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(54) **Pusher plate for cistern of toilet**

(57) A plate (1) for flushing cisterns of toilets, comprising a plate body (2) provided with a containment edge (3), the plate body (2) having fixing means (6, 7) adapted to fix the plate body (2) directly to the door (5) of a flushing cistern (15), the door (5) being accommodated within the wall (4) and coupled to the cistern (15).

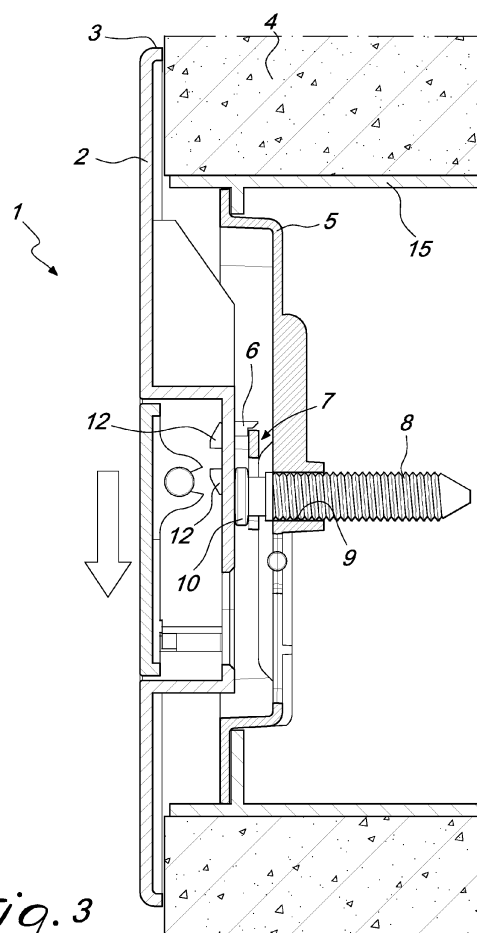


Fig. 3

Description

[0001] The present invention relates to a plate for flushing cisterns of toilets. More specifically, the invention relates to a plate adapted to be applied to flushing cisterns for toilets, where the cistern is accommodated within the wall.

[0002] As is known, the systems currently used for flushing toilets favor, in place of the so called rapid flow system, which is currently prohibited by regulations because it involves an excessive waste of water, the use of flushing cisterns which are built into the wall and which fill with water, which is then flushed, by acting on adapted buttons, which are actuateable outside the wall, in order to convey the water in the toilets so as to perform the flush.

[0003] Currently, the flushing buttons on the aforementioned cisterns are accommodated in plates applied externally to the wall, in such a way as to be coupled to the cistern. More specifically, the cistern is built into the wall, a door is applied to the cistern which is provided with linkages that make it possible to open the valves for the flushing of the water and the subsequent filling of the cistern, and a perimetric plate-holder frame is then applied to the door and is arranged externally to the wall. The plate is applied to the perimetric frame and accommodates the button or buttons for actuating the flushing cistern.

[0004] The solution proposed above, by way of the presence of the plate-holder frame applied externally to the wall, means that the overall protrusion from the wall is not insignificant, since the plate-holder frame must then be coupled with the plate and thus there is a certain thickness, and therefore a significant protrusion externally to the wall.

[0005] If it is desired to make this protrusion as small as possible, no solutions are currently available to ensure that the plate adheres as closely as possible to the wall and thus that the thickness outside the wall be substantially constituted by the rest of the plate.

[0006] The aim of the present invention is to provide a plate for flushing cisterns of toilets, in which externally to the wall, the protrusion from the wall itself is constituted solely by the thickness of the plate.

[0007] Within this aim, an object of the present invention is to provide a plate for flushing cisterns of toilets, in which, with respect to conventional cisterns, the perimetric plate-holder frame arranged externally to the wall can be eliminated.

[0008] Another object of the present invention is to provide a plate for flushing cisterns of toilets, in which the application and removal of the plate can occur with a simple translational motion of the same.

[0009] Another object of the present invention is to provide a plate for flushing cisterns of toilets which is highly reliable, easily and practically implemented and low cost.

[0010] This aim and these and other objects which will become better apparent hereinafter are achieved by a

plate for flushing cisterns of toilets, comprising a plate body provided with a containment edge, **characterized in that** said plate body has fixing means adapted to fix the plate body directly to the door of a flushing cistern, said door being accommodated within the wall and coupled to the cistern.

[0011] Further characteristics and advantages of the invention will become better apparent from the description of a preferred, but not exclusive, embodiment of the plate according to the present invention, which is illustrated by way of non-limiting example in the accompanying drawings wherein:

Figure 1 is an exploded perspective view of the plate according to the invention and the door of a flushing cistern for toilets;

Figure 2 is a perspective view of the plate according to the present invention;

Figure 3 is a cross-sectional view of the application of the plate according to the invention, in a first active condition;

Figure 4 is a cross-sectional view of the plate according to the invention in an active configuration of the final fixing of the plate.

[0012] With reference to the figures, the plate according to the invention, generally designated by the reference numeral 1, comprises a plate-like element 2 provided with a containment edge 3 adapted to come into contact with the wall 4 on which the plate 2 is applied.

[0013] Conveniently, the plate 1 is adapted to be directly connected to a door 5 that closes the cistern 15.

[0014] In this manner, the plate 1 is directly coupled to the door 5, without the interposition of any perimetric plate-holder frame.

[0015] Conveniently, the plate 1 can be provided with one or two buttons for actuating. In the figures two buttons for actuating are shown.

[0016] The fastening of the plate 1 to the door 5 ensures that the thickness that can be perceived externally to the wall is only that constituted by the thickness of the plate 1, as clearly illustrated in Figures 3 and 4.

[0017] In order to fasten the plate 1 to the door 5, the plate 1 is provided with fixing means for directly fixing the plate 1 to the door 5. More specifically, the fixing means comprise means 6 of retention of clips 7 which make it possible to perform a locking of the plate 1 around a pair of screws 8 which are conveniently accommodated in holes 9 defined on the door 5.

[0018] Conveniently, the clips 7 have feet 12 which are adapted to engage in seats or cavities 13 defined in the plate body, for the retention of the clips 6 to the body 2 of the plate, together with the fixing means 6.

[0019] Substantially, the screws 8 are inserted in the door 5, specifically in the holes 9, with the head 10 of the screws 8 protruding from the door by a distance that is such as to enable the fixing of the plate, and in particular of the clips 7, around the heads 10 of the screws 8.

[0020] The clips 7 are contoured with an inner profile 11 that makes it possible to rest the clip 7 on the portion immediately preceding the head 10 of the screw 8 and, with a downward pressure movement of the entire plate 1, make the plate descend and thus widen the clips 7, and in particular the profile 11 of the clips 7, around the portion immediately preceding the head 10 of the screws 8, so as to lock the plate 1 with the respective clips 7 against the head 10 of the screws 8, so as to have the plate 1 flush with the wall 4.

[0021] In order to make the plate 1 adhere perfectly to the door 5, and thus to the wall 4, it is possible to provide a template that enables the installation technician to determine by how much the screws 8 need to protrude from the door 5, for the head of the screws 8 to be engageable by the clips 7 coupled to the plate 1.

[0022] In practice it has been found that the plate according to the present invention fully achieves the set aim and objects, in that it makes it possible to be applied directly to the door of the cistern, thus protruding from the wall by a thickness constituted solely by the thickness of the plate.

[0023] Moreover, the application of the plate to the door is extremely simple, in that it is possible to position the plate with the pair of clips resting on the head of the screws which protrude from the door, and then exert a downward traction so as to make the head and the screws engage in the seat defined in the clips, thus locking the plate in position.

[0024] The plate, thus conceived, is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims. Moreover, all the details may be substituted by other, technically equivalent elements.

[0025] In practice the materials employed, and the contingent dimensions and shapes, may be any according to requirements and to the state of the art.

[0026] The disclosures in Italian Patent Application No. MI2012A001994 from which this application claims priority are incorporated herein by reference.

[0027] 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 plate (1) for flushing cisterns of toilets, comprising a plate body (2) provided with a containment edge (3), **characterized in that** said plate body (2) has fixing means (6, 7) adapted to fix the plate body (2) directly to the door (5) of a flushing cistern (15), said door (5) being accommodated within the wall (4) and coupled to the cistern (15).

2. The plate according to claim 1, **characterized in that** said fixing means (6, 7) comprise a pair of clips (7) adapted to be connected to said plate (1) and to accommodate in turn the head (10) of a pair of screws (8) that protrude from said door (5).

3. The plate according to claim 1 or 2, **characterized in that** said clips (7) have a seat defined with an internal profile (11) to accommodate the head (10) of said screws (8).

4. The plate according to one or more of the preceding claims, **characterized in that** said clips (7) are provided with feet (12) for accommodation in cavities (13) defined in said plate body (2).

5. The plate according to one or more of the preceding claims, **characterized in that** said edge (3) of said plate body (2) is adapted to make contact directly with the wall (4) on which said plate is applied, at the cistern (15).

6. A flushing cistern for toilets, comprising a cistern body (15) adapted to be built into the wall (4) and a door (5) adapted to be applied so as to close the body (5) of the cistern, **characterized in that** it comprises a plate (1) according to one or more of the preceding claims.

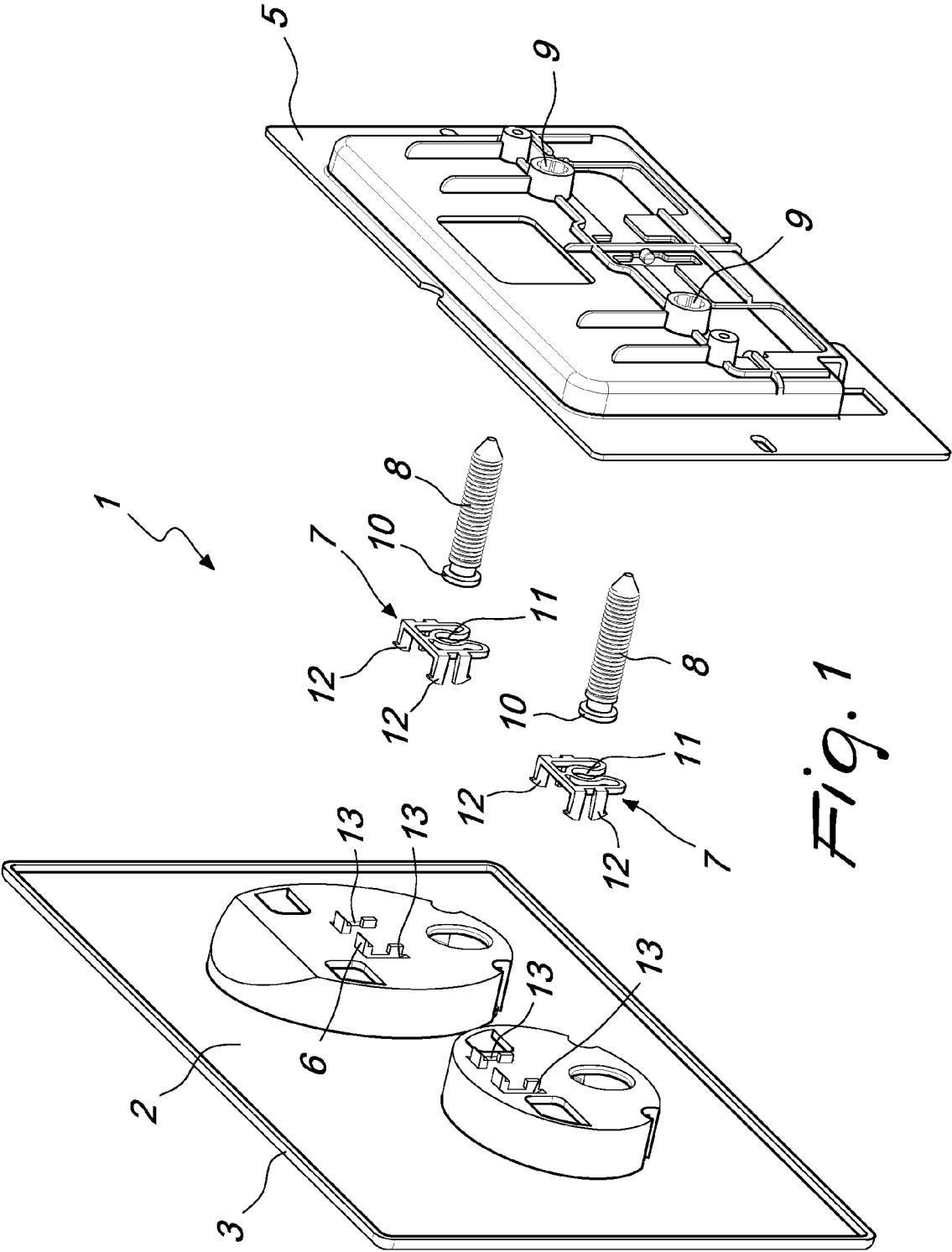


Fig. 1

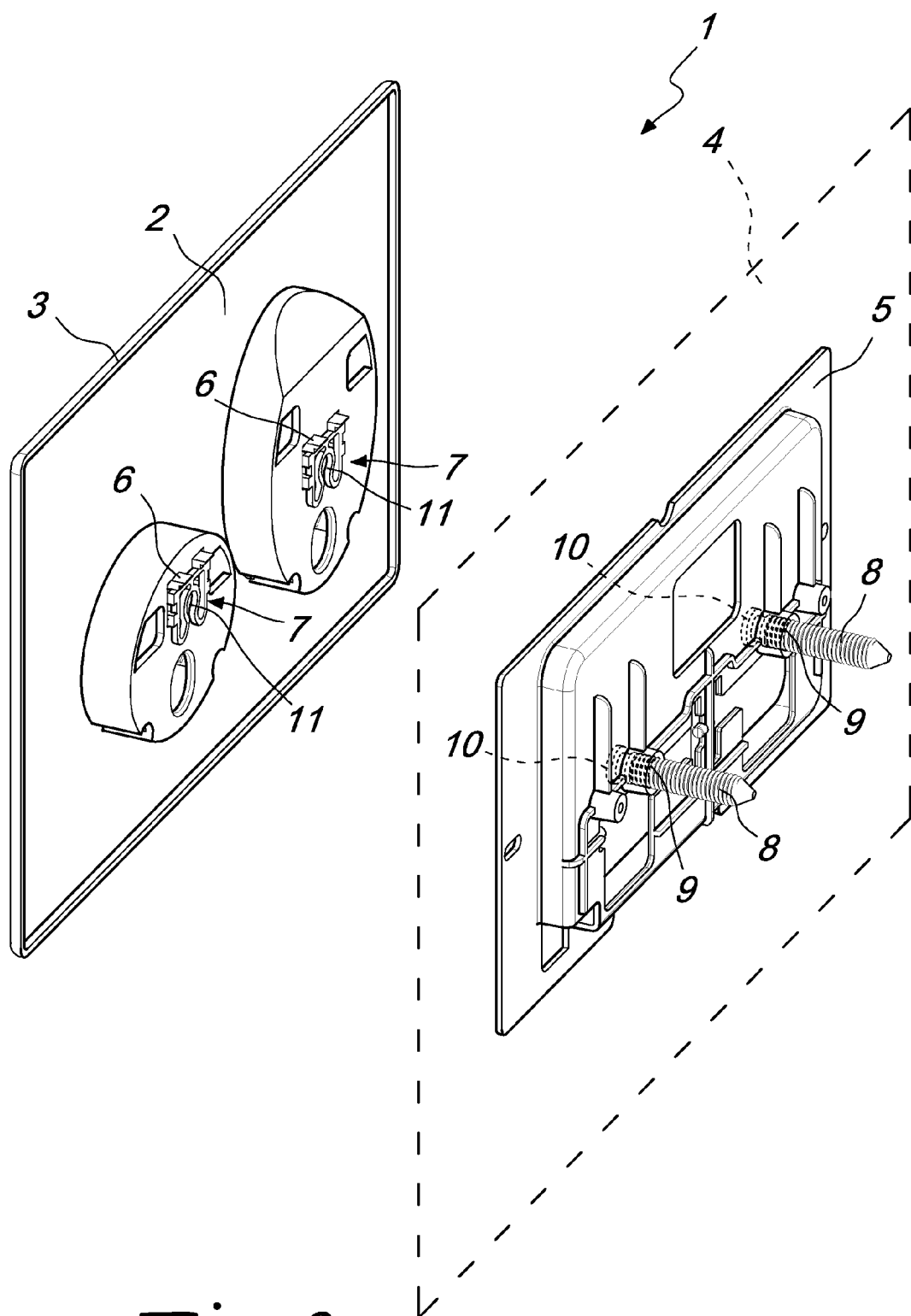
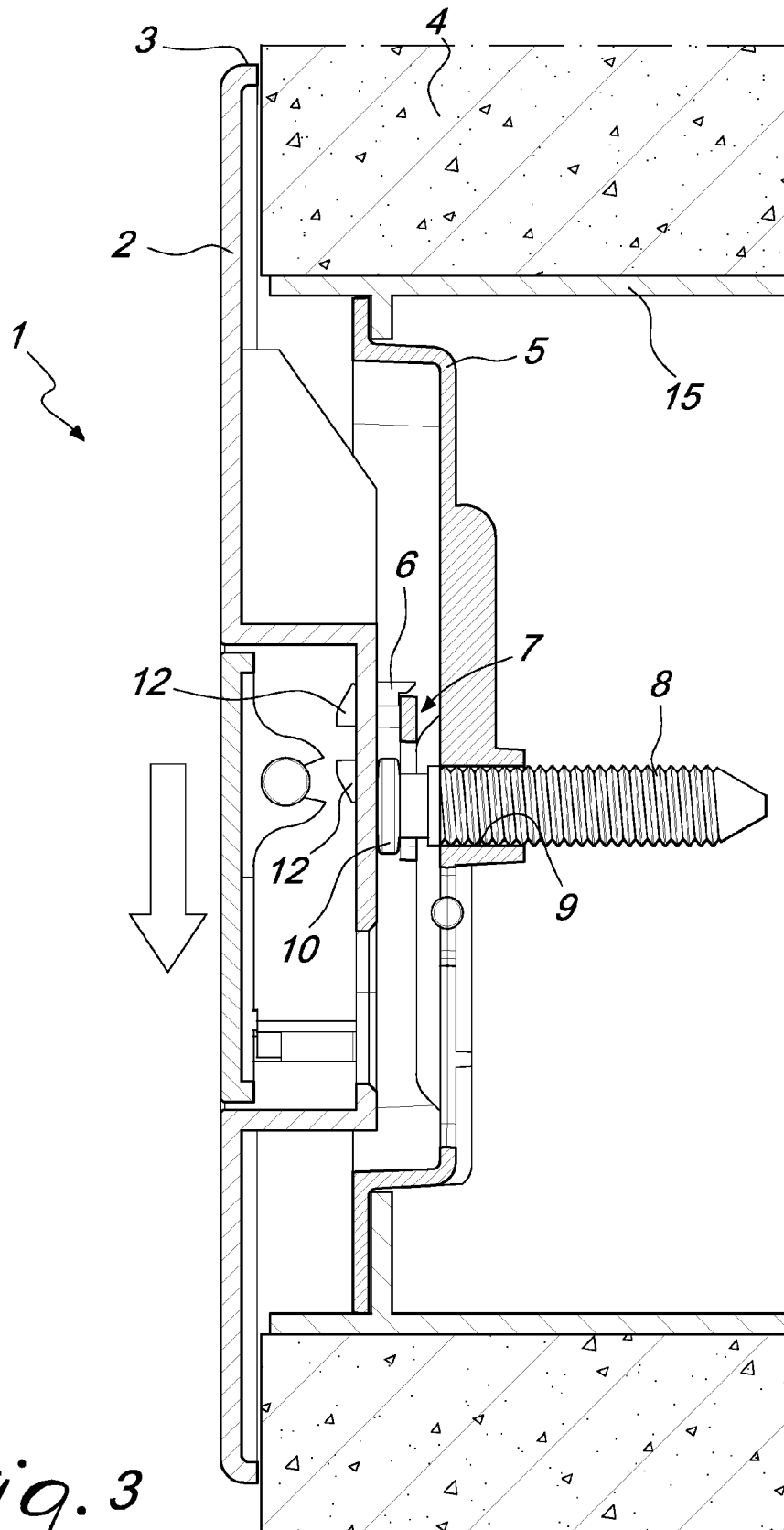
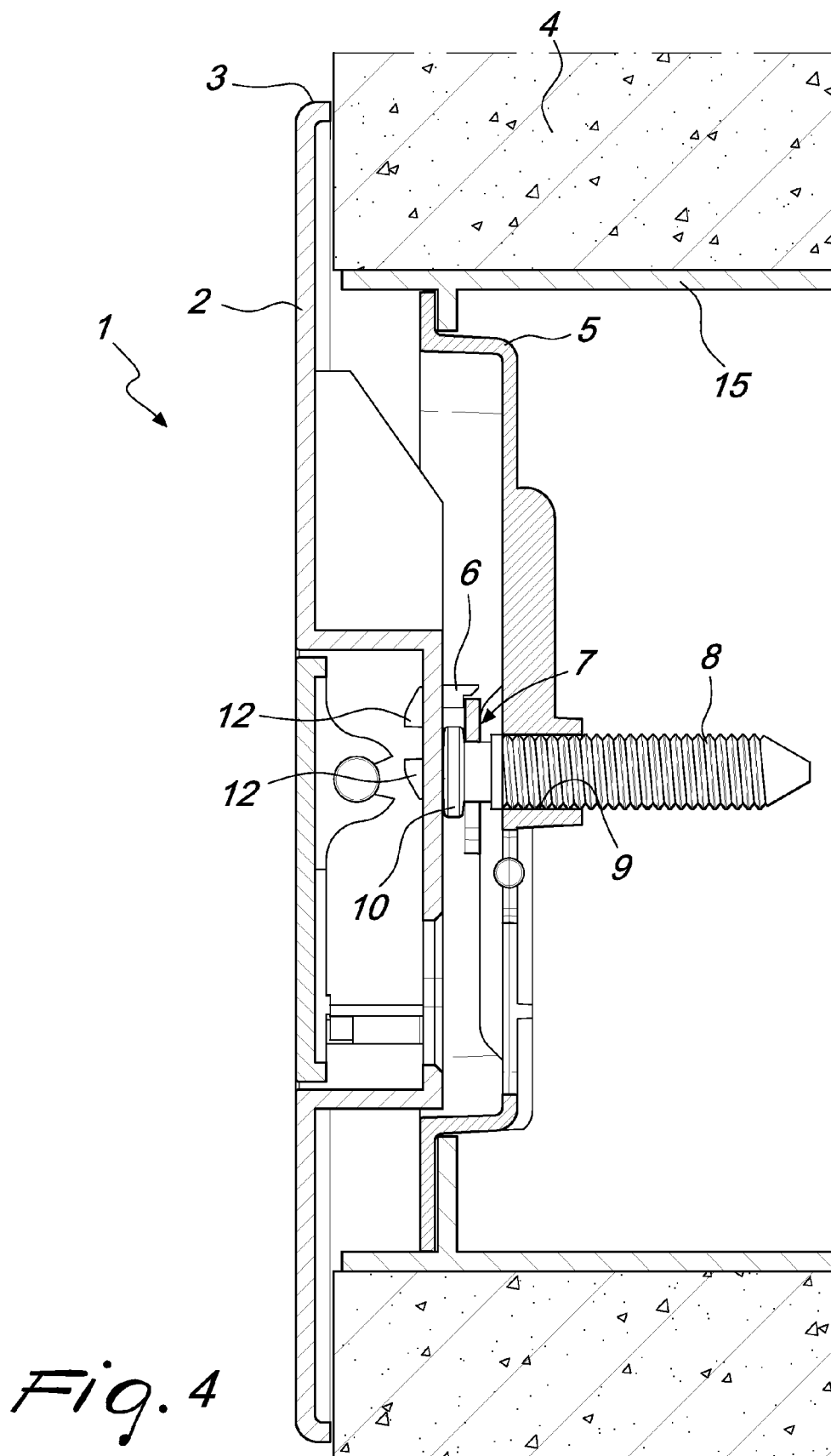


Fig. 2







EUROPEAN SEARCH REPORT

Application Number
EP 13 18 1648

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X	FR 1 602 895 A (GEBERIT & CIE) 8 February 1971 (1971-02-08) * figure 2 *	1,6	INV. E03D5/02
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 5 March 2014	Examiner Flygare, Esa
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 13 18 1648

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