



(11) **EP 1 136 015 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:

**26.09.2001 Bulletin 2001/39**

(51) Int Cl.7: **A45D 33/00, A45D 37/00**

(21) Application number: **00105850.2**

(22) Date of filing: **20.03.2000**

(84) Designated Contracting States:

**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE**

Designated Extension States:

**AL LT LV MK RO SI**

(71) Applicant: **Givaudan SA**

**1214 Vernier-Genève (CH)**

• **McGee, Tom**

**Teaneck, NJ 07666 (US)**

(74) Representative: **Patentanwälte**

**Schaad, Balass, Menzl & Partner AG**

**Dufourstrasse 101**

**Postfach**

**8034 Zürich (CH)**

(72) Inventors:

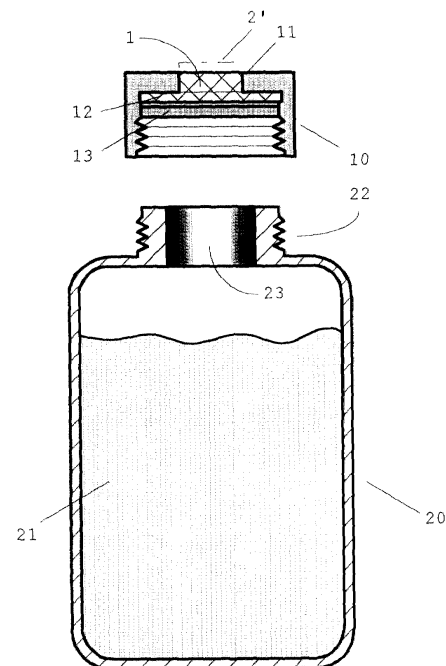
• **Short, John**

**F-95290 L'Isle Adam (FR)**

(54) **Container for a consumer product, a cover for a container and an insert.**

(57) The container (20; 20y; 20z; 20w) and the corresponding cover (10, 10y, 10z) allow to keep a consumer product, a liquid or a solid, such as a cosmetic product, a personal care product, a medical product, a household product or the like, tightly sealed, while simultaneously making the fragrance of this product available to the ambience. The container (20w) or the cover (10, 10y, 10z) comprises a chamber (12; 24) suitable to receive a fragranced insert (1; 1x; 1y; 1w) said chamber (12; 24) comprising at least one opening (11; 11a, 11b, 11c, 11d; 26) through which the fragranced insert (1; 1x; 1y; 1w) is at least partially exposed to the ambience and with a seal (13; 13x; 13y; 13z) used for separating the fragranced insert (1; 1x; 1y; 1w) from the product (21) contained in the container (20; 20y; 20z; 20w).

**Fig. 1**



## Description

**[0001]** The present invention relates to a container for a consumer product, a liquid or a solid, such as a cosmetic product, a personal care product, a medical product, a household product or the like, a cover for a container and an insert according to claim 1, claim 10 respective claim 15.

## BACKGROUND OF THE INVENTION

**[0002]** A cover of a container is usually designed to tightly seal an opening through which, during use, a product such as a liquid can be taken out from the container. The cover prevents the liquid (or the moisture of a solid product) from evaporating or getting contaminated.

**[0003]** As a result a liquid filled into a container will not deliver a fragrance to the ambience as long as the cover is mounted. An unused product on a shelf of a store will therefore not give away an aroma or a fragrance which would help a consumer to select the product from several brands or variants. However for a large variety of products the fragrance is an important or even the determinant factor concerning the choice of the product.

**[0004]** In order to give a potential consumer an impression of the product such as a perfume or a deodorant the packaging of the product often includes a visual and written description of the product and the thereto related fragrance.

**[0005]** Especially in larger magazines customers are usually offered samples for testing purposes. For each product line a product may be unpacked and made available to the customers. Frequently a consumer will actually open the packaging of an unused product on his own in order to smell the product before making a choice. In case that the fragrance does not find the consumers approval, the product is normally put back onto the shelf. In both cases, opened and used products can no longer be sold. This practice is also not desirable in view of product security and hygiene.

**[0006]** As an alternative fragrance samplers can be made available at the sales points of a magazine. Fragrance samplers include fragrance absorbed into a substrate, which may be covered by a plastic film which can be peeled off. Fragranced material may also be contained in an encapsulation which is susceptible to breaking under physical pressure. The described fragrance samplers can therefore be activated by scratching or rubbing the surface of the substrate or by breaking the shell of the encapsulation in such a way releasing the fragrance.

**[0007]** The disadvantages of fragrance samplers are however that, due to evaporation, quality (distortion of the fragrance character) and quantity of the fragrance contained in the sampler rapidly decreases after activation. The process of touching also contaminates the skin

of the consumer and results in cross-contamination of other samplers.

**[0008]** The present invention is therefore based on the object of specifying a container for a consumer product such as a perfume or a deodorant and a cover for a container which allow to keep a product, a liquid or a solid, such as a perfume or a deodorant, tightly sealed in said container while making the fragrance of the product available to the ambience. It is a further object to specify an element required for said container respective cover which is suitable to provide a fragrance.

## SUMMARY OF THE INVENTION

**[0009]** The above and other objects of the present invention are achieved by a container and a cover for a container as specified in claim 1 respective claim 10.

**[0010]** An inventive container is suitable to store cosmetic products, personal care products, medical products, household products or the like. The container or the cover of the container, which can be produced at low cost, comprises a chamber suitable to receive a fragranced insert which delivers a fragrance to the ambience over a long period of time in high quality. Said fragranced insert being separated from a liquid or a solid stored in the container by a wall of the chamber or by a seal which preferably is part of the fragranced insert. The chamber comprises a further wall perforated with one or several holes to allow the diffusion of the fragrance from the fragranced insert to the ambience.

**[0011]** Said chamber is preferably realised in the cover respective the cap of the container.

**[0012]** The fragranced insert is preferably made from a solid material, preferably a material, that is suitable for absorbing fragrance oil or a fragranced solution such as a plastic polymer, a cellulose support, e.g. paper or card, wood or a composite material containing cellulose.

**[0013]** Fragrance can also be added to plaster or cement supports before or after moulding and setting. The advantages of such a support are ease of preparation, low cost and high fragrance dose which will give a long lasting effect.

**[0014]** Especially fragrance absorbing material will provide a long lasting effect with maintained quality since the fragranced insert acts as a reservoir keeping the fragrance material shielded against the air thus preventing oxidation of major parts of the fragrance material. Only a small part of the fragrance, after transport through the insert material, will be exposed to the air.

**[0015]** Fragrances are compatible with solid waxes and can be mixed into melted wax with ease. The melted wax can be moulded or integrated into a cellulose support forming the fragranced insert.

**[0016]** The fragranced insert is preferably made from a solid material in which the fragrance oil has been absorbed at a level in the range of 1% to 50% by weight and preferably between 10% and 50% by weight.

**[0017]** The total surface area of the chamber wall

comprising the perforations may be chosen within a broad range, e.g. between 0.25 cm<sup>2</sup> and 5.0cm<sup>2</sup>, with a preferred surface area of 0.4 cm<sup>2</sup> to 1.0 cm<sup>2</sup>. The fragranced insert, which may have an average thickness between 1 and 3 mm is chosen accordingly.

#### BRIEF DESCRIPTION OF THE DRAWINGS

**[0018]** Some of the objects and advantages of the present invention have been stated, others will appear when the following description is considered together with the accompanying drawings, in which:

- Fig. 1 shows a fragranced insert integrated into a cover of a container;
- Fig. 1a shows the assembly of the cover of Fig. 1;
- Fig. 1b shows a fragranced insert combined with a seal;
- Fig. 2 shows an inventive container with a cover;
- Fig. 2a shows a fragranced insert suitable for incorporation into the first flip-top cover;
- Fig. 3 shows an inventive container with a second flip-top cover;
- Fig. 3a shows a fragranced insert suitable for incorporation into the second flip-top cover and
- Fig. 4 shows an inventive container with a fragranced insert held in a chamber of a container wall.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

**[0019]** Fig. 1 shows sectional view of a container 20 with a fitting 22 for a cover respective a cap 10, also shown in sectional view, and an opening 23 through which a liquid 21 has been filled into the container 20.

**[0020]** The cover 10 comprises a chamber 12 with an opening 11 which are designed to receive and hold a fragranced insert 1 which consists of a material support that contains a high concentration of fragrance. The release of fragrance is controlled by the nature of the carrier material used for the fragranced insert 1, the concentration of fragrance and the total surface area of the opening 11 in the cover 10 through which the fragranced insert is exposed to the ambience and fragrance is released. A consumer can therefore smell the fragrance without opening the packaging or the container 20.

**[0021]** In order to prevent the liquid 21 from entering through the opening 23 of the container 20 into the chamber 12 a seal 13 has been placed adjacent to the fragranced insert 1. The seal 13 is designed in such a

way that it is closing the chamber 12 within the cover 10 and/or the opening 23 of the container 20 when the cover 10 is set to closed position. In a preferred embodiment the cover 10, the fragranced insert 1 and the seal 13 are further designed in such a way that the fragranced insert 1 is tightly held within the chamber 12 and that the seal 13 can be snapped respectively fastened in a position within the cover 10.

**[0022]** After the assembly of the arrangement the fragrance will exit from the insert 1 through the opening 11 of the cover 10 into the ambience provided that the opening 11 of the cover 10 is not sealed. Sealing the opening 11 of the cover 10, for example with a tape, may be desired until the container 20 respective the assembled product is offered to the consumers.

**[0023]** Fig. 1a shows the assembly of the cover 10, the seal 13 and the fragranced insert 1 which is composed of two cylindrical parts 2 and 3 of different diameter; the smaller part 2 designed to fill the opening 11 of the cover 10 and the larger part 3 designed to fill the chamber 12. As shown in Fig. 1 the smaller part 2 may extend out of the opening 11 of the cover 10 (see Fig. 1, line 2') in order to enable a consumer to apply the fragrance onto the skin, in this way also activating the capillary effect.

**[0024]** In Fig. 1a the seal 13 is apart from the fragranced insert 1. In Fig. 1b the seal 13x is connected to the fragranced insert 1x thus facilitating the assembly of the arrangement.

**[0025]** Fig. 2 shows a different container 20y with a so called flip-top cover 10y which is perforated with four holes 11a, 11b, 11c and 11d which are designed to receive cylindrical parts 2a, 2b, 2c and 2d of a fragranced insert 1y as shown in Fig. 2a. Below the flip-top cover 10y is a chamber provided which is designed to receive the main body of the fragranced insert 1y which is connected to a seal 13y used for closing and sealing the opening (see Fig. 3) of the container 20y.

**[0026]** Fig. 3 shows an inventive container 20z with a second flip-top cover 10z in opened position, which comprises a seal 13z having the form of a cam which fits into the opening 23z of the container 20z.

**[0027]** The fragranced insert 1z shown in Fig. 3a which is suitable for incorporation into the second flip-top cover 10z or between the container 29z and the flip-top cover 10z comprises a hole 4z through which the cam-like seal 13z can be passed through towards the opening 23z of the container 20z. The opening 23z is therefore closed when the flip-top cover 10z is put down. Fragrance from the fragranced insert 1z can however emanate through the holes of the flip-top cover 10z to the ambience.

**[0028]** Hence the fragrance of the product can be tested by consumers in a magazine without opening the containers 20y or 20z.

**[0029]** A fragranced insert 1 is preferably incorporated into the cover 10 of a container 20. However as an alternative a fragranced insert 1 may also advanta-

geously be combined with a container 20w as shown in Fig. 4.

**[0030]** The container 20w shown in Fig. 4 comprises a holder 25 attached to a wall of the container 20w. The holder 25, which is perforated with two holes 26, is embracing a chamber 24 into which a fragranced insert 1w is placed. Fragrance can therefore emanate from the fragranced insert 1w through the holes 26 in the holder 25 to the ambience.

**[0031]** The holder 25 and accordingly the fragranced insert 1w can be arranged in a form adapted to the design of the product. The holder 25 may even be a characterising element of the design. The holder 25 may surround or be arranged top down along the container which may also comprise double walls with at least one chamber 24 in between. It is even desirable to combine attractive shapes and patterns of the perforations with colour tones of the insert optimise the aesthetic appeal of the package.

**[0032]** The holes 26 in the holder 25 should cover a large enough area to allow sufficient fragrance to emanate to the exterior. Suitable sizes for the holes would be 0,5 to 25 mm in diameter; preferred diameters are between 2 and 10 mm. A suitable number of holes would be 1-100; preferred numbers are 1-10.

**[0033]** For a superior performance of the device the surface area of the holes and also that of the exposed fragranced insert 1, 1x, 1y, 1z, 1w could be between 0,25 cm<sup>2</sup> and 5,0 cm<sup>2</sup> while a preferred surface area is between 0,4 cm<sup>2</sup> and 1,0 cm<sup>2</sup>. In case that multiple perforations are used they preferably are arranged in close proximity to each other.

**[0034]** The preferred dimensions of the fragranced insert 1, 1x, 1y, 1z, 1w are 3 cm<sup>2</sup> - 12,5 cm<sup>2</sup> of surface area and 1 mm-5 mm of thickness. Optimum thickness is about 2 mm.

**[0035]** The material used for the fragranced insert 1, 1x, 1y, 1z, 1w should contain between 1% and 50% fragrance by weight preferred levels are 20%-50%.

**[0036]** Fragrances, which can be used for the present invention, are generally composed of mixtures of natural and/or synthetic essential oils such as orange oil, pine oil, eucalyptus oil, lavender oil, rose oil, etc. and various synthetic oils usually selected from groups consisting of alcohols, phenols, ketones, aldehydes, esters, polycyclic compounds, macrocyclic compounds, etc.. The term fragrance also encompasses any mixtures of perfume oil as mentioned above that are primarily intended to provide a pleasant odour. The fragrance might also include solvents such as, amongst others; glycols (propylene glycol, dipropylene glycol, hexylene glycol), paraffins and fatty esters such as isopropyl myristate.

**[0037]** Suitable materials for the fragranced insert are plastic polymers, plaster, cement, cellulose and composite materials using the above mentioned materials. The preferred materials are plastic polymers that can be made and moulded with levels of more than 10% of fragrance oil incorporated into the polymer. The most suit-

able plastic materials for the fragranced insert or fragranced part of a composite insert are polymers of the following types: polyvinylalcohol and copolymers of vinyl alcohol with vinyl esters, (meth)acrylic acid, (meth) acrylic acid esters and ethylene, vinyl esters, polyamides, polyesters and mixtures of these or mixtures of these with other polymers. Preferred plastics are vinyl esters or mixtures of polyamides and polyester.

**[0038]** Examples of suitable plastic polymers are

Poly(ethylene-co-vinylalcohol)copolymers,

Poly(ethylene-co-vinylacetate)copolymers and

Polyester/polyamide block copolymer.

**[0039]** The most preferred plastic polymer is the polyester/polyamide block copolymer that has a general formula of: HO-[CO-PA-CO-O-PE-O]<sub>n</sub>-H, where PA is a polyamide block, PE is a polyester block and n is the number of repeated blocks in the polymer. An example of a commercially available polymer of this type is the PEBAX (polyether block amide) range from Elf Atochem. Most preferred is PEBAX 2533SN01. Tests of fragrance diffusion from this material show that fragrance continues to diffuse for more than 60 days whereas it lasts for less than 30 from a cellulose support.

**[0040]** Other preferred polymers are poly (ethylene-co-vinylacetate)copolymers. An example of a commercially available polymer of this type is Elvax from Dupont de Nemours. These above mentioned polymers have the advantage of being able to absorb up to 20% and 50% by weight of fragrance oil and can be worked using a variety of different techniques such as; injection and moulding, extrusion of films, tubes and sheets, co-extrusion with other plastics such as polyethylene, polypropylene and polycarbonate, thermoforming, over moulding and coating.

**[0041]** All of the above described materials and procedures can be used for manufacturing suitable inserts for the described invention.

**[0042]** The following examples give details of suitable combinations of fragrance concentration in a fragranced insert, suitable dimensions of a fragranced insert and dimensions of perforations.

A) PEPAX insert containing 30% of fragrance by weight:

Insert size respective surface area preferably between 3 cm<sup>2</sup> and 12.5 cm<sup>2</sup>.

Formed either round or rectangular with a thickness of preferably 1 mm - 5 mm.

Total surface area of the perforations preferably between 0,5 cm<sup>2</sup> and 0,9 cm<sup>2</sup>.

B) EVA insert containing 20% of fragrance by weight:

Insert size respective surface area preferably between 3 cm<sup>2</sup> and 12.5 cm<sup>2</sup>.

Formed either round or rectangular with a thickness of preferably 1 mm - 5 mm.

Total surface area of the perforations preferably between 0,5 cm<sup>2</sup> and 0,9 cm<sup>2</sup>.

**[0043]** The scope of this invention covers packaging for all personal care and household consumer products in which fragrance type or quality might play a role in the consumer choice of buying. It permits the consumer to test the fragrance without tampering with the packaging. Examples of the type of product for which this invention is suitable include (among others): shampoos, hair conditioners, shower gels, liquid soaps, intimate hygiene products, personal deodorants and anti-perspirants, skin creams, skin lotions, sun protection products, liquid laundry detergents, dishwashing liquids, automatic dishwashing powders and liquids, all-purpose and specialised surface cleansers, air fresheners.

#### Claims

1. Container with a cover which allow to keep a consumer product, a liquid or a solid, such as a cosmetic product, a personal care product, a medical product, a household product or the like, tightly sealed, **characterised in that** the container (20w) or the cover (10, 10y, 10z) comprises a chamber (12; 24) suitable to receive a fragranced insert (1; 1x; 1y; 1w) said chamber (12; 24) comprising at least one opening (11; 11a, 11b, 11c, 11d; 26) through which the fragranced insert (1; 1x; 1y; 1w) is at least partially exposed to the ambience and with a seal (13; 13x; 13y; 13z) used for separating the fragranced insert (1; 1x; 1y; 1w) from the product (21) contained in the container (20; 20y; 20z; 20w).
2. Container and cover according to claim 1, **characterised in that** the container (20; 20y; 20z; 20w) or the cover (10, 10y, 10z) comprises double walls suitable to receive the fragranced insert (1; 1x; 1y; 1w) in between.
3. Container according to claim 1, **characterised in that** the seal (13; 13x; 13y; 13z) mounted in the cover (10, 10y, 10z) is closing the chamber (12; 24) and/or, when the cover (10, 10y, 10z) is in closed position, the opening (23; 23z) of the container (20; 20y; 20z; 20w), through which the product (21) can be taken out.
4. Container according to claim 3, **characterised in that** the seal (13x; 13y) is connected to the fragranced insert (1x; 1y).
5. Container according to claim 3, **characterised in that** a cam-like seal (13z) is connected to the cover (10z) which is tightly fitting into the opening (23z) of the container (20z) when the cover (10z) is in closed position and that the fragranced insert (1z) is designed in such a way that the cam-like seal (13z) passing through or besides the fragranced insert (1z) into the opening (23z) of the container (20z).
6. Container according to one of the claims 1 - 5, **characterised in that** the fragranced insert (1; 1x; 1y; 1w) fits into and preferably extending out of the at least one opening (11; 11a, 11b, 11c, 11d; 26).
7. Container according to one of the claims 1 - 6, **characterised in that** the fragranced insert (1; 1x; 1y; 1w) is made from a solid material, preferably a material, such as plastic polymer, cellulose, wax, plaster, cement, wood or composite materials containing any of these, said solid material being suitable for absorbing a fragrance oil or a fragranced solution.
8. Container according to claim 7, **characterised in that** the fragranced insert (1; 1x; 1y; 1w) contains a fragrance oil or a fragrance solvent at a level of 1% to 50%, preferably 20% to 50%, by weight.
9. Container according to one of the claims 1 - 8, **characterised in that** the total surface area of the perforations is in the range from 0,25 cm<sup>2</sup> to 5,0 cm<sup>2</sup> with a preferred surface area of 0,4 cm<sup>2</sup> to 1,0 cm<sup>2</sup> and/or that the fragranced insert (1; 1x; 1y; 1w) has a surface area in the range from 3 cm<sup>2</sup> to 12,5 cm<sup>2</sup> with an average thickness between 1 and 5 mm.
10. Cover for a container (20; 20y; 20z) according to one of the claims 1 - 9, **characterised in that** the cover (10, 10y, 10z) comprises a chamber (12) suitable to receive a fragranced insert (1; 1x; 1y) said chamber (12) comprising at least one opening (11; 11a, 11b, 11c, 11d) through which the fragranced insert (1; 1x; 1y) is at least partially exposed to the ambience and with a seal (13; 13x; 13y) used for separating the fragranced insert (1; 1x; 1y; 1w) from the product (21) contained in the container (20; 20y; 20z).
11. Cover according to claim 10, **characterised in that** the cover (10, 10y, 10z) comprises double walls suitable to receive the fragranced insert (1; 1x; 1y) in between.
12. Cover according to claim 10 or 11, **characterised**

in that the seal (13; 13x; 13y; 13z) mounted in the cover (10, 10y, 10z) is closing the chamber (12; 24) and/or, when the cover (10, 10y, 10z) is in closed position, the opening (23; 23z) of the container (20; 20y; 20z).

5

13. Cover according to claim 10, 11 or 12, **characterised in that** the cover (10y, 10z) is connected to the container (20y; 20z) by a joint.

10

14. Cover according to claim 13, **characterised in that** a cam-like seal (13z) is connected to the cover (10z) which is tightly fitting into the opening (23z) of the container (20z) when the cover (10z) is in closed position and that the fragranced insert (1z) is designed in such a way that the cam-like seal (13z) passing through or besides the fragranced insert (1z) into the opening (23z) of the container (20z).

15

15. Insert (1; 1x; 1y; 1w) for a cover (10, 10y, 10z) and/or a container (20w) according to one of the claims 1 - 14, made from a solid material, preferably a material, such as plastic polymer, cellulose, wax, plaster, cement, wood or composite materials containing any of these, said solid material being suitable for absorbing a fragrance oil or a fragrance solution.

20

25

16. Insert (1; 1x; 1y; 1w) according to claim 15, **characterised in that** the insert (1; 1x; 1y; 1w) contains a fragrance oil or a fragrance solution at a level of 1% to 50%, preferably 20% to 50%, by weight.

30

17. Insert (1; 1x; 1y; 1w) according to claim 15 or 16, **characterised in that** the insert (1; 1x; 1y; 1w) is designed to fit into a perforated chamber (12; 24) provided in the cover (10, 10y, 10z) or in the container (20w) and preferably into and/or extending through and out of the at least one opening (11; 11a, 11b, 11c, 11d; 26) of the perforation towards the outside.

35

40

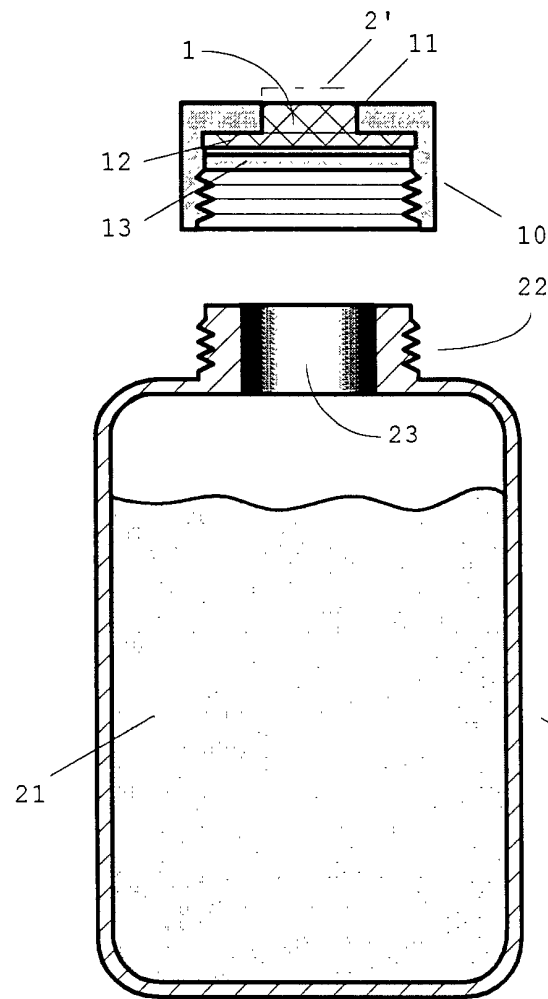
18. Insert (1; 1x; 1y; 1w) according to claim 15, 16 or 17, **characterised in that** the insert (1; 1x; 1y; 1w) has a surface area in the range from 3 cm<sup>2</sup> to 12,5 cm<sup>2</sup> with an average thickness between 1 and 5 mm.

45

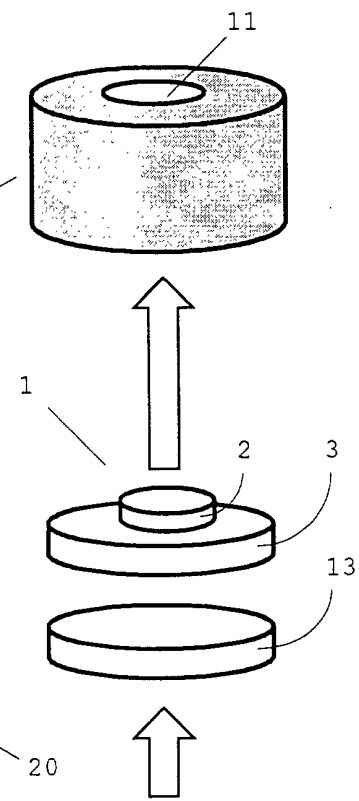
50

55

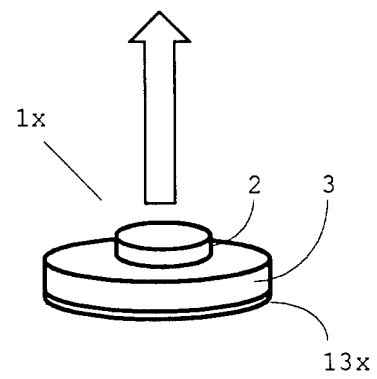
**Fig. 1**



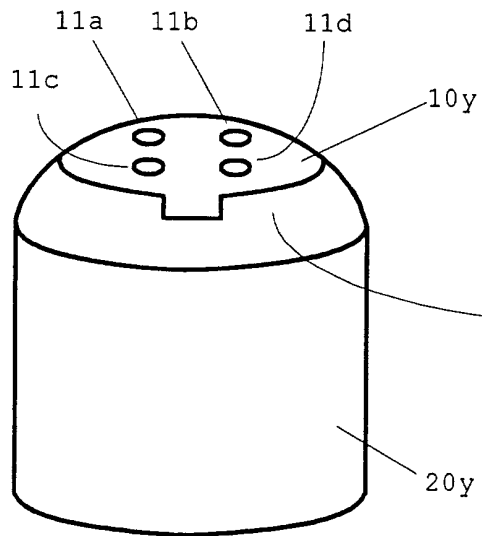
**Fig. 1a**



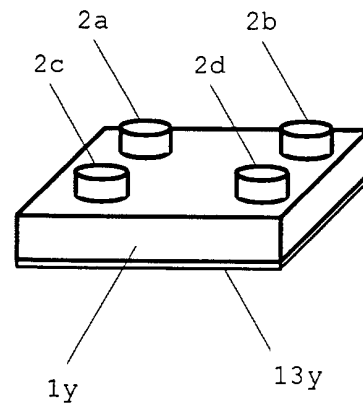
**Fig. 1b**



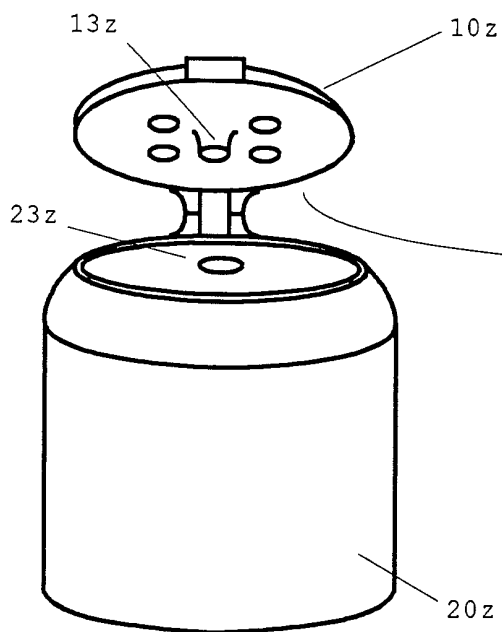
**Fig. 2**



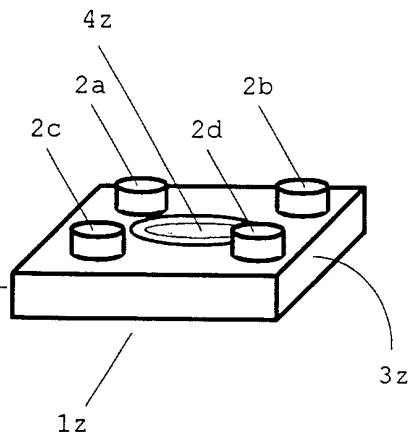
**Fig. 2a**



**Fig. 3**

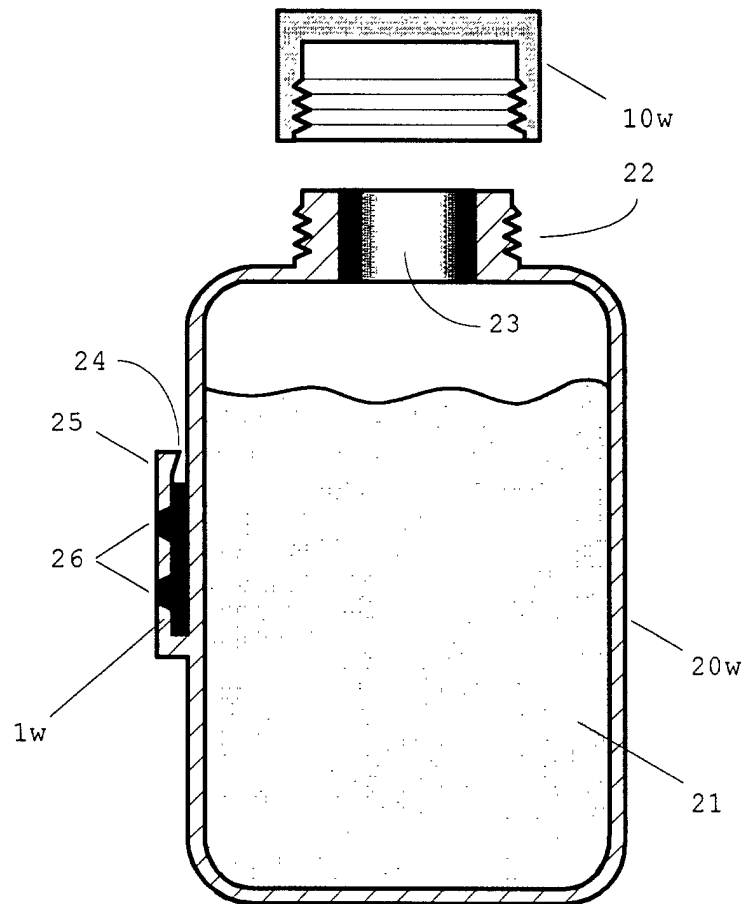


**Fig. 3a**





**Fig. 4**





European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 00 10 5850

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.7)
X	FR 639 477 A (COTY) 22 June 1928 (1928-06-22) * page 1, column 39 - page 2, column 63; figures 2,3 *	1-3, 10-12	A45D33/00 A45D37/00
A	---	4-9,13, 14	
X	WO 00 00059 A (PROCTER & GAMBLE) 6 January 2000 (2000-01-06) * page 3-16; figures 2,3,5 *	15	
A	---	16-18	
A	US 2 438 841 A (JOSEPH CASALINO) 30 March 1948 (1948-03-30) * the whole document *	1-14	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			A45D
The present search report has been drawn up for all claims			
Place of search <b>MUNICH</b>		Date of completion of the search <b>27 September 2000</b>	Examiner <b>Lang, D</b>
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 10 5850

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

27-09-2000

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 639477	A	22-06-1928	NONE	
WO 0000059	A	06-01-2000	AU 4848999 A	17-01-2000
US 2438841	A	30-03-1948	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82