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(54) **A deck system and floor panel for a deck system**

Decksystem und Bodenplatte für ein Decksystem

Système de pont et panneau de plancher pour système de pont

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Description

BACKGROUND OF THE INVENTION

[0001] The invention relates to deck system, and a floor panel for a deck system.

[0002] US6637163 describes a deck including a panel, a retainer and a fastener. The panel includes a flange having an aperture therein. The retainer includes an upper leg and a lower leg embracing the flange therebetween, with the lower leg having a fastener receiving opening. The fastener is for attaching the panel to structural framework, with the fastener including a shoulder. The fastener extends through the aperture of the flange and the opening of the lower leg of the retainer. The shoulder extends through the aperture in the flange and abuts against the lower leg of the retainer to secure the retainer. Furthermore, the shoulder is sufficiently tall as to prevent the fastener from tightly clamping the flange. Additionally, the flange embraced between the upper leg and the lower leg of the retainer is adapted to expand between the upper leg and the lower leg.; Therefore, thermal expansion of the panel is accommodated.

[0003] US6324796 describes a decking system for placement on a subassembly having at least two spaced apart joists. A plurality of elongated tubular elements for placement in lateral interlocking engagement with each other transversely of and spanning the distance between the joists. Each of said plurality of elements having a top portion, a bottom portion, and first and second side walls connecting said top and bottom portions. The top portion extends laterally beyond the first side wall and has formed thereon a downwardly extending longitudinal flange. The bottom portion extends laterally beyond the second side wall and has formed thereon an upwardly extending longitudinal wall defining an upwardly opening channel adjacent the second side wall adapted to receive therein in watertight relation the downwardly extending longitudinal flange. The bottom portion having formed therein a plurality of apertures intermediate the second side wall and the upwardly extending longitudinal wall, adapted for the insertion of fasteners therethrough for engagement with the joists

[0004] There is room for improvement of panels for outdoor decks, in particular for instance for terraces.

SUMMARY OF THE INVENTION

[0005] It is an object of the invention to provide an improved panel for outdoor use.

[0006] The invention furthermore or additionally has the object of providing a panel that is easy to produce, easy to place, and with new architectural possibilities.

[0007] The invention further or additionally provides a deck system of panels that are in lateral interlocking engagement but allowing the panels to expand and contract in their transverse direction due to environmental influences, and remain in interlocking engagement.

[0008] For that purpose the invention provides a deck system of claim 1.

[0009] In particular, the invention provides a deck system wherein said first coupling part comprises a first longitudinal ledge extending in transverse direction from the first side wall and at a normal distance from said bottom side, said second coupling part comprises a lower longitudinal ledge extending in longitudinal direction and in transverse direction away from said floor panel body and at a normal distance from said top side, wherein the first longitudinal ledge and the lower longitudinal ledge in transvers direction overlap each other,
wherein one of the first longitudinal ledge and the lower longitudinal ledge comprises a receiving groove having a receiving groove width and the other one of the first longitudinal ledge and the lower longitudinal ledge comprises a snap-lip having a snap-lip width, and
wherein the receiving groove and the snap-lip are provided for snap-fitting into one another, at least one of the receiving groove width and the snap-lip width being flexibly resilient, for allowing said floor panels to expand in transverse direction.

[0010] In particular, when a floor panel is fixed to a substrate along one longitudinal edge, the flexible parts allow floor panels to expand.

[0011] In an embodiment, the first longitudinal ledge comprises the receiving groove opening in the direction of the bottom side and the lower longitudinal ledge comprises the snap-lip extending in the direction of the top side.

[0012] In an embodiment, the receiving groove comprises a resilient, slanted lip extending from a receiving groove wall for providing the flexible, resilient receiving groove width, in particular comprises a resilient, upwardly slanted lip extending from a lower part of said longitudinal edge.

[0013] In an embodiment, the snap-lip comprises comprising a first resilient longitudinal lip and a second resilient longitudinal lip at a transverse distance from said first resilient longitudinal lip, for providing the flexible, resilient snap-lip width.

[0014] In an embodiment, the second coupling part further comprises an upper longitudinal ledge extending in longitudinal direction and in transvers direction away from the floor panel body, the first longitudinal ledge dimensioned for extending in abutment with a lower surface of the upper longitudinal ledge.

[0015] In an embodiment, the first and second resilient longitudinal lips in transvers direction spaced apart 1%-5% of an upper surface width of said floor panels and designed to allow edges of said first and second resilient longitudinal lips to touch one another. The combination of mutual distance, length and flexibility allows the thickness of the combination of lips to change and thus be able to take up at least part of expansion and shrinkage of the floor panels in transvers direction due to temperature fluctuations. Thus, the flexible lips provide a second coupling part that allows snap-fitting and take up dimen-

sional fluctuations.

[0016] In an embodiment, an edge of the upwardly slanted lip in transverse direction in unmounted state to the floor panels designed to flex a distance of 1%-5% of an upper surface width in transverse direction towards said floor panel.

[0017] In an embodiment, the first longitudinal ledge comprising a lower abutment rib extending from its lower surface, the lower abutment rib providing a side wall of the receiving groove.

[0018] In an embodiment, the second coupling part further comprises an upper longitudinal ledge extending in longitudinal direction, in transverse direction away from said floor panel body and comprising a lower abutment surface for said first longitudinal ledge.

[0019] In an embodiment, the first coupling part comprises a first longitudinal ledge extending in transverse direction from the first side wall, said first longitudinal ledge comprising an upper abutment rib on its upper surface and a lower abutment rib extending from its lower surface, and a resilient, upwardly slanted lip extending from a lower part of said longitudinal edge.

[0020] In an embodiment, the second coupling part comprises an upper longitudinal ledge extending in longitudinal direction and in transverse direction away from said floor panel body and comprising a lower abutment surface for said upper abutment rib and a lower longitudinal ledge extending in longitudinal direction and in transverse direction away from said floor panel body and at a normal distance from said upper longitudinal ledge and comprising a first resilient longitudinal lip and a second resilient longitudinal lip at a transverse distance from said first resilient longitudinal lip, and wherein said lower longitudinal ledges are fixed to a substructure, and said first coupling part of said first floor panel provides a lateral, interlocking engagement with said second coupling part of said second floor panel.

[0021] In an embodiment, said first longitudinal ledge is dimensioned for extending the upper abutment lip in abutment with said lower surface of said upper longitudinal ledge.

[0022] In an embodiment, the first and second resilient longitudinal lips are in transvers direction spaced apart 1%-5% of an upper surface width of said floor panels and designed to allow edges of said first and second resilient longitudinal lips to touch one another when a force is exerted that pushes the lips together.

[0023] In an embodiment, an edge of said upwardly slanted lip is designed such that in transverse direction in unmounted state to the floor panels it is allowed to flex a distance of 1%-5% of an upper surface width in transverse direction towards said floor panel.

[0024] The invention further relates to a floor panel for a deck system according to claim 1

[0025] By using similar floor panels that each comprise these first and second coupling parts, and engaging the first coupling part of one floor panel with the second coupling part of a second floor panel, the floor panels are allowed to expand and contract in transvers direction, i.e., their width, and still remain in interlocking engagement.

[0026] The floor panels can be used in particular for constructing for instance boat docks, piers, decks, patios, walkways, pontoon boat floors, and specifically terrace floors.

[0027] As mentioned before, in the past many floor panels were proposed that are made from, or largely consist of, polymer material. Often, the polymer material comprises a filler to make these panels even more weather resistant, and/or even more wear resistant. Many manufacturers were of the opinion that making such panels already provides a durable deck. The amount of expansion and contraction in particular due to thermal expansion and contraction, however, was always underestimated.

[0028] In one embodiment the floor panels further comprises floor panel coupling parts along an edge for coupling to similar panels. The first and second coupling parts of the current invention can also be seen as so-called tongue-and-groove. In that way floor panels can for instance be assembled into a complete deck.

[0029] Further embodiments are described in depending claims.

SHORT DESCRIPTION OF THE DRAWINGS

[0030] In the attached figures an embodiment of a floor panel is shown in which:

Figure 1 shows a cross sectional view cross to the longitudinal direction, i.e. in transverse direction, of an embodiment of a floor panel;

Figures 2A-2C show subsequent views of the floor panel of figure 1 showing several steps in coupling two panels along their longitudinal sides.

DETAILED DESCRIPTION OF THE DRAWINGS

[0031] Figure 1 shows a transverse cross section of a floor panel 1. Floor panel 1 has a floor panel body 2. Floor panel body 2 has an upper face 3 and a lower face 4. Floor panel 1 extends in longitudinal direction. Two similar floor panels 1 can be placed such that they engage one another lateral and interlocking. To that end, each floor panel 1 has a first floor panel coupling part 5 along one longitudinal edge and a second floor panel coupling part 6 along its opposite longitudinal edge. The floor panel 1 has a longitudinal axis running normal to the paper, a lateral or transvers axis running here parallel to the layer indicated with reference number 13, and a normal axis running normal to the layer indicated with reference number 13.

[0032] In figure 1, Normal (N), longitudinal (L, normal to the paper) and Transvers (T) are indicated.

[0033] In the embodiment shown in figure 1, the floor

panel 1 has a floor panel body 2 that comprises an upper wall 7, and a lower wall 8. The upper wall 7 and the lower wall 8 are here parallel and at a distance from one another. Floor panel body 2 further comprises a first side wall 9 and a second side wall 10 opposite the first side wall 9. The first and second side walls 9, 10 extend in longitudinal direction and in thickness direction, and connect the upper and lower walls 7 and 8. In this embodiment, the floor panel body 2 comprises additional internal walls 11 that connecting the upper wall 7 with the lower wall 8. Longitudinally expending air chambers 12 are enclosed by upper and lower walls 7 and 8 and by the internal walls and the first and second side walls 9, 10. Often, such a floor panel is produced in an extrusion process of a polymer material. Often, the polymer material comprises fillers. These fillers may be silicon-based, and/or cellulose based.

[0034] In the embodiment of figure 1, the floor panel comprises an upper surface layer 13. Such an upper surface layer 13 may be co-extruded with the further floor panel 1. Other processes, however, may also be used, like a two-stage extrusion where the surface layer 13 is applied on the floor panel 2.

[0035] In an embodiment, the surface layer 13 is a material comprising more than 50% by weight of rice husk and less than 50% by weight of polymer material. In particular, it comprises between 70 and 90 % by weight of rice husk and between 30% and 10 by weight of polymer material. In particular, a material sold under the trade name Resysta® was found to be very suitable.

[0036] In an embodiment, the floor panel is mainly (excluding the upper surface layer 13) composed of polyvinyl chloride (PVC). This material is durable and can be recycled. Other materials that may be used are for instance polyethylene (PE), Nylon (polyamide, PA), polyester like for instance PET. These polymer materials may comprise fillers like for instance cellulose base (e.g., wood, or other organic material), silicon based (e.g., sand) or another inorganic material, or fibers. These fillers may be included in volumes of up to 50 % by weight, and in some cases even larger amounts may be possible.

[0037] In the embodiment of figure 1, the first panel coupling part 5 comprises a first longitudinal ledge 14 that further extends in a transverse direction from the first side wall 9. The ledge may also be referred to as a flange.

[0038] A first coupling is provided by a receiving groove 60 and a snap-lip 61. Here, the receiving groove 60 is provided on the first panel coupling part 5. The snap-lip 61 is provided here on the second panel coupling part 6.

[0039] The first longitudinal ledge 14 comprises an upper abutment rib 15 on an upper face of first longitudinal ledge 14 and which extends toward the upper surface direction. Upper abutment rib 15 extends in longitudinal direction. Upper abutment rib 15 is positioned at or near an end portion of first longitudinal ledge 14, in particular at the end of first longitudinal ledge 14. At its bottom surface, first longitudinal ledge 14 comprises a lower abutment rib 16 extending towards the lower surface direction. Lower abutment rib 16 provides an abutment surface directed towards or facing the first side wall 9. This abutment surface is in transvers direction at a distance from the upper abutment rib 15. In this embodiment of figure 1, the upper wall 7 of the floor panel body 2 extends beyond the first side wall 9. In particular, the extended part 19 of the upper wall 7 extends in transvers direction beyond lower abutment rib 16. First longitudinal ledge 14 is positioned below the extended upper wall part 19 end connected to its lower surface via a connecting rib.

[0040] In the embodiment of figure 1, the first panel coupling part 5 further comprises an upwardly slanted lip 17. Upwardly slanted lip 17 extends in longitudinal direction. Furthermore, upwardly slanted lip 17 extends from the lower part of the first side wall 9. In particular, in the embodiment of figure 1, it extends from the first side union of the first side wall 9 and the lower wall 8. The upwardly slanted lip 17 runs toward the upper face at a slope, away from the first side wall 9. The angle between the upwardly slanted lip 17 and the first side wall 9 is between 25° and 55°. In particular, the angle is between 30° and 50°. Upwardly slanted lip 17 has a longitudinal edge 18. The thickness of upwardly slanted lip 17 is selected such in combination with the material from which the upwardly slanted lip 17 is made that it is flexible. The longitudinal edge 18 can be urged in the direction of the side wall 9, in particular its flexibility or resilience is such that the longitudinal edge 18 can be urged against side wall 9 by a force that is exerted by the thermal expansion of the material from which the floor panel 1 is made. A width of upwardly slanted lip 17 is selected such that at its edge 18, it extends between 1% and 5% of the width of upper wall 7 from first side wall 9. In order to be flexible with respect to the upper wall 9, in an embodiment its thickness is less then 60% of the thickness of the upper wall 9.

[0041] In this embodiment, slanted lip 17 and lower abutment rib 16 define the receiving groove 60. In particular, a receiving groove width w1 is defined by abutment surface 50 of abutment rib 16 and the edge of slanted lip 17

[0042] In the embodiment of figure 1, the second floor panel coupling part 6 comprises an upper ledge 20, extending in longitudinal direction and in transvers direction away from the floor panel body 2. In the embodiment of figure 1, the upper ledge 20 has an upper surface that is substantially a continuation of the upper face of the floor panel body. The upper ledge 20 further comprises a lower surface that provides an engagement surface for the upper abutment rib 15 of first longitudinal ledge 14. Upper ledge 20 extends in transverse direction of floor panel body 2 beyond second side wall 10. Upper ledge 20 in this embodiment extends past upper abutment rib 15 when a first floor panel coupling part 5 of one panel engages a second floor panel coupling part 6 of a second, similar floor panel. Such a situation if indicated in figure 2C. In fact, the sum of the transverse extension of the upper ledge 20 and of the extended upper wall part 19 minus the transverse extension of first longitudinal ledge

14 is between 1% and 10% of the width of the upper wall 7. In particular, the width of the groove 26 between adjacent floor panels 1 is between 1% and 5% of the width of the upper wall 7. An advantage of such a groove 26 is that it provides a gutter that can lead water away from the surface. The upper surface 3 can have a slight curvature to facilitate that. Alternatively, the width of remaining groove 26 is selected in such a way that it takes into account a change of width due to a temperature change of 100K. In an embodiment, the upper abutment rib 15 of a first floor panel is positioned to remain below upper ledge 20 of a second floor panel (below in the sense as indicated in figure 2C) when two floor panels are engaging and at a temperature of -40°C, in particular at a temperature of -25°C. In this definition, the floor panels are first fixed to a substructure at a temperature of between 10-25°C without urging the floor panels towards one another, more in particular a temperature of about 15°C.

[0043] Upper ledge 20 in this embodiment can also be defined as an extension of upper wall 7 beyond side wall 10.

[0044] In the embodiment of figure 1, the second floor panel further comprises a lower ledge 21. Lower ledge 21 extends in longitudinal direction and in transvers direction away from the floor panel body 2. Lower ledge 21 or lower flange 21 is positioned at a normal distance from upper ledge 20. Here, the lower ledge 21 runs near the lower face 4 of floor panel body 2. In this embodiment of figure 1, the lower ledge or lower flange 21 can be defined as an extension of lower wall 8 beyond second side wall 10. The lower ledge 21 comprises a first lip 22 and a second lip 23 further away from the first lip 22 in transverse direction. The first lip 22 and second lip 23 are substantially parallel with respect to one another. The transvers distance between the first lip 22 and the second lip 23 is here between 1% and 5 % of the width of upper wall 7. In particular, the transverse distance between these two lips 22, 23 is between 20 and 70 times the thermal expansion coefficient of the material of the upper wall 7, times the width of the upper wall 7. Lips 22 and 23 extend in longitudinal direction.

[0045] In this embodiment, the snap-lip 61 is provided by first lip 22 and a second lip 23. The width w1 of the snap-lip 61 can flexibly resiliently change due to the fact that the lips 22 and 23 can flex toward one another.

[0046] The most remote lip 23 comprises a longitudinal groove 24 in its face facing away from second side wall 10. This longitudinal groove 24 is adapted to receive and engage edge 18 of upwardly slanting lip 17 when a first and second floor panel laterally engage one another. A transverse distance between the abutment surface of lower rib 16 and the edge of upwardly slanted lip 17 and a width of the lips 22 and 23 (a distance between away facing faces) are selected such that when the first coupling part 5 of a first floor panel and the second coupling part of a second floor panel engage, the edge 18 of upwardly slanted lip 17 snaps into longitudinal groove 24.

[0047] The lips 22, 23 are less resilient than upper wall 7. In particular, lips 22, 23 have a thickness that is less than the thickness of the upper wall 7. Specifically, the thickness of the lips 22, 23 is less then 60% of the thickness of the upper wall 7. Usually, the upper wall 7 and lower wall 8 are substantially equal.

[0048] In the embodiment of figure 1, in particular, the upper wall 7 extends in lateral directions past the first and second side walls 9, 10. Lower ledge 21 here extends in transvers direction further from floor panel body than upper ledge 20. Lower ledge 20 in this embodiment is an extension of lower wall 8 beyond side wall 10.

[0049] Upper face 3 of the floor panel often is flat, but it may also be provided with a relief. Alternatively, the upper face may be slightly curved, for instance in transverse direction.

[0050] The various lips, ledges and ribs extend continuously in longitudinal direction. However, interruptions may be provided if that does not compromise the functionality. In the current design, the pnels can provide a deck that prevents water to reach a substructure.

[0051] A first floor panel can be coupled to a second floor panel. The first panel coupling part 5 of the first floor panel can be brought into interlocking engagement with the second floor panel coupling part 6 of a second panel. To that end, the second floor panel coupling part 6 of that second floor panel is inserted into the first floor panel coupling part 5 of that first floor panel while the upper faces 3 are at an angle, and next the upper faces are brought in one plane. These subsequent steps are shown in figures 2A-2C. The first (left) floor panel is first coupled to s substructure (not shown). Subsequently, a second coupling part 6 of a second floor panel is inserted as shown in figures 2A and 2B. Floor coupling parts of adjacent floor panels are snap-locked in their coupled state. Next, the second floor panel in the position of figure 2C is fixed to the substructure at its lower ledge 21. When installed at an average temperature of use, often between 10°C and 20°C, the upwardly slanted lip 17 and remote lip 23 may be slightly under pressure. Thus, the width of the floor panels 1 is able to contract and expand due to temperature changes.

[0052] Floor panels 1 are usually connected to a lower construction or substructure. A series of apertures can be formed in the lower ledge 21 to permit the use of fasteners such as screws to engage a sub assembly beneath the floor panels. Such a sub assembly may be a frame with joists or a subjacent surface.

[0053] In assembling a deck, one panel is applied to a subassembly via the fasteners. Then, a next floor panel is snapped with its first coupling part 5 into the second coupling part 6. Especially for outdoors use or another use where a deck is subjected to large temperature differences between for instance -20°C to 40°C, the current coupling parts allow mounting of a deck that stays properly flat and where floor panels do not crack or deform due to linear expansion or to dilatation. For a panel substantially made of PVC with a thermal expansion parameter $\alpha = 24.10^{-5}\ K^{-1}$ and with a width of between 10 and

30 cm, a change in width for a change in temperature of 60 degrees will be about $60x24.10^{-5} = 0.014$ parts. Thus, the width changes 1.4-4.2 mm. The flexing in transverse direction of lips 17, 22 and 23 should be able to take up about that amount of dimensional change.

[0054] In an embodiment, the floor panel 1 has a total width of 187 mm, and a thickness of 21 mm. the thickness of the upper wall 7 and the lower wall 8 and the first and second side walls 9, 10 in that embodiment is 4 mm. The lips 17, 22 and 23 have a thickness of about 1-1.5 mm. Thus, when the width of the floor panel changes through thermal expansion or thermal shrinkage, the lips 17, 22 and 23 can bend and take up the change in dimension of the floor panel 1 while the rest of the floor panel keeps its form.

[0055] It will be clear that the description above is included to illustrate the operation of preferred embodiments of the invention, and not to limit the scope of the invention.

List of reference numbers

[0056]

1 floor panel
2 floor panel body
3 upper face
4 lower face
5 first panel coupling part
6 second panel coupling part
7 upper wall
8 lower wall
9 first side wall or longitudinal edge
10 second side wall or longitudinal edge
11 internal wall
12 longitudinal chamber
13 upper surface layer
14 longitudinal ledge
15 upper abutment rib
16 lower abutment rib
17 upwardly slanted lip
18 edge of upwardly slanted lip 17
19 extended upper wall
20 upper (longitudinal) ledge
21 lower (longitudinal) ledge
22 first (resilient longitudinal) lip
23 second or remote (resilient longitudinal) lip
24 longitudinal groove (in lip 23)
25 attachment provision in lower ledge
26 gutter or groove between upper walls of adjacent lateral floor panels 50 (lower abutment lip 16) abutment surface
51 lower surface (of the upper longitudinal ledge 20)
52 surface of upper abutment rib 15
53 abutment surface of first lip 22
A insert direction
B snap direction d upper (sur)face width
d1 spacing/transverse distance of longitudinal lips 22, 23
d2 transverse distance between transverse end of first longitudinal ledge 14 and abutment surface of lower abutment lip 16
d3 transverse distance between end of first longitudinal ledge 14 and first resilient longitudinal lip 22
d4 transverse distance between end of the upper ledge and the second lip
d5 total width of the floor panel
d6 transverse distance between end of the upper ledge and first resilient lip
d7 transverse distance between end or first longitudinal ledge and ....
d8 transverse length of the upper ledge
d9 flexing distance of the upward slanted lip
d10 distance between the end of
w1 receiving groove width
D snap-lip width
60 receiving groove
61 snap-lip

Claims

1. A deck system, particularly for outdoor use, comprising at least a first and a second, similar, floor panel (1) in lateral interlocking engagement, said floor panels (1) comprising a polymer material, said floor panels comprising a floor panel body (2) having opposite longitudinal edges (9, 10), a top side (3) and a bottom side (4), a first floor panel coupling part (5) extending along one longitudinal edge (9) of said floor panel body and a second panel coupling part (6) extending along the opposite longitudinal edge (10) of said floor panel body, said first floor panel coupling part (5) of said first floor panel (1) for coupling to said second floor panel coupling part (6) of said second floor panel (1), wherein

- said first coupling part (5) comprises a first longitudinal ledge (14) extending in transverse direction from the first longitudinal edge (9) and provided at a normal distance from said bottom side (4);
- said second coupling part (6) comprises a lower longitudinal ledge (21) extending in longitudinal direction and in transverse direction away from said floor panel body (2) and at a normal distance from said top side (3);

wherein the first longitudinal ledge (14) of one of the floor panels (1) and the lower longitudinal ledge (21) of the other of the floor panels (1) in transvers direction overlap each other,

wherein one of the first longitudinal ledge (14) and the lower longitudinal ledge (21) comprises a receiving groove (60) having a receiving groove width (w1) and the other one of the first longitudinal ledge (14)

and the lower longitudinal ledge (21) comprises a snap-lip (61) having a snap-lip width (D), and wherein the receiving groove (60) and the snap-lip (61) are provided for snap-fitting into one another, the receiving groove width and the snap-lip width being flexibly resilient, for allowing said floor panels to expand in transverse direction, wherein the snap-lip (61) comprises a first resilient longitudinal lip (22) and a second resilient longitudinal lip (23) at a transverse distance (d1) from said first resilient longitudinal lip (22), for providing the flexible, resilient snap-lip width, and wherein the receiving groove (60) comprises a resilient, slanted lip (17) extending from a receiving groove wall for providing the flexible, resilient receiving groove width.

2. The deck system of claim 1, wherein the first longitudinal ledge (14) comprises the receiving groove (60) opening in the direction of the bottom side (4) and the lower longitudinal ledge (21) comprises the snap-lip (61) extending in the direction of the top side (3).

3. The deck system of any one of the preceding claims, wherein the resilient, upwardly slanted lip (17) extends from a lower part of said longitudinal edge (9).

4. The deck system of any one of the preceding claims, wherein said second coupling part (6) further comprises an upper longitudinal ledge (20) extending in longitudinal direction and in transverse direction away from the floor panel body (2), the first longitudinal ledge (14) dimensioned for extending in abutment with a lower surface (51) of the upper longitudinal ledge (20).

5. The deck system of any one of the preceding claims, wherein the first and second resilient longitudinal lips (22, 23) in transvers direction spaced apart (d1) 1%-5% of an upper surface width (d) of said floor panels (1) and designed to allow edges of said first and second resilient longitudinal lips (22, 23) to flex until they touch one another.

6. The deck system of any one of the preceding claims, wherein an edge (18) of the upwardly slanted lip (17) in transverse direction in unmounted state to the floor panels designed to flex a distance (d9) of 1%-5% of an upper surface width (d) of said panel (1) in transverse direction towards said floor panel (1).

7. The deck system of any one of the preceding claims, wherein the first longitudinal ledge (14) comprising a lower abutment rib (16) extending from its lower surface, the lower abutment rib (16) providing a side wall (50) of the receiving groove (60).

8. The deck system according to any one of the preceding claims, wherein a transverse distance (d2) between a transverse end (52) of said first longitudinal ledge (14) and an abutment of said lower abutment lip (16) with said first resilient longitudinal lip (22) is 1%-5% less than a transverse distance (d3) between an end of said first longitudinal ledge (14) and said first resilient longitudinal lip (22).

9. The deck system according to any one of the preceding claims, wherein a transverse distance between an abutment (50) of said lower abutment lip (16) with said first resilient longitudinal lip (22) and the edge (18) of said upwardly slanted lip (17) is between 0.5% and 3% less than a transverse distance (d1) between said first and second resilient longitudinal lips (22, 23).

10. The deck system according to any one of the preceding claims, wherein said floor panels (1) are produced using extrusion, in particular said floor panel comprising an upper surface layer that is coextruded with said further floor panel, more in particular said upper surface layer comprising at least 50 % by weight material derived from rice husk.

11. The deck system according to any one of the preceding claims, wherein said floor panel body (2) comprises an upper wall (7) and a lower wall (8), and a first side wall (9) and a second side wall (10) connecting said upper wall (7) and said lower wall, wherein said upper wall (7) extends beyond said second side wall (10) forming said upper longitudinal ledge (20), and wherein said upper wall (7) extends beyond said first side wall (9) forming at least part of said first longitudinal ledge (14), and wherein said lower wall (8) extends beyond said second side wall (10) forming said lower longitudinal ledge (21), in particular wherein said resilient, upwardly slanted longitudinal lip (17) extends from a lower portion of said first side wall (10), in particular said resilient, upwardly slanted longitudinal lip (17) extends from the first union of the first side wall and the lower wall (8).

12. The deck system according to any one of the preceding claims, wherein said floor panel coupling parts (5, 6) form a tongue on one longitudinal side edge and a groove on the opposite longitudinal side edge and the floor panels form a lath part or tongue-and-groove planking.

13. A floor panel (1) for a deck system of any one of the preceding claims, in which the floor panel (1) is in lateral, interlocking engagement with similar floor panels, said floor panel (1) comprising a floor panel body (2) having opposite longitudinal edges, a top side (3) and a bottom side (4), said floor panel body (2) comprises an upper wall (7) and a lower wall (8),

and a first side wall (9) and a second side wall (10) connecting said upper wall (7) and said lower wall, said floor panel (1) comprising a polymer material, and wherein:

- said first coupling part (5) comprises
a first longitudinal ledge (14) extending in transverse direction from the first side wall (9), said first longitudinal ledge (14) comprising an upper abutment rib (15) on its upper surface and a lower abutment rib (16) extending from its lower surface, and a resilient, upwardly slanted lip (17) extending from a lower part of said side wall (9);
- said second coupling part (6) comprises
an upper longitudinal ledge (20) extending in longitudinal direction (L) and in transverse direction (T) away from said floor panel body (2) and comprising a lower abutment surface (51) for said upper abutment rib (15) and
a lower longitudinal ledge (21) extending in longitudinal direction and in transverse direction away from said floor panel body and at a normal distance from said upper longitudinal ledge (20) and comprising a first resilient longitudinal lip (22) and a second resilient longitudinal lip (23) at a transverse distance from said first resilient longitudinal lip (22), and
wherein said lower longitudinal ledge (21) allows fixing to a substructure, and said first coupling part (5) of said floor panel (1) provides a lateral, interlocking engagement with said second coupling part (6) of another, similar floor panel, said first longitudinal ledge (14) dimensioned for extending the upper abutment lip (15) in abutment with said lower surface (51) of said upper longitudinal ledge (20), said first and second resilient longitudinal lips (22, 23) in transvers direction spaced apart a distance (d1) 1%-5% of an upper surface width (d) of said floor panel (1) and designed to allow edges of said first and second resilient longitudinal lips (22, 23) to touch one another,
an edge (18) of said upwardly slanted lip (17) in transverse direction in unmounted state to the floor panels designed to flex a distance (d9) of 1%-5% of the upper surface width (d) in transverse direction towards said floor panel (1),
and a transverse distance (d2) between a transverse end (52) of said first longitudinal ledge (14) and an abutment (50) of said lower abutment lip (16) with said first resilient longitudinal lip (22) at least 1%-5% less than a transverse distance between an end (52) of said first longitudinal ledge (14) and said first resilient longitudinal lip (22), and
a transverse distance between an abutment (50) of said lower abutment lip (16) with said first resilient longitudinal lip (22) and the edge (18) of said upwardly slanted rib (17) between 0.5% and 3% less than a transverse distance (d1) between said first and second resilient longitudinal lips (22, 23).

Patentansprüche

1. Ein Terrassensystem, speziell für die Verwendung im Freien, welches zumindest eine erste und eine zweite, ähnliche Bodenplatte, die seitlich ineinandergreifen, aufweist, wobei die genannten Bodenplatten (1) ein Polymer-Material aufweisen, wobei die Bodenplatten einen Bodenplatten-Körper (2) mit einander gegenüberliegenden Längskanten (9,10), eine Oberseite (3) und eine Unterseite (4), ein erstes Bodenplatten-Verbindungsteil (5), das sich entlang einer Längskante (9) des genannten Bodenplatten-Körpers erstreckt, und ein zweites Platten-Verbindungsteil (6), das sich entlang der gegenüberliegenden Längskante (10) des genannten Bodenplatten-Körpers erstreckt, aufweisen, wobei das erste Bodenplatten-Verbindungsteil (5) der genannten ersten Bodenplatte (1) zur Verbindung mit dem genannten zweiten Bodenplatten-Verbindungsteil (6) der genannten zweiten Bodenplatte (1) dient; wobei

   - das genannte erste Verbindungsteil (5) eine erste Längsleiste (14) aufweist, die sich in Querrichtung von der ersten Längskante (9) erstreckt und in einer normalen Entfernung von der genannten Unterseite (4) vorgesehen ist;
   - das genannte zweite Verbindungsteil (6) eine untere Längsleiste (21) aufweist, die sich in Längsrichtung und in Querrichtung von dem genannten Bodenplatten-Körper (2) hinweg erstreckt und in einer normalen Entfernung von der genannten Oberseite (3) vorgesehen ist;

   wobei die erste Längsleiste (14) einer der Bodenplatten (1) und die untere Längsleiste (21) der anderen der Bodenplatten (1) sich in Querrichtung überlappen,
   wobei entweder die erste Längsleiste (14) oder die untere Längsleiste (21) eine Aufnahmenut (60) mit einer Aufnahmenutbreite (w1) und die andere entweder der ersten Längsleiste (14) oder der unteren Längsleiste (21) eine Schnapplippe (61) mit einer Schnapplippenbreite (D) aufweist, und
   wobei die Aufnahmenut (60) und die Schnapplippe (61) dazu vorgesehen sind, ineinander einzuschnappen, da die Breite der Aufnahmenut und die Breite der Schnapplippe flexibel elastisch sind, sodass die genannten Bodenplatten sich in Querrichtung ausdehnen können, wobei die Schnapplippe (61) eine erste elastische Längslippe (22) und eine zweite elastische Längslippe (23) in einer Querentfernung (d1) von der genannten ersten elastischen

Längslippe (22) aufweist, damit die flexible elastische Schnapplippen-Breite gebildet wird, und wobei die Aufnahmenut (60) eine elastische, abgeschrägte Lippe (17) aufweist, die sich von einer Aufnahmenut-Wand erstreckt, wodurch die flexible, elastische Aufnahmenut-Breite gebildet wird.

2. Das Terrassensystem aus Anspruch 1, wobei die erste Längsleiste (14) die Aufnahmenut (60) aufweist, die sich öffnet in Richtung der Unterseite (4), und die untere Längsleiste (21) die Schnapplippe (61) aufweist, die sich in Richtung der Oberseite (3) erstreckt.

3. Das Terrassensystem aus einem beliebigen der vorigen Ansprüche, wobei die elastische, aufwärts abgeschrägte Lippe (17) sich von einem unteren Teil der genannten Längskante (9) erstreckt.

4. Das Terrassensystem aus einem beliebigen der vorigen Ansprüche, wobei das genannte zweite Verbindungsteil (6) weiterhin eine obere Längsleiste (20) aufweist, die sich in Längsrichtung und in Querrichtung von dem Bodenplatten-Körper (2) hinweg erstreckt und die erste Längsleiste (14) dazu bemessen ist, sich im Stoß mit einer unteren Oberfläche (51) der oberen Längsleiste (20) zu erstrecken.

5. Das Terrassensystem aus einem beliebigen der vorigen Ansprüche, wobei die erste und die zweite elastische Längslippe (22, 23) in Querrichtung in einer Entfernung (d1) von 1%-5% einer oberen Oberflächenbreite (d) der genannten Bodenplatten (1) angeordnet sind und dazu ausgelegt sind, es für die genannte erste und zweite elastische Längslippe (22, 23) zu ermöglichen, sich zu biegen, bis sie einander berühren.

6. Das Terrassensystem aus einem beliebigen der vorigen Ansprüche, wobei eine Kante (18) der aufwärts abgeschrägten Lippe (17) in Querrichtung im nicht an den Bodenplatten befestigten Zustand dazu ausgelegt ist, sich in einer Entfernung (d9) von 1%-5% einer oberen Oberflächenbreite (d) der genannten Platte (1) in Querrichtung auf die genannten Bodenplatte (1) hin zu biegen.

7. Das Terrassensystem aus einem beliebigen der vorigen Ansprüche, wobei die erste Längsleiste (14) eine sich von ihrer unteren Oberfläche erstreckende untere Stoßrippe (16) aufweist, wobei die untere Stoßrippe (16) eine Seitenwand (50) der Aufnahmenut (60) bildet.

8. Das Terrassensystem entsprechend einem beliebigen der vorigen Ansprüche, wobei eine Querentfernung (d2) zwischen einem Querende (52) der genannten ersten Längsleiste (14) und einem Stoß der genannten unteren Stoßlippe (16) mit der genannten ersten elastischen Längslippe (22) 1%-5% weniger beträgt als ein Querentfernung (d3) zwischen einem Ende der genannten ersten Längsleiste (14) und der genannten ersten elastischen Längslippe (22).

9. Das Terrassensystem entsprechend einem beliebigen der vorigen Ansprüche, wobei eine Querentfernung zwischen einem Stoß (50) der genannten unteren Stoßlippe (16) mit der genannten ersten elastischen Längslippe (22) und der Kante (18) der genannten aufwärts abgeschrägten Lippe (17) zwischen 0,5 % und 3 % weniger beträgt als eine Querentfernung (d1) zwischen den genannten ersten und zweiten elastischen Längslippen (22, 23).

10. Das Terrassensystem entsprechend einem beliebigen der vorigen Ansprüche, wobei die genannten Bodenplatten (1) mit Hilfe der Extrusion hergestellt werden, insbesondere die genannte Bodenplatte, die eine obere Oberflächenschicht aufweist, die mit der genannten weiteren Bodenplatte koextrudiert wird, wobei mehr insbesondere die genannte obere Oberflächenschicht ein Material aufweist, das zu mindestens 50 Gewichts-% aus Reishülsen abgeleitet ist.

11. Das Terrassensystem entsprechend einem beliebigen der vorigen Ansprüche, wobei der genannte Bodenplatten-Körper (2) eine obere Wand (7) und eine untere Wand (8) und eine erste Seitenwand (9) und eine zweite Seitenwand (10) aufweist, die die genannte obere Wand (7) und die genannte untere Wand miteinander verbinden, wobei die genannte obere Wand sich über die genannte zweite Seitenwand (10) hinaus erstreckt und die genannte obere Längsleiste (20) bildet und wobei die genannte obere Wand (7) sich über die genannte erste Seitenwand (9) hinaus erstreckt und zumindest einen Teil der genannten ersten Längsleiste (14) bildet, und wobei die genannte untere Wand (8) sich über die genannte zweite Seitenwand (10) hinaus erstreckt und die genannte untere Längsleiste (21) bildet, insbesondere wobei die genannte aufwärts abgeschrägte Lippe (17) sich von der ersten Verbindung zwischen der ersten Seitenwand und der unteren Wand (8) erstreckt.

12. Das Terrassensystem entsprechend einem beliebigen der vorigen Ansprüche, wobei die genannten Bodenplatten-Verbindungsteile (5, 6) an einer Längs-Seitenkante eine Feder und an der entgegengesetzten Längs-Seitenkante eine Nut bilden und die Bodenplatten eine Spundungs- oder Nut-Feder-Beplankung bilden.

13. Eine Bodenplatte (1) für ein Terrassensystem aus einem beliebigen der obigen Ansprüche, wobei die

Bodenplatte (1) sich in lateraler, ineinandergreifender Verbindung mit ähnlichen Bodenplatten befindet, wobei die genannte Bodenplatte (1) einen Bodenplatten-Körper mit gegenüberliegenden Längskanten, eine Oberseite (3) und eine Unterseite (4) aufweist, wobei der genannte Bodenplatten-Körper (2) eine obere Wand (7) und eine untere Wand (8) und eine erste Seitenwand (9) und eine zweite Seitenwand (10) aufweist, die die genannte obere Wand (7) und die genannte untere Wand miteinander verbinden, wobei die genannte Bodenplatte (1) ein Polymermaterial aufweist und wobei:

- das genannte erste Verbindungsteil (5)
eine erste Längsleiste (14) aufweist, die sich in Querrichtung von der ersten Seitenwand (9) erstreckt, wobei die genannte erste Längsleiste (14) auf ihrer oberen Oberfläche eine obere Stoßrippe (15) aufweist und eine untere Stoßrippe (16), die sich von ihrer unteren Oberfläche erstreckt, und
eine elastische, aufwärts abgeschrägte Lippe (17) sich von einem unteren Teil der genannten Seitenwand (9) erstreckt;
- das genannte zweite Verbindungsteil (6)
eine obere Längsleiste (20) aufweist, die sich in Längsrichtung (L) und in Querrichtung (T) von dem genannten Bodenplatten-Körper (2) hinweg erstreckt und eine untere Stoßoberfläche (51) für die genannte obere Stoßrippe (15) aufweist, und eine untere Längsleiste (21), die sich in Längsrichtung und in Querrichtung von dem genannten Bodenplatten-Körper und in einer normalen Entfernung von der genannten oberen Längskante (20) hinweg erstreckt und eine erste elastische Längslippe (22) und eine zweite elastische Längslippe (23) in einer Querentfernung von der genannten ersten elastischen Längslippe (22) aufweist, und
wobei die genannte untere Längsleiste (21) die Befestigung an einer Unterstruktur ermöglicht, und das genannte erste Verbindungsteil (5) der genannten Bodenplatte (1) eine seitliche, ineinandergreifende Verbindung mit dem genannten zweiten Verbindungsteil (6) einer anderen, ähnlichen Bodenplatte bildet, wobei die genannte erste Längsleiste (14) so bemessen ist, dass sich die obere Stoßlippe (15) im Stoß mit der genannten unteren Oberfläche (51) der genannten oberen Längsleiste (20) erstreckt, wobei die genannten ersten und zweiten elastischen Längslippen (22, 23) sich in Querrichtung voneinander in einer Entfernung (d1) von 1 %-5 % von einer oberen Oberflächenbreite (d) der genannten Bodenplatte befinden und so ausgelegt sind, dass sie es ermöglichen, dass die genannten ersten und zweiten elastischen Längslippen (22, 23) sich gegenseitig berühren,
eine Kante (18) der aufwärts abgeschrägten Lippe (17) in Querrichtung im nicht an den Bodenplatten befestigten Zustand dazu ausgelegt ist, sich in einer Entfernung (d9) von 1%-5% der oberen Oberflächenbreite (d) in Querrichtung auf die genannte Bodenplatte (1) hin zu biegen, und eine Querentfernung (d2) zwischen einem Querende (52) der genannten ersten Längsleiste (14) und einem Stoß (50) der genannten unteren Stoßlippe (16) mit der genannten ersten elastischen Längslippe (22) von mindestens 1 %-5 % weniger als eine Querentfernung (d3) zwischen einem Ende (52) der genannten ersten Längsleiste (14) und der genannten ersten elastischen Längslippe (22), und
eine Querentfernung zwischen einem Stoß (50) der genannten unteren Stoßlippe (16) mit der genannten ersten elastischen Längslippe (22) und der Kante (18) der genannten aufwärts abgeschrägten Rippe (17) von zwischen 0,5 % und 3 % weniger als eine Querentfernung (d1) zwischen den genannten ersten und zweiten elastischen Längslippen (22, 23).

Revendications

1. Système de plateforme, en particulier destiné à un usage extérieur, comprenant au moins un premier et un deuxième panneau de plancher (1) similaires engagés latéralement l'un dans l'autre, lesdits panneaux de plancher (1) comprenant un matériau polymère, lesdits panneaux de plancher comprenant un corps (2) de panneau de plancher présentant des bords longitudinaux opposés (9, 10), un côté supérieur (3) et un côté inférieur (4), une première pièce d'accouplement (5) de panneau de plancher s'étendant le long d'un bord longitudinal (9) dudit corps de panneau de plancher et une deuxième pièce d'accouplement (6) de panneau s'étendant le long du bord longitudinal (10) opposé dudit corps de panneau de plancher, ladite première pièce d'accouplement (5) de panneau de plancher dudit premier panneau de plancher (1) étant destinée à être accouplée à ladite deuxième pièce d'accouplement (6) de panneau de plancher dudit deuxième panneau de plancher (1),
ladite première pièce d'accouplement (5) comprenant une première moulure longitudinale (14) s'étendant transversalement par rapport au premier bord longitudinal (9) et prévue à une distance normale dudit côté inférieur (4),
ladite deuxième pièce d'accouplement (6) comprenant une moulure longitudinale inférieure (21) s'étendant dans le sens de la longueur, transversalement par rapport audit corps (2) de panneau de plancher et à une distance normale dudit côté supérieur (3),

la première moulure longitudinale (14) de l'un des panneaux de plancher (1) et la moulure longitudinale inférieure (21) de l'autre panneau de plancher (1) se superposant mutuellement dans une direction transversale,
l'une parmi la première moulure longitudinale (14) et la moulure longitudinale inférieure (21) comprenant une rainure de réception (60) présentant une largeur (w1) de rainure de réception et l'autre parmi la première moulure longitudinale (14) et la moulure longitudinale inférieure (21) comprenant une lèvre d'accrochage élastique (61) présentant une largeur (D) de lèvre d'accrochage élastique, et
la rainure de réception (60) et la lèvre (61) d'accrochage élastique étant prévues pour s'ajuster élastiquement l'une dans l'autre, la largeur de la rainure de réception et la largeur de la lèvre d'accrochage élastique étant flexibles élastiquement pour permettre auxdits panneaux de plancher de se dilater dans la direction transversale, la lèvre (61) d'accrochage élastique comprenant une première lèvre longitudinale élastique (22) et une deuxième lèvre longitudinale élastique (23) située à une distance transversale (d1) de ladite première lèvre longitudinale élastique (22) pour définir la largeur flexible de lèvre d'accrochage élastique, la rainure de réception (60) comprenant une lèvre élastique (17) en biseau débordant d'une paroi de la rainure de réception pour définir la largeur flexible de la rainure de réception élastique.

2. Système de plateforme selon la revendication 1, dans lequel la première moulure longitudinale (14) comprend la rainure de réception (60) qui s'ouvre en direction du côté inférieur (4) et la nervure longitudinale inférieure (21) comprend la lèvre (61) d'accrochage élastique qui s'étend en direction du côté supérieur (3).

3. Système de plateforme selon l'une quelconque des revendications précédentes, dans lequel la lèvre élastique (17) en biseau vers le haut déborde de la partie inférieure dudit bord longitudinal (9).

4. Système de plateforme selon l'une quelconque des revendications précédentes, dans lequel ladite deuxième partie d'accouplement (6) comprend en outre une nervure longitudinale supérieure (20) qui s'étend dans la direction longitudinale et transversalement par rapport au corps (2) du panneau de plancher, la première moulure longitudinale (14) étant dimensionnée pour venir buter contre une surface inférieure (51) de la moulure longitudinale supérieure (20).

5. Système de plateforme selon l'une quelconque des revendications précédentes, dans lequel la première et la deuxième lèvre longitudinale élastique (22, 23) sont écartées l'une de l'autre (d1) dans la direction transversale de 1 % à 5 % de la largeur (d) de la surface supérieure desdits panneaux de plancher (1) et sont conçues pour permettre aux bords de ladite première et de ladite deuxième lèvre longitudinale élastique (22, 23) de se fléchir jusqu'à ce qu'ils entrent en contact mutuel.

6. Système de plateforme selon l'une quelconque des revendications précédentes, dans lequel un bord (18) de la lèvre (17) en biseau vers le haut est conçu pour, en situation non montée sur les panneaux de plancher, se fléchir dans la direction transversale sur une distance (d9) qui représente de 1 % à 5 % de la largeur (d) de la surface supérieure dudit panneau (1) transversalement en direction dudit panneau de plancher (1).

7. Système de plateforme selon l'une quelconque des revendications précédentes, dans lequel la première moulure longitudinale (14) comprend une nervure inférieure de butée (16) qui déborde de sa surface inférieure, la nervure inférieure de butée (16) formant une paroi latérale (50) de la rainure de réception (60).

8. Système de plateforme selon l'une quelconque des revendications précédentes, dans lequel la distance transversale (d2) entre l'extrémité transversale (52) de la première moulure longitudinale (14) et la butée de ladite lèvre de butée inférieure (16) avec ladite première lèvre longitudinale élastique (22) est de 1 % à 5 % inférieure à la distance transversale (d3) entre l'extrémité de ladite première moulure longitudinale (14) et ladite première lèvre longitudinale élastique (22).

9. Système de plateforme selon l'une quelconque des revendications précédentes, dans lequel la distance transversale entre une butée (50) de ladite lèvre inférieure de butée (16) et ladite première lèvre longitudinale élastique (22) et le bord (18) de ladite lèvre (17) en biseau vers le haut est de 0,5 % à 3 % inférieure à la distance transversale (d1) entre ladite première et ladite deuxième lèvre longitudinale élastique (22, 23).

10. Système de plateforme selon l'une quelconque des revendications précédentes, dans lequel lesdits panneaux de plancher (1) sont produits par extrusion, et en particulier ledit panneau de plancher comprend une couche de surface supérieure coextrudée avec ledit autre panneau de plancher, ladite couche de surface supérieure comprenant plus particulièrement au moins 50 % en poids d'un matériau dérivé de balle de riz.

11. Système de plateforme selon l'une quelconque des revendications précédentes, dans lequel ledit corps (2) de panneau de plancher comprend une paroi su-

périeure (7) et une paroi inférieure (8), une première paroi latérale (9) et une deuxième paroi latérale (10) reliant ladite paroi supérieure (7) et ladite paroi inférieure, ladite paroi supérieure (7) s'étendant au-delà de ladite deuxième paroi latérale (10) pour former ladite moulure longitudinale supérieure (20), ladite paroi supérieure (7) s'étendant au-delà de ladite première paroi latérale (9) pour former au moins une partie de ladite première moulure longitudinale (14), ladite paroi inférieure (8) s'étendant au-delà de ladite deuxième paroi latérale (10) pour former ladite moulure longitudinale inférieure (21), ladite lèvre longitudinale élastique (17) en biseau vers le haut partant d'une partie inférieure de ladite première paroi latérale (10) et en particulier ladite lèvre longitudinale élastique (17) en biseau vers le haut partant de la première réunion entre la première paroi latérale et la paroi inférieure (8).

12. Système de plateforme selon l'une quelconque des revendications précédentes, dans lequel lesdites pièces (5, 6) d'accouplement de panneau de plancher forment une languette sur un bord latéral longitudinal et une rainure sur le bord latéral longitudinal opposé, les panneaux de plancher formant une volige ou un plancher à languettes et rainures.

13. Panneau de plancher (1) pour système de plateforme selon l'une quelconque des revendications précédentes, dans lequel le panneau de plancher (1) engage latéralement des panneaux de plancher similaires, lesdits panneaux de plancher (1) comprenant un corps (2) de panneau de plancher présentant des bords longitudinaux opposés, un côté supérieur (3) et un côté inférieur (4), ledit corps (2) de panneau de plancher comprenant une paroi supérieure (7) et une paroi inférieure (8), une première paroi latérale (9) et une deuxième paroi latérale (10) reliant ladite paroi supérieure (7) et ladite paroi inférieure, ledit panneau de plancher (1) comprenant un matériau polymère, ladite première pièce d'accouplement (5) comprenant une première moulure longitudinale (14) s'étendant dans la direction transversale à partir de la première paroi latérale (9), ladite première moulure longitudinale (14) comprenant une nervure (15) de butée supérieure sur sa surface supérieure et une nervure (16) de butée inférieure partant de sa surface inférieure, une lèvre élastique (17) en biseau supérieur partant d'une partie inférieure de ladite paroi latérale (9),

ladite deuxième pièce d'accouplement (6) comprenant une moulure longitudinale supérieure (20) s'étendant dans la direction longitudinale (L) et dans la direction transversale (T) pour s'éloigner dudit premier corps (2) de panneau de plancher et comprenant une surface (51) de butée inférieure pour ladite nervure (15) de butée supérieure,

une moulure longitudinale inférieure (21) s'étendant dans la direction longitudinale et dans la direction transversale pour s'éloigner dudit premier panneau de plancher et à une distance normale de ladite moulure longitudinale supérieure (20) et comprenant une première lèvre longitudinale élastique (22) et une deuxième lèvre longitudinale élastique (23) située à une distance transversale de ladite première lèvre longitudinale élastique (22), et

ladite moulure longitudinale inférieure (21) permettant la fixation à une sous-structure et ladite première pièce d'accouplement (5) dudit panneau de plancher (1) assurant un engagement latéral avec ladite deuxième pièce d'accouplement (6) d'un autre panneau de plancher similaire, ladite première moulure longitudinale (14) étant dimensionnée de manière à amener la lèvre (15) de butée supérieure à buter sur ladite surface inférieure (51) de ladite moulure longitudinale supérieure (20), ladite première et ladite deuxième moulure longitudinale élastique (22, 23) étant écartées l'une de l'autre dans la direction transversale sur une distance (d1) qui représente 1 % à 5 % de la largeur (d) de la surface supérieure dudit panneau de plancher (1) et étant conçues pour permettre aux bords de ladite première et de ladite deuxième lèvre longitudinale élastique (22, 23) de se toucher mutuellement,

un bord (18) de ladite lèvre (17) en biseau supérieur étant conçu pour, à l'état non monté sur les panneaux de plancher, se fléchir dans la direction transversale sur une distance (d9) qui représente de 1 % à 5 % de la largeur (d) de la surface supérieure dans la direction transversale, en direction dudit panneau de plancher (1),

la distance transversale (d2) entre une extrémité transversale (52) de la première moulure longitudinale (14) et une butée (50) de ladite lèvre (16) de butée inférieure avec ladite première lèvre longitudinale élastique (22) étant d'au moins 1 % à 5 % inférieure à la distance transversale entre une extrémité (52) de ladite première moulure longitudinale (14) et ladite première lèvre longitudinale élastique (22) et

la distance transversale entre une butée (50) de ladite lèvre (16) de butée inférieure avec ladite première lèvre longitudinale élastique (22) et le bord (18) de ladite nervure (17) en biseau supérieur étant de 0,5 % à 3 % inférieure à la distance transversale (d1) entre ladite première et ladite deuxième lèvre longitudinale élastique (22, 23).

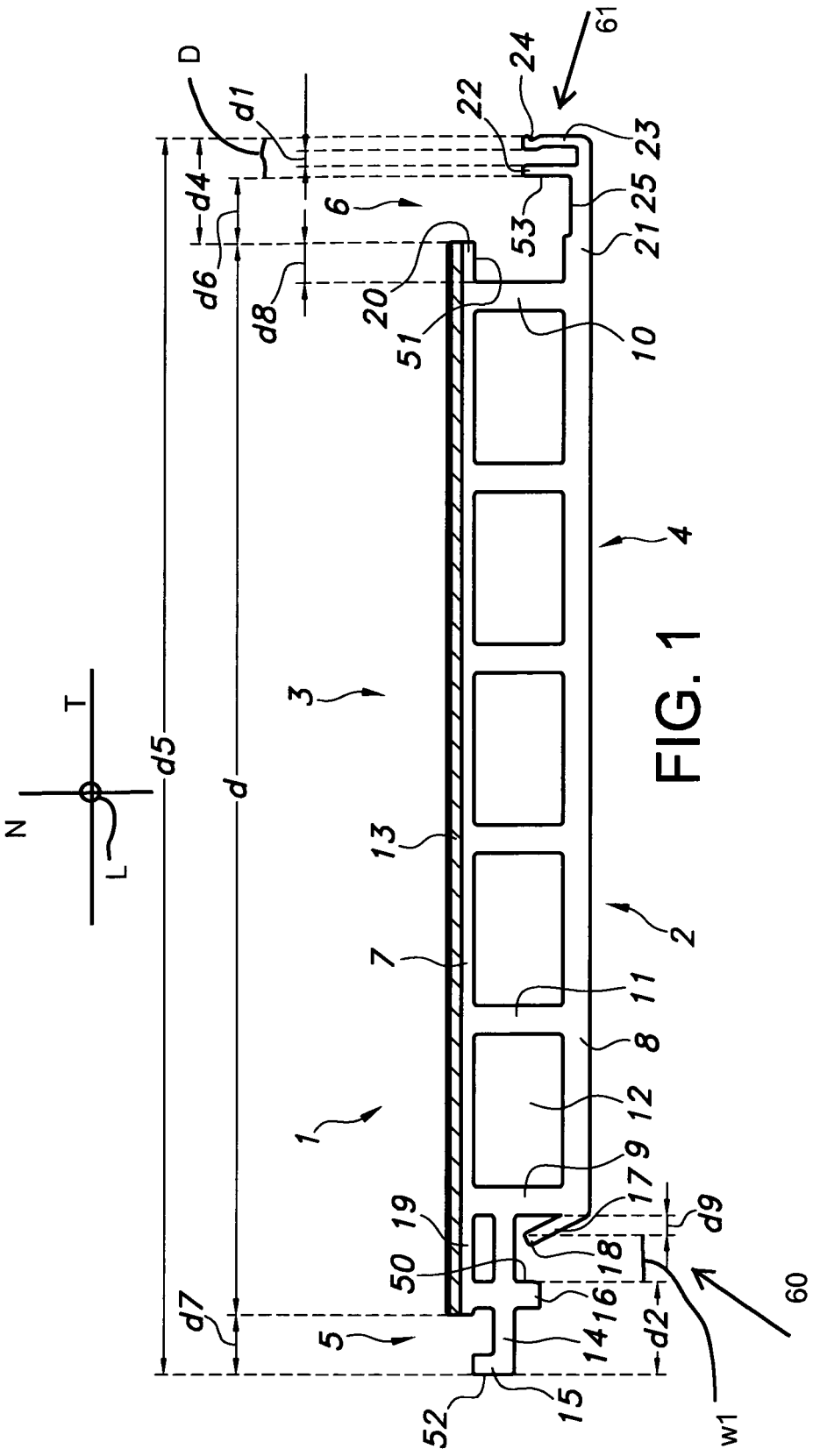
D
d1
d4
d6
d8
d5
d
d7
6
20
51
22
24
61
23
25
53
21
10
4
3
T
N
L
13
7
2
11
8
12
1
9
17
19
50
18
16
14
5
15
52
d9
d2
60
w1

FIG. 1

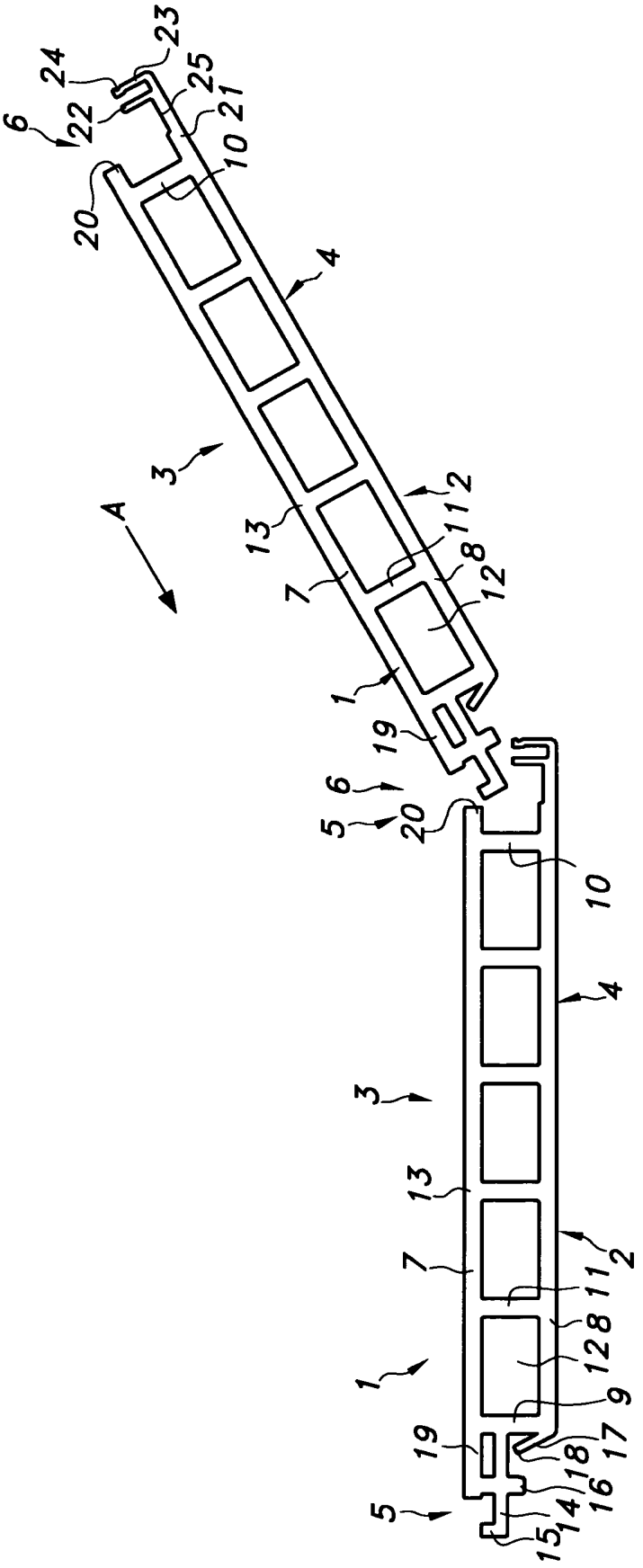
6
24
23
22
25
21
10
20
4
3
A
13
2
11
7
8
12
1
19
6
5
20
10
4
3
13
7
2
11
1
12
8
9
19
17
18
16
5
14
15

FIG. 2A

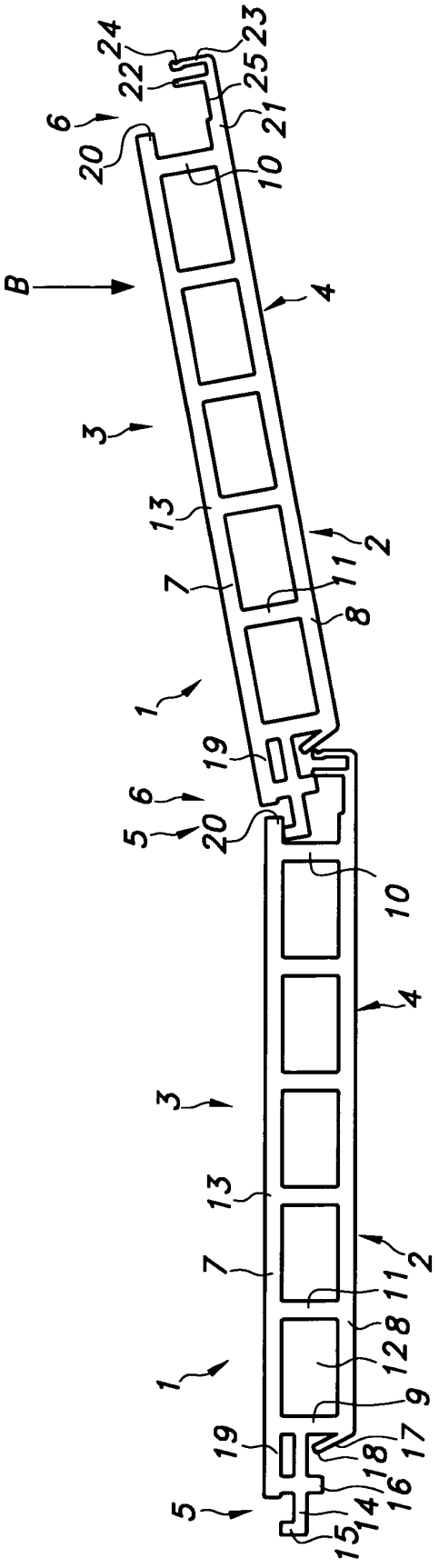
B
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

FIG. 2B

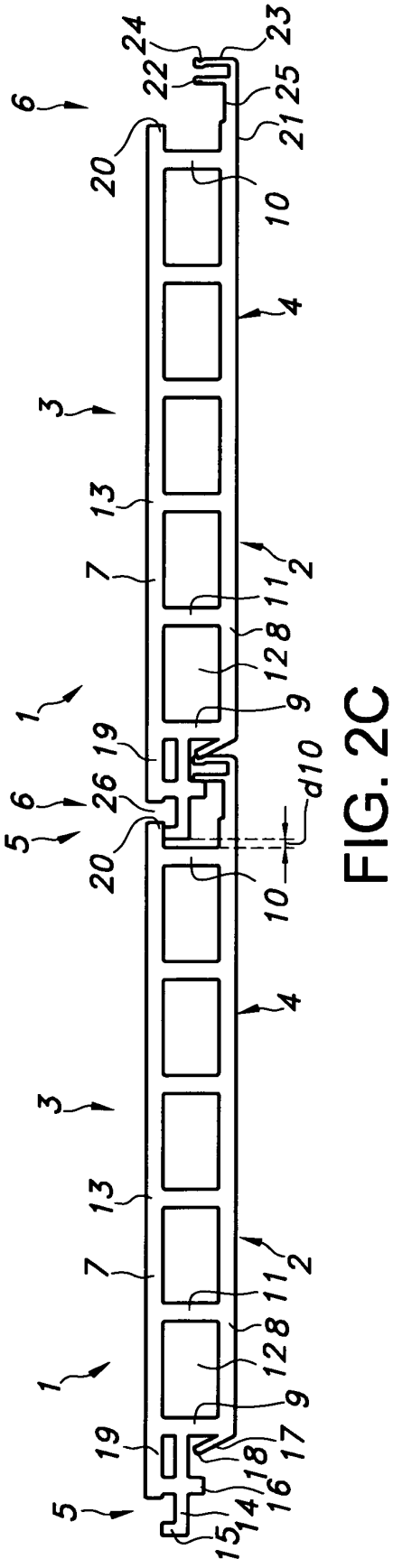
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
d10

FIG. 2C

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 6637163 B **[0002]**
- US 6324796 B **[0003]**