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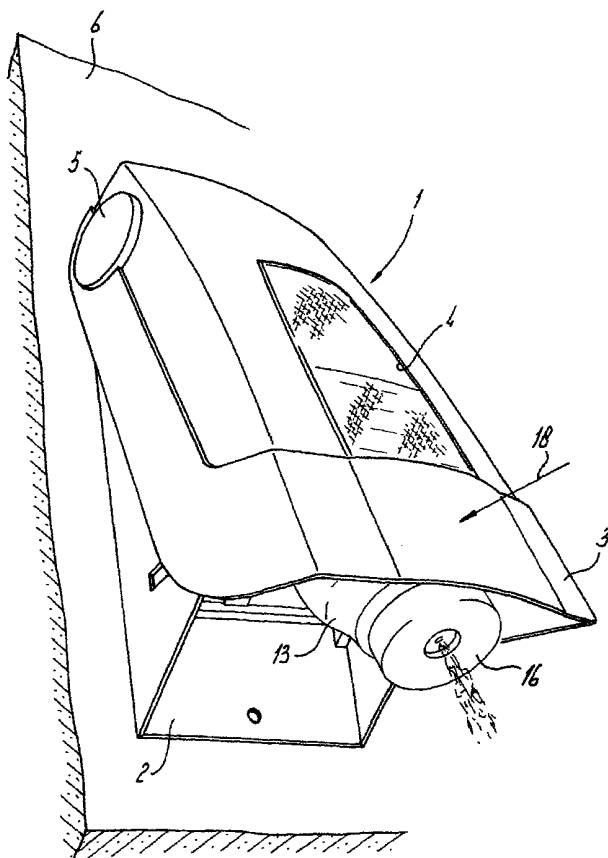
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[Continued on next page]

(54) Title: DISPENSER ASSEMBLY FOR LIQUIDS



(57) Abstract: Pump-less dispenser assembly (1) for liquids. This consists of a resilient plastic container (13) to contain the liquid to be dispensed plus a dispenser in which this container is accommodated. The dispenser consists of a carrier (2), which is to be fixed to a wall (6) or the like and on which a levering mechanism constructed as a protective cover (3) has been fitted. By pressing on the protective cover, the container fitting tightly between the protective cover and the carrier is flattened to some extent and the liquid concerned is dispensed. With this arrangement the distance (b) from the point of engagement on the protective cover (17) to the connection of the container (12) is greater than the distance (a) from the connection of the container to the point of engagement between the container and carrier (11).

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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Dispenser assembly for liquids

The present invention relates to a pump-less dispenser assembly for liquids, comprising a carrier, which is to be fixed to a wall or the like and is provided with a connection wall, a container, which on one side is connected to said carrier, and a levering mechanism, which engages on a side of said container located opposite said one side of the carrier and is hingeably joined to said carrier. A dispenser assembly of this type is disclosed in US 4 258 865 A.

In general a distinction must be made between dispenser assemblies which function with the aid of a small pump and those where such a pump is not present. It will be understood that the latter construction is simpler and less expensive. Moreover, it has the advantage that when the container is replaced all parts which come into contact with the liquid to be dispensed are also replaced. This is in contrast to constructions in which a pump is used and, apart from changing the container periodically, cleaning of the pump is required.

Pump-less dispenser assemblies according to the prior art consist of some sort of construction where a container or bottle is fixed to a carrier. The bottle then has to be squeezed from two sides using the hand. Because on the other hand the container or bottle bears against the carrier, the volume thereof decreases and the contents thereof are forced to flow out, as a result of which the dispensing operation is achieved.

With this construction it has been found that it is difficult to empty the bottle completely. In fact the constructor is faced with a dilemma. On the one hand, it is possible to produce the bottle from a relatively hard, resilient plastic material, as a result of which it springs back into shape after each dispensing operation. By this means when the bottle is next compressed sufficient air can be displaced to force the remainder of the contents out of the container. However, because the plastic used is relatively stiff in order to guarantee that it returns to shape, the effort needed to compress the bottle is relatively substantial.

This problem can be overcome by producing the plastic container from a relatively soft plastic material that is easy to compress. However, it is then no longer guaranteed that the bottle will assume the original shape again after compression. The result of this is that it is difficult to empty the bottle completely.

A carrier consisting of two parts hingeably joined to one another is disclosed in US 4 258 865. One part is designed for connection to a wall or the like and the other part,

hingeably connected thereto, faces towards the user during use. A container is accommodated in this other part. A lever is hingeably mounted in the first part that faces towards the wall. Only a lip of this lever protrudes from this first part. On operation a flexible part of the container is compressed and a liquid is dispensed. This construction is relatively complex.

The aim of the present invention is to avoid the disadvantages associated with the prior art, but still provide a dispenser assembly without a pump.

This aim is achieved with the dispenser assembly described above in that said container is connected to the carrier close to the connection wall thereof, in that the carrier surrounds a first part of said container and in that the remainder of said container is surrounded by the levering mechanism constructed as a protective cover.

According to the invention the levering mechanism is constructed as a protective cover. As a result the larger part of the container is out of sight. Optionally there can be a window in the protective cover, through which the contents of the container can be observed, if the container is made of transparent material.

According to an advantageous embodiment of the invention, a lever effect is provided on compressing the container. As a result it is possible to produce the container from a relatively stiff, resilient plastic material, it nevertheless being possible for the operating forces to remain restricted, so that anyone can perform a dispensing operation without too much difficulty. According to the invention, the levering mechanism engages on the container close to the dispenser opening of the container. On the other hand the carrier engages on the container closer to the connection point between carrier and container. As a result of the use of the levering mechanism, squeezing together is no longer necessary and operation with one hand is possible.

The container can optionally be provided with an elevation which fits in said window. This elevation can provide the container with additional strength.

According to a further advantageous embodiment of the invention, the point of engagement of the carrier and the container is of convex construction. That is to say there is a convex surface on the carrier over which the container "rolls" on compression.

The protective cover can be fixed to the carrier in any way known from the prior art, but this connection preferably comprises a hinge construction. More particularly, the protective cover is fitted such that it hinges about the carrier, the container being located between them. According to an advantageous embodiment, the container is provided with

protrusions close to the connection point. These protrusions fit in corresponding receptacles in either the carrier or the protective cover.

When using a protective cover/carrier combination, according to an advantageous embodiment locking means are present which prevent the protective cover being moved too far away from the carrier. These locking means determine the rest position. Of course, it is possible to unlock these locking means in order to replace the container.

The invention also relates to a dispenser consisting of the combination of a carrier and levering mechanism as described above, possibly in combination with the locking means described above.

10 The invention also relates to a container, for dispensing liquids, provided with the features described above, as a result of which said container is suitable for incorporation in the dispenser described above.

According to an advantageous embodiment, the container is provided with an elevation or other protrusion that increases the dimensional stability, as a result of which the container returns to its original position more rapidly following compression.

15 The invention will be explained in more detail below with reference to an illustrative embodiment shown in the drawing. In the drawing:

Fig. 1 shows a perspective view of the dispenser assembly according to the invention;

Fig. 2 shows a perspective view of the dispenser according to the invention in the position in which it has been hinged open;

Fig. 3 shows a side view of the hinged-open position of the dispenser assembly according to the invention;

Fig. 4 shows a side view of the container according to the invention, in perspective view;

25 Fig. 5 shows the container according to the invention viewed from the bottom;

Fig. 6 shows the locking position of the protective cover and carrier according to the invention; and

Fig. 7 shows the locking means according to the invention in detail.

The dispenser assembly according to the invention is indicated by 1 in Fig. 1. This dispenser assembly consists of a carrier 2 and a levering mechanism/protective cover 3, which together form the dispenser, and a container indicated by 13. This container is accommodated in the dispenser such that it can be replaced. Carrier 2 is fixed in some way to a solid component, such as a wall 6. Protective cover 3 is provided with a window 4 into

which a raised, reinforcing part 15 of the container 13 is received. Protective cover 3 is fitted with the aid of hinge 5 such that it hinges about the carrier 2.

It can be seen from Fig. 2 that the carrier 2 is provided with locking means 7 as well as a point of engagement or support 11. Details of the locking means 7 can be seen in Figs. 6 and 7. It can be seen from these figures that locking lips 8 are present which are fixed to carrier 2 and engage behind locking ridges 9 fixed to protective cover 3. Locking lips 8 can be brought into the unlocked position by grasping handle 10. The locked position is shown in more detail in Fig. 7.

Support 11 is of convex construction so that the container or bottle 13 "rolls" over this surface 11 in the direction of arrow 18 (Fig. 1) when protective cover 3 is compressed.

It can also be seen from Fig. 2 that receptacles 12 are present close to hinge 5 in the interior of the protective cover 3. These function to receive protrusions 14 (Fig. 4) on container 13. Fitting of container 13 in protective cover 3 is shown in Fig. 3. The point of engagement for the operating force (arrow 18) on the protective cover is indicated by 17. The distance to hinge 5 is indicated by b. The distance between hinge 5 and support 11 is indicated by a in Fig. 3 and it can clearly be seen that a is less than b, as a result of which the lever action described above is obtained on exerting force in accordance with arrow 18. As a result it is possible to make the container 13 of a relatively stiff, resilient plastic material without a disproportionate increase in the operating force. Moreover, the dispenser can be operated with one hand, the other hand being able, for example, to collect the liquid dispensed.

The dispenser opening of the container is indicated by 16. This can be any construction known from the prior art by means of which a liquid, such as shampoo, soap and the like can be dispensed. It can be fitted on container 13 such that it can be screwed, but it is also possible that it can be removed from the container only by damaging the neck of the container, so that it is ensured that the bottle or container 13 can be used only once.

Although the invention has been explained above with reference to a preferred embodiment of the invention, it must be understood that numerous modifications can be made thereto which are immediately apparent to those skilled in the art on reading the above description and fall within the scope of the appended claims. For instance, it is possible to make the levering mechanism constructed as a protective cover of different construction, that is to say for this cover to cover all or a small portion of the container 13.

Claims

1. Pump-less dispenser assembly (1) for liquids, comprising a carrier, which is to be fixed to a wall or the like and is provided with a connection wall, a container (13),
5 which on one side is connected to said carrier (2), and a levering mechanism (3), which engages on a side of said container located opposite said one side of the carrier (2) and is hingeably joined to said carrier, characterised in that said container (3) is connected to the carrier close to the connection wall thereof, in that the carrier surrounds a first part of said container and in that the remainder of said container is
10 surrounded by the levering mechanism constructed as a protective cover.
2. Dispenser assembly according to Claim 1, wherein the distance (a) from the connection point of the container on the carrier to the point of engagement (11) between the container and the carrier is less than the distance (b) from the connection point of the container to the point of engagement (17) of the levering mechanism.
- 15 3. Assembly according to one of the preceding claims, wherein locking means (7) are present which determine the maximum (open) position of said protective cover.
4. Assembly according to one of the preceding claims, wherein said protective cover is provided with a window (4) in front of said container.
5. Assembly according to one of the preceding claims, wherein said container is
20 hingeably mounted on said carrier.
6. Assembly according to one of the preceding claims, wherein said container is provided with protrusions (14) for connection.
7. Assembly according to one of the preceding claims, wherein said container is made of a resilient plastic material.
- 25 8. Assembly according to one of the preceding claims, wherein the point of engagement (11) between the carrier and the container comprises a convex surface.
9. Dispenser comprising a carrier (2) to be fixed to a wall or the like, provided with a connection wall and a receptacle for a container, a levering mechanism (3) hingeably connected to said carrier and provided with a point of engagement for engaging on a
30 container, the levering mechanism (3) and receptacle for the container in the carrier being constructed to receive said container between them, characterised in that said receptacle for the container is arranged close to the connection wall of the carrier and in that the levering mechanism is constructed as a protective cover for said container.

10. Container for containing liquid to be dispensed, comprising a container according to one of Claims 1 - 8.
11. Container according to Claim 10, comprising an elevation (15).

fig - 1

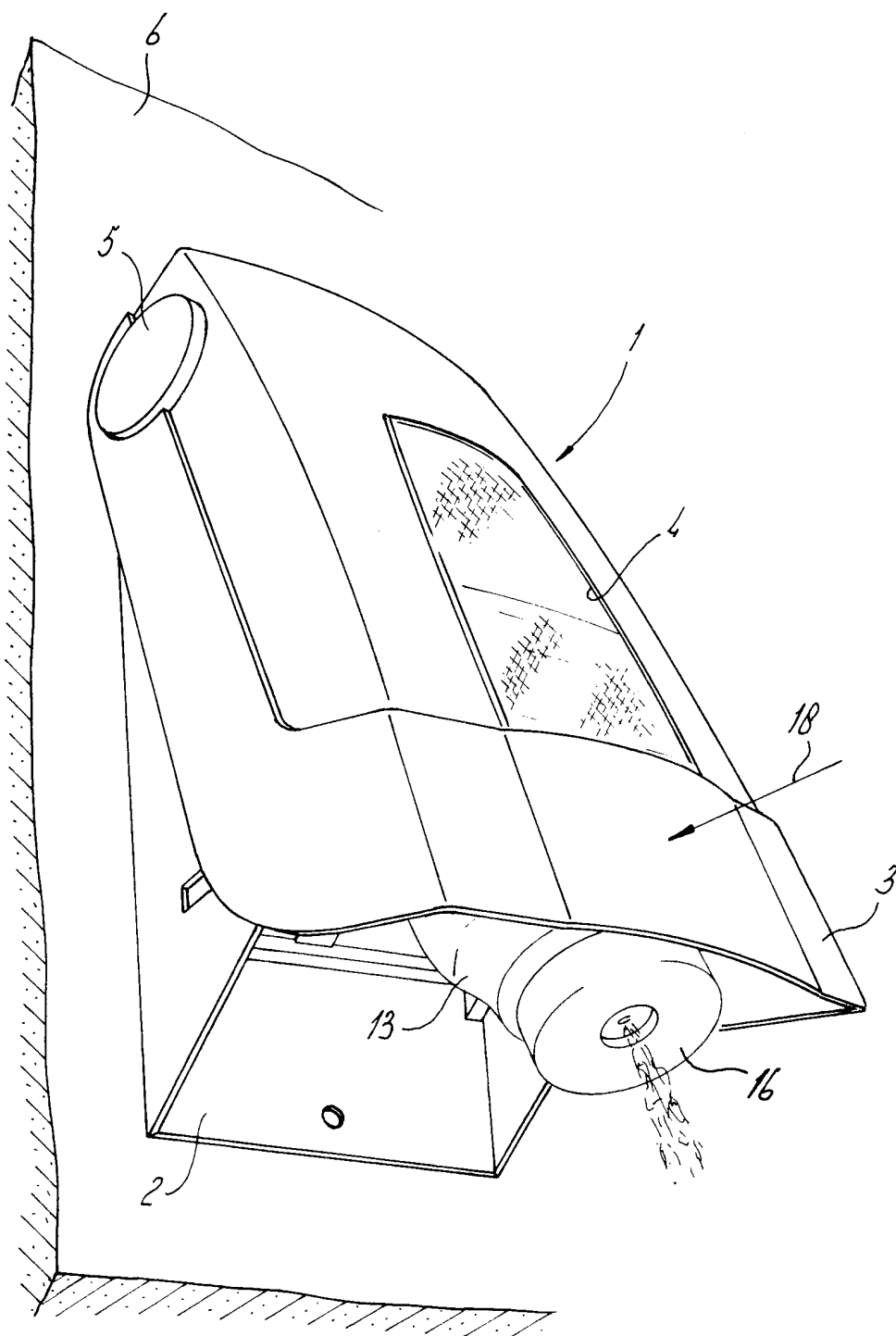


fig-2

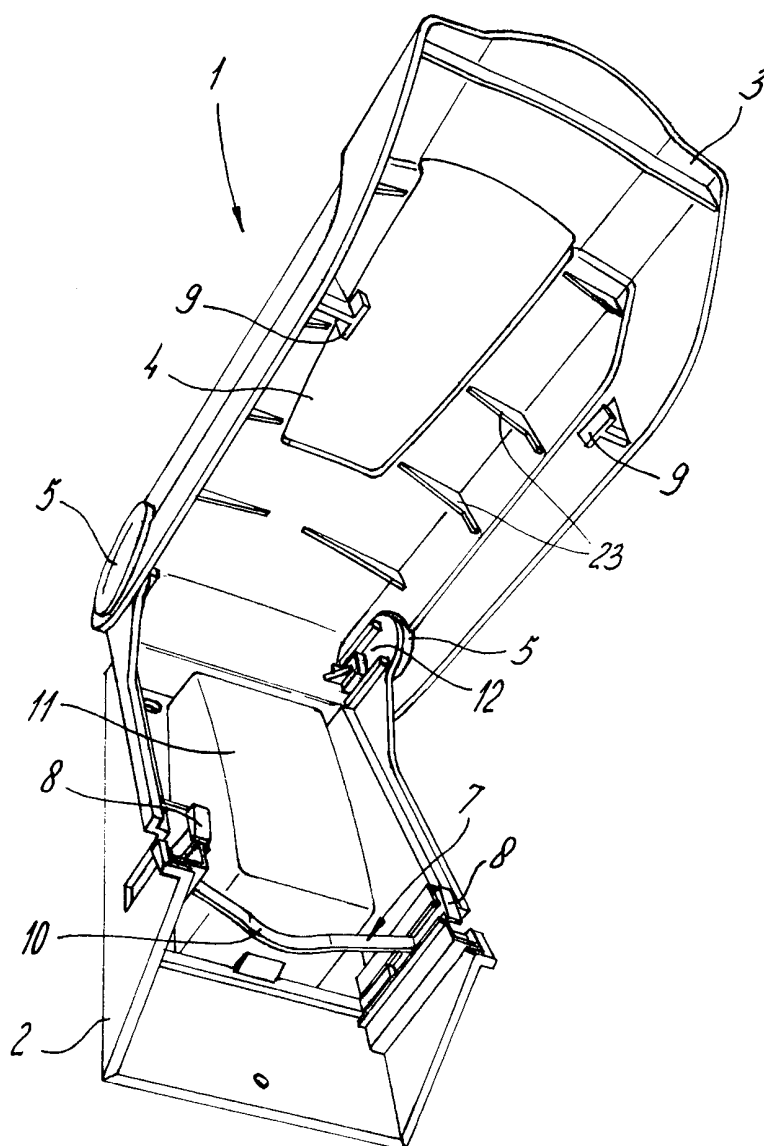
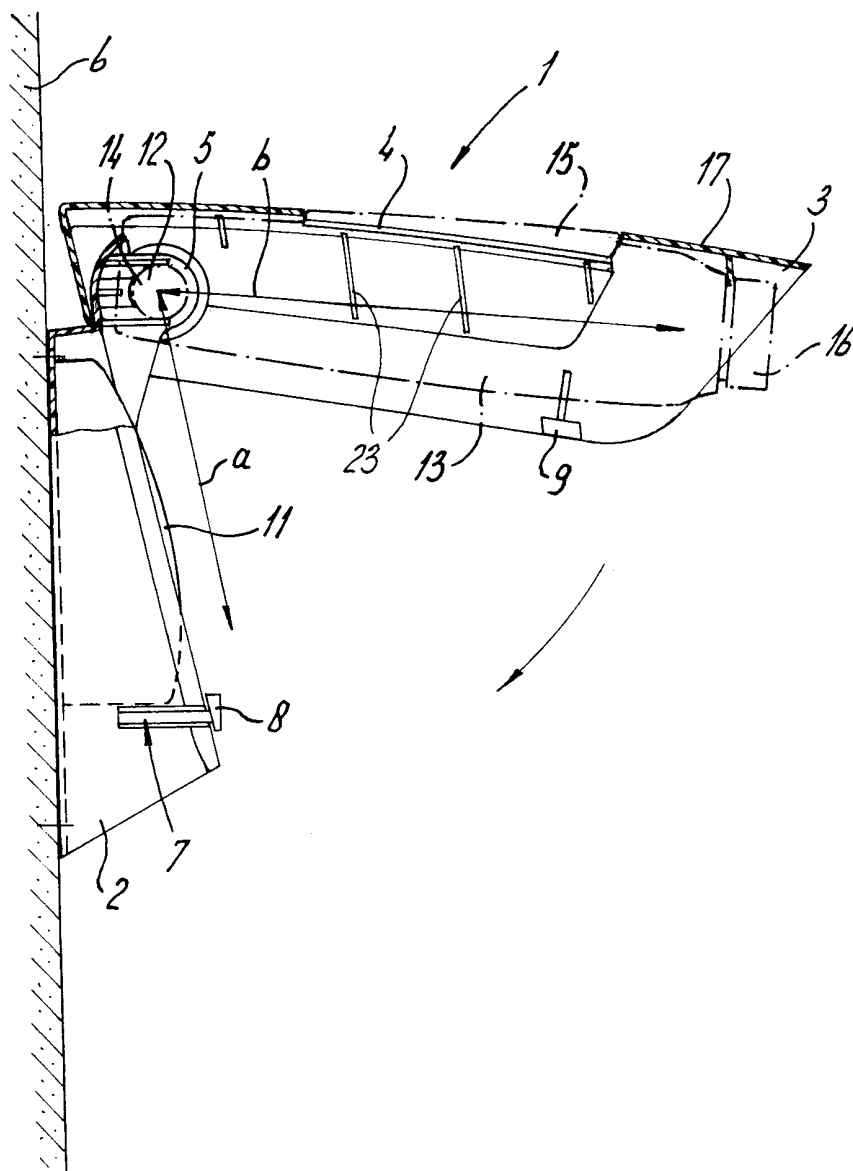


fig - 3



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fig - 4

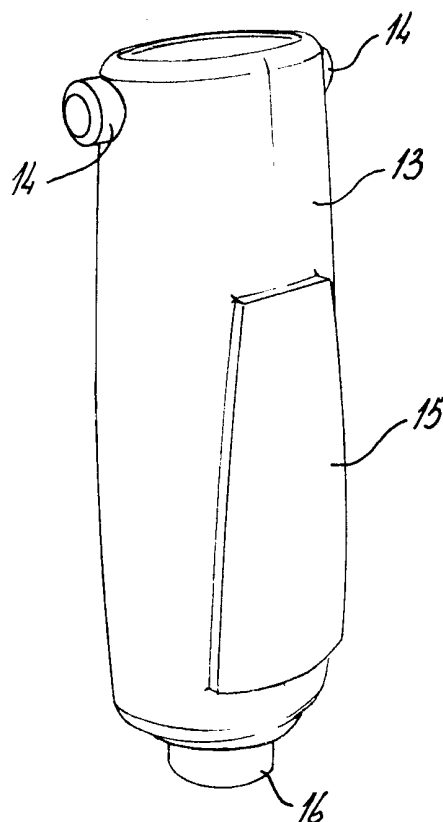
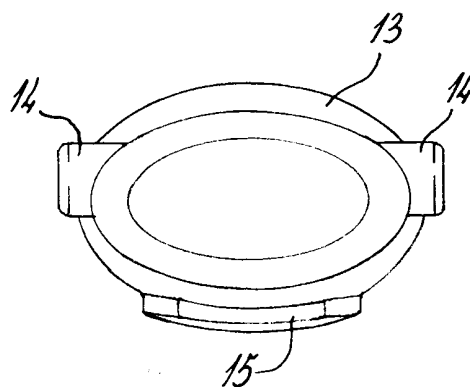


fig - 5



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fig-7

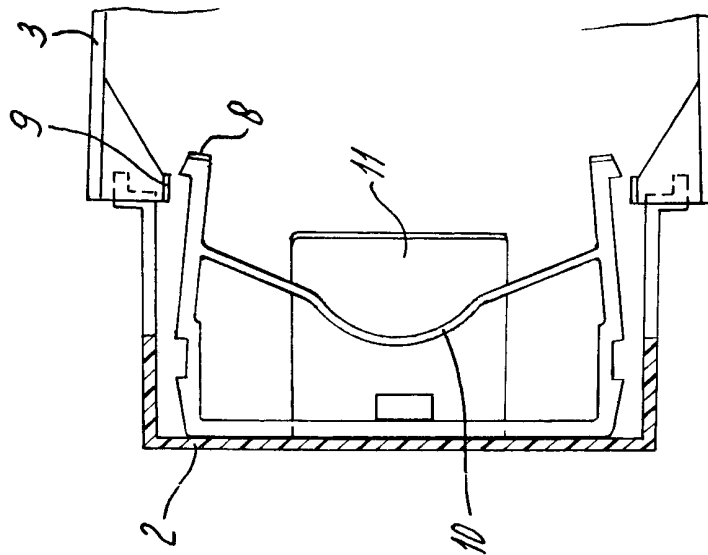
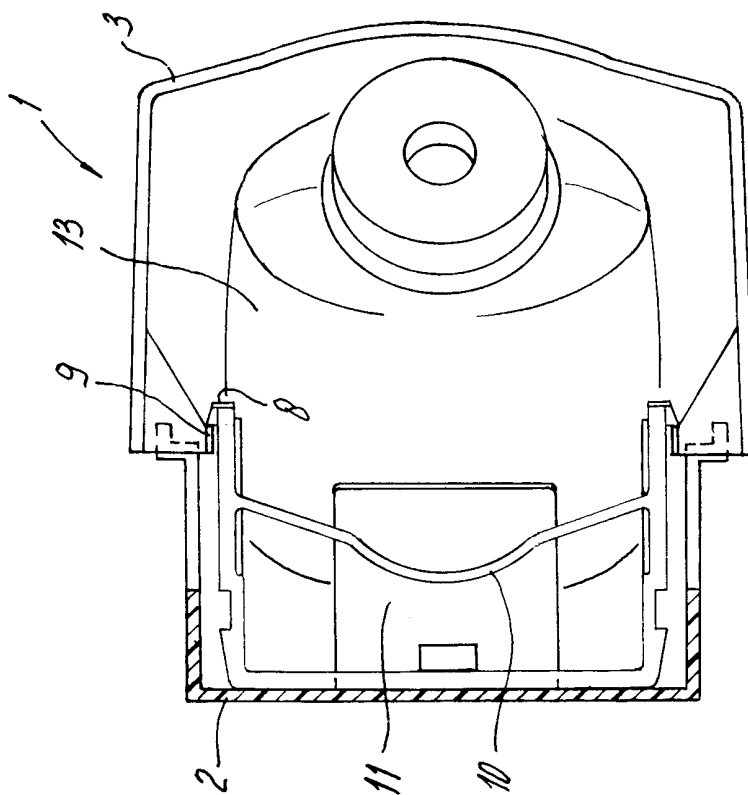


fig-6



INTERNATIONAL SEARCH REPORT

Inte. onal Application No

PCT/NL 00/00756

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A47K5/122

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A47K B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 258 865 A (VAHL JOACHIM ET AL) 31 March 1981 (1981-03-31) the whole document ---	1-3,7-12
A	US 5 417 347 A (DE LAFORCADE VINCENT) 23 May 1995 (1995-05-23) the whole document ---	1,9,11, 12
A	US 4 634 022 A (O'HALLORAN P JOSEPH ET AL) 6 January 1987 (1987-01-06) column 3, paragraph 54 -column 6, paragraph 23; figures 1-6 -----	1,6,9, 11,12



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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* & * document member of the same patent family

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INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

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