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(71) Applicant: **Carvalhais, Fernando Rodrigues**
2800-180 Almada (PT)

(72) Inventor: **Carvalhais, Fernando Rodrigues**
2800-180 Almada (PT)

(54) A fixing system for joints and for finishing and decorative profiles

(57) This invention refers to a fixing system for joints, and for finishing or decorative profiles. It can be applied in the fixing of finishing profiles, decorative profiles or joints, when they are used in wall covering, ceilings, partitions or floors with sheets of covering material, no matter whether they are stratified, ceramic, natural stone or parquet. The invention comprises two parts, which can be applied to the profiles, or are jointly manufactured with the profiles, as a complete set.

The male part (see diagram no.1, no.1) made up of a head with two ridges and one furrow, or three ridges and two furrows, and it permits the oblique positioning (see diagram no.2, *a* or *b*) of the head relative to the common axis of the two parts (see diagram no.1, no.3). The female part (see diagram no.1, no.2) is in the form of a trapezoid and its surface is composed of ridges and furrows equal in amplitude and curvature to those of the male part (see diagram no. 1, no.1).

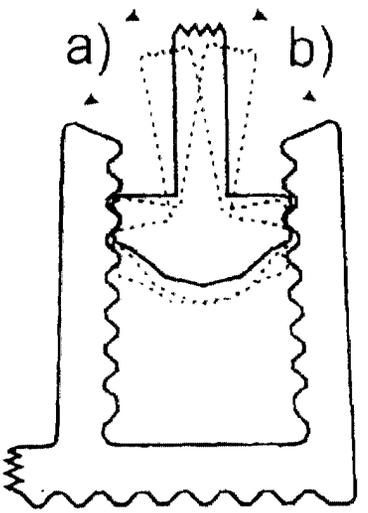

Diagram nº 2

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Description

[0001] This invention refers to a fixing system for joints, and for finishing or decorative profiles. It can be applied in the fixing of finishing profiles, decorative profiles or dilation joints, when they are used in wall covering, ceilings, partitions or floors with sheets of covering material, no matter whether they are stratified, ceramic, natural stone or parquet.

[0002] The fixing system that exists now on the market is always manufactured jointly with the profile as part of a complete set. This system uses a base or fixing profile, which subsequently has the decorative or finishing profile applied to it. The two profiles fit into each other in a fixed position, without any possibility of adjustments or movement. The female part is part of the profile that is screwed or glued to the surface that is going to be covered. It is composed of an open, rectangular gutter whose internal walls or sides are covered with triangular furrows or sawlike ridges, some sharpened and others more rounded. These sawlike ridges are made up of equilateral triangles, but often they contain bent and irregular teeth. This female part is rigid, with sides that are not very elastic, or they have no elasticity at all. This means that the fitting of the upper, or male, part, which has the same width or is often even wider, has to be done with a sharp blow, often with the aid of a plastic or rubber hammer. It is often the case that, during the insertion of the male part, one of the sides of the female part cracks, due to the fact that the parts were not correctly aligned. The male part, which is an integral part of the upper profile, is a solid, rectangular section that has the whole length of both of its sides covered in the same type of irregular, sawlike ridges which cover the internal walls of the female part. This immovable fixing system is clearly incompatible with the modern, decorative profiles, which have increasingly more diverse formats with lighter and more versatile applications.

[0003] With the existing fixing system it is almost always necessary to level the surfaces which are to be covered, so that when the sheets of covering material are applied there are no differences in level in the areas that will support the material. If there are differences in level, the use of improvised wedges will be almost inevitable, which will cause cracks or openings at the edges of the decorative or technical profiles. When these openings occur, the usual solution is the application of a filler or any other similar kind of putty. However, after a short period of time these fillers dry and start to crack, or they change colour, causing consequent problems in appearance, or even safety problems if the opening was situated in flooring joints.

[0004] The invention that is herein presented is the result of lengthy technical studies and tests with a practical application that result from the professional knowledge of the inventor. This invention, besides solving the aesthetic and technical problems described above, is also a considerable technical innovation, which allows new application possibilities of these types of profile, due to its perfection in the finishes, versatility and ease of use.

[0005] The fixing system for decorative profiles of the present invention is comprised of two parts (called the male and female part), which can be used in all and every type of profile, by being screwed or glued in, or by being added onto the profile during its manufacture.

[0006] The female part can be applied directly onto any surface or base, including those which are uneven, or it can be manufactured as an integral part of the base profile, being joined to this in one of many possible positions (see diagram no.5, *x, y* and *z*). It is a part that can be manufactured from a raw material that is both elastic and very resistant, as well as from the raw materials that are generally used for decorative profiles or coatings, such as mild steel, aluminium, PVC or any other material with similar characteristics. The female part is composed of a gutter in the form of a trapezoid that is open at the top, this being the shortest side of the trapezoid (see diagram no. 1, no.2). The two internal sides, along the whole of their length, have an alternating sequence of rounded ridges and furrows, equal in amplitude and curvature to those of the (male) part that will fit in there. The two internal sides of the trapezoid are symmetrical.

[0007] On the other hand, the male part (see diagram no. 1, no. 1), can be attached to any profile of the upper position, or it can made into an integral part of the profile during its manufacture, being joined to it by a narrow, highly resistant column, which terminates in a head with its top slightly rounded. The two sides of the head each contain two ridges and one furrow, or, they can have three ridges and two furrows. The ridges and furrows have exactly the same geometric aspect and amplitude as those of the internal walls of the female part.

[0008] The use of this fixing system in decorative profiles does not require that the two parts are perfectly aligned along their common axis when one is to be fitted into the other. This is due to the fact that the ridges and furrows of both parts are equal in amplitude and have the same smooth, rounded surfaces, which ensures that the fitting of one piece into the other is a lot easier. One part can be inserted into the other without the need for tools, with a light blow, or the application of a small amount of pressure while simultaneously adjusting its positioning.

[0009] Two of the main points of reference of this invention are: the versatility and ease of use with regard to the adjustment of profiles on uneven, irregular or undulated surfaces of the area to be covered - the possibility of shifting the decorative part to one side or the other in order to eliminate any gaps caused by an irregularity; and the regular curving of the furrows that permits various positions, in terms of depth and obliquity, of the upper part (male part) inside the lower part (female part).

Claims

1. This invention refers to a fixing system for joints, and for finishing or decorative profiles. It can be applied in the fixing of finishing profiles, decorative profiles or dilation joints, when they are used in the wall covering, ceilings, dividing partitions or floors with sheets of covering material, and it comprises two parts that fit into each other, male / female parts (see diagram no.1, no.3). In order to adapt to any differences in level the system permits that the upper part, the male part (see diagram no.1, no.1), may move laterally and can be fixed in a perpendicular position, or in a position oblique to this, within the limits of the opening of the lower part (see diagram no.2, *a* or *b*). Any one of the two parts of this system can be adapted to the profiles, or they can be part of the profile, being added onto the profile during its manufacture in any one of the definable positions (see diagram no.5, *x, y* and *z*). The upper part (male part) is joined to the profile by a narrow and rigid column which terminates in a head with its top slightly rounded. The sides of the head have two ridges and one furrow (see diagram no.1, no.1), but they can also have three ridges and two furrows. On the other hand, the lower part, the female part (see diagram no.1, no.2), consists of a gutter in the form of a trapezoid that is open at the top, this being the shortest side of the trapezoid. The two inner sides, along the whole of their length, are covered by alternating and symmetrically placed, rounded ridges and furrows

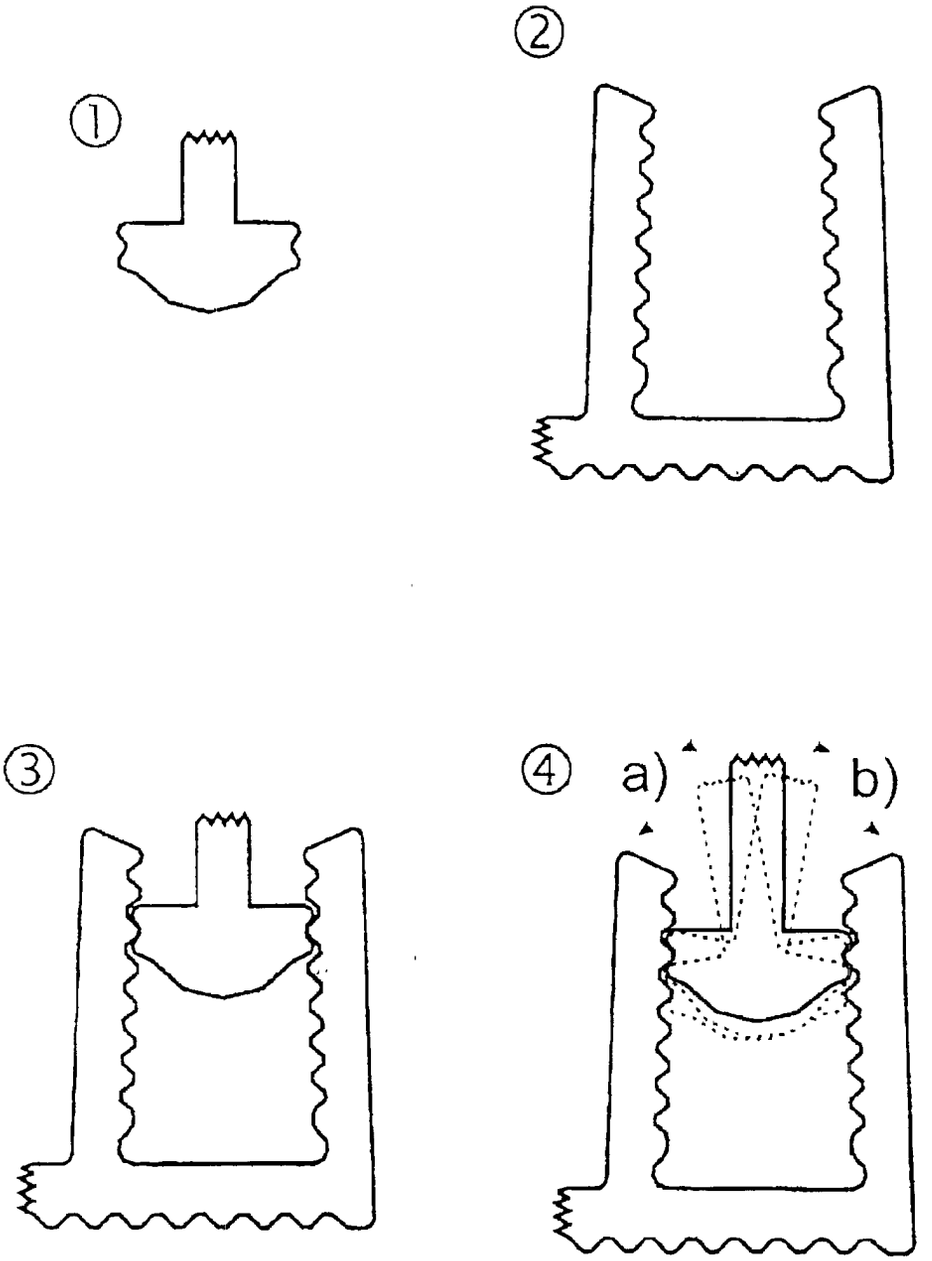


Diagram nº 1

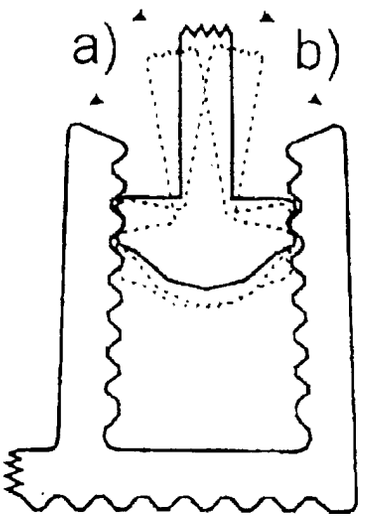
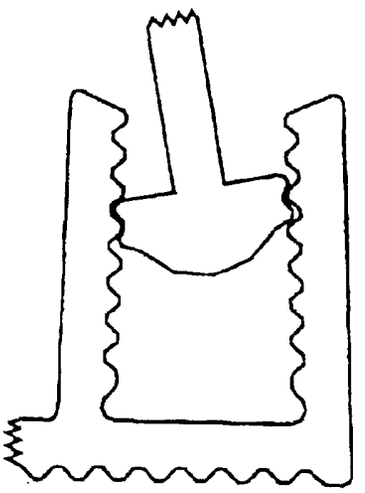


Diagram nº 2



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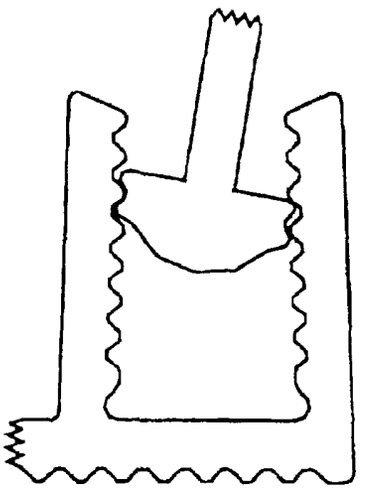

Diagram nº 4

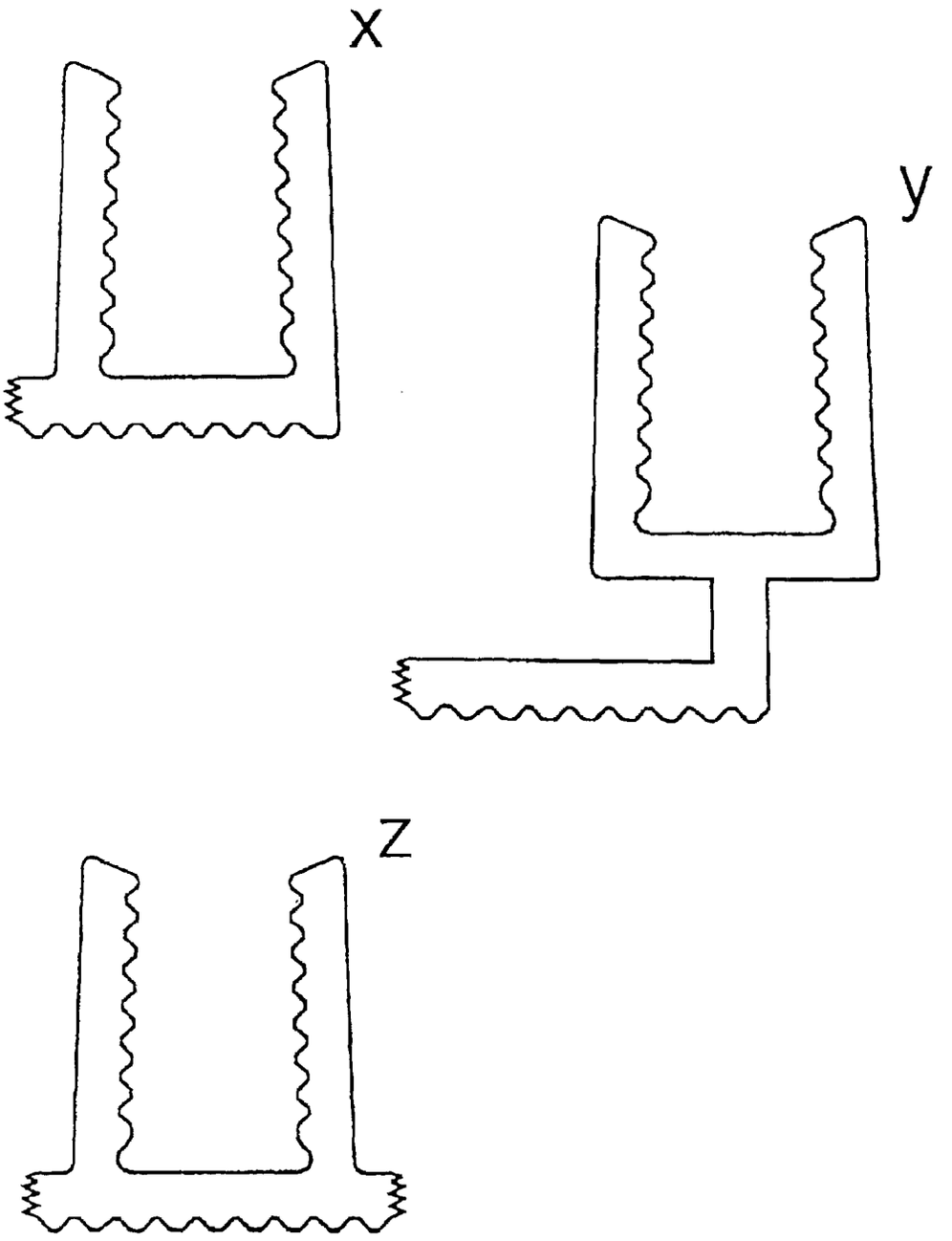

Diagram nº 5

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EUROPEAN SEARCH REPORT

Application Number
EP 01 67 0003

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	GB 2 238 557 A (EUROCLAD LTD) 5 June 1991 (1991-06-05) Abstract * page 6, line 35 - page 7, line 3 * * figures 1-4 * * claim 7 *	1	E04F13/08 E04F19/06 E04F19/04 F16B5/02
A	US 3 667 177 A (BIELA ELMER G) 6 June 1972 (1972-06-06) * figures 5,6 *	1	
A	FR 1 109 944 A (BÜCHLER FRANZ) 3 February 1956 (1956-02-03) * figures 1-9 *	1	
A	GB 2 253 222 A (MURPHY AUSTIN CHARLES) 2 September 1992 (1992-09-02) * figures 1-5 *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7) E04F F16B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	30 November 2001	Huusom, C

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 01 67 0003

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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30-11-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2238557 A	05-06-1991	NONE	
US 3667177 A	06-06-1972	NONE	
FR 1109944 A	03-02-1956	BE 531202 A CH 323840 A	31-08-1957
GB 2253222 A	02-09-1992	EP 0501642 A1	02-09-1992

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