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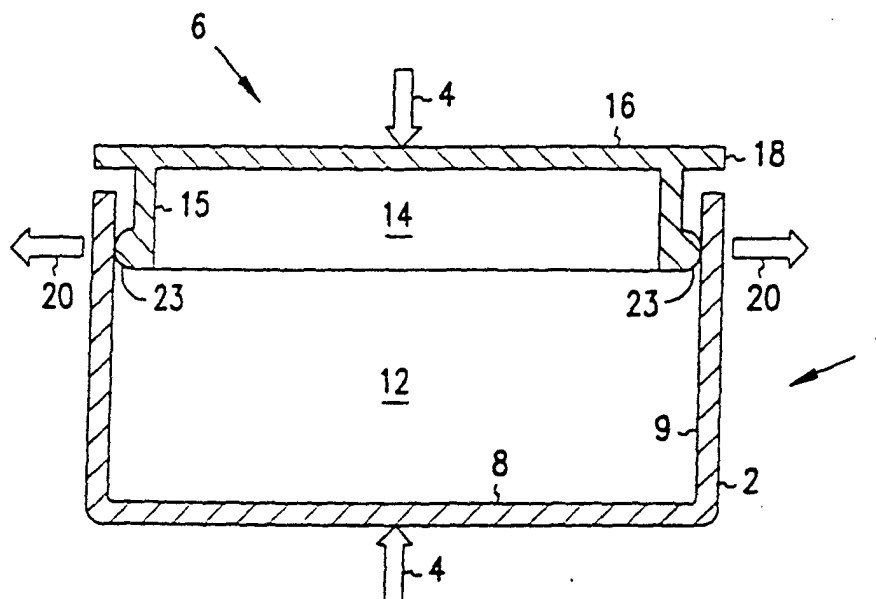
This application was filed on 04 - 10 - 2002 as a  
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(54) **Packaging and cover for packaging for cosmetic or pharmaceutical compositions**

(57) One embodiment of the present invention in-  
 cludes a cover (6) for a packaging for a cosmetic and/  
 or a pharmaceutical composition.

The cover (6) comprises means of attachment on a

container of the packaging and a sealing wall for sealing  
 an opening of the container (1). The sealing wall is a  
 flexible wall that is elastically deformable by a difference  
 in pressure exerted on its two main sides.



**FIG. 1**

## Description

### BACKGROUND OF THE INVENTION

[0001] The present invention relates to a cover for packaging of cosmetic compositions and/or pharmaceutical compositions, to a packaging such as refillable packaging and sealed packaging for cosmetic and/or pharmaceutical compositions, and to cosmetic and/or pharmaceutical compositions packaged in the packaging.

[0002] Packagings for cosmetic compositions are typically provided with a rigid cover which prevents variation of the internal volume of the packaging. In the case of sealed packaging, a variation of the internal pressure, for example, an increase of the internal pressure induced by closing of the cover, or a variation of the external pressure, induces a difference of pressure between the interior and the exterior of the packaging.

[0003] This pressure variation has numerous disadvantages. On one hand, hermetic sealing of the packaging can be compromised leading to a risk of leakage of the cosmetic composition due to excessive internal pressure, or of contamination of the cosmetic composition due to internal low pressure. Furthermore, low pressure created by movement of the wall of the cover during opening of the packaging risks detaching the cosmetic composition and carrying it outside of its housing. Moreover, compression of the air tends to work against closing of the packaging, while external pressure not balanced by an equivalent internal pressure tends to work against opening of the packaging. This pressure variation occurs for containers with a sealed compartment.

[0004] Cosmetic compositions based on wax and emulsions of fatty material can advantageously be refilled within a container, particularly in the case of foundations, lipsticks, rouges or creams, by-products based on solvents, such as water, volatile silicones, alcohols or mixtures of them. These types of products require for their storage a packaging with a sealed compartment.

[0005] The sealed packagings for cosmetic compositions of known type have an elastomer seal with compression having an axial component. These packagings have numerous disadvantages. The sealed quality is only ensured if the elastomer seal is compressed with a relatively high force, making the closing of the packaging difficult or not very reliable. Furthermore, the packaging has a high price, due not only to the use of an expensive seal, but also due to difficulties of automation of the positioning of a non-rigid part, such as an elastomer seal.

[0006] One other problem with sealed cosmetic packaging concerns refills. Production of a packaging of a cosmetic composition by placing a refill inside a housing is known. The positioning and holding of the refill is not always easy. Moreover, the volume of the container receiving the refill increases the space requirement of the packaging. Furthermore, it is not always easy to ensure

the temporary hermetic sealing of a sealed compartment of a refillable packaging for a cosmetic and/or pharmaceutical composition produced based on a volatile solvent.

### SUMMARY OF THE INVENTION

[0007] One embodiment of the present invention includes a cover for a packaging for a cosmetic and/or pharmaceutical composition. The cover comprises means of attachment on a container of the packaging and a sealing wall for sealing an opening of the container. The sealing wall is a flexible wall that is elastically deformable by a difference in pressure exerted on its two main sides.

[0008] Another embodiment of the present invention includes a packaging for a cosmetic and/or pharmaceutical composition. The packaging comprises a container for receiving the cosmetic and/or pharmaceutical composition and a cover with an elastic deformation. The elastic deformation occurs as a result of a difference between internal pressure predominating in the container and an external pressure that at least partially balances the pressure differences on the sides of the flexible wall.

[0009] One other embodiment of the present invention includes a cosmetic and/or pharmaceutical composition disposed in packaging that has a ventilated compartment and some means of application of cosmetic and/or pharmaceutical composition of the sponge or Japanese foam type.

[0010] Another embodiment of the present invention includes a sealed packaging for cosmetic or pharmaceutical compositions. The sealed packaging includes a sealed compartment defined by a container and a fitted cover characterized by radial walls that are arranged a distance  $d$  apart from one another. One of the walls is provided with an annular rib having a radial extent in a direction of the other wall which is greater than  $d$ , in such a way as to exert on the opposite wall a radial force ensuring temporary hermetic sealing of the sealed compartment of the packaging.

[0011] Another embodiment of the present invention includes a refillable packaging for a cosmetic and/or pharmaceutical composition which has an external envelope wherein the external envelope is provided with an opening for receiving a container of a refill of cosmetic and/or pharmaceutical composition. The packaging further comprises an opening of the container that opens inside external envelope and means of locking the container of the refill in position in the packaging.

[0012] One additional embodiment of the present invention includes a process for packaging a cosmetic and/or pharmaceutical composition. The process includes filling a container of a refill with cosmetic and/or pharmaceutical composition. The process also includes assembling the container of the refill containing cosmetic and/or pharmaceutical composition with a packaging.

## DESCRIPTION OF THE DRAWINGS

### [0013]

Figure 1 is a cross-sectional view of one embodiment of a packaging according to the present invention.

Figure 2 is a cross-sectional view of another example of execution of a packaging according to the present invention.

Figure 3 is a cross-sectional view of another example of packaging of the present invention.

Figure 4 is a cross-sectional view of one other example of packaging of the present invention.

Figure 5 is a cross-sectional view of another embodiment of packaging of the present invention.

Figure 6 is a cross-sectional view of another embodiment of packaging of the present invention.

Figure 7 is a cross-sectional view of one other embodiment of packaging of the present invention.

Figure 8 is a cross-sectional view of another embodiment of packaging of the present invention.

Figure 9 is a cross-sectional view of another embodiment of packaging of the present invention.

Figure 10 is a side view of packaging of Figure 9 in an open state.

Figure 11 is a cross-sectional view of a cup of the packaging of Figure 9.

Figure 12 is a top view of the cup of Figure 11.

Figure 13 is a view on a larger scale of the packaging of Figure 9.

## DETAILED DESCRIPTION

[0014] One embodiment of the present invention includes a packaging with a sealed compartment with substantially no leakage of a cosmetic and/or a pharmaceutical composition due to excessive internal pressure, or of contamination due to excessive internal pressure. Furthermore, with the packaging of the present invention, there is no risk of flow of the composition during opening, closing or operation of refilling of the packaging. The packaging is easy to open and close. The packaging has a sealed compartment closed by a cover which is provided with a wall which can be deformed, preferably elastically, by a difference between the internal pressure predominating in the sealed compartment and the external pressure.

[0015] Other embodiments of the present invention include packaging which allows for automated assembly and automatic filling, particularly at high temperatures, greater than 50 degrees Centigrade, typically between 75 and 100 degrees Centigrade. Incomplete or incorrect closing of the packaging is virtually impossible. The packaging is therefore reusable.

[0016] One embodiment of the present invention includes a cover for a packaging for a cosmetic and/or pharmaceutical composition such as foundation, cream,

rouge or lipstick, which has a mechanism for attachment onto a container of the packaging and a wall for sealing an opening of the container, characterized by a flexible sealing wall which is deformed elastically by a difference in pressure exerted on its two main sides. The cover displays an elastic deformation caused by a difference between the internal pressure predominating in the container and the external pressure that at least partially balances this pressure difference.

[0017] Another embodiment of the present invention includes a packaging wherein the cover has a wall extending at least locally facing a wall of the container and wherein the side of the wall of the cover facing the wall of the container is provided with a radial rib whose radial extent is greater than the distance between the two walls facing one another so as to ensure, by radial contact, temporary hermetic sealing of the sealed compartment of the packaging.

[0018] One sealing wall embodiment comprises a wavy wall that includes concentric patterns in wave form increasing the flexibility of the wall in a direction normal to the opening to be sealed.

[0019] One other packaging embodiment comprises a box with a small thickness when it is provided with a middle platform, delimiting an upper ventilated compartment and a sealed compartment for receiving a cosmetic and/or pharmaceutical composition, and wherein the platform forms a cover for the latter compartment.

[0020] Another packaging embodiment includes a mechanism for receiving a removable container forming a refill of cosmetic and/or pharmaceutical composition. The packaging has a receiving opening and some mechanism of locking in position, particularly by clipping, of a removable container in the form of a trough or cup, whose opening opens inside the packaging. Some packaging embodiments further include a ventilated compartment, some mechanism of application of the cosmetic and/or pharmaceutical composition of a sponge or Japanese foam type.

[0021] One other packaging embodiment for cosmetic compositions according to the present invention includes a sealed compartment defined by a container and a cover which are associated, having radial walls arranged at least locally a distance  $d$  apart from one another. One of these walls is provided with an annular rib having a radial extent in the direction of the other wall which is greater than  $d$ , which is capable of exerting on the opposite wall a radial force ensuring temporary hermetic sealing of the sealed compartment of the packaging. It is well understood that the distance  $d$  at rest can be zero. The diameter of the external side of the wall of the cover can be greater than the diameter of the internal side of the container. In this case, during assembly, the external side of the wall of the cover and the rib separate the walls from one another. This packaging is capable of receiving refills.

[0022] For some embodiments, the cover of the packaging constitutes the cover of the sealed compartment.

The sealed compartment is for cosmetic compositions based on volatile solvents and a ventilated housing for storage of a mechanism of application, such as a Japanese foam or a sponge, which are better maintained in a dry atmosphere. In this case, the packaging according to the present invention comprises an intermediate platform between the cover of the packaging and the sealed compartment. In both cases, the cover of the compartment is advantageously flexible and/or deformable so as to ensure, by the deformation of the cover of the sealed compartment with respect to the external pressure.

**[0023]** The platform delimits a chamber for receiving the cosmetic and/or pharmaceutical composition and a ventilated compartment for receiving the mechanism of application of the cosmetic and/or pharmaceutical composition. The platform ensures hermetic sealing of the container of the refill. The platform can be deformed so as to allow compensation for the difference in pressure between the interior and the exterior of the container of the refill.

**[0024]** A wall of application of the annular rib or the wall bearing the annular rib corresponds to a wall of the container of the sealed compartment filled with the cosmetic composition. The compartment is provided with a first wall delimiting a container for receiving the cosmetic composition and a second wall, radially external with respect to the first wall, bearing the annular rib or serving as support surface for this rib. Thus, the support of the rib is prevented from separating the wall of the container for receiving the cosmetic composition from this composition, which would promote its detachment.

**[0025]** One other embodiment of the present invention includes sealed packaging having a locking mechanism that locks the packaging in a closed state in which the compartment is hermetically sealed. The annular rib is arranged on a radially external side of the wall of the cover arranged opposite a radially internal side of a wall of the container. In one embodiment, the container has two parallel or roughly parallel walls. The rib is applied on or by the radially external wall of the container to ensure hermetic sealing. The first wall delimits a chamber for receiving the cosmetic and/or pharmaceutical composition and the second wall for application of the mechanism of hermetic sealing of the container of the refill.

**[0026]** Another embodiment includes a refillable packaging for a cosmetic and/or pharmaceutical composition, which has an external envelope, characterized by an opening for receiving a container of a refill of the cosmetic and/or pharmaceutical composition and an opening of the container opens inside the external envelope, and by a mechanism of locking the container of the refill in position in the packaging. One mechanism for locking comprises projecting elements ensuring the locking and holding by clipping of the container of the refill in the packaging.

**[0027]** The container of the refill has a wall with an undercut shape delimiting a chamber for receiving the

cosmetic and/or pharmaceutical composition. For some embodiments, the packaging comprises a flat box and the container of the refill is a trough or a well.

**[0028]** For one packaging embodiment, the opening is made in a base of the external envelope of the packaging and the external wall of the bottom of the container of the refill is in the extension of the external side of the base of the envelope of the packaging.

**[0029]** The present invention also includes a process for packaging a cosmetic and/or pharmaceutical composition. The process includes filling a container of a refill with a cosmetic and/or pharmaceutical composition and assembling the container of the refill containing the cosmetic and/or pharmaceutical composition with the packaging. Filling may occur while the cosmetic and/or pharmaceutical is hot. The filling may occur by pressing the cosmetic and/or pharmaceutical

**[0030]** In Figure 1 is a packaging which has a container 1, cover 6 and a mechanism of locking in a closed state of the packaging which are symbolized by arrows 4. Container 1 has bottom 8 and cylindrical wall 9, with an elliptical, oval, polygonal or other shaped base. Wall 9 is vertical or roughly vertical, at least in its part near opening 14 of chamber 12 for receiving the cosmetic composition of container 1. Cover 6 has wall 16 for closing opening 14, wall 15 configured to the internal side of the upper part of wall 9 of the container, and a mechanism 18 for limiting the course of travel for preventing cover 6 from being pressed inside of container 1. Wall 15 is advantageously arranged parallel to the upper part where the temporary hermetic sealing of wall 9 is established, that is to say that the distance between the radially internal side of wall 9 is established. That is, the distance between the radially internal side of wall 9 and radially external side of wall 15 is constant or roughly constant. The distance is typically between a few tenths and a few hundredths of a millimeter. The external side of wall 15 bears annular rib 23 whose thickness in the nonstressed state is greater than the average distance between the radially external side of wall 15 and the radially internal side of wall 9. For example, for a distance between the sides opposite one another of walls 9 and 15 equal to 0.1 mm, annular rib 23 has a radial projection of 0.3 mm so that radial forces, symbolized by arrows 20, exerted by rib 22 on the radially internal side of wall 9 correspond to a deformation of wall 15 of 0.2 mm on each side. Radial forces 20 ensure the sealing of sealed compartment 14. It should be noted that forces 20 are exerted only in the radial direction. The axial components are zero or roughly zero when cover 6 is positioned on container 1. During introduction, the very weak axial forces correspond to friction of rib 23 on the internal side of wall 9. This results in the fact that, on one hand, it is possible to ensure excellent sealing of the packaging according to the present invention without having to exert extensive axial force, and, on the other hand, since the reaction to the axial forces is itself zero or roughly zero, the seal formed by walls 9, 15 and annular rib 23

does not tend to cause packaging 1 to open. In Figure 2, annular rib 23 is borne by the internal side of wall 9 opposite the external side of wall 15.

**[0031]** In an embodiment illustrated in Figure 2, cover 6 has wall 15 which is radially external with respect to wall 9 of container 1. Cover 6 exerts a force of constriction on wall 9 of container 1 which promotes application of this wall on its contents, in particular, on a cosmetic composition in a pasty state.

**[0032]** In an example illustrated in Figure 3, annular rib 23 is borne by the radially internal side of wall 15 of cover 6 and is applied on the radially external side of wall 9 of container 1.

**[0033]** In Figure 5, one can see an embodiment of packaging which combines features of embodiments in Figures 1 and 2 with those of Figures 3 and 4. Container 1 of Figure 5, has chamber 12 for receiving the cosmetic composition, which is delimited by walls 9', a second wall 9 radially external to and connected with wall 9' and /or with bottom 8, in such a way as to form a sealed compartment. The radially internal side of wall 9 forms a support surface for annular rib 19 of cover 6.

**[0034]** Radially external force exerted by rib 23 on wall 9 is only partially transmitted to wall 9', which considerably limits the risk of detachment of the cosmetic composition with respect to walls 9'. It is understood that use of a radially external wall associated with the seal of Figures 2, 3 and /or 4 is not outside the scope of the present invention.

**[0035]** In Figure 6 is a packaging embodiment, of the box type, which is capable of receiving, in a sealed compartment or chamber 12, a cosmetic composition of the foundation, rouge or lipstick type. The box of Figure 6 has lower part 25, upper part 27, and intermediate platform 28 provided in its center with an opening provided with sealing disk 26 which seals chamber 12. The various elements are articulated by a hinge mechanism 32 with a single pin, shown in Figure 9. Some locking mechanisms, such as a hook and pusher, which is not shown, ensure that the box is maintained in a closed state when it is not used. In order to prevent rotation of the cosmetic composition, cylindrical or oval-based wall 9 is set up on the bottom of lower part 25. The bottom of the container is made rough or to have striations to promote clinging of the cosmetic composition. Sealing disk 26, shown in Figure 6, has a wall extending roughly over the whole extent of opening 12 of sealed compartment 12, as well as wall 15 parallel to wall 9, and provided on its radially external side with annular rib 23 which is applied, in a closed state, on the radially internal sides of wall 9.

**[0036]** For some embodiments, space 22 available above sealing disk 26 forms a chamber which is ventilated by openings, not shown, for storage of the mechanism for application of the cosmetic composition, for example, a sponge or a Japanese foam. Degradation of the application mechanism is prevented by humidity and the formation of mold. Chamber 22 also receives a mir-

ror.

**[0037]** In Figure 7 is an improved example of a box of the present invention which has a single piece 29' forming the platform and the sealing disk. In one embodiment, single piece platform 29' is deformed by a difference in pressure on its two sides in order to provide compensation for such a pressure. Suction of the cosmetic composition by a low pressure brought about by opening of the box according to the present invention is avoided. Compression of the cosmetic composition due to closing of the box as well as sealing problems connected with variations in atmospheric pressure which varies with meteorological conditions and with the altitude such as connected with low and high pressures created in rooms such as the pressurized cabin of an aircraft. Moreover, the packaging according to the present invention is easy to operate, because the internal pressure does not work against its closing, and the external pressure does not work against its opening. An example of deformable wall 29' having concentric waves is illustrated in Figure 12. Platform 29' has hinges 32, with a mechanism of locking with hooks and some mechanism of return 38, in the form of leaf springs, ensuring that the platform is flattened toward opening 14 of container 12.

**[0038]** Another embodiment of a box of the present invention is illustrated in Figure 8. The sealed compartment of the box of Figure 8 is provided with removable cup 40 which, on one hand, prevents the radially external force exerted by annular rib 23 of wall 15 of platform 30' from detaching the cosmetic composition from the wall of its container. On the other hand, it is easier to fill a cup with a cosmetic composition than to handle, in a filling line, a complex box for filling opening 12 downward at high temperature. Only the plastic cup provided with a temporary packaging such as a cover, a cap, or similar closure is usable to refill a box according to the present invention.

**[0039]** One cup embodiment has an undercut shape such that its opening 14, shown in Figure 11, has a width smaller than that of a widened part. Consequently, on one hand, cup 40' tends to retain a product if the box is overturned with opening 14 downward, and on the other hand, the narrow walls of the cup at the site of opening 14 provide optical masking of possible detachments of the cosmetic composition with respect to the walls at the bottom due to evaporation of the solvent in case of prolonged opening of the box, corresponding to a common error of users.

**[0040]** The undercut shape of the receiving cup also makes it possible to mask the shrinkage of the cosmetic composition which is poured hot into the well, during its shrinkage due to a cooling phase.

**[0041]** In Figures 9 and 10, is shown an execution example of box 1 according to the present invention, which has lower part 25' provided with a central opening for receiving cup 40', whose attachment on the box is ensured by any known mechanism, such as by screwing over a quarter turn or by catching. The cosmetic com-

position 5 is illustrated by the dots in Figure 10.

**[0042]** Some embodiments of mechanisms for attachment of cup 40' are illustrated in Figures 11 and 12 and have wall 42, radially external to wall 9, provided with securing elements 44, for example, in the form of hooks distributed preferably regularly on the periphery of wall 42. The cup is roughly elliptical and it has four securing hooks 45 arranged at the intersection of the large and the small axis of the ellipse with the external side of wall 42.

**[0043]** The undercut cup is produced by blowing, or with a mold which is opened in two steps: first, the exterior of the mold is released; then a piston ensures the release of the cup with passage of narrow opening 14 through a zone of greater width of the mold by elastic deformation of the plastic material constituting the cup.

**[0044]** In Figure 13 is an annular rib 23 arranged on wall 15 facing wall 9 a distance d away, for example, equal to 0.1 mm. The intersection between the space occupied by rib 23 in the absence of wall 9 and the wall 9 in the absence of rib 23 having a radial extent e, for example, equal to 0.2 mm. As a variant, at rest, the diameter of opening 14 is less than the diameter of the radially external side of wall 15. In this case, cover 6 is introduced by force and rib 23 separates the opposite walls. Annular ribs may be rounded, polygonal such as triangular or trapezoidal.

## Claims

1. A sealed packaging for cosmetic or pharmaceutical compositions which has sealed compartment (12) defined by container (1) and fitted cover (3), **characterized by** radial walls that are arranged a distance d apart from one another; one of these walls (9, 15) is provided with annular rib (19) having a radial extent in the direction of the other wall (15, 9) which is greater than d, in such a way as to exert on the opposite wall (15, 9) a radial force ensuring temporary hermetic sealing of sealed compartment (12) of the packaging.
2. The packaging according to claim 1, further comprising means of locking (37) of the packaging in a closed state in which sealed compartment (12) is hermetically sealed.
3. The packaging according to either of claim 1 or claim 2, further comprising an annular rib (23) arranged on a radially external side of wall (15) of cover (6) arranged opposite a radially internal side of wall (9) of container (1).
4. The packaging according to any one of claims 1 to 3, further comprising a container (1) having two parallel or roughly parallel walls (9, 9') and by the rib (23) that is applied on, or by the radially external

wall (9) of the container (1).

5. The packaging according to any one of claims 1 to 4, further comprising a container (1) having a wall (9, 9') delimiting the space (12) for storage of cosmetic and/or pharmaceutical composition, which has an undercut shape.
6. The packaging according to any one of claims 1 to 5, further comprising a cover (6) having wall (21) deformable by a difference in pressure exerted on its two main sides so as to ensure compensation for this difference in pressure.
7. The packaging according to any one of claims 1 to 6, further having a shape of a box which has a lower part (25, 25') forming or receiving a container (3, 40, 40'), a separation platform (30') forming a cover for a sealed compartment and on upper part (27) forming a cover for the box.
8. The packaging according to claim 7, in which the platform (30') delimits a chamber for receiving means of application of the cosmetic or pharmaceutical composition, which has openings ensuring the ventilation of this chamber.
9. The packaging according to any one of the preceding claims **characterized in that** said packaging is a box which has a receiving opening and means of locking in position, in particular, means (42, 45) of clipping of a removable cup (33').
10. The packaging according to any one of the preceding claims further containing a cosmetic or pharmaceutical composition, particularly foundations, creams, rouges, lipsticks.

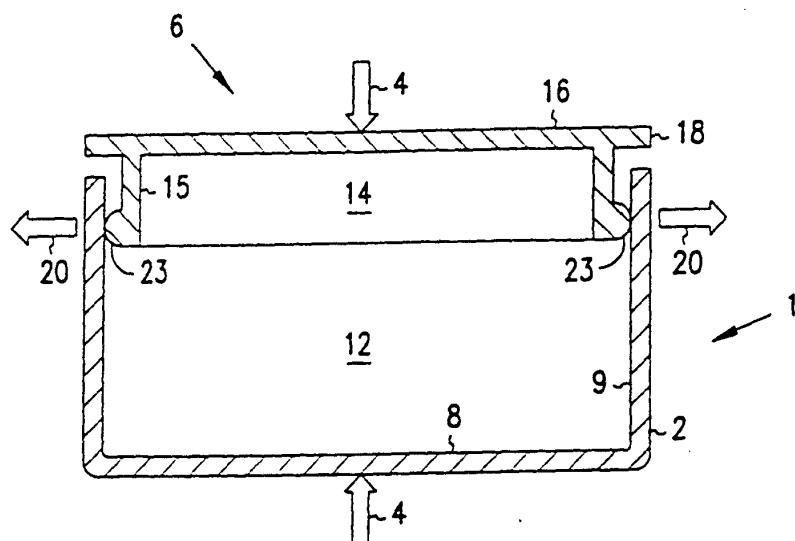


FIG. 1

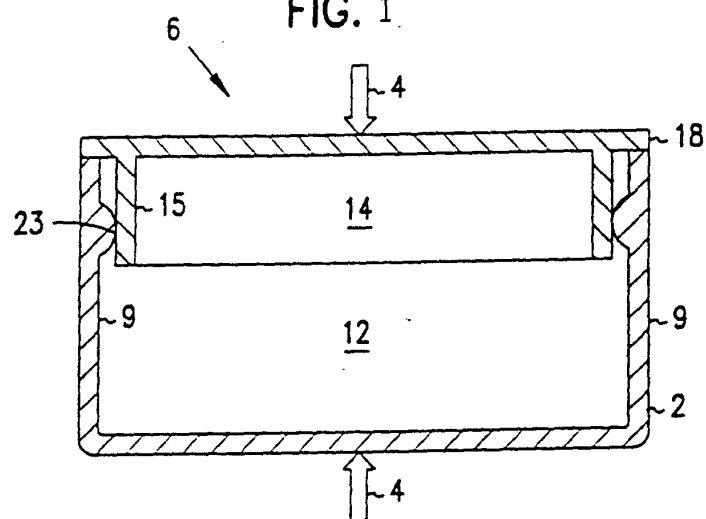


FIG. 2

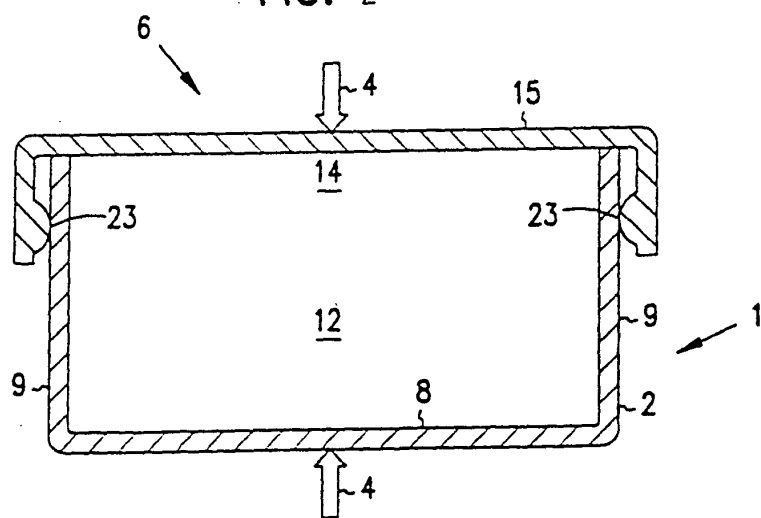


FIG. 3

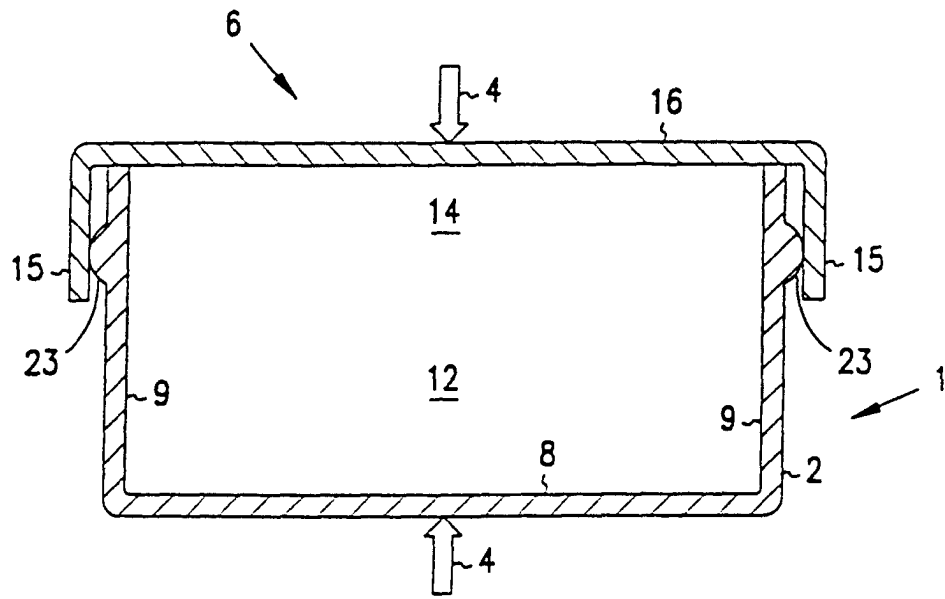


FIG. 4

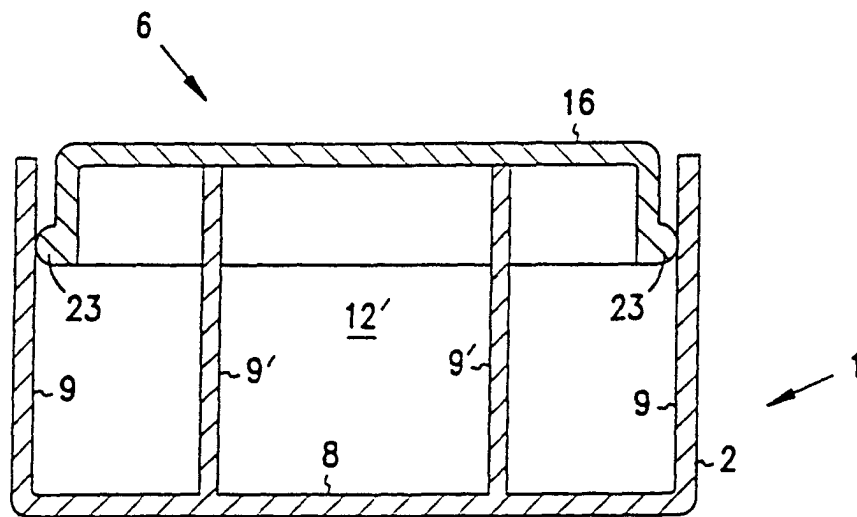


FIG. 5

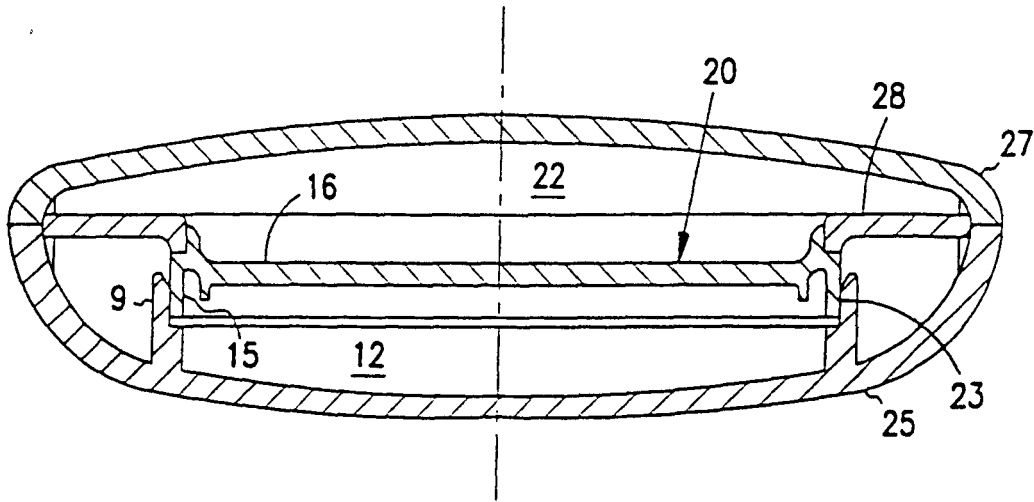


FIG. 6

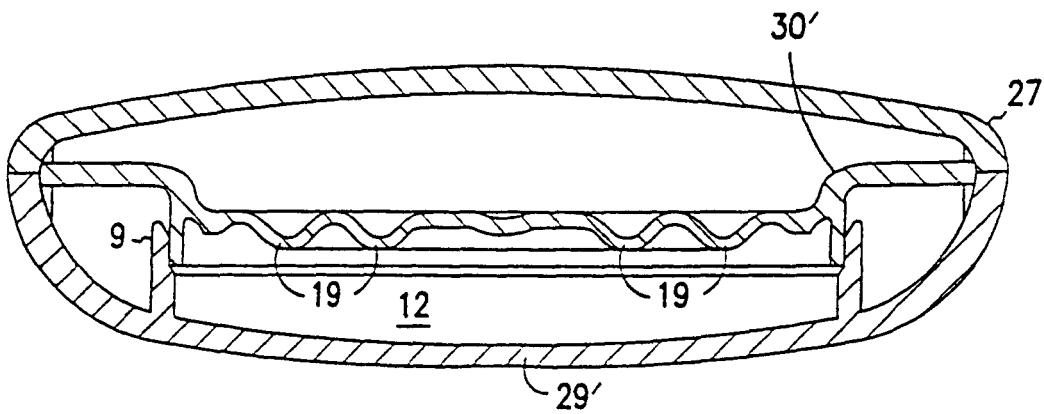


FIG. 7

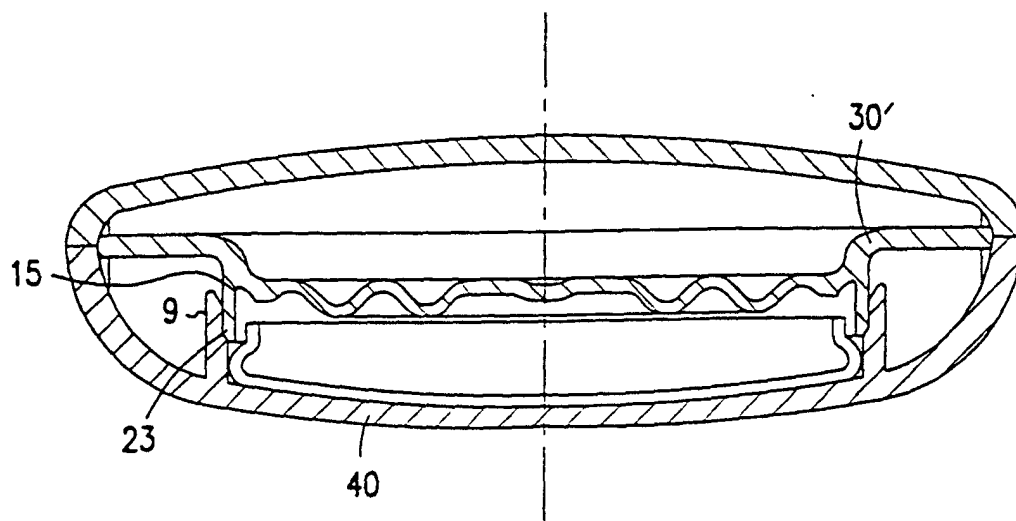


FIG. 8

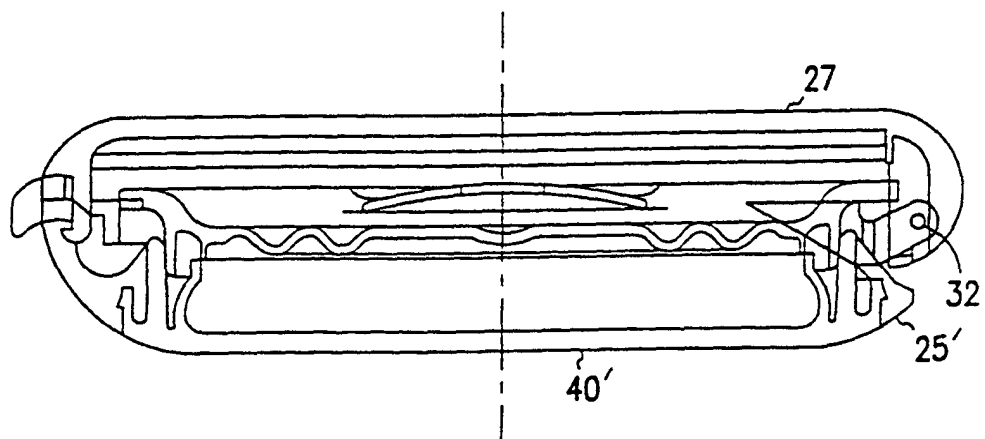


FIG. 9

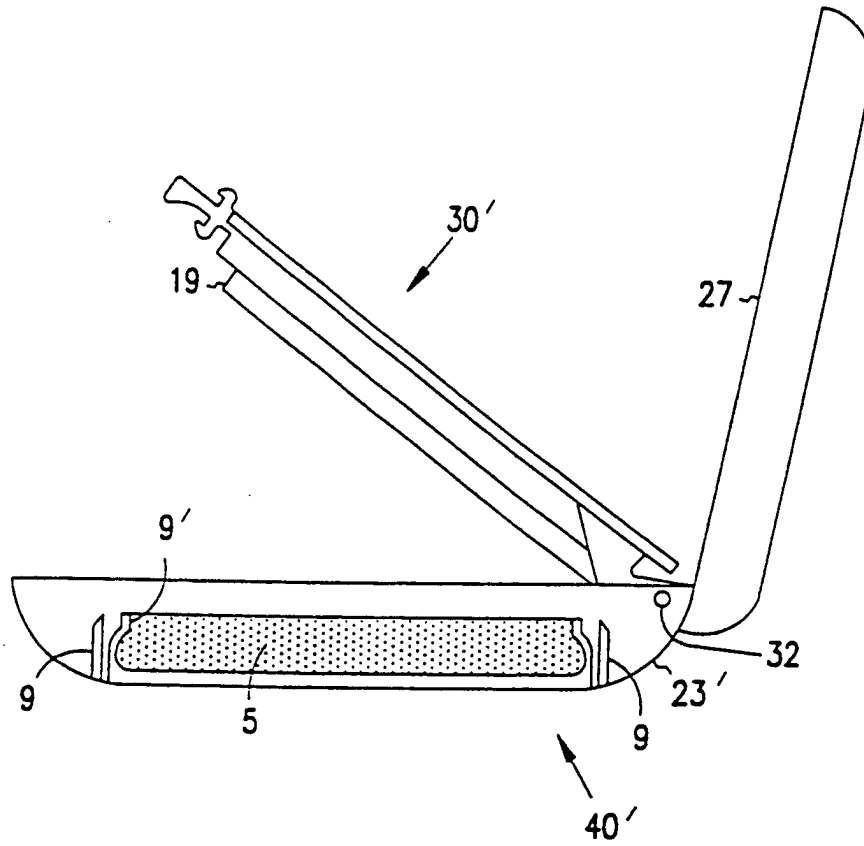


FIG. 10

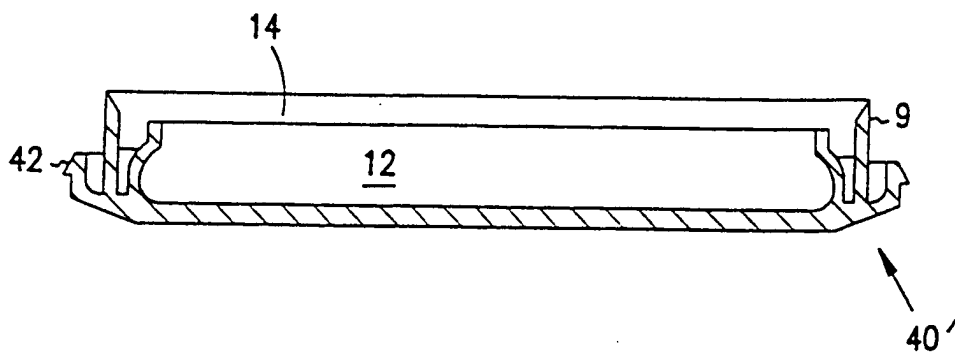


FIG. 11

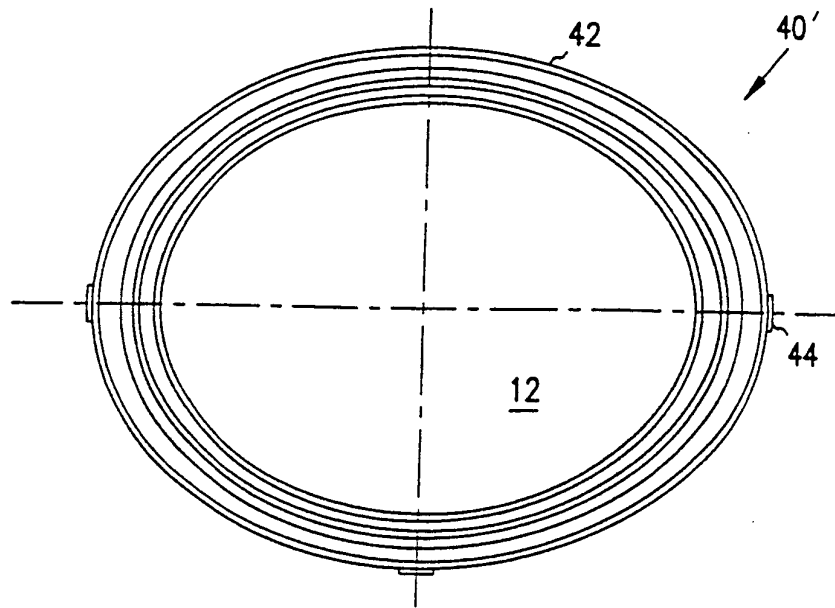


FIG. 12

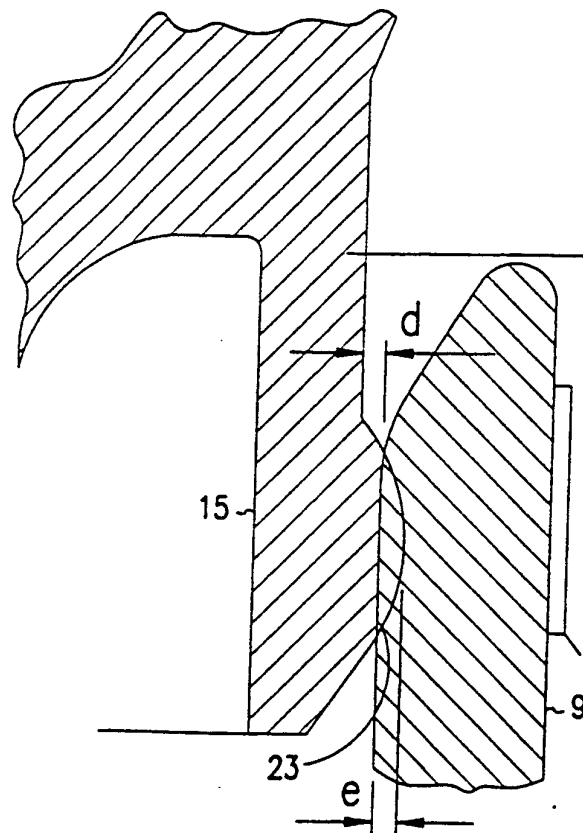


FIG. 13



European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 02 02 2185

| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | WO 98 36985 A (SHEFFLER ROBERT J ;CHANG CHARLES (US)) 27 August 1998 (1998-08-27)<br>* claims 1,19; figures 12-20 *      | 1-6,10                                                     | A45C13/00<br>A45D33/00                               |
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| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                          | 9                                                          |                                                      |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EP 0 574 107 A (RISDON CORP)<br>15 December 1993 (1993-12-15)<br>* claim 7; figures 5,6 *                                | 1-8,10                                                     |                                                      |
| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                          | 9                                                          |                                                      |
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