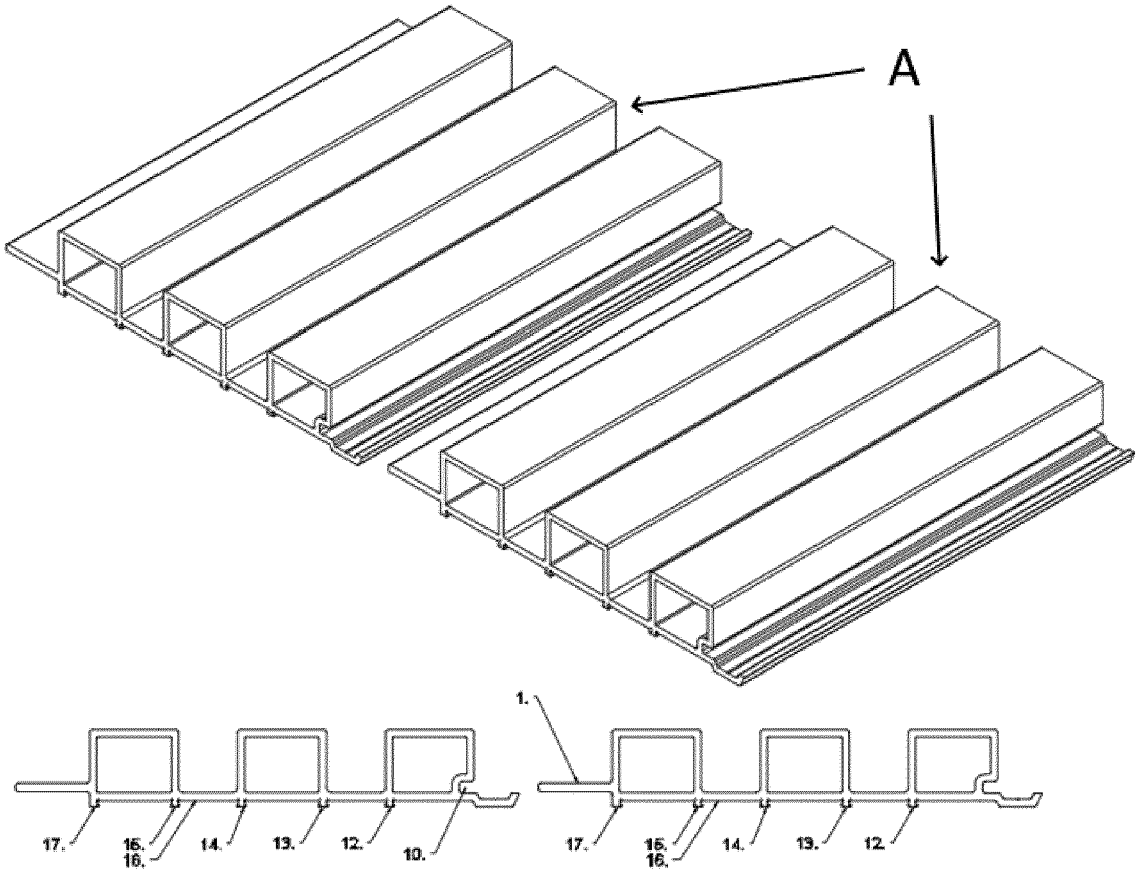

Figure-5

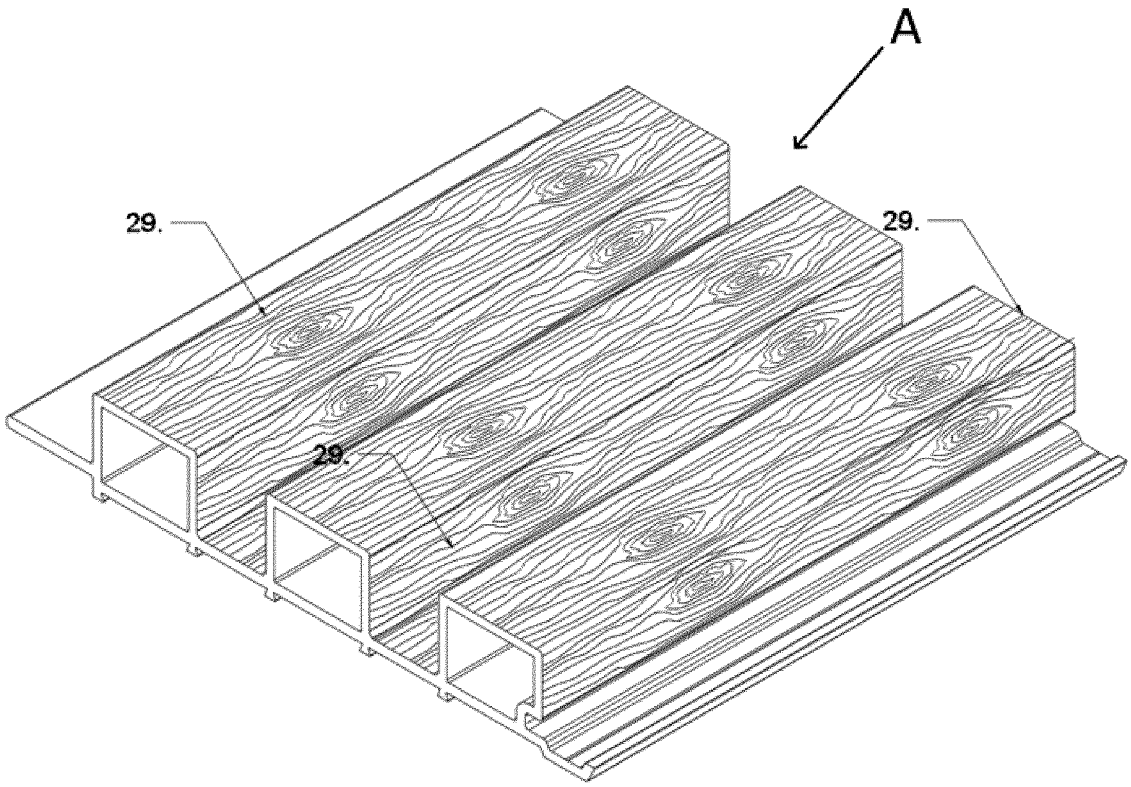

Figure-6

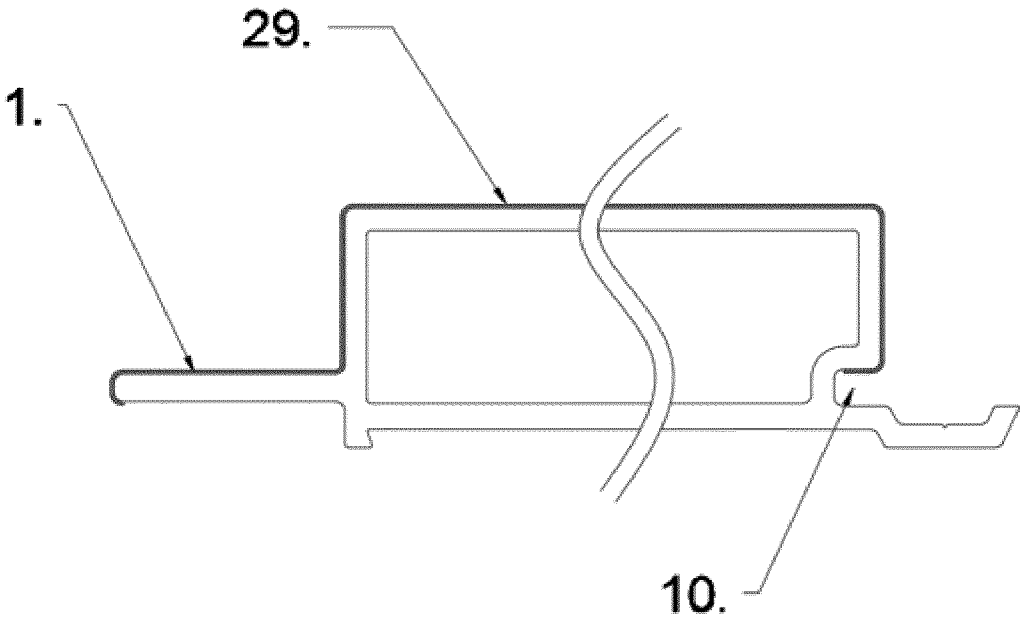

Figure-7

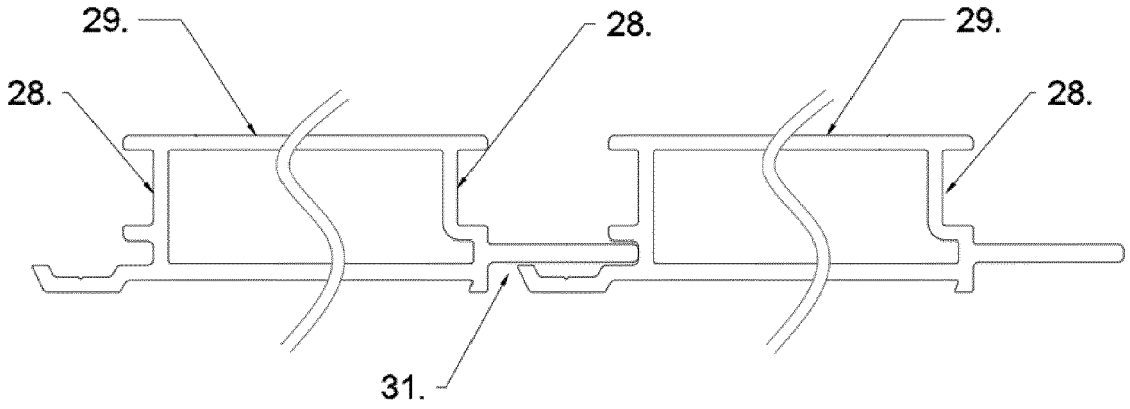

Figure-8

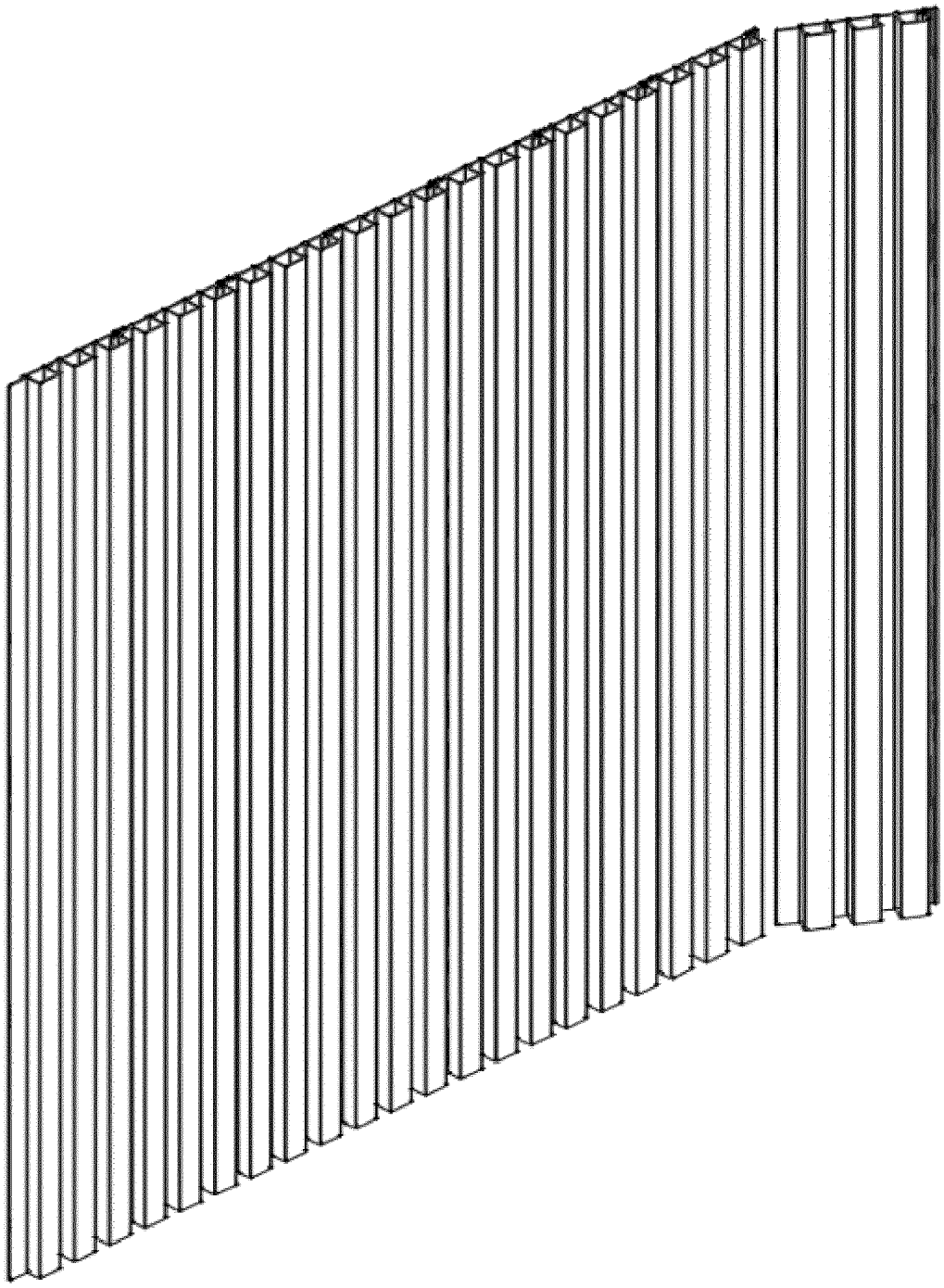

Figure-9

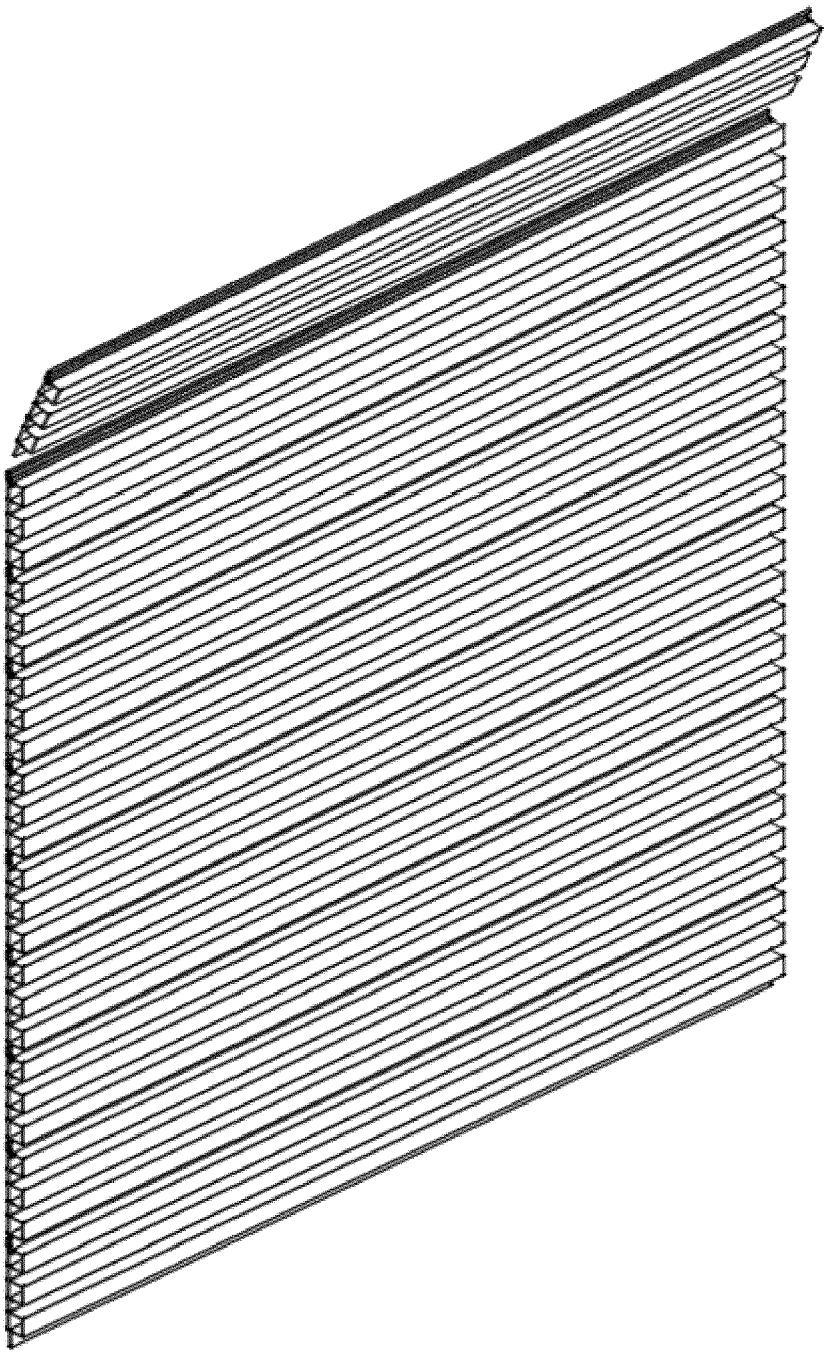

Figure-10

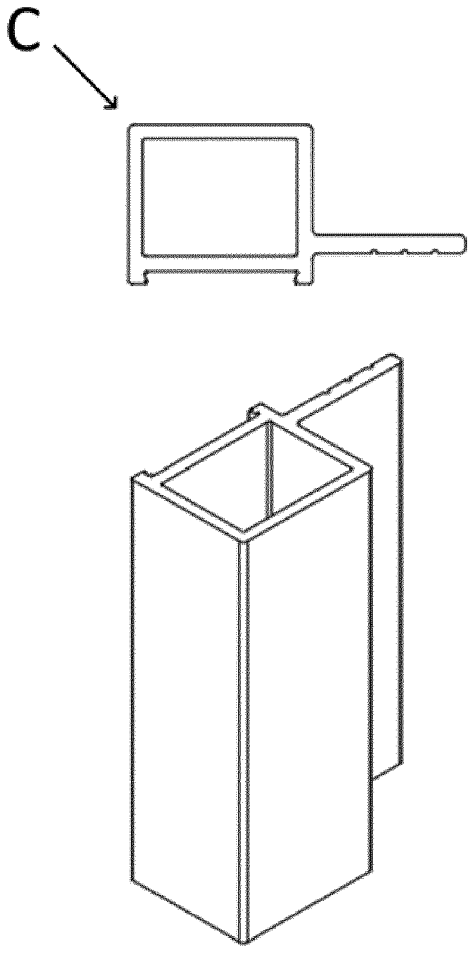

Figure-11

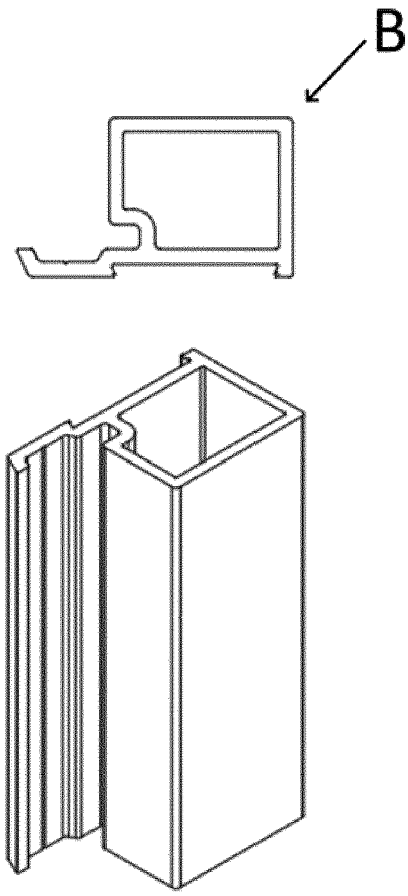

Figure-12

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European Patent Office
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EUROPEAN SEARCH REPORT

Application Number
EP 22 19 5867

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	EP 2 444 568 A2 (RODECA GMBH [DE]) 25 April 2012 (2012-04-25) * figures 5, 13 *	1-7	INV. E04F13/08 E04F13/18
A	DE 20 2007 011441 U1 (LAUKIEN GMBH & CO BETEILIGUNGE [DE]) 20 December 2007 (2007-12-20) * figure 1 *	1-7	

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	7 August 2023	Fournier, Thomas

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

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07-08-2023

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2444568 A2	25-04-2012	DE 202011003120 U1	27-07-2011
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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