



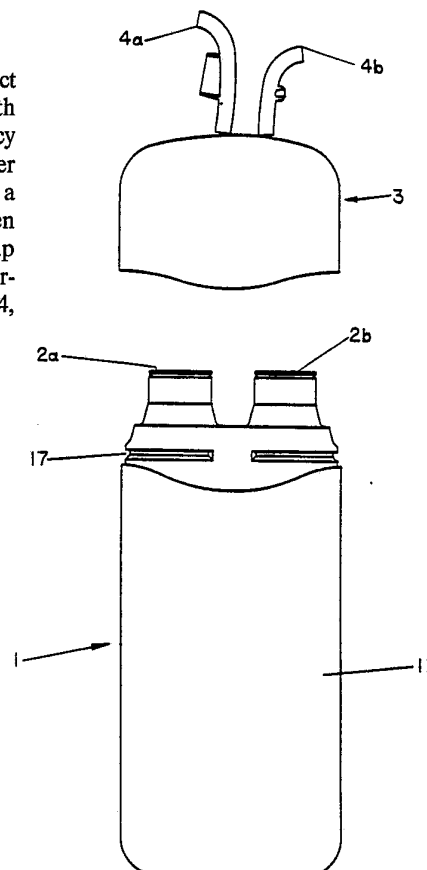
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<p>(21) International Application Number: PCT/US91/08134 (22) International Filing Date: 6 November 1991 (06.11.91) (30) Priority data: 90203018.8 14 November 1990 (14.11.90) EP (34) Countries for which the regional or international application was filed: AT et al. (71) Applicant: THE PROCTER & GAMBLE COMPANY [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US). (72) Inventors: HERTOGS, Willy, Aloysius, Maria ; Rozestraat 5, B-2860 Sint Katelijne Waver (BE). DEFLANDER, Joseph, Fernand ; Elleveldweg 22, B-3150 Wespelaar (BE).</p>		<p>(74) Agent: REED, T., David; The Procter & Gamble Company, Ivorydale Technical Center, 5299 Sprng Grove Avenue, Cincinnati, OH 45217-1087 (US). (81) Designated States: AU, BR, CA, JP, KR. Published <i>With international search report.</i></p>

(54) Title: CONTAINER WITH MULTIPLE ORIFICES AND COMBINATION CLOSURE

(57) Abstract

The present invention relates to a container that dispenses a flowable product at variable rates. The majority of prior art devices provide multiple containers with different sized dispensing orifices. The present invention overcomes this deficiency by providing a single container with multiple orifices of different sizes. The container has multiple dispensing orifices (6, 106, 206) and a combination closure comprising a body (11, 111, 211) which extends in one or more dispensing necks (2, 202) with open ends, said combination closure comprising one common cap (3, 103, 203) said cap showing differently sized orifices coinciding with said dispensing necks or with intermediate channels (218) each of said orifices being reclosable by a hinged closure (4, 104, 204) which is integral with said common cap.



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⁺ Any designation of "SU" has effect in the Russian Federation. It is not yet known whether any such designation has effect in other States of the former Soviet Union.

"CONTAINER WITH MULTIPLE ORIFICES AND COMBINATION CLOSURE"

TECHNICAL FIELD

This invention relates to a container for a flowable product, which is equipped with at least two dispensing orifices tightly closed by a single helmet-type cap showing a corresponding number of dispensing openings with individual closures. More particularly, it relates to a unique assembly of a container and a cap showing different dispensing openings with coinciding closures which are movably integral with this cap.

BACKGROUND OF THE INVENTION

Many flowable products, and more particularly liquids, may have to be used in a different amount or at a different speed depending on the specific situation. This is the case for liquids or gels used in the bathroom, like liquid skin care products which are used as bathfoam in the bathtub or as liquid or semi-liquid soap under the shower. At present, and even if the product to be dispensed is the same, it is mostly packed in separate containers with a different type of dispensing orifice, since products to be used as bathfoam are usually poured into the bathtub from bottles with a wide orifice whereas products to be used under the shower are poured from containers having a restricted orifice for controlled dispensing.

This means that two separate containers have to find a place in the bathroom and frequently more specifically around the bathtub which is also being used for showering. As a consequence, it is desirable to have a package from which a flowable product, and more particularly a liquid or a gel, can be dispensed either rapidly from a wide orifice or in a more controlled way from a restricted orifice, provided on the same package, both orifices being reclosable in a leak-proof way.

Containers with differently sized dispensing openings are found on the market. An example is the well-known salt container which foresees differently sized openings which can be closed off by a rotating disk showing one large sized opening only, which is to coincide with one of the differently sized outlets on the top surface of the container, to dispense the contents in the desired way. In general, a protective membrane or lid has to be removed at the time of first dispensing. The disadvantage of these containers is that their dispensing orifices are not

tightly closed so that they are not readily usable for liquid or gel-type products, especially if they are to be stored with the dispensing orifices oriented downwards, as may be desirable for e.g. a shower gel.

Dual compartment bottles with separate bottle necks and separate stoppers are found on the market. These bottles require not only two stopping operations, which is difficult to achieve in an accurate and speedy way on a filling and packing line, but do furthermore not address the problem of dispensing product, held in one and the same container, through one dispensing orifice while other dispensing orifices remain tightly closed.

German patent application 1 959 631 discloses a container for a flowable product which can be dispensed through an opening in the top surface of the container, this opening being closable by a rotatable disk positioned in said top surface of the container, said rotatable disk also showing three differently sized openings which, when coinciding with the opening in the surface of the container, allow dispensing in the selected way. No means are provided for tight closure of the openings, so that said container would not be suitable for tight packing of a liquid or gel-type product, especially if stored in inverted position. Furthermore, although the package according to DE-A-1 959 631 allows dispensing of its contents in three different ways, the fact that the dispensing orifices are positioned in the flat upper surface of the container, may to some extent allow more or less clean dispensing of granular flowable material but would in no case allow clean dispensing of liquid or gel-type material.

German Patent Application 3 917 057 discloses a closure with two hinged flaps, meant to cover two different

dispensing orifices. The container is meant to contain a granular product, like seasoning, the large opening in the closure being so sized that a spoon can be introduced to remove some of the contents, whereas the other assembly of openings is meant to allow sprinkling with the product. The whole purpose of the development is directed to devise a cap which can be quickly and easily manufactured. Although the cap according to the DE-A-3 917 057 will most probably be tight enough for a granular product, no means are provided to allow tidy and controlled dispensing of a liquid, semi-liquid or gel type product and for leak-proof reclosing of the container, even if stored in inverted position.

EPO Patent Application 0 357 981 describes a closing and dispensing cap for fluid materials. The cap is provided with one or more dispensing holes which may be closed by means of an oscillatable shutter matching a spherical segment of the cap in which the dispensing orifices are provided. The sliding shutter is kept in the appropriate position by small closing protrusions which are to correspond and cooperate with the dispensing holes. Reading the specification of EP-A-0 357 981, it becomes evident that the shutter with closing protrusions would not give a leak-proof reclosing of the container if stored in inverted position.

In the light of the above, it is a principal object of the present invention to provide a container with multiple dispensing orifices and a combination closure.

It is another object of the invention to provide this container with multiple dispensing orifices and combination closure with at least two necks for dispensing in different ways, said dispensing necks being tightly closed by one common cap.

It is an additional object of the invention to provide this container with multiple dispensing orifices and combination closure with one common cap showing orifices coinciding respectively with each container dispensing neck and sized differently so as to allow differently controlled dispensing of the contents of the container, each orifice being reclosable by a closure which is movably integral with the common cap, each orifice which is not in use for dispensing remaining product tight while product is dispensed through another orifice.

It is also an object of the invention to provide this container with multiple dispensing orifices and combination closure with only one neck, and one cap showing at least two dispensing orifices which are sized differently to as to allow differently controlled dispensing of the contents of the container, each orifice being reclosable by a closure which is movably integral with the cap, each orifice which is not in use for dispensing remaining product tight while product is dispensed through another orifice.

It is still another object of the invention to provide this container with multiple dispensing orifices and combination closure with a tight cap which can be easily and rapidly applied on the container filling and closing line.

It is a further object of the invention to provide the respective closures of the differently sized dispensing orifices with a marking showing the preferred use of the particular dispensing orifice.

It is also an object of the invention to provide this container with multiple dispensing orifices and combination closure with means enabling it to be stored in different positions.

SUMMARY OF THE INVENTION

In order to accomplish the above stated objectives, the present invention provides a container with multiple dispensing orifices and combination closure comprising a container body extending in one or several dispensing necks and one common cap, which cap shows differently sized orifices coinciding with the dispensing neck(s), either directly or through intermediate channels, each orifice being reclosable by a hinged closure which is integral with the common cap. In a preferred embodiment, the container with multiple dispensing orifices and combination closure is provided with means enabling it to be stored in different positions.

BRIEF DESCRIPTION OF THE DRAWINGS

While the specification concludes with claims particularly pointing out and distinctly claiming the present invention, it is believed that the same will be better understood from the following description taken in conjunction with the accompanying drawings:

Figure 1 is a front elevational exploded view of a first embodiment of the container according to the invention and comprising two necks and a common helmet-type cap with respective closures movably integral with the common cap and held in open position.

Figure 2 is a broken away cross-sectional view of the assembled container shown in Figure 1.

Figure 3 is a top view of the container shown in Figures 1 and 2, but with the closures in closed position.

Figure 4 is a top view of the container shown in Figure 3 but with the closure of the large dispensing orifice in open position.

Figure 5 is a top view of the container shown in Figure 3 but with the closure of the controlled dispensing orifice in open position.

Figure 6 is a broken away cross-sectional view of another embodiment of the container according to the invention, said container comprising one neck and a helmet-type cap including two channels leading from the container neck towards two dispensing orifices in the helmet-type cap, with respective closures movably integral with the common cap and held in open position.

Figure 7 is a front elevational view of another container according to the invention, also showing one possible execution for suspending the container with the dispensing orifices wither upwardly or downwardly oriented.

Figure 8 shows a broken away front elevational view of the embodiment of Figure 7, while the product is being dispensed in a large quantity through the large dispensing orifice.

Figure 9 shows a broken away front elevational view of the embodiment of Figure 7, while the product is being dispensed in a more controlled way from the restricted orifice.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings in detail, wherein like reference numbers indicate the same elements throughout the use, there are illustrated two preferred embodiments of a container with multiple dispensing orifices and combination closure according to the present invention.

As can be seen from Figure 1, container (1) extends in two necks (2a and 2b) and a common helmet-type cap (3) with hinged closures (4a and 4b) held in open position and which

are to coincide with necks (2a and 2b).

The broken away cross-sectional view of the top part of the assembled container shown in Figure 2 illustrates how common cap (3) tightly engages bottle necks (2a and 2b) by flanges (5a and 5b). Orifice (6a) is provided inside flange (5a) through common cap (3) whereas smaller orifice (6b) is provided inside flange (5b) through common cap (3). Hinged closure (4a) is hingedly connected to intermediate piece (15) which is snap-fitted into a recess in the top of common cap (3) and has a depending skirt (7a) which is to tightly fit inside orifice (6a) and against the inside of flange (5a) when in closed position, whereas hinged closure (4b), which is also hingedly connected to intermediate piece (15), has a smaller depending skirt (7b) which is to tightly fit into smaller orifice (6b) when in closed position. The tight fit between flanges (5) and the inside of necks (2) and of skirts (7) and the inside wall of orifices (6) ensure proper product-tightness of the container, also when used when product has e.g. to be squeezed out of smaller orifice (6b) in a downwardly oriented position. Recesses (9a and 9b) allow easy lifting of hinged closures (4a and 4b), which remain attached to the cap (3) by hinges (10a and 10b).

The top view of the container shown in figures 1 and 2 as represented in figure 3, shows hinged closures (4a and 4b) in closed position. The markings (8a and 8b) give a clear indication of the purpose of the orifice covered by the respective hinged closures.

The top view of figure 4 shows the orifice (6a) whereas the bent-over hinged closure (4a) shows skirt (7a) which is to fit inside orifice (6a) when the hinged closure is bent back into its closing position. Thanks to recess (9a) it has been easy to lift hinged closure (4a) into its open position.

The top view of figure 5 shows the orifice (6b) whereas the bent-over hinged closure (4b) shows skirt (7b) which is to fit inside orifice (6b) when the hinged closure is bent back into its closing position. Thanks to recess (9b) it has been easy to lift hinged closure (4b) into its open position.

The container (201) as illustrated in figure 6 extends in one neck (202) only. Channels (218a and 218b) have a common tube-shaped base (216) which fits into neck (202). The respective open ends of the channels (218a and 218b) coincide with dispensing orifices (206a and 206b) which can be tightly closed by respective closure (204a and 204b) which are hingedly connected to intermediate piece (215) which is snap-fitted into a recess in the top of common helmet-type cap (203). Depending skirts (207a and 207b) fit tightly into coinciding dispensing orifices (206a and 206b), whereas tube-like extension (216) fits tightly into neck (202), thereby ensuring that the container remains leak-proof, no matter in what position it is stored. Also, even when product is dispensed through one orifice, the closed-off one will remain product-tight.

The container represented in figures 7, 8 and 9 illustrates another possible execution of a container (101) according to the present invention. Container cap (103) is equipped with hinged closures (104a and 104b) which show markings (108a and 108b) and easy opening recesses (109a and 109b). Container body (111) is provided with rope-type device (112) which can be attached to either notch (113a) or (113b) which allows to hang it up with the dispensing orifices directed either upwardly or downwardly. Hinged closures (104a and 104b) are hingedly connected to an intermediate piece (115), which is snap-fitted into a recess in the top of common cap (103).

The broken away front elevational view illustrated in figure 7 shows how product (114) is dispensed through larger orifice (106a) while hinged closure (104a) is kept open but still attached to the cap along hinge (110a) and intermediate piece (115).

The broken away front elevational view of figure 8 illustrates how product (114) is being dispensed through smaller orifice (106b) while hinged closure (104b) remains attached to the cap (103) through hinge (110b) and intermediate piece (115).

Although the embodiment illustrated in figures 7, 8 and 9 is, in its specific representation, more directed towards a container with two necks, it will be obvious to the man of the art that only little adaptation will be needed to make this embodiment also function very well with a container having one neck only, as described in figure 6.

Thanks to the fact that the individual dispensing orifices (6,106,206), coinciding with the individual dispensing necks (2,202) extending from the container or with the intermediate channels (215), can be tightly closed by individual hinged closures (4,104,204) made integral with one common cap (3,103,203), simplifies greatly the on-line capping of the filled container. Indeed, as the container has been filled on-line through one or more of the necks, the cap, on which the individual dispensing orifices are already tightly closed by the corresponding hinged closures, is put on the filled container in one operation, flanges (5,205) ensuring tight closure of the complete package. Once the cap has been put on the filled container, it is held in place on the bottle neck, respectively container shoulder, by any conventional means like snap rings or snap rims (17, 217) as illustrated in Figures 1 and 6.

The container can be made of any more or less flexible material like plastic (polyethylene, polypropylene, PET, polycarbonate, multilayered material) through injection blow moulding or blow moulding whereas the combination closure is preferably made of plastic (polypropylene, polyethylene) through injection moulding. It is advantageous to use material with different grades of resiliency/hardness for the container and for the combination closure elements in order to achieve even better product tightness. The hinged closures can be made with different grades of material to improve closing characteristics and of different colors to enhance functionality.

Although the container illustrated in figure 2 shows two identical bottle necks with two identical openings, it will be evident that these bottle necks and/or their openings can be differently sized, the important fact being that there is a tight connection between the open ends of the bottle necks and the corresponding flange extending from the inside of the common cap.

Also, even if the drawings show embodiments having an oval cross-section and two dispensing openings, it will be obvious that any container with multiple dispensing orifices and combination closure, no matter the number of orifices or the cross-section of the container, will be covered by this invention as long as the principle of cooperation between a common combination closure and the container with various outlets as described in this patent application is applied.

Various additional modifications of the described invention would be apparent to those skilled in the art. Two examples of embodiments according to the invention have been illustrated above. Accordingly, the scope of the present invention should be considered in terms of the following claims and is understood not to be limited to details or structures described and shown in the specification and drawings.

CLAIMS

1. Container with multiple dispensing orifices and combination closure, characterized in that said container comprises a body (11,111,211) which extends in one or more dispensing necks with open end (2,202) and said combination closure comprises one common cap (3,103,203), said cap showing differently sized orifices (6,106,206) coinciding with said dispensing necks or with intermediate channels (218), each of said orifices being reclosable by a hinged closure (4,104) which is integral with said common cap (3,103,203).

2. Container according to claim 1, characterized in that said container comprises at least two dispensing necks (2).

3. Container according to claim 2, characterized in that said open ends of said dispensing necks (2) are identically sized.

4. Container according to claim 2, characterized in that said open ends of said dispensing necks (2) are differently sized.

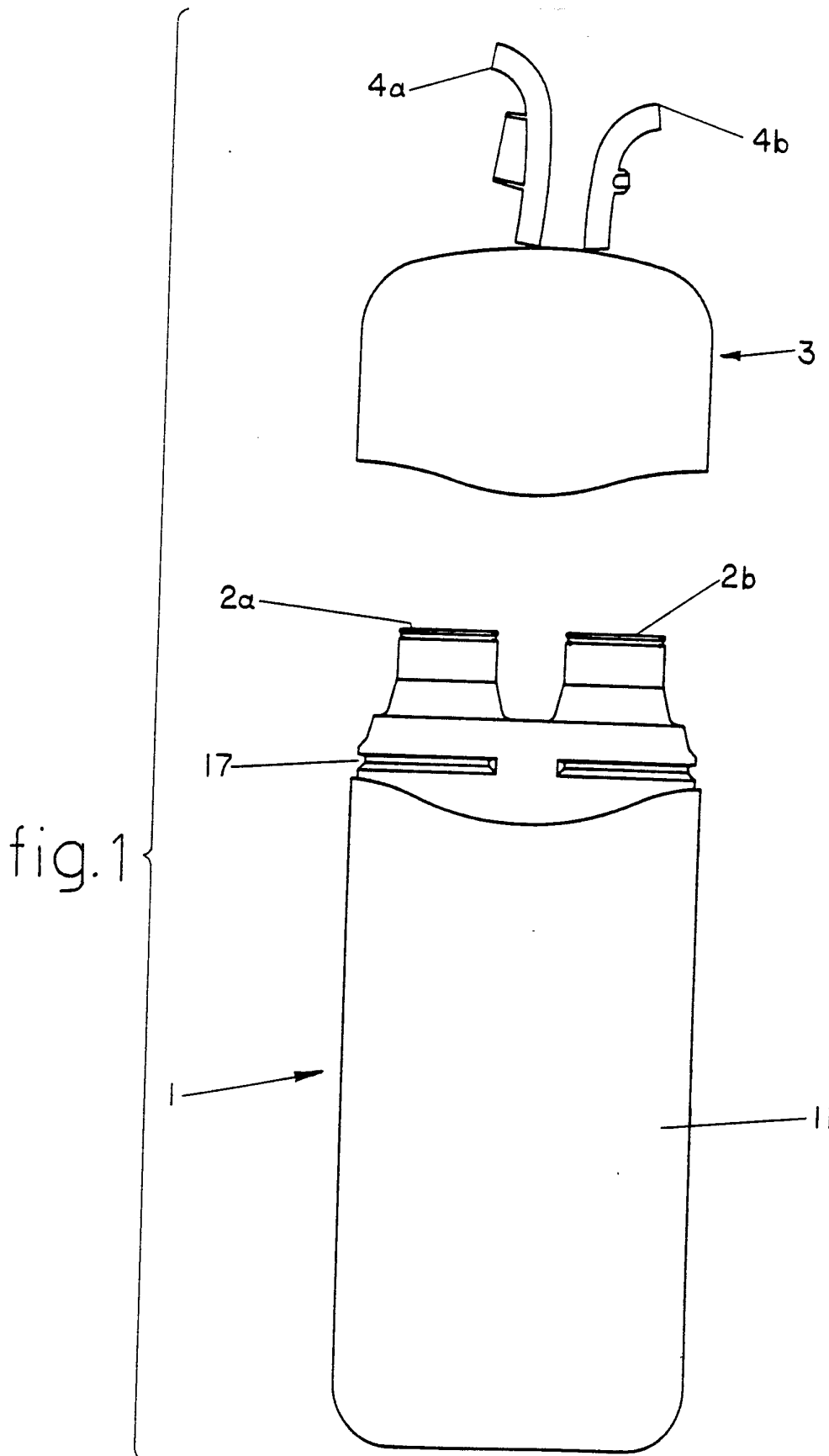
5. Container according to claim 1, characterized in that it comprises one dispensing neck (202) and in that the common cap (203) of said combination closure comprises intermediate channels (218) which correspond at their product delivery extremities with dispensing orifices (206) and show a common tube-like extension (216) which fits into dispensing neck (202) of said container body (211).

6. Container according to any of the preceding claims, characterized in that the inside of said common cap (3,103,203) is provided with flanges (5,205) which tightly engage the inside wall of dispensing necks (2,202), whereas hinged closures (4,104,204) are provided with depending skirts (7,207) which tightly fit inside orifices (6,106,206) and against the inside of flanges (5,205).

7. Container according to any of the preceding claims, characterized in that said hinged closures (4,104,204) show usage markings (8,108).

8. Container according to any of the preceding claims, characterized in that said container is provided with means (112,113) allowing storing in different positions.

9. Container according to any of the preceding claims, characterized in that it contains a skin care product (114).



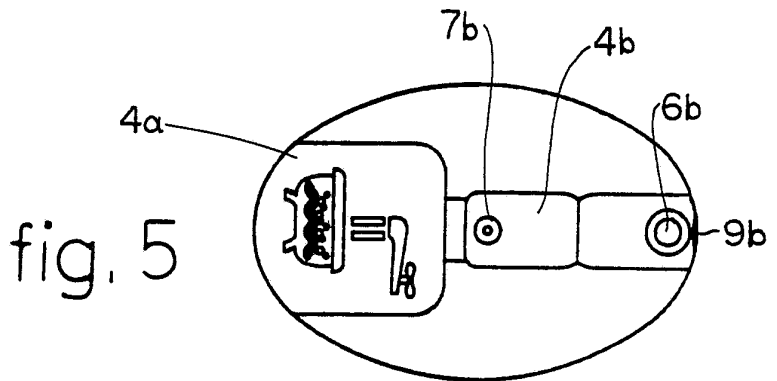
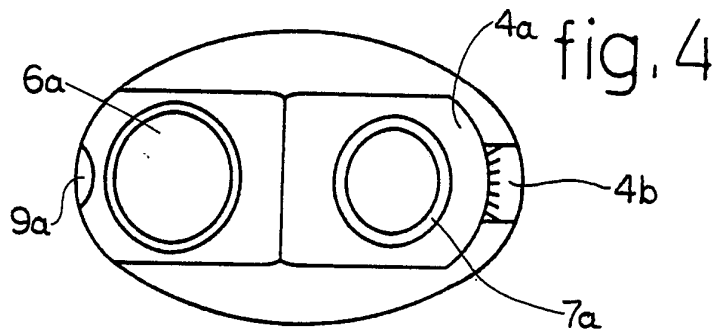
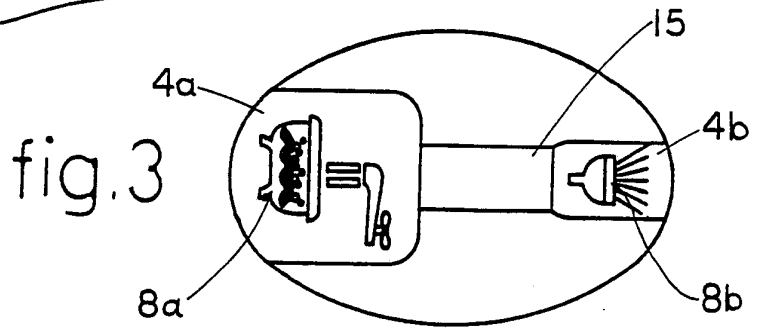
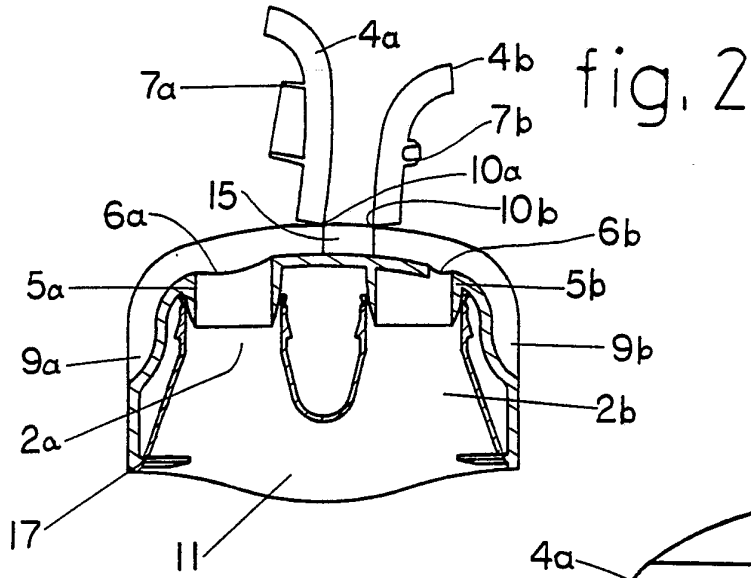
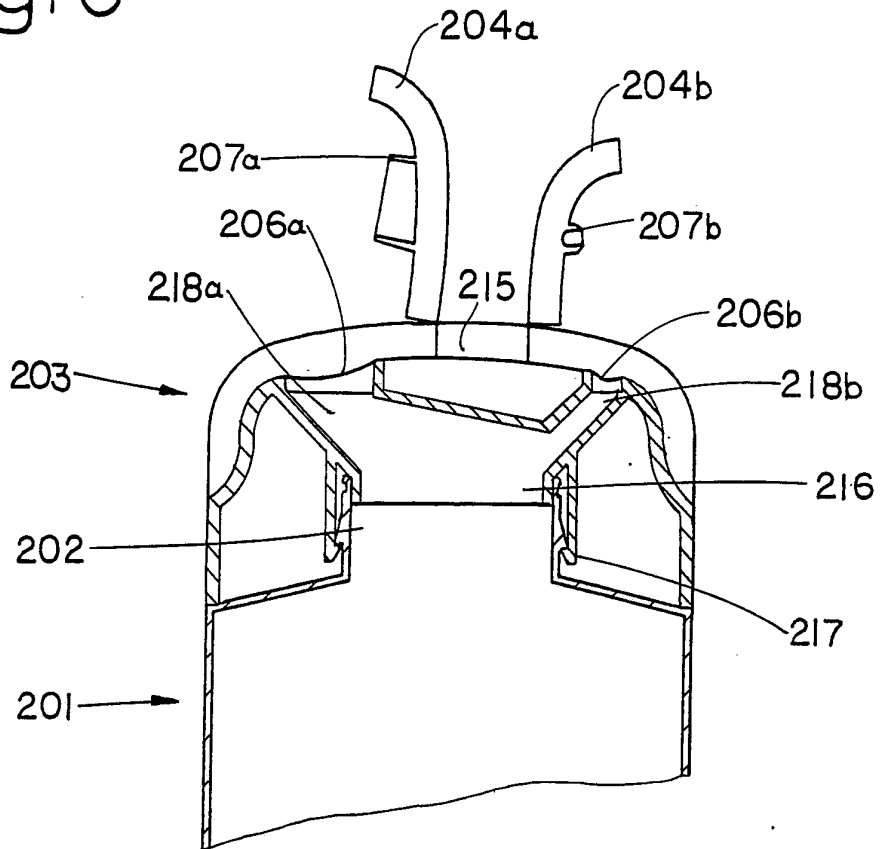


fig. 6



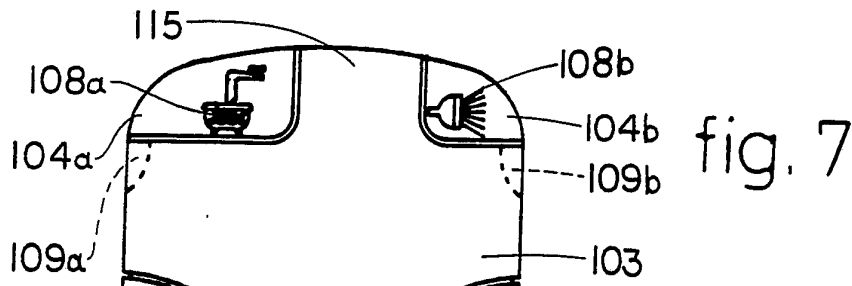


fig. 7

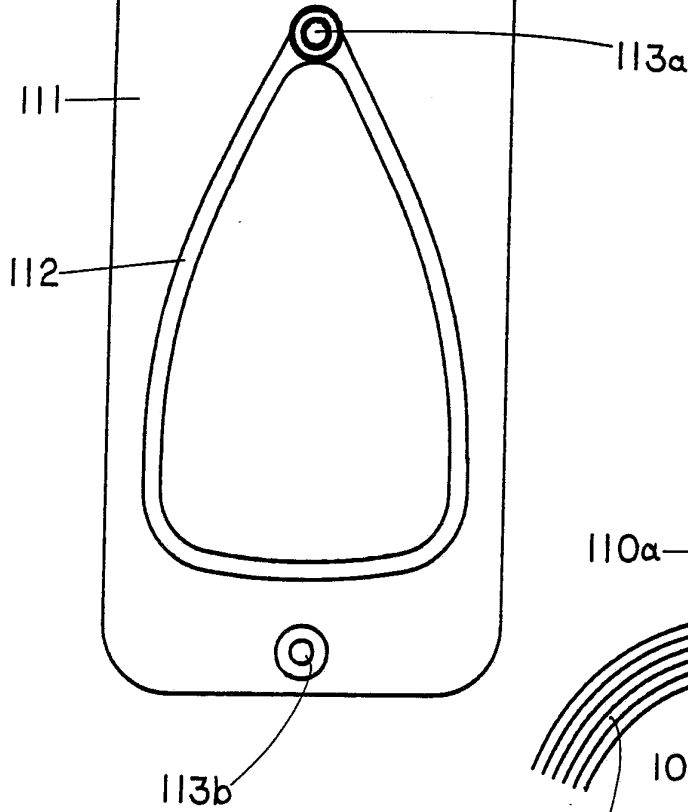


fig. 8

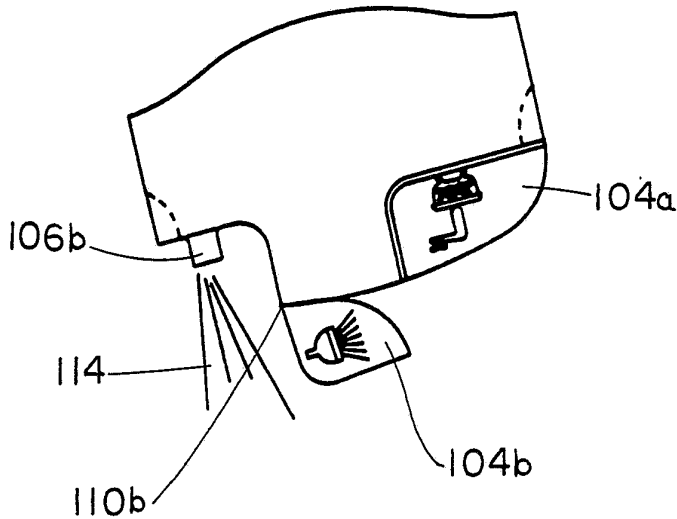
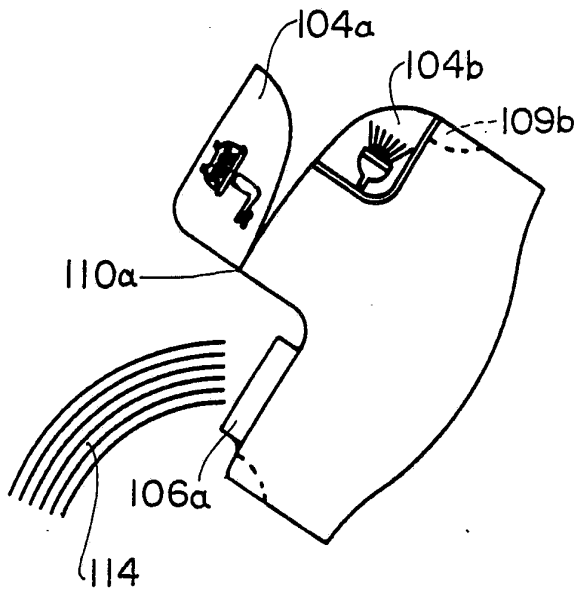


fig. 9

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US91/08134

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC		
IPC(5): B67D 3/00		
US CL.: 222/485		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
US	222/480, 481, 482, 484, 485, 486, 556, 565	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT ⁹		
Category [*]	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
X, P	US, A, 5,062,550 (SINGH) 05 November 1991 See entire document.	1-6
X	US, A, 4,754,898 (BRITT et al.) 05 July 1988 See entire document.	1,5,6
X	US, A, 4,782,985 (KINSLEY) 08 November 1988 See entire document.	1,5,6
X, P	US, A, 5,048,730 (FORSYTH et al.) 17 September 1991, See entire document.	1,5,6
Y, P	FR, A, 2,645,510 (MAISTRE) 12 October 1991 See entire document.	1,2,3,6
Y	US, A, 3,782,600 (COLUMBUS) 01 January 1974 See entire document.	2,4
A	US, A, 1,375,030 (WATKINS et al.) 19 April 1921	
<p>[*] Special categories of cited documents: ¹⁰</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&" document member of the same patent family</p>		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
12 FEBRUARY 1992	02 MAR 1992	
International Searching Authority	Signature of Authorized Officer	
ISA/US	NGUYEN NGOC-HO INTERNATIONAL DIVISION JOSEPH A. KAUFMAN	

FURTHER INFORMATION CONTINUED FROM THE SECOND SHEET

V. OBSERVATIONS WHERE CERTAIN CLAIMS WERE FOUND UNSEARCHABLE¹

This international search report has not been established in respect of certain claims under Article 17(2) (a) for the following reasons:

1. Claim numbers _____, because they relate to subject matter¹² not required to be searched by this Authority, namely:

2. Claim numbers _____, because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out¹³, specifically:

3. Claim numbers 7-9, because they are dependent claims not drafted in accordance with the second and third sentences of PCT Rule 6.4(a).

VI. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING²

This International Searching Authority found multiple inventions in this international application as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims of the international application.

2. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims of the international application for which fees were paid, specifically claims:

3. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claim numbers:

4. As all searchable claims could be searched without effort justifying an additional fee, the International Searching Authority did not invite payment of any additional fee.

Remark on Protest

- The additional search fees were accompanied by applicant's protest.
 No protest accompanied the payment of additional search fees.