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(54) IMPROVED CONNECTION SYSTEM BETWEEN A FLOOR AND A WALL OR A SURFACE IN GENERAL

(57) The invention is a new connection system (100) between a floor (P) and a wall (M) or a surface in general, between which a connection space (S) is created, comprising a shaped section bar (20) suited to be positioned so as to cover said connection space (S) and at least one elastic clip (10) suited to be positioned between the second side (20) of the section bar (20) and the edge (P 1) of the floor (P), wherein said elastic clip (10) in turn comprises at least one first part (12) intended to be rested on said edge (P1) of the floor (P), pressing against it, and at least two second parts (13) intended to be simply rested on said section bar (20), and wherein the surface (121) of said second parts (12) resting on said second side (22) of the section bar (20) is at least partly knurled or generically rough.

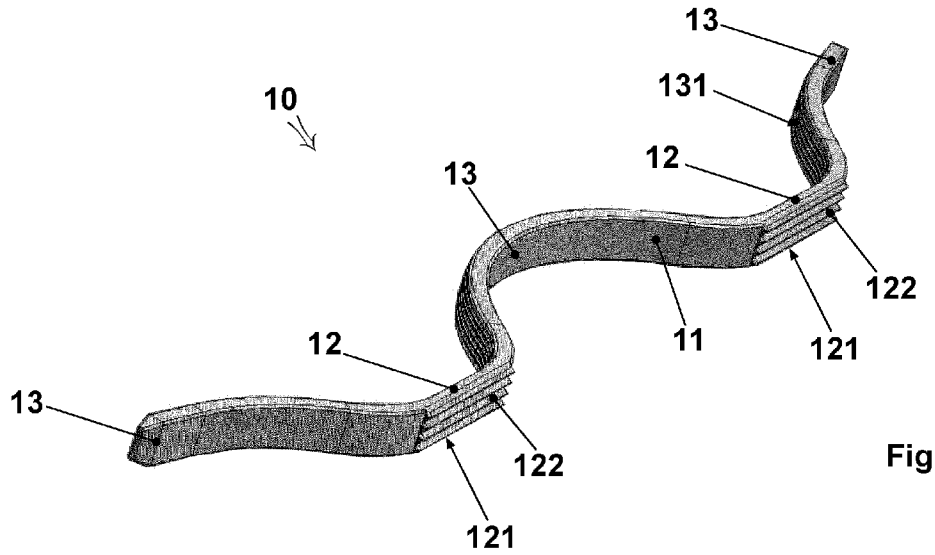

Fig. 3

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Description

[0001] The present patent concerns section bars connecting a floor and a vertical wall, and in particular it concerns a new improved connection system between a floor and a wall or a surface in general.

[0002] It is known that in the connection area between a floor and a wall there can be gaps that are normally covered with covering section bars. Common skirting boards are known and widespread, wherein said skirting boards consist of 5-10 cm high, variously shaped section bars that are placed on the edge of the floor and fixed to the wall using nails or screws or adhesives.

[0003] Much smaller, less aesthetically invasive section bars are known, comprising a covering section bar suited to be applied to the gap between the floor and the wall.

[0004] Patent application EP 3 822 430 A1 describes a system comprising a section bar essentially in the shape of an inverted L, wherein the horizontal side is to be positioned on the edge of the floor so that it covers the gap, while the vertical side is to be positioned against the wall, between the wall itself and the edge of the floor, inside the gap.

[0005] To ensure the correct positioning of the section bar, the patent document describes the use of clips fixed to the section bar and equipped with elastic elements suited to exert a pressure against the edge of the floor, in order to press the section bar against the wall and hold it in the correct position.

[0006] A drawback of systems of this type lies in that all the clips must be fixed to the section bar before its installation, while it is not possible to add further clips after the section bar has been installed, unless the entire section bar is removed again. The subject of the present patent is a new improved connection system between a floor and a wall or a surface in general.

[0007] The main object of the present invention is to provide a section bar whose installation procedures are easier and faster, as it uses elastic clips that are not constrained to the section bar itself but can be variably positioned.

[0008] Another object of the present invention is to ensure that the section bar is maintained in the correct position, thanks to the special configuration of the clips, which is intended to prevent any unwanted movement of the section bar after its installation, and without using any fixing means such as screws or nails.

[0009] Another object of the present invention is to provide a section bar that can be installed not only on fixed floors but also, and preferably, on floating floors, since both the clip and the section bar can follow any movements or natural expansions of the floor.

[0010] These and other direct and complementary objects are achieved by the new improved connection system between a floor and a wall or a surface in general, which among its main parts includes:

- a shaped section bar suited to be positioned in such a way as to cover the connection space between a floor and a wall or a surface in general, normally vertical, said section bar in turn comprising at least one first side intended to be positioned on the edge of said floor and a second side intended to be positioned opposite said wall and facing the edge of the floor, thus being inserted in the connection space between said floor and said wall;
- at least one elastic clip suited to be positioned between said second side of the section bar and said edge of the floor;

and wherein said elastic clip in turn comprises:

- at least one first part intended to be rested on said edge of the floor, pressing against it;
- at least two second parts intended to be simply rested on said second side of the section bar, without any shape constraint, pressing against it;

wherein said first part is included between said two second parts, and wherein the surface of said second parts resting on said second side of the section bar is at least partly knurled or generically rough.

[0011] Said knurled surface has the function of increasing friction between the clip and the second side of the section bar, to prevent any unwanted movement of the latter once installed.

[0012] Said clip is, for example, curvilinear, in the shape of an arc or a V, wherein the vertex constitutes said first part, while the ends constitute said second parts.

[0013] In the preferred solution, said clip has a curvilinear double-wave or double-V shape, thus comprising two first parts resting on the edge of the floor and three second parts resting on the second side of the section bar.

[0014] The procedure for the installation of the new connection system comprises the following steps:

- given an installed floor and a wall, where there is a gap or a connection space between the edge of the floor and the wall, a first clip is first placed on the floor, in a position close to said edge of the floor and said gap, and oriented as it will later be inserted in said connection space, that is, with said second parts facing the wall;
- the section bar is positioned parallel to said gap and over said clip; the section bar is oriented as it is to be installed, that is, with said second side facing the wall;
- the clip and the section bar are pushed towards the wall, so that first the clip rests on the second side of the section bar and then the section bar, together with the clip, reaches the gap, where the operator will successively also press the section bar downwards,

thus causing the clip and the second side of the section bar to be introduced in said connection space. This operation can be carried out with the aid of a simple thin thrusting element, which, once inserted under the section bar, pushes the clip and the section bar itself towards the gap into which they will be inserted.

[0015] The other clips are then introduced in succession and progressively inserted under the already positioned section bar. This operation is allowed by the normal flexibility of the section bar.

[0016] The configuration of the clips thus makes it possible to retain the section bar by applying a thrusting force towards the wall, and also prevents any unwanted movement of the section bar, thanks to both the thrusting action against the wall and the presence of said knurled surface of the clip.

[0017] Thanks to the special configuration of the clip, which can thus be correctly positioned between the section bar and the floor without being constrained to the section bar itself, the operator can insert the clips after the section bar has been positioned, differently from what happens with the known systems in which the clip must be constrained to the section bar so that it is prevented from slipping out in a transverse direction with respect to the section bar.

[0018] The characteristics of the new connection system are better clarified in the following description, making reference to the drawings, which are attached by way of non-limiting example.

Figure 1 shows a schematic top view of a clip (10) inserted in the connection space (S) included between a wall (M) and a floor (P). The installed overlying section bar (20) is also represented with a broken line.

Figure 2 shows a schematic side view of a clip (10) inserted in the connection space (S) included between a wall (M) and a floor (P), with the installed overlying section bar (20).

Figure 3 shows a three-dimensional view of a preferred embodiment of a clip (10), while Figure 3a shows a side view of the same.

Figure 4 shows a view of a second possible embodiment of a clip (10'), where the clip (10') is provided with support tabs (123).

Figure 5 shows a side view of the clip (10') shown in Figure 4 inserted in the connection space (S) with the section bar (20).

[0019] The new improved connection system (100) is suited to be positioned between a floor (P) and a wall (M) or a surface in general, usually vertical, at the level of and covering the gap or connection space (S) formed between the floor (P) and the wall (M).

[0020] The system (100) comprises a shaped section bar (20) suited to be positioned in such a way as to cover the connection space (S) and comprising at least one first side (21) intended to be positioned on the edge (P1) of said floor (P) and a second side (22) intended to be positioned opposite said wall (M) and facing the edge (P1) of the floor (P), thus being inserted in said connection space (S).

[0021] The system (100) further comprises at least one elastic clip (10) suited to be positioned in said connection space (S) between said second side (22) of the section bar (20) and said edge (P1) of the floor (P).

[0022] Said clip (10) comprises a body (11) configured as a shaped, curved or folded, band, which gives the clip (10) itself a certain elasticity to stress in a direction substantially orthogonal to the body.

[0023] In particular, the clip (10) is shaped in such a way as to have:

- at least a first part (12) intended to be rested on said edge (P1) of the floor (P);
- at least two second parts (13) intended to be simply rested on said second side (22) of the section bar (20), without any shape constraint,

wherein said first part (12) lies between said two second parts (13).

[0024] The surface (131) of said second parts (13) of said clip (10) intended to come into contact with said second side (22) of the section bar (20) is at least partly knurled or generically rough.

[0025] According to a possible embodiment, even the surface (221) of the second side (22) of the section bar (20), that is, the surface (221) in contact with the clip (10), is knurled or generically rough, in order to further increase friction and thus adherence between the clip (10) and the section bar (20).

[0026] In the solution shown, for example, in Figures 1 and 3, said clip (10) comprises two of said first parts (12) alternating with three of said second parts (13), and the band-shaped body (11) has a double-wave curvilinear configuration, consisting essentially of a succession of curved sections with alternating concave parts.

[0027] Instead, in the solution shown in Figure 4, the clip (10') has a triple-wave configuration comprising three of said first parts (12) and four of said second parts (13). The same inventive concept applies to any other configuration of the clip, whether it is formed by curved or linear sections.

[0028] As shown in Figure 2, where the clip (10) and the section bar (20) are correctly inserted in the connection space (S) between the floor (P) and the wall (M), said second parts (13) of the clip (10) rest against the second side (22) of the section bar (20), while said first parts (12) rest against the edge (P1) of the floor (P), thus holding the section bar (P) in the correct position and preventing any unwanted lifting and slipping out of the same, without the clip (10) being engaged in any way with the section bar (P).

[0029] The dimensions of the first side (21) of the

section bar (20) are such that it completely covers said connection space (S) and furthermore it is provided with an end edge (211), preferably tapered or rounded or otherwise shaped so that it can be connected to the floor (P).

[0030] In a preferred solution shown in Figure 3, said first parts (12) of the clip (10) comprise teeth (122) on the surface (121) intended to come into contact with the edge (P1) of the floor (P).

[0031] Said teeth (122) have the function of increasing friction with the edge (P1) of the floor (P), so as to increase adherence to the floor (P) itself.

[0032] This is particularly useful in the case of floating floors, that is, floors that are not firmly fixed to the laying surface. Thus, if the floor (P) moves, the clip (10) follows the movement of the floor (P), as does the section bar (20).

[0033] If, for example, the floor rises, the clip (10) and the section bar (20) rise accordingly due to the movement of the floor (P). When the floor is walked on and thus sinks again, the clip (10) and the section bar (20) lower again, due to the improved adherence between the clip (10) and the floor (P) and between the clip (10) and the section bar (20).

[0034] In the solution shown in Figure 4, on the other hand, the clip (10') comprises, as an alternative to or in combination with said teeth (122), support tabs (123) protruding from said first parts (12) and suited to rest on the corner (P1 1) of the edge (P1) of the floor (P).

[0035] Said tabs (123) therefore contribute to the correct positioning of the clips (10') with respect to the floor (P). In this case, according to the invention, said first side (21) of the section bar (20) is configured with a step (212) in proximity to its end edge (211), in order to accommodate said support tabs (123).

[0036] Further examples of possible variants of the section bar (20) are shown in Figures 6, 7 and 8:

- Figure 6 shows that the section bar (20') comprises said first side (21) intended to cover the connection space (S) at the top, said second side (22) intended to be inserted vertically in the connection space (S) and to be interposed between the clip (10) and the wall (M), a third side (23) in the shape of an inverted L, extending upwards from said first side (21) to create a sort of box-shaped skirting board;
- Figure 7 shows that the section bar (20") comprises said first side (21) intended to cover the connection space (S) at the top, said second side (22) intended to be inserted vertically in the connection space (S) and to be interposed between the clip (10) and the wall (M), a third side (24) forming an extension with said second side (22), so as to create a sort of flat skirting board, which will be resting against said wall (M);
- Figure 8 shows that the section bar (20‴) comprises said first side (21) intended to cover the connection space (S) at the top, said second side (22) intended to be inserted vertically in the connection space (S) and to be interposed between the clip (10) and the wall (M), a third side (25) in the shape of an inverted L and with the end edge (251) folded downwards, extending upwards from said first side (21) so as to form a sort of box-shaped skirting board, wherein the folded edge (251) rests against said wall (M).

[0037] The above figures also show that the surface (221) of said second side (22) facing towards the clip (10) can be knurled.

[0038] The clip (10) can be completely or partially made of any material having a certain elasticity, such as PVC, ABS, nylon, glass filled nylon, POM or acetal resin (crystalline thermoplastic).

[0039] Said clip (10) can also be completely or partially made of a metallic material, for example pressed aluminium.

[0040] Therefore, with reference to the above description and the attached drawings, the following claims are made.

Claims

1. Connection system (100) between a floor (P) and a wall (M) or a surface in general, between which a connection space (S) is formed, comprising:

- a shaped section bar (20) suited to be positioned in such a way as to cover said connection space (S), said section bar (20) in turn comprising at least one first side (21) intended to be positioned above the edge (P1) of said floor (P) and a second side (22) intended to be positioned opposite said wall (M) and facing said edge (P1) of the floor (P), thus being inserted in said connection space (S);
- at least one elastic clip (10) suited to be positioned between said second side (22) of the section bar (20) and said edge (P1) of the floor (P),

characterized in that said elastic clip (10) in turn comprises:

- at least one first part (12) intended to be rested on said edge (P1) of the floor (P), pressing against it;
- at least two second parts (13) intended to be simply rested on said second side (22) of the section bar (20), without any shape constraint, pressing against it;

and wherein said first part (12) is included between said two second parts (13), and wherein the surface (121) of said second parts (13) resting on said second side (22) of the section bar (20) is at least partly knurled or generically

rough.

2. Connection system (100) according to claim 1, **characterized in that** the surface (221) of the second side (22) of the section bar (20), that is, the surface (221) in contact with the clip (10), is knurled or generically rough to further increase friction and thus adherence between the clip (10) and the section bar (20).

3. Connection system (100) according to claim 1, **characterized in that** said clip (10) comprises a body (11) configured as a shaped, curved or folded, band made up of a succession of curved and/or linear sections, which gives the clip (10) itself a certain elasticity to stress in a direction substantially orthogonal to the body.

4. Connection system (100) according to the preceding claim, **characterized in that** said clip (10) comprises two or more of said first parts (12) alternating with three or more of said second parts (13), and the band-shaped body (11) follows a curvilinear double wave pattern, substantially formed by a succession of curved sections with alternating concave parts.

5. Connection system (100) according to claim 1, **characterized in that** said at least one first part (12) of the clip (10) comprises teeth (122) on the surface (121) intended to come in contact with the edge (P1) of the floor (P).

6. Connection system (100) according to claim 1, **characterized in that** said clip (10') comprises, as an alternative to or in combination with said teeth (122), support tabs (123) protruding from said first parts (12) and suited to rest on the corner (P11) of the edge (P1) of the floor (P).

7. Connection system (100) according to the preceding claim, **characterized in that** said first side (21) of the section bar (20) is configured with a step (212) facing downwards in proximity to its end edge (211), in order to accommodate said support tabs (123) of said one or more clips (10') under it.

8. Connection system (100) according to the preceding claim, **characterized in that** said clip (10) is completely or partially made of a plastic material and/or a metallic material, such as aluminium.

9. Procedure for installing the connection system (100) according to one or more of the preceding claims, **characterized in that** it comprises the following steps:

- given an installed floor (P) and a wall (M), wherein between the edge (P1) of the floor (P) and the wall (M) there is a gap or connection space (S), positioning a first clip (10) on said floor (P), in a position close to said edge (P1) and to said connection space (S), and oriented with said second parts (13) facing said wall (M);
- positioning said section bar (P) parallel to said connection space (S) and above said clip (10), oriented with said second side (22) facing said wall (M),
- moving said clip (10) and said section bar (20) towards said wall (M), so that first said clip (10) rests on said second side (22) of the section bar (20) and then said section bar (20), together with said clip (10), reaches said connection space (S);
- pressing the section bar (20) downwards, thus causing the introduction of said clip (10) and said second side (22) of the section bar (20) into said connection space (S);
- inserting one or more further clips (10) under said section bar (20) already positioned and in said connection space (S) by partially bending and lifting the section bar (20).

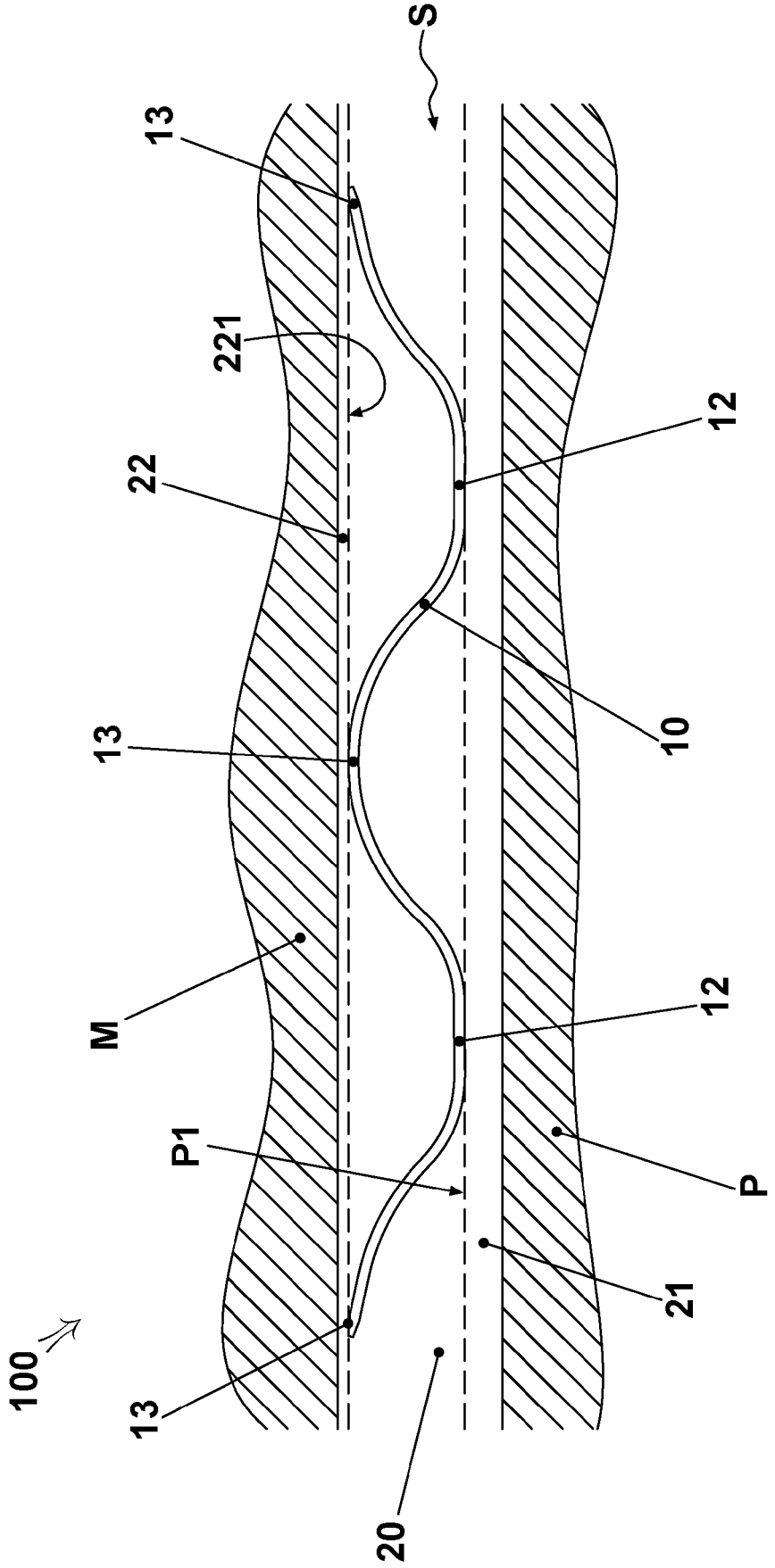

Fig. 1

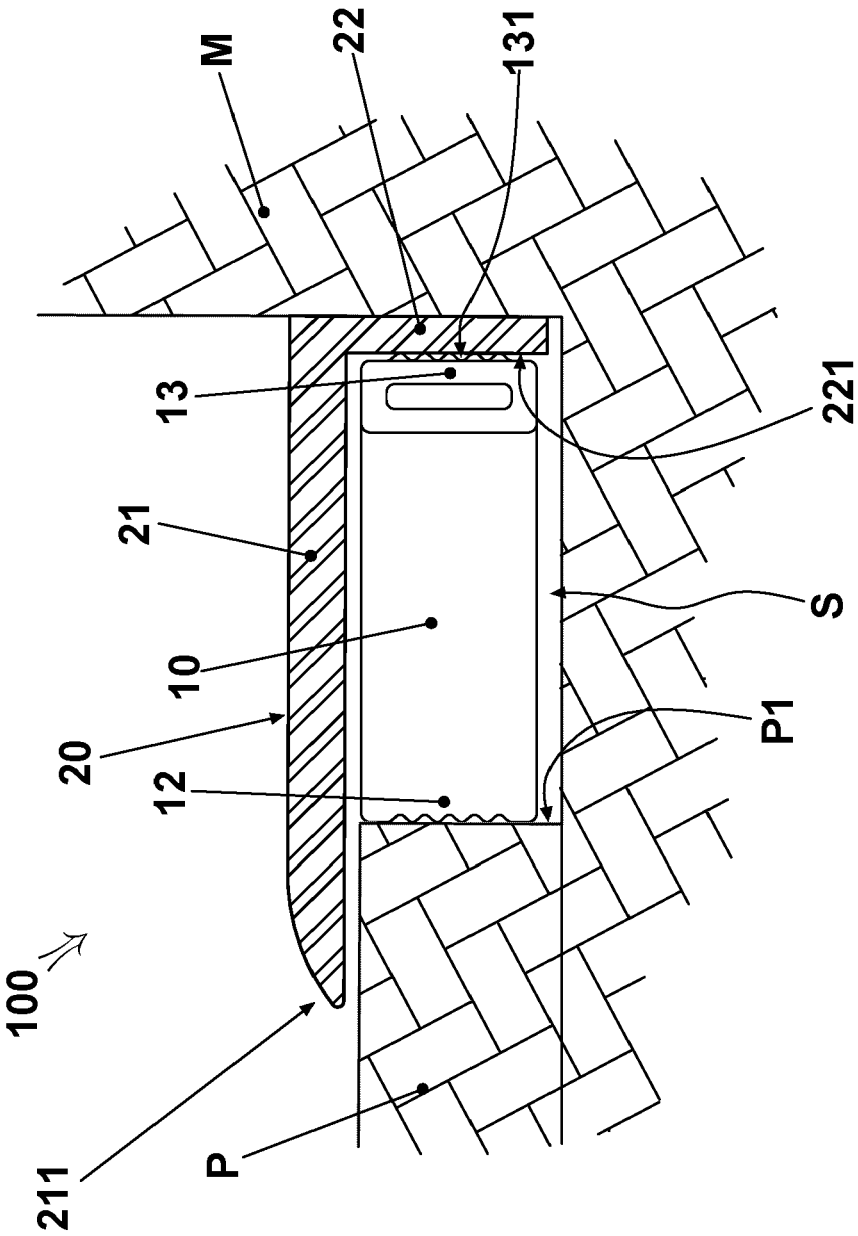

Fig. 2

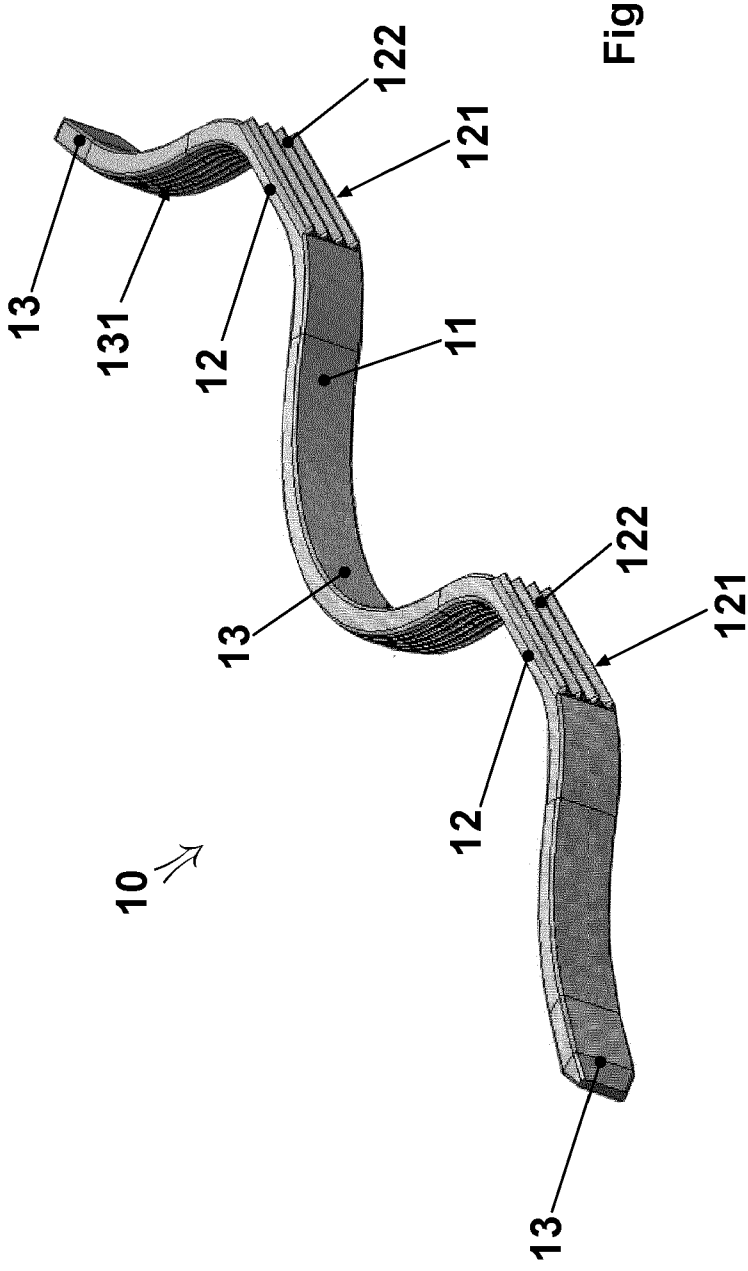
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Fig. 3

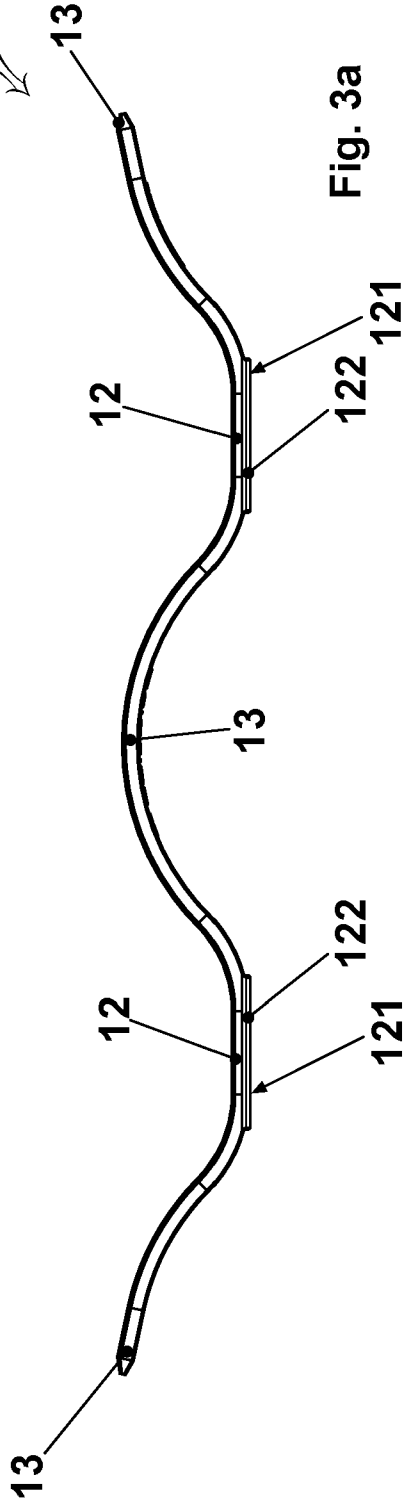
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Fig. 3a

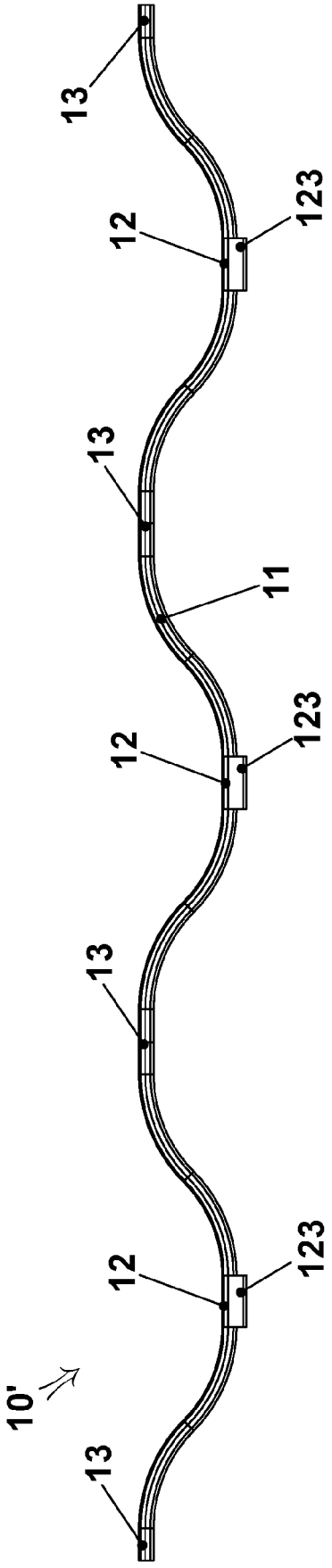
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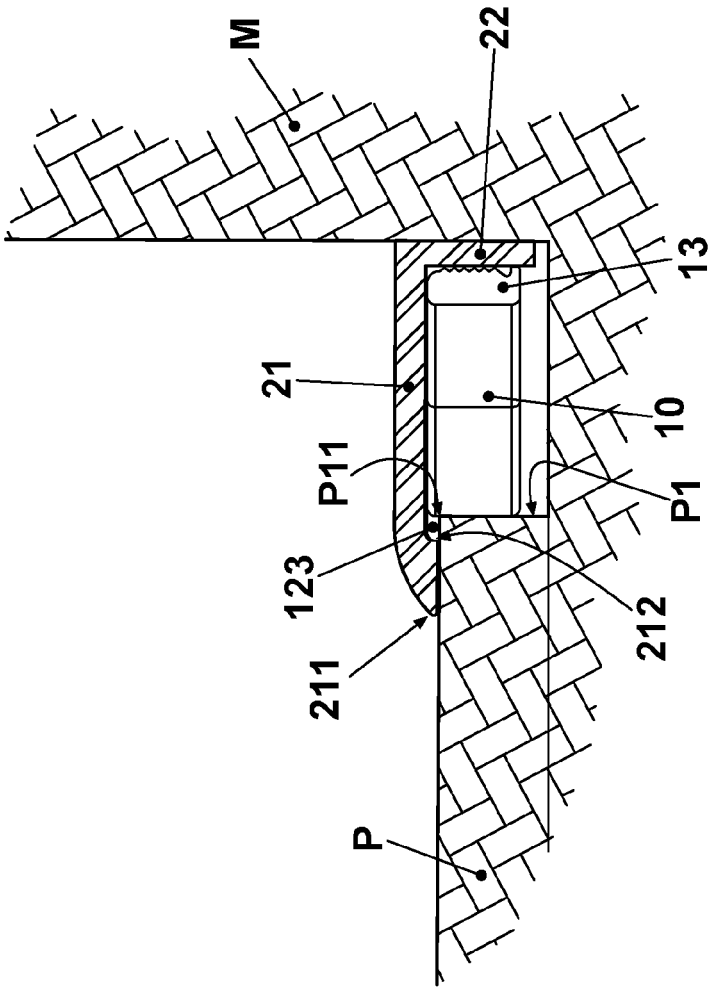
Fig. 4


M
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P11
P1
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211
P

Fig. 5

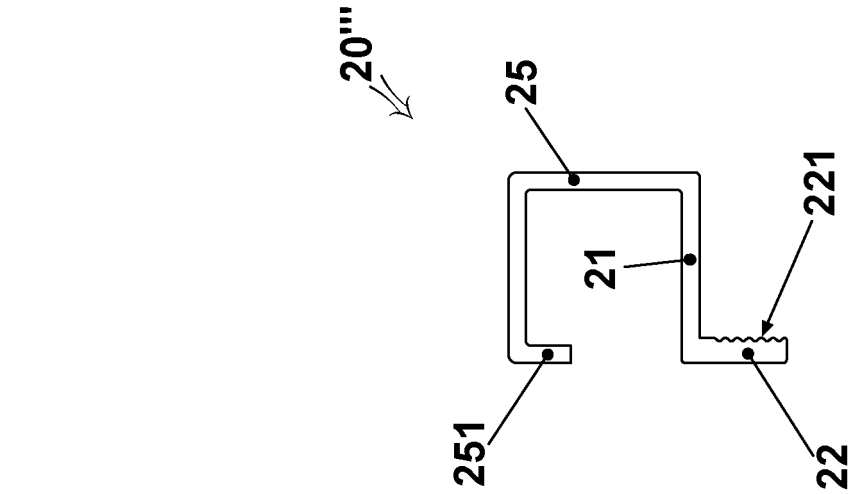

Fig. 8

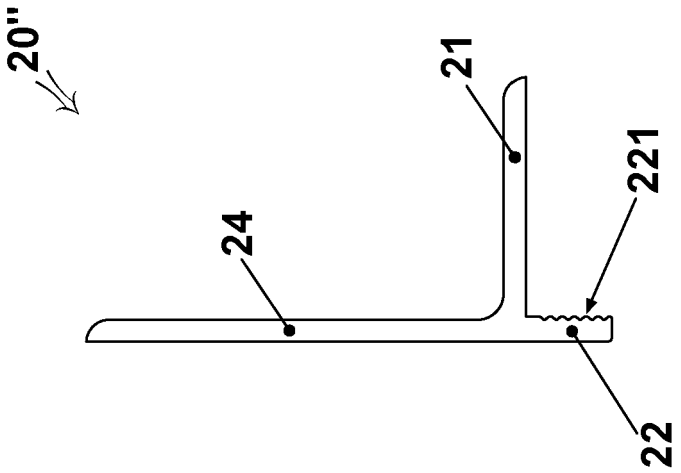

Fig. 7

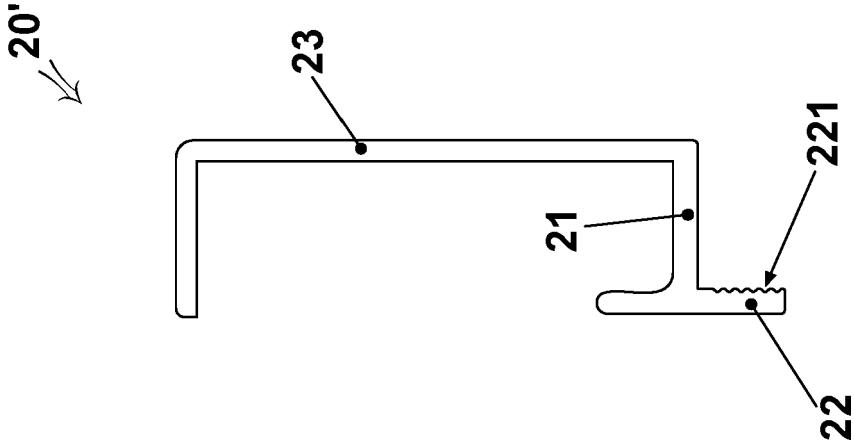

Fig. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 23 19 7621

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	BE 1 019 380 A3 (FLOORING IND LTD SARL [LU]) 5 June 2012 (2012-06-05) * figures 1-6 * * page 9, line 31 - line 32 * * page 10, line 12 - line 29 * * page 11, line 17 - page 12, line 15 * * page 12, line 31 - line 34 *	1-3,9 4-8	INV. E04F19/04 E04F15/02
Y	WO 2007/070909 A1 (NEUHOFER FRANZ JR [AT]) 28 June 2007 (2007-06-28) * figures 1-2,6 * * page 6, last paragraph *	4	
Y	US 2019/127992 A1 (GALAS ADAM [PL]) 2 May 2019 (2019-05-02) * figures 1,4 * * paragraph [0037] *	5	
Y	EP 2 292 872 A1 (FLOORING IND LTD SARL [LU]) 9 March 2011 (2011-03-09) * figures 11-13 * * paragraph [0007] * * paragraph [0046] *	6-8	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	23 February 2024	Estorgues, Marlène

CATEGORY OF CITED DOCUMENTS

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23-02-2024

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
BE 1019380 A3	05-06-2012	BE 1019380 A3	05-06-2012
		BE 1019586 A3	07-08-2012
WO 2007070909 A1	28-06-2007	AT 503230 A1	15-08-2007
		WO 2007070909 A1	28-06-2007
US 2019127992 A1	02-05-2019	AU 2017247781 A1	18-10-2018
		BR 112018069656 A2	05-02-2019
		CA 3018658 A1	12-10-2017
		CN 108884681 A	23-11-2018
		EP 3440278 A1	13-02-2019
		ES 2895958 T3	23-02-2022
		HU E056689 T2	28-03-2022
		JP 6917648 B2	11-08-2021
		JP 2019513928 A	30-05-2019
		LT 3440278 T	10-12-2021
		MA 44618 A	07-04-2021
		PL 232410 B1	28-06-2019
		PL 3440278 T3	17-01-2022
		RU 2699089 C1	03-09-2019
		SG 11201808012T A	30-10-2018
		UA 122018 C2	25-08-2020
		US 2019127992 A1	02-05-2019
		WO 2017175121 A1	12-10-2017
EP 2292872 A1	09-03-2011	NONE	

EPO FORM P0459

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

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Patent documents cited in the description

- EP 3822430 A1 **[0004]**