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(54) AUXILIARY DEVICE FOR PLACING ELEMENTS IN THE FORM OF A PLATE

HILFSVORRICHTUNG ZUM SETZEN VON ELEMENTEN IN FORM EINER PLATTE

DISPOSITIF AUXILIAIRE POUR POSER DES ÉLÉMENTS SOUS FORME DE PLAQUE

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Description

Technical Field of the invention

[0001] This invention refers to an auxiliary device for the level placement of elements in the form of a plate, such as floor tiles, slabs, ceramic tiles, etc., of those used to coat floors and/or walls.

[0002] That is, it is related to the devices used to separate the floor tiles, slabs, ceramic tiles, or similar elements in a uniform manner and to level their edges during the laying of the coating of the floor or wall.

Background of the invention

[0003] Various auxiliary device solutions are known for the placing and levelling of elements in the form of a plate, such as floor tiles, slabs, ceramic tiles, etc., on floors or walls. These devices generally known comprise a support or separating element and a pressing or adjusting element. The support element has a base and a column or grip rod which is arranged perpendicular to the base.

[0004] While in use, during the laying of the floor or wall, the base is placed on the adhesive mixture, and on said base are placed the edges corresponding to two or more elements in the form of a plate, which shall be arranged adjacent. The edges are flush with the larger faces of the grip rod, said elements in the form of a plate remaining separated at a certain distance, corresponding to the joint between said elements.

[0005] For its part, more than one pressing element design is known. For example, in the document AU2016100036, published on 11 February 2016, a pressing element is shown that has the form of a wedge, which is made to slide over the elements in the form of a plate through a longitudinal opening that traverses the grip rod of the support element, until the upper surface of said wedge makes contact with the grip rod and a pushing of the pressing element occurs in a direction perpendicular to the plane of placement of said elements in the form of a plate against the latter, which are fastened between the support element and the pressing element, finally achieving coplanarity or levelling between said elements in the form of a plate.

[0006] Once the adhesive mixture has dried, both the wedge and the grip rod are extracted. The extraction of the grip rod occurs through the breakage of a weakened portion of the support element arranged between its grip rod and its base, the latter being trapped between the floor or wall and the element in the form of a plate that coats it.

[0007] Other known levelling devices show a pressing element that has the form of a screw or threaded ring, which couples to the exterior of the end of the grip rod which is opposite the base of the support element. For example, the devices shown in the document ES 2514886 and ES 2552318, published on 24 October 2012 and 30 September 2015 respectively.

[0008] In both known devices that use the pressing element in the form of a threaded ring, the latter is threaded into the grip rod until it contacts the elements in the form of a plate to be levelled, producing a push of the pressing element in a direction perpendicular to the plane of placement of said elements in the form of a plate, against the latter, likewise achieving coplanarity between said elements in the form of a plate.

[0009] In these known devices, the coupling of the threaded ring to the grip rod is done by means of two coupling projects that protrude at each side of said grip rod, which slide between two helicoidal ramps that protrude into the interior of the threaded ring. Which seems to cause impressions and require additional efforts when the threaded ring is being coupled to the grip rod, producing involuntary and undesired shifting of the elements in the form of a plate that result finally in unevenness between said elements. For this reason, it is necessary to design an auxiliary device that, simply and economically, makes it possible to overcome the above-mentioned drawbacks.

[0010] The document US9322186B1 discloses a levelling spacer system includes a multiple plates, multiple spacers and multiple knobs. The spacers are threadably connected to the knobs to clamp the panel members, and the plates are used to connect the spacers and the knobs together with so as to clamp more panel members. The plates and the knobs are located on the top of the panel members, and the spacers are located at the underside of the panel members. When the panel members are levelled, the knobs are removed, and the necks on the spacers are broken to finish the levelling of the panel members.

[0011] Otherwise, the document EP2966239A1 discloses a spacer element for a positioning system for covering elements comprises a base intended to be made to bear on a fixing adhesive for the covering elements and to receive and support a portion of a rear surface of two adjacent covering elements, a plate extending transversely along a longitudinal axis of the spacer element, the base being intended to be interposed, in use, between facing edges of the two covering elements, an intended breaking line being formed between the plate and the base, comprising a threaded shaft attached to the plate on the side opposite the base, and an insertion aperture formed in the plate and adapted to allow the slidable insertion of a wedge.

[0012] The document KR101842840B1 discloses a tile levelling apparatus. According to one aspect of the present invention, the tile levelling apparatus comprises: a horizontal plate providing an upper surface on which a plurality of tiles are secured; one pair of vertical plates vertically extended on the upper surface of the horizontal plate, and intersecting each other; one pair of square holes formed in the pair of vertical plates, respectively, and connected to each other; and a pressing clip inserted into the pair of square holes, capable of coming in contact with a top horizontal surface of the square hole at an

inclined or stepped upper surface thereof, and downwardly pressing the upper surface of the tiles simultaneously at the bottom which is horizontally extended.

[0013] The document CN204920163U discloses a ceramic tile ware of making level, including screw capping and checkpost, the checkpost divide into main board and second board, the perpendicular surface middle part that sets up in the second board in main board to the width of main board equals with the length of second board, the superficial lower extreme of second board is provided with the opening, the both sides of the second board of checkpost are provided with the chi tooth to surface at the chi tooth is provided with the external screw thread, the screw capping is the ring form, and the internal surface diameter of screw capping is the same with the width of main board to twist inner surface of the cover be provided with the external screw thread assorted internal thread of chi tooth surface. The ascending effort of downward effort and checkpost main board that this ceramic tile ware of making level formed when utilizing ring type screw capping to descend is with two ceramic tile extrusion to same horizontal planes, after two ceramic tiles are in same horizontal plane, through the rotatory screw capping that removes to utilize the rubber hammer to pound out the checkpost along the gap between two ceramic tiles.

Description of the invention

[0014] This invention is established and characterised in the independent claim 1. The object of the invention is an auxiliary device for the placement of elements in the form of a plate. The technical problem to be solved is how to facilitate the coupling of the pressure element to the support element, such that the involuntary and undesired shifting of the elements in the form of a plate to be levelled is prevented.

[0015] In view of what was set out hereinabove, this invention refers to an auxiliary device for the placement of elements in the form of a plate, for example, floor tiles, slabs, ceramic tiles, etc., of those used to coat floors and/or walls.

[0016] The device comprises a support element and a pressing element. For its part, the support element comprises a substantially flat base, and a grip rod extended from said base perpendicularly thereto. The base is adapted to support at least two adjacent elements in the form of a plate from opposed larger faces of said grip rod. About the pressing element, it is adapted to be coupled to the grip rod, and to fasten the elements in the form of a plate between the support element and said pressing element, to achieve coplanarity between said elements in the form of a plate. Where smaller lateral faces of the grip rod comprise two rows of external nut threads which result in segments or lengths of a nut thread developed helically about an axis of rotation perpendicular to the base.

[0017] In this way, the coupling is facilitated of a press-

ing element in the form of a threaded ring, which comprises an interior nut of the same passage of the thread of the external nut threads of the grip rod, to the latter, preventing imprecisions and without requiring great efforts when carrying out the coupling of said threaded ring to the grip rod, which could cause involuntary and undesired shifting of the elements in the form of a plate that entail an inappropriate placement thereof.

[0018] The device is also alternatively used with a pressing element in the form of a wedge, and the grip rod is provided with a longitudinal opening that traverses its larger faces, where said longitudinal opening is adapted to receive the pressing element in the form of a wedge inserted parallel to the base of the support element.

Brief description of the figures

[0019] This descriptive report is complemented with a set of figures, illustrative of the preferred example, and which never limit the invention.

Figure 1 represents a perspective view of the support element of the auxiliary device for the placement of elements in the form of a plate.

Figure 2 represents a perspective view of the auxiliary device with the support element of figure 1 and a first embodiment of the pressing element, applied to two elements in the form of a plate to be placed at the same level.

Figure 3 represents a cutaway front view of the auxiliary device of figure 2.

Figure 4 represents a schematic cutaway view of the auxiliary device with the support element in figure 1 and a second embodiment of the pressing element, applied to two elements in the form of a plate to be placed on the same level.

Detailed description of the invention

[0020] This invention is an auxiliary device for the placement of elements in the form of a plate, such as floor tiles, slabs, ceramic tiles, etc., which are useful, for example, in the laying of the coating of floors and/or walls. As shown in the figures, the auxiliary device comprises a support element (1) and an element (3).

[0021] As figure 1 shows, the support element (1) comprises in turn a substantially flat base (1.1) and a grip rod (1.2), the latter extended from said base (1.1) perpendicularly thereto.

[0022] As shown in figures 2, 3 and 4, the base (1.1) is adapted to support at least two adjacent elements in the form of a plate (2) from opposed larger faces (1.21) of said grip rod (1.2). In other words, the base (1.1) of the support element (1) is placed on the layer of adhesive mixture (4) applied to the wall or floor (5) to be coated with elements in the form of a plate (2). On the base (1.1) are placed the edges corresponding to two or more elements in the form of a plate (2) that are to be arranged

adjacent or contiguous. Said edges are arranged flush with the larger faces (1.21) of the grip rod (1.2), said elements in the form of a plate (2) remaining separated at a certain distance (the separation between the opposed larger faces (1.21) of the grip rod (1.2), corresponding to the joint between said elements (2).

[0023] Moreover, as shown in figure 1, smaller lateral faces (1.22) of the grip rod (1.2) comprise two rows of external nut threads (1.221) which result in segments or lengths of a nut thread developed helically about an axis of rotation (R) perpendicular to the base (1.1).

[0024] The grip rod (1.2) has the form of a rectangular bar. However, it could have the form of a crosspiece (not seen in the figures), for example, which may be used in the formation of a joint among four elements in the form of plates (2) arranged contiguous to each other.

[0025] The grip rod (1.2) is connected with the base (1.1) by means of a weakened portion (1.3), which is adapted to be broken when an attempt is made to pull the grip rod (1.2) and the base (1.1) offers resistance.

[0026] For its part, the pressing element (3) is adapted to be coupled to the grip rod (1.2) and to fasten the elements in the form of a plate (2) between the support element (1) and said pressing element (3), thus to achieve coplanarity between said elements in the form of a plate (2), that is, that said elements (2) end up arranged on the same plane.

[0027] As shown in figures 2 and 3, the pressing element (3) has the form of a threaded ring (3.1), which comprises an internal nut (3.11) adapted to screw tightly into the rows of external nut thread (1.221) of the grip rod (1.2).

[0028] Thus, with the easy and simple screwing of the ring (3.1) into the grip rod (1.2) a point is reached at which the anterior edge of the screwed thread (3.1) makes contact with the elements in the form of a plate (2) to be levelled, which are supported by the base (1.1). Where, continuing the advance in the threading, said ring (3.1) develops such pushing force against the elements in the form of a plate (2) that it causes the coplanarity between said elements in the form of a plate (2), without moving them or dislocating them.

[0029] Alternatively the support element (1) of figure 1 is also suitable to be used with a pressing element (3) in the form of a wedge (3.2). As seen in figure 4. This is an alternative embodiment to that in figures 2 and 3 which, with the auxiliary device of this invention, is possible at the discretion of the user.

[0030] To use it, as shown in figure 1, the grip rod (1.2) comprise a longitudinal opening (1.23) that traverses its larger faces (1.21), where the longitudinal opening (1.23) is adapted to receive the wedge (3.2) inserted parallel to the base (1.1). See figure 4.

[0031] The longitudinal opening (1.23) is rectangular, and its dimensions correspond to a maximum rectangular cross-section of the wedge (3.2), and an upper surface (3.21) of the wedge (3.2) comprises a plurality of parallel coupling grooves (3.211), adapted to be set on an upper

edge (1.231) of the longitudinal opening (1.23) shaped in the form of a "V".

[0032] Thus, once the edges of the elements have been arranged in the form of a plate (2) on the base (1.1), the wedge (3.2) is made to slide over said elements in the form of a plate (2), through the longitudinal opening (1.23), until the upper surface (3.21) of said wedge (3.2) makes contact with the grip rod (1.2), where, if the wedge (3.2) continues advancing through the longitudinal opening (1.23), such pushing force is developed against the elements in the form of a plate (2) that it causes the coplanarity between said elements (2).

[0033] The setting of the upper edge (1.231) of the longitudinal opening (1.23) into one of the coupling grooves (3.211) of the upper surface (3.21) of the wedge (3.2), makes it possible to maintain the position said wedge (3.2) has reached in the longitudinal opening (1.23), which has caused the coplanarity between the elements in the form of a plate (2).

[0034] In both embodiments, with a view to achieving the elimination or removal of the auxiliary device once the complete fixing has occurred of the elements in the form of a plate (2) to the floor or wall (5), the corresponding pressing element (3) is decoupled from the support element (1), and then, the grip rod is pulled (1.2) to promote its breakage due to its weakened portion (1.3), the base (1.1) ending up under the elements in the form of a plate (2), and the joint between said elements (2) shaped.

Claims

1. Auxiliary device for placing elements in the form of a plate (2) comprising a support element (1) and a pressing element (3) wherein:

the support element (1) comprises a substantially flat base (1.1) and a grip rod (1.2) extended from said base (1.1) perpendicularly thereto, where the base (1.1) is adapted to support at least two adjacent elements in the form of a plate (2) wherein said elements in the form of a plate (2) remaining separated at a distance corresponding to the separation between opposed larger faces (1.21) of the grip rod (1.2); the pressing element (3) is adapted to be coupled to the grip rod (1.2) and to fasten the elements in the form of a plate (2) between the support element (1) and said pressing element (3) to achieve coplanarity between said elements in the form of a plate (2),

wherein the grip rod (1.2) is connected with the base (1.1) by means of a weakened portion (1.3), adapted to be broken when an attempt is made to pull the grip rod (1.2) and the base (1.1) offers resistance; wherein the grip rod (1.2) further comprises smaller

lateral faces (1.22) which in turn comprise two rows of external nut threads (1.221) which result in segments of a nut thread developed helically about an axis of rotation (R) perpendicular to the base (1.1); and wherein the pressing element (3) has the form of:

a threaded ring (3.1) comprising an internal nut (3.11) adapted to screw tightly into the rows of external nut thread (1.221) of the grip rod (1.2); or
a wedge (3.2) arranged to be inserted parallel to the base (1.1) into a longitudinal opening (1.23) that traverses the larger faces (1.21) of the grip rod (1.2);

characterised in that the grip rod (1.2) has the form of a rectangular bar and the longitudinal opening (1.23) is rectangular, and its dimensions correspond to a maximum rectangular cross-section of the wedge (3.2); and **in that** an upper surface (3.21) of the wedge (3.2) comprises a plurality of parallel coupling grooves (3.211) adapted to be set into an upper surface (1.231) of the longitudinal opening (1.23) in the form of a "V"; and **in that** once the adjacent edges of the elements in the form of a plate (2) have been arranged on the base (1.1), the wedge (3.2) is arranged to slide over said elements in the form of a plate (2), through the longitudinal opening (1.23), until the upper surface (3.21) of said wedge (3.2) makes contact with the grip rod (1.2).

Patentansprüche

1. Hilfsvorrichtung zum Platzieren plattenförmiger Elemente (2) mit einem Trägerelement (1) und einem Druckelement (3), wobei:

das Trägerelement (1) eine im Wesentlichen flache Basis (1.1) und eine Griffstange (1.2) umfasst, die zur Basis (1.1) lotrecht verläuft, wobei die Basis (1.1) dafür ausgelegt ist, mindestens zwei nebeneinander angeordnete, plattenförmige Elemente (2) zu tragen, wobei der Abstand zwischen diesen plattenförmigen Elementen (2) dem Abstand zwischen den gegenüberliegenden längeren Seiten (1.21) der Griffstange (1.2) entspricht;
das Druckelement (3) dafür ausgelegt ist, mit der Griffstange (1.2) verbunden zu werden und die plattenförmigen Elemente (2) zwischen dem Trägerelement (1) und dem Druckelement (3) zu fixieren, um eine Komplanarität zwischen den plattenförmigen Elementen (2) zu erzielen,

wobei die Griffstange (1.2) mit der Basis (1.1) mittels eines schwächeren Abschnitts (1.3) verbunden ist, der dafür ausgelegt ist, zu zerbrechen, wenn ver-

sucht wird, an der Griffstange (1.2) zu ziehen und die Basis (1.1) Widerstand bietet; wobei die Griffstange (1.2) ferner kleinere Seitenflächen (1.22) aufweist, die ihrerseits zwei Reihen mit Außengewinden (1.221) aufweisen, die zu Segmenten eines Muttergewindes führen, das schraubenförmig um eine Drehachse (R) senkrecht zur Basis (1.1) führt; und wobei das Druckelement (3) die Form hat von:

einem Gewinding (3.1) mit einer Innemutter (3.11), die so ausgelegt ist, dass sie sich fest in die Reihen des Außengewindes (1.221) der Griffstange (1.2) einschrauben lässt; oder einen Keil (3.2), der so angeordnet ist, dass er parallel zur Basis (1.1) in eine Längsöffnung (1.23) eingeführt werden kann, die die längeren Flächen (1.21) der Griffstange (1.2) durchquert;

dadurch gekennzeichnet, dass die Griffstange (1.2) die Form eines rechteckigen Stabs hat und die Längsöffnung (1.23) rechteckig ist und ihre Abmessungen einem maximalen rechteckigen Querschnitt des Keils (3.2) entsprechen; und dass eine obere Fläche (3.21) des Keils (3.2) eine Vielzahl von parallelen Kopplungsnuten (3.211) aufweist, die in eine obere Fläche (1.231) der Längsöffnung (1.23) in Form eines "V" eingesetzt werden können; und dass, nachdem die nebeneinander angeordneten Ränder der plattenförmigen Elemente (2) auf der Basis (1.1) angeordnet worden sind, der Keil (3.2) so angeordnet ist, dass er über die plattenförmigen Elemente (2) durch die Längsöffnung (1.23) gleitet, bis die obere Fläche (3.21) des Keils (3.2) mit der Griffstange (1.2) in Kontakt kommt.

Revendications

1. Dispositif auxiliaire pour la mise en place d'éléments en forme de plaque (2) comprenant un élément de support (1) et un élément de pression (3) dans lequel :

l'élément de support (1) comprend une base sensiblement plate (1.1) et une barre-poignée (1.2) s'étendant depuis ladite base (1.1) perpendiculairement à celle-ci, où la base (1.1) est adaptée pour supporter au moins deux éléments adjacents sous la forme d'une plaque (2), où lesdits éléments sous la forme d'une plaque (2) sont séparés d'une distance correspondant à la séparation entre les plus grands côtés opposés (1.21) de la barre-poignée (1.2) ;
l'élément de pression (3) est conçu pour être couplé à la barre-poignée (1.2) et pour fixer les éléments sous forme de plaque (2) entre l'élément de support (1) et ledit élément de pression (3) pour obtenir une coplanarité entre lesdits élé-

ments sous forme de plaque (2),

où la barre-poignée (1.2) est reliée à la base (1.1) au moyen d'une paroi réduite (1.3), conçue pour casser lorsque l'on essaye de tirer la barre-poignée (1.2) et que la base (1.1) offre une résistance ; où la barre-poignée (1.2) comprend en outre des faces latérales plus petites (1.22) qui comprennent à leur tour deux rangées de filets d'écrous externes (1.221) qui donnent des segments d'un filet d'écrou développés en hélice autour d'un axe de rotation (R) perpendiculaire à la base (1.1) ;
et où l'élément de pression (3) a la forme de :

une bague filetée (3.1) comprenant un écrou interne (3.11) adapté pour se visser fermement dans les rangées de filets d'écrous externes (1.221) de la barre-poignée (1.2) ; ou
une cale (3.2) disposée pour être insérée parallèlement à la base (1.1) dans une ouverture longitudinale (1.23) qui traverse les plus grands côtés (1.21) de la barre-poignée (1.2) ;

caractérisé en ce que la barre-poignée (1.2) a la forme d'une barre rectangulaire et l'ouverture longitudinale (1.23) est rectangulaire, et ses dimensions correspondent à une section transversale rectangulaire maximale de la cale (3.2) ; et en ce qu'une surface supérieure (3.21) de la cale (3.2) comprend plusieurs fentes de couplages parallèles (3.211) conçues pour être placées dans une partie supérieure (1.231) de l'ouverture longitudinale (1.23) en forme de « V » ; et en ce qu'une fois que les bords adjacents des éléments en forme de plaque (2) ont été disposés sur la base (1.1), la cale (3.2) est disposée pour glisser sur lesdits éléments en forme de plaque (2), à travers l'ouverture longitudinale (1.23), jusqu'à ce que la partie supérieure (3.21) de ladite cale (3.2) entre en contact avec la barre-poignée (1.2).

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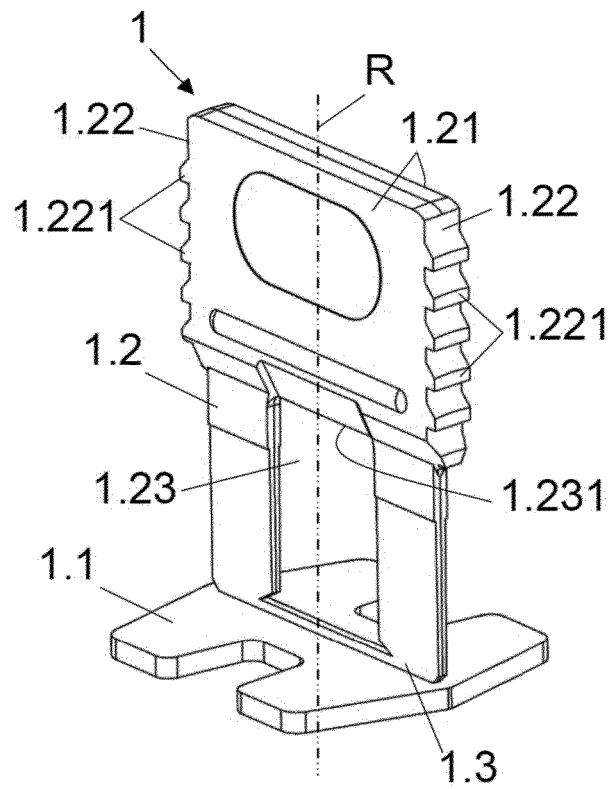


Fig.1

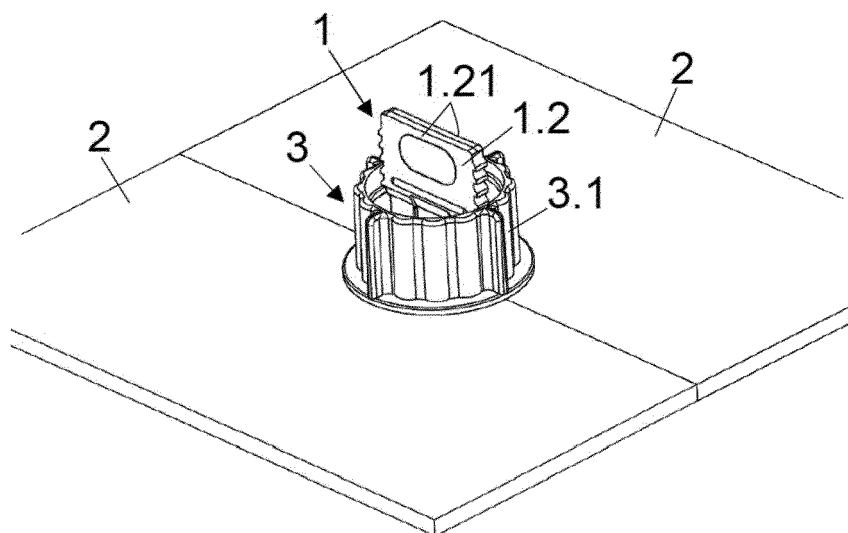


Fig.2

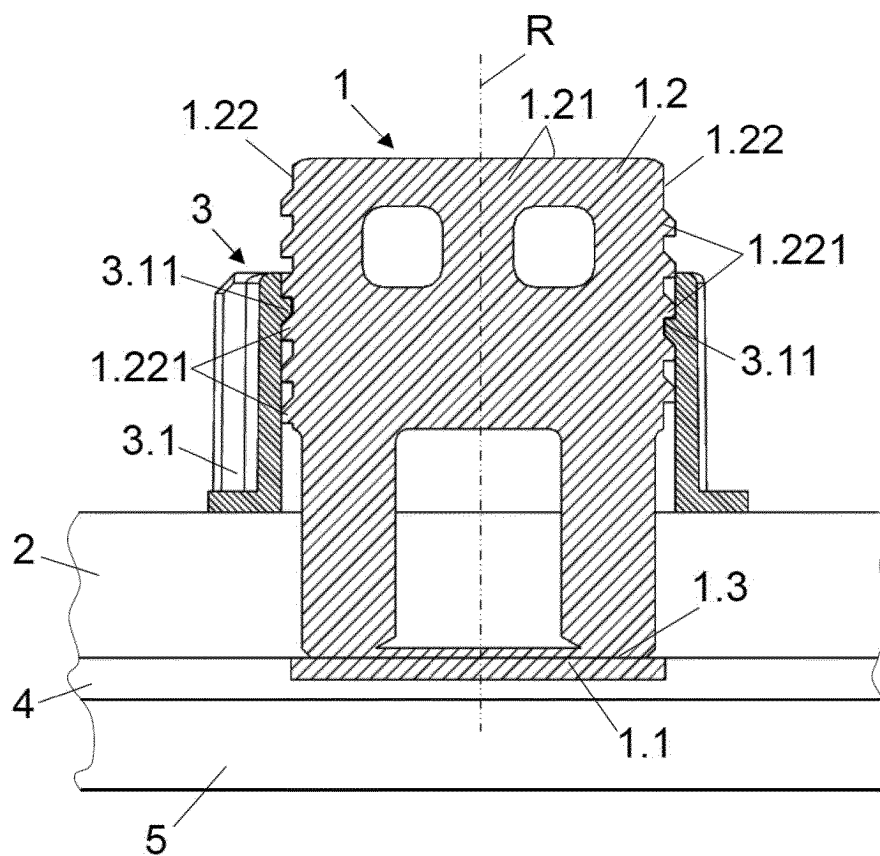


Fig.3

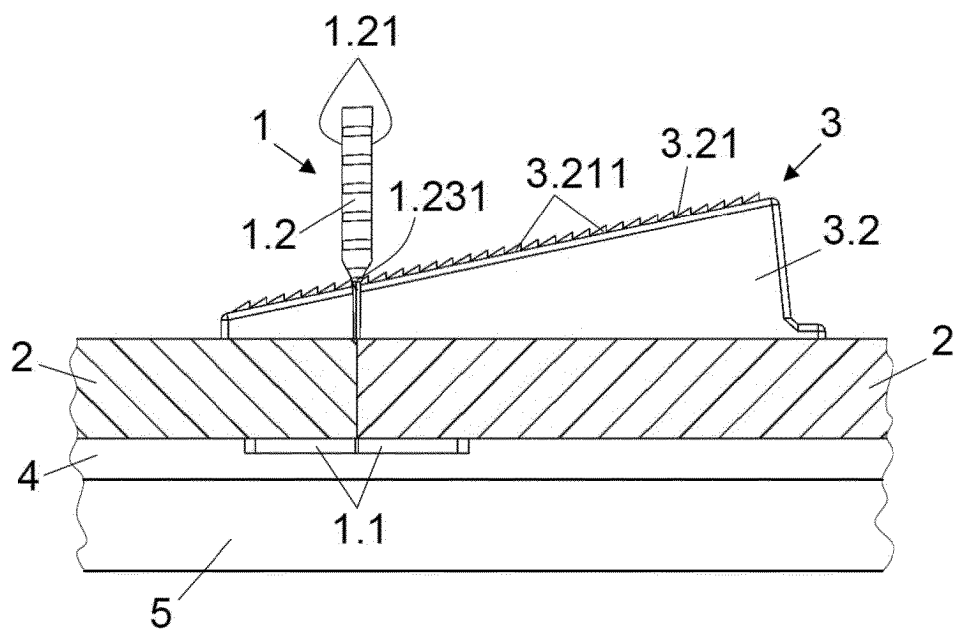


Fig.4

REFERENCES CITED IN THE DESCRIPTION

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