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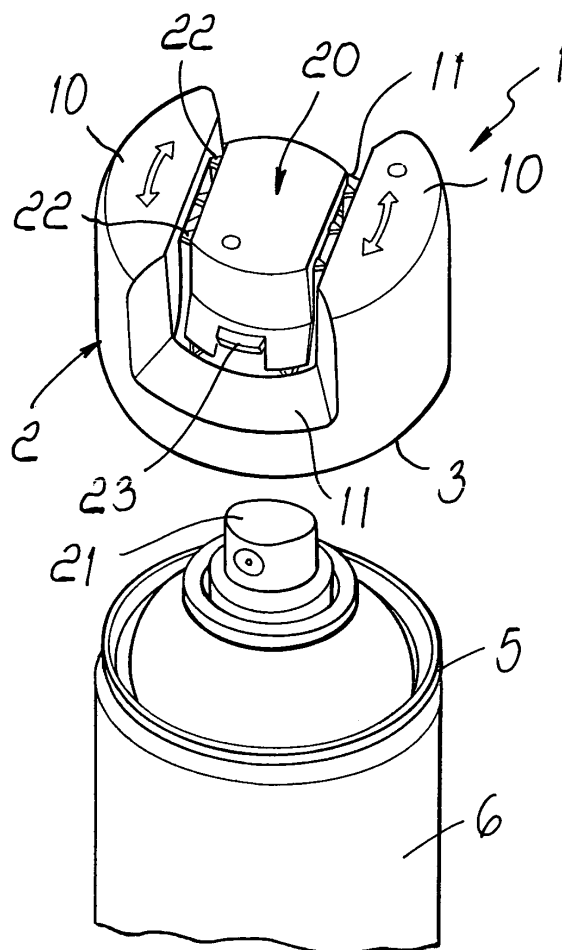
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(54) **Cap for aerosol canisters, particularly for paints and the like**

(57) A cap (1) for aerosol canisters, particularly for paints and the like, comprising a cap body (2), which can be mated in a tamper-resistant manner to the body of a canister (6) and forms a removable portion (20), which affects at least the region at the dispensing valve (21) of the canister body (6), the removable portion being separable from the cap body (2) exclusively by means of a tool.



*Fig. 1*

## Description

**[0001]** The present invention relates to a cap for aerosol canisters, particularly for paints and the like.

**[0002]** As is known, aerosol canisters used for paints and the like typically have a cap which is provided in a color that matches the color of the paint contained therein.

**[0003]** In order to solve the safety requirements linked to the problems of improper use of the product, which typically occurs in department stores, dirtying and vandalizing the surrounding area, over time the need has been felt to provide caps that cannot be removed manually but require breaking part of the cap by means of a tool or the like in order to be able to remove the cap and gain access to use of the product.

**[0004]** With this solution, therefore, one must break the cap, which must then be reused, and such solution may not be particularly welcomed by the user; moreover, once the cap has been removed, the user has no immediate perception of the color of the canister, with the risk of swapping caps and therefore colors, if a plurality of canisters must be used simultaneously.

**[0005]** The aim of the invention is to solve the problem described above by providing a cap for aerosol canisters, particularly for paints and the like, which allows to provide a permanent color reference, so that the user always has under immediate control the coloring of the paint being contained.

**[0006]** Within this aim, an object of the invention is to provide a cap that is particularly ergonomic and allows to perform more precisely any paint application.

**[0007]** Another object of the present invention is to provide a cap which, in case of accidental fall during use of the canister and while the canister is in storage, does not allow the accidental dispensing of the product and further allows to secure the product against any unintended dispensing, preventing the external diffusion of the paint.

**[0008]** Another object of the present invention is to provide a cap for aerosol canisters and the like which, thanks to its particular features, is capable of giving the greatest assurances of reliability and safety in use and is further competitive from a merely economical standpoint.

**[0009]** This aim and these and other objects, which will become better apparent hereinafter, are achieved by a cap for aerosol canisters, particularly for paints and the like, according to the invention, characterized in that it comprises a cap body, which can be mated in a tamper-resistant manner to the body of a canister and forms a removable portion, which affects at least the region at the dispensing valve of said canister body, said removable portion being at least partially separable from said cap body exclusively by means of a tool.

**[0010]** Further characteristics and advantages of the invention will become better apparent from the description of a preferred but not exclusive embodiment of a cap for aerosol canisters, particularly for paints and the like, illustrated by way of non-limiting example in the accom-

panying drawings, wherein:

Figure 1 is a schematic exploded perspective view of the cap and of the canister body;

Figure 2 is a schematic view of the cap, taken from its lower portion;

Figure 3 is a perspective view of the cap applied to the canister after removal of the removable portion;

Figure 4 is a top plan view of the intact cap;

Figure 5 is a view of the cap, removed at the removable portion, in the dispensing position;

Figure 6 is a view of the cap, removed at the removable portion, in the safety position;

Figure 7 is a schematic sectional view of the step of removing the cap of the canister for separate disposal, which can be performed only after removing the removable part.

**[0011]** With reference to the cited figures, the cap for aerosol canisters, particularly for paints and the like, generally designated by the reference numeral 1, comprises a cap body 2, which has a shape provided with a lower circular rim 3, on which mating teeth 4 are positioned and engage below an end collar 5 formed by a canister body 6.

**[0012]** Mating is of the so-called tamper-resistant type, i.e., such as to not allow removal of the cap from the canister except by at least partially tearing the cap.

**[0013]** The safety engagement is provided on the external circumference and allows to prevent manual removal of the cap.

**[0014]** The cap forms two mutually opposite shoulders 10, which are separated by two recesses 11, which are arranged diametrically with respect to each other and between which there is a removable portion 20, which in practice affects the region that surrounds the dispensing valve 21 of the canister.

**[0015]** The removable portion 20 is connected to the shoulders and recesses by means of fracture points, designated by the reference numeral 22, which are devised so as to not allow manual tearing, requiring instead, in order to remove the portion 20, the use of a tool, which may be constituted by pliers, a screwdriver or the like, which produces the fracture and consequently allows to remove the removable portion 20, advantageously provided with a tab 23 for engagement with the pliers.

**[0016]** Removal of the removable portion 20 allows to expose the region affected by the dispensing valve 21, which is provided with the typical dispensing button and is accommodated between the shoulders 10.

**[0017]** This arrangement provides the advantage that the body of the cap acts as a protective element for the valve, even when the removable portion has been removed; moreover, the cap can be positioned so that the alignment of the recesses easily indicates the dispensing direction.

**[0018]** If the product is to be secured against any unintended dispensing, it is sufficient to turn the body 2 of the cap, so as to arrange the shoulders in such a manner

that dispensing is directed toward the inside of the shoulders, thereby preventing the possibility of external spreading of the coloring agent.

[0019] The particular structure of the cap allows to achieve a very low weight with respect to traditional caps, which must be provided with an internal skirt for engagement on the collar arranged around the valve; it is thus possible, by eliminating the internal skirt, to increase the solidity of the coupling and reduce significantly the weight of the product.

[0020] Another important aspect further consists in that the engagement of the cap is practically tamper-resistant and stable when the cap is intact, i.e., before the removable portion is removed, but allows the easy separation of the cap once the removable portion has been removed, simply by performing a compressive action which moves the two shoulders mutually closer, thus allowing the separation of the cap for separate disposal with respect to the canister.

[0021] The solution described above allows, in canisters for containing paints and the like, to keep a predominant part of the cap always connected to the canister even during use, thus always having an immediate perception of the color of the paint contained within the canister.

[0022] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the inventive concept.

[0023] All the details may further be replaced with other technically equivalent elements.

[0024] In practice, the materials used, as well as the contingent shapes and dimensions, may be any according to requirements.

[0025] 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.

3. The cap for aerosol canisters according to the preceding claims, **characterized in that** said cap body forms two mutually opposite shoulders, which are separated by two recesses arranged diametrically with respect to each other, said removable portion being positioned between said recesses.
4. The cap for aerosol canisters according to one or more of the preceding claims, **characterized in that** it comprises fracture points for the connection of said removable portion to said shoulders and to said recesses.
5. The cap for aerosol canisters according to one or more of the preceding claims, **characterized in that** said removable portion has a tab for engagement with pliers.
6. The cap for aerosol canisters according to one or more of the preceding claims, **characterized in that** said cap body can rotate about the axis of said canister in order to change the relative position of said cap with respect to the dispensing direction of the paint determined by the dispensing valve.

## Claims

1. A cap for aerosol canisters, particularly for paints and the like, **characterized in that** it comprises a cap body, which can be mated in a tamper-resistant manner to the body of a canister and forms a removable portion, which affects at least the region at the dispensing valve of said canister body, said removable portion being at least partially separable from said cap body exclusively by means of a tool.
2. The cap for aerosol canisters according to claim 1, **characterized in that** it comprises, on the cap body, at least one mating tooth, which is provided at the free rim of said cap and can engage below the end collar formed by a canister body.

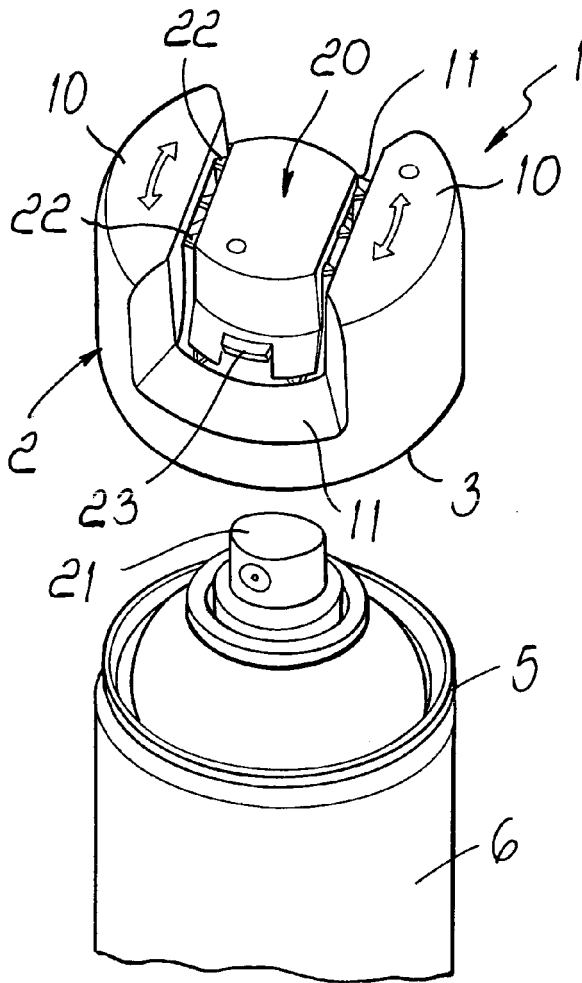


Fig. 1

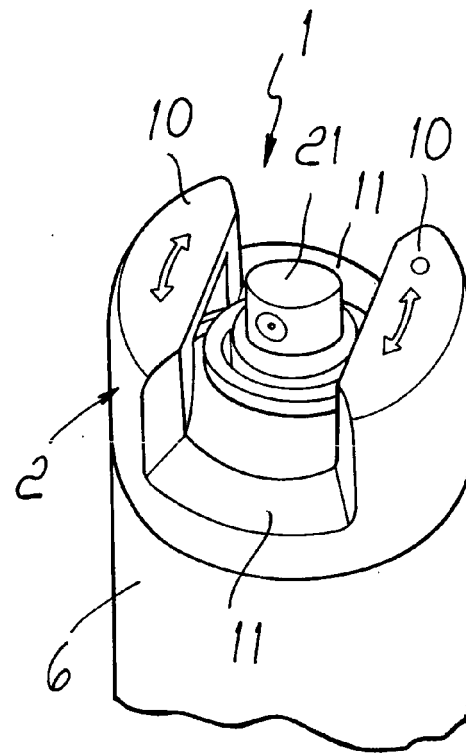


Fig. 3

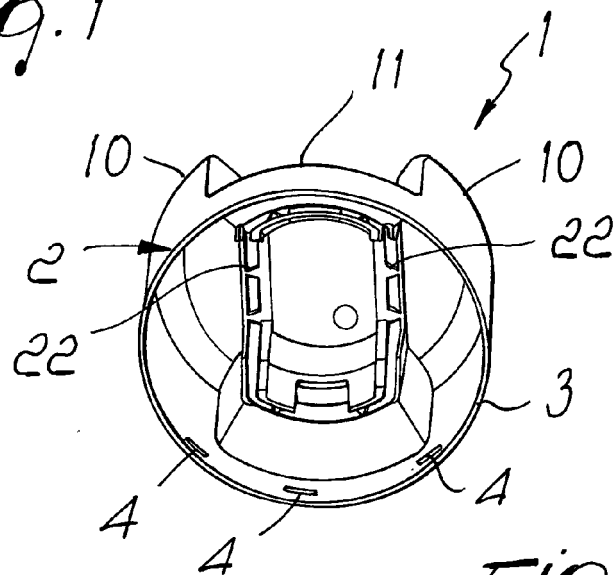
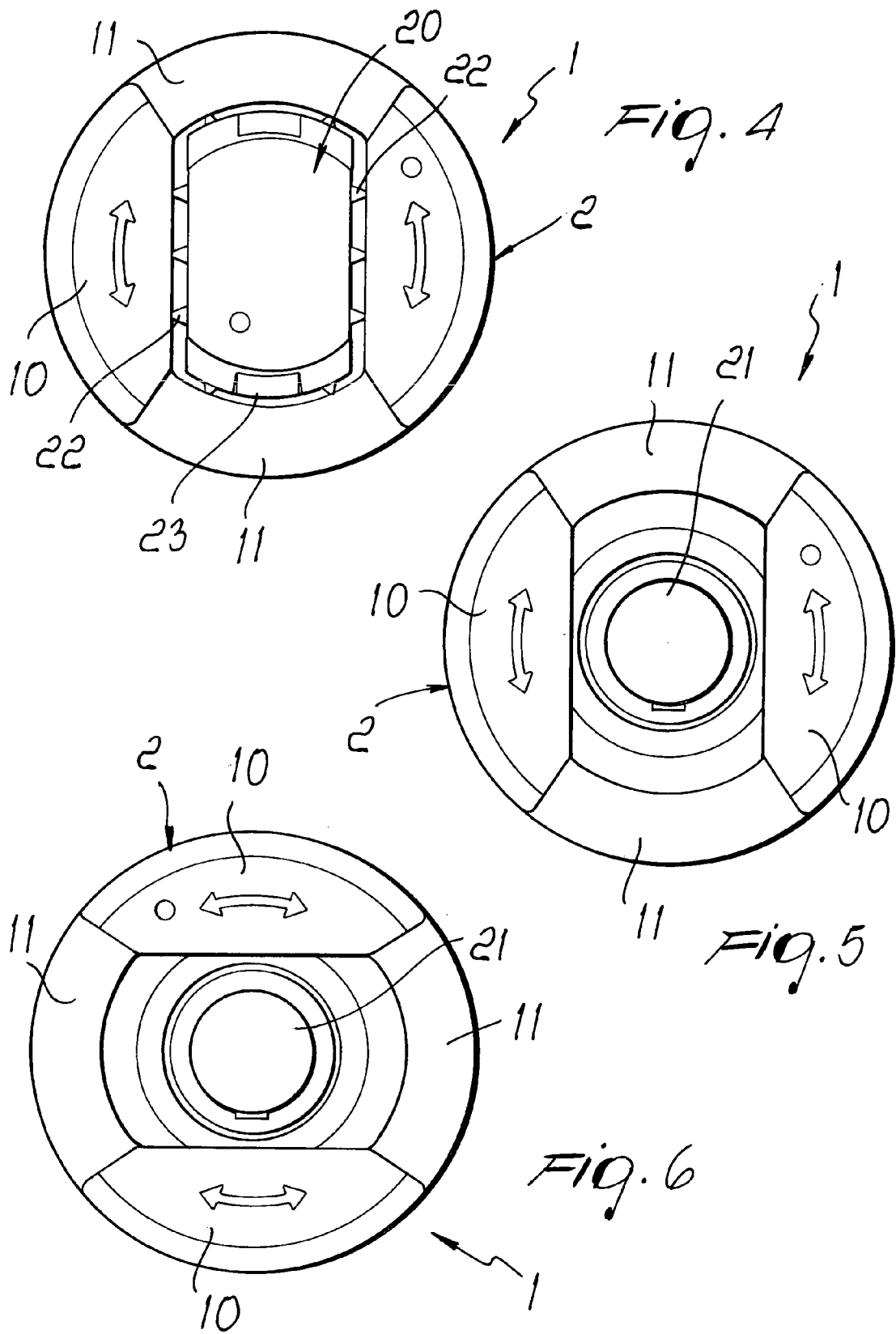
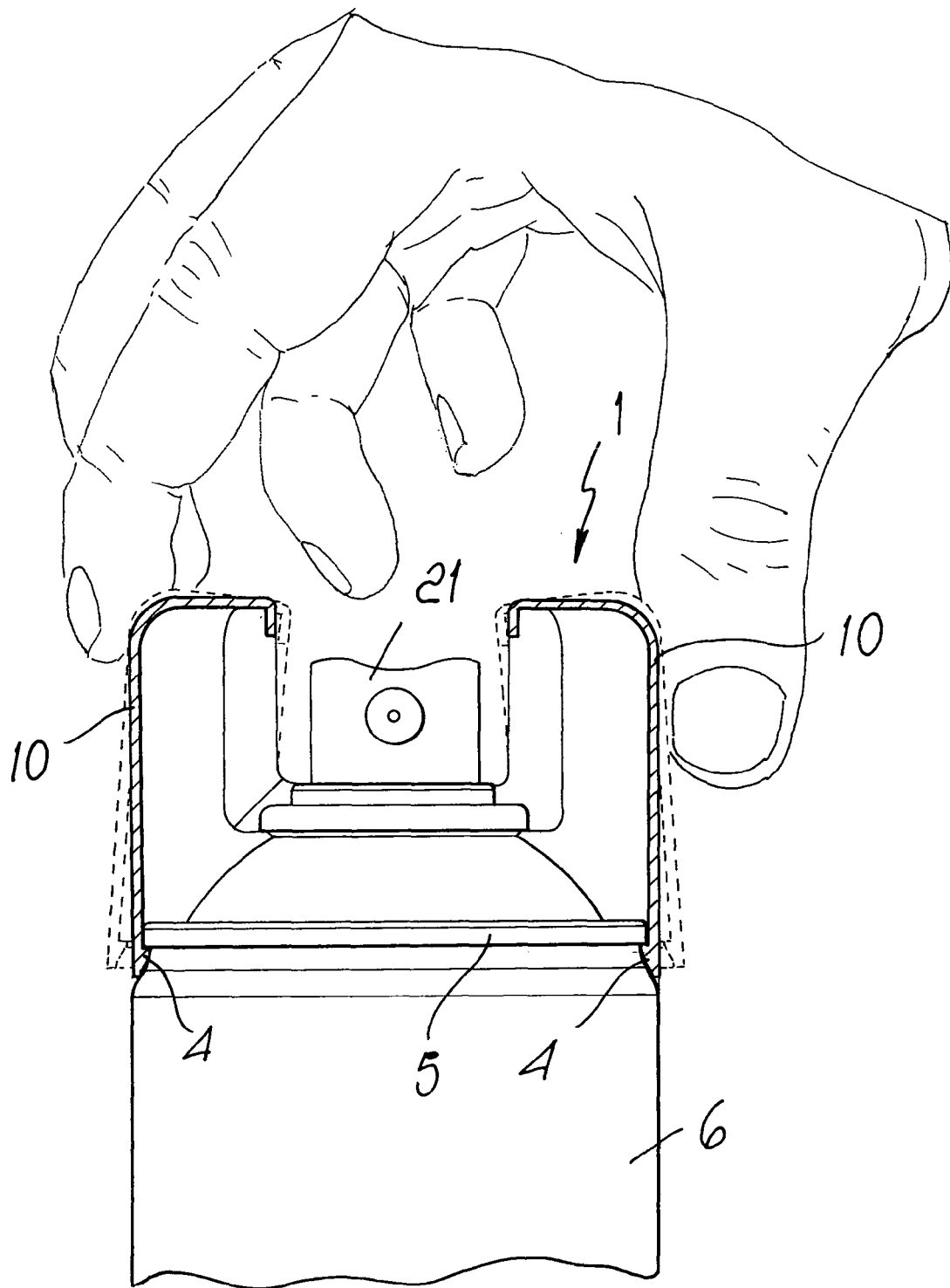


Fig. 2





*Fig. 7*



| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                    |                                                                                                                        |                                                                                                                                                                                                                                                                                       |                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Category                                                                                                                                                                                                                                               | Citation of document with indication, where appropriate, of relevant passages                                          | Relevant to claim                                                                                                                                                                                                                                                                     | CLASSIFICATION OF THE APPLICATION (IPC) |
| A                                                                                                                                                                                                                                                      | DE 18 08 352 A1 (PRAEZ S VENTIL GMBH DEUTSCHE) 27 May 1970 (1970-05-27)<br>* page 10, paragraph 2; figure 5 *<br>----- | 1,4,5                                                                                                                                                                                                                                                                                 | INV.<br>B65D83/16                       |
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|                                                                                                                                                                                                                                                        |                                                                                                                        |                                                                                                                                                                                                                                                                                       | B65D                                    |
| The present search report has been drawn up for all claims                                                                                                                                                                                             |                                                                                                                        |                                                                                                                                                                                                                                                                                       |                                         |
| Place of search<br>The Hague                                                                                                                                                                                                                           |                                                                                                                        | Date of completion of the search<br>19 January 2007                                                                                                                                                                                                                                   | Examiner<br>Bridault, Alain             |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document |                                                                                                                        | T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>.....<br>& : member of the same patent family, corresponding document |                                         |

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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