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(54) **Container for flush-mounting, particularly for air-conditioning system mounting**

(57) A container for flush-mounting, particularly for air-conditioning system mounting, comprising a box-like containment body (2) for refrigeration pipes and a power supply cable; a substantially funnel-shaped condensation conveyance element (12) is associable in a down-

ward region with the box-like body (2) so that it can be removed and rotated through 180°. The conveyance element (12) has an outlet (14) which is arranged at a lateral end and is orientated horizontally or is slightly inclined downwardly.

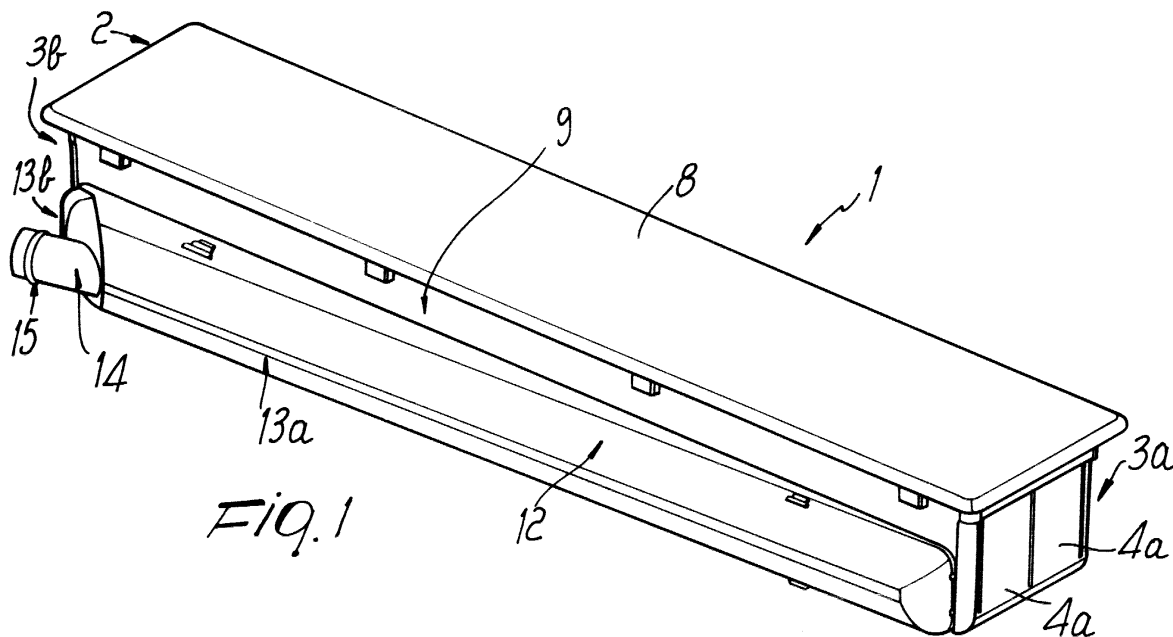


Fig. 1

EP 1 143 204 A2

Description

[0001] The present invention relates to a container for flush-mounting, particularly for air-conditioning system mounting.

[0002] Currently, the provision of an air-conditioning system requires a connection between an external condensing unit and an internal unit by means of two thermally insulated pipes which are suitable to convey the refrigerant fluid between the two units.

[0003] The internal unit must also be powered, usually by means of an electric cable, and has a pipe for discharging the condensed moisture.

[0004] In order to facilitate the installer in positioning the internal unit, it is known to provide containers for the refrigeration pipes and the electrical cable which are substantially shaped like a parallelepiped and are flush-mounted in the wall at the region where the internal unit is positioned.

[0005] Said containers have standardized dimensions so as to allow to position thereat suitable templates for engaging the internal unit.

[0006] One of the problems that arise is the drainage of condensation: usually, in the case of provisions for the conditioning system, it is known to flush-mount in the wall a pipe for draining said water, which must then be connected to the condensation outlet of the internal unit.

[0007] Therefore, it might happen that the condensation outlet of said internal unit is arranged on a side which does not correspond to the side where the outlet is flush-mounted, thus forcing the installer to provide the connection by means of a pipe whose path is necessarily approximately horizontal in order to reach the other end, thereby causing the possibility of stagnation of condensation and hence generating possible odors.

[0008] As a partial solution to this drawback, published EPA-0961909 discloses a flush-mounting box for supplying internal units of conditioning systems being provided with a tray-type channel, with two passages, which is suitable to receive and drain the condensation that arrives from an internal unit.

[0009] EPA-0961909, derives from WO 99/06773, which extended the scope of protection while maintaining the presence of the tray-type channel.

[0010] However, even this solution suffers drawbacks, in that the tray-type channel still causes water stagnation because it is arranged on a horizontal plane, because the container has to be arranged levelled, and also because the lateral openings for draining condensation are constituted by tubular elements having a certain thickness, which accordingly allows formation of a film of water with respect to the bottom of the tray-type channel.

[0011] Moreover, the tray-type channel has the same thickness as the container, and this requires the use of a suitable template for subsequently positioning the internal unit of the air-conditioning system.

[0012] Finally, it has been found that formation of the film of water at the tray-type channel causes formation of condensation outside the tray due to the difference in temperature between the film of water and the tray-type channel; this entails producing dampness in the wall and thereby formation of unsightly stains on such wall, with consequent deterioration thereof.

[0013] As a partial solution to this problem, it is known to apply an adhesive sheath under the tray-type channel, with an increase in production and installation costs.

[0014] Again as a solution to the above noted problems, the same Applicant has filed EPA-00101271.5, which discloses a container for flush-mounting comprising a box-like containment body for refrigeration pipes and a power supply cable, characterized in that a condensation conveyance element is associable below said box-like body so that it can be removed and rotated through 180°, said conveyance element being substantially funnel-shaped with the outlet arranged at a lateral end.

[0015] In addition to the improvements achieved, which relate for example to better installation and to complete conveyance of condensation, in the disclosed solution the outlet is arranged at right angles to the box-like body; although this choice is technically correct, the need has been found to improve the connection to the condensation outlet which can be embedded in the wall.

[0016] The aim of the present invention is to solve the noted technical problems, by eliminating the drawbacks of the cited known art and by providing a container which allows optimum storage not only for example of the refrigeration pipes and of the power supply cable for an internal unit, but also of the condensation outlet or pipe of said unit, allowing both optimum drainage of the condensation and its easy conveyance to a suitable outlet embedded in the wall.

[0017] Within this aim, an important object is to provide a container which is structurally simple and has low manufacturing costs.

[0018] This aim and this and other objects which will become better apparent hereinafter are achieved by a container for flush-mounting which comprises a box-like containment body for refrigeration pipes and a power supply cable, a condensation conveyance element being associable in a downward region with said box-like body so that it can be removed and rotated through 180°, said conveyance element being substantially funnel-shaped, characterized in that said conveyance element has an outlet which is arranged at a lateral end and is orientated horizontally or is slightly inclined downwardly.

[0019] Further characteristics and advantages of the invention will become better apparent from the detailed description of a particular embodiment thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a bottom perspective view of the con-

tainer according to the invention in the assembled condition;

Figure 2 is an exploded perspective view thereof;

Figure 3 is a side view thereof;

Figure 4 is a bottom view thereof;

Figure 5 is a side view thereof with the conveyance element not associated therewith.

[0020] With reference to the figures, the reference numeral 1 designates a container for flush-mounting which is particularly used for air-conditioning system mounting.

[0021] The container is constituted by a box-like flush-mounting body 2 which is preferably shaped like a parallelepiped and has, at its lateral surfaces 3a and 3b, adapted openings 4a and 4b for the lateral insertion of suitable refrigeration pipes and of a possible power supply cable for the internal unit, which is not shown.

[0022] The box-like body 2 has a front opening and, at the perimetric edge 5, adapted first seats 6 for temporarily accommodating first elastically compressible tabs 7 which protrude from a suitable cover 8, which can thus be inserted by push-fitting and can accordingly be removed.

[0023] The box-like body 2 has, at its lower surface 9, a longitudinal opening 10 at the perimeter of which adapted second seats are provided for the removable engagement of second tabs 11 which protrude perimetrically and above a condensation conveyance element 12.

[0024] Said conveyance element, which can be arranged below said body thanks to the provision of an appropriate recess formed for example in the wall, has a longitudinal extension which is approximately equal to the longitudinal extension of the box-like body 2 and is substantially funnel-shaped, so as to form two mutually opposite inclined surfaces, designated by the reference numerals 13a and 13b, which merge proximate to a lateral end of said conveyance element 12.

[0025] A condensation outlet 14 is formed at the merging region between the two inclined surfaces 13a and 13b, and its inclination is substantially equal to, or slightly greater than, the inclination of the adjacent or merging surface 13a and therefore of the least inclined of said two surfaces.

[0026] The outlet 14 is preferably tubular and preferably does not protrude beyond the lateral edge of the box-like body 2; moreover, at its end there is provided an annular sealing element 15 for the hermetic connection of an adapted pipe which is advantageously flexible at least at one end and is embedded in the wall beforehand; alternatively, a sleeve for connection to a pipe embedded in the wall can be associated with the outlet 14.

[0027] The particular arrangement and orientation of the outlet 14 on one hand still allows an optimum drainage of the condensation and on the other hand allows the installer to achieve a better interconnection to the outlet embedded in the wall, which is usually arranged

laterally to the seat for positioning the flush-mounting container.

[0028] It has thus been observed that the invention has achieved the intended aim and object, a container for flush-mounting having been devised which allows both to achieve optimum collection of condensation and optimum conveyance thereof by means of a rapid, easy and straightforward connection to a pipe associated in the wall beforehand.

[0029] The materials used, as well as the dimensions of the individual components of the invention, may of course be more pertinent according to specific requirements.

[0030] The disclosures in Italian Utility Patent Application No. TV2000U000017 from which this application claims priority are incorporated herein by reference.

[0031] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A container for flush-mounting, comprising a box-like containment body (2) for refrigeration pipes and a power supply cable, a condensation conveyance element (12) being associable in a downward region with said box-like body so that it can be removed and rotated through 180°, said conveyance element (12) being funnel-shaped, **characterized in that** said conveyance element (12) has an outlet (14) which is arranged at a lateral end and is orientated horizontally or is slightly inclined downwardly.
2. The container according to claim 1, comprising a removable condensation conveyance element (12) which is funnel-shaped so as to form two mutually opposite inclined surfaces (13a, 13b) which merge proximate to a lateral end of said conveyance element (12), **characterized in that** a condensation outlet (14) is provided at the region where said two inclined surfaces (13a, 13b) merge and is inclined substantially as much as, or slightly more than the least inclined of said merging surfaces (13a, 13b).
3. The container according to claims 1 and 2, **characterized in that** said outlet (14) is tubular and stop short of the lateral edge of the box-like body (2).

