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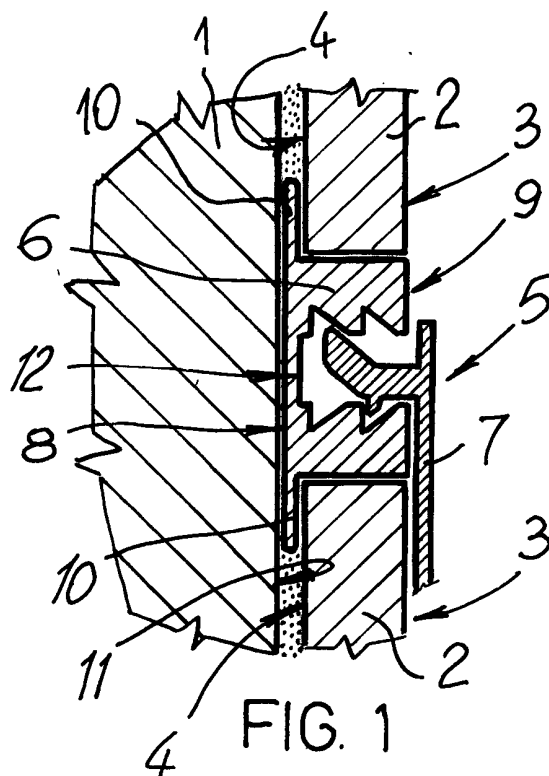
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(54) **Supporting device**

(57) The supporting device comprises a base element (6) which has a resting face (8) on a surface (11) and an opposite fastening face (9) that can be fixed with fixing means (10; 25, 26) to said surface (11); a movable element (7) that can be fastened onto said base element (6) in a removable way with fastening means (12); said fastening means (12) further comprise guide means (13) obtained in said fastening face (9); hook means (14) obtained in said movable element (7) and suitable for coupling with said guide means (13).



Description

TECHNICAL FIELD

[0001] The invention refers to a supporting device.

PRIOR STATE OF THE ART

[0002] Supporting devices are known usable in houses to support objects or shelves on which objects can be placed.

[0003] These supporting devices are usually made up of a straight bar which is fixable to a wall so as to be substantially horizontal and a series of hooks that can be hooked onto the bar.

[0004] Onto the hooks in turn the objects to be supported are hooked or else the latter can be already independently equipped with these hooks.

[0005] The straight bar has supports for fixing to the wall to sustain it so it is protruding with respect to the wall to allow hooking the hooks to it.

[0006] The supports can be fixed to the wall by means of materials placed in between these and the wall surface or using screws and anchors after making holes for introducing the latter in the wall.

[0007] This state of the art has a number of drawbacks.

[0008] A first drawback relates to fixing with adhesive materials because, over time, these tend to reduce their adhesive strength.

[0009] This circumstance occurs above all if the supports have to be fixed on a point of a wall close to a heat source, for example close to a household appliance used to cook food.

[0010] The gradual reduction of the adhesive strength and the weight of the bodies supported by the bar by means of the hooks determines the detachment of the supports and the fall of the bar and everything this supports.

[0011] Another drawback relating to fixing with screws and anchors is that the wall to which the supports have to be fixed has to be drilled.

[0012] If the wall is covered with tiles, these too have to be drilled, with the risk of damaging or breaking them, in order to insert the anchors which have to be secured in the wall and arranged in such a position as to receive and firmly retain the retention screws.

[0013] Furthermore, the latter normally stay visible and make the wall ugly to look at.

OBJECTS OF THE INVENTION

[0014] One object of the invention is to improve the state of the art.

[0015] Another object of the invention is to make a supporting device which, when positioned, remains stable over time.

[0016] A further object of the invention is to make a supporting device that looks good and does not require

drilling and screws for fixing onto a surface, for example, on a surface of a wall.

[0017] According to one aspect of the invention, a supporting device is provided comprising: a base element which has a resting face on said surface and an opposite fastening face that can be fixed to a surface with fixing means; a movable element that can be fastened onto said base element in a removable way with fastening means; characterized in that said fastening means comprise: guide means obtained in said fastening face of said base element; hook means obtained in said movable element and suitable for coupling with said guide means.

[0018] Consequently, the supporting device allows fixing to a wall, or another surface, in a stable way over time and further allows maintaining the supported objects without oscillations.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] Further characteristics and advantages will appear even more evident from the description of a supporting device, illustrated indicatively by way of non limiting example, in the attached drawings wherein:

Figure 1 is an interrupted cross section view of a supporting device in a support position;

Figure 2 is an interrupted cross section view of the supporting device of Figure 1 in a coupling or separation position between a base element and a movable element;

Figure 3 is an interrupted cross section view of the supporting device of Figure 1 in a configuration in which the base element and the movable element are completely separated;

Figure 4 is an interrupted perspective view of a wall to which the supporting device of Figures 1, 2 and 3 has been fitted;

Figure 5 is an enlarged scale view of the interrupted cross section of Figure 3;

Figure 6 is a schematic side view of a supporting device in a further possible version, particularly suitable for supporting projecting shelves.

EMBODIMENTS OF THE INVENTION

[0020] With reference to the Figures, by 1 is indicated a wall that is covered with tiles 2 which have a visible face 3 and an opposite installation face 4.

[0021] Between rows of tiles 2 a supporting device 5 can be mounted that is suitable for supporting objects of various kinds.

[0022] The supporting device 5 comprises a base element 6 and a movable element 7 to be fastened to the base element 6, as will be better indicated later on.

[0023] As is visible in the Figures, the base element 6 has a body with a substantially quadrangular section that defines a resting face 8 on the wall 1 and an opposite fastening face 9, which are substantially parallel.

[0024] From the resting face 8 protrudes in opposite directions, in this case upwards and downwards, a thin lip 10 which is suitable for being surmounted by the installation faces 4 of adjoining tiles, in such a way that, in an operating configuration, these keep it pressed against the surface 11 of the wall 1.

[0025] As shown in the Figures, the thin lip 10 has a face that is substantially coplanar with the resting face 8 and which represents with this a common surface of contact intended to be rested on the surface 11.

[0026] Between this common surface of contact and the surface 11, adhesive means can be placed to reinforce the adhesion of the base element 6 to the wall 1, such as, for example, a layer of glue or a bi-adhesive tape.

[0027] The movable element 7 can be fastened to the base element 6 by means of fastening means 12, which comprise a guide 13 obtained in the fastening face 9 and a hook 14 obtained in the movable element 7 shaped so as to couple with the guide 13 in a removable way.

[0028] In detail, the guide 13 is made up of a groove 15 with a cross section that shapes a first pair of first upper retention teeth 16 and an opposite second pair of second lower retention teeth 17, all turned towards the outside of the guide 13.

[0029] Also the hook 14 fitted to the movable element 7, at an end 18 considered upper in a fastening condition, comprises a second lip 19 that can be fitted in the guide 13 through the groove 15 and which protrudes overhanging from a face 20 of the movable element 7 faceable onto the fastening face 9.

[0030] This second lip 19 has, in cross section, a third retention tooth 21 protruding from a first upper face 22 of the second lip 19 and which can be engaged with one of the first retention teeth 16 and a fourth retention tooth 23 overhanging from a second face 24 of the second lip 19 opposite the first upper face 22 and which can be engaged with one of the second retention teeth 17 in a hooked configuration between the base element 6 and the movable element 7.

[0031] The body of the base element 6 has a cross dimension such as to make the visible faces 3 and the fastening face 9 substantially coplanar, on a configuration mounted on the wall 1.

[0032] According to the further version of the supporting device 1 shown in Figure 6, it will be noticed that the base element 6 is fixed to the wall 1 by means of wall anchors 25 which are fitted in specific holes 27 prepared in this and in which are engaged screws 26 that are fitted through the groove 15, so as not to be excessively visible from outside being partially hidden by the first upper teeth 16 and by the second lower teeth 17.

[0033] The operation of the supporting device is the following: according to a first embodiment shown in the Figures from 1 to 3, during the installation of the tiles 2, the base element 6 is rested on the wall 1 and the tiles 2 are in turn rested on the surface 11 of the wall 1 so as to surmount the thin lip 10 with a portion of the respective installation faces 4.

[0034] If necessary, between the resting face 8 and the surface 11 a layer of adhesive material can be applied or a segment of bi-adhesive tape, so as to keep the base element 6 fixed on the wall 1 before installation of the tiles 2 is completed and to also reinforce the fastening of the base element 6 also when installation is completed.

[0035] When the base element 6 is mounted stably on the wall 1, on the surface 11 of this only the groove 15 and the edges of this that delimit it and form the fastening face 9 remain visible, as can be seen in the Figure 4.

[0036] One or more movable elements 7 can therefore be fastened to the base element 6 fitting each second lip 19 inside the groove 15, arranging it first of all in a slightly turned position, as can be seen in the figure 2 and as indicated by the arrows "F", so as to allow the passage and the introduction of the third retention tooth 21 and of the fourth retention tooth 23 in the longitudinal groove 15 and between the first retention teeth 16 and the second retention teeth 17: the width of the groove 15 is such as to allow this rotation for the introduction of the second lip 19.

[0037] Once introduction has been completed, the movable element 7 is rotated in the direction of the wall 1 and the third retention tooth 21 and the fourth retention tooth 23 rest against one of the first retention teeth 16 and one of the second retention teeth 17 respectively: this way, the movable element 7 is fastened to the base element 6 without the chance to oscillate spontaneously.

[0038] Repeating the operation in the opposite sequence, i.e. by slightly lifting it to cause it to rotate upwards, each movable element 7 can be disengaged from the base element 6 and the second lip 19 can be removed from the groove 15.

[0039] It must be pointed out that the movable element 7 can comprise a hooked profile 125, so as to transform into a hook on which objects can be hung, or the movable element 7 can be fitted or be directly obtained in an object to be supported, such as, for example, in the small tray shown in Figure 4.

[0040] According to a further version of the supporting device 1, the base element 6, with reference to the Figure 6, is fixed to the surface 11 by means of the wall anchors 25 fitted in the wall 1 and of screws 26 that can be engaged in these, thereby allowing the fixing of the supporting device 1 also on those surfaces 11 that are devoid of covering or already covered with tiles or wallpaper.

[0041] The way of fastening and disengaging the base element 6 and the movable elements 7 remains the same described previously.

Claims

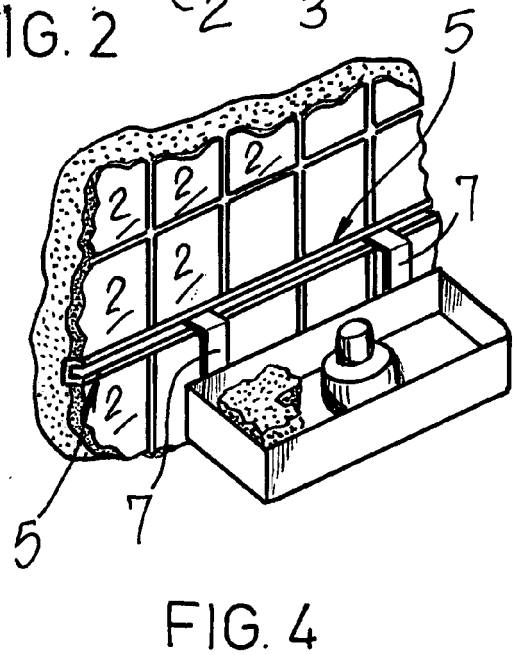
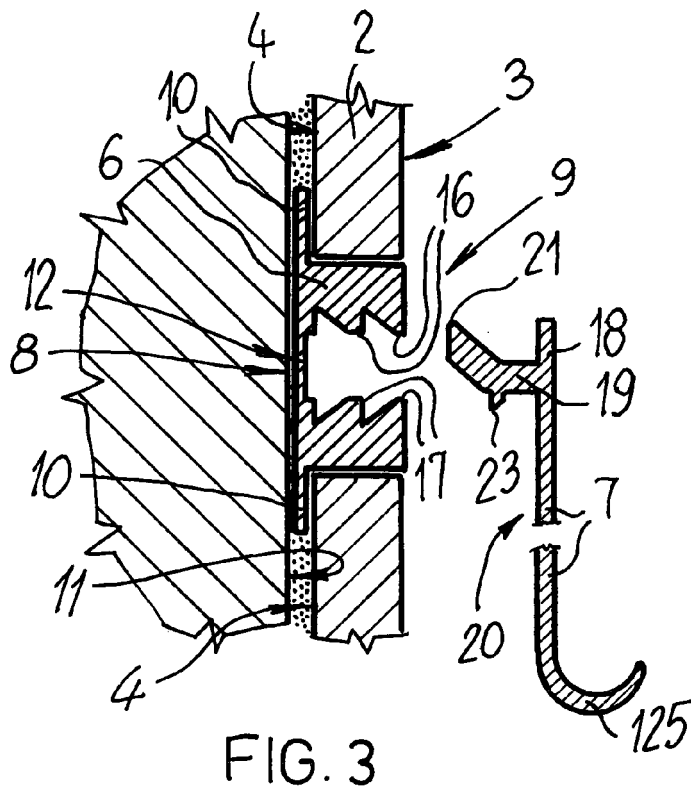
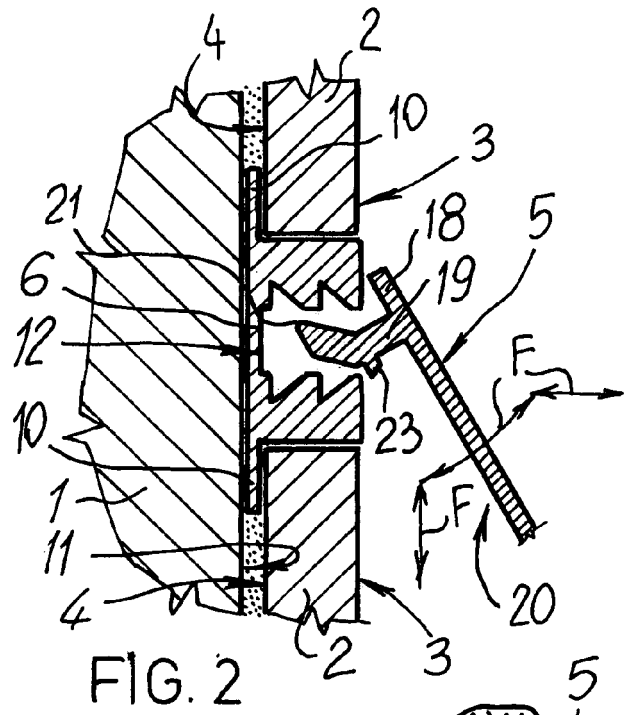
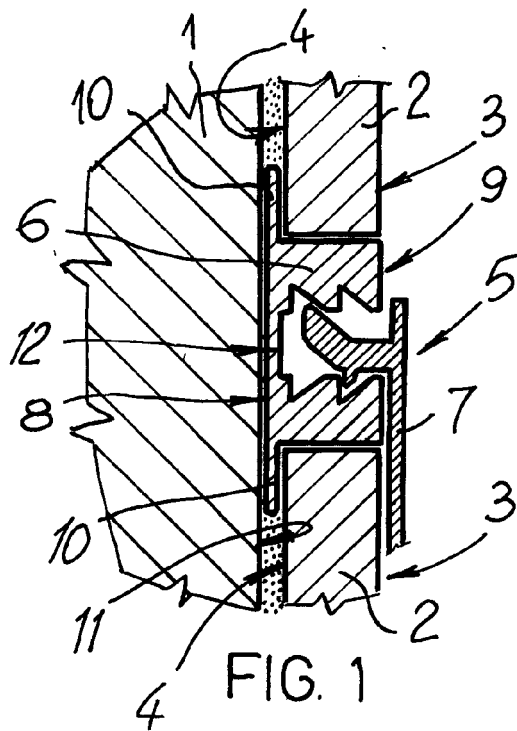
1. Supporting device comprising: a base element (6) which has a resting face (8) on a surface (11) and an opposite fastening face (9) that can be fixed with fixing means (10; 25, 26) to said surface (11); a movable element (7) that can be fastened onto said base

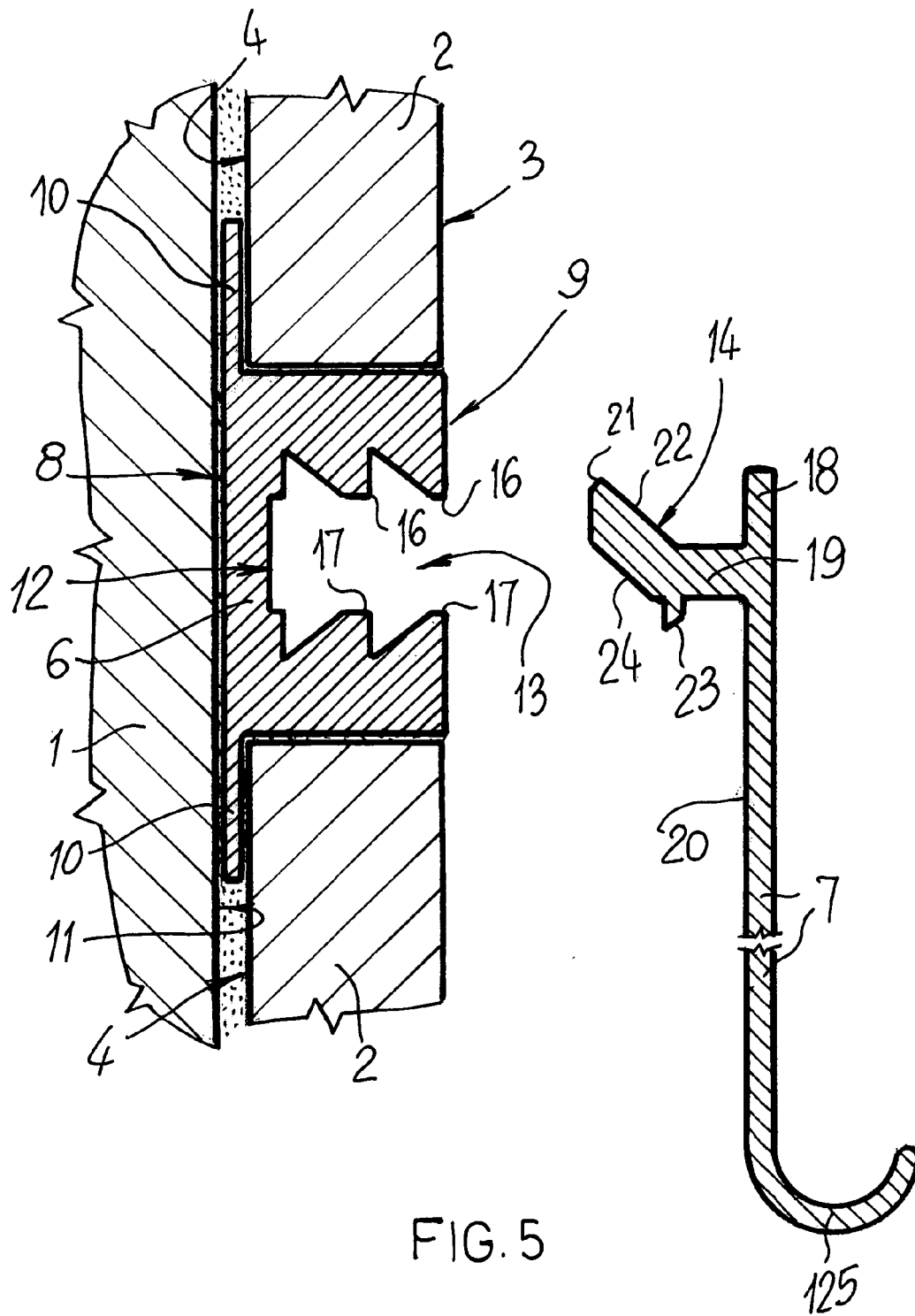
element (6) in a removable way with fastening means (12); **characterized in that** said fastening means (12) comprise: guide means (13) obtained in said fastening face (9); hook means (14) obtained in said movable element (7) and suitable for coupling with said guide means (13) .

2. Device according to claim 1, wherein said guide means comprise a longitudinal groove (15) obtained in said fastening face (9) and turned opposite with respect to said surface (11) and in which said hook means (14) can be engaged. 10
3. Device according to claim 2, wherein said groove (15) has a cross section which shapes at least one first side and a second side parallel and facing said first side and between which said hook means (14) can be fitted, on said first side being obtained a first retention element (16) of said hook means (14) and on said second side being obtained a second retention element (17) of said hook means (14) in an engagement configuration between the latter and said groove (15). 15
4. Device according to claim 3, wherein said first retention element comprises a first retention tooth (16) and said second retention element comprises a second retention tooth (17), said first retention tooth (16) and second retention tooth (17) being opposite to one another and protruding towards each other. 20
5. Device according to any of the claims from 1 to 4, wherein said fastening means (12) comprise a second lip (19) which can be fitted in said longitudinal groove (15) and overhanging from a face (20) of said movable element (7) faceable onto said fastening face (9), said second lip (19) having, in cross section, a third retention tooth (21) overhanging from a first face (22) of said second lip (19) and which can be engaged with said first retention tooth (16) and a fourth retention tooth (23) overhanging from a second face (24) of said second lip (19) opposite said first face (22) and which can be engaged with said second retention tooth (17) in a hooked configuration between said base element (6) and said movable element (7). 25
6. Device according to claim 1, wherein said fixing means comprise a thin lip (10) protruding from said resting face (8) and has a face substantially coplanar with it. 30
7. Device according to claim 6, wherein a face of said thin lip (10) and said resting face (8) form a common surface of contact intended to be rested on said surface (11). 35
8. Device according to claim 7, wherein between said 40

common surface of contact and said surface (11) can be interposed adhesive means.

9. Device according to any of the claims from 1 to 5, wherein said thin lip (10) can be interposed between said surface (11) and stop means (2, 4) which can be overlapped to said thin lip (10), in such a way that this is kept pressed against said surface (11) by said stop means (2, 4). 45
10. Device according to claim 9, wherein said stop means comprise one or more ceramic tiles (2) having installation faces (4) and opposite visible faces (3) and suitable for covering said surface (11) overlapping said thin lip (10). 50
11. Device according to any of the claims from 1 to 10, wherein said base element (6) has substantially the same thickness as said ceramic tiles (2), in such a way that said fastening face (9) and said visible faces (3) are substantially coplanar. 55
12. Device according to any of the claims from 6 to 11, wherein said thin lip (10) extends from said resting face (8) from opposite sides with respect to this.
13. Device according to any of the preceding claims wherein between said base element (6) and said movable element (7) can be interposed anti-extraction means (27) suitable for retaining said movable element (7) in coupled configuration with said base element (6).





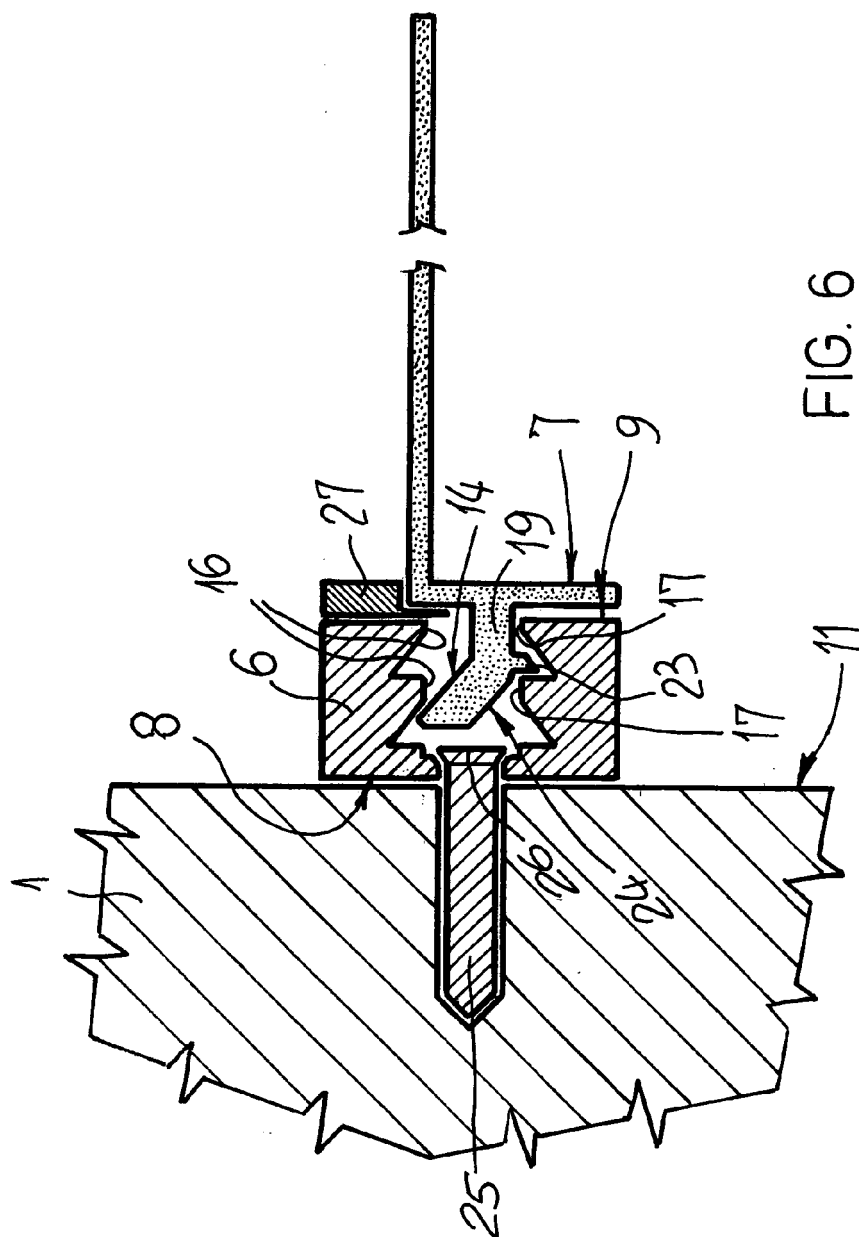


FIG. 6



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 07 01 2556

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 26 October 2007	Examiner Jones, Clive
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03-02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 07 01 2556

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26-10-2007

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