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Description

Field of the Invention

[0001] The present invention relates to a closure means for jars and containers made of a plastics material. In particular the jars and containers are for use in retaining flowable materials such as creams, for use for example as cosmetics materials.

Background to the Invention

[0002] Jars and containers formed of a plastics material are well known in the art to retain flowable liquids which typically have a viscosity equal to or greater than water. For example, with reference to the cosmetics' industry, creams and gels are often supplied in such containers. Plastic containers give the advantage of ease of manufacture and also allow brand names and decoration, as well as distinctive container forms, to be easily applied to a container body or to the outside of a container.

[0003] However, plastics materials have disadvantages when required to retain liquids, particularly those which are relatively free flowing. The primary problem is that of forming a reusable seal, allowing the container to be opened, thereby breaking the seal, and then effectively closed reforming the seal. Typically, in order to prevent escape of the liquid in the event that the container is tipped up, a screw-on lid is used having a thread around the inside perimeter, said thread engaging in use a complementary thread on the outside of the container body. To overcome these disadvantages a pressure or a point contact type seal is additionally included.

[0004] Although such seals can be effective the tolerances with which the threads need to be formed has to be high as too close a fit results in difficulty in removing or adding the lid and too loose a fit does not form a good seal. Moreover, the resulting product needs to be opened and closed using two hands, and there is a present trend towards containers which can be opened and closed using one hand only. One type of closure means suitable for one handed use is a flip-lid.

[0005] Although flip-lid containers are known in the prior art, for example US 2008/0 237 178 A1 discloses a flip-lid container according to the preamble of claim 1, they usually include one or more of the following features. Firstly, the lid is attached to the jar by means of a screw thread, similar to that above. Due to the tolerances in the thread this makes consistent lining up the flip-lid with the other features, on manufacture, problematic.

[0006] Secondly, when both the lid and the container body are formed of the same material - a feature which is advantageous when recycling of the container is contemplated - then a point-contact seal is often made between the lid and the bore of the container body. Such seals are very often ineffective. Alternatively or additionally therefore, a sealing wad of material is included which is positioned in such a way that the lid needs to be removed from the container body, the wad removed and the lid replaced. This action can be messy, waste a portion of the contents of the container and also risk the seal formed on replacement of the lid not being as effective as the factory made seal.

[0007] The application of a screw-lid to a container, during the filling process, can also be problematic, as specialist machines having the capability of administering the correct amount of torque to the lid to secure the lid to the container body need to be provided.

[0008] It is an object of the present invention to provide a flip-lid closure for a container which addresses the above problems.

Summary of the Invention

[0009] According to the invention there is provided a flip-lid container (10), the container (10) comprising; a container body (11) to retain contents such as cosmetic creams or ung morts; the container body (11) having a base (20) and side walls the walls defining an opening through which the contents can be removed, a lid assembly (12), operatively attached to said body (11) and covering the opening, the lid assembly (12) having a lid (13), hingedly mounted to move between an open and a position in which the opening in the container body is closed, the lid (13) having a sealing member (27) projecting away from the lid towards, when in the closed position the container body, said member, sealingly engaging a sealing surface (28) on the lid assembly (12) to form a continuous seal about the opening, the lid assembly sealingly engaging the end of the side walls of the container body; the lid assembly overlapping and having a complementary shape to the side walls, the overlapping portion of the lid assembly being formed of a resilient material, and including a circumferential clip (22) on its inner surface engaging a corresponding clip (16) on the outer surface of the side wall of the container body to prevent separation of the lid assembly from the container body, characterised in that the outside of the container side wall or the overlapping portion of the lid assembly includes one or more ribs (19a), located in and engaging the edges of one or more circumferential gaps (18, 19) in the clip to prevent relative rotation of the lid assembly and container body.

[0010] The lid assembly can simply be pushed into the container body, without the need for engagement of a thread.

[0011] Optionally, the upper surface of the clip on the lid assembly engages the lower surface of the clip on the walls. The resilient nature of the overlapping portion enables the lid assembly to pass over, with applied force the clip on the walls, but resists separation.

[0012] Optionally the lid assembly includes a sealing...
member engaging the inside end of the wall portion to prevent the contents from penetrating between the container body and the lid assembly. Further optionally the portion of the sealing member and the wall portion forming said engagement are parallel to each other.

[0013] Advantageously, the container includes a wad, extending across the ends of the side walls to provide a barrier against the contents removed until first required, said wad being sandwiched between the end of the side wall and the lid assembly, the wad additionally forming thereby a seal between the container body and the lid assembly.

[0014] The wad further advantageously includes a weakening such as a series of perforations enabling a portion of the wad to be removed to allow a user to access contents. The section of the wad sandwiched between the container body and lid assembly remains thereby in position to maintain that seal.

[0015] The wad optionally has a laminar structure having at least three layers comprising at least one liquid repelling layer and an inner layer of foam based materials which seals on removal of the removable portion to prevent the wad from wicking contents from the container.

**Brief Description of the Drawings**

[0016] The invention is now described with reference to the accompanying drawings which show by way of example only two embodiments for the container. In the drawings;

- Figure 1 is a front view of a flip-top container;
- Figure 2 is a rear view of the container of Figure 1;
- Figure 3 is a partial sectional view of a container body;
- Figures 4a & 4b are respectively a top and bottom view of the container body of Figure 3;
- Figure 5 is an expanded view of a first embodiment of a seal;
- Figure 6 is a front view of a second embodiment of a lid assembly;
- Figure 7 is a cutaway, enlarged view of the lid assembly of Figure 6;
- Figure 8 is an enlarged view of region A of Figure 7; and
- Figure 9 is an expanded view of a second embodiment of a seal.

**Detailed Description of the Invention**

[0017] As indicated above, fixing a lid assembly to a container body by conventional screw-thread means is often ineffective for flowable materials. Moreover, a trend in the cosmetics industry where such containers are widely used is towards containers which can be opened and closed using one hand: a feature which screw-topped containers do not have. In addition manufacture and assembly of a screw-threaded lid assembly can be problematic in respect of the requirement to use the correct amount of turning force on the lid relative to the container body.

[0018] The present invention contemplates a lid assembly which carries a flip-top lid, which assembly can be pushed onto a container body using downward force only. As such, manufacture is simpler and quality control more accurate and more easily assured. The equipment required to carry out the process and to monitor is therefore less expensive.

[0019] In addition, the use of a push on lid enables greater accuracy and consistency in aligning the lid with other features on the container body such as contours to facilitate grip or decoration on the container. Yet further, the lid assembly and the container body can be made of the same material which facilitates recycling.

[0020] Referring to Figures 1 and 2 these show the basic components of a container, generally referenced 10. The container 10 has a container body 11 to retain the contents and a lid assembly 12 which allows the contents to be removed when required and afterwards to close the container 10. Typically the components of the body 11 and the lid assembly 12 are formed from the same material, which material is advantageously a polypropylene. The lid assembly has a lid 13 hingeably mounted by a hinge 14 to the lid assembly 12. The hinge 14 can be suitably biased to urge the lid 13 to an open or a closed position. To assist the user in lifting the lid 13, the assembly 12 has an indent 15 allowing the user to push the lid 13 from underneath.

[0021] In order to retain the lid assembly 12 in position, the container body 11 has a circumferential clip 16 around its neck portion 17. As can be seen from Figure 3 the diameter of the neck portion 17 is smaller than that of the rest of the container body 11 so that the assembled container 10 has a constant diameter throughout its height. In the embodiment of Figure 4a, the clip 16 has two gaps 18, 19 at opposite sides of the container body 11. The gaps 18, 19 retain ribs 19a on the inside of the lid assembly 12, said ribs passing into the gaps 18, 19 on assembly of the container 10. Once the lid assembly 12 is in position, the edges of the gaps 18, 19 co-operate with ribs 19a to prevent rotation of the lid assembly 12 with respect to the container body 11.

[0022] The gaps 18, 19 are of different sizes (in the embodiment shown 12mm and 6mm respectively) which ensures that only one orientation is possible. It will be appreciated however that the clip 16 can be provided with only one such gap. The lid assembly 12 is then required to have only one rib. Also, where the orientation is not fully required to be invariant, the gaps 18, 19 can be of the same size. Moreover they can be at different positions around the circumference if so desired. The base 20 of the container body 11 has a driver rib 21 to aid positioning and orientation when in an assembly machine.

[0023] In an alternative embodiment (not illustrated) the or each rib can be located on the outside of the con-
A flip-lid container (10), the container (10) comprising a container body (11) having a base (20) and side walls the walls defining an opening through which the contents can be removed, said container body (11) having a base (20) and side walls, the walls defining an opening through which the contents can be removed, a lid (13) having a sealing member (27) projecting in the container body is closed, the contents can be removed.

[0026] The completed container 10 includes a second seal to prevent the contents from leaking out through the neck of the container 10. The lid 13 has a circumferential sealing member 27 which engages a corresponding surface 28 on the lid assembly 12. The sealing member 27 is formed of a resilient material so that on closure of the lid 13 the sealing member 27 is urged to remain in sealing contact with the assembly 12.

[0027] In order to form the container, the contents are added to the container body 11. The container body 11 and lid assembly 12 are brought together such that the assembly 12 is located directly above, at a set distance from the body 11. Force is then applied - typically a downward force - on the assembly to bring the body 11 and assembly 12 together. As the assembly 12 passes over the body 11, the clip 22 first engages from above the clip 16. Continued force results in the clip 22 being forced outwards on the skirt 23 passing over the clip 16. Once the clip 22 has passed beyond the lower edge of the clip 16, the resilient nature of the skirt 23 causes the clip 22 to pass under and remain in engagement with the clip 16. Once the seat 24 engages the end of the neck portion 17, the force is removed. The container 10, subject to any markings is then eventually ready for dispatch.

[0028] A second embodiment of seal is shown in Figure 6-9. Where there is a requirement for a sealing wad to be included on manufacture, the above first embodiment can be adapted. As shown particularly in Figure 9, the second embodiment shares many features with the first embodiment of Figure 5; primarily for example the circumferential clips 16, 22 and the lid sealing member 27.

[0029] The seat 24 does not however include a seal 25 but instead the contents are prevented from egress by a wad 29 sandwiched between the seat 24 and the neck portion 17. The wad 29 can have perforations 30 or other weakening which permit, on first use by the user, a portion of the wad 29 to be removed. The remaining part of the wad 29 remains, unlike prior art wad seals, between the seat 24 and the neck portion 17 to ensure a seal is retained. In prior art screw-topped containers, the wad would eventually lose its sealing efficiency on continued opening and closing of the container.

[0030] Although a number of designs of wad 29 are known in the art, in a preferred embodiment the wad 29 is a sandwich structure comprising an outer liquid resistant material with a foam material sandwiched therebetween. Said structure of the foam is designed to have self-sealing properties following introduction of the weakening or perforations to prevent material from leaking out or penetrating.

[0031] It will of course be understood that the invention is not limited to the specific details described herein, which are given by way of example only, and that various modifications and alterations are possible within the scope of the invention.

Claims

1. A flip-lid container (10), the container (10) comprising:
   a container body (11) to retain contents such as cosmetic creams or unguents;
   the container body (11) having a base (20) and side walls the walls defining an opening through which the contents can be removed,
   a lid assembly (12), operatively attached to said body (11) and covering the opening, the lid assembly (12) having a lid (13), hingeably mounted to move between an open and a position in which the opening in the container body is closed,
   the lid (13) having a sealing member (27) projecting away from the lid towards, when in the closed position the container body, said member, sealingly engaging a sealing surface (28) on the lid assembly (12) to form a continuous seal about the opening, the lid assembly sealingly engaging the end of the side walls of the container body;
   the lid assembly overlapping and having a complementary shape to the side walls, the overlapping portion of the lid assembly being formed of a resilient material, and including a circumferential clip (22) on its inner surface engaging a corresponding clip (16) on the outer surface of the side wall of the container body to prevent separation of the lid assembly from the container body, characterised in that the outside of the container side wall or the overlapping portion of the lid assembly includes one or more ribs (19a), located in and engaging the edges of one or more circumferential gaps (18, 19) in the clip to prevent relative rotation
of the lid assembly and container body.

2. A container according to Claim 1, wherein, the upper surface of the clip (22) on the lid assembly engages the lower surface of the clip (16) on the walls.

3. A container according to claim 1 or 2 wherein the container body (11) and the lid assembly (12) are formed of the same material.

4. A container according to claim 3 wherein the same material is a polypropylene.

5. A container according to any preceding Claim, wherein the lid assembly includes a sealing member engaging the inside end of the wall portion to prevent the contents from penetrating between the container body and the lid assembly.

6. A container according to Claim 5, wherein the portion of the sealing member and the wall portion forming said engagement are parallel to each other.

7. A container according to any preceding claim, wherein the container includes a wad (29), extending across the ends of the side walls to provide a barrier against the contents removed until first required, said wad being sandwiched between the end of the side wall and the lid assembly, the wad additionally forming thereby a seal between the container body and the lid assembly.

8. A container according to Claim 7, wherein the wad includes a weakening (30) enabling a portion of the wad to be removed to allow a user to access contents.

9. A container according to Claim 8, wherein the weakening comprises a plurality of perforations (30) in the wad.

10. A container according to Claims 7-9, wherein the wad has a laminar structure having at least three layers comprising at least one liquid repelling layer and an inner layer of foam based materials which seals on removal of the removable portion to prevent the wad from wicking contents from the container.

**Patentansprüche**

1. Behälter (10) mit klappbarem Deckel, der Behälter (10) umfassend:

   einen Behälterkörper (11) zur Aufbewahrung eines Inhalts wie zum Beispiel kosmetische Cremes oder Salben;

   wobei der Behälterkörper (11) über eine Basis (20) und Seitenwände verfügt, die Wände eine Öffnung definieren, durch welche der Inhalt entnommen werden kann, eine Deckelbaugruppe (12), die operativ mit dem Körper (11) verbunden ist und die Öffnung abdeckt, wobei die Deckelbaugruppe (12) über einen Deckel (13) verfügt, der schwenkbar befestigt ist, um zwischen einer geöffneten Position und einer Position beweglich zu sein, in der die Öffnung in dem Behälterkörper verschlossen ist, wobei der Deckel (13) über ein Dichtungselement (27) verfügt, das von dem Deckel absteht und, wenn er sich in der verschlossenen Position des Behälterkörpers befindet, abdichtend in eine Dichtungsfläche (28) an der Deckelbaugruppe (12) eingreift, um eine durchgängige Dichtung um die Öffnung herum zu bilden, wobei die Deckelbaugruppe abdichtend in das Ende der Seitenwände des Behälterkörpers eingreift;

   wobei die Deckelbaugruppe die Seitenwände überlappt und eine ergänzende Form zu diesen, der überlappende Abschnitt der Deckelbaugruppe aus einem elastischen Material gebildet ist und an seiner Innenseite einen umlaufenden Clip (22) enthält, der in einer entsprechenden Clip (16) auf der Außenfläche der Seitenwand des Behälterkörpers eingreift, um eine Trennung der Deckelbaugruppe von dem Behälterkörper zu verhindern,

   dadurch gekennzeichnet, dass die Außenseite der Behälterseitenwand oder der überlappende Abschnitt der Deckelbaugruppe eine oder mehrere Rippen (19a) enthält, die sich in einer oder mehreren umlaufenden Aussparungen (18, 19) in dem Clip befinden und in dessen bzw. deren Kanten eingreifen, um eine relative Verdrehung der Deckelbaugruppe im Verhältnis zum Behälterkörper zu verhindern.

2. Behälter gemäß Anspruch 1, wobei die Oberseite des Clips (22) an der Deckelbaugruppe in die Unterseite des Clips (16) an den Wänden eingreift.

3. Behälter gemäß Anspruch 1 oder 2, wobei der Behälterkörper (11) und die Deckelbaugruppe (12) aus demselben Material bestehen.

4. Behälter gemäß Anspruch 2, wobei es sich bei demselben Material um ein Polypropylen handelt.

5. Behälter gemäß einem der vorherigen Ansprüche, wobei die Deckelbaugruppe ein Dichtungselement enthält, das in das innere Ende des Wandabschnitts eingreift, um zu verhindern, dass der Inhalt zwischen den Behälterkörper und die Deckelbaugruppe eindringen kann.
6. Behälter gemäß Anspruch 5, wobei der Abschnitt 
des Dichtungselements und der Wandabschnitt, 
welche den Eingriff bilden, parallel zueinander sind.

7. Behälter gemäß einem der vorherigen Ansprüche, 
wobei der Behälter eine Polsterschicht (29) enthält, 
die sich über die Enden der Seitenwände erstreckt, 
um eine Barriere zu bilden, die verhindert, dass der 
Inhalt entnommen wird, bevor er erstmalig ge-
braucht wird, wobei die Polsterschicht zwischen dem 
Ende der Seitenwand und der Deckelbaugruppe an-
geordnet ist, wodurch die Polsterschicht eine Dich-
tung zwischen dem Behälterkörper und der Deckel-
baugruppe bildet.

8. Behälter gemäß Anspruch 7, wobei die Polster-
schicht eine Abschwächung (30) enthält, die es er-
möglich, einen Abschnitt der Polsterschicht zu ent-
fernen, um einem Benutzer den Zugriff auf den Inhalt 
zumutet.

9. Behälter gemäß Anspruch 8, wobei die Abschwä-
chung eine Mehrzahl von Perforationen (30) in der 
Polsterschicht umfasst.

10. Behälter gemäß Ansprüchen 7-9, wobei die Pol-
sterschicht eine laminare Struktur aufweist, die aus 
mindestens drei Schichten besteht, welche minde-
stens eine flüssigkeitsabwesende Schicht und eine 
ninnere Schicht aus schaumstoffartigen Materialien 
umfassen, die für eine Abdichtung nach Entfernung 
des entfernbaren Abschnitts sorgt, um zu verhin-
dern, dass Inhalt durch Dochtwirkung aus dem Be-
hält er entweicht.

Revidications

1. Un récipient à rabat (10), le récipient (10) 
comportant :

   un corps de récipient (11) pour contenir un con-
tenue comme des onguents ou des crèmes 
cosmétiques ;
   le corps de récipient (11) ayant une base (20) 
des parois latérales, les parois latérales défi-
nissant une ouverture à travers laquelle le con-
tenu peut être retiré ;
   un assemblage de couvercle (12), attaché de 
   façon opérante audit corps (11) et couvrant 
l’ouverture, l’assemblage de couvercle (12) 
ayant un couvercle (13), monté de manière ar-
ticulée pour se déplacer entre une position 
ouverte et une position dans laquelle l’ouverture 
dans le corps de récipient est fermée, 
   le couvercle (13) ayant un élément d’étanchéité 
(27) faisant saillie en s’éloignant du couvercle 
vers, dans la position fermée du corps de réci-
   pient, ledit élément, se mettant en prise étanche 
avec une surface d’étanchéité (28) sur l’assem-
blage de couvercle (12) pour former un joint 
d’étanchéité continu autour de l’ouverture,
   l’assemblage de couvercle se mettant en prise 
éthane avec l’extrémité des parois latérales du 
corps de récipient ;
   l’assemblage de couvercle chevauchant et 
ayant une forme complémentaire avec les pa-
rois latérales, la portion chevauchante de l’as-
semblage de couvercle étant formée d’un ma-
teriau élastique, et comprenant une attache cir-
conférentielle (22) sur sa surface interne se met-
tant en prise avec une attache correspondante 
(16) sur la surface externe de la paroi latérale 
du corps de récipient pour empêcher la sépara-
tion de l’assemblage de couvercle du corps de 
récipient, 

2. Un récipient selon la revendication 1, dans lequel la 
surface supérieure de l’attache (22) sur l’assem-
blage de couvercle se met en prise avec la surface in-
férieure de l’attache (16) sur les parois.

3. Un récipient selon la revendication 1 ou 2 dans lequel 
le corps de récipient (11) et l’assemblage de couver-
cle (12) sont formés du même matériau.

4. Un récipient selon la revendication 3 dans lequel le 
même matériau est un polypropylène.

5. Un récipient selon n’importe quelle revendication 
précédente, dans lequel l’assemblage de couvercle 
comprend un élément d’étanchéité se mettant en pri-
se avec l’extrémité intérieure de la portion de paroi 
pour empêcher le contenu de pénétrer entre le corps 
de récipient et l’assemblage de couvercle.

6. Un récipient selon la revendication 5, dans lequel la 
portion de l’élément d’étanchéité et la portion de pa-
roi formant ladite mise en prise sont parallèles l’une 
là l’autre.

7. Un récipient selon n’importe quelle revendication 
précédente, dans lequel le récipient comprend un tampon (29) s’étendant d’une extrémité à l’autre des 
parois latérales pour fournir une barrière contre le 
contenu retiré jusqu’à ce qu’il soit requis pour la pre-
mière fois, ledit tampon étant pris en sandwich entre
l’extrémité de la paroi latérale et l’assemblage de
couvercle, le tampon formant ainsi de surcroît un
joint d’étanchéité entre le corps de récipient et l’as-
semblage de couvercle.

8. Un récipient selon la revendication 7, dans lequel le
tampon comprend un affaiblissement (30) permet-
tant à une portion du tampon d’être retirée pour per-
mettre à un utilisateur d’accéder au contenu.

9. Un récipient selon la revendication 8, dans lequel
l’affaiblissement comporte une pluralité de perfora-
tions (30) dans le tampon.

10. Un récipient selon les revendications 7 à 9, dans
lequel le tampon a une structure laminaire ayant au
moins trois couches comportant au moins une cou-
che repoussant les liquides et une couche interne
de matériaux à base de mousse qui rend étanche
lors du retrait de la portion amovible pour empêcher
le tampon d’évacuer le contenu du récipient.
Figure 9
REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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