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(54) HEAD OF A SUPPORT ELEMENT AND A SUPPORT ELEMENT FOR SUPPORTING FLOORS, PARTICULARLY EXTERNAL FLOORS

(57) A head of a support for supporting floors, outdoor floors in particular, on its top surface (3a) featuring four spacing ribs (4) positioned radially and distributed evenly along its top rim is fitted with positioning element (5), preferably a plate, pivotably connected to the head (3) so that the said positioning element (5), when tilted away, is perpendicular to a top surface (3a) of the head (3), while when in the folded position the positioning element (5) does not protrude above the top surface (3a) of the head (3). The head (3) is connected to a base (1) of the support, preferably via a threaded connection.

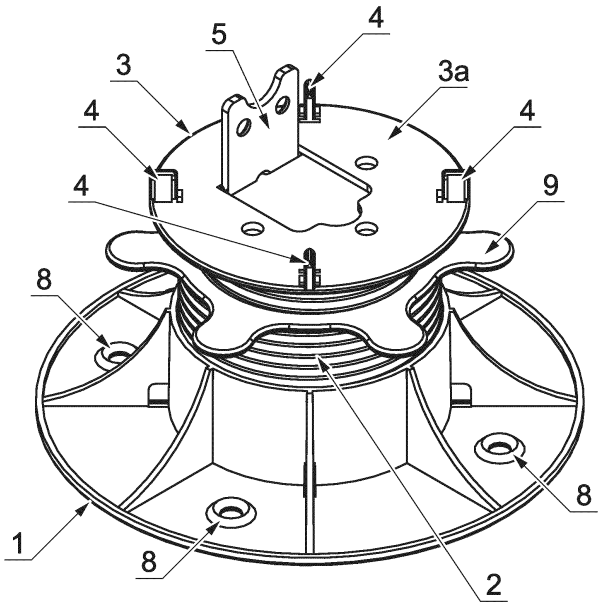

Fig. 6

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Description

[0001] The invention concerns a head of a support element and a support element for supporting floors, intended especially for supporting ground beams and outdoor floor boards.

[0002] Known from patent document PL 231172 B1 is a floor assembly set made up of chambered profiles clad with cladding elements. The set incorporates a transition strip placed between two neighbouring profiles clad with cladding elements, where the strip features profile guides set in profile slots; the set further incorporates bevelled feet which are slipped into the bevelled recess of the left support and bevelled recess of the right support and pressed from the side with damping pads, where the bottom levelling elements rest on the base featuring ribs on its bottom side, and where the base is fitted with a guide with a longitudinal groove for the slides. The left support and the right support feature recesses parallel to each other, intended to accommodate the protrusions of the damping pads, where the protrusions are parallel to each other. The base features a wall non-detachably connected to the base at the right angle, reinforced with slanting ribs, it also features an oval pass-through opening.

[0003] Known from patent document PL 232763 B1 is a terrace support pad of adjustable height, intended for mounting terrace boards, planks, ground beams and wooden parquet boards. The support pad is made up of the bottom part and the top part, where extending from the surface of the top plate of the bottom part is a number of equal blocks distributed evenly on the plan of a circle, where the blocks form a crown of a kind, and where the block takes the form of a number of equal steps, while extending from the surface of each step is a rib the long sides of which are oriented radially; moreover, the number of the blocks is divisible by four; furthermore, the top part takes the form of a plate which connects a number of equal ducts distributed evenly on the plan of a circle and forming a crown of a kind, where the number of ducts is equal to the number of blocks which slide into the ducts, and where each duct features a pocket to accommodate the rib; in addition, there are four spacing elements extending from the plate of the top part.

[0004] Known from patent document EP 3 112 551 B1 is a terrace system and a holding part for the mounting of the visible profiles. The holding part for the mounting of visible profiles incorporates the base plate featuring at least one mounting opening for the holding element which serves the mounting of the holding part, and two supporting bridges extending from the base plate and situated one next to another, which act in opposite directions in the interlocking manner in the recess in each visible profile.

[0005] The purpose of the present invention is to provide an easy-to-use support characterised by smooth adjustment of its height, featuring a universal head for supporting floors, terraces in particular, ground beams and boards included.

[0006] According to the present invention, a head of a support for supporting floors, outdoor floors in particular, on its top surface featuring four spacing ribs positioned radially and distributed evenly along its top rim, is characterised in that it is fitted with a positioning element pivotably connected to the head so that the said positioning element, when tilted away, is perpendicular to a top surface of the head, while when in the folded position (not tilted away) the positioning element does not protrude above the top surface of the head.

[0007] Preferably, the positioning element takes the form of a plate, or a block, or a rod. Preferably, the positioning element is connected to the head via a hinge, preferably a membrane hinge.

[0008] A bottom surface of the head may be adjusted for mounting the head on a underlying surface, preferably it may end with a base featuring mounting openings via which the head may be fixed to the underlying surface, preferably screwed to it, in the latter case serving as a support, or the head may feature technical means enabling its connection to the relevant part of the support, the preferable technical means being a thread.

[0009] According to the present invention, a support for supporting floors, outdoor floors in particular, incorporating a head according to this invention features a base connected to the said head.

[0010] The head of the support is connected to the base of the support, preferably via a threaded connection.

[0011] Preferably, between the support head and the support base there is a central part connected to the support head on the one end, and to the support base on the other end.

[0012] Preferably, the support head is connected to the central part via a threaded connection, and the central part is preferably connected to the support base via a threaded connection.

[0013] Preferably, the threaded connection between the support base and the central part may be the opposite direction of rotation than that of the connection between the central part and the support head.

[0014] In addition, the central part may be fitted with a fingered rosette, where the rosette facilitates screwing the central part onto the base and unscrewing it from the base.

[0015] Moreover, the support base features mounting openings via which the support may be fixed to the underlying surface.

[0016] The threaded connections between the support parts enable smooth and precise adjustment of the support height depending on the place of its location. The radial ribs positioned on the top surface of the support head enable precise laying of the boards at equal distances from one another. If the support is used for mounting ground beams, the position of the ground beam is defined by the pivotable element tilted away at the angle of 90° with respect to the top surface of the head.

[0017] An embodiment of the invention is shown in a drawing where Fig. 1 shows the support in three-dimensional view with the pivotable element folded;

Fig. 2 depicts the support head, in three-dimensional view;
Fig. 3 shows the central part of the support, in three-dimensional view;
Fig. 4 presents the support base, in three-dimensional view;
Fig. 5 depicts the support in axial view;
Fig. 6 shows the support with the pivotable element tilted away, in three-dimensional view.

[0018] The support according to the first embodiment incorporates base 1, central part 2 and head 3 which on its top surface 3a features four mounting ribs 4 arranged radially at even distances between one another along its top rim, it also features positioning element 5, for example in the form of a plate which is pivotably connected to head 3 so that when tilted away, plate 5 is positioned perpendicular to top surface 3a of head 3, as shown in Fig. 6, while in the folded position (not tilted away) plate 5 does not extend above top surface (3a) of head (3), the top surface of plate 5 runs in the plane of top surface 3a of head 3, as shown in Fig. 1, or below top surface 3a of head 3. Head 3 features a thread, as shown in Fig. 2.

[0019] Head 3 is connected via threaded connection 7 to central part 2 of the support, where the central part is connected via threaded connection 6 to base 1 of the support, and where preferably the direction of rotation of the said threaded connection 6 between central part 2 of the support and base 1 of the support is opposite to the direction of rotation of threaded connection 7 between central part 2 of the support and head 3 of the support. For example, base 1 features an inner thread, head 3 features an outer thread, while central part 2 features an outer thread which serves its connection to base 1 and an inner thread which serves its connection to head 3, as shown in Fig. 5. In addition, central part 2 may be fitted with fingered rosette 9, where the rosette facilitates screwing the central part onto base 1 and unscrewing it from base 1.

[0020] In the second embodiment the support is different from the support in the first embodiment in that it is devoid of central part 2, and head 3 is connected directly to base 1, for example via a threaded connection (not shown on the drawing).

[0021] In both embodiments base 1 of the support may feature mounting openings 8 via which base 1 may be fixed to the underlying surface.

[0022] In another embodiment (not shown on the drawing), the bottom surface of head 3 may be adjusted for its direct mounting on the underlying surface, for example it may end with a base which, for example, features mounting openings via which head 3 may be fixed to the underlying surface, and in the latter case head 3 itself serves as the support.

[0023] In all embodiments the positioning element 5, such as a plate, may be either in folded position, i.e. not extend above top surface 3a of head 3, as shown in Fig. 1, and in such a case the support is intended for bearing floor boards laid thereon, or positioning element 5, for example a plate, may be tilted away at the angle of 90° with respect to top surface 3a of head 3, as shown in Fig. 6, and in such a case the support is intended for bearing ground beams laid thereon for the assembly of floor planks.

List of numerical references

[0024]

1 - support base
2 - central part of the support
3 - support head
3a - top surface of the support head
4 - spacing ribs
5 - positioning element
6 - threaded connection between the central part of the support and the support base
7 - threaded connection between the central part of the support and the support head
8 - mounting openings
9 - fingered rosette

Claims

1. A head of a support for supporting floors, outdoor floors in particular, on its top surface featuring four spacing ribs positioned radially and distributed evenly along its top rim, **characterised in that** it is fitted with a positioning element (5) pivotably connected to head (3) so that the said positioning element (5), when tilted away, is perpendicular to a top surface (3a) of the head (3), while when in the folded position the positioning element (5) does not protrude above the top surface (3a) of the head (3).

2. The head according to claim 1, **characterised in that** the positioning element (5) takes the form of a plate.

3. The head according to claims 1 or 2, **characterised in that** the positioning element (5) is connected to the head (3) via a hinge, preferably a membrane hinge.

4. The head according to claim 1, **characterised in that** a bottom part of the head (3) features technical means adjusted for mounting the head (3) on a underlying surface, preferably it comprises a base featuring mounting openings.

5. The head according to claim 1, **characterised in that** the bottom part of head (3) features technical

means for connecting the head (3) to the corresponding part of the support.

6. A support for supporting floors, outdoor floors in particular, comprising a head (3) according to claim 5 and a base (1) which is connected to the head (3).

7. The support according to claim 6, **characterised in that** the base (1) is connected to the head (3) via a threaded connection.

8. The support according to claim 6, **characterised in that** between the head (3) and the base (1) there is a central part (2) connected to the head (3) on the one end, and to the base (1) on the other end.

9. The support according to claim 8, **characterised in that** the head (3) is connected to the central part (2) via a threaded connection (7), and the central part (2) is connected to the base (1) via a threaded connection (6).

10. The support according to claim 9, **characterised in that** the threaded connection (6) between the base (1) and the central part (2) is **characterised by** the opposite direction of rotation than that of the threaded connection (7) between the central part (2) and the head (3).

11. The support according to claim 8 or 9 or 10, **characterised in that** the central part (2) is fitted with a fingered rosette (9).

12. The support according to any one of the claims 6 to 11, **characterised in that** the base (1) features mounting openings (8) via which the support is fixed to the underlying surface.

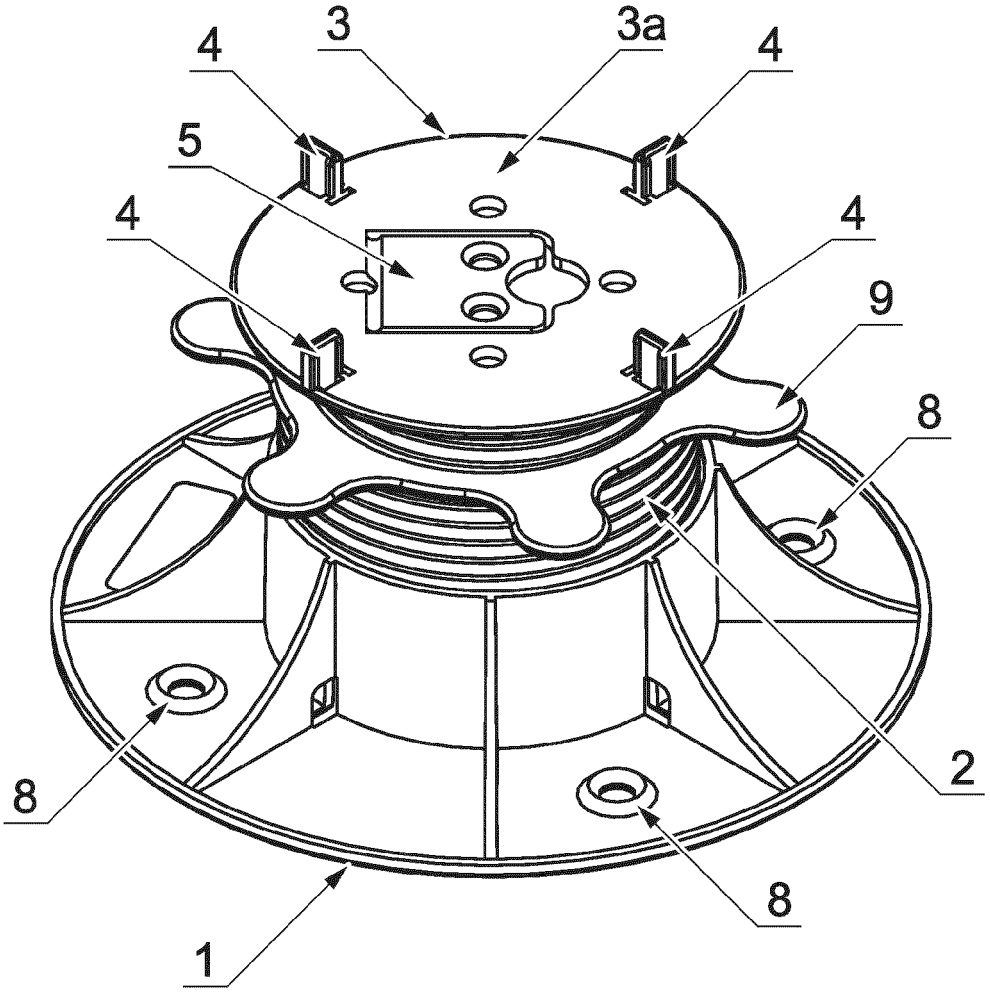

Fig. 1

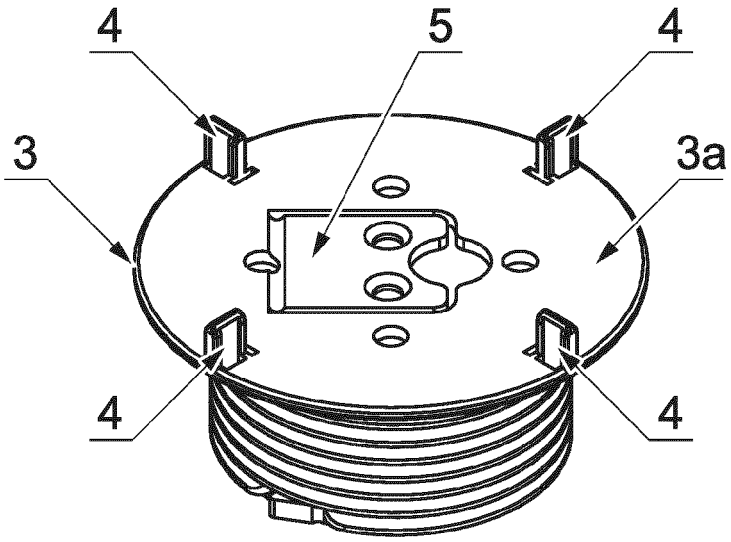

Fig. 2

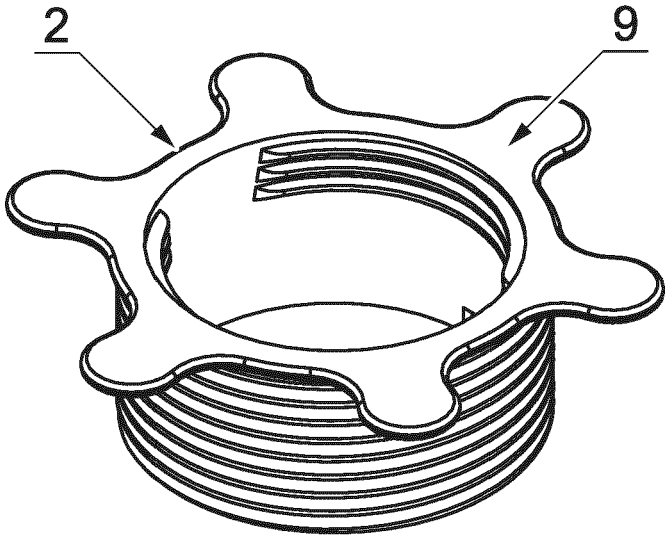

Fig. 3

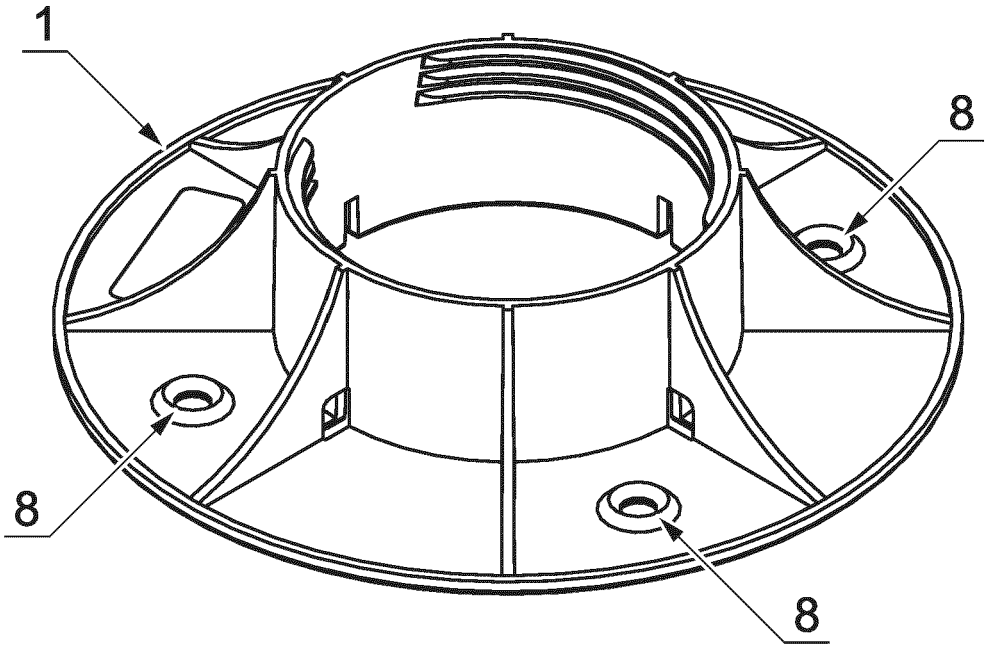

Fig. 4

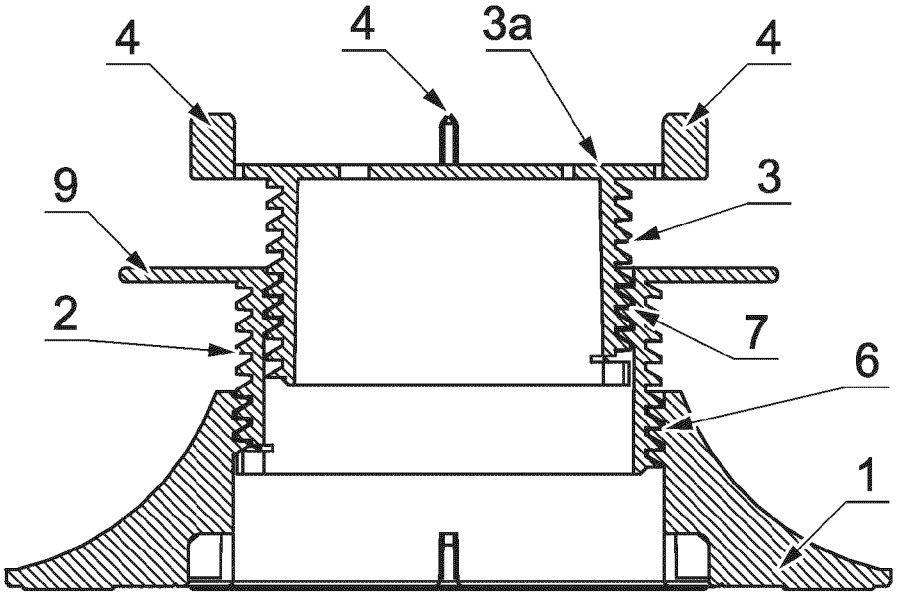

Fig. 5

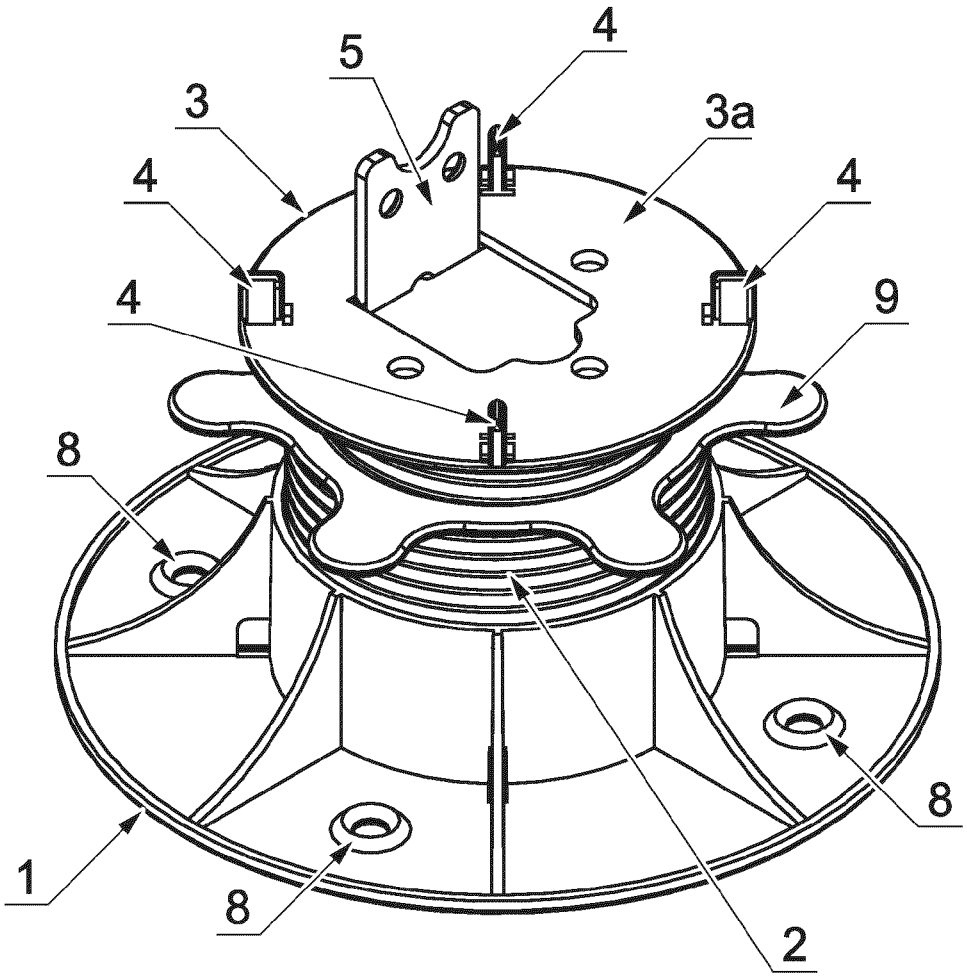

Fig. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 24 02 0355

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	US 2024/003141 A1 (DOUGLAS ANDREW [GB] ET AL) 4 January 2024 (2024-01-04) * figures 1-3,11 * * paragraph [0065] - paragraph [0072] * * paragraph [0084] * -----	1-6,12 7-11	INV. E04F15/024
Y	FR 2 559 529 A1 (SIPLAST SA [FR]) 16 August 1985 (1985-08-16) * figures 1a-1b * * page 5, line 29 - line 32 * * page 6, line 18 - line 19 * * page 6, line 34 - line 37 * * page 8, line 1 - line 7 * -----	7-11	

TECHNICAL FIELDS SEARCHED (IPC)

E04F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	18 March 2025	Estorgues, Marlène

CATEGORY OF CITED DOCUMENTS

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18-03-2025

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

REFERENCES CITED IN THE DESCRIPTION

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- PL 231172 B1 **[0002]**
- PL 232763 B1 **[0003]**
- EP 3112551 B1 **[0004]**