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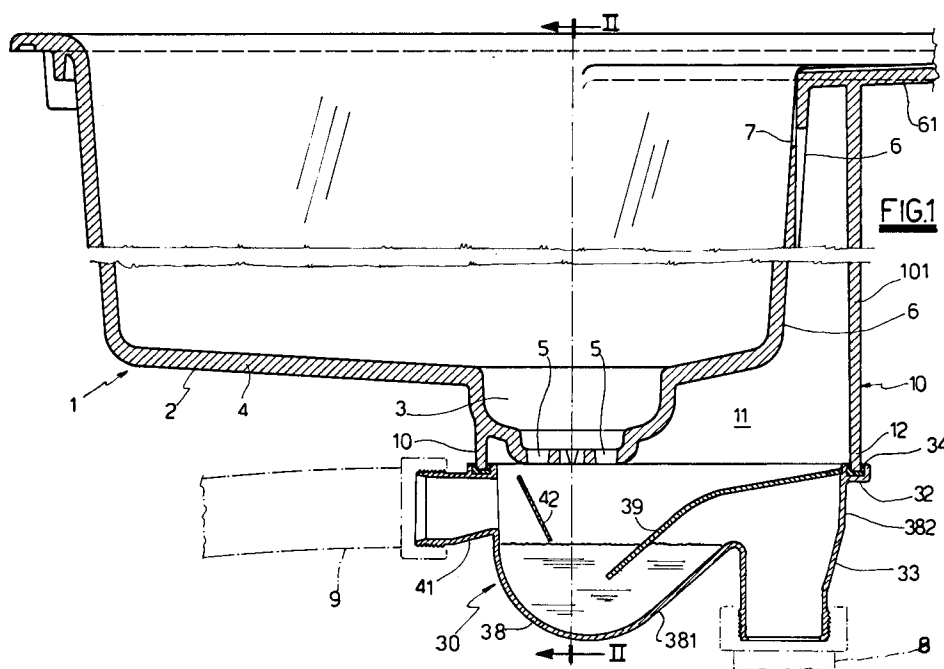
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EUROPEAN PATENT APPLICATION(21) Application number: **94202139.5**(51) Int. Cl.⁶: **E03C 1/14, E03C 1/232, E03C 1/28**(22) Date of filing: **22.07.94**(30) Priority: **05.08.93 IT RE930062 U****I-42025 Cavriago (Reggio Emilia) (IT)**(43) Date of publication of application:
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I-42100 Reggio Emilia (IT)(54) **Unit with sanitary appliance, such as sink, wash basin or bidet, and relative discharge means.**

(57) The sanitary appliance comprises, integral therewith and projecting lowerly from its lower outer surface, a profiled wall (10) arranged to define a cavity (11) which encloses the water stream emerging both from the discharge port (3) and from the overflow aperture (7), and having a lower edge (12) defining the open lower end of the cavity (11); to the wall (10)

there is joined a profiled cup (30) which is shaped to define a trap passage, has an open upper end into which the inlet of the trap passage opens and of which the edge (32) is arranged to sealedly mate with the lower edge (12) of the profiled wall (10), and has an outlet port (33) communicating with the final end of the trap passage.

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This invention relates to sanitary appliances of sink, wash basin, bidet and similar type, ie appliances comprising at least one water-containing bowl with a discharge port in its base and overflow apertures in its side.

In the known art, relatively complex means and operations are required to connect said discharge port and overflow apertures to the waste pipe.

Usually the discharge port and the overflow each require an appropriate coupling which is connected to the lower outer surface of the appliance, and a common manifold which is then connected to a trap element, itself connected to the waste pipe.

The various connection operations are relatively complicated and require specialized labour and relatively lengthy assembly/removal times.

These means and operations are further complicated if other discharge pipes are to be connected to said manifold, for example the discharge from a washing machine or from a dishwasher.

A further drawback derives from the fact that the joints between the various elements of the discharge-trap assembly and between this and the sanitary appliance are often a cause of water leakage because of their relative complication.

In particular it is frequently difficult and complicated to connect the couplings to the bowl at the overflow apertures.

The object of the present invention is to obviate the aforesaid drawbacks.

Said object is attained according to the invention both by modifying the lower outer surface of the sanitary appliance and by a special profiled cup applied to the sanitary appliance.

According to the invention the sanitary appliance comprises a profiled wall projecting lowerly from the lower surface of the appliance and integral therewith, to define, together with the lower surface of the appliance, a cavity enclosing the water stream leaving both the discharge port and the overflow aperture, and having a lower edge defining the open lower end of said cavity.

The profiled cup is shaped to define a trap passage, has an open upper end into which the inlet of the trap passage opens and of which the edge is arranged to sealedly mate with the lower edge of the profiled wall, and has an outlet port communicating with the final end of the trap passage.

The invention is described in detail hereinafter with the aid of the accompanying figures, which show some embodiments thereof.

Figure 1 is a section on an axial vertical plane through the unit of the invention applied to a single-bowl sink.

Figure 2 is a detail of the section on the plane II-II of Figure 1.

Figure 3 is a plan view from below of a detail of the sink of Figure 1.

Figure 4 is a plan view from above of the profiled cup of Figure 1.

Figure 5 is a section on an axial vertical plane through the unit of the invention applied to a double-bowl sink.

Figure 6 is a plan view from below of a detail of the sink of Figure 5.

Figures 1-4 show the invention applied to a sanitary appliance 1 of sink type with a single bowl 2 for containing water.

The bowl 2 has a suitable discharge port 3 in its base wall 4.

The port 3 is formed integrally with the sanitary appliance and is shaped to define discharge holes 5 and to receive a closure plug; in other words the port 3 also acts as a usual drain fitting (which in the known art is constructed of metal and applied to a hole in the bowl, whereas in the present case it is formed integrally with the sanitary appliance).

In its side, ie in a lateral wall 6, the bowl 2 comprises a number of overflow apertures 7.

According to the invention a profiled wall 10 projects lowerly from the lower outer surface of the appliance 1 and is integral with this latter.

Together with the lower surface of the appliance 1, the wall 10 defines a cavity 11 which encloses the water stream leaving both the discharge port 3 and the trap passage apertures 7, and has a lower edge 12 defining the open lower end of the cavity 11. Specifically, in the embodiment shown in Figures 1-4, the lower edge 12 lies in a horizontal plane and has an elongate closed ring profile. The wall 10 has a portion 101 of relatively large height with directrix of circular arc form, rising from the lower edge 12 to reach a virtually horizontal wall 61 forming part of a flat portion acting as a draining board. Said wall portion 101 faces the lateral wall 6 and forms therewith a sort of duct enclosing the stream leaving the apertures 7.

The portion 101 then joins the remaining part of the wall 10, of lesser height, which is joined to the lower surface of the base wall 4 to surround the port 3.

Advantageously the wall 10 is formed integral with the appliance 1 during the stage in which this latter is formed.

Consequently the present invention is applicable typically to sanitary appliances formed of synthetic material such as glass-reinforced plastic. It can however also be applied in the case of appliances formed from more traditional materials, such as ceramic.

A profiled cup 30, shaped to define a trap passage, is applied to the appliance 1 formed as heretofore described.

The cup 30 has an open upper end bounded by an edge 32 at which the trap passage opens (described in greater detail below). The edge 32 is arranged to sealedly mate with the lower edge 12 of the wall 10.

The cup 30 also has an outlet edge 33 communicating with the final end of the trap passage.

Specifically, the edge 32 of the cup 30 lies in a horizontal plane and in plan view has a profile identical with that of the edge 12 of the wall 10. In addition, it is arranged to sealedly engage the edge 12 when the wall 10 and cup 30 are brought together.

In detail, the edge 32 defines a groove 321 to receive a seal gasket 34 which engages the edge 12 of the wall 10. The cup 30 is fixed to the wall 10 by screws 35 inserted through holes provided through suitable enlarged portions 37 and engaging suitable threaded seats 14 provided in enlarged portions 15 of the wall 10.

The cup 30 is then connected to the wall 10 by simply tightening the screws 35 into their seats 14. The cup 30 can be disconnected from the wall 10 by unscrewing.

Specifically, the cup 30 is shaped in the following manner.

It comprises a container body 38 with its upper end open, to define said upper end of the cup.

The body 38 is formed from a first portion lowerly closed by a cup-shaped wall 381, and a second portion positioned to the side of the first portion to define the outlet port 33.

Within the container body 38 there is a baffle 39 with horizontal generating lines and an inclined profile, joined to two opposing sides and to the downstream region of the body 38.

The baffle 39 commences above the port 33 and terminates within the first portion below the level of the water contained in said cup-shaped lower wall 381.

Consequently the baffle 39, in combination with the lower wall 381, defines a trap duct, of which the inlet is connected to the upper end of the cup 30 and the outlet is connected to the outlet port 33.

Advantageously the profiled cup 30 comprises one or more lateral inlet ports 41 to be connected to the discharge 9 of other appliances, for example to the discharge of a washing machine or of a dishwasher. Alternatively, said port 41 can be closed by a usual plug. The port 41 is positioned in the portion 381 in front of the baffle 39.

Advantageously in the cup 30 there is also provided a small deviator baffle 42 facing the lateral port 41 at a short distance therefrom, its purpose being to downwardly deviate the jet entering the cup 30.

The water leaving the bowl 2 passes through the discharge port 3, falls into the underlying inlet

of the trap duct of the cup 30 and from here leaves through the port 33 which is obviously connected to a waste pipe (forming part of the water disposal piping of the house).

The water passing through the overflow apertures 7 falls onto the baffle 39 and from here descends into the inlet to the trap passage duct. Likewise the water discharged through the pipe 9 enters the trap passage duct via the lateral port 41.

Figures 5 and 6 show the invention applied to a sink comprising two bowls 2, two relatively close opposing lateral walls 6, and overflow apertures 7 positioned in one of said walls 6 and hence communicating with the space defined between said lateral walls 6. In addition each bowl 2 has a respective discharge port 3.

A profiled wall 10 of different shape from the aforescribed profiled wall is provided, again for the purpose of defining a cavity enclosing the water stream leaving the two discharge ports 3 and the overflow apertures 7.

In detail, the wall 10 comprises a lower portion 103 of elongate closed ring form surrounding the two discharge ports 3 and from which there extend two mutually parallel upwardly elongate upper portions 104, each of which joins the lateral wall 6 of one bowl 2 to the opposing lateral wall 6 of the other bowl 2. The two portions 104 together with the two walls 6 define a sort of vertical duct for the water leaving from the overflow apertures 7.

In this application, the profiled cup 30 is shaped to define two trap passages each having its inlet positioned in correspondence with a respective discharge port 3 of the bowl 2 and its final end connected to a common outlet port 33.

In the embodiment shown in Figure 5, the cup 30 is formed from a container body 38 and a baffle 39, its shape deriving from symmetrically joining together two cups 30 of the type shown in Figures 1-4 and positioning the outlet port 33 in common.

In this case two lateral ports 41 are provided.

From the foregoing description it is apparent that with the present invention the operations involved in connecting the discharges 3 and 7 of the appliance 1 to the waste pipe 8 are extremely simple and fast, it being necessary merely to connect the profiled cup 30 by screws 35 to the outer lower part of the sanitary appliance 1, specifically to its profiled wall 10.

This connection, and likewise its disconnection, are so simple that they can be effected by any person even if not expert in such operations.

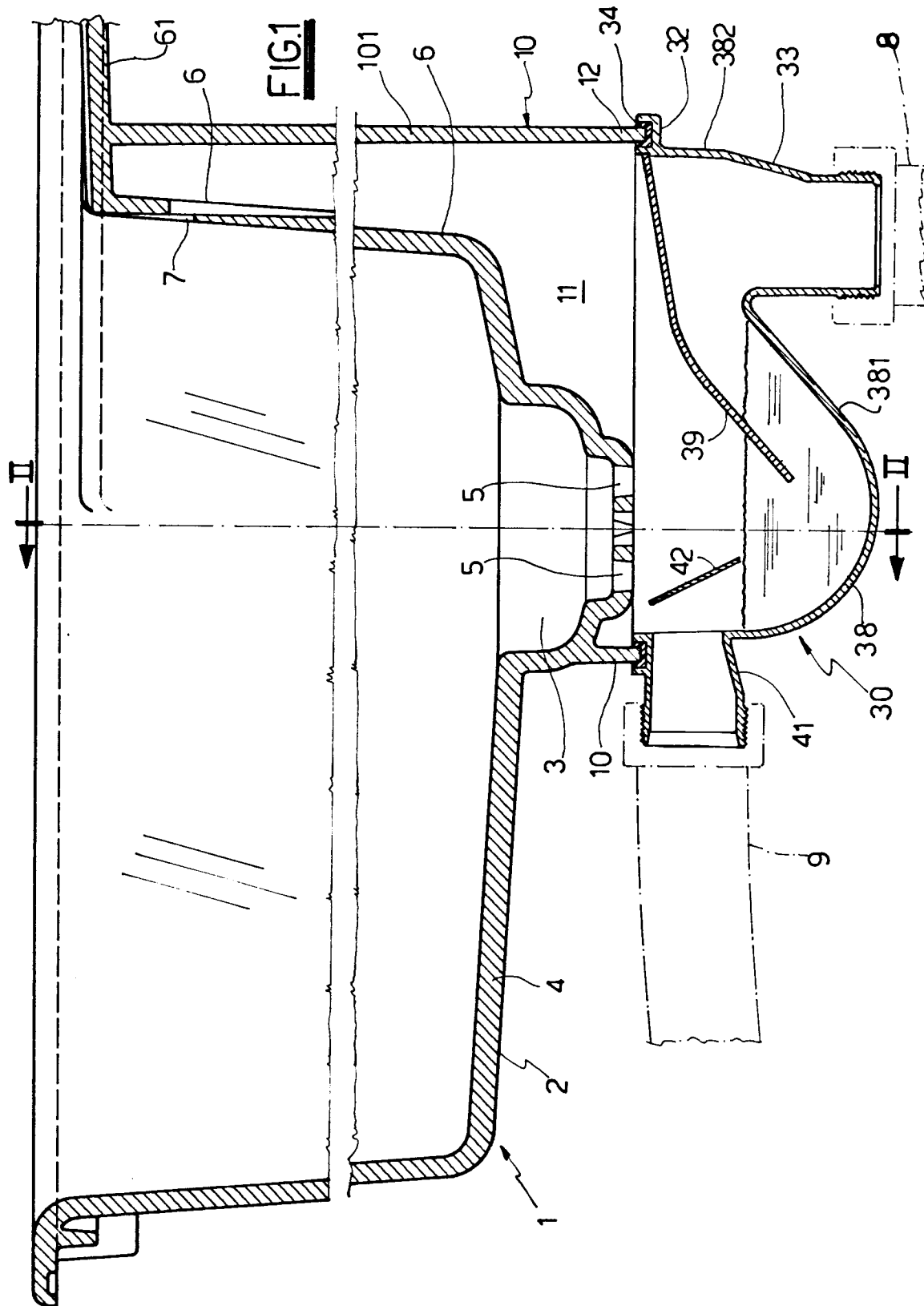
In addition the space occupied by the profiled cup 30 is small compared with equivalent members used in the known art. Consequently the useful space below the sanitary appliance is increased, which space can therefore be used for example as a containing compartment.

Moreover the seal is more reliable than in the known art in that the seals between the appliance and the pipes, which in the known art are those most critical to form, are replaced according to the present invention by the single seal between the wall 10 and the cup 30, this seal not presenting any difficulty in its formation.

Numerous modifications of a practical and applicational nature can obviously be applied to the invention, but without leaving the scope of the inventive idea as hereinafter claimed.

Claims

1. A unit with a sanitary appliance of sink, wash basin, bidet or similar type and relative discharge means, said appliance comprising at least one water-containing bowl (2) with a discharge port (3) and an overflow aperture (7), characterised by comprising:
 - a profiled wall (10) projecting lowerly from the outer lower surface of the appliance (1) and integral therewith, to define, together with the outer lower surface of the appliance (1), a cavity (11) enclosing the water stream leaving both the discharge port (3) and the overflow aperture (7), and having a lower edge (12) defining the open lower end of the cavity (11);
 - a profiled cup (30) which is associated with the profiled wall (10) and shaped to define a trap passage, has an open upper end into which the inlet of the trap passage opens and of which the edge (32) is arranged to sealedly mate with the lower edge (12) of the profiled wall (10), and has an outlet port (33) communicating with the final end of the trap passage.
2. A unit as claimed in claim 1, characterised in that the lower edge (12) of the profiled wall (10) and the edge (32) of the profiled cup (30) have an identical profile in plan view and mutually engage in a sealed manner when the profiled wall (10) and profiled cup (30) are brought together.
3. A unit as claimed in claim 1, characterised in that said profiled cup (30) comprises:
 - a container body (38) the upper end of which defines said upper end of the cup and having a first portion closed lowerly by a cup-shaped lower wall (381) and a second portion positioned to the side of the first portion to define said outlet port (33);
 - a baffle (39) of inclined profile joined to two opposing sides and to the downstream region of the container body (38), to terminate within the first portion below the level of the water contained in said cup-shaped lower part (381).
4. A unit as claimed in claim 1, characterised in that said profiled cup (30) has at least one lateral inlet port (41) communicating with the inlet of the trap passage.
5. A unit as claimed in claim 4, characterised in that said profiled cup (30) has at least one deviator baffle (42) positioned facing the lateral inlet port (41) at a short distance therefrom.
6. A unit as claimed in claim 1, in which the sanitary appliance (1) comprises two bowls (2) with two relatively close opposing lateral walls (6), said overflow apertures (7) communicating with the space defined between said lateral walls (6), each bowl (2) having respective discharge ports (3), characterised in that said profiled wall (10) comprises a lower portion (103) of closed ring form surrounding the two discharge ports (3) and from which there extend two mutually parallel upwardly elongate upper portions (104), each of which joins a lateral wall (6) of one bowl (2) to the opposing lateral wall (6) of the other bowl (2), to define a sort of vertical duct for the water leaving from the overflow (7).
7. A unit as claimed in claim 6, characterised in that said profiled cup (30) is shaped to define two trap passages, each having its inlet positioned in correspondence with a respective discharge port (3) and its final end connected to a common outlet port (33).



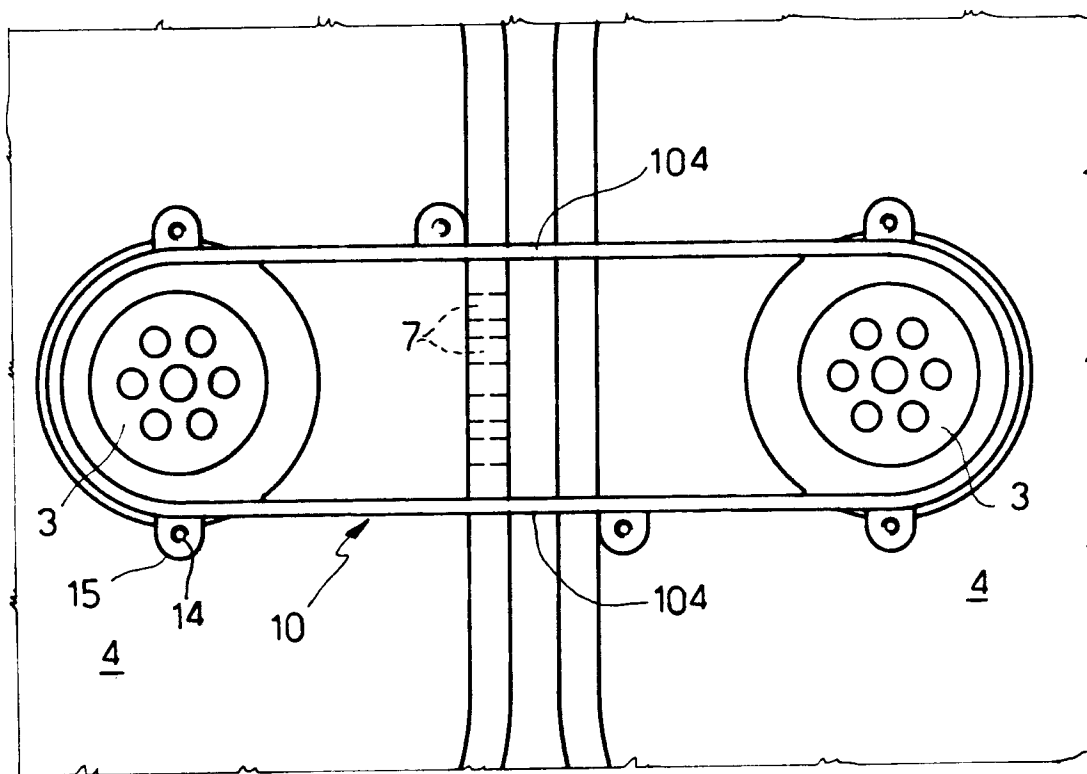


FIG. 6

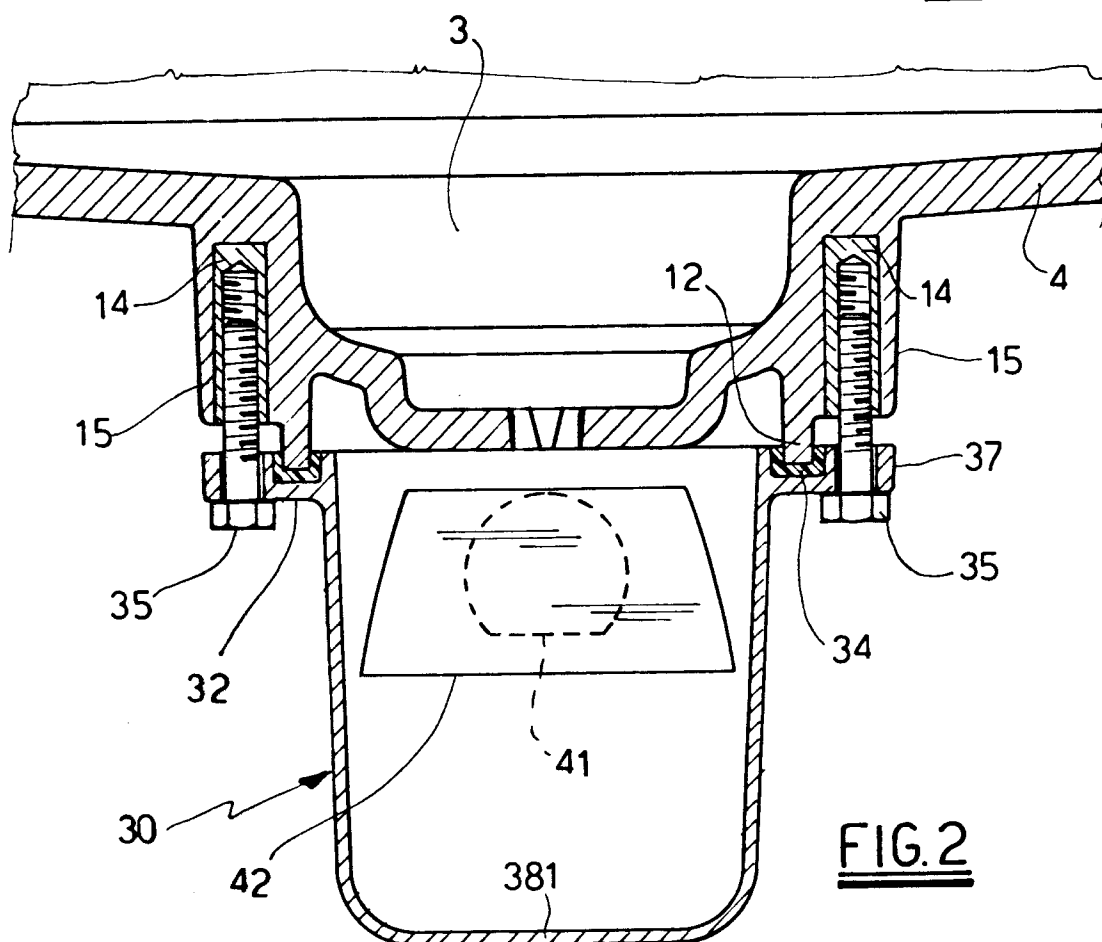
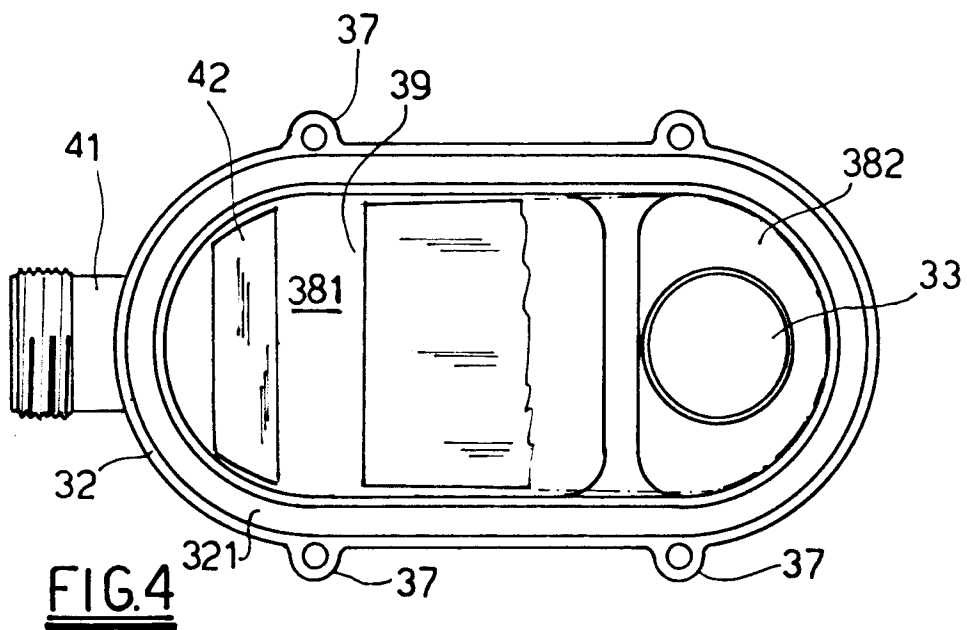
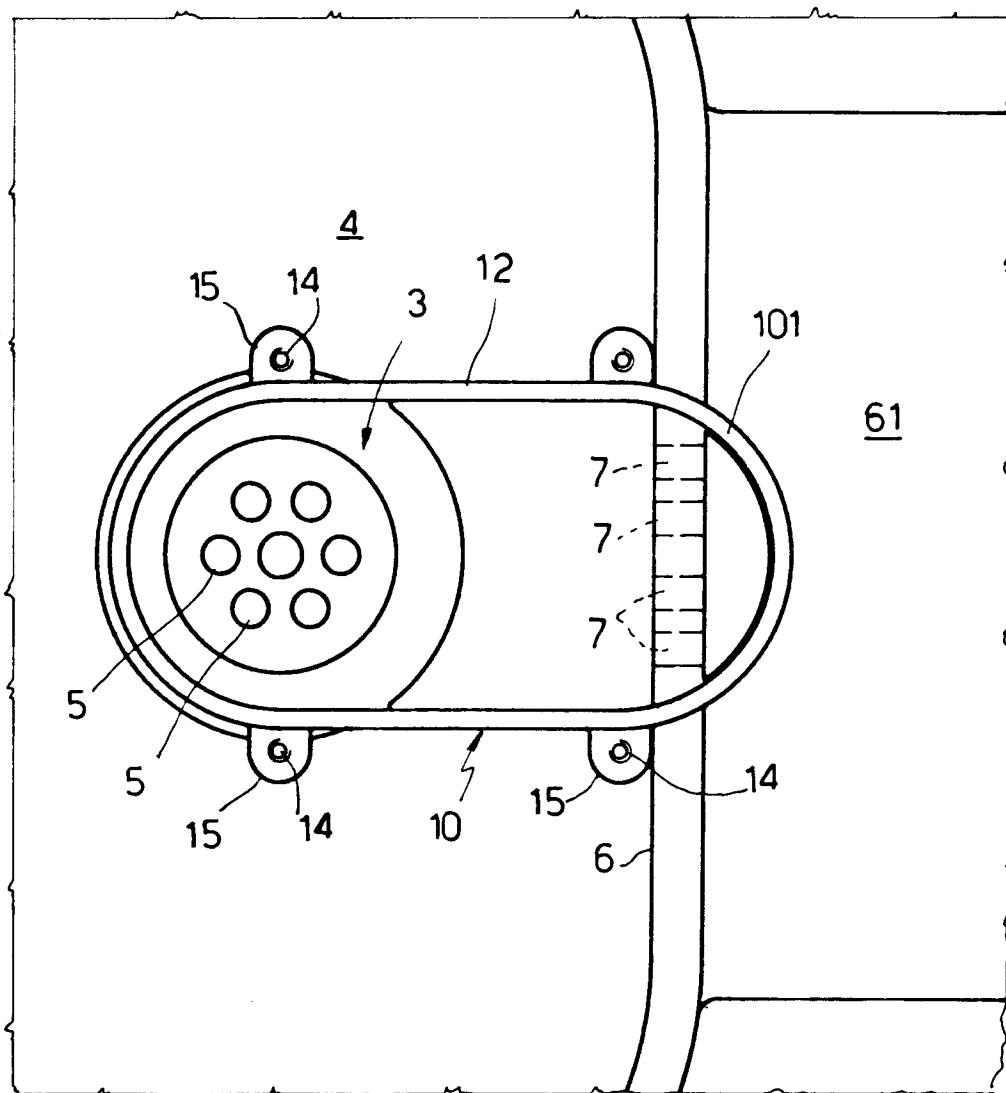
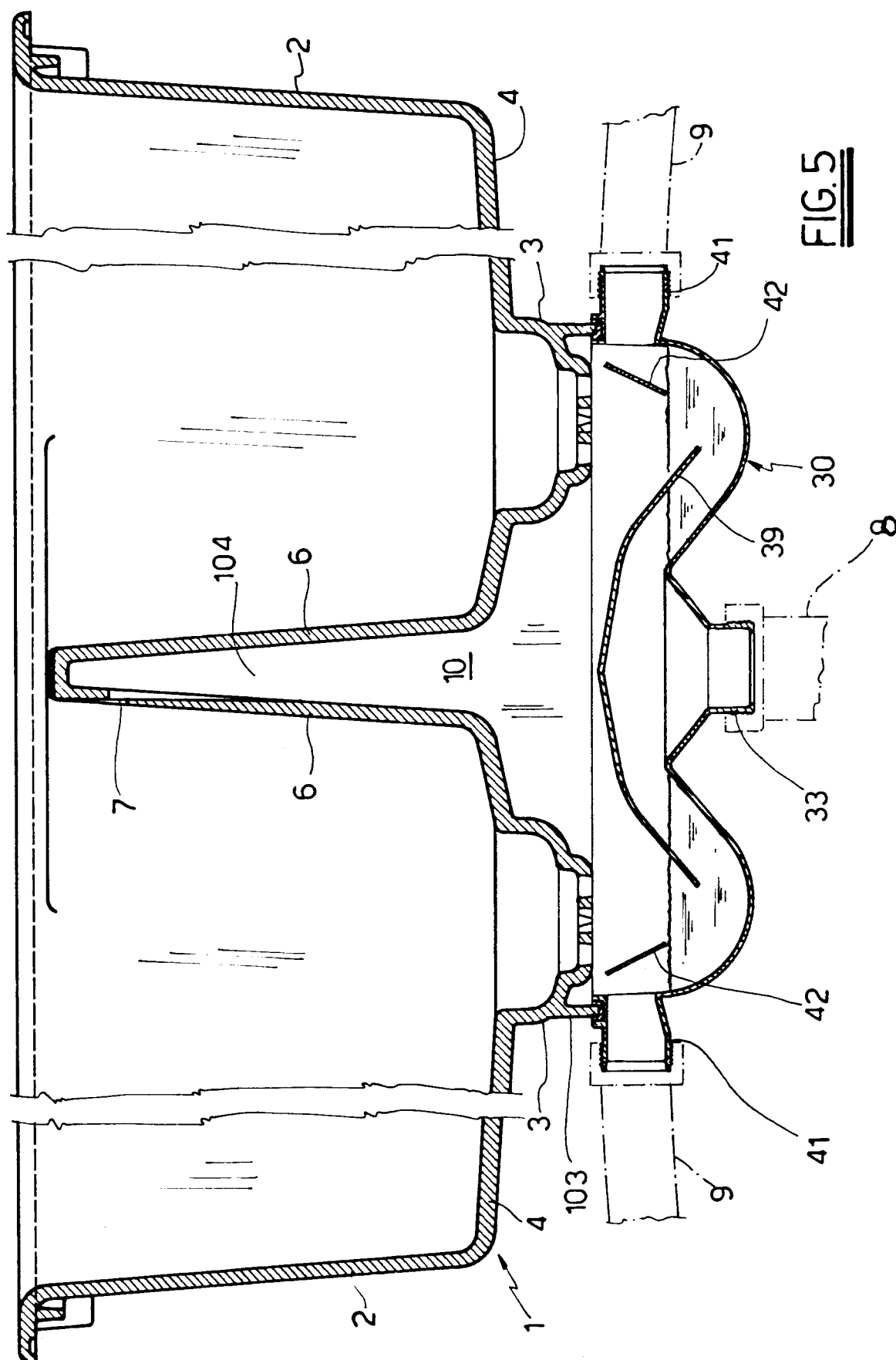


FIG. 2

FIG.3







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EUROPEAN SEARCH REPORT

Application Number
EP 94 20 2139

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)
X	FR-A-1 017 211 (NOSER ET AL.) * page 1, right column, paragraph 2; figures 3,5,6 *	1,3	E03C1/14 E03C1/232 E03C1/28
Y	---	4,6	
X	GB-A-373 308 (SADLER) * page 2, line 80 - page 3, line 23; figures *	1,2	
Y	---	4	
Y	FR-A-2 076 827 (LENNE) * figure 1 *	6	
Y	---		
A	GB-A-342 572 (SOUTHOOK POTTERIS LIMITED) * figure 1 *	1-3	
A	---	4	
A	FR-A-1 422 763 (MALAVASI) * figures *		
A	---		
A	IKZ, no.17, 1979 pages 46 - 54 'ENTWÄSSERUNGSGEGENSTÄNDE TEIL II' * figure 28 *		TECHNICAL FIELDS SEARCHED (Int.Cl.6) E03C
A	---	1,6	
A	DE-B-12 92 089 (SUNDS VERKSTÄDER AKTIEBOLAG) * figures *		
A	-----		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 25 November 1994	Examiner De Coene, P
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