

(19)



(11)

EP 2 101 121 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
16.09.2009 Bulletin 2009/38

(51) Int Cl.:
F24F 13/32^(2006.01)

(21) Application number: **08425146.1**

(22) Date of filing: **11.03.2008**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT
RO SE SI SK TR**
Designated Extension States:
AL BA MK RS

(72) Inventor: **Riello, Valerio Giordano**
37040 Bevilacqua (VR) (IT)

(74) Representative: **Bonvicini, Davide et al**
Perani Mezzanotte & Partners
Piazza San Babila, 5
20122 Milano (IT)

(71) Applicant: **Giordano Riello International Group**
S.p.A.
37040 Bevilacqua VR (IT)

(54) **Module for installation of an air conditioning unit terminal**

(57) A module for installation of an air conditioning unit terminal comprises a structure adapted to be embedded in a compartment formed in a wall. The structure

defines a housing for the terminal, comprises a plurality of panels in mutual connection to define such housing and fastener means for fixing the panels together.

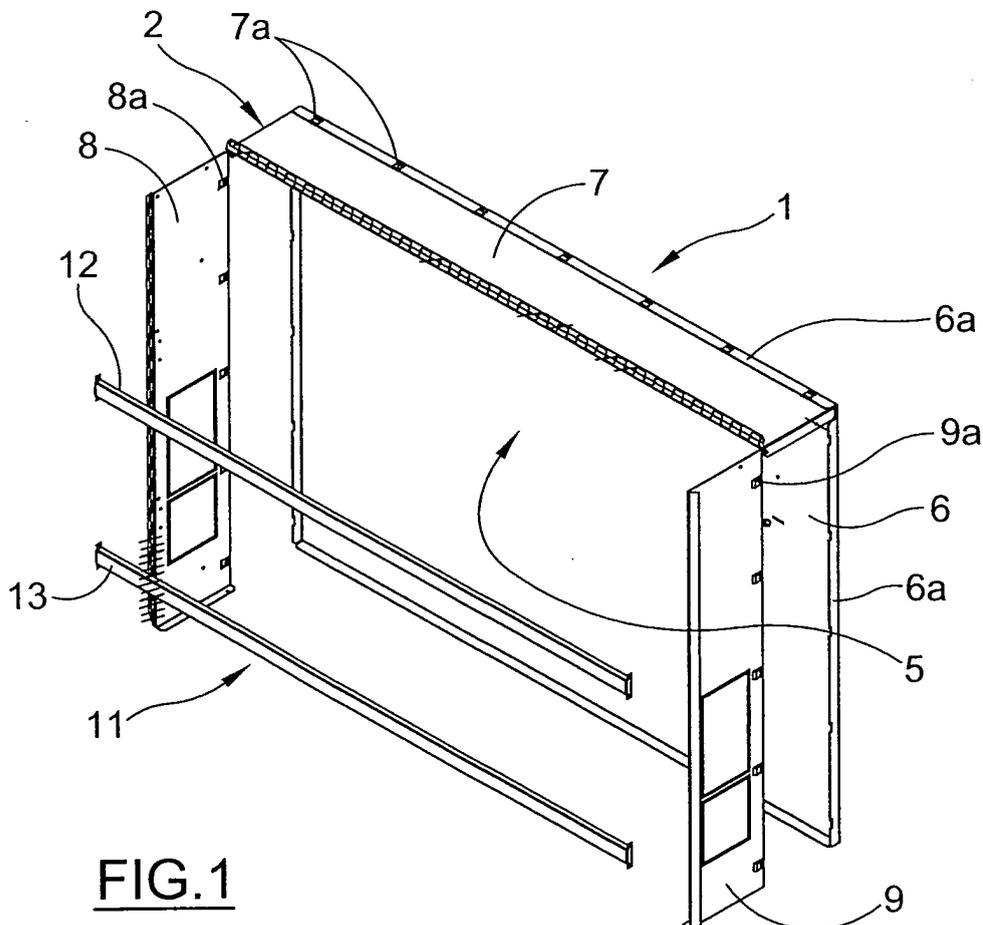


FIG. 1

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Description

[0001] The present invention relates to a module for installation of an air conditioning unit terminal according to the preamble of claim 1.

[0002] Built-in modules are known in the art and are commonly employed to define with the highest precision a compartment for receiving the terminal unit.

[0003] One example of a built-in module is disclosed in the Italian patent application no. MI2004A000262 by the applicant hereof. In accordance with the above mentioned prior art, the module comprises a structure designed to be embedded in a compartment formed within a wall and having a housing for receiving a terminal air conditioning unit, such as a heat exchanger.

[0004] The built-in structure, in the form of a formwork or a caisson, is defined by two sidewalls, a planar top element and a bottom element, which are assembled together, e.g. by welding or riveting. Otherwise, the built-in structure is formed of a molded plastic element.

[0005] The structure so formed is provided to the mason, who forms the compartment in the wall and embeds the built-in structure in such compartment.

[0006] A module as described above suffers from a number of drawbacks. First, the overall space requirements of the built-in structure are related to the size of the molded element and cannot be changed by the manufacturer during production in response to specific customer requirements.

[0007] Furthermore, the molding process employed for making the built-in structure greatly limits the variety of materials that can be used for the module.

[0008] Therefore, the object of the present invention is to provide a module for installation of a terminal of an air conditioning unit that has such structural and functional features as to fulfill the above needs, while obviating the drawbacks of prior art.

[0009] This object is fulfilled by a module for installation of a terminal of an air conditioning unit according to the preamble of claim 1.

[0010] Further characteristics and advantages of the module for installation of a terminal of an air conditioning unit of this invention, will be apparent from the following description of one preferred embodiment thereof, which is given by way of illustration and without limitation with reference to the accompanying figures, in which:

- Figure 1 is a perspective view of a module for installation of an air conditioning unit terminal of the present invention,
- Figures 2 to 4 are different planar views of the module of Figure 1, and
- Figure 5 shows a detail of the module of Figure 1.

[0011] Referring to the annexed figures, numeral 1 generally designates a module for installation of an air conditioning unit terminal.

[0012] The module 1 comprises a structure 2 designed

to be embedded in a compartment 3 formed in a wall 3.

[0013] The compartment 3 is roughly formed in the wall 4 by a mason, who removes a portion of material from the wall 4 or builds the wall 4 around it.

5 **[0014]** The structure 2 defines a housing 5 for receiving a terminal air conditioning unit (not shown), such as a radiant element or plate or a heat exchanger.

[0015] Particularly, the built-in structure 2 comprises a plurality of panels 6, 7, 8, 9 connected together to define the housing 5.

10 **[0016]** In accordance with one embodiment, the structure 2 has a back panel 6, a top panel 7 and two side panels 8, 9 connected together to define the housing 5.

15 **[0017]** For connection of the terminal unit to the air conditioning system, one or more of these panels have apertures for the passage of electric and/or hydraulic connections.

[0018] Advantageously, the structure 2 has fastener means for fixing the side panels 8, 9 and the top panel 7 to the bottom or back panel 6.

20 **[0019]** The panels may be formed of various materials as required. For example, the bottom panel may be formed of a thermal insulation material or include a thermal insulation layer, whereas the side panels may be simply formed of sheet metal.

25 **[0020]** Therefore, the panel arrangement of the built-in structure 2 provides a modular structure, which can be adapted to various needs and directly assembled on site.

30 **[0021]** Namely, the top panel 7 comprises a planar element having fastener means 7a for fixing the top panel 7 to the back panel 6.

[0022] Likewise, each of the two side panels 8, 9 comprises a planar element having fastener means 8a, 9a for fixing the top panel 8 to the back panel 6.

35 **[0023]** According to one embodiment, the back panel 6 comprises a planar element having a peripheral edge 6a overhanging from the plane of the element 6 and the fastener means 7a, 8a, 9a of the panels 7, 8, 9 include an elastic tongue adapted to engage a portion of the peripheral edge 6a of the planar element 6 of the back panel to fix, possibly in a removable manner, each of these panels to the back panel 6.

40 **[0024]** The built-in structure 2 also has fastener means 10 for fixing the two side panels 8, 9 to the top panel 7.

45 **[0025]** According to the embodiment as shown in the accompanying figures, the fastener means 10 comprise a plurality of through holes formed in the edge 7b of the planar element 7 and a respective plurality of through holes formed in the planar elements 8, 9. Screw fasteners or other equivalent means (not shown) may be introduced in these through holes.

50 **[0026]** Advantageously, the built-in structure 2 has reinforcement means 11 for stiffening the structure 2.

[0027] According to one embodiment, the reinforcement means 11 include two stiffening crossbars 12, 13 connected at opposite ends to the two side panels 8, 9.

[0028] The module 1 may further have a front panel for hiding the terminal unit when the terminal unit is held

within the built-in structure 2, thereby reducing the overall visual impact of the module.

[0029] If convector heaters are used, the module 1 may be equipped with manually or electrically operable air baffles and if fan convectors are used it can be equipped with means for forced ventilation.

[0030] It shall be noted that the module 1 may have a bottom panel (not shown) and/or further panels designed to meet specific installation requirements, provided that the panels are connected together to define the housing 5 and that the module has fastener means for fixing together such panels to define a modular element.

[0031] As clearly shown in the above description, the module for installation of a terminal of an air conditioning unit of the invention fulfills the needs as set out in the introduction of this disclosure and obviate the drawbacks of the modules for installation of terminal air conditioning units according to the prior art.

[0032] Those skilled in the art will obviously appreciate that a number of changes and variants may be made to the module for installation of a terminal of an air conditioning unit of the invention as described hereinbefore to meet specific needs, without departure from the scope of the invention, as defined in the following claims.

Claims

1. A module (1) for installation of a terminal of an air conditioning unit, comprising a structure (2) designed to be embedded in a compartment (3) formed within a wall (4), said structure (2) defining a housing (5) for receiving said terminal, said structure (2) being **characterized in that** it comprises a plurality of panels (6, 7, 8, 9) in mutual connection to define said housing (5) and fastener means (7a, 8a, 9a) for fixing together the panels of said plurality of panels.
2. A module (1) as claimed in claim 1, wherein said plurality of panels include a back panel (6), a top panel (7) and two side panels (8, 9) connected together to define said housing (5).
3. A module (1) as claimed in claim 2, wherein said top panel (7) comprises a planar element having fastener means (7a) for fixing the top panel (7) to the back panel (6).
4. A module (1) as claimed in claim 2 or 3, wherein each of said two side panels (8, 9) comprises a planar element having fastener means (8a, 9a) for fixing the relevant side panel (8, 9) to the back panel (6).
5. A module (1) as claimed in any one of claims 2 to 4, wherein said back panel (6) comprises a planar element having a peripheral edge (6a) overhanging from the plane of the element, said fastener means including an elastic tongue (7a, 8a, 9a) adapted to

engage a portion of the peripheral edge (6a) of the planar element of the back panel (6) to fix the relevant panel to the back panel (6).

- 5 6. A module (1) as claimed in any one of claims 2 to 5, wherein said structure (2) comprises fastener means for fixing the two side panels (8, 9) to said top panel (7).
- 10 7. A module (1) as claimed in any one of claims 2 to 6, wherein said structure (2) comprises reinforcement means for stiffening said structure (2).
- 15 8. A module (1) as claimed in claim 7, wherein said reinforcement means (11) are connected at opposite ends to said two side panels (8, 9).

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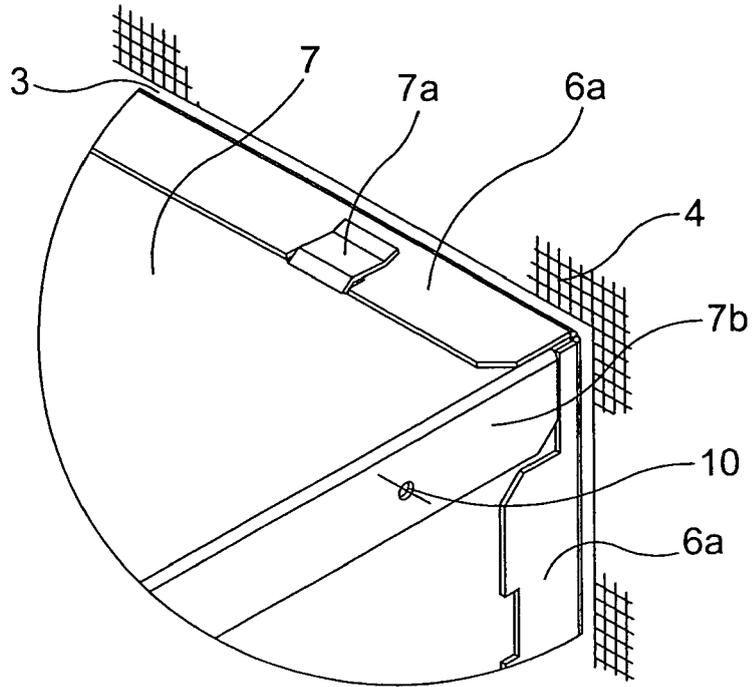


FIG. 5

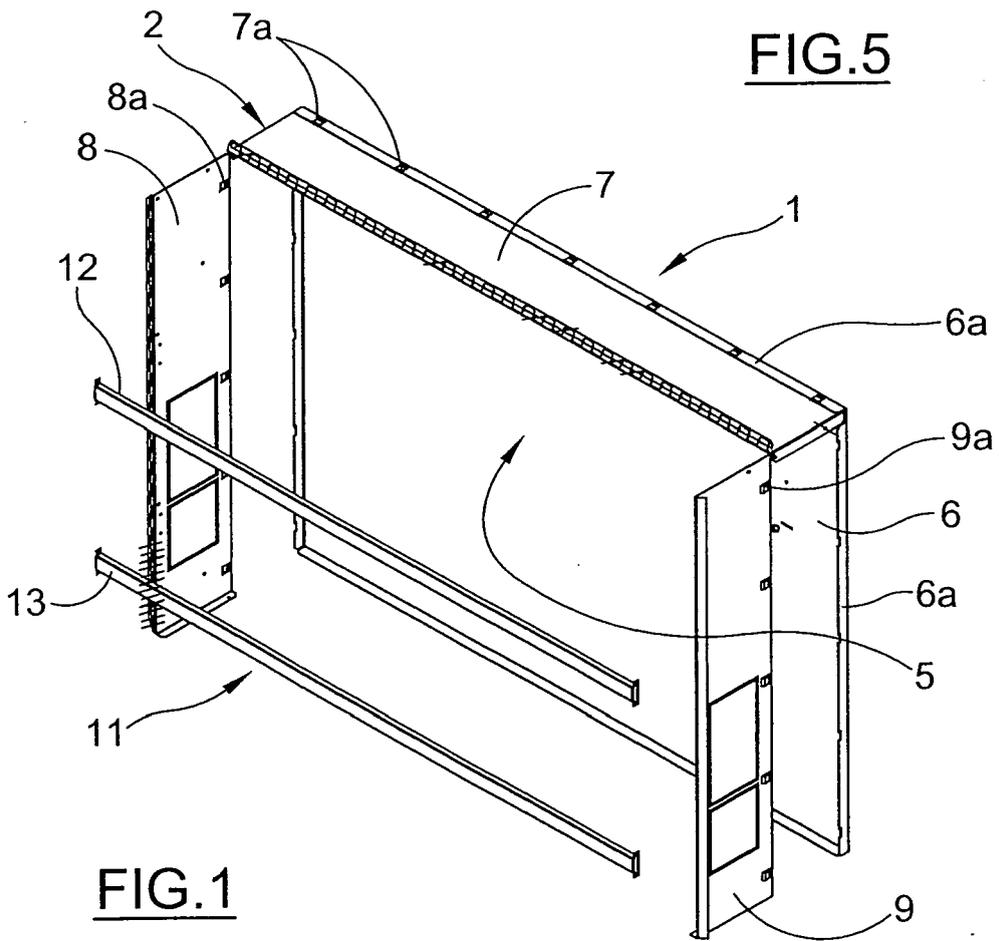


FIG. 1

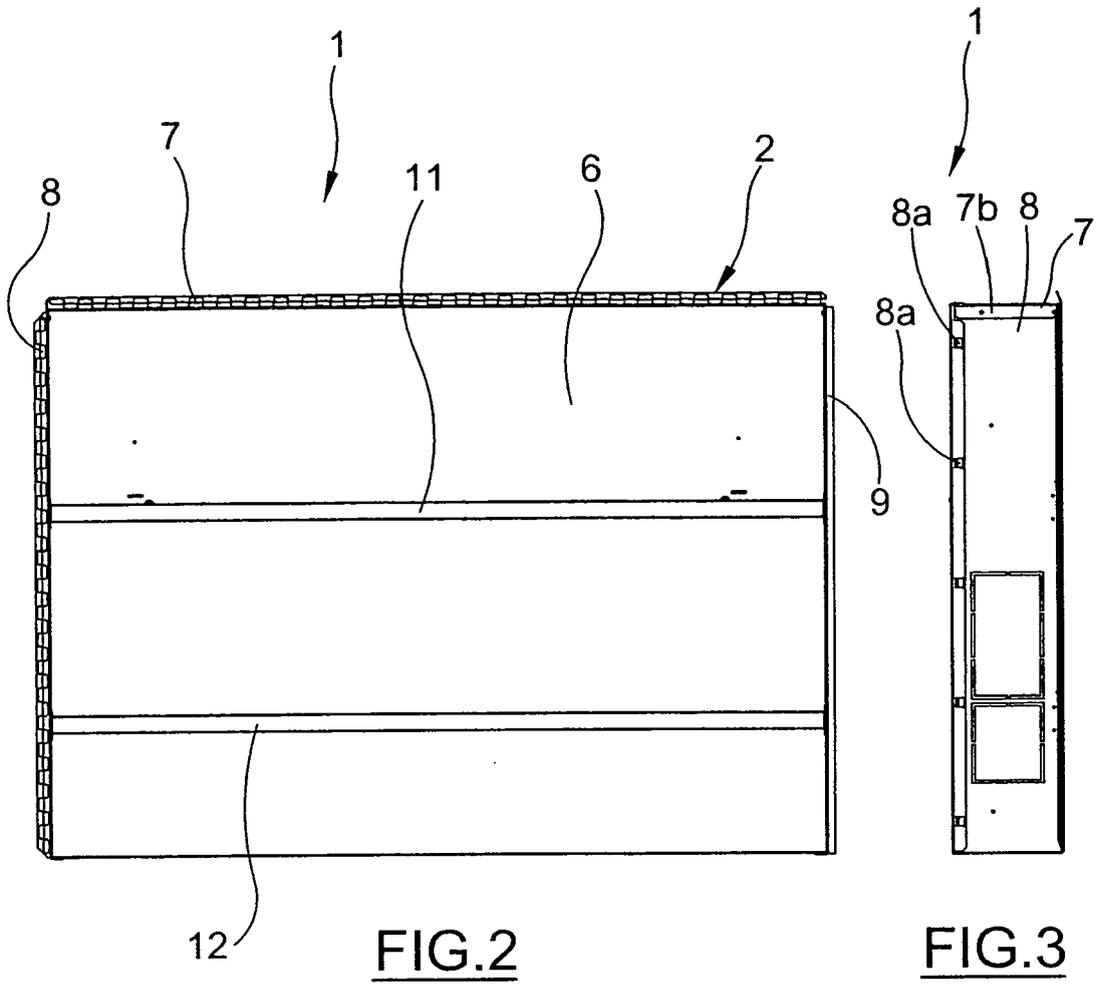


FIG.2

FIG.3

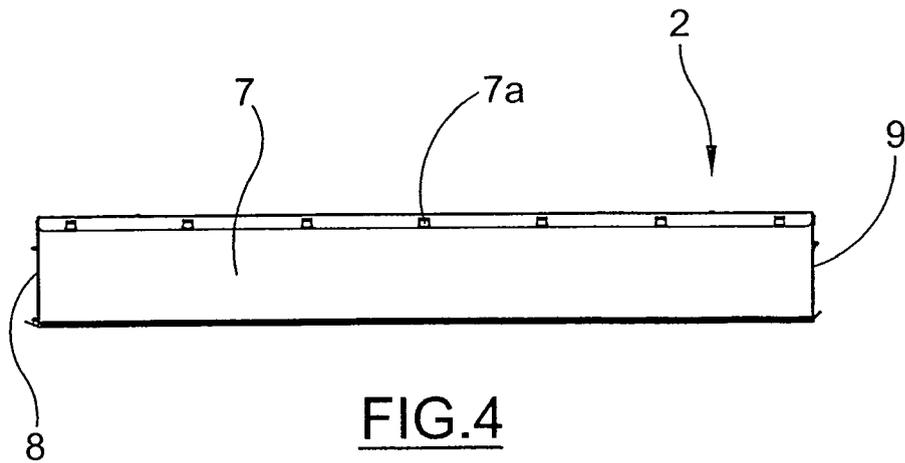


FIG.4



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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 15 July 2008	Examiner González-Granda, C
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