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(54) Shower cubicle installation system

(57) Shower cubicle installation system in which the shower cubicle comprises a shower tray (1) surrounded by at least one fixed vertical side wall (4, 5) and, connected along one vertical edge to an upright (12, 13, 47, 48) that will be fixed to the said fixed side wall (4, 5), at least one fixed wall or swing door (8, 9) whose other, free edge is intended to meet the opposite edge of another wall or door (8,9) surrounding the shower tray (1), the said upright (12, 13, 47, 48) being provided with means (24, 25, 31a, 51, 52) for varying, up to a predetermined maximum value of axial extensibility, the distance of the said free edge from the said fixed wall (4, 5) and for locking it firmly in the correct position so that it correctly meets the opposing edge of the said other wall or door surrounding the shower tray (1), and also a plurality of components (42, 58, 59, 60) for creating a water containment lip (18, 20) which is fitted to the upper edge (6a, 7a) of the sides (6, 7) of the shower tray (1), around which it runs. According to the system, the said plurality of components for creating the said water containment lip (18, 20) includes means for adjusting the axial length of the said containment lip so that it fits the actual measurement of the outline of the shower tray (1), the maximum value (L) of the said adjustable axial length being not greater than the said predetermined maximum value of the extensibility of the means for varying the distance of the said free edge from the fixed wall (4, 5).

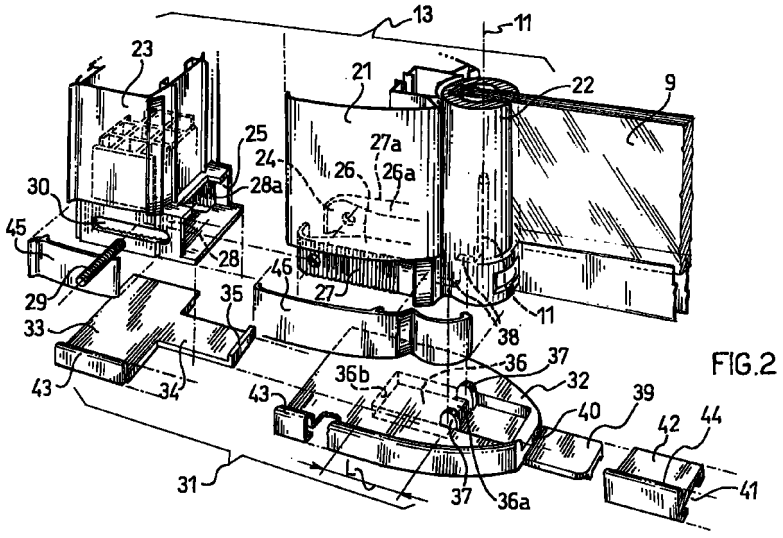

FIG.2

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Description

[0001] The present invention relates to a shower cubicle installation system in which the shower cubicle comprises a shower tray surrounded by at least one fixed vertical side wall and, connected along one vertical edge to an upright that will be fixed to the said fixed side wall, at least one fixed wall or swing door whose other, free edge is intended to meet the opposite edge of another wall or door surrounding the shower tray, the said upright being provided with means for varying the distance of the said free edge from the said fixed wall and for locking it firmly in the correct position so that it correctly meets the opposing edge of the said other wall or door surrounding the shower tray, and also a plurality of long narrow components for creating a water containment lip which is fitted to the upper edge of the sides of the shower tray, around which it runs.

[0002] When installing shower cubicles of the known type mentioned above there are sometimes dimensional problems due to the differences encountered, between the real dimensions which the walls and doors surrounding the shower tray are to cover and the design dimensions used in manufacturing the walls and doors that are to be fitted.

[0003] To overcome this disadvantage, one known method in the trade is to provide the uprights of the walls or doors that are to be fixed to one or more of the fixed walls (the latter usually being tiled or covered with marble slabs) with adjustment devices to enable building tolerances to be compensated for because, as is known, tolerances in buildings are usually quite high when compared with those of the mechanical structures to which the abovementioned uprights belong.

[0004] What happens in currently used installation systems is that, after the uprights have been fixed to the fixed walls, and therefore after holes have already been made in the tiled walls for the necessary fixings, the adjustment devices are found not to offer sufficient extension to cover the dimensional differences encountered in practice around the shower tray. As a consequence the swing doors or fixed walls do not meet properly and the entire unit has to be taken out and replaced.

[0005] This drawback obviously creates a financial loss because of the time spent removing the incorrect set of walls and doors and installing a new set that will fit, besides the possible damage to the tiled or marble-covered walls because the holes of the fixings for the first installation will not always coincide with those necessary for the second installation.

[0006] The object of the present invention is to provide a solution to the drawbacks discussed above of the abovementioned known installation techniques by making it possible to check whether or not the measurements of the walls and doors of a shower tray and the actual measurements taken on site around the shower tray actually match, before the walls are drilled for actual installation and fixing of the shower cubicle.

[0007] The object is achieved with the installation system defined in Claim 1, which follows later.

[0008] The invention will now be described in greater detail with reference to a preferred installation system which is given by way of non-limiting example and illustrated in the accompanying drawings, in which:

Figure 1 shows a perspective view of a known shower cubicle to which the installation system according to the present invention can be applied;
Figure 2 shows an exploded perspective view of the components of the installation system according to the invention in an initial embodiment;
Figure 3 shows a perspective view of the device for making transverse adjustments to the position of the hinge pin of a door of the shower cubicle of the example seen in Figure 2;
Figure 4 shows a perspective view of some of the fittings of the installation system concerned with the meeting point between the free edges of two adjacent doors from the example of Figure 2;
Figure 5 shows a plan view of those fittings of the system according to the invention concerned with the installation of a vertical upright as in the example of Figure 2, in the first position of transverse adjustment;
Figure 6 shows a sectional view of the fittings of Figure 5 taken on the plane marked VI-VI in Figure 5;
Figure 7 shows a sectional view on the plane marked VII-VII in Figure 5;
Figure 8 shows a plan view of the fittings of Figure 5 in a different position of transverse adjustment;
Figure 9 shows a section through the fittings illustrated in Figure 8 taken on the plane marked IX-IX in Figure 8;
Figures 10, 11 and 12 are perspective views of non-limiting examples of three different types of shower trays with which the shower cubicle installation system according to the invention can be used;
Figure 13 shows an alternative construction for one component of the fittings for carrying out the installation system in accordance with the example shown in Figure 2; and
Figure 14 shows a plan view, partly in section, of a shower cubicle with an installation system produced in accordance with a second embodiment.

[0009] With reference to the abovementioned figures and with particular reference to Figure 1, which illustrates a typical known shower cubicle, 1 denotes the shower tray which, in the example illustrated, is closed on the two sides 2 and 3 by the fixed masonry walls 4 and 5, which latter may be tiled or covered with marble slabs as is conventional.

[0010] The other two sides 6 and 7 of the shower tray 1 of the example illustrated are closed by respective

doors 8 and 9 hinged along the vertical pins 10 and 11 carried by the uprights 12 and 13.

[0011] As an alternative, one of the doors 8 or 9 may consist of a fixed wall connected directly to its upright 12 or 13 without vertical hinge pins 10 and 11.

[0012] In the example illustrated the uprights 12 and 13 are fixed vertically against the walls 4 and 5 with fixing means (not shown because conventional).

[0013] For example, these means may be expanding screw fixings inserted in corresponding holes buried in the walls.

[0014] The doors can be opened and closed with the aid of handles 14 and 15 and are designed so that their respective seals meet along the free vertical edges 16 and 17.

[0015] On the upper edges 6a and 7a of the sides 6 and 7 of the shower tray 1 a lip 18 is formed, e.g. using a certain number of mouldings inserted end to end one inside the other. The purpose of this lip 18 is to contain the water that runs all the way around the shower tray, beginning in front of the uprights 12 and 13.

[0016] In the particular case illustrated in Figure 1 this lip runs along the sides 6 and 7, whereas in the drawing of Figure 11 the same lip runs only along one front side of the shower tray, for example side 6.

[0017] This moulding is composed of a series of long narrow components cut to size and connected together; at curves, for example the corner 19 of the shower tray, the series of components comprises arcuate connectors 20, or, as in the case of a shower tray with one completely curved side, curved pieces.

[0018] Each of the uprights 12 and 13, as can be observed in greater detail in Figure 2, consists of two parts connected together using means of mutual adjustment and locking.

[0019] For simplicity, the remainder of this description will refer to upright 13 only, its structure being exactly the same as that of upright 12.

[0020] The upright 13 therefore comprises the front part denoted 21 which carries the door 9 support 22 defining the axis of the vertical hinge 11.

[0021] These supporting components may if desired be omitted if the upright is intended to support a fixed wall rather than a swing door.

[0022] The part 21 is connected to the rear part 23, which is a moulding intended to be fixed vertically to the wall 5, e.g. with expanding screw fixings inserted into holes prepared in the correct positions in the above-mentioned part 5. The part 21 of the upright 13 and the part 23 are connected to each other by a slide 24 carried by the base of the part 21 of a housing 25 carried by the base of the part 23. The slide 24 is roughly C-shaped with longitudinal arms 26 and 26a which push into the housing 25.

[0023] The lateral surfaces 27 and 27a of the arms 26 and 26a have serrations so as to engage with corresponding serrations on the opposing inner surfaces 28 and 28a of the housing 25.

[0024] A threaded screw 29 passing through the window 30 of the housing 25 engages, by way of an expander, with the arms 26 and 26a, of the slide 24 in order to lock and release the latter relative to the serrated walls 28 and 28a of the housing 25, thereby enabling the part 21 to be positioned where desired relative to the part 23.

[0025] It is evident from the above that the maximum possible extension of the upright 13 depends on the length of the window 30 whose extension therefore limits the extent to which the position of the hinge pin 11 of the door 9 relative to the wall 5 can be varied.

[0026] As a result of this, during the installation of the shower cubicle, if the part 23 of the upright were already fixed to the wall 5 and the size of the window 30 were not sufficient to permit adequate adjustment of the part 21, the consequence is that the edges 16 and 17 of the doors 8 and 9 will not be exactly and the installation will have to be recommenced with other suitable materials.

[0027] In accordance with the present invention the system provides a platelike component with a general reference 31. This is composed of a first plate 32 having a sliding connection with a second plate 33.

[0028] The latter plate 33 fits underneath the plate 32 and possesses a tongue 34 with a tooth 35 which slides in a groove 36 in the plate 32, the open side of the groove 36 being towards the plate 33.

[0029] The longitudinal excursion L of the plate 33 relative to the plate 32 is defined by the opposite ends 36a and 36b of the groove 36, and stable intermediate positioning is provided by the engagement of the tooth 35 with a rough or serrated surface (not shown) of the closed upper surface of the groove 36.

[0030] The plate 32 also possesses at least two vertical tongues 37 designed to engage in corresponding slots 38 in the base of the part 21 of the upright 13.

[0031] Lastly, the same plate 32 possesses a horizontal tongue 39 projecting from its front end 40.

[0032] This tongue 39 is designed to fit snugly into the longitudinal cavity 41 of the moulding 42 which, together with other straight or curved components of the same type makes up the water containment lip 18, 20 on the upper edge 6a, 7a of the shower tray 1.

[0033] Both the plate 32 and the plate 33 have a lateral lip 43 which corresponds in shape and size to the lip 44 of the moulding 42.

[0034] This lip 43 forms on the platelike component 31, as a whole, a centring means for accommodating the base of the upright 13. The covers 45 and 46 close off the area of the slide 26 and of the housing 25 at the base of the upright after adjustment of the connection between the parts 21 and 23.

[0035] In an alternative construction shown diagrammatically in Figure 13, the platelike component 31 may be produced in one piece and the means of longitudinal adjustment, in this case, consist of transverse segments 31a defined by incised lines 31b formed at the rear end of the platelike component 31.

[0036] Taken together, the segments 31a, cover a longitudinal extension "L" not greater than that of the device for adjusting the upright, i.e. the size of the window 30.

[0037] Adjustment, in the case of the example in Figure 13, is by detaching and removing one or more segments 31a by breaking it or them along the incisions 31b.

[0038] It will be clear from the above description that, in the system according to the invention, before the holes are made for fixing the uprights 12 and 13, the platelike components 31 are put in position on the upper edges 6a, 7a of the sides 6, 7 of the shower tray 1, next to the walls 4, 5 to which the uprights 12, 13 of the shower cubicle are to be fixed.

[0039] The straight or, if applicable, curved mouldings 42 are also put in at the same time to form the sealing lip 18.

[0040] By adjusting the position of the plate 33 relative to the plate 32 or by adjusting the number of segments 31a, within the range of adjustment L permitted by the groove 36 or by the total number of pre-incised segments 31a, the water containment lip 18, 20 is installed exactly all the way around the edge of the shower tray 1, on the sides where the latter is to carry the walls or doors of the shower cubicle.

[0041] When the positions have been defined, and therefore if the range of adjustment L has been sufficient to absorb the tolerances, part 23 of the uprights 12 and 13 is fitted by drilling the walls 4 and 5. There is no danger that it will subsequently be found impossible to assemble the parts correctly due to insufficient adjustability of the uprights because the range L does not exceed the amount of movement permitted by the window 30 to the parts 21 and 23 with respect to one another.

[0042] Clearly if, after having positioned the platelike component 31 and the associated long narrow components, that is if after having prepared the water containment lip 18, 20, it is found that the range of adjustment L is not sufficient to absorb the differences between the design dimensions of the shower cubicle and the real dimensions actually encountered in the structure around the shower tray, it is possible to withdraw the materials and carry out the necessary replacements without having damaged the fixed walls around the shower tray or otherwise executed faulty and useless work.

[0043] The platelike component 31 and the straight or curved mouldings 42 serve in practice as a template to see whether or not the shower cubicle can be installed and whether it is possible to install it correctly.

[0044] At the same time these components 31 and mouldings 42 also still perform the function of water containment, preventing spillages out of the shower tray during use of the shower.

[0045] The same technical solution described above can also be applied to the particular embodiment of a shower cubicle as illustrated in Figure 14.

[0046] Referring to this figure, it will be seen that the uprights 47 and 48, shown in cross-section, are supported vertically by their respective bases 49 and 50 which rest on the upper edges 6a and 7a of the sides 6 and 7 of the shower tray 1.

[0047] The uprights 47 and 48 each have a respective seat 51 and 52 to house one vertical edge of the walls 53 and 54, respectively, which, together with the doors 53a and 54a, complete the enclosure of the shower cubicle 1, the other sides 2 and 3 of this being surrounded by the fixed masonry walls as in the example of Figure 2.

[0048] Each upright 47 and 48 also possesses a moulding 55, 56 that runs parallel to the upright and is fixed to it around the peduncle 47a and 48a, respectively.

[0049] A threaded member 47b and 48b is used in a known way to position the mouldings 55, 56 so that the edges 55a and 56a, respectively, fitted with conventional seals, cooperate with the opposite edges 47c and 48c, respectively, as clamps to lock the walls 53 and 54, respectively between them, after the latter have been correctly positioned in the seats 51 and 52 by appropriate longitudinal movements in the direction of the arrow 57.

[0050] At the corner 19 of the shower tray 1 and on the upper edge thereof, the embodiment of Figure 14 places a corner component 58 functionally equivalent to the component 20 of Figure 1.

[0051] Between the bases 49 and 50 of the uprights and the corner component 58 are straight mouldings 59 and 60 that create the water containment lip and that are functionally equivalent to the components 42 illustrated in Figure 4.

[0052] The connection of components 59 and 60 with the corner component 58 and with the bases 49 and 50 of the uprights is by means of an ordinary telescopic connection, the details of which are not shown since known per se.

[0053] The point that should be emphasized is that, in accordance with the concept of the technical solution upon which the present invention is based, the telescopic connection of components 59 and 60 with their respective bases 49 and 50 can take place over an axial excursion of predetermined length L not exceeding the maximum excursion distance permitted by the seats 51 and 52 for the walls 53 and 54.

[0054] In accordance with the installation system described above, only after first positioning the corner component 58, the bases 49 and 50 and the long narrow components 53 and 54 and only after first ensuring that the extensibility of their connections will allow the water containment lip to be formed around the edge of the shower tray, are the uprights fixed in place by putting in the screw fixings, roughly shown at 61 in Figure 14, in the fixed walls. The reason is clear: if the extensibility of the component parts of the water containment lip is suf-

ficient for the latter to be laid perfectly, this will mean that it will also be possible correctly to install the shower cubicle walls, as the extensibility of the latter is essentially equivalent to the extensibility of the former.

[0055] Materials and dimensions may be varied according to requirements without thereby departing from the scope of the present invention.

Claims

1. Shower cubicle installation system in which the shower cubicle comprises a shower tray (1) surrounded by at least one fixed vertical side wall (4, 5) and, connected along one vertical edge to an upright (12, 13, 47, 48) that will be fixed to the said fixed side wall (4, 5), at least one fixed wall or swing door (8, 9) whose other, free edge is intended to meet the opposite edge of another wall or door (8,9) surrounding the shower tray (1), the said upright (12, 13, 47, 48) being provided with means (24, 25, 31a, 51, 52) for varying, up to a predetermined maximum value of axial extensibility, the distance of the said free edge from the said fixed wall (4, 5) and for locking it firmly in the correct position so that it correctly meets the opposing edge of the said other wall or door surrounding the shower tray (1), and also a plurality of components (42, 58, 59, 60) for creating a water containment lip (18, 20) which is fitted to the upper edge (6a, 7a) of the sides (6, 7) of the shower tray (1), around which it runs, the said system being characterized in that the said plurality of components fort creating the said water containment lip (18, 20) includes means for adjusting the axial length of the said containment lip so that it fits the actual measurement of the outline of the shower tray (1), the maximum value (L) of the said adjustable axial length being not greater than the said predetermined maximum value of the extensibility of the means for varying the distance of the said free edge from the fixed wall (4, 5).

2. System according to Claim 1, characterized in that it includes a platelike component (31) inserted between the base of the said upright (12, 13) and the upper edge (6a, 7a) of the sides (6, 7) of the shower tray (1), the said platelike component (31) being provided with longitudinal adjustment devices (34, 35, 36, 31a) and being provided with means (37) for connection to the said base of the upright (12, 13) and with means (39) for frontal connection with the end of one of the said components (42) forming the water containment lip (18, 20).

3. System according to Claims 1 and 2, characterized in that the said means of adjusting the axial length of the said lip (18, 20) consist of a plurality of segments (31a) separated, so that they can be broken off, by incisions (31b) formed on the body of the said platelike component (31), the sum of the widths of the said plurality of segments (31a) being equal to the said maximum value (L) of adjustable axial length.

4. System according to Claims 1 to 3, characterized in that the said longitudinal adjustment devices (34, 35, 36, 31a), together with the said plurality of components (42, 58, 59, 60) permit continuity of the water containment lip (18, 20) on the upper edge (6a, 7a) of the shower tray between a wall at the start and a wall at the end of the outline, thus compensating for dimensional tolerances.

5. System according to Claims 1 to 4, characterized in that the said means for connecting the said platelike component (31) to the said base of the upright (12, 13) consist of male (37) and female (38) components that slot into each other.

6. System according to Claim 5, characterized in that the said components that slot into each other consist of two tongues (37) projecting vertically from the said platelike component (31), and a pair of corresponding slots (38) in the base of the said upright (12, 13), the said slots (38) being open towards the said platelike component (31).

7. System according to Claims 1 to 6, characterized in that the said means for the frontal connection of the said platelike component (31) to one of the components (42) forming the water containment lip (18, 20) consist of a tongue (39), projecting horizontally out of the said platelike component (31) parallel to the upper edge (6a, 7a) of the sides (6,7) of the shower tray (1), together with a corresponding longitudinal cavity (41) in the said long narrow component (42).

8. System according to claims 1 to 7, characterized in that the said platelike component (31) comprises a first plate (32) and a second plate (33) connected to the first in a sliding drawer-like manner between a position in which the said second plate (33) is completely underneath the first and an extreme position in which it is partly withdrawn, means (34, 35, 36) being provided to lock together the said plates (32, 33) in the extreme positions and in any intermediate position.

9. System according to claim 8, characterized in that the said first (32) and the said second (33) plates are provided with a lip (43) running along at least part of their outline and extending towards the base of the said upright, the said lip defining the bearing seat for the base of the said upright (12, 13).

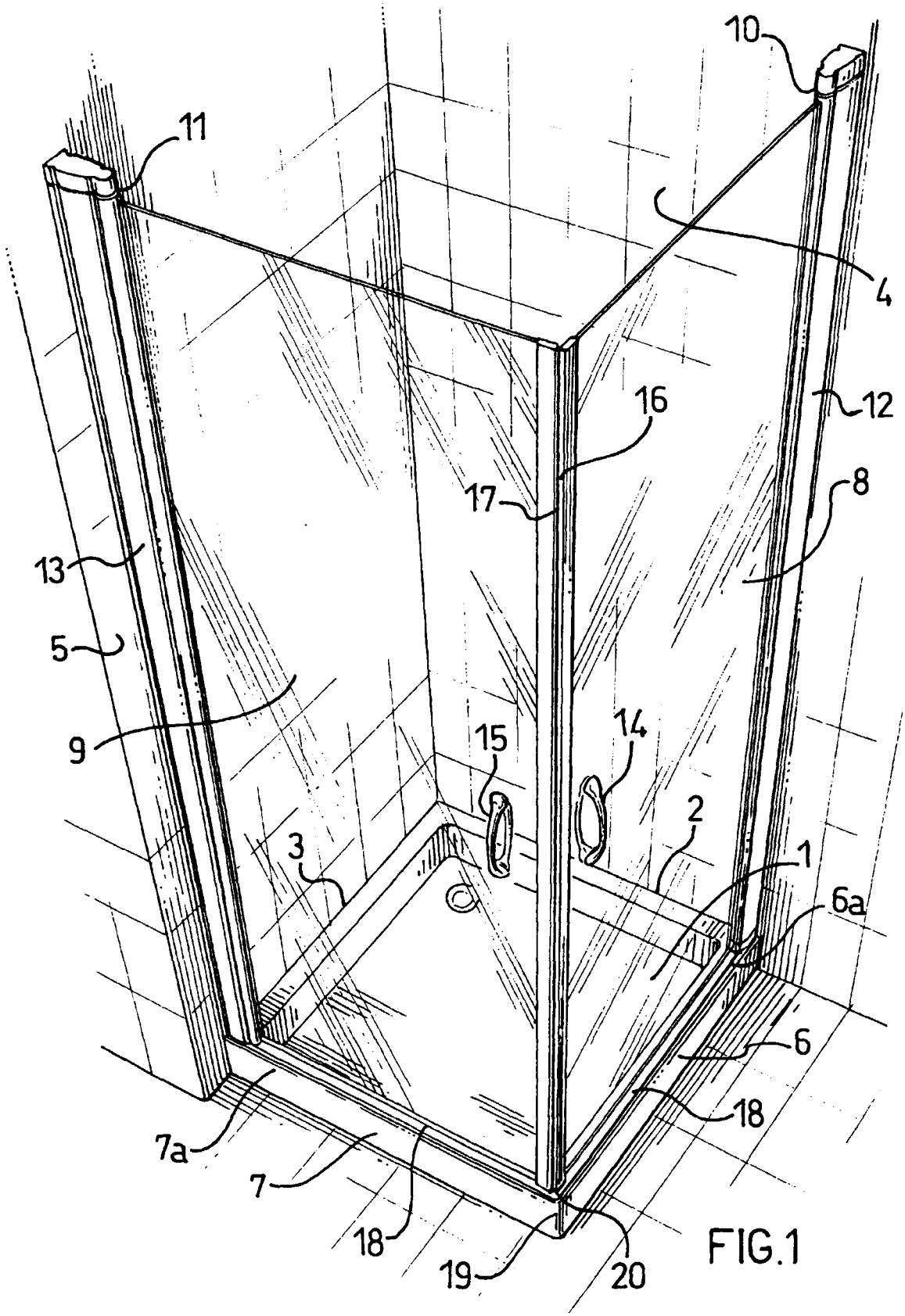
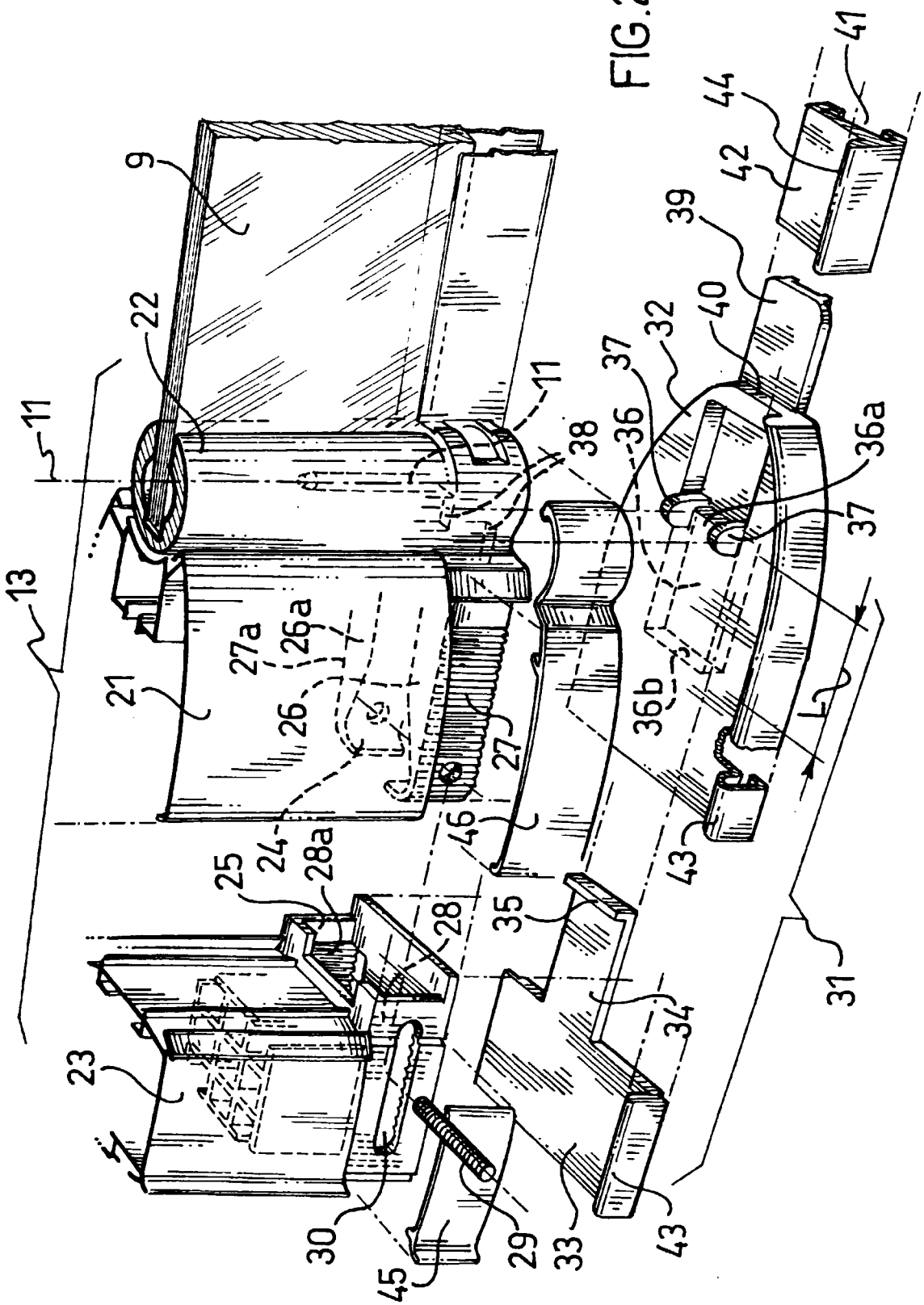


FIG.1

FIG.2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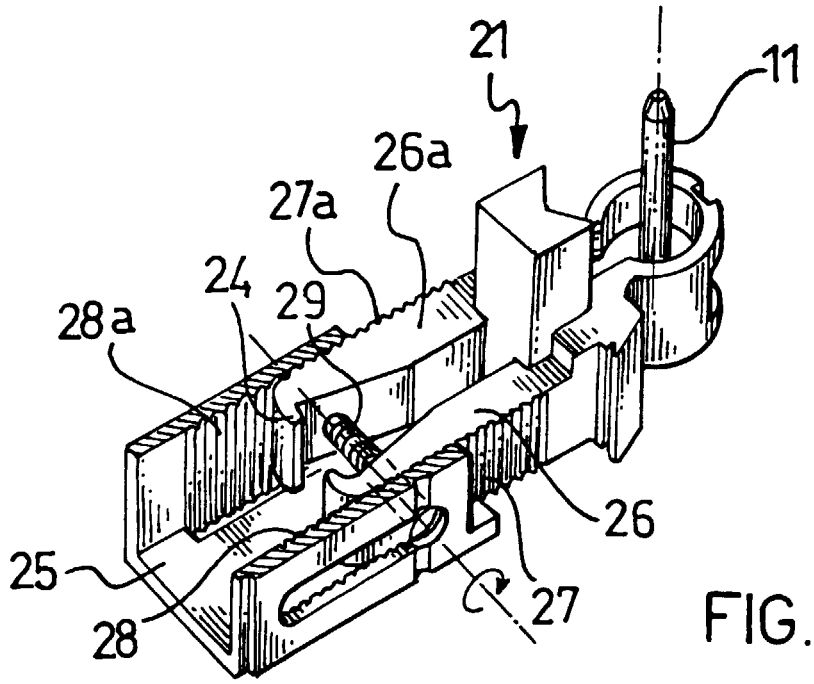


FIG.3

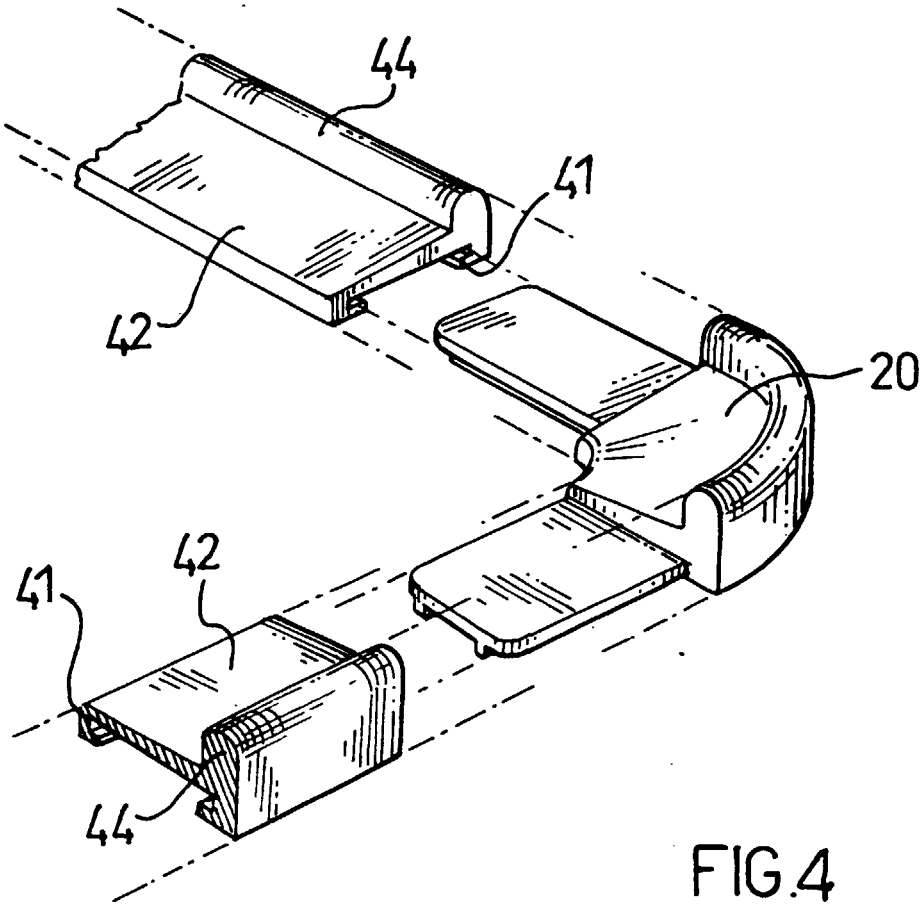


FIG.4

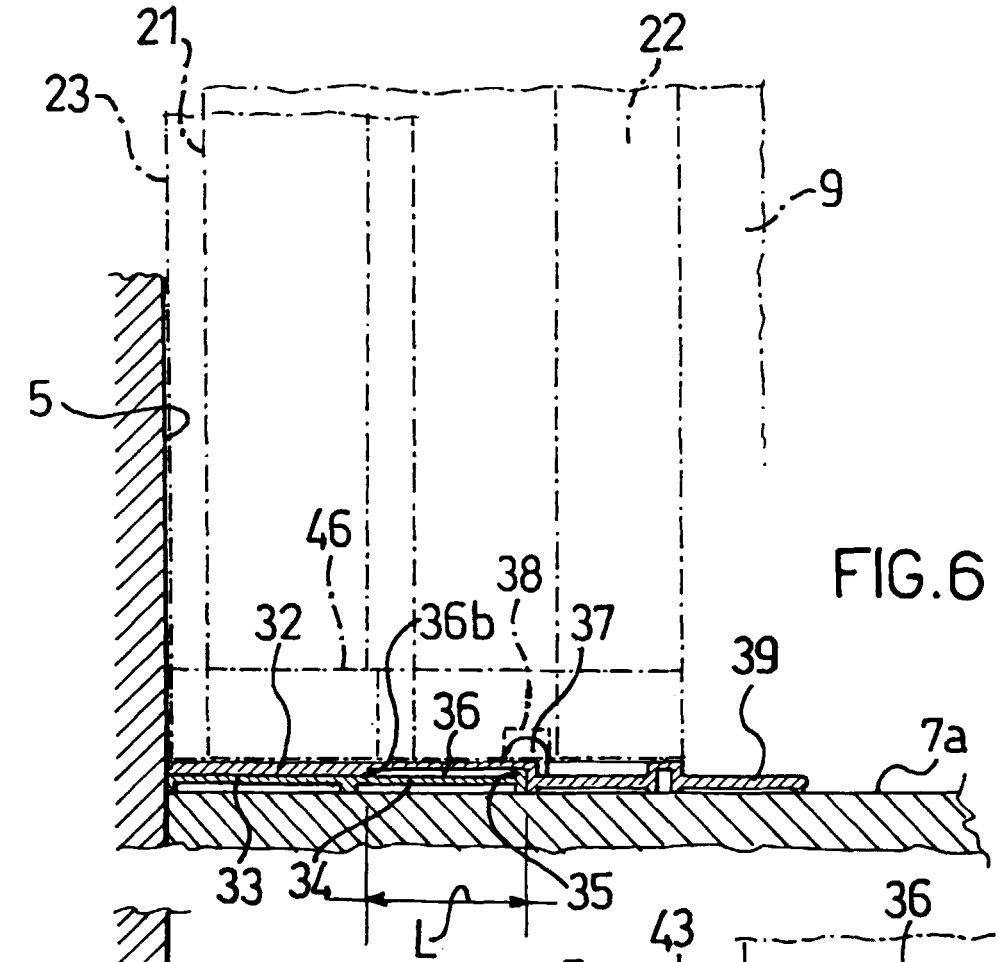


FIG.6

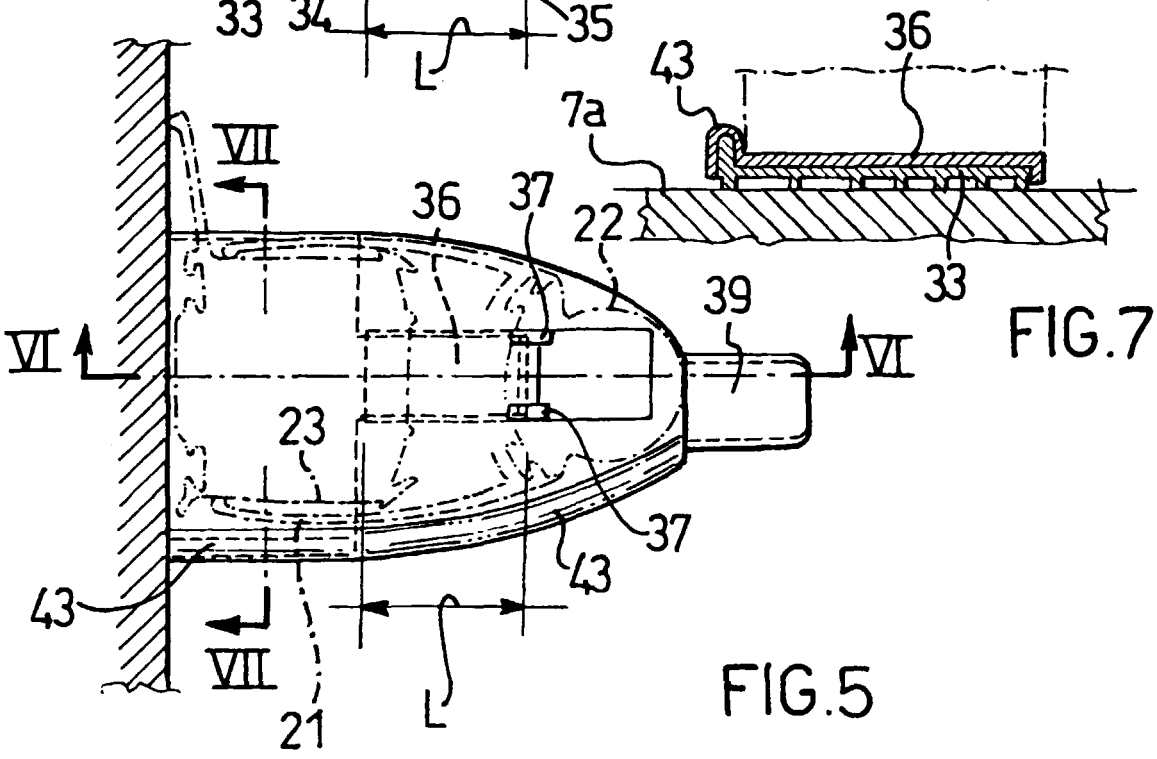
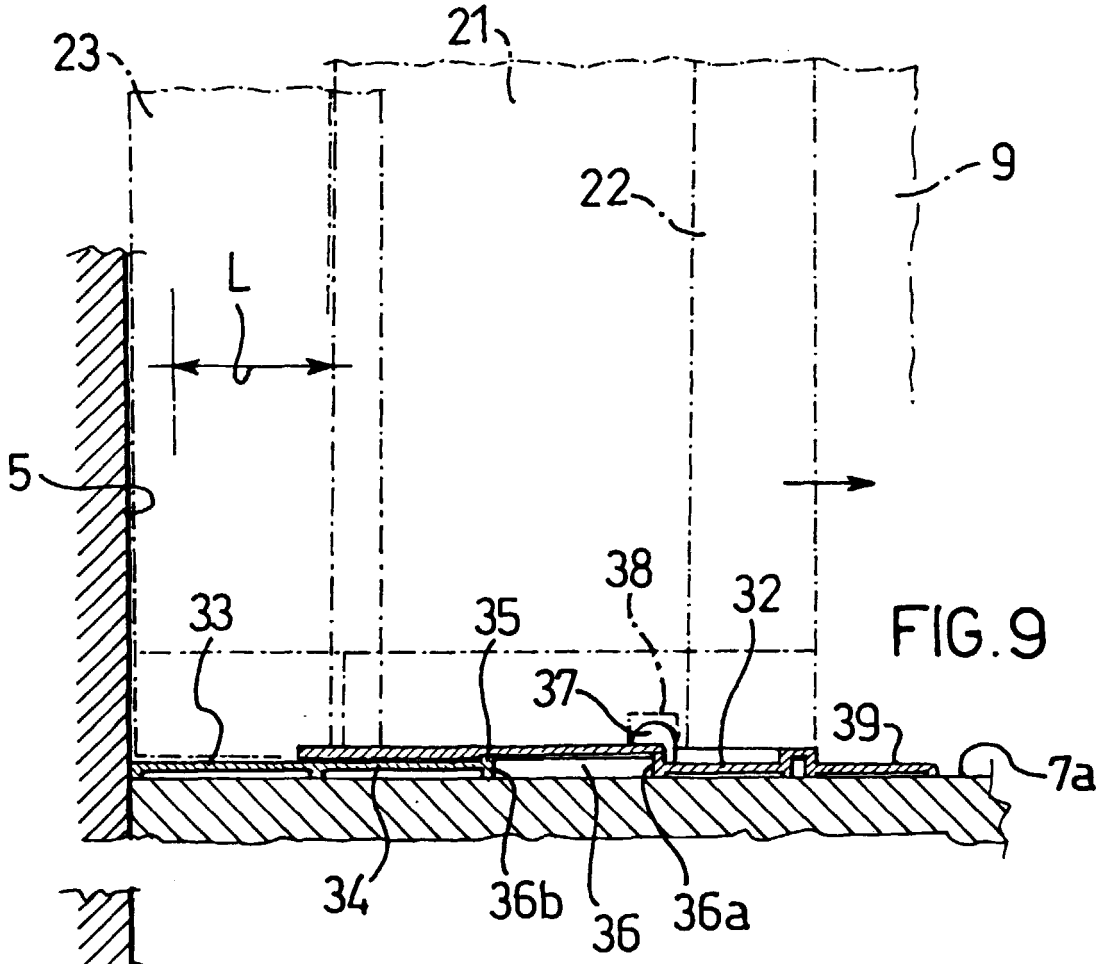


FIG.7

FIG.5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36a

FIG.9

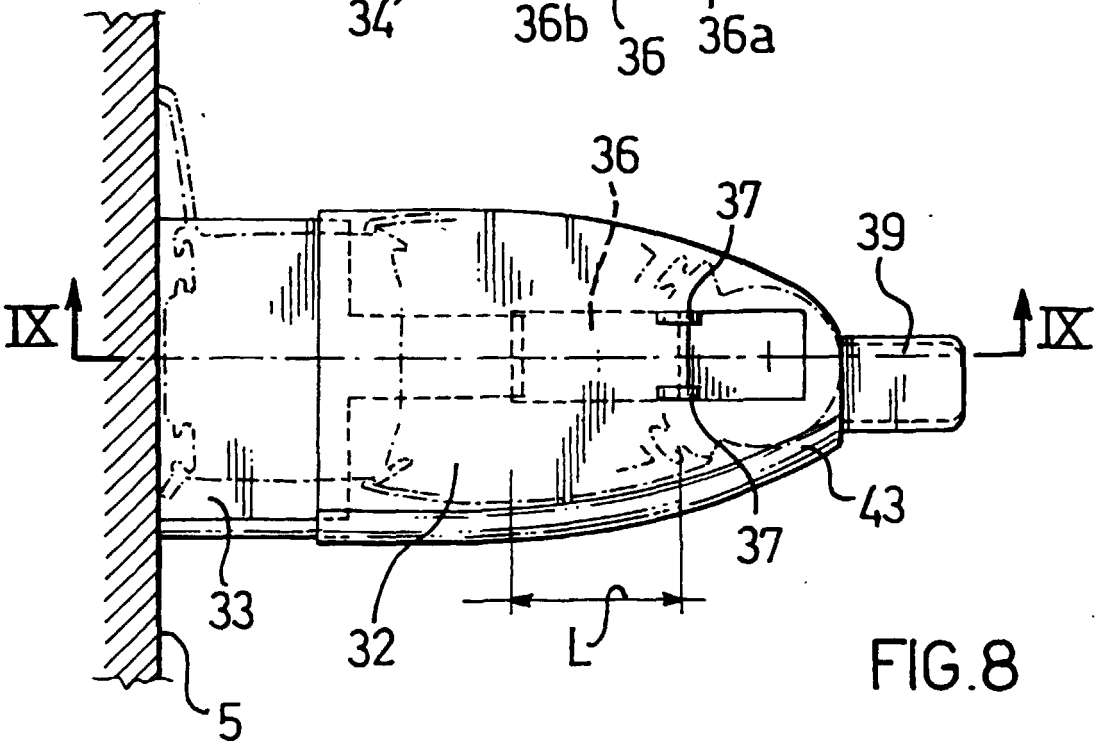
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FIG.8

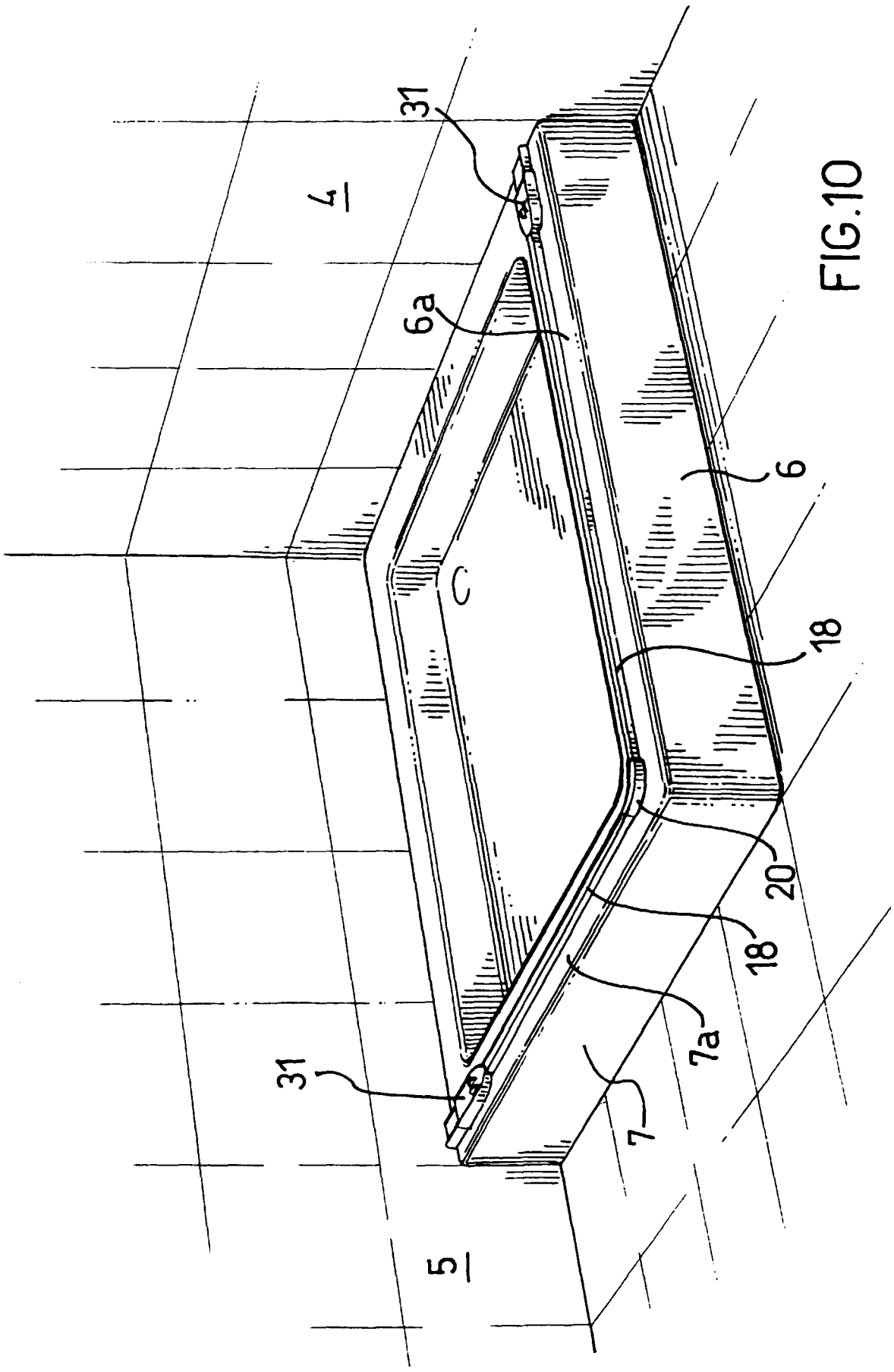


FIG.10

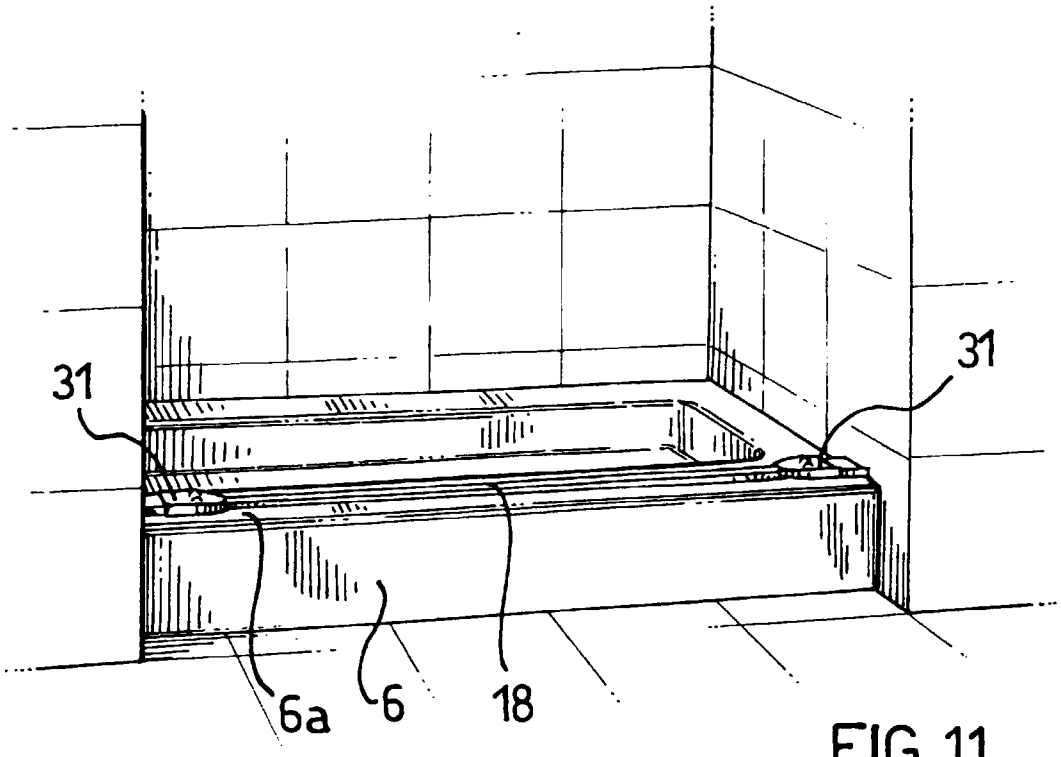


FIG.11

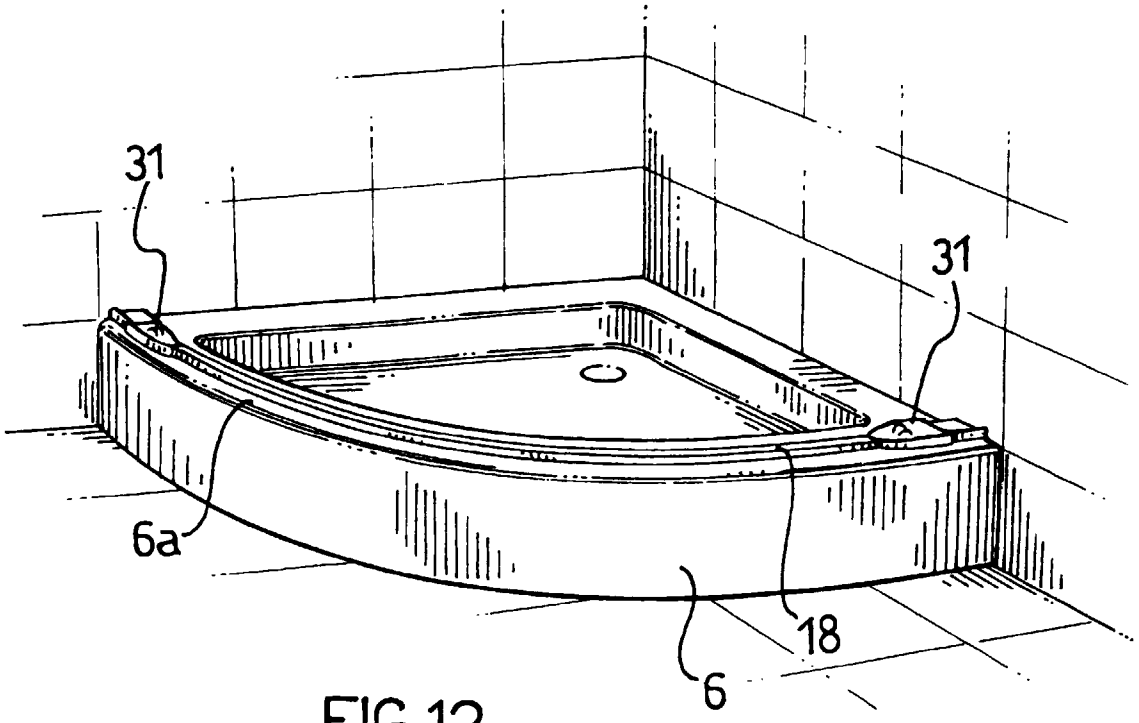


FIG.12

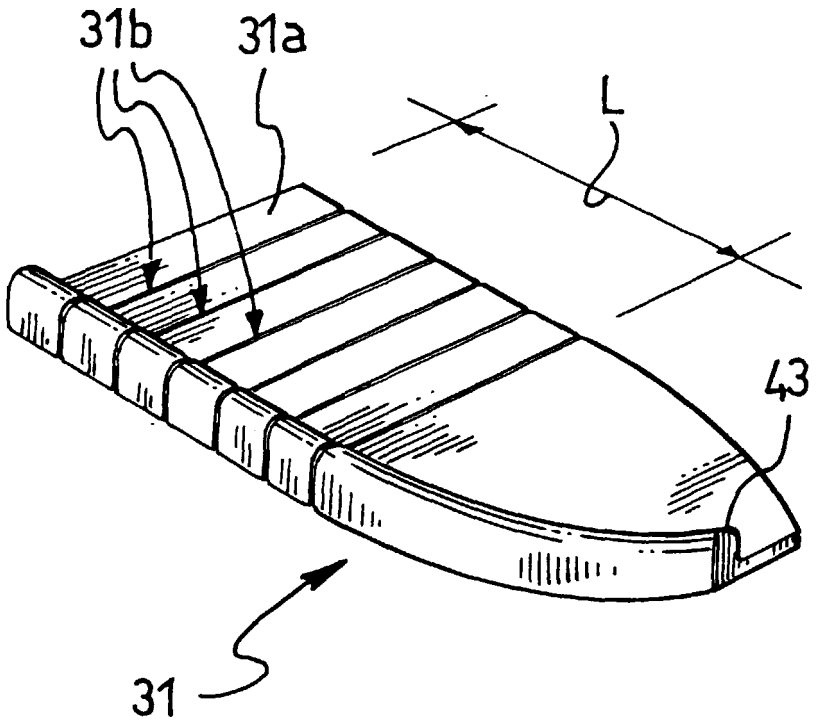
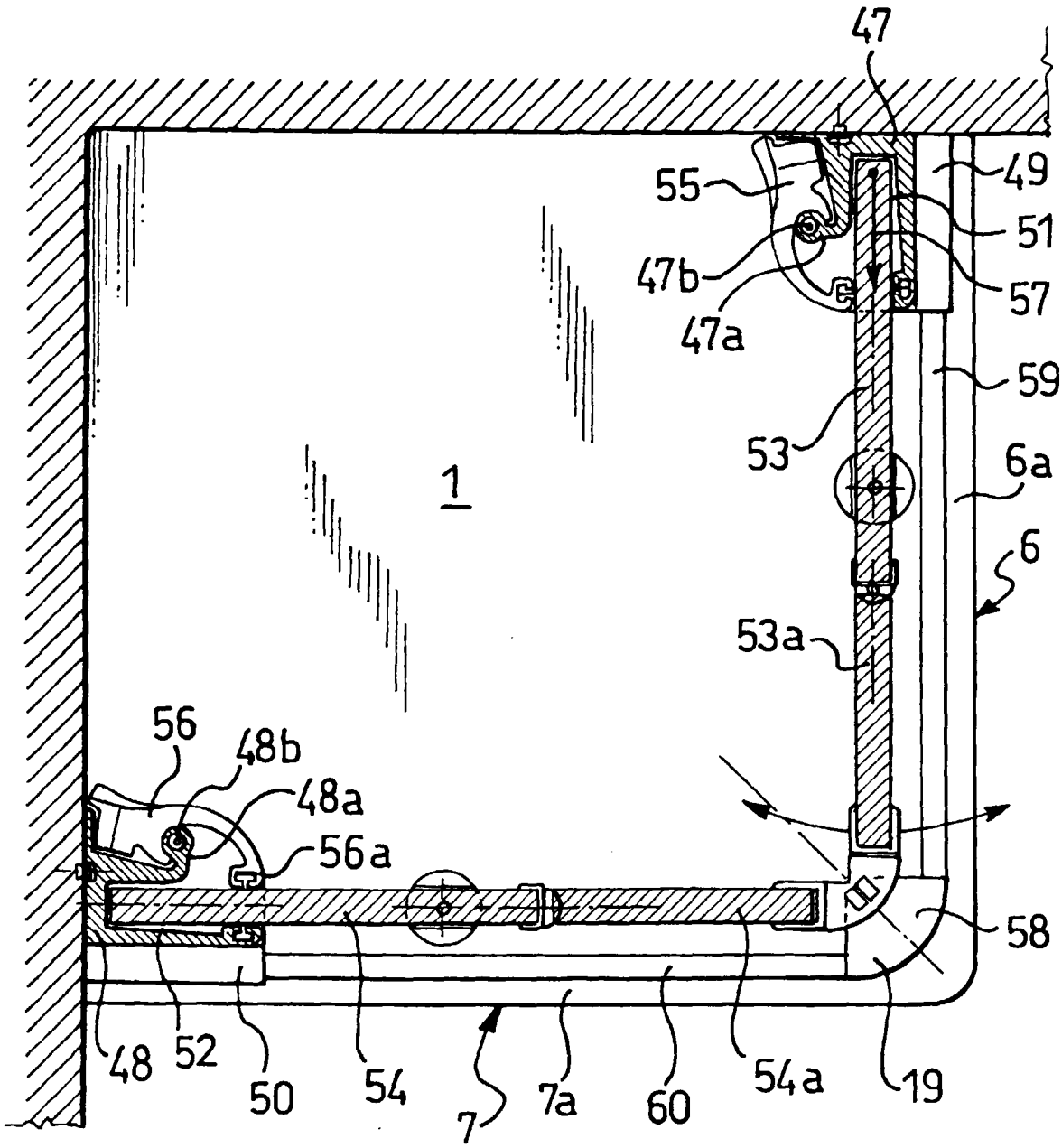


FIG. 13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7a
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54a
19

FIG. 14

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 83 0566

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	EP 0 118 883 A (HÜPPE GMBH) 19 September 1984 * the whole document *	1	A47K3/22
A	DE 93 02 872 U (H. BREUER) 13 January 1994 * the whole document *	1	
A	EP 0 327 154 A (ELIA VISMARA S.R.L.) 9 August 1989 * the whole document *	1	
A	EP 0 119 514 A (G. H. BAUS) 26 September 1984 * the whole document *	1	
A	GB 2 120 713 A (UNITED STATES GYPSUM COMPANY) 7 December 1983 * the whole document *	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

A47K

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	26 February 1999	Delzor, F

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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