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(54) **Air vent seal for containers of cosmetic products**

(57) The invention relates to a seal (1) of elastic material for packages (2) of cosmetic products, adapted for being placed between a cover (3) and a container (4) adapted for containing a cosmetic product (11). The seal (1) comprises a first membrane (5) facing the cover (3) and a second flexible membrane (6) facing the inside (7) of the container (4), which are distinct from each other and connected to each other at one edge (19) provided

with an annular sealing zone (8). The second membrane (6) is provided with bores (20) for the air passing from the container (4) towards the first membrane (5). The seal (1) is provided with flexing means (13) which together with abutting means (15, 16, 17, 18) of the cover (3) and container (4) are adapted to inflect the second bored membrane (6) towards the inside (7) of the container (4) when the cover (3) is closed. (Fig. 6).

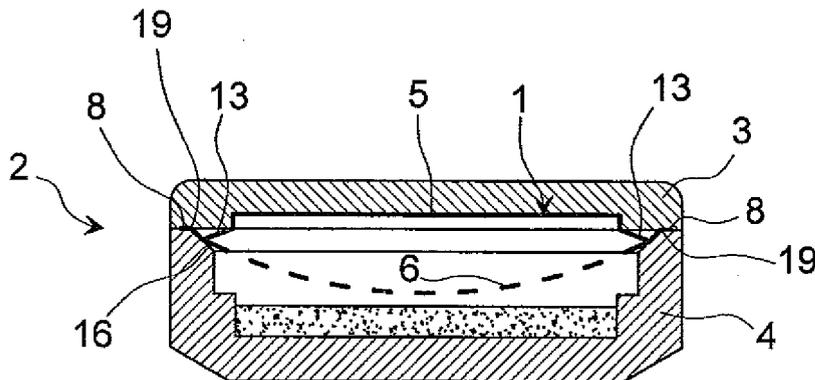


Fig.6

Description

[0001] The present invention relates to an air vent seal for containers of cosmetic products.

[0002] Here, reference is made to packages of cosmetics such as containers containing a certain amount of product, e.g. cream, closed with covers. The container typically has a mouth of a relatively large type, sometimes large enough for inserting fingers or other aids for picking up the cosmetic. Therefore, there is no reference herein to the type of cosmetic container ascribable to a tube with an outlet orifice for the cosmetic.

[0003] The type of cosmetic and container thereof referenced herein involves the presence of an air space between the cosmetic and the interior of the cover which remains when the cover is closed. This air space is detrimental to the good preservation of the product because it causes oxidations and a water content variation in the product due to the evaporation.

[0004] Previous solutions to this problem include the use of O-ring type seals and metal straps, to ensure the airtight sealing of covers. However, these solutions do not act on the air amount existing between the cover and the cosmetic surface.

[0005] The application of small discs on the cosmetic surface is further known, but they should be removed and restored each time the cosmetic is picked up, thus making their use not so easy and exhibiting some hygiene problems over time, since the small discs should be manually moved.

[0006] Therefore, it is the object of the present invention to provide a condition of air insulation for the cosmetic in order to solve the above-mentioned efficiency and hygiene problems.

[0007] In accordance with the invention, such an object is achieved by a seal of elastic material for packages of cosmetic products adapted for being placed between a cover and a container adapted for containing a cosmetic product, **characterized in that** the seal comprises a first membrane facing the cover and a second flexible membrane facing the inside of the container, which are distinct from each other and connected to each other at one edge provided with an annular sealing zone, the second membrane being provided with bores for the air passing from the container towards the first membrane, the seal being provided with flexing means which together with abutting means of cover and container are adapted to deflect the second bored membrane towards the inside of the container when the cover is closed.

[0008] These and other features of the present invention will become more apparent from the following detailed description of a practical embodiment thereof, shown by way of non-limiting example in the accompanying drawings, in which:

figure 1 shows a top perspective view of a seal for a cosmetic product package according to the invention;

figure 2 shows bottom perspective view of the seal; figure 3 shows a diametrical section view of the seal; figure 4 shows a diametrical section view of a package according to the invention with the cover being open;

figure 5 shows a diametrical section view of a package according to the invention with the cover resting on a cosmetic container;

figure 6 shows a diametrical section view of a package according to the invention with the cover being closed.

[0009] With reference to figures 1, 2 and 3, there is provided a seal 1 comprised of a first upper membrane 5 and a second lower membrane 6, which are distinct from each other and connected to each other at one edge 19. The first membrane 5 has an annular zone 8 which extends towards the outside of edge 19. The second membrane 6 has bores 20 adapted for the air passing towards the first membrane 5.

[0010] Seal 1 is adapted for being used between a cover 3 and a container 4 of a package 2 adapted for containing a cosmetic product 11 in an inside 7 thereof.

[0011] The first membrane 5 is provided with a top portion 12 in contact with and abutting against cover 3 through a complementary profile 15 of the cover itself.

[0012] The first membrane 5 is further provided with flexing means 13 for deflecting the second membrane 6, as it will be clearer hereinafter. The flexing means may be of various types, in this embodiment they are shaped as an annular portion 13 placed around the top portion 12, between the latter and the annular zone 8, which is inclined towards container 4 with respect to the top portion 12.

[0013] Container 4 comprises a mouth 14 provided with a truncated-cone portion 16. The mouth 14 precedes a first circumference 17 and a second circumference 18 of the truncated-cone portion 16; the first circumference 17 is at the inlet of and of a bigger size than the second circumference 18, the latter facing the inside 7 of container 4.

[0014] Furthermore, the first circumference 17 has a diameter substantially equal to that of edge 19 (figure 2) of the seal 1.

[0015] The technical problem of reducing the air in contact with the cosmetic product 11 of a container 4 in a package 2 of cosmetic products 11 is solved by the above-mentioned embodiment of the seal 1 acting as follows.

[0016] With reference to the accompanying drawings, and in particular to figures 4, 5 and 6, seal 1 rests on cover 3, with the first membrane 5 facing the cover 3, with the top portion 12 in contact with cover 3. The profile 15 of cover 3 is complementary to the top portion 12 and is in abutment therewith. The second bored membrane 6 faces the mouth 14 of container 4.

[0017] In figure 5, cover 3 and seal 1 rest on the mouth 14 of container 4. It should be noted that the edge 19 of

the second membrane 6 is equal to the first circumference 17 of portion 16.

[0018] The top portion 12 in contact with the cover 3 is urged by the cover itself to push seal 1 towards the container 4 upon closing the cover 3 of container 4.

[0019] In figure 6, the effect of the progressive closing between cover 3 and container 4, due to the abutting means 16, 17, 18 of the mouth 14, and to the inclination of the annular portion 13, results in that upon lowering the cover 3, edge 19 is forced to move outwards from the first circumference 17. The flexible, elastic annular portion 13 is thus deformed as shown in figure 6, under the pressure of cover 3.

[0020] The deformation of the annular portion 13 accentuates the inflection of the second membrane 6 towards the inside 7 of container 4, because the mutual inclination between the annular portion 13 and the second membrane 6 tends to be kept. Therefore, upon the inflection of the annular portion 13, the second membrane 6 inflects downwards. The second membrane 6 approaches the cosmetic product 11, and by allowing the air existing between the cosmetic product 11 and the second membrane 6 to pass towards the first membrane 5 through the bores 20, significantly reduces the air in contact with the cosmetic product 11, without the need of touching seal 1.

[0021] Edge 8 acts as an airtight seal between the cover 3 and the container 4, when the cover 3 is closed.

Claims

1. Seal (1) of elastic material for packages (2) of cosmetic products adapted for being placed between a cover (3) and a container (4) adapted for containing a cosmetic product (11), **characterized in that** the seal (1) comprises a first membrane (5) faced to the cover (3) and a second membrane (6) which is flexible and is faced to the inside (7) of the container (4), which membranes are distinct from each other and connected with each other at an edge (19) provided with an annular sealing zone (8), the second membrane (6) being provided with bores (20) for passage of air from the container (4) towards the first membrane (5), the seal (1) being provided with flexing means (13) which together with abutting means (15, 16, 17, 18) of the cover (3) and the container (4) are able to inflect the second bored membrane (6) towards the inside (7) of the container (4) when the cover (3) is closed.
2. Seal (1) according to claim 1, **characterized in that** the seal (1) comprises a top portion (12) in contact with the cover (3) which is adapted for abutting said cover (3) to push the seal (1) towards the container (4) when the cover (3) is closed.
3. Seal (1) according to claim 2, **characterized in that**

the flexing means (13) of the seal (1) comprise at least an annular portion (13) between the top portion (12) and the annular sealing zone (8) of the first membrane (5) with an inclination with respect to the second membrane (6) which is adapted for inflecting the second membrane (6) towards the inside (7) of the container (4) under the action of the abutting means (15, 16, 17, 18) of the cover (3) and the container (4).

4. Package (2) of cosmetic products comprising a container (4) provided with a mouth (14), a cover (3) and a seal (1) to be interposed between the cover (3) and the container (4), **characterized in that** the seal (1) comprises a first membrane (5) faced to the cover (3) and a second membrane (6) which is flexible, which are distinct from each other and connected with each other at a sealing edge (19) provided with an annular sealing zone (8), the second membrane (6) being provided with bores (20) for passage of the air present inside the container (4), the package (2) being provided with abutting means (15, 16, 17, 18) which cooperate with flexing means (13) of the seal (1) for inflecting the second bored membrane (6) towards the inside (7) of the container (4).
5. Package (2) according to claim 4, **characterized in that** the abutting means (15, 16, 17, 18) comprise a profile (15) of the cover (3) which is adapted for providing abutment for a top portion (12) of the first membrane (5).
6. Package (2) according to claim 4 or 5, **characterized in that** the abutting means (15, 16, 17, 18) comprise at least a substantially truncated-cone portion (16) at the mouth (14), a first circumference (17) of said truncated-cone portion (16) being at the inlet and of bigger size than a second circumference (18) faced towards the inside (7) of the container (4).
7. Package (2) according to claim 6, **characterized in that** the first circumference (17) of the truncated-cone portion (16) is substantially equal to that of the edge (19).
8. Package (2) according to anyone of claims 4 to 7, **characterized in that** the flexing means (13) comprise a flexible annular portion (13) around the top portion (12) which is adapted for inflecting the second membrane (6) towards the inside (7) of the container (4) when the cover (3) is closed.

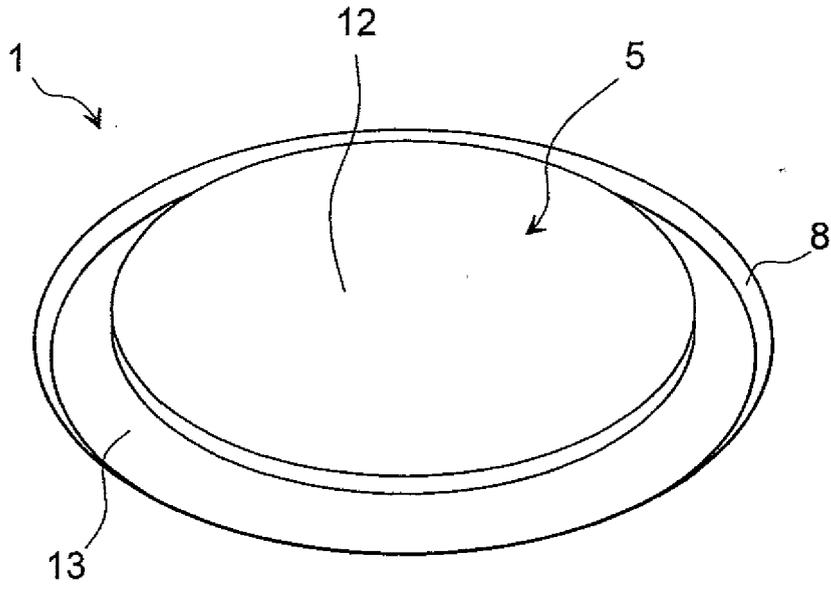


Fig.1

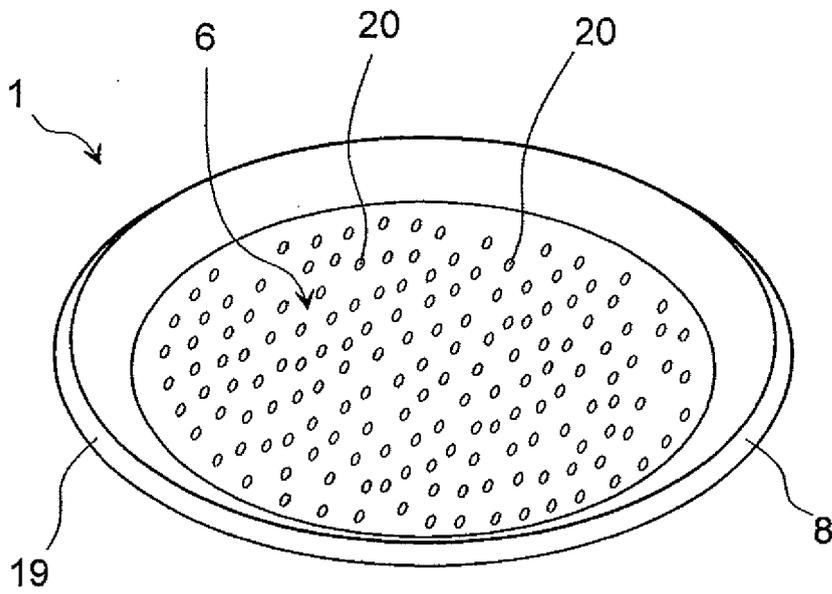


Fig.2

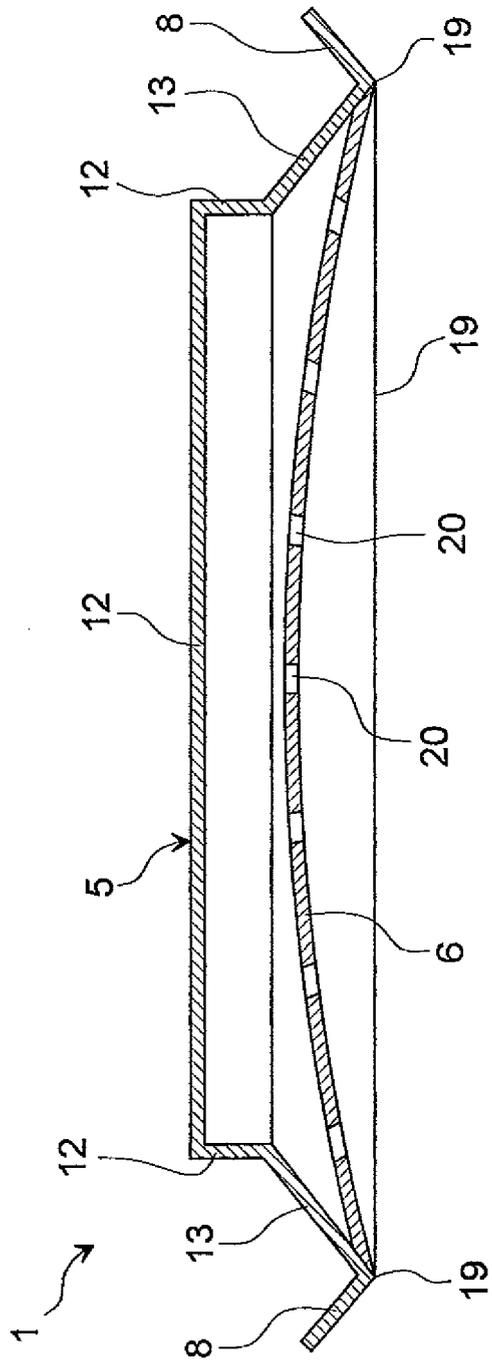


Fig.3

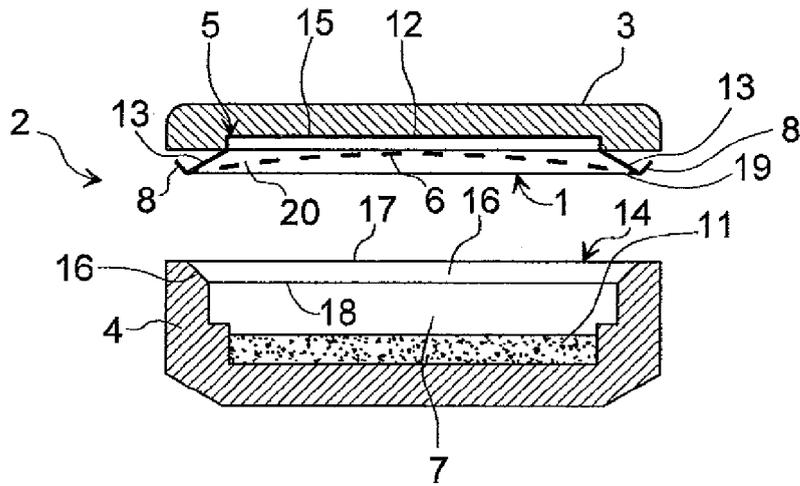


Fig.4

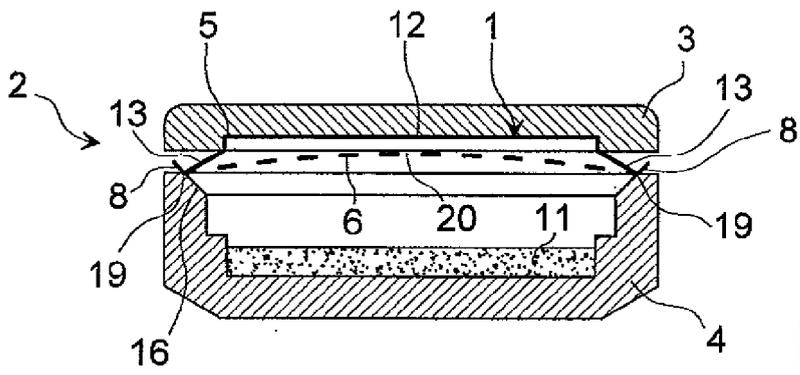


Fig.5

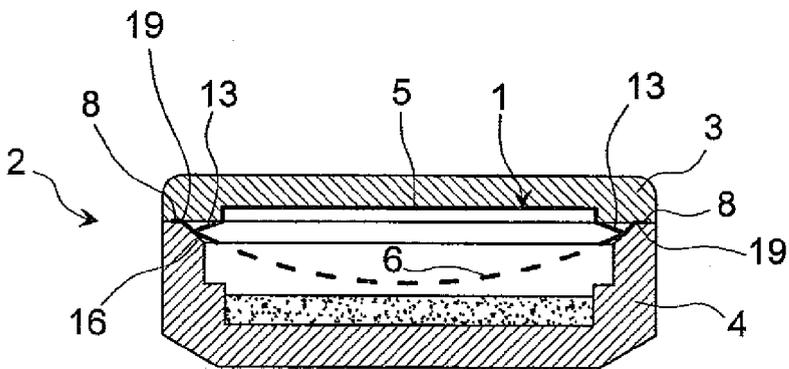


Fig.6



EUROPEAN SEARCH REPORT

Application Number
EP 09 17 8113

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	EP 0 861 613 A2 (LAFFON S P A [IT]) 2 September 1998 (1998-09-02) * column 3, line 51 - column 4, line 18; figure 3 *	1,4	INV. B65D81/24 B65D53/04 A45D40/00 B65D77/20
A	FR 1 061 561 A (MAZZONI) 13 April 1954 (1954-04-13) * page 2, left-hand column, paragraph 8 - right-hand column, paragraph 1; figures 1-3 *	1,4	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65D A45D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 23 March 2010	Examiner Bridault, Alain
CATEGORY OF CITED DOCUMENTS		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	
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		& : member of the same patent family, corresponding document	

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

EP 09 17 8113

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
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23-03-2010

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0861613	A2	02-09-1998	IT MI970388 A1	24-08-1998
FR 1061561	A	13-04-1954	NONE	

EPO FORM P0459

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