

(19)



(11)

EP 4 826 191 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
21.10.2026 Bulletin 2026/43

(51) International Patent Classification (IPC):
E04F 13/08 ^(2006.01) **E04F 13/07** ^(2006.01)
E04F 13/24 ^(2006.01)

(21) Application number: **26164682.2**

(52) Cooperative Patent Classification (CPC):
E04F 13/0894; E04F 13/076; E04F 13/0835;
E04F 13/0837; E04F 13/24

(22) Date of filing: **13.03.2026**

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

(71) Applicant: **Kerama Group B.V.**
2652 XV Berkel en Rodenrijs (NL)

(72) Inventor: **BURK MONCLÚS, Donovan Alexander**
2652 XV Berkel en Rodenrijs (NL)

(74) Representative: **V.O.**
P.O. Box 87930
2508 DH Den Haag (NL)

(30) Priority: **14.03.2025 NL 2039983**

(54) **ASSEMBLY AND METHOD FOR CONNECTING PANELS TO A SUPPORT SURFACE**

(57) An Assembly (1) of a first and a second panel (2, 3) that can be connected to a support surface via a nail or screw type connector (25, 26) or via a snap-on connector (40, 42, 43) fitting into an opening (30, 31, 32).

The distance between the center line of the opening (30, 31, 32) and the end face of an overlap projection (17) of the first panel (2) is D1, the distance between

the center line of the opening (32) and an end face of a lower projection (13) of the second panel (3) is D2 and the distance between the center lines of the openings (31, 32) of the first and second panels (2, 3) is D3, wherein $D1 + D2 \leq D3$. In this way, the panels can be mounted without pivoting or horizontal displacement along the support surface.

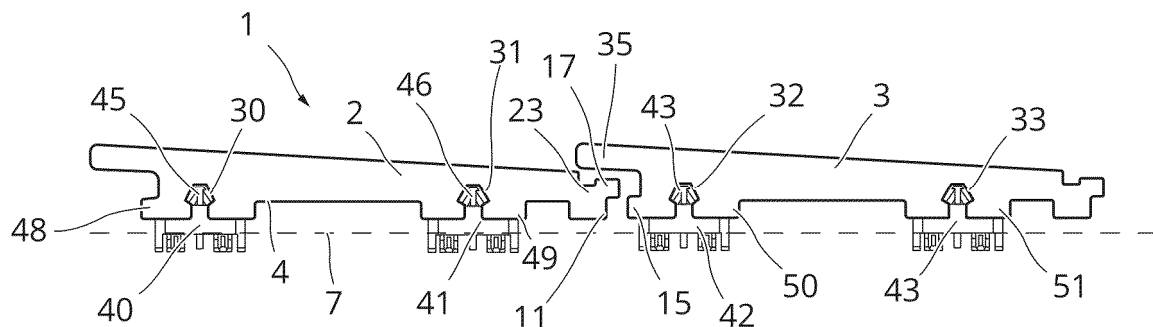


Fig. 2

Description

Technical Field

[0001] The invention relates to an assembly of panels for connecting to a support surface, and to a method of connecting such an assembly.

Background

[0002] Wall cladding systems cover exterior surfaces of a building with panels, planks, or shingles of a different material than the wall. The panels are installed over other materials used in construction for decorative and/or insulating purposes. Panels may also be connected to a floor surface to provide a floor covering.

[0003] There are many types of cladding available with a wide range of textures, colors, styles, and finishes.

[0004] Materials used in cladding systems can comprise wood, metal (zinc, stainless steel, bronze, copper, etc.), plastic, PVC, or laminates of these materials. Panels can comprise a core of rigid foam of polystyrene or polyurethane material or fiberglass or rock, or wood fiber, granules, or a combination thereof.

[0005] The known panels are connected to a wall or floor via nails, rivets, screws, or a snap-on connection having resilient projections extending from the wall or floor that fit resiliently fit into openings on the wall-side of the panels.

[0006] It is an object to provide an assembly of panels, and a method of attaching said panels to a support surface, which provides for rapid and reliable connection to a variety of support surfaces.

Summary

[0007] The invention relates to an assembly of a first and a second panel, each panel having a support side for placement on a support surface and a top side, the panels being adapted to be placed adjacent on the support surface and connected to the support surface via a nail or screw type connector extending from the top side or via a snap-on connector extending from the support side,

the first panel comprising a transverse side wall and an overlap projection extending transversely from the sidewall at a distance from the support surface, the second panel comprising a transverse side wall and a lower projection extending transversely from the sidewall along the support surface, the overlap projection of the first panel overlapping the lower projection of the second panel, a securement area being situated near the overlap projection for receiving a nail or screw type connector, wherein each panel comprises an opening extend-

ing from the support side for receiving a snap connector extending transversely to the support surface, wherein the distance between the center line of the opening and the end face of the overlap projection of the first panel is $D1$, the distance between the center line of the opening and end face of the lower projection of the second panel is $D2$ and the distance between the center lines of the openings of the first and second panels is $D3$, wherein $D1+D2 \leq D3$.

[0008] The panels can be connected to the support surface either via the nail or screw-type connectors or via the snap-on or click connectors. When using the snap-on connectors, the panels can be connected to these connectors without the need to slide the panels along the support surface or carrying out a pivoting action. This provides a flexible and versatile cladding system that can be applied on a variety of support structures such as walls and floors of building constructions. This is especially favourable when connecting rigid panels.

[0009] An embodiment of an assembly comprises a first and a second panel, each panel having a support side for placement on a support surface and a top side, the panels being adapted to be placed adjacent on the support surface and connected to the support surface via a nail or screw type connector extending from the top side or via a snap-on connector extending from the support side,

the first panel comprising a transverse side wall and an overlap projection extending transversely from the sidewall at a distance from the support surface, the second panel comprising a transverse side wall and a lower projection extending transversely from the sidewall along the support surface, the overlap projection of the first panel overlapping the lower projection of the second panel, a securement area being situated near the overlap projection for receiving a nail or screw type connector,

wherein each panel comprises an opening extending from the support side for receiving a snap connector extending transversely to the support surface, wherein the distance between the center line of the opening and the end face of the overlap projection of the first panel is $D1$, the distance between the center line of the opening and the transverse side wall of the second panel is $D2'$ and the distance between the center lines of the openings of the first and second panels is $D3$, wherein $D1+D2' > D3$.

[0010] Upon interconnecting the panels via the snap-on or click connectors, the panels are pivoted and/or bent into position. This is especially favourable when connecting panels that have a degree of flexibility, at

least at the position of the overlap projection.

[0011] The panels can for instance be made of Aluminium, PVC, a Wood Plastic Composite (WPC) or any combinations thereof. The panels conform to a class B fire rating of fire classification standard EN13501-1:2018. The panels may be connected to a KERALock or Grad-type click system.

[0012] In an embodiment of an assembly, the first panel comprises a top projection extending transversely from the sidewall along the top surface, at a distance from the lower projection, the top projection overlapping the overlapping projection of the second panel when the panels are interconnected via the snap connection.

[0013] As the top projections cover the underlying securement areas, the nail or screw-type connectors are shielded from view, and the interconnected panels have the same appearance when connected via the nail or screw type connectors and when connected via the snap-on connectors.

[0014] In another embodiment of an assembly, the overlap projection comprises the securement area, which is recessed for receiving a nail or screw, the top projection overlapping the securement area.

[0015] Each panel of the assembly may comprise two spaced-apart openings for receiving a respective snap connector.

[0016] The top sides of the panels may be placed at an angle to the support surface. The top side and support side can bound a hollow body, which may be filled with filler material, such as a foam material.

[0017] A method of connecting an assembly to a support surface comprises:

- providing parallel connector strips on the support surface, connecting a first panel with nails or screws to the support strip, and sliding a second panel parallel to the support surface against the first panel, with the lower projection below the overlap projection and connecting the other side of the panel to a second spaced apart connector strip via a nail or screw, or
- providing parallel rows of snap-on connectors on the support surface,
- connecting a first panel by placing the snap connectors into the first panel by moving the first panel towards the support surface and
- connecting the second panel by placing the snap-on connectors into the second panel, by moving the first panel towards the support surface without sliding the second panel in a direction along the support surface.

[0018] Another embodiment of a method of connecting an assembly of panels to a support surface comprises:

- providing parallel connector strips on the support

surface, connecting a first panel with nails or screws to the support strip, and sliding a second panel parallel to the support surface against the first panel, with the lower projection below the overlap projection and connecting the other side of the panel to a second spaced apart connector strip via a nail or screw, or

- providing parallel rows of snap-on connectors on the support surface,
- connecting a first panel by placing the snap connectors into the first panel by moving the first panel towards the support surface and
- connecting the second panel by placing the snap-on connectors into the second panel, by moving the first panel towards the support surface and pivoting the second panel transversely to the support surface, and or bending of the first panel.

Brief Description of the Drawings

[0019] Some embodiments of an assembly of panels according to the invention and a method of connecting these panels to a support surface, will by way of non-limiting example be described in detail with reference to the accompanying drawings. In the drawings:

Fig. 1 shows two interconnected panels attached to a support surface via nails, having a slanting top surface.

Fig. 2 shows the interconnected panels of the embodiment of fig. 1, wherein the panels are connected to the support surface via snap-on connectors.

Fig. 3 schematically shows the dimensions of the panels of figs. 1 and 2,

Fig. 4 shows an embodiment of interconnected panels that are attached to a support surface via nails, the panels having a level top surface,

Fig. 5 shows the interconnected panels of the embodiment of fig. 4, wherein the panels are connected to the support surface via snap-on connectors.

Fig. 6 shows an embodiment of two interconnected panels attached to a support surface via nails, having hollow elements.

Fig. 7 shows the interconnected panels of the embodiment of fig. 6, wherein the panels are connected to the support surface via snap-on connectors, and

Fig. 8 schematically shows the dimensions of the panels of figs. 6 and 7.

Detailed Description

[0020] Fig. 1 shows an assembly 1 of first panel 2 and second panel 3 of a substantially rigid material. The panels 2, 3 are placed with their support sides 4, 5 on a support surface 7 that is indicated with a dashed

line. The support surface 7 may be a wall or a floor, and can be comprised of wood, brick or concrete. The support surface 2 may be planar or may comprise individual support structures such as beams or strips onto which the panels 2, 3 are mounted.

[0021] The panels 2, 3 comprise a transverse sidewall 10, 11 with a lower projection 12, 13 that extends along the support surface 7. An overlap projection 17, 18 extends from an opposite transverse sidewall 15, 16, at a distance from the support surface 7. Securement areas 23, 24 are provided near a top surface 20, 21 of the panels in which a nail 25, 26 is driven through each panel 2, 3 for fixing the panel to the support surface 7.

[0022] Instead of using nails 25, 26, the panels can be connected to the support surface 7 by connectors such as rivets, screws, staples, pegs, and equivalent mechanical connectors. The connectors can be formed of metal, plastic, wood and any combination thereof.

[0023] The panels 2, 3 are at their support sides 4, 5 each provided with two openings 30, 31; 32, 33 for receiving a snap-on connector for attaching the panels to the support surface 7 without the use of nails 25, 26.

[0024] The panels at their top side 20, 21 comprise a top projection 34, 35 extending from the sidewalls 10, 11 to cover the securement areas 23, 24.

[0025] When attaching the panels to the support surface, the first panel 2 is placed in position, and the nail 25 is driven through the panel at the securement area 23. The securement area 23 is recessed to receive the head of the nail 25. Next, the second panel 3 is placed on the support surface 7 at some distance from the first panel 2 and is moved in a sideways direction along the support surface 7 such that the lower projection 13 is positioned below the overlap projection 17 of the panel 2 and the transverse sidewalls 11 and 15 of both panels 2 and 3 are in abutting contact.

[0026] The top projection 35 of the panel 3 is slid over the securement area 23 such that the lower surface of the projection 35 lies on the top surface 20 and the nail 25 is covered.

[0027] Then the nail 26 is driven through the second panel 3 at the recessed securement area 24, to fix this panel 3 in position and a next panel can be attached to the secured panel 3.

[0028] Figure 2 shows connection of the panels 2, 3 via snap-on connectors 40, 41, 42, 43 that are fixed to the support surface 7. The snap-on connectors comprise a tapered head section 45, 46 that can be compressed to fit into the narrow lower part of the holes 30-33 and that expands in the widened top part of the holes. At the support side 4, 5 the panels 2, 3 are provided with support strips 48, 49; 50, 51 that are of generally the same width, or of a slightly larger width, as the snap-on connectors 40-43.

[0029] When attaching the panels to the connectors 40-41, the first panel 2 can be placed with its openings 30, 31 above the connectors 40, 41 and then pressed

down in the direction of the support surface 7. Next, the panel 2 is placed with its openings 32, 33 above the connectors 42, 43 and is pressed down towards the support surface 7 until the connectors 32, 33 snap into position. The side walls 11, 15 of the panels 2, 3 are at spaced-apart positions, such that the panel 3 can be placed alongside the panel 2 without transverse movement along the support surface 7, or pivoting. The top projection 35 of the second panel 2 overlaps the securement area 23, so that the connected panels 2, 3 present the same visible impression as the panels that are connected by nails or similar connectors, that are shown in figure 1.

[0030] Figure 3 shows the distance D1 between the center line L1 of hole 31 for the snap-on connector 41 and the position Lo of the end face of the overlap projection 17 of the first panel 2. The distance between the hole 32 of the snap-on connector 42 of the second panel 3 and the position L1 of the end face of the lower projection 13 of the second panel 3 is D2. The distance between the holes 31 and 32 for the snap-on connectors in the first and second panels 2, 3 is D3. For the panels 2, 3 to be able to be connected to the connectors 41, 42, without movement of the panels along the support surface, either by sliding or by pivoting, D3 should be larger than or equal to D1+D2; $D3 \geq D1+D2$.

[0031] Figure 4 shows an assembly 59 of a first panel 60 of wider dimensions having two openings 65, 66 in the support side 74, 75 for forming a snap-on connection, and a narrower panel 61 having a single opening 67. An upper projection 62 extends from the sidewall 64 of the panel 60 and overlaps a lower projection 63 extending from sidewall 64' of the second panel 61. The securement areas 68, 69 are relatively wide and the top projections 72, 73 do not extend over the top surface 77 of the panel 60 so that the top surfaces of the panels 60, 61 are situated in the same plane.

[0032] Figure 5 shows the panels 60, 61 connected to the support surface via snap-on connectors 78, 79, wherein the end faces of the upper and lower projections 62, 63 are sufficiently spaced apart to allow connection of the panels 60, 61 with the connectors 78, 79 without a sliding or pivoting movement of the panels along the support surface.

[0033] Figure 6 shows an assembly 81 of a first panel 82 and a second panel 83 of hollow elements, each having a transverse wall 84, 85 with a lower projection 86, 87 that is fixed to a support surface 88 via nails 89, 90. The walls 84, 85 comprise a slanted shoulder part 91, 96, with an angle of for instance about 30 degrees. An overlap projection 92, 93 of relatively large dimension extends from each transverse wall 94, 95. The overlap projections 92, 93 can upon connection of the panels 82, 83 to the snap on connectors, pivot with their rounded edge along the shoulder part 91, 96. Openings 97, 98 are provided in the lower surface 100, 101 of the panels 82, 83 for receiving snap-on connectors.

[0034] Figure 7 shows the panels 82,83 connected to the support surface 88 via snap-on connectors 105, 106. When first panel 81 is connected, the lower projection 87 is placed underneath the overlap projection 92, by pivoting the second panel 83, prior to pushing it down with its opening 98 over the connector 106.

[0035] The flexible nature of the panels, especially at the position of the projections 86, 87, 92, 93 allows the interconnection of the panels using the snap-on connectors 105, 106, even though, as shown in figure 8, the holes for receiving the connectors 105, 106 are mutually spaced at a distance D3. The distance D1 between the hole 97 of connector 105 and the overlap projection 92 of panel 82, and the distance D2' between the hole of connector 106 and the transverse sidewall 85 of the second panel 83, are such that $D3 < D1 + D2'$ such that the panels have to be able to pivot and/or partly flex and bend upon their interconnection.

Claims

1. Assembly (1, 59) of a first and a second panel (2, 3; 60, 61), each panel having a support side (4, 5; 74, 75) for placement on a support surface (7, 80) and a top side (20, 21; 72, 73), the panels being adapted to be placed adjacent on the support surface and connected to the support surface via a nail or screw type connector (25, 26; 70, 71) extending from the top side (20, 21; 72, 73) or via a snap-on connector (40, 42, 43; 78, 79) extending from the support side (4, 5; 74, 75),

The first panel (2, 60) comprising a transverse side wall (11, 64) and an overlap projection (17, 62) extending transversely from the side-wall (11, 64) at a distance from the support surface (7, 80),

the second panel (3, 61) comprising a transverse side wall (15, 64') and a lower projection (13, 63) extending transversely from the side-wall (15, 64') along the support surface (7, 80), the overlap projection (17, 62) of the first panel overlapping the lower projection (13, 63) of the second panel, a securement area (23, 24; 68, 69) being situated near the overlap projection (17, 62) for receiving a nail or screw type connector (25, 26; 70, 71),

wherein each panel comprises an opening (30, 31, 33; 65, 6, 67) extending from the support side for receiving a snap connector (40, 41, 43; 78, 79) extending transversely to the support surface (7, 80), wherein the distance between the center line of the opening (31, 65) and the end face of the overlap projection (17, 62) of the first panel (2, 60) is D1, the distance between the center line of the opening (32, 67) and end face of the lower projection (13, 63) of

the second panel (3,61) is D2 and the distance between the center lines of the openings (31, 32; 65, 67) of the first and second panels (2, 3; 60, 61) is D3, wherein $D1 + D2 \leq D3$.

2. Assembly (81) of a first and a second panel (82, 83), each panel having a support side (100, 101) for placement on a support surface (88) and a top side, the panels being adapted to be placed adjacent on the support surface and connected to the support surface via a nail or screw type connector (89, 90) extending from the top side or via a snap-on connector (105, 106) extending from the support side (100, 101),

The first panel (82) comprising a transverse side wall (94) and an overlap projection (92) extending transversely from the sidewall (94) at a distance from the support surface (88), the second panel (83) comprising a transverse side wall (85) and a lower projection (87) extending transversely from the sidewall (85) along the support surface (88), the overlap projection (92) of the first panel (82) overlapping the lower projection (87) of the second panel (83), a securement area being situated near the overlap projection for receiving a nail or screw type connector (89, 90),

Wherein each panel (82, 83) comprises an opening (97, 98) extending from the support side (100, 101) for receiving a snap connector (105, 106) extending transversely to the support surface (88), wherein the distance between the center line of the opening (97) and the end face of the overlap projection (92) of the first panel is D1, the distance between the center line of the opening (98) and the transverse side wall (85) of the second panel (83) is D2' and the distance between the center lines of the openings (97, 98) of the first and second panels (82, 83) is D3, wherein $D1 + D2' > D3$.

3. Assembly according to claim 1 or 2, wherein the first panel comprises a top projection extending transversely from the sidewall along the top surface, at a distance from the lower projection, the top projection overlapping the overlapping projection of the second panel when the panels are interconnected via the snap connection.
4. Assembly according to claim 3, wherein the overlap projection comprises the securement area, which is recessed for receiving a nail or screw, the top projection overlapping the securement area.
5. Assembly according to any of the preceding claims, each panel comprising two spaced-apart openings for receiving a respective snap connector

tor.

6. Assembly according to any of the preceding claims, the top sides of the panels being placed at an angle to the support surface. 5
7. Assembly according to any of the preceding claims, the top side and support side bounding a hollow body. 10
8. Assembly according to claim 7, wherein the hollow body is filled with filler material, such as a foam material.
9. Assembly according to claim 2 and any claims 3-8, wherein the sidewalls (84,85) have a slanted shoulder part (91, 96) for guiding of the overlap projection (92,93). 15
10. Assembly according to claim 9, wherein the overlap projection (92,93) is of a rounded shape for sliding along the shoulder part (91, 96). 20
11. Panel adapted to be used in an assembly according to any of the preceding claims. 25
12. Method of connecting an assembly according to any claims 3 to 8 in combination with claim 1, to a support surface comprising: 30
 - providing parallel connector strips on the support surface, connecting a first panel with nails or screws to the support strip, and sliding a second panel parallel to the support surface against the first panel, with the lower projection 35
 - below the overlap projection and connecting the other side of the panel to a second spaced apart connector strip via a nail or screw, or
 - providing parallel rows of snap-on connectors on the support surface, 40
 - connecting a first panel by placing the snap connectors into the first panel by moving the first panel towards the support surface and
 - connecting the second panel by placing the snap-on connectors into the second panel, by moving the first panel towards the support surface without sliding the second panel in a direction along the support surface. 45
13. Method of connecting an assembly according to any claims 3 to 8 in combination with claim 2, or claims 9-10 to a support surface comprising: 50
 - providing parallel connector strips on the support surface, connecting a first panel with nails or screws to the support strip, and sliding a second panel parallel to the support surface against the first panel, with the lower projection 55

below the overlap projection and connecting the other side of the panel to a second spaced apart connector strip via a nail or screw, or

- providing parallel rows of snap-on connectors on the support surface,
- connecting a first panel by placing the snap connectors into the first panel by moving the first panel towards the support surface and
- connecting the second panel by placing the snap-on connectors into the second panel, by moving the first panel towards the support surface and pivoting the second panel transversely to the support surface, and or bending of the first panel.

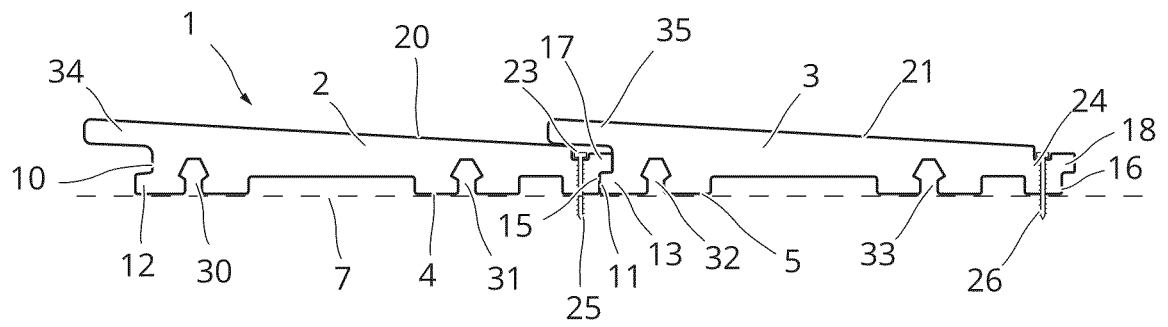


Fig. 1

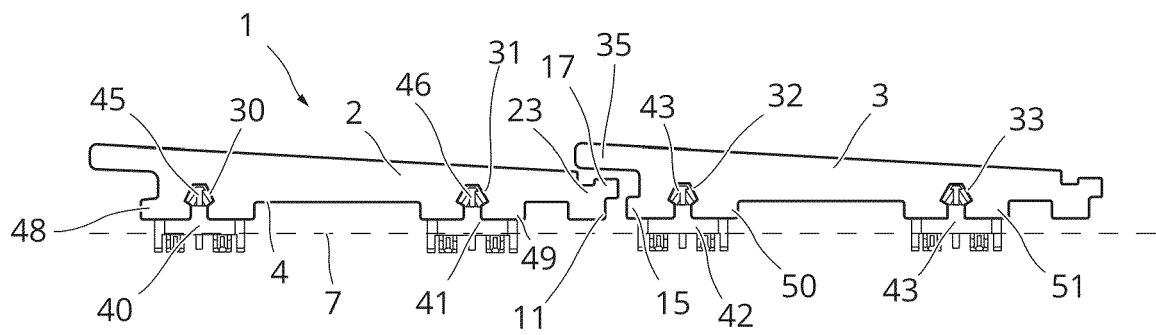


Fig. 2

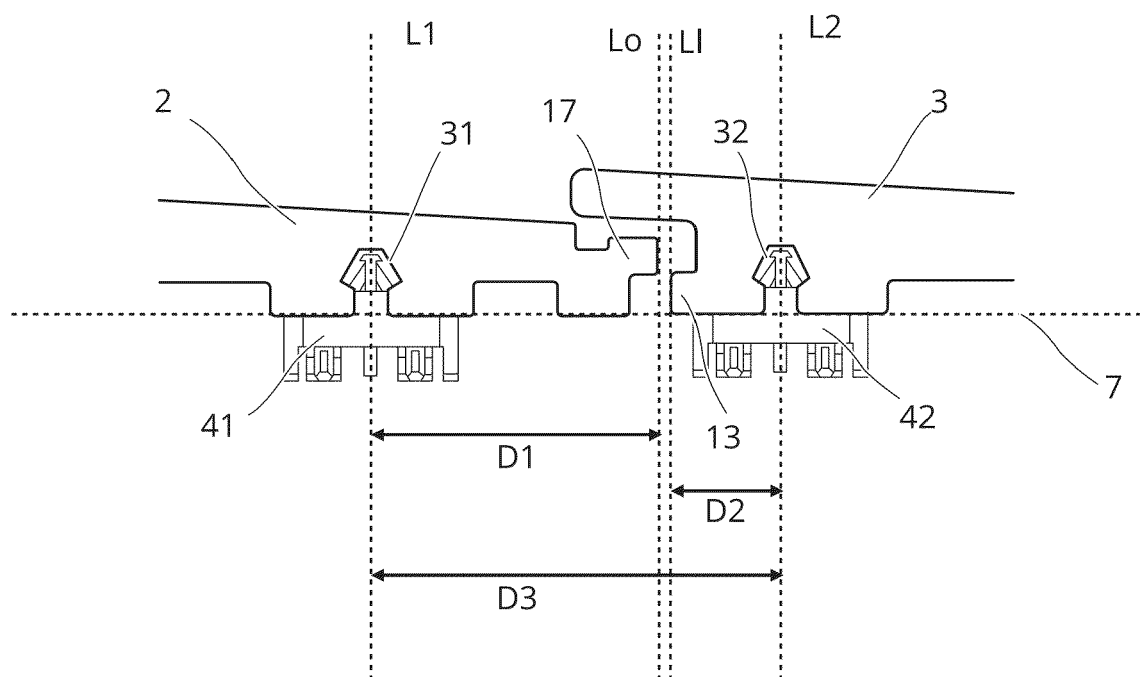


Fig. 3

Fig. 4

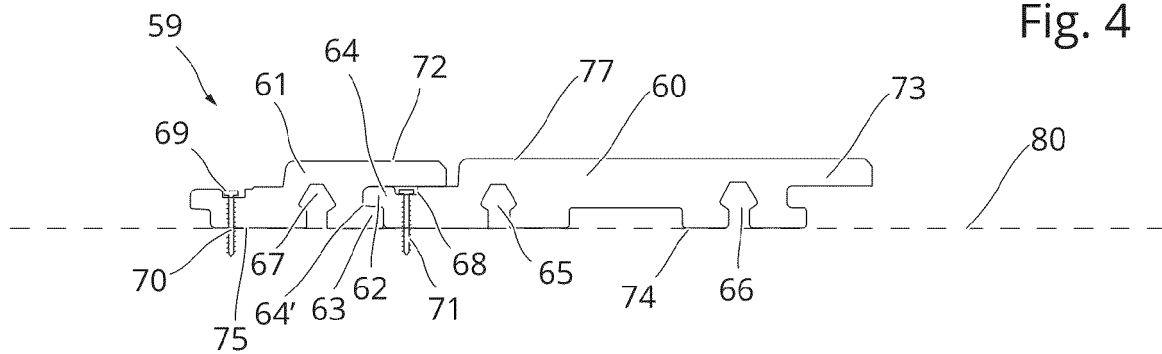


Fig. 5

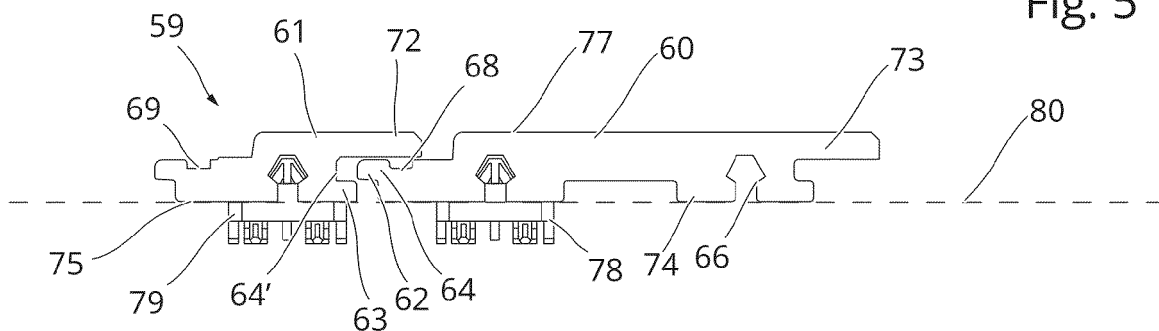


Fig. 6

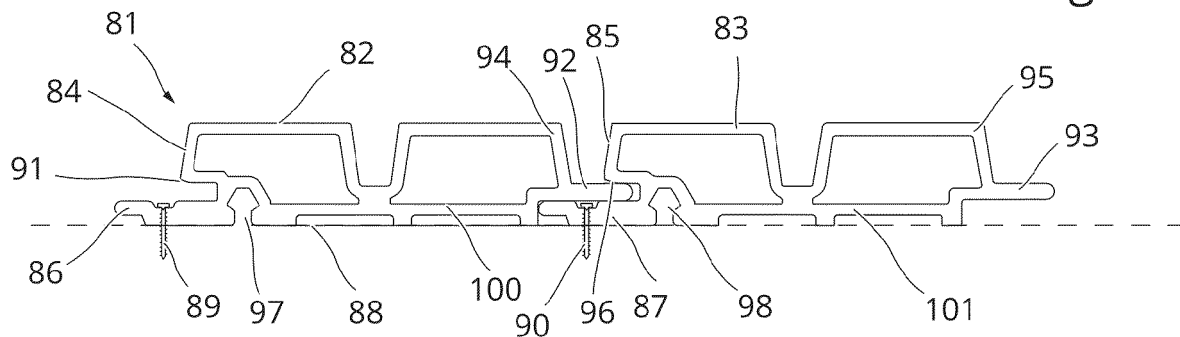
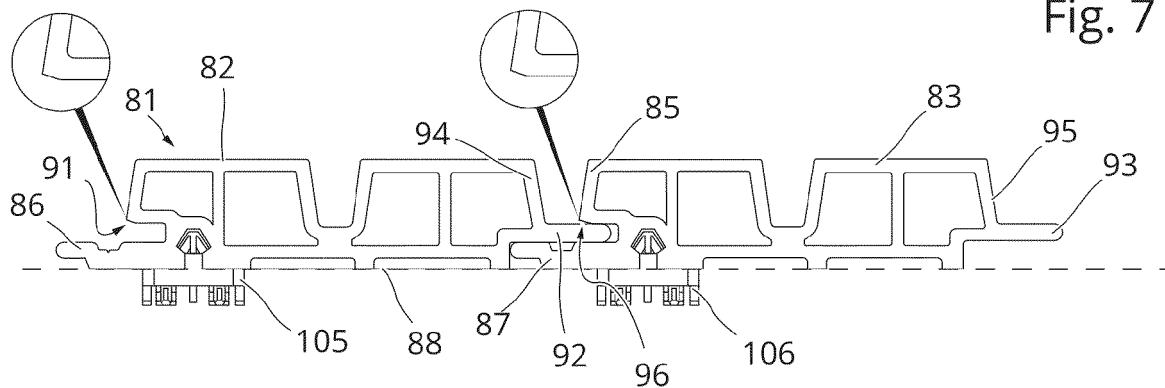


Fig. 7



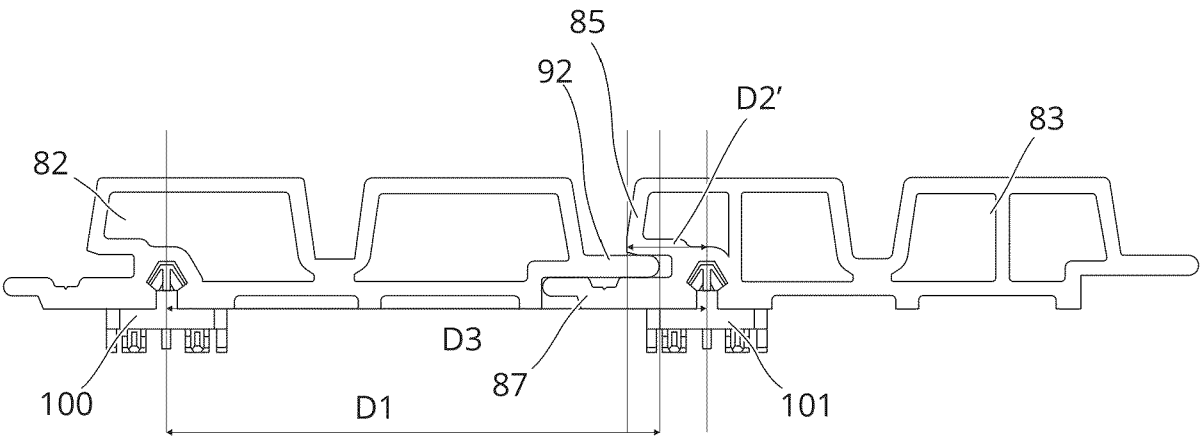


Fig. 8



EUROPEAN SEARCH REPORT

Application Number

EP 26 16 4682

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	CN 109 184 107 A (JIAXING JIAZHIMENG NEW MAT CO LTD) 11 January 2019 (2019-01-11) * figures 1,2 *	1-13	INV. E04F13/08 E04F13/07 E04F13/24
A	US 2020/354968 A1 (ATTEBERY II HAROLD C [US]) 12 November 2020 (2020-11-12) * figures 1a,1c *	1-13	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			E04F
Place of search		Date of completion of the search	Examiner
Munich		15 September 2026	Topcuoglu, Sadik Cem
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 26 16 4682

5

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

15-09-2026

10

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CN 109184107	A	11-01-2019	NONE

US 2020354968	A1	12-11-2020	NONE

15

20

25

30

35

40

45

50

55

EPO FORM P0459

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