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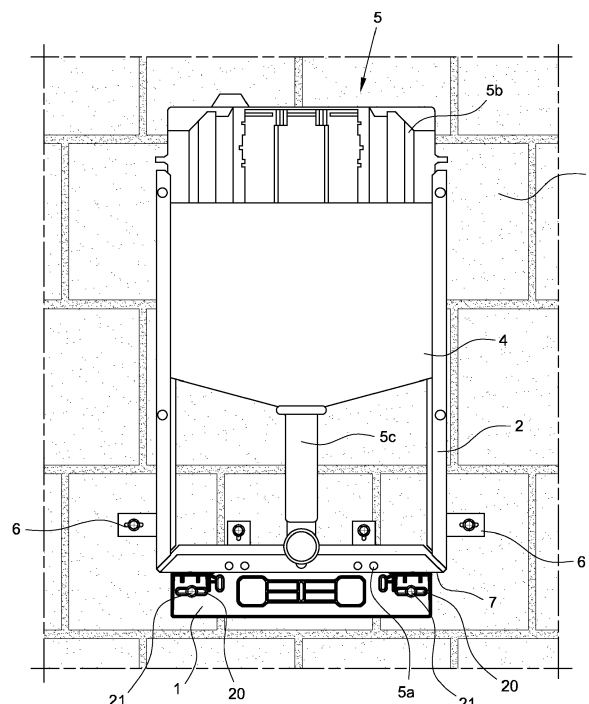
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(54) **INSTALLATION DEVICE FOR A SANITARY APPLIANCE MOUNTING STRUCTURE AND USE THEREOF IN A METHOD OF INSTALLATION OF A SANITARY APPLIANCE MOUNTING STRUCTURE**

(57) An installation device (1) for a sanitary appliance mounting structure (2), comprising a substantially flat plate body (11) having a rear face (17) configured to lean, in use, against a support wall (3) of the mounting structure (2); and at least a bracket (12) projecting from the plate body (11) and substantially perpendicular to the plate body (11); the plate body (11) is provided with at least a

pair of through openings (20a) shaped so as to receive respective fastening members (21) for fixing the device (1) to the support wall (3); the bracket (12) has an upper contact surface (29), substantially horizontal in use and substantially flat, configured to receive and support in use a bottom end edge (7) of the mounting structure (2).

**FIG. 1****EP 3 431 674 A1**

Description

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority from Italian Patent Application No. 102017000082164 filed on 19/07/2017.

[0002] The present invention relates to an installation device for a sanitary appliance mounting structure and use thereof in a method of installation of a sanitary appliance mounting structure.

[0003] It is known that sanitary appliances can be supported by special mounting structures that are normally recessed in a wall.

[0004] A typical recessed mounting structure for sanitary appliances comprises a metal frame on which various structural elements and functional components are fixed, including support members for a sanitary appliance, e.g. a toilet, washbasin, etc., and related accessories, e.g. a flushing tank, piping, etc.; in addition to anchorages for fixing the frame to a support wall.

[0005] Some mounting structures rest on the ground by means of support feet, possibly adjustable in height. Some mounting structures, however, are fixed to the wall and remain in use suspended from the ground.

[0006] It is therefore necessary to fix the mounting structure in the position and in particular at the correct height with respect to the desired final position of the sanitary appliance, as well as to the position of any other components already present (e.g. pipes and fittings).

[0007] In general, the installation of a mounting structure for sanitary appliances of the type mentioned here is not an easy operation for operators. In particular, even considering the weight and size of the structure, to ensure the accurate positioning of the structure on the wall, two operators are usually needed: once the measurements have been taken and the correct position of the structure has been established, one operator holds the raised structure in the desired position, while a second operator fixes the structure to the wall by means of special fastening members.

[0008] It would be desirable to simplify the installation of a mounting structure for sanitary appliances in the right position, so that such installation is simple, fast and effective, and can be carried out without difficulty even by a single operator.

[0009] It is an object of the present invention to provide an installation device for a sanitary appliance mounting structure and a method of installing a sanitary appliance mounting structure which overcomes the drawbacks highlighted herein of the prior art.

[0010] The present invention is therefore related to an installation device for a sanitary appliance mounting structure as defined in the appended claim 1, and to its use in an installation method of a sanitary appliance mounting structure as defined in the appended claim 12.

[0011] Further, preferred characteristics of the invention are indicated in the dependent claims.

[0012] The mounting device of the invention is simple and inexpensive to make, and simple, fast and efficient to use.

[0013] Its use makes it possible to simplify the installation of a mounting structure for sanitary appliances in the right position, so that the installation is simple, fast and effective, and can be carried out without difficulty even by a single operator.

[0014] Further characteristics and advantages of the present invention will become clear from the following description of a non-limiting example of an embodiment made with reference to the appended drawings, wherein:

- Figure 1 is a schematic front view of an installation device for a sanitary appliance mounting structure according to the invention, shown in use together with a mounting structure;
- Figure 2 is a perspective front/lower view of the installation device in figure 1;
- Figure 3 is a perspective rear/upper view of the installation device in figure 1;
- Figures 4, 5 and 6 are respectively a front view, a top view and a side view of the installation device in figure 1.

[0015] Figure 1 shows in use an installation device 1 for a mounting structure 2 of sanitary appliances, in particular for a recessed mounting structure (intended to be recessed in a wall or otherwise hidden behind a cladding panel) for sanitary ware, for example suspended sanitary fixtures.

[0016] In particular, the mounting structure 2 is a suspended structure (i.e. that in use is intended to be fixed to a support wall at a certain height from the ground).

[0017] As shown in Figure 1, the device 1 serves to secure the mounting structure 2 on a support wall 3 in a predetermined position.

[0018] The mounting structure 2 is in itself known and may be of various types.

[0019] In general, the mounting structure 2 comprises a frame 4, made for example with metal sheets, on which one or more functional components 5 are fixed, for example support members 5a for a sanitary appliance, for example a sanitary bowl, a bidet, etc., and related accessories, for example a flushing tank 5b with the relative drain pipe 5c, etc.

[0020] The frame 4 is also provided with anchorages 6 for fixing the frame 4 and therefore the mounting structure 2 to the supporting wall 3.

[0021] The support structure 2 has a bottom end edge 7 which, in use, must be positioned at a predetermined height from the ground (i.e. from a floor of the room where the mounting structure and the relative sanitary equipment are installed). To correctly position the mounting structure 2, the edge 7 rests on the installation device 1, as described in detail below.

[0022] With reference also to Figures 2-6, the device 1 comprises a substantially flat plate body 11 and a pair

of brackets 12 that extend from the plate body 11 and are substantially perpendicular to the plate body 11.

[0023] The plate body 11 may have different shapes: in the illustrated non-limiting example, the plate body 11 has a polygonal perimeter edge 13 and is longitudinally elongated along a main longitudinal axis X, horizontal in use, between two opposite longitudinal ends 14, and has a middle axis Z perpendicular to the axis X and vertical in use.

[0024] The plate body 11 extends between two opposite faces 16, 17 substantially parallel to each other and to the axes X, Z and defining respectively a front face 16 and a rear face 17 of the plate body 11 and thus of the device 1.

[0025] The rear face 17 preferably has a substantially flat surface 18, so as to lean against the support wall 3.

[0026] The front face 16 may bear reinforcement prominences and ribs.

[0027] The plate body 11 has through openings 20 between the faces 16, 17 shaped so as to receive respective fastening members 21 (such as screws, shown in figure 1) for fixing the device 1 to the support wall 3.

[0028] In particular, the plate body 11 is provided with at least a first pair of openings 20a positioned on opposite sides of the middle axis Z and in particular at respective ends 14 of the plate body 11.

[0029] Preferably, the openings 20a have the shape of slots elongated parallel to the axis X and define respective first slots 22a substantially horizontal in use.

[0030] Each opening 20a is delimited by a peripheral edge 23 closed in a loop and protruding outwards from the front face 16.

[0031] The plate body 11 may also have additional openings 20, for example positioned between the openings 20a, for receiving respective fastening members and/or with lightening and/or structural reinforcement function.

[0032] For example, the plate body 11 is provided with a second pair of openings 20b positioned on opposite sides of the axis Z and having the shape of slots elongated parallel to the axis Z and defining respective second slots 22b substantially vertical in use and thus perpendicular to the first slots 22a.

[0033] Preferably, the openings 20b are also delimited by respective peripheral edges 23 closed in a loop and protruding outwards from the front face 16.

[0034] In the non-limiting example illustrated, the plate body 11 has additional openings 20 with lightening and/or structural reinforcement function, located near the axis Z and/or along the axis Z.

[0035] It is understood that the number, position and shape of the openings 20 may be different from that described herein and illustrated merely by way of example.

[0036] The brackets 12 project from the front face 16 of the plate body 11 substantially perpendicular to the front face 16.

[0037] Preferably, the brackets 12 are positioned on opposite sides of the middle axis Z and in particular at

respective ends 14 of the plate body 11.

[0038] In the example shown, the brackets 12 extend perpendicular from an upper edge 24 of the plate body 11, defined by an upper section of the perimeter edge 13.

[0039] Each bracket 12 has a flange portion 25 substantially flat and perpendicular to the plate body 11 and having a substantially flat and upper face 26 perpendicular to the faces 16, 17 of the plate body 11; and supporting ribs 27 connecting a lower face 28, opposite the upper face 26, of the flange portion 25 to the front face 16 of the plate body 11.

[0040] The upper face 26 has a support surface 29, substantially horizontal in use and substantially flat; the support surface 29 is optionally provided with reinforcing ribs and/or grooves, but in any case has at least a portion of flat surface perpendicular to the axis Z.

[0041] The brackets 12 are provided with respective projections 32 extending from the upper faces 26 upwards. Each projection 32 has at least one side 33, for example a rear side facing the rear face 17 of the plate body 11, which is substantially perpendicular to the respective support surface 29 and parallel to the axis Z.

[0042] In the example illustrated, each projection 32 also has a pair of lateral sides 34 parallel to each other and to the axis Z, and a front side 35, opposite the side 33 and inclined relative to the respective support surface 29 and the axis Z.

[0043] Between the brackets 12, the plate body 11 has a raised portion 36, which extends upwards beyond the upper faces 26 of the brackets 12.

[0044] Preferably, the device 1 consists of a monolithic piece 37, for example in polymeric material, formed by the plate body 11 and the brackets 12.

[0045] The use of the device 1 in the installation method of the mounting structure 2 according to the invention is as follows.

[0046] The operator, after having measured the correct position in which the mounting structure 2 is to be fixed on the wall 3, establishes the corresponding position of the device 1, such that the upper faces 26 of the brackets 12 of the device 1 are at the right height from the ground so that the edge 7 of the mounting structure 2 rests thereon. In particular, the operator marks on the wall 3 the height (height from the floor) of the fastening members 21 of the device 1.

[0047] Advantageously, to facilitate the positioning of the device 1 at the right height, the device 1 can bear indications or measurements on the front face 16.

[0048] The operator then positions the device 1 by placing the rear surface 18 against the wall 3; and marks the position of the fastening members 21 through the openings 20a i.e. the slots 22a.

[0049] The fastening members 21 are fixed to the wall 3, for example by inserting respective dowels in the wall 3 and then screwing respective screws through the openings 20 and into the dowels.

[0050] During this operation, it is advisable to check the alignment of the device 1, for example by placing a

level on the brackets 12 and precisely on the faces 26, i.e. on the support surface 29.

[0051] The fastening members 21 are positioned through the openings 20, in particular through the slots 22a.

[0052] The mounting structure 2 is then placed on the device 1, resting the edge 7 on the support surface 29.

[0053] The mounting structure 2 is thus supported by the device 1 without the need for anyone to hold it in place and can now be fixed in turn to the wall 3 by means of the relative anchorages 6.

[0054] If necessary, the device 1 supports the mounting structure 2 also by means of the projections 32 engaging openings made in the edge 7 of the mounting structure 1.

[0055] If necessary, once the fastening members 21 are positioned in the slots 22a but are not tightened, the position of the device 1 (and possibly also of the mounting structure 2 resting on it) can be adjusted horizontally (along the longitudinal axis X), thanks to the shape of the slots 22a.

[0056] It is understood that the installation device and its use described and illustrated herein may be subject to further modifications and variations without departing from the scope of the appended claims.

Claims

1. An installation device (1) for a sanitary appliance mounting structure (2), comprising a substantially flat plate body (11) having a rear face (17) configured to lean, in use, against a support wall (3) to which the mounting structure (2) is to be attached; and at least a bracket (12) projecting from the plate body (11) and substantially perpendicular to the plate body (11); the plate body (11) being provided with at least a pair of through openings (20a) shaped so as to receive respective fastening members (21) for fixing the device (1) on the support wall (3); the bracket (12) having an upper contact surface (29), substantially horizontal in use and substantially flat, configured to receive and support in use a bottom end edge (7) of the mounting structure (2).
2. The device according to claim 1, wherein the rear face (17) is provided with a substantially flat surface (18), so as to lean against the support wall (3).
3. The device according to claim 1 or 2, wherein the openings (20a) are positioned on opposite sides of a middle axis (Z) of the device (1).
4. The device according to one of the preceding claims, wherein the openings (20a) are positioned at respective opposite longitudinal ends (14) of the plate body (11).
5. The device according to one of the preceding claims, wherein the openings (20a) have the shape of elongated slots parallel to a longitudinal axis (X) of the plate body (11) and define respective slots (22a) substantially horizontal in use.
6. The device according to one of the preceding claims, wherein the bracket (12) is provided with a projection (32) which projects upwards from an upper face (26) of the bracket (12).
7. The device according to one of the preceding claims, wherein the bracket (12) projects perpendicularly from an upper edge (24) of the plate body (11).
8. The device according to one of the preceding claims, comprising a pair of brackets (12) projecting from the plate body (11) and having respective upper faces (26) defining said contact surface (29).
9. The device according to claim 8, wherein the brackets (12) are positioned on opposite sides of a middle axis (Z) of the device (1).
10. The device according to claim 8 or 9, wherein the brackets (12) are positioned at respective opposite longitudinal ends (14) of the plate body (11).
11. The device according to one of the preceding claims, wherein the device (1) consists of monolithic piece (37), for example made of a polymer material.
12. Use of the device (1) according to one of the preceding claims in a method of installation of a sanitary appliance mounting structure (2), for supporting the mounting structure (2) in a predetermined position on a support wall (3) before the mounting structure (2) is fixed on the support wall (3).
13. The use according to claim 12, wherein the method of installation comprises the steps of: fixing the device (1) on the support wall (3) in a predetermined position; leaning the mounting structure (2) on the contact surface (29) of the device (1); fixing the mounting structure (2) on the support wall (3).

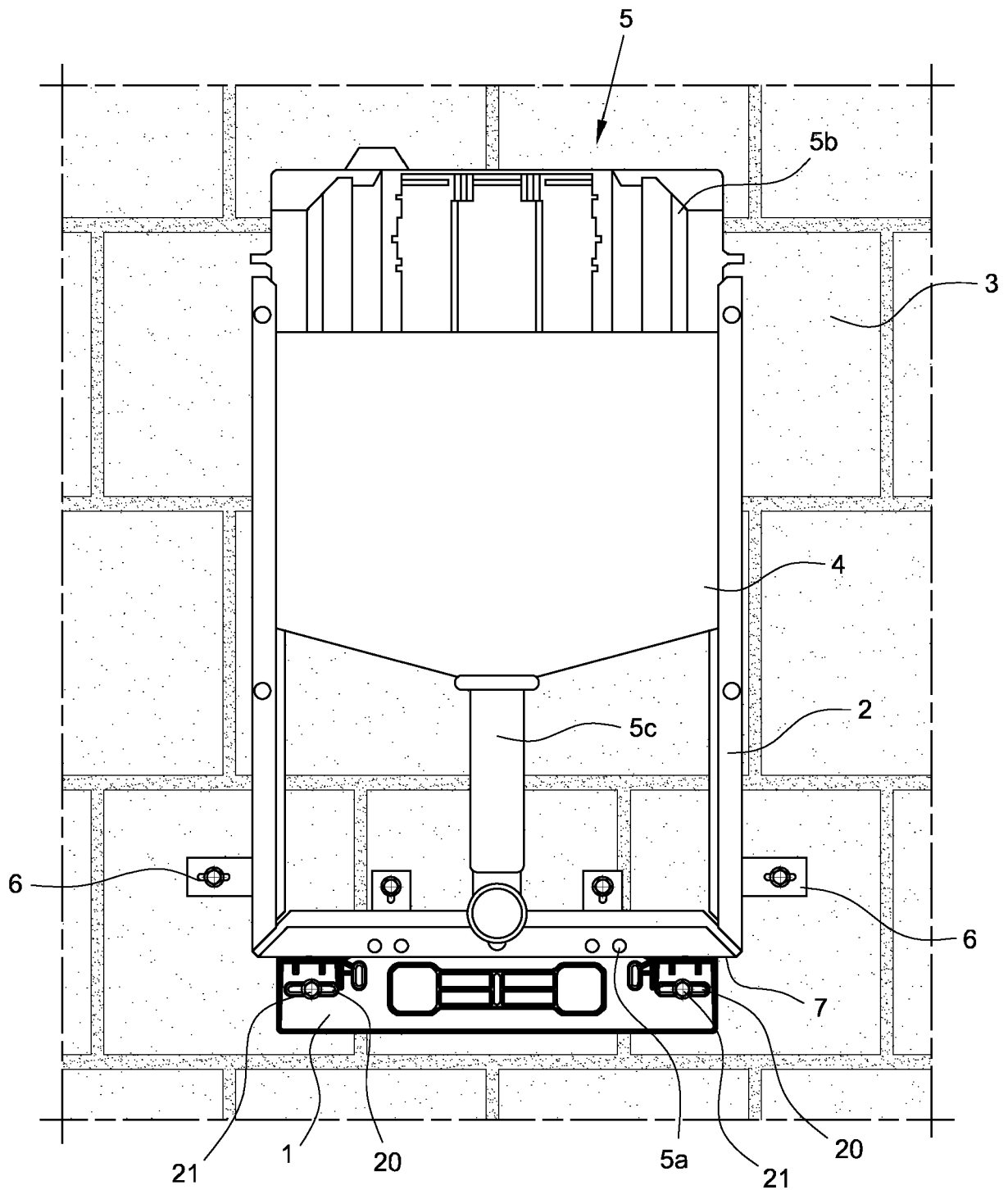


FIG. 1

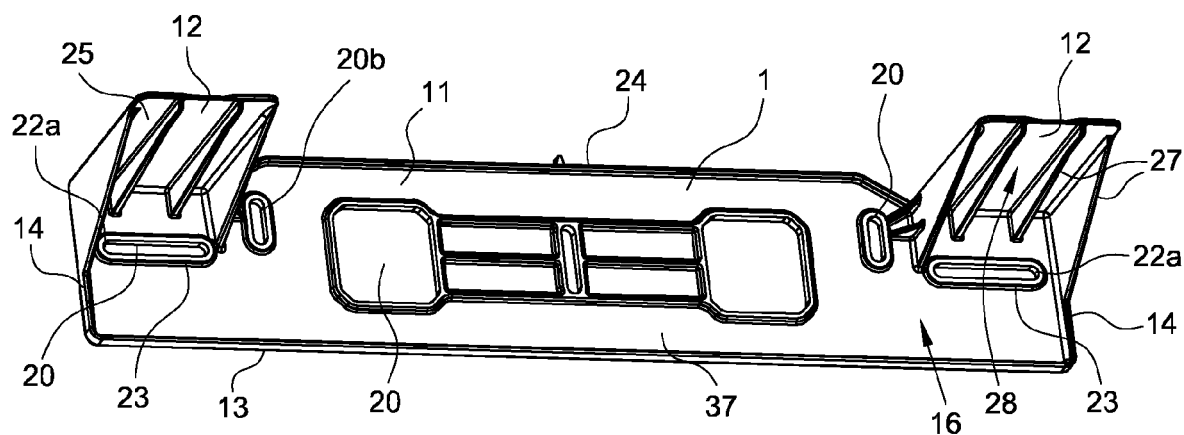


FIG. 2

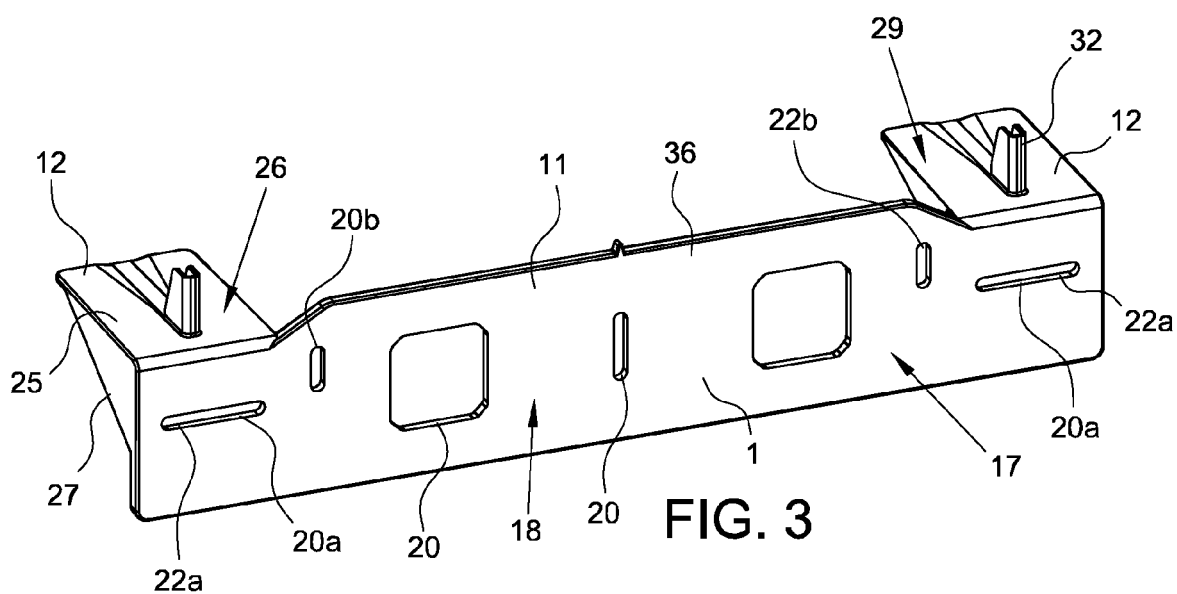


FIG. 3

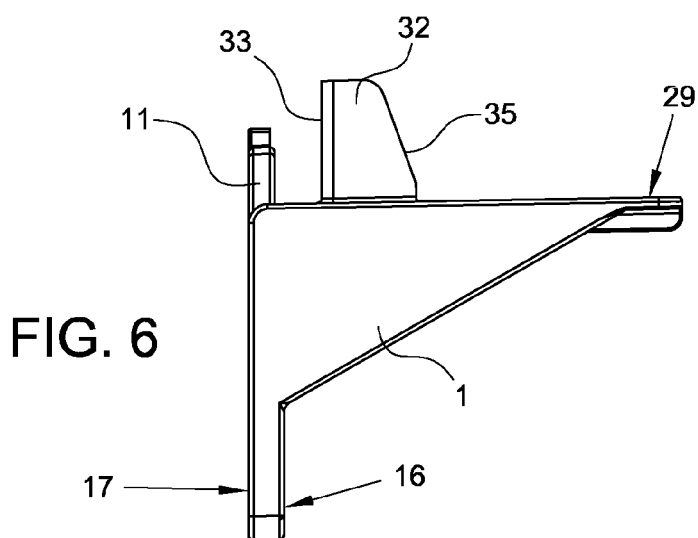
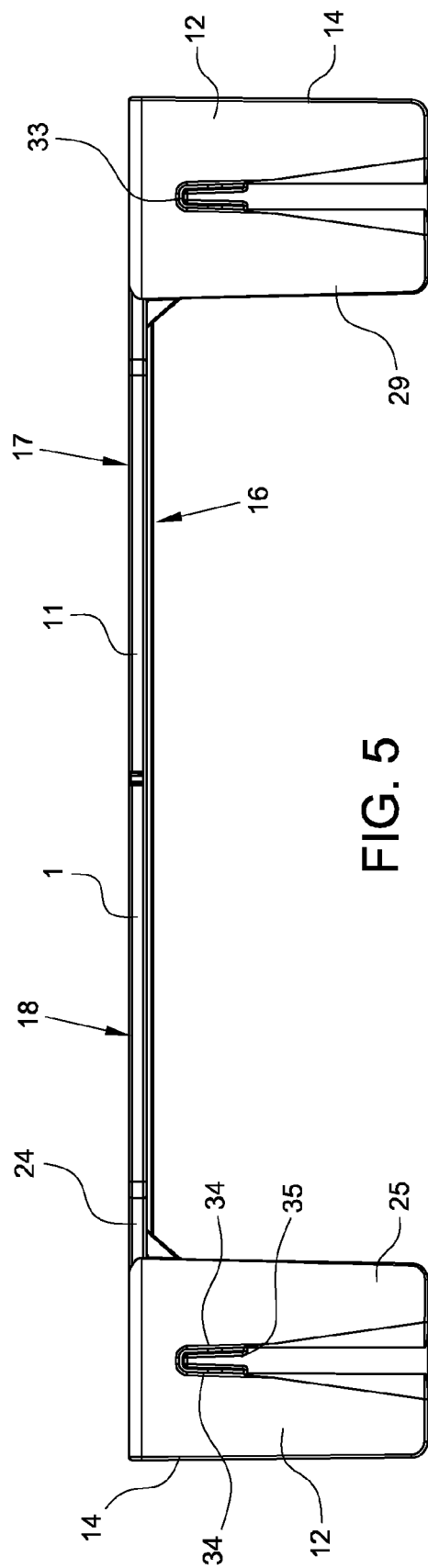
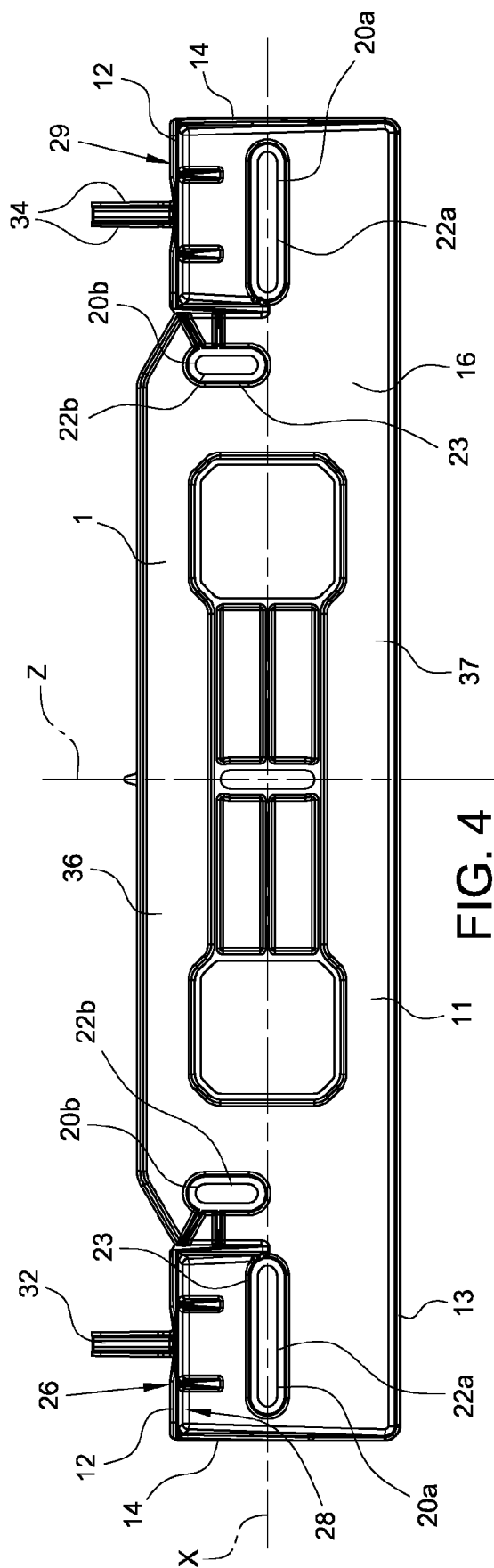


FIG. 6





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 EP 18 18 4441

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Place of search Munich		Date of completion of the search 9 November 2018	Examiner Leher, Valentina
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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