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(54) **Ceiling system**

(57) A ceiling system comprising horizontal laths mounted in spaced-apart relationship and a ceiling cloth that is stretched between and under said laths, a finishing section for finishing an edge between the ceiling cloth and a wall, and fixing means for fixing said finishing section to the ceiling cloth and to the wall, wherein the fin-

ishing section comprises a base section, which is fixed to the underside of the ceiling cloth or to the wall by said fixing means, as well as a cover section, which can be connected to the base section by connecting means, in such a manner that the cover section abuts against the ceiling cloth and/or against the wall.

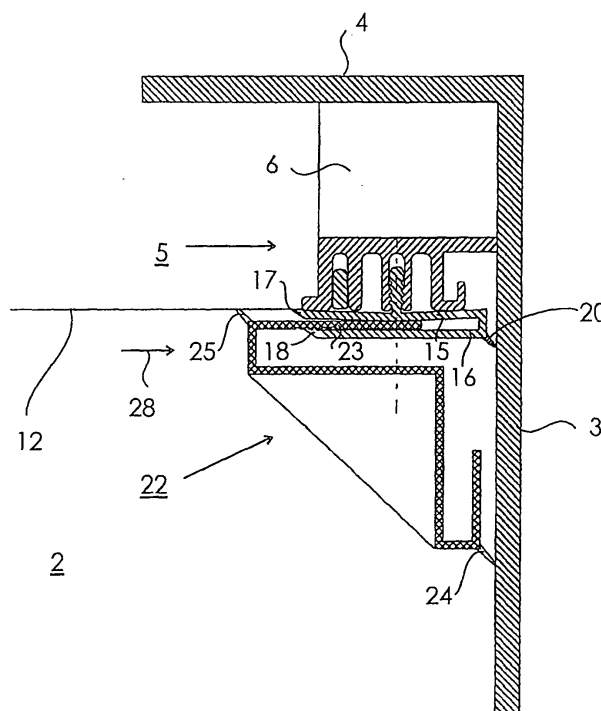


Fig. 4

Description

[0001] The present invention relates to a ceiling system comprising horizontal laths mounted in spaced-apart relationship and a ceiling cloth that is stretched between and under said laths, a finishing section for finishing an edge between the ceiling cloth and a wall, and fixing means for fixing said finishing section to the ceiling cloth and to the wall.

[0002] Such a system is described in Dutch patent NL 1003163. In the known system, an extruded lath of plastic material is used, which is attached to the fixed ceiling via spacer blocks provided along a wall of a room. The lath has a number of slots extending in the longitudinal direction, which are open at their bottom side. The ceiling cloth of the suspended ceiling is clamped down in one of said slots by means of an elongate strip, which is pressed upwards into the clamping slot in question with the end of the cloth folded thereover, whilst a barbed rib forming part of a finishing section at the upper side thereof is pressed upwards into another slot, which is positioned closer to the wall. The slot in question itself is also provided with barbs, so that the connection between the finishing section and the lath that is realised in this manner is of a more or less permanent nature, which connection can only be broken by specialists in practice. Because of this more or less permanent nature of the attachment of the finishing section to the ceiling via the lath it is not readily possible to exchange a finishing section for another finishing section once it has been fitted, which may be desirable when changing the interior of the room in question or, for example, in case the finishing section were damaged. Another drawback of the use of the known finishing system is the fact that as the height of the finishing section increases or, in other words, as the finishing section extends further below the suspended ceiling, the risk of a visually objectionable gap being formed between the underside of the finishing section and the wall along which the finishing section is provided increases, in particular if said wall is inclined in outward direction from the top to the bottom to a certain extent, seen in a vertical plane perpendicular to the wall in question. To overcome this problem, it is known in practice to fix a clamping strip to the wall within the height of the finishing section, preferably near the bottom side thereof, to which the finishing section can be clampingly connected so as to obtain a proper abutment of the clamping strip against the wall along the lower longitudinal edge thereof. The mounting of the clamping strip in turn involves additional operations, of course, which operations need to be carried out with due precision.

[0003] The object of the present invention is to provide a finishing system as referred to in the introductory paragraph, wherein, whether or not in preferred embodiments of the invention, the aforesaid drawbacks of ceiling systems according to the prior art do not apply, or at least to a significantly smaller extent. In order to accomplish that object, the finishing section comprises a base sec-

tion, which is fixed to the underside of the ceiling cloth or to the wall by said fixing means, as well as a cover section, which can be connected to the base section by connecting means, in such a manner that the cover section abuts against the ceiling cloth and/or against the wall. Designing the finishing section as a separate base section and a cover section that can be interconnected by means of the base section makes it possible to configure the connection between the base section and the cover section such that the two can readily be manually disconnected from each other without the connection between the base section and the ceiling or a wall being affected.

[0004] A very advantageous embodiment of the connecting means is obtained if the connecting means comprise a clamping slot associated with either one of the base section and the cover section and a clamping wall associated with the other one of the base section and the cover section, which is clampingly inserted into the clamping slot. The connection between the base section and the cover section can thus be effected in a simple manner by inserting the clamping wall into the clamping slot.

[0005] Furthermore preferably, the clamping slot is horizontally oriented. The important advantage of this preferred embodiment is that the cover section can thus be pushed against the wall, making it possible to obtain a proper abutment between the wall and the (underside of the) cover section, even if the latter has a comparatively great height. The present preferred embodiment does not exclude the possibility of using a clamping strip fixed to the wall after all, as is the case with the prior art, in particular in the case of strongly inclined and/or wavy walls, but this will be necessary less soon than is the case with finishing systems according to the prior art. An additional advantage of the use of a horizontally oriented clamping slot is that thus the cover section will not tend to move downwards under the influence of the force of gravity, which might even lead to the connection between the cover section and the base section being broken and the cover section falling on the ground.

[0006] Preferably, the clamping slot and/or the clamping wall is (are) provided with a roughened portion, for example in the form of teeth. Thus it can be ensured that the base section and the cover section will remain correctly positioned relative to each other also in the course of time, which position might be affected by external factors, such as vibrations caused by passing traffic. It will be understood that care must be taken in that case that the roughened portion is not such that it the connection between the base section and the cover section cannot be broken, or only with a great deal of effort, comparable to the connection of the base section to the ceiling or the wall by the fixing means.

[0007] The clamping slot preferably forms part of the base section, so that the clamping wall of the cover section can be inserted into the clamping slot of the base section.

[0008] According to a very practical embodiment, the

clamping slot is formed by the space between two at least substantially parallel slot walls, with the free end of one of the slot walls springing towards the other slot wall. As a result, the clamping wall is clamped between the slot walls of the clamping slot to a certain extent. In addition, the presence of the clamping slot can thus be hidden from view in that the free end of the slot wall that is inclined in the direction of the other slot wall can abut against said other slot wall, so that there will be no gap, at most a seam.

[0009] Preferably, the base section abuts both against the ceiling cloth and against the wall, so that it is also suitable for use without a separate cover section, as already indicated in the preceding paragraph.

[0010] Furthermore it is advantageous if the cover section abuts both against the ceiling cloth and against the wall. Thus, the base section would be hidden from view in its entirety by the cover section, so that no special demands need to be made as regards the aesthetic quality of the base section.

[0011] To realise a proper abutment of the cover section and/or the base section against the ceiling cloth or the wall, at least one of the longitudinal edges of the base section and/or the cover section that abut against the ceiling cloth or the wall are formed by a flexible flange edge, such as a rubber or TPE (ThermoPlastic Elastomer).

[0012] Furthermore preferably, the base section is fixed to a lath by the fixing means.

[0013] Even more preferably, the fixing means comprise a clamping recess forming part of either one of the base section and the lath, as well as a clamping rib inserted into the clamping recess, which forms part of the other one of the base section and the lath.

[0014] The clamping rib is preferably vertically oriented, so that the base section can be connected to the lath by pushing the base section upwards against the lath.

[0015] Finally, the invention also relates to a base section as such as well as to a cover section at such for use in a finishing system according to the invention as described above.

[0016] The invention will now be explained in more detail in the description below of a finishing system according to a preferred embodiment of the invention, in which reference is made to the following figures 1-4, which are vertical cross-sectional views of the finishing stages during four successive stages of the mounting thereof.

[0017] Figure 1 shows a part of a room 2 at the location of the right-angled joint between a wall 3 and the fixed ceiling 4 of the room 2. Disposed some distance below the ceiling 4 is an extruded hard plastic clamping section 5, which is fixed to the bottom side of a spacer 6, e.g. a wooden strip, with its flat upper side by means of screws (not shown), which spacer 6 is in turn fixed (in a manner not shown) to the ceiling 4 and/or the wall 3. The clamping section 5 is practically fully identical to the lath 2 as described in Dutch patent NL 1003163, to which document reference is made for a more detailed description. Within

the context of the present invention it suffices to note that it comprises four downwardly extending slots 7,8,9,10, with the slot 9 being provided with teeth 11. The clamping section 5 is provided not only along the entire length of the wall 3 but also along all other walls of the room 2, thus forming an endless whole.

[0018] Figure 2 shows the situation that is obtained after a cloth-like ceiling 12 has been stretched on the inner side of the clamping sections 5. To that end an elongate clamping strip 13 with the edge of the stretch ceiling 12 folded thereover in the form of an upside-down U-shape is clampingly accommodated in the slot 7. Also in this regard the present embodiment is not different, or at least not significantly so, from the embodiment as described in Dutch patent NL 1003163, to which reference is again made for a more detailed description.

[0019] Figure 3 shows the manner in which subsequently an extruded hard plastic base section 14 is connected to the clamping section 5. To that end and upwardly extending, barbed rib 27 is inserted into the slot 9 of the clamping section 5. The base section 14 is U-shaped, seen in vertical cross-sectional view, and is provided with legs 15, 16 having bevelled free ends 17, 18, which extend into the room 2. Although the bevelled ends 17, 18 are spaced apart in figure 2, the end 18 inclines towards the end 17 when no forces are exerted thereon, so that the bevelled portions of the ends 17, 18 join one another in mutually aligned relationship. Present between the legs 15, 16 is a slot 19, which can be characterised as a clamping slot 19 on account of the fact that the (end 18 of the) leg 16 inclines in the direction of the leg 15. To obtain a proper abutment of the base section 14 against the wall 3, the base section 14 is provided with an elastically deformable flange 20. Near its end 18, the leg 16 is provided with a tooth 21 on the side facing towards the leg 15.

[0020] Finally, figure 4 shows the finishing system as it can eventually be used with an extruded hard plastic cover section 22. The cover section 22 is shown more or less schematically in figure 4, but as those skilled in the art will appreciate, it may have various forms. One condition in the case of the present preferred embodiment, however, is that the cover section 22 be provided with an insertion leg 23 at the upper side thereof, which insertion leg has a free end that extends towards the wall 3. A number of teeth 26 are provided on the bottom side of the insertion leg 23, which teeth are intended to mate with the tooth 21 on the leg 16 for the purpose of stabilising the position of the cover section 22 with respect to the base section 14. In applied form, the insertion leg 23 is inserted between the ends 17, 18 of the legs 15, 16 of the base section in the direction indicated by the arrow 28, until the flange 24, which is elastically deformable, abuts against the wall 3. In addition to that, the elastically deformable flange 25 abuts against the stretch ceiling 12.

[0021] An important advantage of the present invention is the fact that a higher degree of flexibility is obtained as regards the horizontal position of the cover section 22

with respect to the clamping section 5, so that a proper abutment of the cover section 22 against the wall 3 can be guaranteed also in the case of a relatively strongly inclined position of the wall 3 and/or a great height of the cover section 22. In addition to that, the finishing system provides a possibility of easily exchanging the cover 22, if desired, thus making it possible to realise an entirely new appearance.

[0022] Furthermore it is important to note that the clamping section 5 is designed so that it would also be possible not to use a separate cover section 22, and that consequently the clamping section 5 in fact functions as a cover section, in which connection it should be realised that the end 18 of the leg 16 abuts against the end 17 of the legs 15 in unloaded condition, so that no gap that is visible from the room 2 is present therebetween but rather a seam, which will hardly be visible, if at all.

Claims

1. A ceiling system comprising horizontal laths mounted in spaced-apart relationship and a ceiling cloth that is stretched between and under said laths, a finishing section for finishing an edge between the ceiling cloth and a wall, and fixing means for fixing said finishing section to the ceiling cloth and to the wall, **characterised in that** the finishing section comprises a base section, which is fixed to the underside of the ceiling cloth or to the wall by said fixing means, as well as a cover section, which can be connected to the base section by connecting means, in such a manner that the cover section abuts against the ceiling cloth and/or against the wall.
2. A system according to claim 1, **characterised in that** the connecting means comprise a clamping slot associated with either one of the base section and the cover section and a clamping wall associated with the other one of the base section and the cover section, which is clampingly inserted into the clamping slot.
3. A system according to claim 2, **characterised in that** the clamping slot is horizontally oriented.
4. A system according to claim 2 or 3, **characterised in that** the clamping slot and/or the clamping wall is (are) provided with a roughened portion, for example in the form of teeth.
5. A system according to claim 2, 3 or 4, **characterised in that** the clamping slot forms part of the base section.
6. A system according to claim 2, 3, 4 or 5, **characterised in that** the clamping slot is formed by the space between two at least substantially parallel slot walls,

with the free end of one of the slot walls springing towards the other slot wall.

7. A system according to any one of the preceding claims, **characterised in that** the base section abuts both against the ceiling cloth and against the wall.
8. A system according to any one of the preceding claims, **characterised in that** the cover section abuts both against the ceiling cloth and against the wall.
9. A system according to any one of the preceding claims, **characterised in that** the cover section hides the base section from view in its entirety.
10. A system according to any one of the preceding claims, **characterised in that** at least one of the longitudinal edges of the base section and/or the cover section that abut against the ceiling cloth or the wall are formed by a flexible flange edge.
11. A system according to any one of the preceding claims, **characterised in that** the base section is fixed to a lath by the fixing means.
12. A ceiling system according to claim 11, **characterised in that** the fixing means comprise a clamping recess forming part of either one of the base section and the lath, as well as a clamping rib inserted into the clamping recess, which forms part of the other one of the base section and the lath.
13. A ceiling system according to claim 12, **characterised in that** the clamping rib is vertically oriented.
14. A base section for use with a ceiling system according to any one of the preceding claims.
15. A cover section for use with a ceiling system according to any one of the claims 1-13.

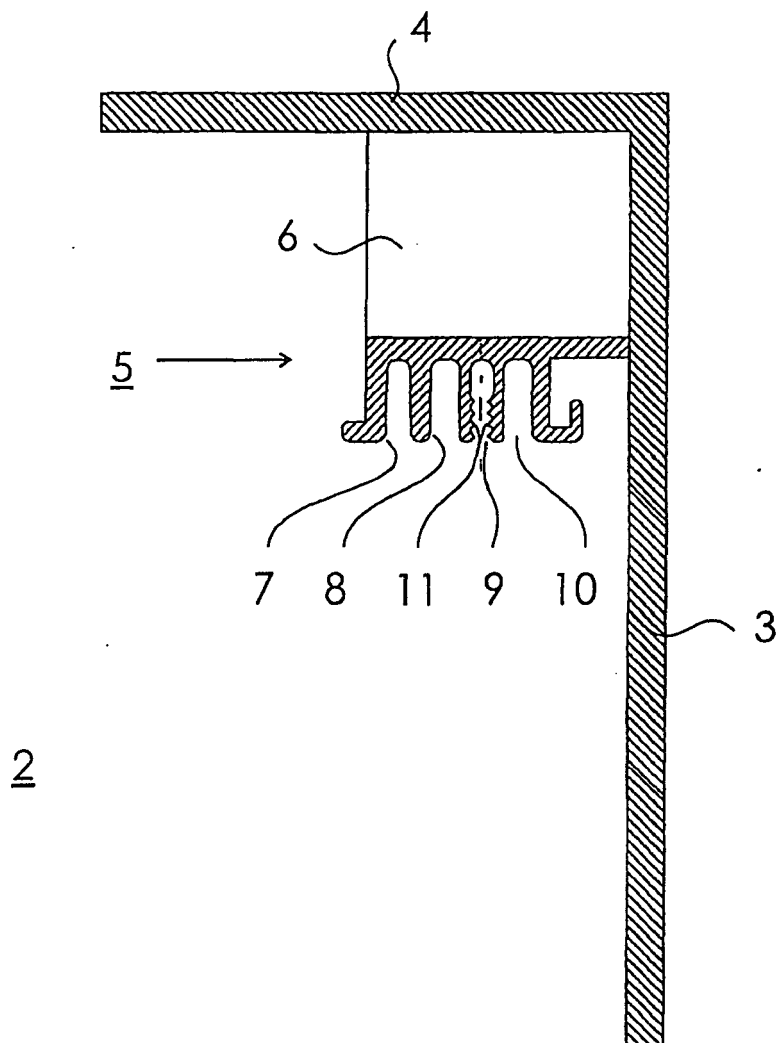
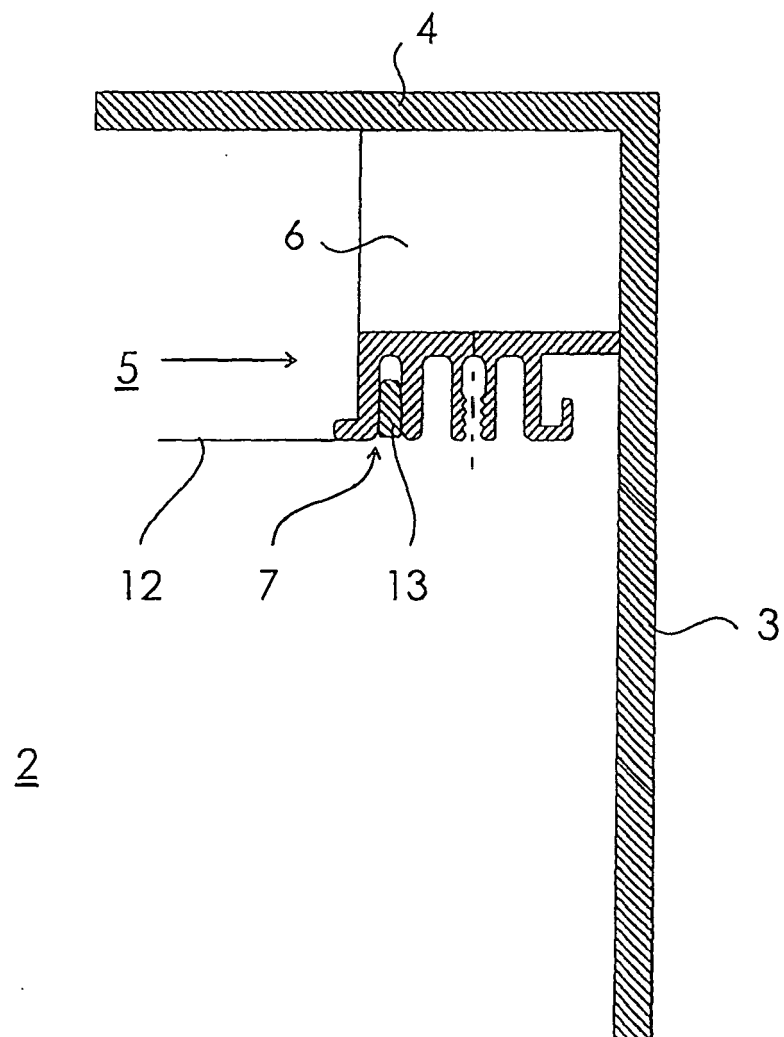


Fig. 1



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Fig. 2

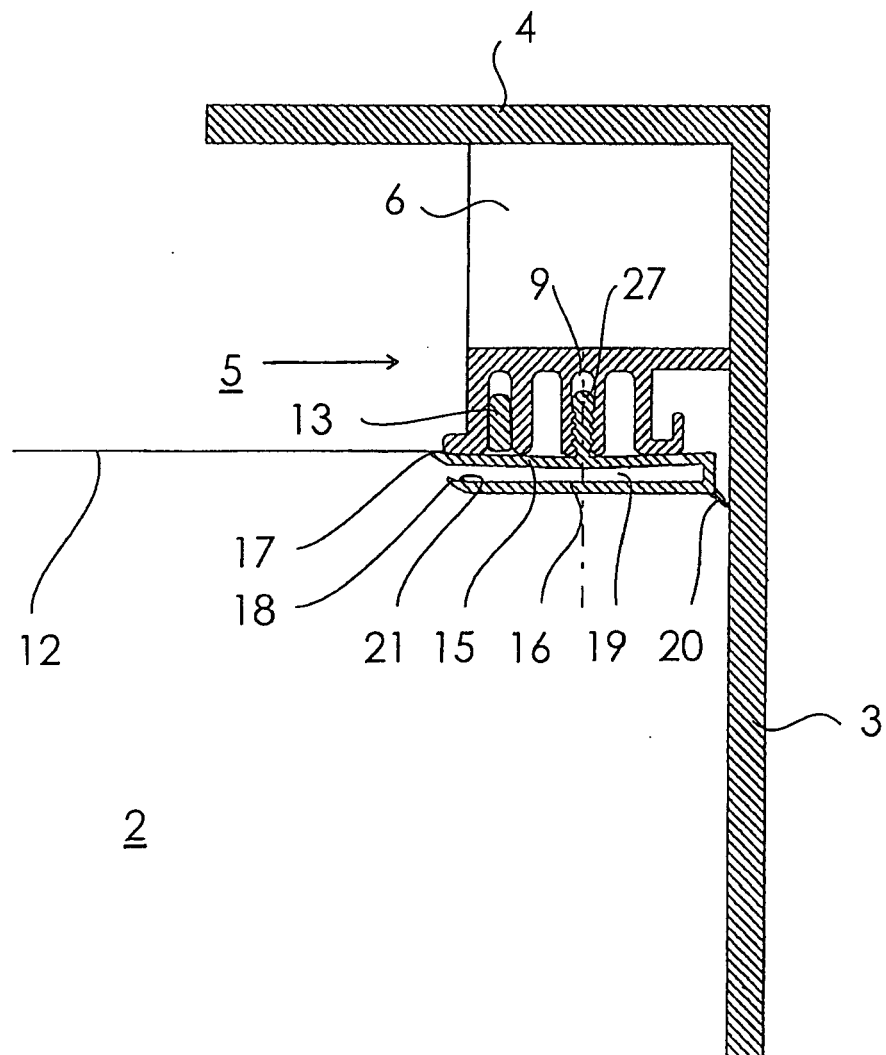


Fig. 3

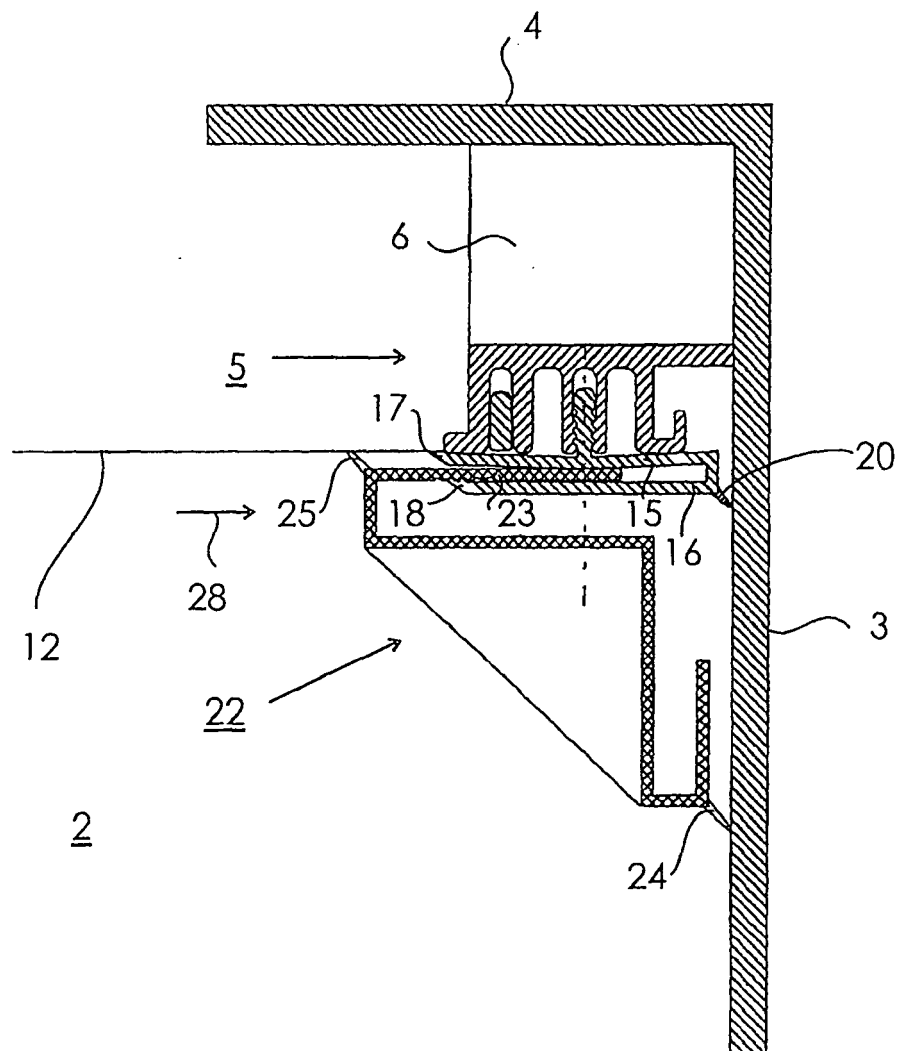


Fig. 4



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PARTIAL EUROPEAN SEARCH REPORT

Application Number

which under Rule 45 of the European Patent Convention EP 06 07 6372
shall be considered, for the purposes of subsequent
proceedings, as the European search report

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
D,A	NL 1 003 163 C (J. SPANJERS) 21 November 1997 (1997-11-21) * page 3, last paragraph - page 4, line 17; figure 1 *	1-13	INV. E04B9/30 E04F19/04
A	FR 2 597 906 A (D. BOUTTIER) 30 October 1987 (1987-10-30) * figures 1,5 *	1,2,4,5, 8-10	
			TECHNICAL FIELDS SEARCHED (IPC)
			E04B E04F B44C
INCOMPLETE SEARCH			
The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for these claims. Claims searched completely : Claims searched incompletely : Claims not searched : Reason for the limitation of the search: see sheet C			
Place of search		Date of completion of the search	Examiner
The Hague		20 October 2006	Righetti, Roberto
CATEGORY OF CITED DOCUMENTS		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 03.82 (P04C07)



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**INCOMPLETE SEARCH
SHEET C**

Application Number
EP 06 07 6372

Claim(s) searched completely:
1-13

Claim(s) not searched:
14, 15

Reason for the limitation of the search:

No meaningful search possible for lack of technical features, Rule 29 (1) EPC.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 07 6372

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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20-10-2006

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REFERENCES CITED IN THE DESCRIPTION

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- NL 1003163 [0002] [0017] [0018]