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(71) Applicant: **L.A. Cost S.r.l.**
06084 Bettona (PG) (IT)

(72) Inventor: **COSTANTINI, ALESSIO**
06083 BASTIA UMBRA (PG) (IT)

(74) Representative: **Baldi, Claudio**
Ing. Claudio Baldi S.r.l.
Viale Cavallotti, 13
60035 Jesi (Ancona) (IT)

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(54) **BUILDING WALL**

(57) A building wall (100) comprises a panel (P), a support base (B) to support said panel (P), connection and adjustment means (4) to rigidly connect the support

base (B) to a foundation level (F) and fixing means (5) to rigidly connect the panel (P) to the foundation level (F).

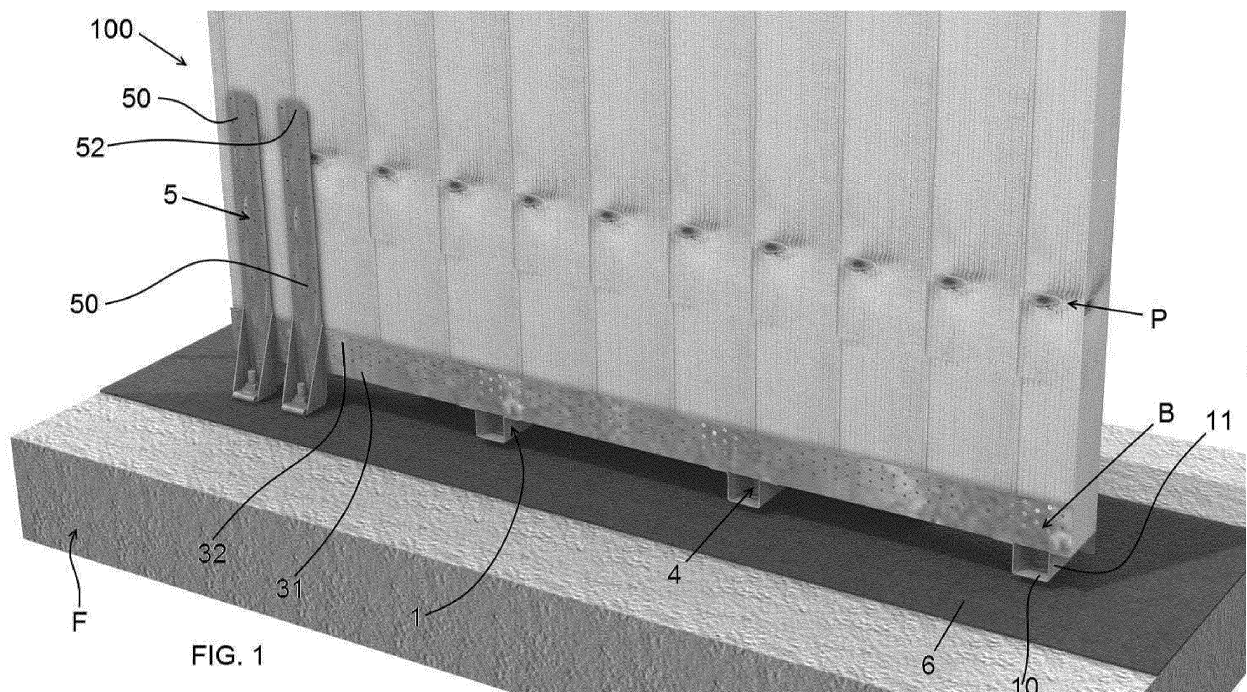


FIG. 1

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Description

[0001] The present patent application for industrial invention relates to a building wall.

[0002] The present invention refers to the construction sector of lightweight buildings, such as timber, steel or aluminum buildings, both of temporary and permanent type.

[0003] Generally speaking, a building wall is supported by a base. Support bases are known, which are intended to be disposed between reinforced concrete foundations and a wall comprising a panel, in order to anchor the panel to the foundations.

[0004] Such bases support the panel in raised position with respect to the foundations, thus eliminating the problems related to heat losses and rising damp. The latter is especially serious in case of timber buildings, in which the formation of humidity can rapidly damage the structure.

[0005] Such support bases generally comprise reinforced concrete curbs or timber base beams having the same thickness as the panel to be supported.

[0006] Therefore, the use of similar support bases implies the construction of a specific curb or base beam for each panel to be anchored to the foundations, thus increasing the costs and time necessary to mount the panel.

[0007] Evidently, the width of the beam must be equal to the thickness of the panel to be mounted and, for this reason, similar beams are made when they are needed, that is to say only when the thickness of the panel to be used is known.

[0008] The purpose of the present invention is to eliminate the drawbacks of the prior art by disclosing a building wall that is practical, versatile and provided with a universal base that is suitable for being applied to any type of panel.

[0009] These purposes are achieved according to the present invention with the characteristics of the independent claim 1.

[0010] Advantageous embodiments of the invention appear from the dependent claims.

[0011] The building wall of the invention comprises:

- a panel,
- a support base intended to be disposed between a foundation level and the panel in order to support the panel;
- first connection means to rigidly connect the support base to foundation level, wherein said first connection means are configured in such a way to adjust the position and the inclination of the support base with respect to the foundation level, and
- second connection means to rigidly connect the panel to the foundation level.

[0012] The peculiarity of the building wall according to the invention consists in the fact that the support base

comprises:

- a support bracket intended to be connected to the foundation level by means of said first connection means, and
- a first bar and a second bar with an L-shaped cross-section and a longitudinal axis.

[0013] The bars are positioned and fixed in parallel position on the support bracket in such a way that the longitudinal axes of the bars are orthogonal to the longitudinal axis of the support bracket and the distance between the longitudinal axes of the bars is substantially equal to the thickness of the panel in order to support the panel.

[0014] The inclination of the first connection means is adjusted in such a way that the longitudinal axis of each bar lies on a horizontal plane.

[0015] The advantages of the building wall according to the invention are evident, because the provision of a support base comprising a support bracket and bars that can be assembled according to the dimensions of the panel to be mounted will considerably reduce the installation time and cost of the wall, making it also easier to produce and store the various parts.

[0016] Additional features of the invention will appear clear from the following detailed description, which refers to merely illustrative, not limiting embodiments, wherein:

Fig. 1 is an axonometric view of the building wall of the invention;

Fig. 2 is an exploded axonometric view of a support base of the building wall according to the invention;

Fig. 3 is an axonometric view of the support base of the building wall according to the invention, mounted on a foundation level;

Fig. 4 is the same view as Fig. 3, except for it is an exploded view of a panel of the building wall according to the invention and of fixing means used to fix the panel to the foundation level;

Fig. 5 is a partially exploded axonometric view of the building wall according to the invention.

[0017] With reference to the figures, the building wall of the invention is disclosed, which is generally indicated with reference numeral 100.

[0018] The building wall (100) comprises a panel (P) and a support base (B) intended to be disposed between a foundation level (F) and the panel (P) to support the panel (P).

[0019] Optionally, a waterproofing membrane (6) is disposed between the foundation level (2) and the support base (1).

[0020] With reference to Fig. 2, the support base (B) comprises a support bracket (1) comprising a horizontal base portion (10) intended to be connected to the foundation level (F) and two vertical lateral walls (11) in parallel position. Two horizontal wings (12) orthogonally pro-

trude outwards from upper borders (13) of the lateral walls (11) of the support bracket.

[0021] A first bar (2) and a second bar (3) are positioned on the support bracket (1) according to the thickness of the panel (P) to be mounted. In particular, the two bars (2, 3) are positioned on the support bracket (1) in such a way that the longitudinal axes (X) of the bars are orthogonal to the longitudinal axis (Y) of the support bracket (1) and the distance between the longitudinal axes (X) of the bars is substantially equal to the thickness of the panel (P) in order to support the panel (P).

[0022] The first bar (2) has an L-shaped cross-section and comprises a horizontal portion (20) and a vertical portion (21). The horizontal portion (20) is stopped against the horizontal wings (12) of the support bracket (1) in order to support the panel (P). The vertical portion (21) protrudes in lower position from the horizontal wings (12) of the support bracket, and is stopped against one edge of the support bracket.

[0023] The second bar (3) has an L-shaped cross-section and comprises a horizontal portion (30) and a vertical portion (31). The horizontal portion (30) is stopped against the horizontal wings (12) of the support bracket (1) in order to support the panel (P). The vertical portion (31) protrudes in upper position from the horizontal wings (12) of the support bracket, and is stopped against a lower portion of one side of the panel (P).

[0024] Optionally, a first waterproofing membrane (7) is disposed between the horizontal portions (20, 30) of the bars (2, 3) of the support base (1) and the panel (P) (see Fig. 4).

[0025] With reference to Figs. 3 and 4, connection and adjustment means (4) are intended to rigidly connect the support bracket (1) to the foundation level (F). Said connection and adjustment means (4) comprise a threaded bar (40) inserted inside a hole (18) obtained on the base portion (10) of the support bracket. Two nuts (41, 42) are screwed in the threaded bar (40), under and above the base portion (10) of the support bracket, in order to adjust the inclination of the support bracket, in such a way that the longitudinal axis (X) of each bar (2, 3) lies on a horizontal plane.

[0026] With reference to Figs. 1 and 4, fixing means (5) are intended to rigidly connect the panel (P) of the building wall to the foundation level (F). The fixing means (5) comprise plates (50) fixed to the foundations level (F) and screws or threaded nails (51) inserted into holes (52) obtained in the plates (50) and into holes (32) obtained in the vertical portion (31) of the second bar (3) and screwed or fixed to the panel (P), in such a way to rigidly constrain the plates (50) and the second bar (3) to the panel (P) and, consequently, the panel (P) to the foundation level (F).

[0027] The description continues with reference to the manufacturing method of the building wall (100) according to the invention.

[0028] The support bracket (1) is positioned on the foundation level (F) and the two bars (2, 3) are positioned

on the support bracket (1), in such a way that the longitudinal axes (X) of the bars are orthogonal to the longitudinal axis (Y) of the support bracket (1) and the distance between the longitudinal axes (X) of the bars is substantially equal to the thickness of the panel (P) to be mounted.

[0029] Therefore, the two bars (2, 3) are fixed to the support bracket (1) in such a way to obtain a support base for the panel (P). The bars (2, 3) are fixed to the support bracket (1) by means of welding.

[0030] The threaded bar (40) is inserted into the hole (18) of the base portion (10) of the support bracket and the two nuts (41, 42) are screwed in the threaded bar (40), under and above the base portion (10) of the support bracket, in order to adjust the inclination of the support bracket, in such a way that the longitudinal axis (X) of each bar (2, 3) lies on a horizontal plane.

[0031] Then, the threaded bar (40) is fixed to the foundation level (F) by means of resin, in such a way to constrain the support base (1) to the foundation level.

[0032] An empty space is formed under the bars (2, 3) and the support bracket (1). Such an empty space under the support base (B) can be filled by casting anti-shrink mortar after making polyurethane foam retention curbs.

[0033] Before positioning the panel (P) on the bars (2, 3) of the support base, such a method may provide for positioning a first waterproofing membrane (7) onto the horizontal portions (20, 30) of the bars (2, 3).

[0034] Successively, the panel (P) is positioned on the bars (2, 3) of the support base, with a lower portion of one side stopped against the vertical portion (31) of the second bar (3).

[0035] Then, the screws (51) of the fixing means are inserted into the holes (32) of the vertical portion (31) of the second bar (3) and screwed in the panel (P), in such a way to rigidly connect the support base (B) to the panel (P).

[0036] Successively, the plates (50) of the fixing means (5) are fixed to the foundation level (F) and the screws (51) are inserted into the holes (52) of the plates (50) and screwed into the panel (P), in such a way to rigidly fix the plates (50) to the panel (P) and, consequently, the panel (P) to the foundation level (F).

[0037] Moreover, after fixing the panel (P) to the foundation level (F), said method may provide for fixing a second waterproofing membrane (8) to one side of the panel (P) onto the support base.

[0038] After mounting the panel (P), the empty space between the panel (P) and the foundation level (F) can be filled by casting a structural footing.

[0039] Numerous variations and modifications can be made to the present embodiments of the invention, which are within the reach of an expert of the field, falling in any case within the scope of the invention.

Claims

1. Building wall (100) comprising:

- a panel (P), 5
- a support base (B) intended to be disposed between a foundation level (F) and said panel (P) in order to support said panel (P);
- connection and adjusting means (4) to rigidly connect the support base (B) to the foundation level (F), wherein said connection and adjusting means (4) are configured in such a way to adjust the position and the inclination of the support base (B) with respect to the foundation level (F), and 10
- fixing means (5) to rigidly connect the panel (P) to the support base (B) and to the foundation level (F), 15

characterized in that 20

said support base (B) comprises:

- a support bracket (1) intended to be connected to the foundation level (F) by means of said connection and adjustment means (4), said support bracket having a longitudinal axis (Y), and 25
- a first bar (2) and a second bar (3) with an L-shaped cross-section and a longitudinal axis (X); said bars (2,3) being positioned and fixed in parallel position on the support bracket (1), in such a way that the longitudinal axes (X) of the bars are orthogonal to the longitudinal axis (Y) of the support bracket (1) and the distance between the longitudinal axes (X) of the bars is substantially equal to the thickness of the panel (P) in order to support the panel (P), 30 35

wherein the inclination of said connection and adjustment means (4) is adjusted in such a way that the longitudinal axis (X) of each bar lies on a horizontal plane. 40

2. The building wall (100) of claim 1, wherein said support bracket (2) of the support base comprises: 45

- a horizontal base portion (10) intended to be connected to the foundation level (F);
- two vertical lateral walls (11) in parallel position; each lateral wall (11) having an upper border (13); 50
- two horizontal wings (12) orthogonally protruding outwards from upper borders (13) of the lateral walls (11) of the support bracket in order to support said bars (2, 3) of the support base. 55

3. The building wall (100) of claim 2, wherein:

the first bar (2) comprises a horizontal portion

(20) stopped against the horizontal wings (12) of the support bracket (1) and a vertical portion (21) that protrudes in lower position from the horizontal wings (12) of the support bracket (1) and is stopped against one border of the support bracket (1);
the second bar (3) comprises a horizontal portion (30) stopped against the horizontal wings (12) of the support bracket (1) and a vertical portion (31) that protrudes in upper position from the horizontal wings (12) of the support bracket (1) and is stopped against a lower portion of one side of the panel (P).

4. The building wall (100) of claim 2 or 3, wherein said connection and adjustment means (4) comprise:

- a threaded bar (40) inserted into a hole (18) obtained on the base portion (10) of the support bracket and intended to be fixed to the foundation level (F), in such a way to connect said support bracket (1) of the support base to the foundation level (F), and
- nuts (41,42) screwed into the threaded bar (40), under and above said base portion (10) of the support bracket, in such a way to adjust the inclination of the support bracket (1).

5. The building wall (100) of any one of the preceding claims, wherein said fixing means (5) comprise:

- plates (50) fixed to the foundation level (F); and
- screws or threaded nails (51) inserted into holes (52) obtained in the plates (50) and into holes (32) obtained in the second bar (3) and screwed into or fixed to the panel (P).

6. The building wall (100) of any one of the preceding claims, comprising a waterproofing membrane (6) disposed between the foundation level (2) and the support base (1).

7. The building wall (100) of any one of the preceding claims, comprising a first waterproofing membrane (7) disposed between the support base (1) and the panel (P).

8. The building wall (100) of any one of the preceding claims, comprising a second waterproofing membrane (8) fixed to one side of the panel (P) above said support base (1).

9. Manufacturing method of a building wall (100) comprising the following steps:

- positioning a support bracket (10) on a foundation level (F),
- positioning two bars (2, 3) on the support bracket

et (10) according to the thickness of a panel (P)
to be mounted;
- fixing the two bars (2, 3) on the support bracket
(10) in such a way to obtain a support base (1)
for the panel (P); 5
- adjusting the inclination of the two bars (2, 3)
by means of connection and adjustment means
(4) connected to the support bracket (10),
- fixing the connection and adjustment means
(4) to the foundation level (F) in such a way to 10
fix the support base (1) to the foundation level,
- positioning the panel (P) on the bars (2, 3) of
the support base;
- fixing the panel (P) to the foundation level (F)
by means of fixing means (5). 15

- 10.** The method of claim 9, wherein said connection and
adjustment means (4) comprise a threaded bar (40)
and nuts (41, 42) screwed into the threaded bar (40)
to adjust the inclination of the support base (1), 20
wherein the threaded bar (40) is fixed to the founda-
tion level (F) with resin, and
said bars (2, 3) of the support base are fixed to the
support bracket (10) of the support base by means
of welding. 25

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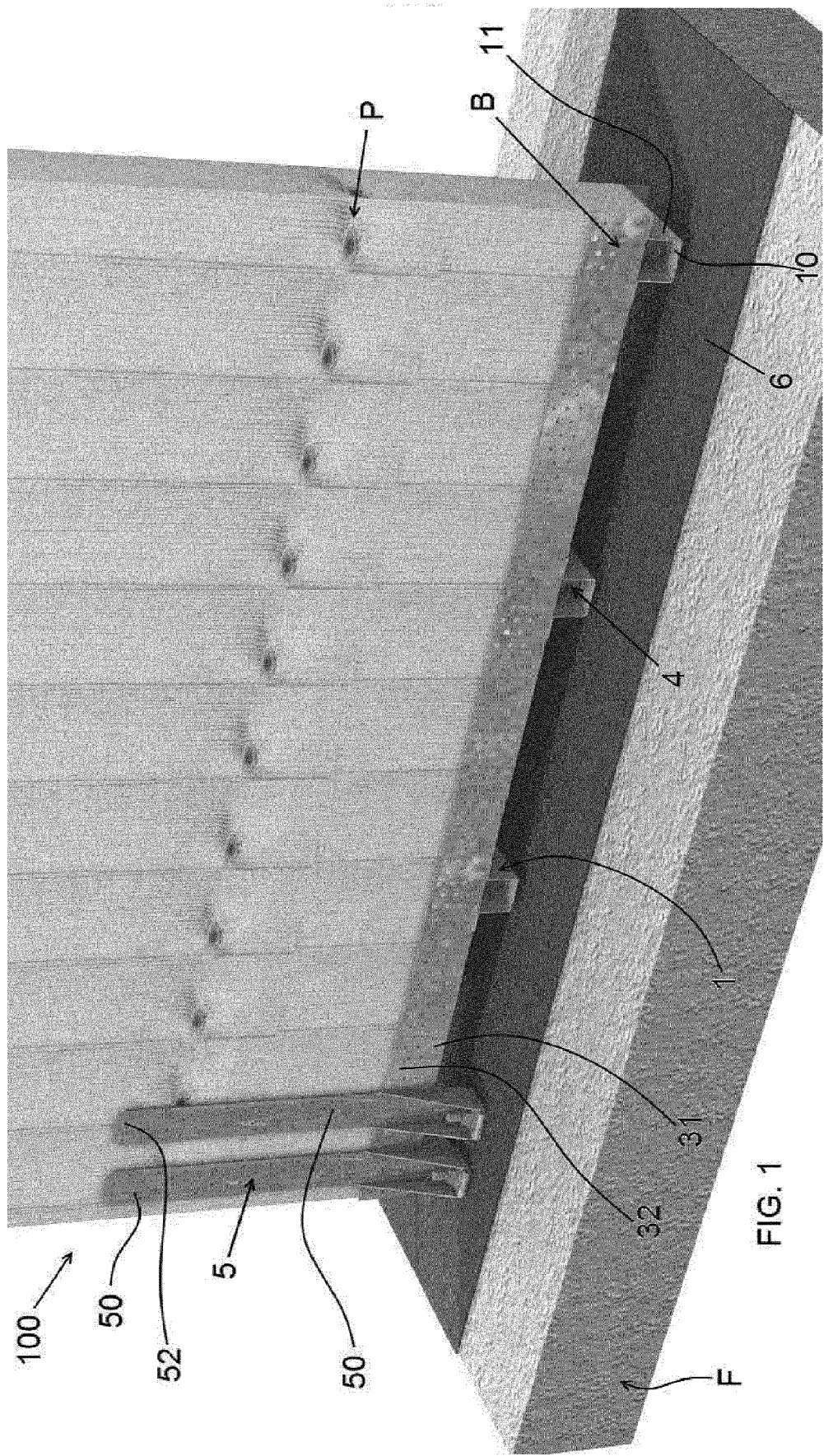
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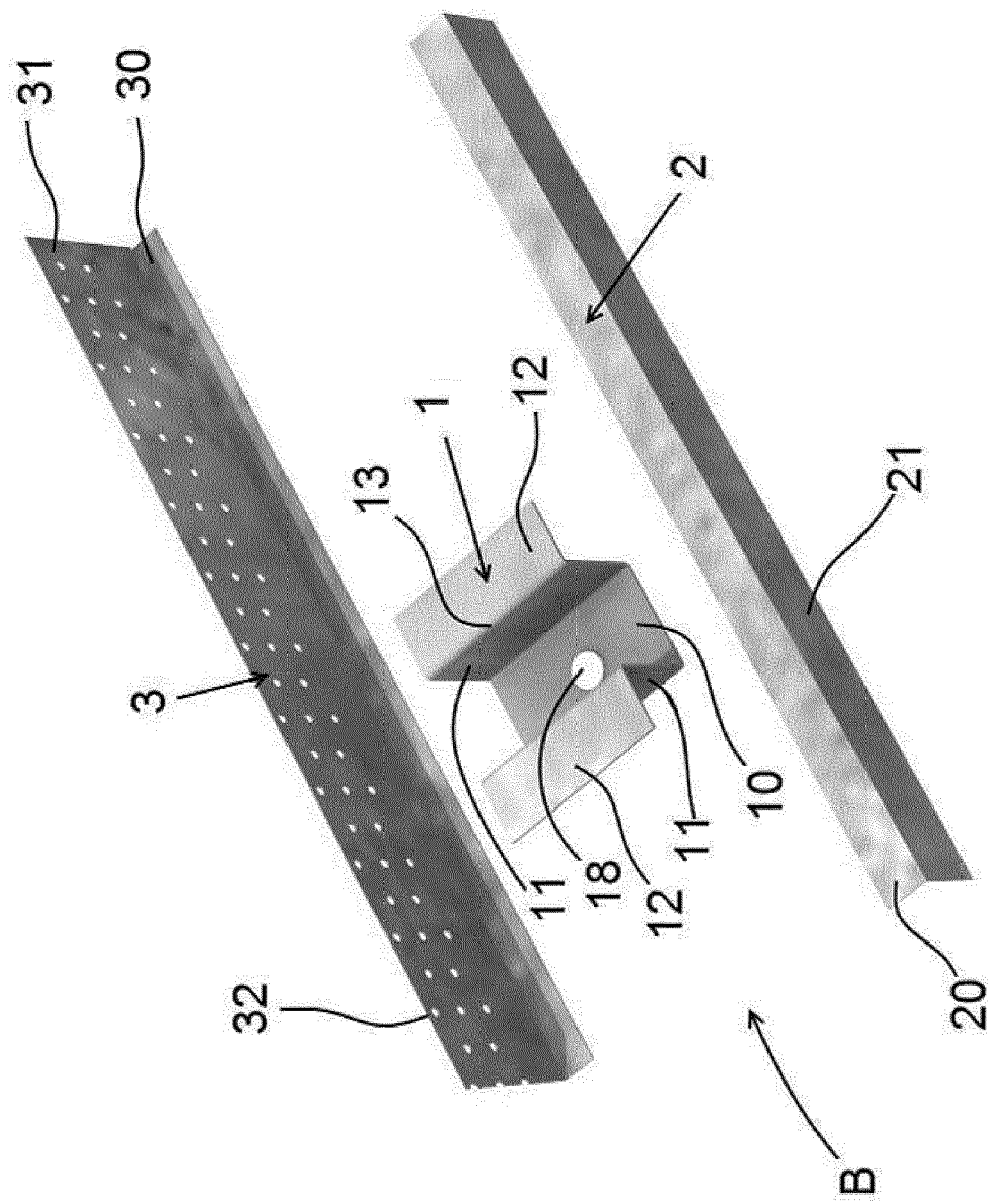
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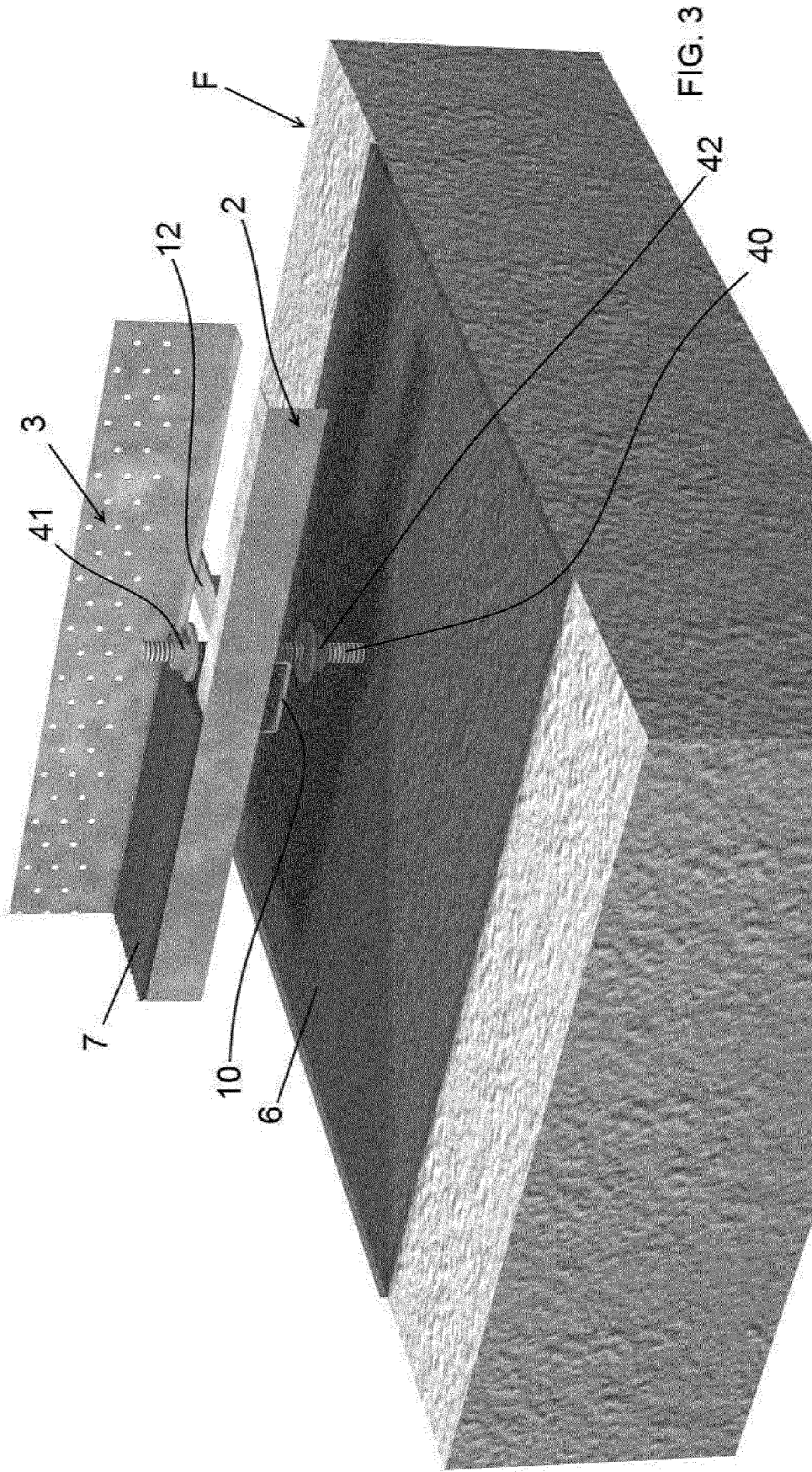
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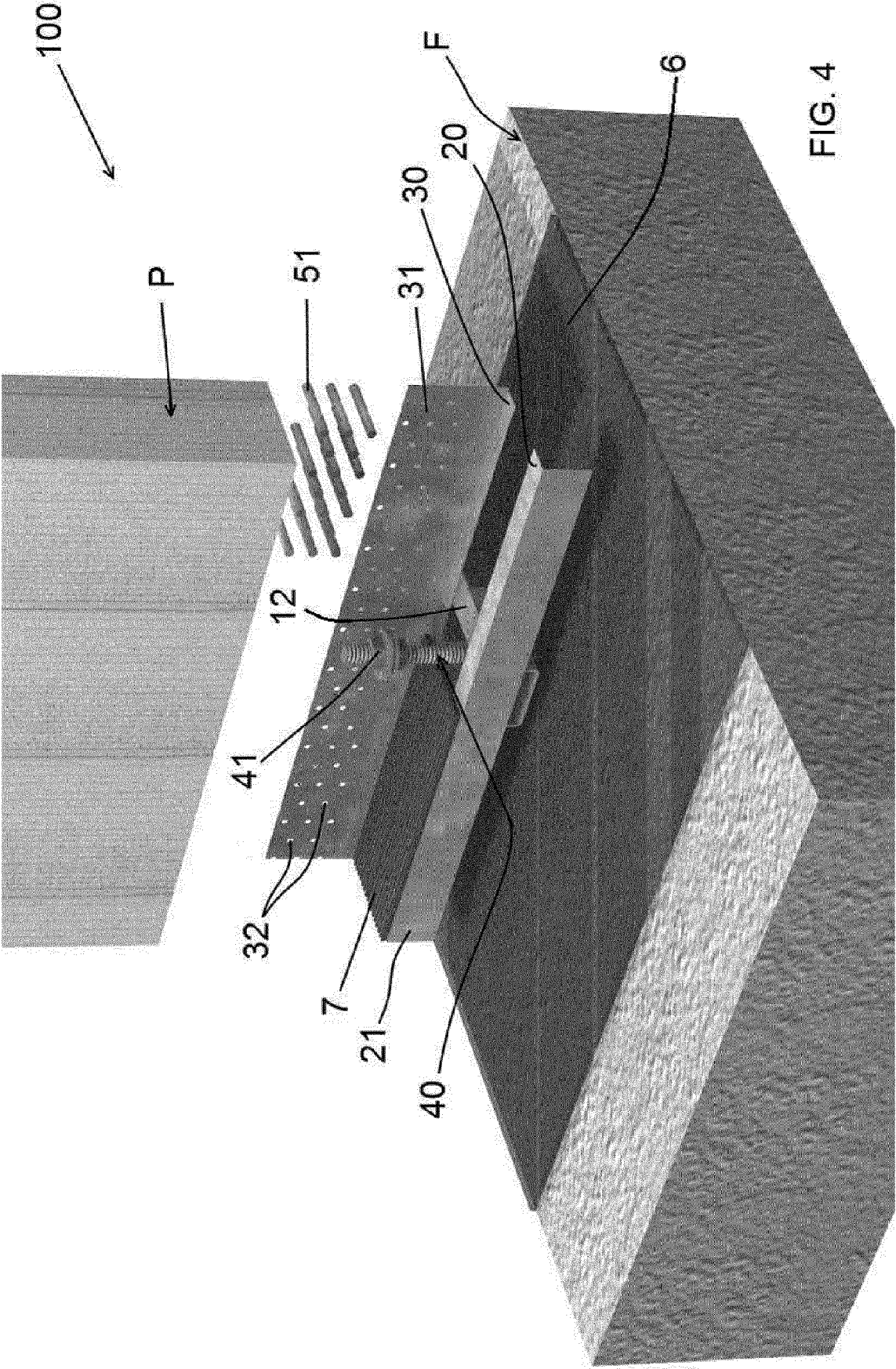
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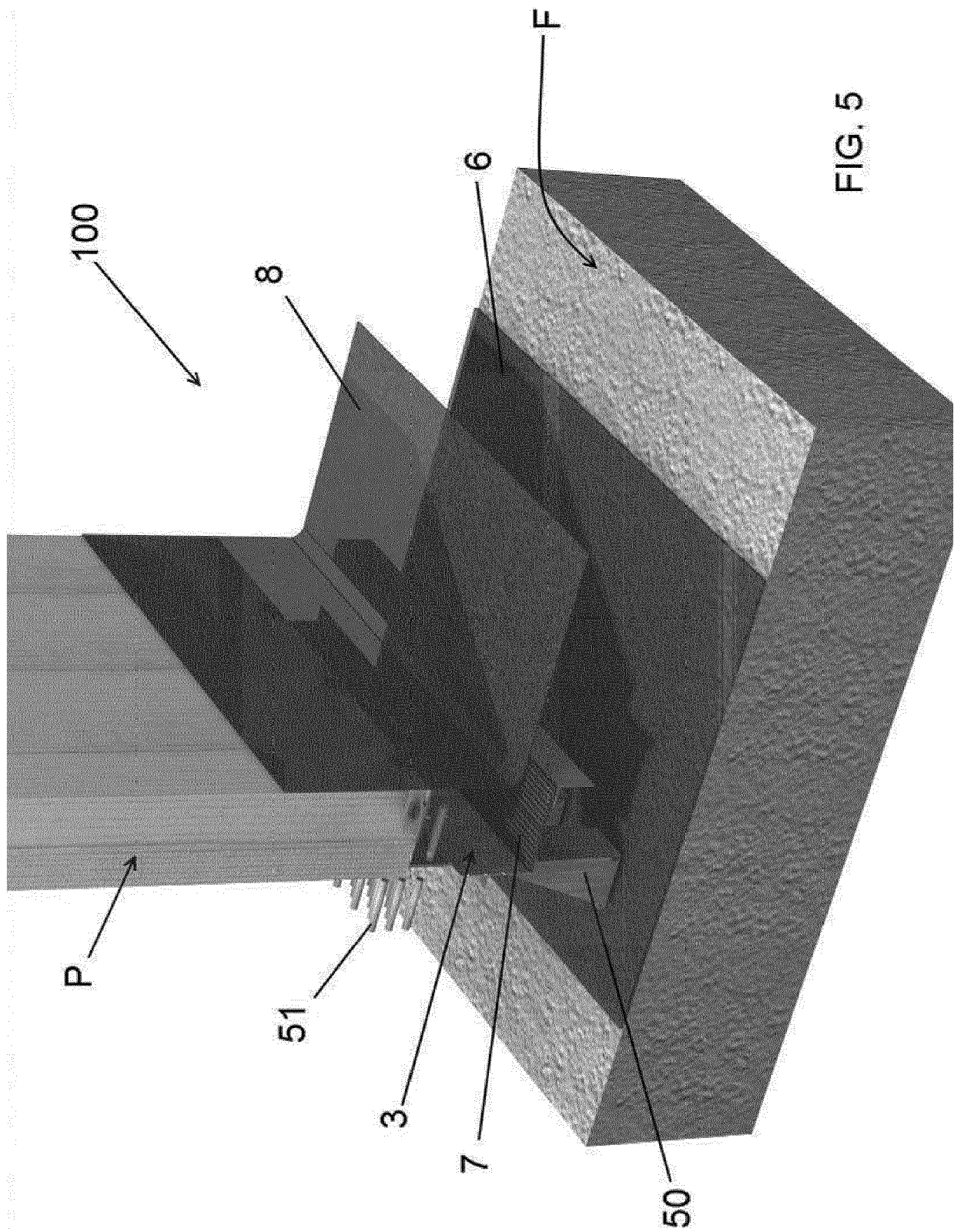


FIG. 5



EUROPEAN SEARCH REPORT

Application Number
EP 17 17 9949

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	US 6 305 134 B1 (ROBINSON JOHN CRAWFORD [AU]) 23 October 2001 (2001-10-23) * column 5, line 63 - column 6, line 34; figures 16, 17 *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			E04B E02D E04H
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 29 November 2017	Examiner Galanti, Flavio
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82