(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 329 183 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
23.07.2003 Bulletin 2003/30

(51) Int Cl.[7]: **A47K 3/30**

(21) Application number: **03009447.8**

(22) Date of filing: **08.04.1998**

(84) Designated Contracting States:
AT DE ES FR GB IT NL

(30) Priority: **11.04.1997 IT MI970257 U**
30.09.1997 IT MI970695 U

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:
98201147.0 / 0 870 460

(71) Applicant: **TEUCO GUZZINI S.p.A.**
62010 Montelupone (IT)

(72) Inventor: **Guzzini, Virgilio**
62019 Recanati (IT)

(74) Representative: **Jorio, Paolo et al**
STUDIO TORTA S.r.l.,
Via Viotti, 9
10121 Torino (IT)

Remarks:
This application was filed on 25 - 04 - 2003 as a divisional application to the application mentioned under INID code 62.

(54) Shower cabinet with improved structure

(57) A shower cabinet (10) comprises a lower tray (11), side walls (13) made of plastic material and lateral closing glass doors (14) connected to said walls. At least one side chosen between the side walls and the tray comprising, enbloc, seats for housing the edges of the glass doors. For example, the side walls (13) may comprise seats (15), made in one piece therein, for directly housing the glass doors (14). In a shower tray (11) and in an upper element (15) joining the side walls (12, 16), respective housings (18, 19, 20) may be provided for the side walls and for guide elements (21) for guiding the sliding movement of a sliding portion (16) of the side walls. Advantageously, the shower tray and upper connecting element are made of injection moulded plastic.

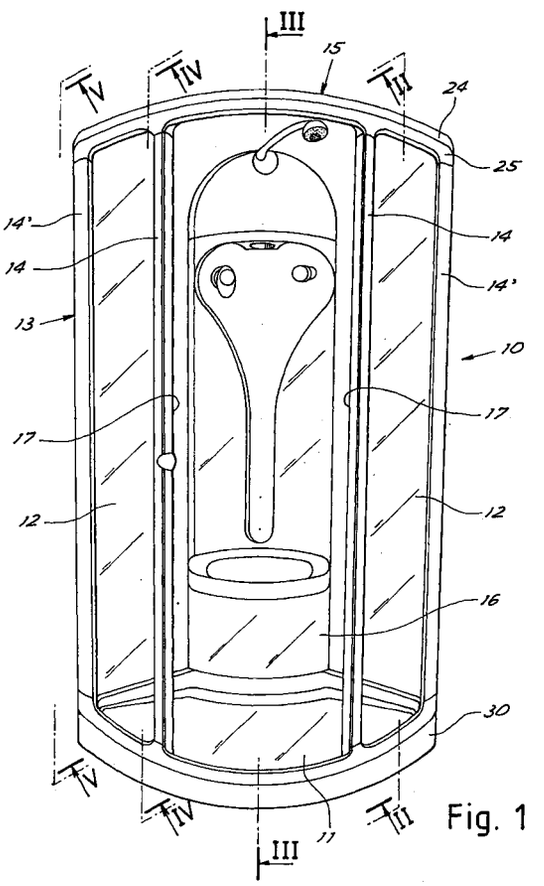

Fig. 1

EP 1 329 183 A2

Description

[0001] This invention refers to a shower, or sauna, cabinet provided with an improved structure.

[0002] In the known technique, cabinets are generally made with elements such as frames or metal structural sections secured to the walls and the base and provided with grooves for housing the glass doors, with suitable sealing material to prevent water from leaking out. The walls of the cabinet (generally obtained by thermoforming) thus constitute simple panels for covering and, if necessary, supporting the connecting frames.

[0003] This structure involves relatively high costs and prolonged assembling periods. Moreover, an accumulation of dirt that is difficult to remove inevitably forms in the gaps between the metal sections and the walls, as well as around screws or other means for fastening such metal sections, thereby seriously jeopardizing hygiene.

[0004] In addition, application of the glass doors to the shower tray is normally carried out by the interposition of a suitable housing secured to the tray by means of screws or by glueing. The same technique is used for anchoring the glass doors to an upper element connecting the latter. It is obvious that the presence of these additional elements comes to bear negatively on the manufacturing costs, as well as on the weights and dimensions of the packaging.

[0005] Moreover, the useful space inside the shower cabinet, specifically in correspondence with the lower tray, is partially reduced.

[0006] The general scope of this invention is to obviate the aforementioned problems by providing a shower cabinet with an improved system for fastening the glass doors to the side walls.

[0007] This scope is achieved, according to the invention, by providing a shower or sauna cabinet comprising a lower tray, side walls and lateral closing glass doors connected to said walls, characterized in that at least one side chosen between the side walls and the tray comprises, enbloc, seats for housing portions of the edges of the glass doors.

[0008] This scope is further achieved, according to the invention, by providing panelling for a shower cabinet, consisting of walls made of plastic material and glass doors, characterized in that it comprises seats in the walls for directly receiving portions of the edge of the glass doors, the seats being formed enbloc in the walls.

[0009] A reduction in the number of components, simplification of the assembling procedure, a reduction in the overall weight and dimensions of the packaging are just a few of the advantages offered by an embodiment according to the invention.

[0010] The innovative principles of this invention and its advantages with respect to the known technique will be more clearly evident from the following description of a possible exemplificative embodiment applying such principles, with reference to the accompanying drawings, in which:

Fig. 1 shows a schematic, perspective view of a shower cabinet according to the invention.

Fig. 2 shows a cross-sectional scrap view of the outer area of the shower cabinet, along the line II-II of Fig. 1.

Fig. 3 shows a view similar to that of Fig. 2, viewed along the line III-III of Fig. 1.

Fig. 4 shows a view similar to that of Fig. 2, viewed along the line IV-1V of Fig. 1.

Fig. 5 shows a view similar to that of Fig. 2, viewed along the line V-V of Fig. 1.

Fig. 6 shows a perspective view, from below, of the underside of the shower tray.

Fig. 7 shows an enlarged detail of the tray shown in Fig. 6, highlighting the device for securing a side panel to the shower tray.

Fig. 8 shows a schematic, perspective view of a second shower cabinet according to the invention.

Fig. 9 shows a cutaway scrap view of a side wall of the shower cabinet of Fig. 8 in correspondence with the housing of a glass door.

[0011] With reference to Fig. 1, a shower cabinet generically indicated by reference 10 comprises a shower tray 11 to which are applied fixed glass doors 12 which form the side walls of the cabinet, with a frame 13 comprising vertical uprights 14, 14' and an upper connecting element 15. The upper element 15 is design so as to slidingly support movable glass doors 16 with relevant vertical uprights 17, forming the door giving access to the inside of the shower cabinet.

[0012] As can be seen in Fig. 2, which shows a cross-sectional view in correspondence with the fixed glass door 12, with the sliding glass door 16 in the open position, the tray 11 and in the upper connecting element 15 are provided respectively with seats 18, 19 for housing the fixed glass door 12, which can be secured there by means of known airtight means, such as silicone or rubber gaskets. As shown in the cross section in Fig. 3, viewed in correspondence with the aperture of the shower cabinet, the tray 11 is also provided with seats 20 for receiving guiding elements 21 for the lower edge of the movable glass door 16. The guide elements 21, for example, can be composed of a plurality of grooved blocks, inserted and secured directly in the seats 20.

[0013] Integrated in the upper element 15 is a rail 22 for slidingly supporting wheels 23 secured to the upper end of the movable glass door 16. The rail 22 can be made of metal to constitute the strengthening element of the frame 13.

[0014] The shower tray and upper element 15 can advantageously be made in any desired shape, comprising the seats and guides for the glass doors, by injection moulding plastic material, with all the benefits offered by the use of such technology.

[0015] In particular, in the embodiment shown, the upper element 15 is composed of two half shells 24, 25 which can be coupled extremely easily, for example, by simply fitting them together, after having inserted the metal rail 22 inside them.

[0016] Fig. 4 shows a cross-section viewed in correspondence with one of the uprights 14 of the frame 13. As can be clearly seen in the figure, here too the lower tray 11 and the upper element 15 comprise respective seats 26, 27, formed directly in their cross section, to house the ends of the uprights 14. In the embodiment shown, the seats are obtained by means of projections protruding from the surface of the tray and the element 15. Obviously, according to requirements, it is possible for the seats 26, 27 to be obtained by means of a recess in the cross section of the aforesaid elements, suitable for receiving complementary protrusions on the uprights.

[0017] Fig. 5 shows the coupling of an end upright 14' with the tray 11 and with the upper element 15 by fitting the upright into the seats 26', 27'.

[0018] As shown schematically in Fig. 4, appropriate tie rods 38 can be housed inside the uprights to ensure a more efficient anchorage of the uprights to the tray 11 and to the upper connecting element 15.

[0019] The structure of the shower cabinet according to the invention has altogether considerably better stability characteristics as compared to a conventional cabinet provided with a plurality of separate fastening elements to be interposed between the tray and the walls.

[0020] Thanks to the fact that it is manufactured by injection moulding, the shower tray 11 can be of relatively limited thickness and its outer surface, as well as the upper element 15, can be easily shaped so as to join together the different cross sections necessary to achieve the above described couplings between the glass doors, uprights and connecting elements.

[0021] In general, thanks to the injection moulding technique, the shower cabinet according to the invention can be made with a considerably better aesthetical finish compared to shower cabinets made by means of other technologies.

[0022] To give greater rigidity to the shower tray, the latter may be made, as schematically shown by reference 28 in Fig. 2 and as can also be seen in Fig. 6 and Fig. 7, with stiffening undercuts or ribs on its underside. The underside of the tray 11 may be advantageously provided during the moulding with seats 39 to house a metal stiffening frame 40. The frame 40 can be fastened in the seats 39 in any known way, for example by fixing.

[0023] The shower tray may also comprise, moulded enbloc therewith, a part of the fastening device 29 for fastening a side panel 30 of the tray itself, for the lower finishing of the shower cabinet.

[0024] As shown in detail in Fig. 7, where the side panel 30 can also be seen the fastening device 29 comprises a plate 31 protruding from the lower part of the tray 11 and having a seat or hole 32 for housing a pin 33 protruding sideways from the panel 30 towards the inside of the shower cabinet.

[0025] The pin 33, in the embodiment shown in Fig. 7, is composed of two upper and lower rigid elements 34, 35 capable of supporting the weight of the panel 30 and of two elastic lateral elements 36, 37 capable of snap fitting into the seat 32 in the plate 31.

[0026] Thanks to the use of the injection moulding technique, other details can be obtained enbloc with the shower tray, for example parts for connection to the water supply system.

[0027] The shape and size of the housings of the uprights depend upon the shape and size of the uprights themselves and consequently upon the particular characteristics of the side walls of the cabinet. The uprights may be secured to the tray and the upper element for example by glueing or fixing, providing a suitable configuration of the housings each time.

[0028] Fig. 8 shows a shower cabinet generically indicated by reference 110 comprising a lower tray 111, an upper element 112 and side walls 113, to which glass doors 114 are secured. The tray 111 and the upper element 112 can be made as previously described for the cabinet 10.

[0029] A preferred system for securing the fixed glass doors according to the invention for the cabinet 110 can be seen in greater detail in Fig. 9, which shows a portion of a side wall 113, advantageously made by injection moulding plastic material.

[0030] In correspondence with a lateral end of the wall 113 a seat 115 is formed in the latter to house one edge of the fixed glass door 114. Said seat consists of a vertical U-shaped groove obtained by moulding the sheet constituting the wall 113 into a suitable shape.

[0031] The groove 115 runs along the entire height of the wall 113 and the lateral edge of the glass door 114 can be inserted within it, advantageously with a slight interference with the walls of the seat to ensure a stable coupling and a sufficient watertight seal.

[0032] Advantageously, the seat 115 is made in correspondence with a curve 116 which forms the front finishing of the wall 113 and offers the possibility of obtaining an interspace 117 for housing known devices (nozzles, pipes, etc.) necessary for operating the shower or sauna. The curve 116 also forms the lateral upright, which differs from the example of upright 14' of Fig. 5.

[0033] When assembling, once the side walls have been positioned on the lower tray, all the installer has to do is fit the glass doors into the groove 115. The saving in terms of time and money and the simplification of the assembling operations that an embodiment according to the invention is capable of offering compared to the systems of known technique are obvious.

[0034] Moreover, the seats, interspaces and joints that in the known technique encourage the accumulaton of dirt and retention of moisture, are eliminated.

[0035] The foregoing description of an embodiment applying the innovative principles of this invention is ob-

viously given by way of example in order to illustrate such innovative principles and should not therefore be understood as a limitation to the sphere of the invention claimed herein.

[0036] For example, the lateral panelling formed by the side walls 113 and the glass doors 12 may be shaped differently to that shown, especially as regards the shape and position of the grooves 115, in order to adapt to differemt aesthetical shapes required for the shower cabinet.

[0037] In addition, the walls 113 can comprise any accessory normally found in a shower or sauna cabinet, such as for example a shower head 118 or spray nozzles 119, shown schematically in figure 9.

[0038] Whenever particular watertight characteristics are required in correspondence with the housings for the glass doors, suitable sealing materials can obviously be applied, for example silicone.

[0039] The term "glass door" used here is understood to mean any front closing panel of a shower cabinet, that may not necessarily be made of glass.

[0040] It is clear from the foregoing description that by obtaining a shower cabinet according to the invention, it is possible to reduce the number of component parts, thereby achieving evident advantages both in terms of manufacturing costs, and in terms of weight and overall dimensions of the packaging, resulting in appreciable benefits in transporting and storing the articles.

[0041] It should also be noted that, to obtain a shower tray and an upper connecting element with built-in housings for the lateral glass doors, the technique of injection moulding plastic material can be used to great advantage, with consequent benefits in terms of weight and manufacturing simplicity.

Claims

1. Shower or sauna cabinet comprising a lower tray (11), a rear wall (113), fixedly mounted side walls (12) and doors (16) connected to said side walls (12), **characterized in that**

   said lower tray (11) comprises, a housing (18) for a corresponding edge of the side walls (12), and **in that**
   said lower tray (11) further comprises a housings (20) for guide elements (21) to guide the movement of the sliding doors (16),
   said housing (18) and said housing (20) being made both enbloc with said lower tray (11).

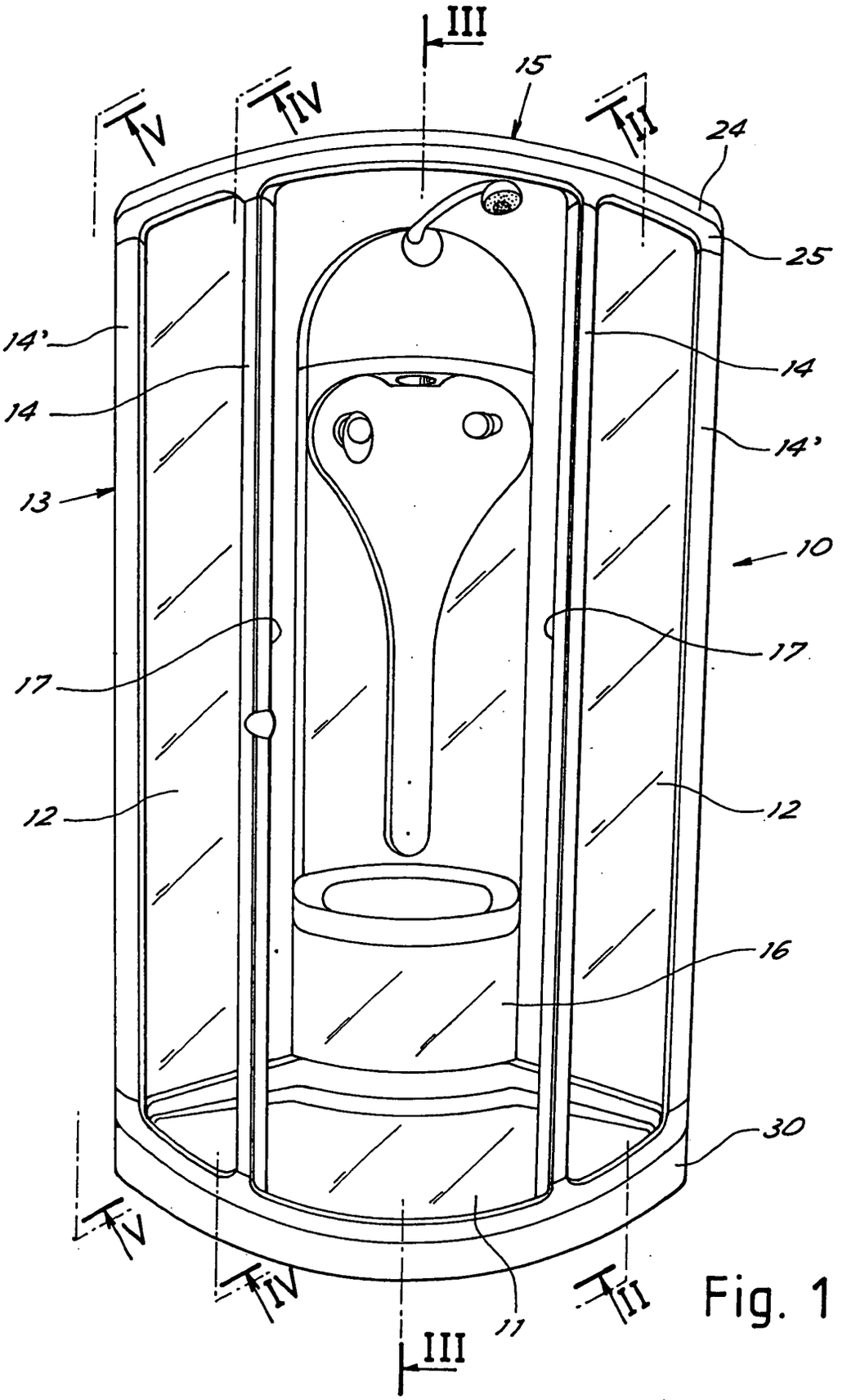

Fig. 1

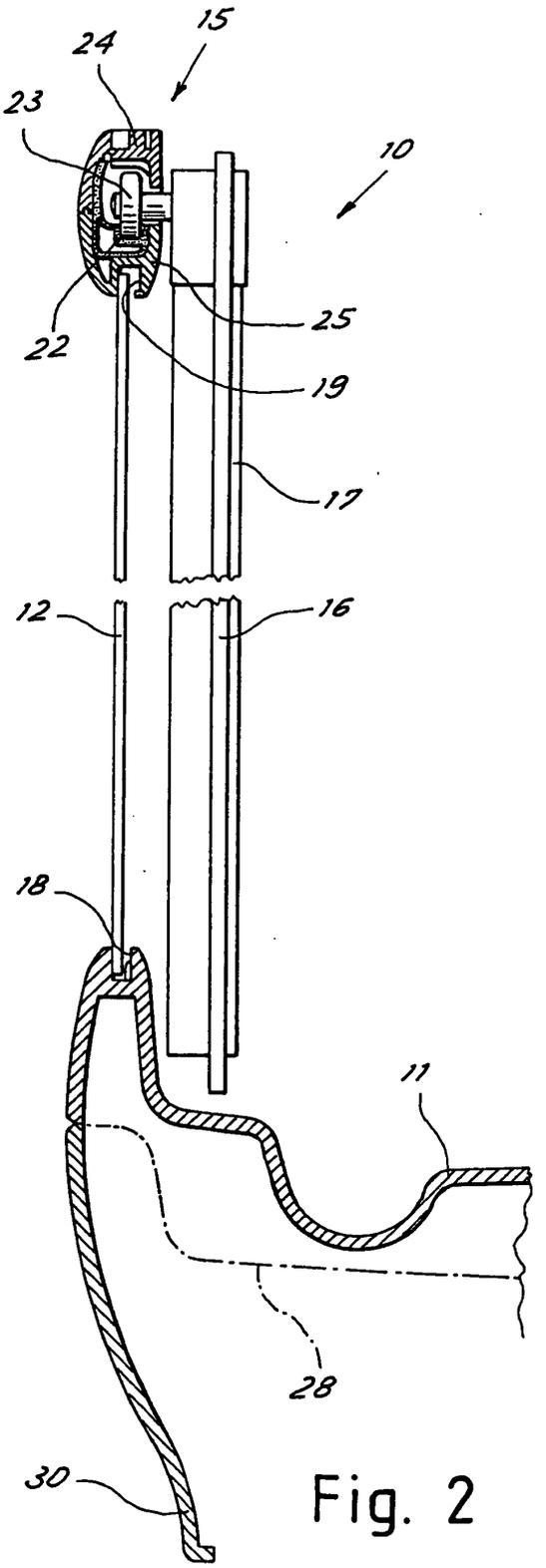
15
24
23
10
22
25
19
17
12
16
18
11
28
30

Fig. 2

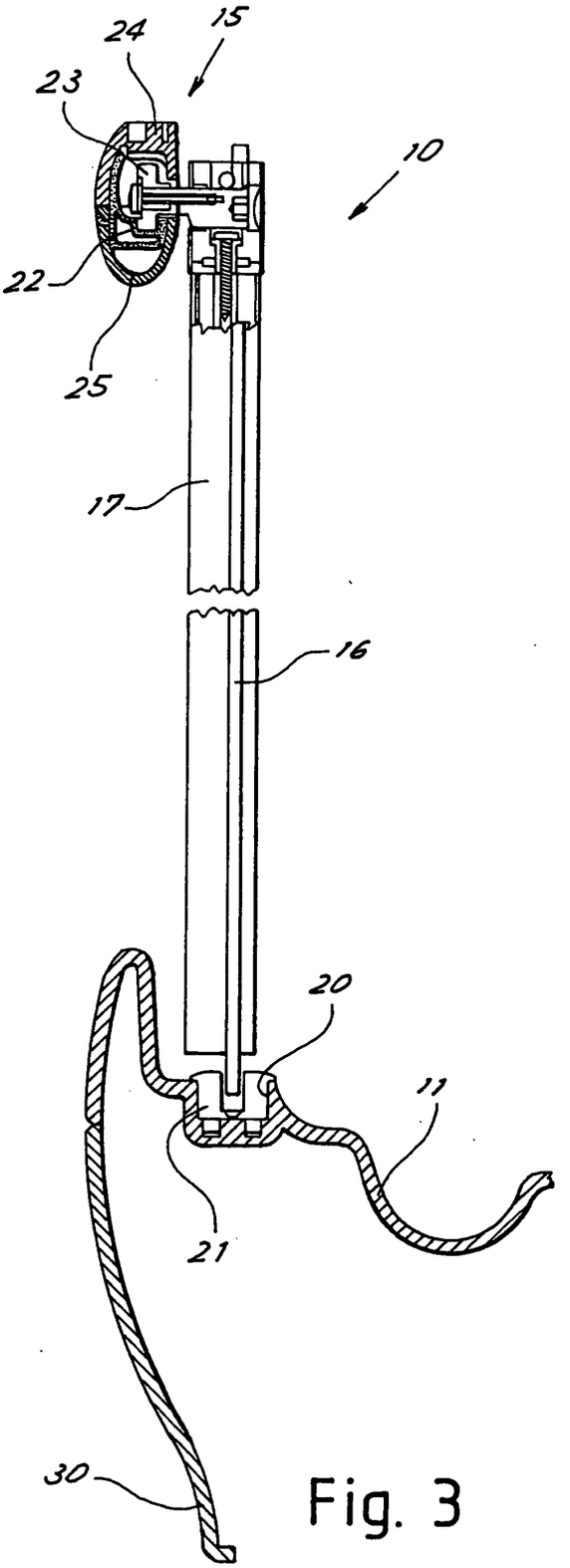
15
24
23
10
22
25
17
16
20
11
21
30

Fig. 3

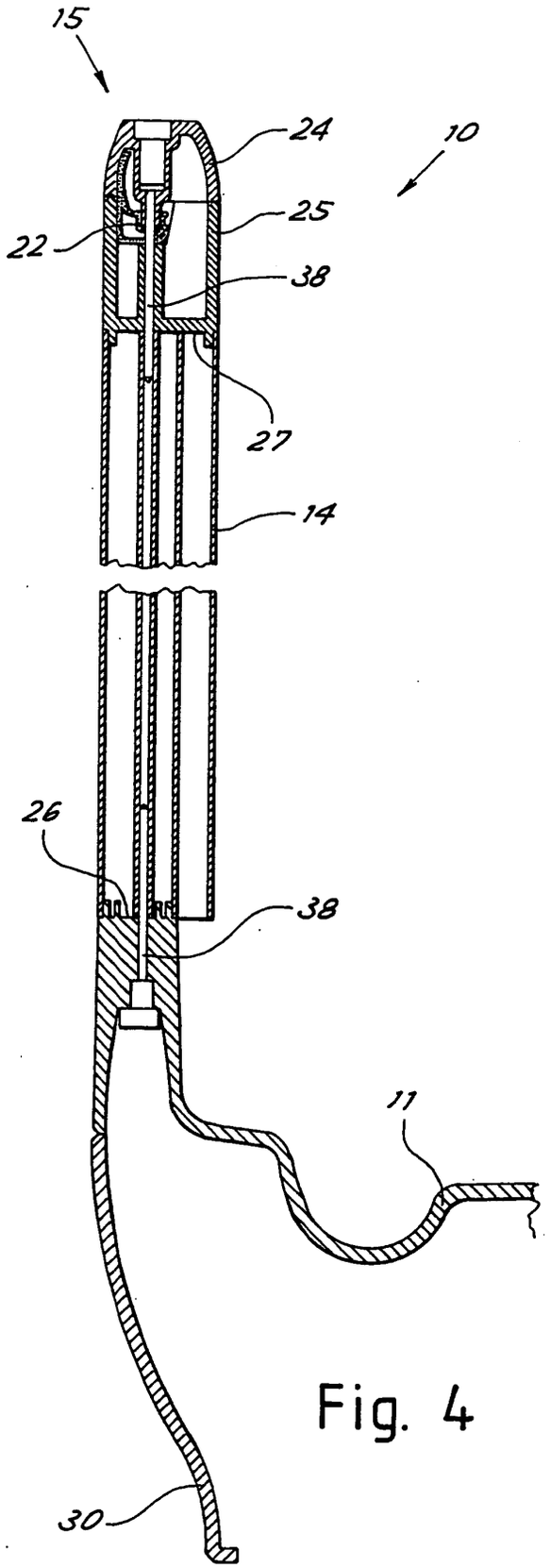

Fig. 4

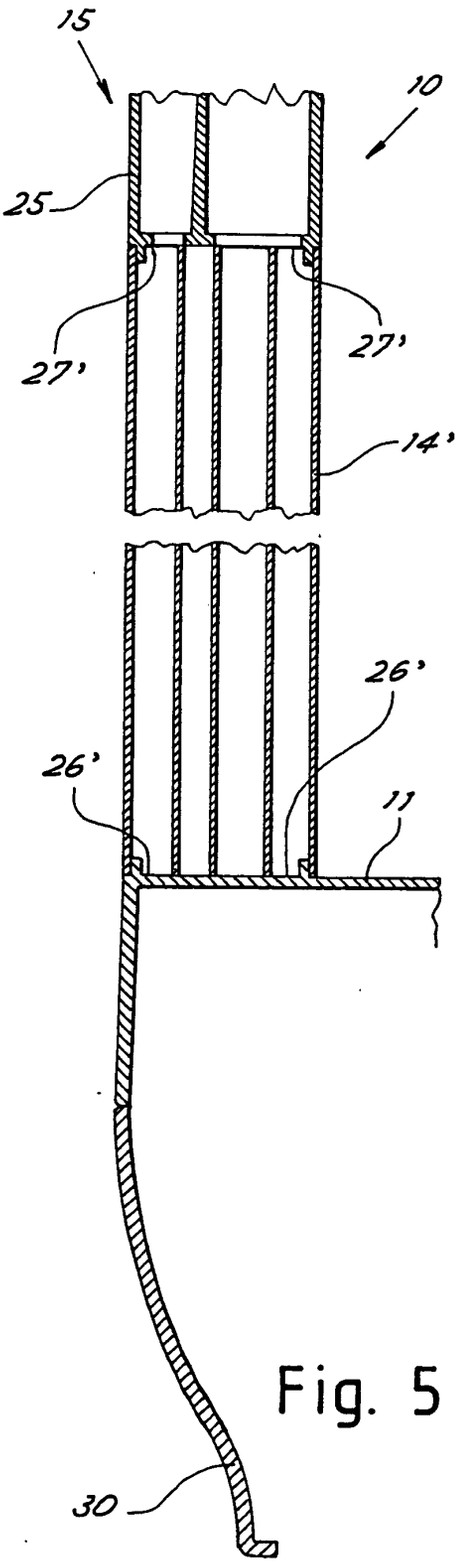

Fig. 5

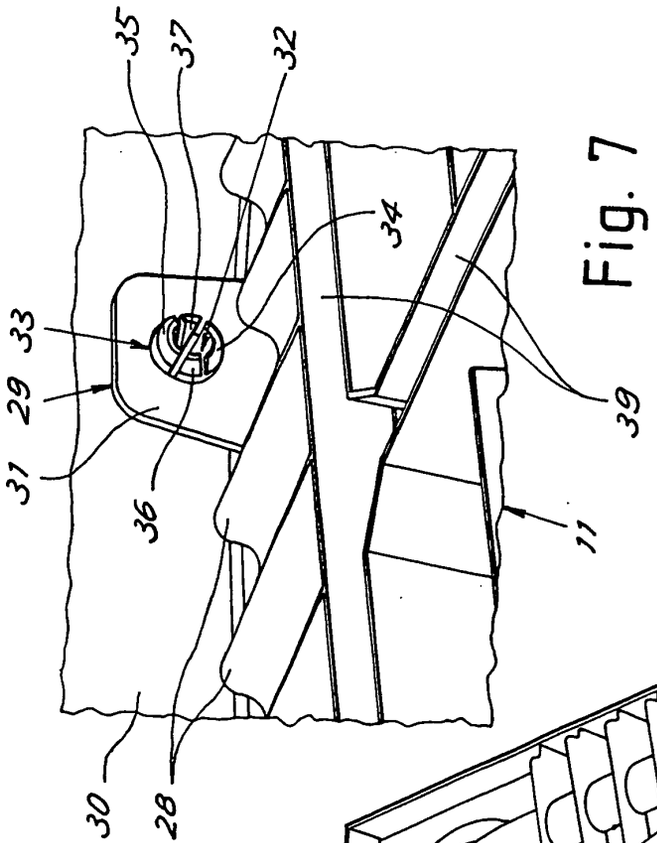

Fig. 7

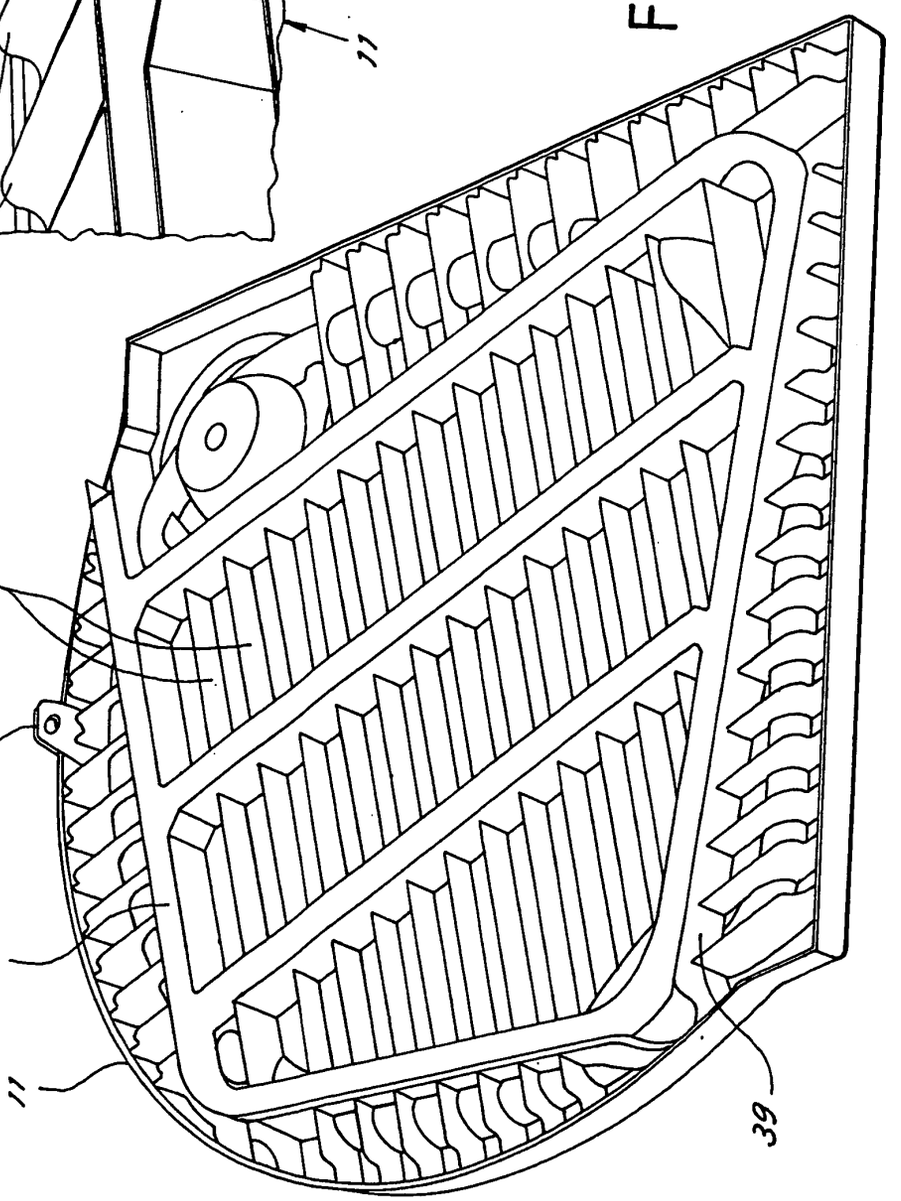

Fig. 6

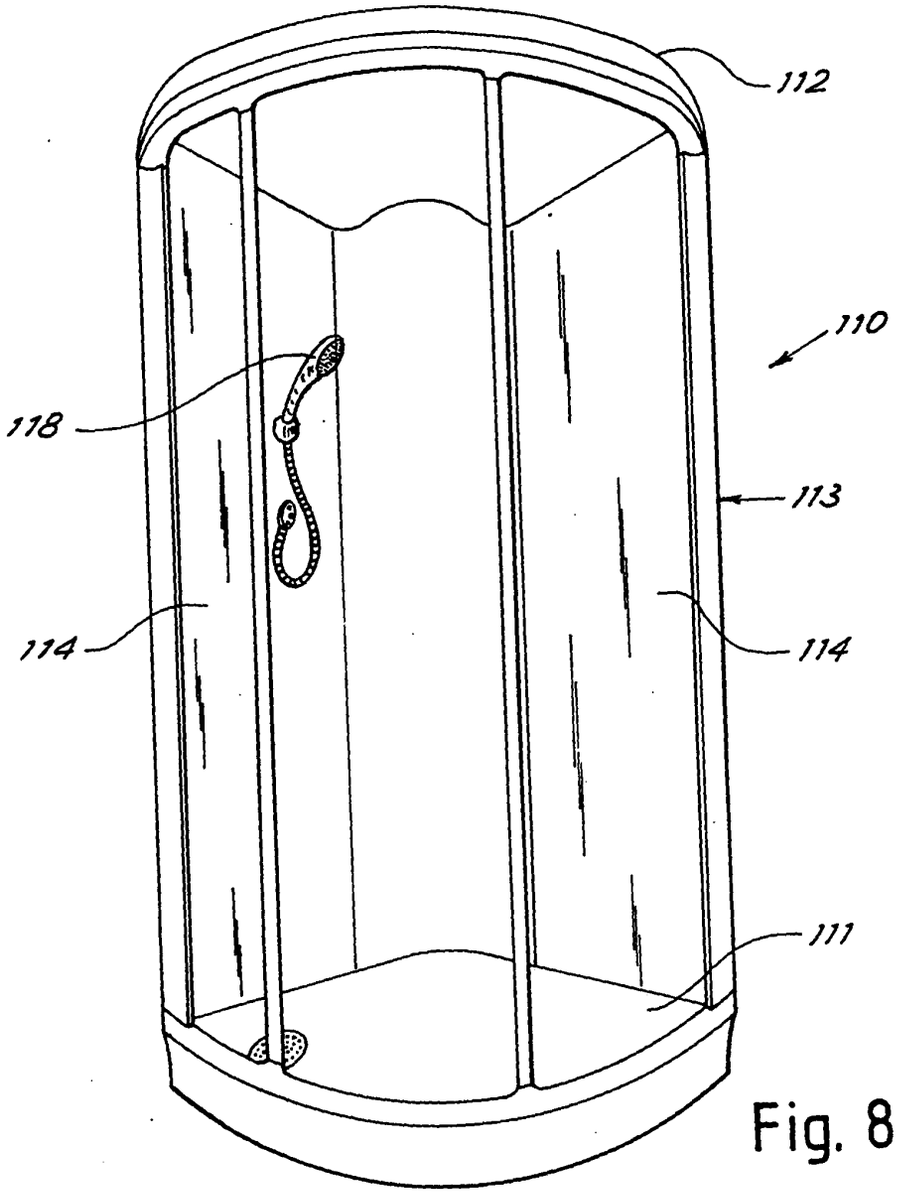

Fig. 8

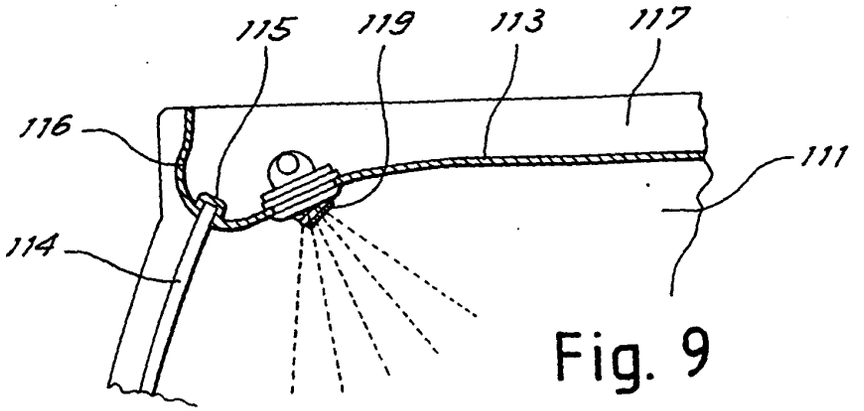

Fig. 9