US 20180186540A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2018/0186540 A1**

VANDAMME (43) **Pub. Date: Jul. 5, 2018**

(54) **FOOD PACKAGING CONTAINING AN INNER BAG**

(71) Applicant: **COMPAGNIE GERVAIS DANONE**, Paris (FR)

(72) Inventor: **Patrick VANDAMME**, Saint Maurice De Gourdans (FR)

(73) Assignee: **Compagnie Gervais Danone**, Paris (FR)

(21) Appl. No.: **15/740,206**

(22) PCT Filed: **Jul. 5, 2016**

(86) PCT No.: **PCT/EP2016/065857**

§ 371 (c)(1),
(2) Date: **Dec. 27, 2017**

(30) **Foreign Application Priority Data**

Jul. 9, 2015 (IB) PCT/IB2015/001348

Publication Classification

(51) **Int. Cl.**

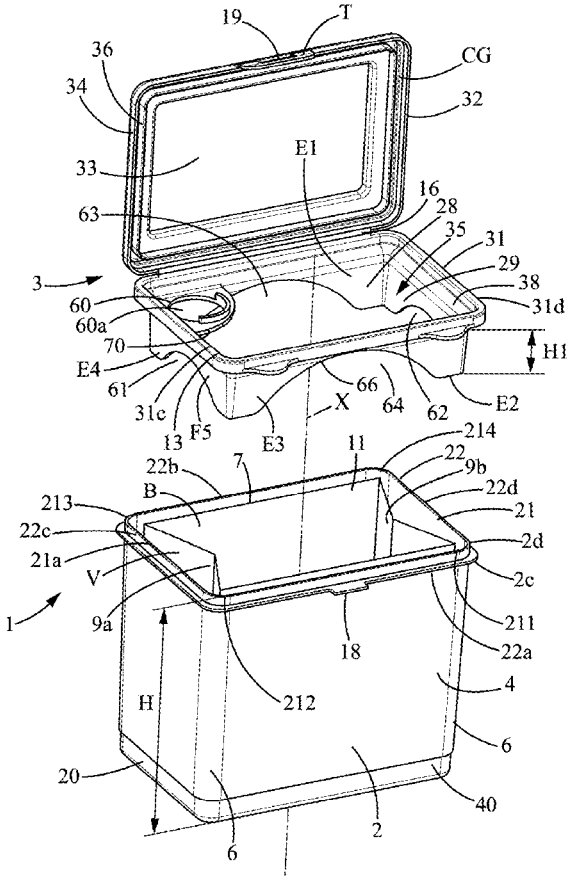
B65D 77/06	(2006.01)
B65D 77/24	(2006.01)
B65D 21/02	(2006.01)
B65D 30/20	(2006.01)
B65D 43/02	(2006.01)
B65D 51/24	(2006.01)

(52) **U.S. Cl.**

CPC ***B65D 77/06*** (2013.01); ***B65D 77/245*** (2013.01); ***B65D 21/022*** (2013.01); ***B65D 31/10*** (2013.01); ***B65D 43/0218*** (2013.01); *B65D 2543/00509* (2013.01); *B65D 2543/00194* (2013.01); *B65D 2543/00296* (2013.01); *B65D 2543/00555* (2013.01); *B65D 2543/00537* (2013.01); ***B65D 51/246*** (2013.01)

(57) **ABSTRACT**

Packaging including a container, and a closure system made up of a frame and a lid hinged to the frame and able to close the container opening in a fitted manner. An upper fitment part of the frame tightly covers the upper rim and a lower insert part is provided to protrude in the interior volume of the container. The gusset bag stored inside the container in a predetermined position unfolds from a partially open configuration to a fully open configuration due to a pressing effect of axial guiding extensions defined by the insert part and engaged through a single opening of the bag. The insert part has one or more notches defined between two of the axial guiding extensions, facilitating complete unfolding of the bag side wall.



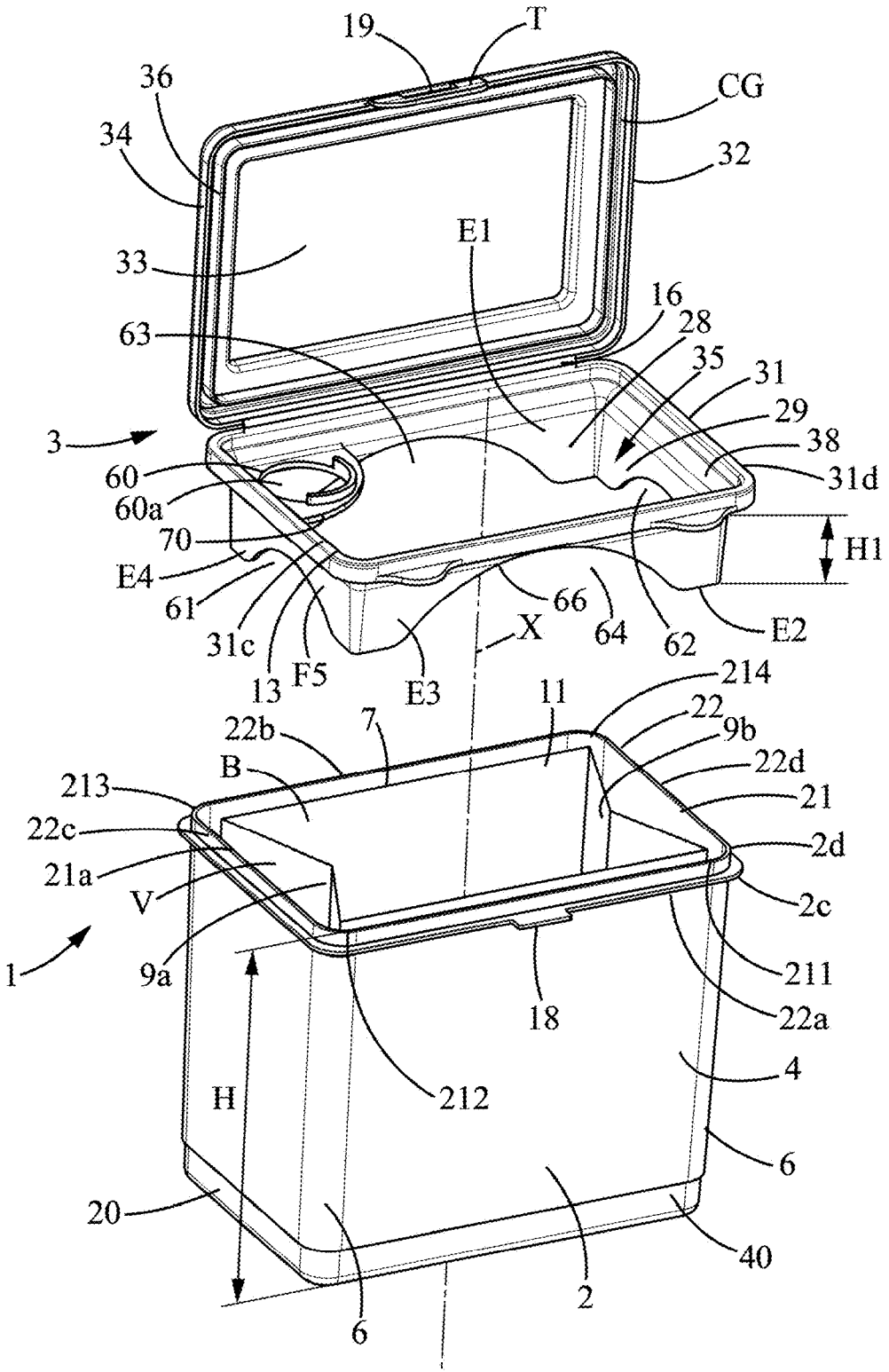

19
T
36
CG
34
32
E1
33
16
63
28
35
31
29
3
38
60
31d
60a
70
H1
E4
61
66
64
62
E2
31c
X
13
F5
E3
11
214
7
22
22b
9b
B
22d
213
21
22c
2d
21a
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1
9a
211
18
22a
H
212
4
6
20
40
2
6

FIG. 1

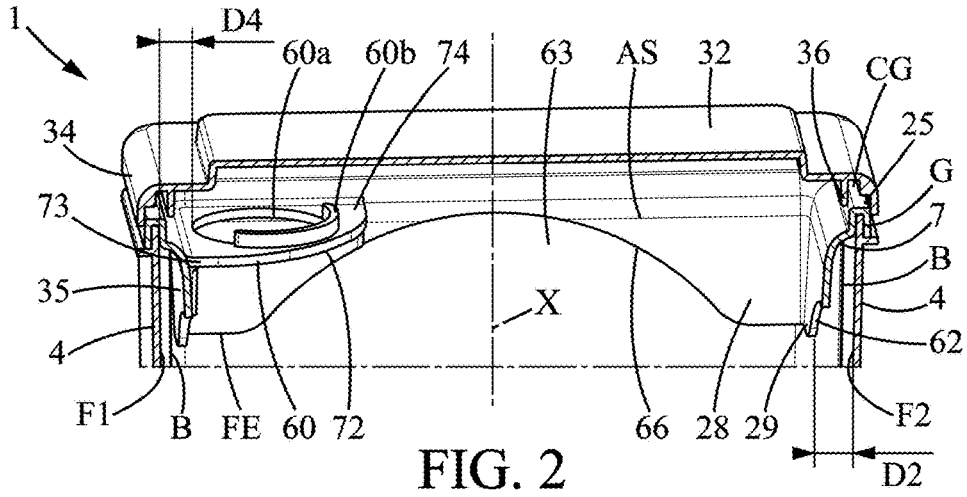


FIG. 2

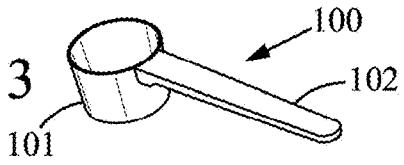


FIG. 3

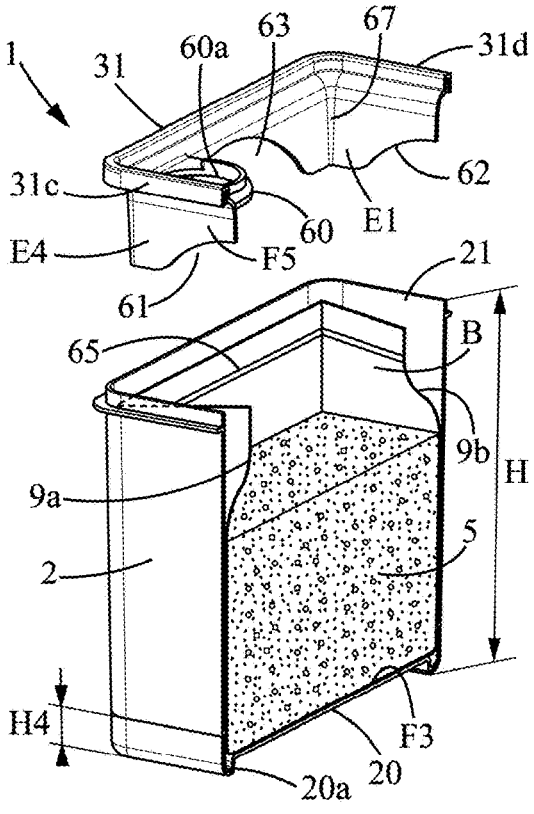


FIG. 4a

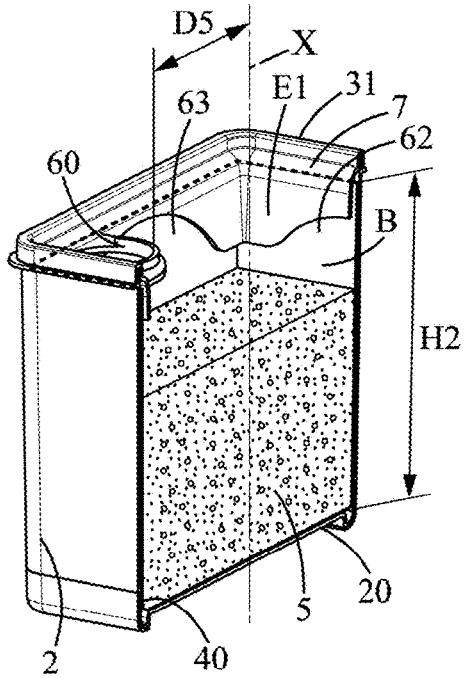


FIG. 4b

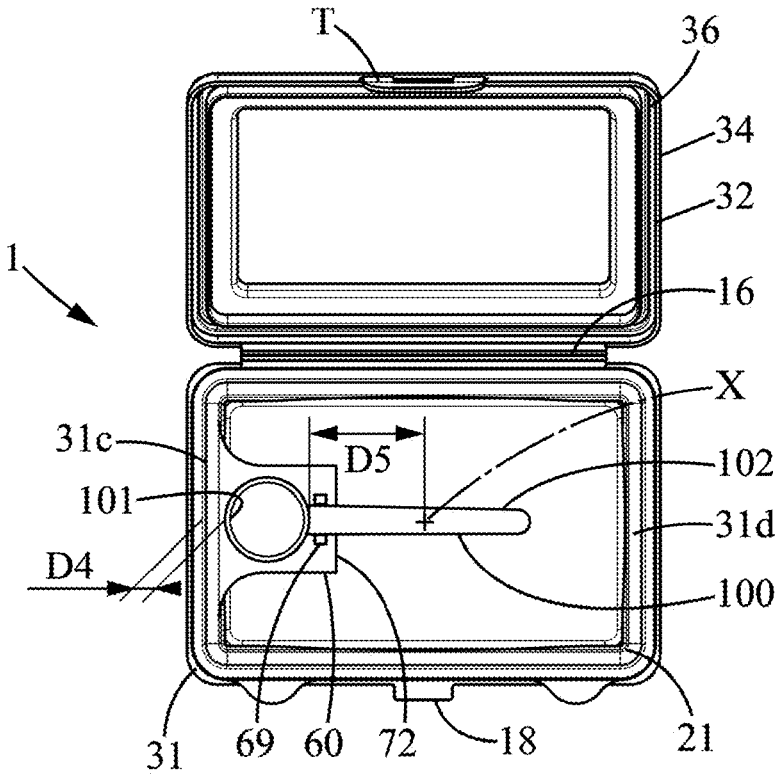

T
36
34
32
1
16
X
31c
D5
102
101
31d
D4
100
31
69
60
72
18
21

FIG. 5

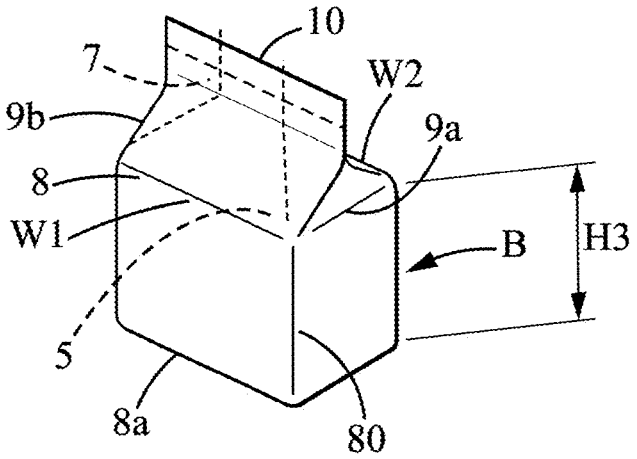

10
7
W2
9b
9a
8
W1
B
H3
5
8a
80

FIG. 6

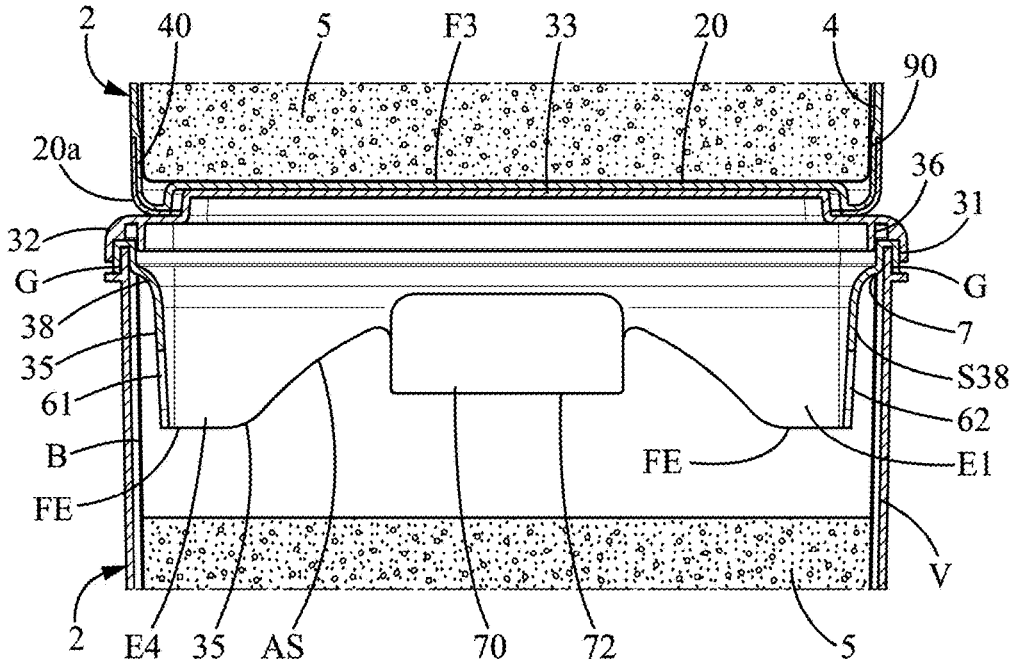

2
40
5
F3
33
20
4
90
20a
36
31
32
G
38
35
61
B
FE
G
7
S38
62
E1
V
FE
2
E4
35
AS
70
72
5

FIG. 7

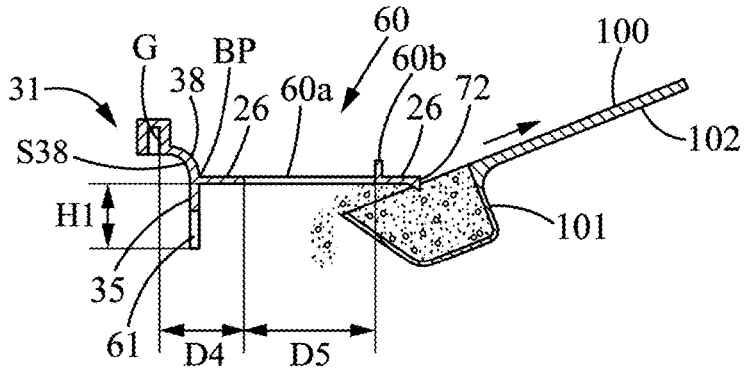

60
G
BP
38
60b
100
31
26
60a
26
72
S38
102
H1
101
35
61
D4
D5

FIG. 8

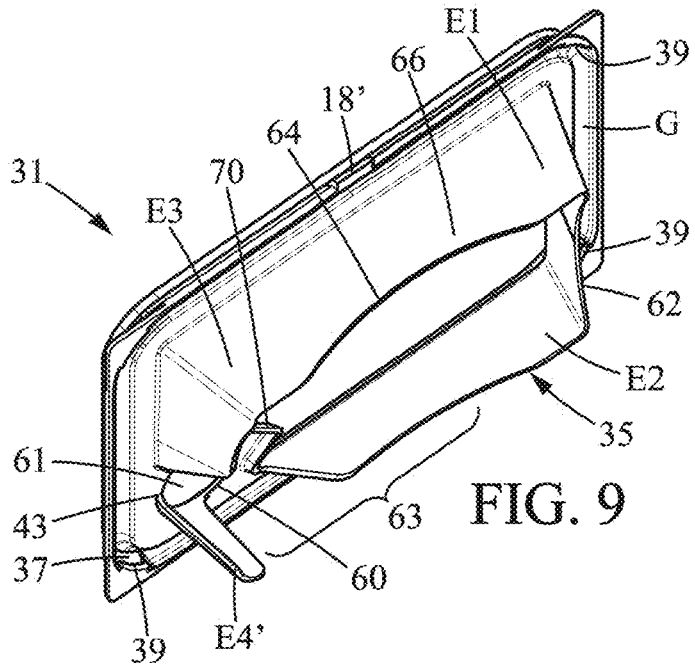

E1
66
39
18'
G
64
70
31
E3
39
62
E2
35
61
43
37
63
60
39
E4'

FIG. 9

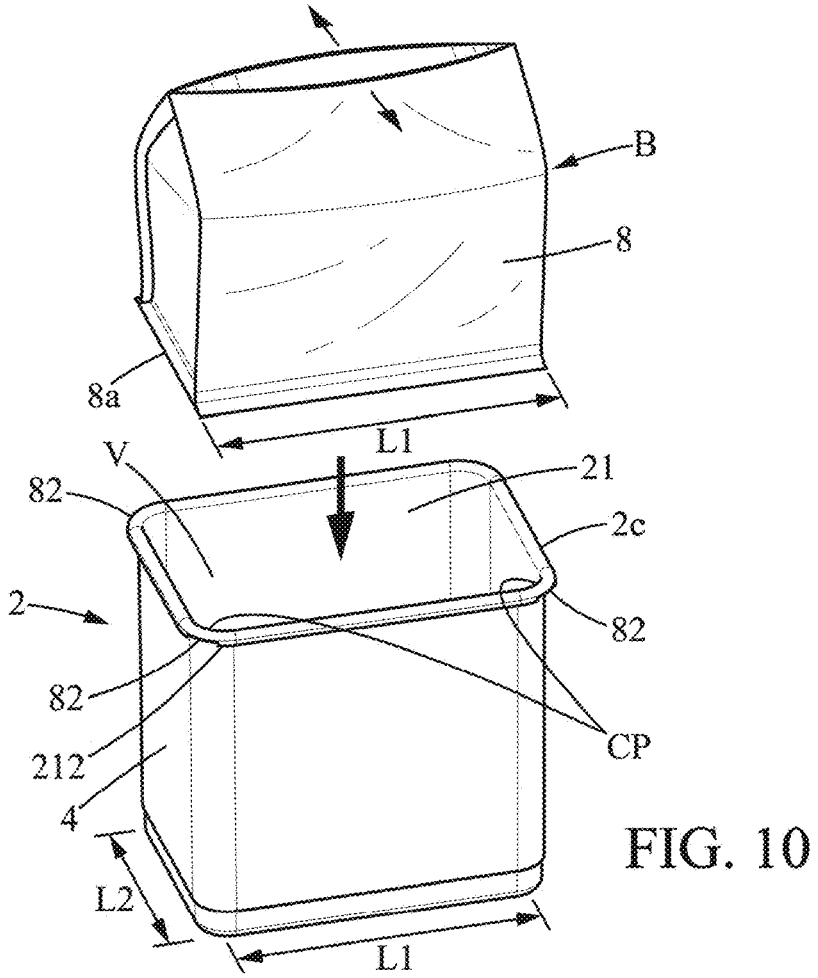

B
8
8a
L1
V
21
82
2c
2
82
82
CP
212
4
L2
L1

FIG. 10

FOOD PACKAGING CONTAINING AN INNER BAG

FIELD OF THE INVENTION

[0001] This invention relates to a packaging having a closure lid adapted to provide easy access to a product contained in a bag used as refill. More specifically, the invention relates to a food packaging adapted to make installation of a gusset bag inside an outer container easier.

BACKGROUND OF THE INVENTION

[0002] Gusset bags having a flexible side wall are well-known for containing a variety of products, especially flowable food products. Refillable food pouches are known, for instance from WO 2014/120258. But for air-sensitive contents, for example powdered milk or cereals, such kind of refillable pouch cannot be used.

[0003] Less sensitive food can also be supplied to a secondary market as a sealed gusset pouch or similar flexible bag. Conventional gusset bags for this purpose are provided with two opposite gussets. After removal of a top portion, the gussets can unfold from a partially open configuration to a fully open configuration. Such flexible bags (for example as disclosed in US 2011/0293208) are not well adapted for a pouring operation.

[0004] Rigid boxes are sometimes used to receive food content initially stored in flexible bags. The box can be repeatedly filled up with such kind of food. But practically, loss of food product from a gusset bag or similar bag often occurs when pouring the flowable food content into the box.

[0005] Besides, boxes are not particularly well adapted to store a gusset bag that is in an open state because the product can flow between the flexible bag and the inner face of the box. This typically happens when the whole packaging is turned upside down in a closed state of the box. And if the box is not correctly closed by a lid positioned at the top of the box or if the sealing performed by the lid is not efficient, the product may be quickly altered and loss of product may occur.

[0006] Document WO 2012/085117 discloses a gusset bag stored in a box. The box sidewall has an inner circumference adapted to guide the annular side of the bag, whereby the bag is standing in a predetermined position in the packaging. Because of the guiding by the box sidewall, the inner flexible bag cannot move laterally inside the container (fit of the bag inside the box). Such cooperation between an inner bag and an outer container, with a single predetermined position of the inner bag, is well-known in the art. The gusset bag is provided with flaps that extend beyond the upper edges of the box. In order to correctly close the top of the box, a closure system is provided with annular frame that accommodates the upper edges of the box with the flaps folded around these upper edges. Due to this accommodation, the gusset bag in the predetermined position is widely open and there is no leakage of product between the bag and the box sidewall, with provision that the flaps have been correctly folded and positioned.

[0007] With such arrangement, a user may have difficulty to accurately position the flaps or the annular frame. Additionally, the need for large flaps (useless for the purpose of storing the food product that is contained entirely inside the box) can significantly increase the bulk of the gusset bag before integration in the box.

[0008] Documents JP2012197105A, JP2012197106A, JP2012197107A, JP2012197108A, JP2012197109A and JP2012197110A also relate to refillable food pouches that are maintained in a rigid box. At the top of the box, a specific insert is used to obtain a wide opening of the pouch and a cover can close the top access opening defined by the insert.

SUMMARY OF THE INVENTION

[0009] It is therefore an object of the present invention to provide a reclosable packaging which gives the content of the packaging good protection every time the lid is closed and which is efficiently refillable.

[0010] To this end, embodiments of the invention provide a packaging for a food product comprising:

[0011] an outer container longitudinally extending about a central axis from a bottom to an upper face having an opening, the outer container having a peripheral upper rim delimiting the opening and a sidewall defining an interior volume of a determined height, the sidewall having two opposite inner faces, preferably planar,

[0012] a closure system comprising a frame which is annular and fixed in a removable manner to the peripheral upper rim, and a lid hinged to the frame to allow movement of the lid between an open position and a closed position, in which the lid closes the opening of the container, the frame comprising an upper fitment part covering the upper rim;

[0013] a gusset bag filled with food product and flexible, comprising a bottom, an upper end adapted to define an opening of the bag at the opposite from the bottom, an annular side wall provided with at least one gusset, preferably two opposite gussets, so that the bag is adapted to unfold from a partially open configuration to a fully open configuration, the sidewall of the outer container having a shape, especially a cross sectional shape, and size matching with the annular side wall of the bag so as to prevent the bag to be eccentrically positioned inside the interior volume (predetermined position of the bag);

wherein the frame further comprises:

[0014] an insert part that extends in the interior volume and is radially spaced inwardly from the sidewall of the container, the insert part extending annularly entirely below the upper rim, and

[0015] a plurality of axial guiding extensions that belong to the insert part and configured to engage the bag through the opening of the bag to hold open the bag, the insert part having a notch defined between two of the axial guiding extensions, along one of said two opposite inner faces.

[0016] The bag may fully cover the inner face of the bottom and is close to the sidewall of the outer container so as to be either in contact with the two opposite inner faces, or substantially coaxial with the sidewall of the outer container with a small gap at its periphery. More generally it is understood that the bag is sized so that it cannot move significantly in a radial direction, i.e. not more than 5 or 6 mm, preferably less than 4 mm, when put in a storage position in the interior volume. Such small play typically represents less than 9 or 10 percents of the width or equivalent size of the bag as the smaller size of the container is typically greater than 60 mm, preferably greater than 80 mm.

[0017] With such arrangement of the closure system, the insert part can efficiently come into contact and push (radially outwards) portions of the bag side wall when mounting

the frame, thanks to the axial extensions, without interfering with unfolding of the bag, thanks to the notch. Since the bag side wall has substantially the same shape has the container near the bottom, there is no particular requirement for any centering of the bag. The top of the side wall of the bag has not to be particularly stretched or folded more than the reminder of the side wall, which is of interest to prevent undesirable cracks in the bag material.

[0018] Additionally, the amount of plastic material to form the insert part is reduced as the notch typically defines a significant spacing between two axial extensions of a same side. This spacing may be superior to 30 mm near the free edges of the axial extensions.

[0019] When the bag and the container have a polygonal shape, for example a rectangular shape, the guiding axial extensions may be provided each with an angled free edge in order to guide each upper edges of the bag in a peripheral area that is defined between the insert part and the top of the container. The bag is typically a gusseted pre-made bag so that planar outer faces in the side wall are easy to obtain, such outer faces matching with the corresponding inner faces of the container. It should be understood that the wording "partially open configuration" may correspond to a free configuration where the opening is close to its size when the bag is configured in a fully open state. Thus the term "partially open" may simply be interpreted as "not fully open" (typically not sufficiently open to have a regular gap between the top of the bag and the container).

[0020] In accordance with a particular feature, at least one of the two opposite inner faces is defined by a panel in contact with the upper fitment part and extends between two connections (preferably curved) that each define an angle, preferably of about 90°, between two adjacent panels of the sidewall of the outer container.

[0021] In accordance with a particular feature, the sidewall of the outer container is defined by four panels interconnected at respective connections that extend each rectilinearly from the bottom to an angle of the peripheral upper rim, while the annular side wall of the bag is provided with four edges and has a predetermined periphery sized and shaped so that each of the edges is at less than about 3 mm from one of the connections when the bag is stored in the interior volume and the upper rim is engaged into a groove of the fitment part. With such arrangement, positioning the bag is intuitive and easy and the upper edges of the bag can be positioned as a lining that covers the inner face of the container sidewall. Since the bag is hold in a fully open state by the insert part (with the side wall of the bag thus longitudinally extending with a same small radial spacing with respect to the container), risk of folding the bag is prevented when retrieving the food content.

[0022] In accordance with a particular feature, one of the axial guiding extensions extends between two notches from a base adjacent to a determined hole, such hole not intersected by the central axis being delimited by a part of the frame that is entirely covered by the lid in the closed configuration of the lid. This determined hole is typically delimited by a retaining device for a measuring utensil and is preferably circular. The axial guiding extension adjacent to the determined hole may optionally have a C-shape or L-shape section when viewed in a plane perpendicular to the central axis.

[0023] In accordance with a particular feature, the notch extends between two planar portions of two axial extensions that are angled to have each a L-shape section when viewed in a plane perpendicular to the central axis. This configuration of the axial extensions is well adapted to prevent undesirable folding (of the bag) near the angles of the outer container, especially when the packaging has a polygonal shape with angles of about 90°.

[0024] In accordance with a particular feature, the insert part comprises four bridge portions each tapering toward the bottom with small deviation as compared to the central axis, said small deviation being preferably inferior or equal to 10°, each of the four bridge portions comprising:

[0025] a notch extending between two axial guiding extensions; and

[0026] an arched section that extends above the notch, between the two axial guiding extensions.

[0027] The curved edge of the arched section may delimit all or part of the notch and may have a more or less pronounced curvature.

[0028] Optionally, the insert part has four substantially planar outer faces, each arched section defining a midsection of said outer faces of the insert part

[0029] In accordance with a particular feature, the insert part is such that the following relation is satisfied:

$$H-H2<5\text{ mm}<H1$$

where

[0030] H**1** is the maximum height of the insert part,

[0031] H**2** is a height of the flexible gusset bag in the fully open configuration, and

[0032] H is the determined height of the interior volume.

[0033] The height H**2** is measured from a bottom part of the bag that is typically planar and in contact with the food content. The bag in the open state thus does not extend beyond the opening of the container and difference in height (as compared to the level of the container opening) can be lower than about 4 or 5 mm, preferably about 2 or 3 mm. With such small difference in height and as the insert part (by definition) is received inside the volume of the bag, with a sufficient height, the bag cannot vertically escape from the fully open configuration. More generally, having a small radial play (less than 2 or 3 mm) and a small axial play for the bag is advantageous to prevent significant deformation of the bag side wall (or any change in relative position between the bag and the insert part) when the whole packaging is turned upside down.

[0034] As the bag may be typically maintained without any fold or any collapse at the top side (the side wall of the bag having a shape matching with the inner face of the rigid container), a partly or fully transparent box could also advantageously be used with a satisfactory display of information marked on the outer faces of the bag side wall.

[0035] In some variants, height of the bag may be lower, providing that the insert part is of greater height and/or the container is provided with one or more holding members or similar adjusting means for supporting the bag at a distance from the level of the bottom.

[0036] In preferred embodiments of the invention, use is furthermore made of at least one of the following arrangements:

[0037] the bag and the container have each a polygonal shape, preferably a rectangular shape, the axial guiding extensions being provided each with an angled free edge in order to guide each upper edges of the bag in a peripheral upper area that is defined between the insert

part and an upper part of the container, entirely above the angled free edges in a fitted configuration of the fitment part (typically, each branch of the angled free edge is at least longer than 10 mm).

[0038] the insert part comprises four axial guiding extensions that are entirely located inside a virtual cuboid, which has a rectangular first section inferior or equal to a rectangular second section defined by the bottom of the bag (peripheral rectangular edge of the bottom of the bag).

[0039] the insert part is provided with a first notch and a second notch at the opposite from the first notch, each of the first notch and the second notch being wider than high, the bag comprising two opposite gussets that unfold through the first notch and the second notch, respectively.

[0040] the packaging further comprises a measuring utensil having a cup and a handle, the measuring utensil being received by a retaining device in a storage position, in which the handle extends entirely above the insert part (with such storage position, typically a horizontal position, the measuring utensil can extend above the food content and does not interfere with the axial guiding extensions of the insert part).

[0041] the first notch is at least partly adjacent to the cup in the storage position, the retaining device being connected to a first side of the frame, the second notch extending proximate to a second side of the frame which is parallel to the first side of the frame (accordingly, the cup is hold at a distance from the central axis of the container, while the handle to be catched by the user can intersect this central axis or extend close to this central axis).

[0042] the bag has an inner face provided with at least one initially energized annular elastic tape interfering with the two gussets, configured to deform radially outwards (because of its energized state and its shape memory) so that the bag automatically unfolds from an initial partially open configuration to another configuration that is close or identical to the fully open configuration (the bag, which is typically a refill initially provided with a closing band at the top, can reach the fully open configuration more easily with such biasing effect obtained after removal of the closing band).

[0043] in the storage position, the cup is entirely offset with respect to a virtual median plane of the container which intersects the first notch and the second notch.

[0044] the frame comprises an annular transition part between the insert part and the fitment part, the transition part tapering downwardly and defining a concave surface facing outwardly (the curvature of the annular transition part is suitable to push the upper edges radially outwards rather than crush downwardly such upper edges; besides, such transition part is of interest to provide an efficient guiding effect by the insert part without exerting a vertical pushing effect or undesirable tearing action).

[0045] the annular transition part has a radial extension (measured from the junction with the fitment part) that is greater than a maximum of radial extension of the insert part.

[0046] in the fully open configuration, the flexible bag defines an upper face that is facing or is in contact with a continuously curved outer surface that connects tangentially with an annular outer surface defined by the insert part, the curved outer surface having an upper portion adjacent to a groove in which the upper rim is engaged.

[0047] the frame comprises a levelling element provided with two opposite ends and a rigid free edge that extends transversally to the central axis, between the two opposite ends, the levelling element being adjacent to a same axial guiding extension at each of the two opposite ends.

[0048] the frame comprises at least one resilient sealing element more flexible than the axial extensions (preferably an annular gasket) to define one or more radial contacts between the bag—at an upper part thereof—and the frame.

[0049] the two opposite inner faces are less spaced in an area proximate the bottom of the container, so as to have less interspace between the bag and the container in a lower part of the interior volume.

BRIEF DESCRIPTION OF THE DRAWINGS

[0050] Other features and advantages of the invention will become apparent in the course of the following description, which is given by way of non-restrictive example with reference to the figures, in which:

[0051] FIG. **1** is an exploded perspective view of a packaging according to a first embodiment in accordance with the invention, showing the lid in the open position and the inner gusset bag arranged in the interior volume of the outer container;

[0052] FIG. **2** is a cross section through the upper part of the packaging of FIG. **1** showing the lid almost in the closed position and the insert part inserted through the mouth of the bag;

[0053] FIG. **3** is a perspective view of a measuring utensil that can be retained below the lid in a storage position according to the invention;

[0054] FIGS. **4***a* and **4***b* are two successive perspective views (not showing the lid for sake of simplicity) illustrating the guiding effect of the insert part when inserted through the mouth of the gusset bag;

[0055] FIG. **5** is a top view of a packaging according to a second embodiment in accordance with the invention;

[0056] FIG. **6** is a perspective view of the unopened gusset bag that can be used as a refill;

[0057] FIG. **7** illustrates in cross section a stacking between two outer containers;

[0058] FIG. **8** is a cross section view through a packaging according to the invention, showing a levelling operation;

[0059] FIG. **9** is a perspective view of a frame used for accommodation of a gusset bag in an outer container, in accordance to a third embodiment;

[0060] FIG. **10** is a perspective view showing an outer container and a gusset bag ready to be inserted inside the outer container, before mounting of a closure system provided with the frame shown in FIG. **9**.

DETAILED DESCRIPTION

[0061] In the various figures, identical reference numerals designate identical or similar elements.

[0062] It should be noted that the following detailed description and illustration are directed to a packaging **1** including a box and a flexible gusset pouch or similar bag B that is not resealable (not tightly closed after removal of a top portion), the packaging being well adapted for easy retrieval of the food product contained in the bag B. A variety of products may be contained in the bag B, preferably food products such as powdered milk, dry or powdered

beverages, dry soups, coffee, tea, whey powder or the like, butter milk powder, spices, and other flowable solid food products.

[0063] Referring to FIGS. **1-2** and **7**, the packaging **1** comprises a container **2** and a closure system **3**. The container **2** is open on one side opposite its bottom **20** and may be parallelepiped-shaped, provided with an oval section or any shape with a bottom substantially as wide as the opening, as those skilled in the art will understand. An annular side wall **4** of the container **2** extends about a vertical central axis X to a top **2***a* defining a peripheral upper rim **21***a*. An outer collar **2***c* may be provided and the top **2***a* may be defined as an annular projection protruding upwardly from an upper face defined by the collar **2***c*. A wide opening **21** enclosed by a perimeter **22** is defined by the rim **21***a* that is rigid (the optional collar **2***c* increases rigidity of the rim **21***a* to prevent any deformation).

[0064] The cross section perpendicular to the central axis X of the container **2** may be basically rectangular with rounded corners. It ensures vertical strength of the packagings **1** when stacked. FIG. **7** shows in more detail a way of stacking the packagings **1**, using a recess at the bottom **20** to at least partly house the top wall **33** of the lid **32**. For reasons of convenient handling, again, the cross section is preferably inscribed in a rectangle measuring 100 to 140 mm by 80 or 90 to 125 mm. The interior volume V of the container **2** has a determined height H, which is here close to the whole height of the container **2**. The bottom **20** may be provided with bearing means **20***a*, for example feet or an annular base that may protrude downwardly with respect to the planar wall of the bottom **20**. Such bearing means **20***a* can reinforce the strength of the bottom **20** when configured as an additional outer layer of the container **2**. The lower part **40** of the sidewall **4** may be of slightly narrower section as illustrated in FIG. **1**.

[0065] When the sidewall **4** of the container **2** has a rectangular cross section, two opposite inner faces F**1**, F**2** are defined by planar panels and the distance between these inner faces F**1**, F**2** may correspond to a width of the interior volume V. The determined height H, here measured from a planar inner face F**3** of the bottom **20** to the top face is preferably between 120 and 190 mm to provide the normal volume for boxes intended to contain infant powdered milk. It is therefore a relatively deep container whose opening **21** must be made as wide as possible to avoid difficulty with extracting powder from close to the bottom **20** of the container **2**. In addition, this wide opening **21** allows a measuring utensil **100** to be used to pick up the powder or similar food content **5**.

[0066] Because of this basically rectangular cross section, shown in FIG. **1**, the perimeter **22** of the opening **21** of the container **2** may be considered to have a first long side **22***a*, an opposite second long side **22***b*, and first and second short sides **22***c*, **22***d* connecting the long sides. Four corner portions or similar connections **6** may be defined in the sidewall **4** to prevent formation of sharp edges. Here the four panels of the sidewall **4** are provided with four connections **6** each adapted for interconnecting two adjacent panels that form an angle of about 90°.

[0067] Without implying any restriction, the container **2** may be made as a single thermally blow-moulded plastic component. The plastic is preferably a multilayer composite forming a highly effective oxygen barrier where used for a food content **5** such as powdered milk, but the container **2** could of course be produced in some other material, especially metal or a multilayer cartonboard.

[0068] Referring to FIGS. **4***a*-**4***b* and **6**, the food content **5** is stored in the bag B, which has a flexible side wall **8**, a bottom **8***a* and a top portion defined by a closing band **10** intended to be cut or torn. Here, a front wall W**1** and a rear wall W**2** are interconnected by two opposite gussets **9***a*, **9***b* extending parallel to a longitudinal axis of the flexible side wall **8**. Welds or sealing junctions can be provided to define the bag B. The closing band **10** may be a sealed part obtained by heat sealing. The bottom **8***a* can be defined by flaps in an overlapped configuration with a sealing area defined between at least two flaps.

[0069] In some embodiments, the bag B can be a mono-web construction of a film. But in preferred embodiments, the front wall W**1**, the rear wall W**2** and the bottom **8***a* are obtained by assembling at least two different parts. In such case, the bag B includes several seal areas to seal the parts together (e.g., with heat-sealed parts). In a particular embodiment of the present invention as shown in FIG. **6**, the bottom **8***a* is deprived from any gusset and is typically planar. Each of the two gussets **9***a*, **9***b* has an interior edge extending between the respective inner faces of the front wall W**1** and the rear wall W**2** when the bag B is closed by the closing bad **10** or similar closing means.

[0070] The film material used to form the bag B can be plastic, such as low, medium or high density polyethylene, polypropylene, polyester (PET), polyamide or any other material that is commonly used in the packaging industry, copolymers, or blends thereof. The film material can be a single layer cast or blown film, a multi-layer coextrusion or laminate. The film material can also include one or more layers of paper, metal foil, vacuum deposited metal or inorganic layer of aluminium or silicon oxide and/or a polymer barrier layer, such as ethylene vinyl alcohol or polyvinylidene chloride. These examples are non limiting examples.

[0071] It is an important aspect that the material is flexible and capable of allowing a gusset **9***a* and/or **9***b* to be formed. Here, the two opposite gussets **9***a*, **9***b* are provided adjacent to the wide opening **11**. The bag B is therefore a gusset bag. The upper end defined by the upper edges **7** is adapted to define an opening **11** substantially as wide as the bottom **8***a*, typically with the same shape as the bottom **8***a*. Besides, if the film is a multi-layer film, it is preferred that at least the inner layer of the bag B is a heat sealable layer.

[0072] Referring to FIG. **6**, the bag B is optionally provided with a top peripheral edge and, before a cutting or tearing or peeling action to remove such top part of the bag B, the content **5** of the bag B cannot be retrieved through the single opening **11** of the bag B. The top portions of the front wall W**1** and of the rear wall W**2** are typically in an initial flat configuration, as illustrated in FIG. **6**.

[0073] In other words, the content **5** (powdered milk or other granular or powdery product for example) is perfectly preserved in the bag B until used for the first time when the top peripheral edge (here defined by the closing band **10**) is removed, optionally with the aid of one or more peeling-off tongues, tearing tongues, weakened areas or the like.

[0074] Referring to FIG. **6**, the closing band **10** or similar top portion of the bag B is preferably provided with a line of weakness (at the dash line) that extends laterally across both walls W**1** and W**2** in close proximity to but below the top peripheral edge. The line of weakness may be formed by,

for example, perforating or scoring the front wall W1, the rear wall W2 and other optional flaps with a laser or knife either individually before these walls W1 and W2 are sealed together, or collectively after they have been sealed together. One or both ends of line of weakness may terminate with a notch (not shown), which provides a stress concentration and aids in starting a tear along the line of weakness when the bag B is opened by a consumer.

[0075] Here, as simple cut along the dash line (a rectilinear dash line in this non limiting example as shown in FIG. **6**) is sufficient to provide access to the content **5** because the side wall **8** of the bag B expands in a sufficient extent so that the respective top portions of the front wall W1 and of the rear wall W2 are not in the initial flat configuration. Preferably, the upper level of the food content **5** extends at an axial distance from the upper edges **7** that extend along a cut line that corresponds to the dash line (for example, the upper level is between 25 and 90 mm below the level of the edges **7**).

[0076] Inside the bag B, the initial level of the food content **5**, typically powder material, corresponds to a height H3 that is significantly lower than a predetermined height H2 of the bag B when the bag B is in a fully open configuration (as shown in FIG. **4***b* for example). The ratio H3:H2 may be comprised between 1:2 and 4:5 in some embodiments.

[0077] Now referring to FIGS. **1-2** and **4***a*-**4***b*, it can be seen that the bag B, once open, can be stored in the interior volume V of the container **2**. Of course, the gusset bag B can also be stored in the container **2** and then opened by excising the closing band **10**.

[0078] While the interior volume V is here illustrated as fully matching with the outer shape of the container **2**, it is understood that such interior volume V can be adjusted depending on specific configuration inside the container **2**. The height H2 of the bag B is inferior to the determined height H so that the upper rim **21***a* extends entirely above the upper edges **7** of the bag B. The annular side wall **8** of the bag B has a shape matching with the sidewall **4** of the outer container **2** so as to prevent the bag B to be eccentrically positioned inside the interior volume V. In other words, the position of the bag B with respect to the container **2** before fixing the frame **31** is a predetermined position. As clearly apparent from FIGS. **1**, **4***a*-**4***b* and **7** in particular, such predetermined position is due to the similar cross section shape of the bag side wall **8** as compared to the cross section shape of the sidewall **4** of the outer container **2**. A natural vertical guiding of the bag B, which is initially in a full state, is obtained when having the bag side wall **8** closely surrounded by the sidewall **4**.

[0079] The closure system **3** is here provided with an annular fitment part **13** that comprises a peripheral groove G, in which the upper rim **21***a* is fitted (the annular projection defined by the top **2***a* being here received in the groove G). The fitment part **13** is here configured as a top part of an annular frame **31** that surrounds the opening **21**.

[0080] The closure system **3** also comprises a lid **32** hinged to the frame **31** to allow movement of the lid **32** between an open position and a closed position. The frame **31** is thus directly fixed in a removable and tight manner to the peripheral upper rim **21***a*, while the lid **32** closes the opening **21** of the container **2** when engaged with the fitment part **13** of the frame **31**. The lid **32** comprises a top wall **33** and is provided with a circumferential side wall **34** extending from the top wall **33** and an interior skirt **36** regularly spaced from the circumferential side wall so as to define with the side wall **34** a continuous groove CG. With such configuration, the fitment part **13** may be received in the continuous groove CG. The inner face of the fitment part **13** may optionally be in radial contact with the interior skirt **36** in the closed position of the lid **32** (the interior skirt **36** pressing at least partially against such inner face of the annular fitment part), so as to prevent the food content **5** (in a powder form for example) to accumulate in a lid-frame contact area **25**. Here as illustrated in FIG. **2**, such contact area **25** is provided between an outer angled surface of the fitment part **13** and a sealing surface of the circumferential side wall **34**. Accordingly, the lid **32** can be repeatedly closed with an efficient sealing effect.

[0081] The top wall **33** is here substantially planar to reduce the height of the lid **32**. The frame **31** is provided with an insert part **35** optionally making the frame **31** higher than the lid **32**. The lid **32** and the frame **31** are articulated together via a connection that allows the lid **32** to be moved with respect to the frame **31** and to the container **2** between an open position depicted in FIG. **1**, in which the opening **21** is largely accessible, and a closed position, depicted in FIG. **7** for example, in which the lid **32** covers this opening **21**. This then is a resealable packaging the lid **32** of which is handled on each occasion, for example for preparing baby bottles.

[0082] The connection in this instance is a hinged connection **16** (typically one or more living hinges) in which the axis of pivoting is perpendicular to the central axis X. In the embodiment depicted, it is a plastic hinge **16** formed by a fold line, which allows the lid **32** and the frame **31** to be produced as a single component. This is a component obtained by injecting a plastic, such as polypropylene for example, into a mould. However, the hinged connection **16** could of course be obtained using two separate components assembled with one another, and it is equally possible to provide some other form of connection between the frame **31** and the lid **32**.

[0083] Referring to FIG. **1**, the frame **31** may have substantially the same general circumference as the lid **32** and here comprises first and second short outer sides **31***c*, **31***d* defined by the fitment part **13**, matching with the first and second short sides **22***c*, **22***d*.

[0084] While the depicted embodiments show a central axis X, which is a symmetry axis for the container **2** and for the frame **31**, of course other configurations may be used, depending on the geometry of the container sidewall **4**. The frame **31** has not necessarily the same shape has the section of the interior volume V. In optional embodiments with partitioning elements, the sidewall **4** that surrounds the interior volume V for receiving the bag B may correspond to a part of the container side periphery and includes a partitioning element used to define the upper rim **21***a*.

[0085] Referring to FIGS. **1** and **5**, the fitment part **13** or the container **2** has a projecting member with an engagement rim **18** used for locking. Such engagement rim **18** may be integrally formed with the annular collar **2***c* of the container **2**. The packaging **1** has here a locking device provided with a tab T that protrudes downwardly from the lid **32**, here from the side wall **34**. When the lid **31** is in the closed position, the tab T occupies an engagement position in which a lower catching portion **19** engages with the engagement rim **18**. Unlocking is performed by actuating the tab T by hand

towards a radially outward direction (typically a pulling action). In the closed position, as shown in FIG. **7**, the lid **32** is adjusted and fitted so that a continuous sealing contact is obtained between the fitment part **13** and the lid **32**.

[0086] Now referring to FIGS. **1-2**, **4***a*-**4***b* and **8**, the pressing to maintain the top of the gusset bag B in a fully open configuration, thanks to an insert part **35** of the frame **31**, will be described.

[0087] The bag B, filled with the food content **5**, open and stored in the interior volume V, is in contact with the bottom **20** of the container **2** and cannot substantially move because of the small play between the side wall **8** and all or part of the inner faces of the sidewall **4** of the container **2**. Indeed, the annular side wall **8** has here a shape matching with the sidewall **4**. The bag B thus cannot be eccentrically positioned inside the interior volume V. In some options, the lower part **40** that is preferably of lower height H**4** than height H**3** is configured to locally reduce or suppress the small gap around the bag B (reduction of size in the lower part **90** of the interior volume V). It is thus understood that the container **2** is configured to define a predetermined position for the bag B having the opening **11** facing upwardly.

[0088] In this configuration without the closure system **3** fitted onto the upper rim **21***a*, the bag B is typically not in a fully open configuration. Each of the panels of the sidewall **4** extends between two connections **6** that each correspond to an angle, preferably of about 90° as shown in the depicted embodiments. When such kind of angle is defined between two adjacent panels of the container **2**, it is understood that the corresponding corner portions of the bag B (stored in the interior volume V) cannot be sufficiently close to the connections **6**. Indeed, significant folds or recessed parts (typically at the gussets **9***a*, **9***b*) are typically formed, as shown in FIG. **1** for example.

[0089] The flexible side wall **8**, here because of the gussets **9***a*, **9***b*, can unfold from a partially open configuration to a fully open configuration, providing that the upper edges **7** are displaced (under a pressing action) and held in position away from the central axis X and along the sidewall **4** of the container **2**. For this purpose, the frame **31** comprises an insert part **35** that extends in the interior volume V when the fitment part **13** is covering the upper rim **21***a* with a tight annular contact, and which is intended to be received inside the bag B (above the level of the food content **5**). In FIG. **1**, the folding in the partially open configuration is a bit exaggerated to better illustrate that the edges **7** are irregularly spaced from the sidewall **4**.

[0090] The insert part **35** is radially spaced inwardly with respect to the sidewall **4** of the container **2**, such spacing being here obtained because of an annular transition part **38** that interconnects the insert part **35** (interior part of the frame **31**) and the fitment part **13** (exterior part of the frame **31**).

[0091] The annular transition part **38** can be radially connected to the fitment part **13** as shown in FIG. **8**, below the tight connection between the fitment part **13** and the upper rim **21***a*. Accordingly, the food content **5** cannot escape from the container **2** because of:

[0092] the tight contact at the groove G;

[0093] the continuous contact at the groove CG, preferably using an interior skirt **36**;

and if the packaging **1** is turned upside down, the food content **5** will necessarily return inside the bag B (after, in normal position) because the powder or content particles cannot be displaced beyond the concave surface S**38**, due to the pressing contact between the top peripheral part of the bag B (at the upper edges **7**, such top is in a stretched condition) and the frame **31** (at the continuous transition part **38** and/or at the continuous annular upper end of the insert part **35**).

[0094] In order to improve the radial contact, the frame **31** may comprise at least one resilient sealing element (not shown) more flexible than the axial extensions E**1**, E**2**, E**3**, E**4** and protruding radially outwards from the outer faces F**5**, below the fitment part **13**. An annular gasket or similar annular resilient element, which is preferably provided near the transition part **38** (and typically entirely above the notches **61**, **62**, **63**, **64**), defines one or more radial contacts between the bag B and the frame **31**. Such resilient element may be curved or angled to facilitate insertion of the insert part **35** through the opening **11**.

[0095] Referring to FIG. **2**, the insert part **35** extends annularly entirely below the upper rim **21***a* and preferably entirely below the optional annular collar **2***c*. The annular transition part **38** extends substantially at the same level as the collar **2***c* and tapers downwardly, defining a circumferential concave surface S**38** facing outwardly. In the inserted configuration of the insert part **35**, the transition part **38** may abut against the upper edges **7** of the flexible gusset bag B to hold these upper edges **7** in a proximal position relative to the inner face (including the opposite faces F**1** and F**2**) of the sidewall **4**. In some embodiments, the upper edges **7** are only facing such concave surface S**38**, without continuous or local axial contact against this transition part **38**.

[0096] The insert part **35** is provided with a plurality of axial guiding extensions E**1**, E**2**, E**3**, E**4** configured to engage the bag B through the opening **11**. When mounting the closure system **3** with the bag B already extending in the interior volume V, the insert part **35** is sufficiently spaced from the container sidewall **4** to allow the upper edges **7** of the bag B to completely surround the skirt-like insert part **35** with a small play. The guiding extensions E**1**, E**2**, E**3**, E**4** are engaging, through the opening **11**, the top of the bag B at opposite inner parts (corners or opposite sides). Due to the pressing action of the guiding extensions E**1**, E**2**, E**3**, E**4**, in the fitted configuration of the closure system **3**, these localized parts of the bag B are firstly displaced outwards and then held in a stationary and adjacent position with respect to the respective inner faces of the container **2**.

[0097] The axial guiding extensions E**1**, E**2**, E**3**, E**4** are not stretching or tensing the side wall **8** of the bag B beyond a virtual cuboid that is defined by the bottom **8***a* of the bag B. Accordingly, when the frame **31** is in a mounted state as shown in FIG. **4***b* or **7**, each face of the side wall **8** of the bag B may be substantially planar. With this configuration, a wide and constant section of the bag B is obtained, which is optimal to retrieve food content **5** near the bottom **8***a*, using a measuring utensil **100**.

[0098] The axial guiding extensions E**1**, E**2**, E**3**, E**4** have a height H**1** that is greater than length of the each of the two lower rectilinear edge portions defined at the free end (L-shaped free edge FE) of the guiding axial extension E**1**, E**2**, E**3**, E**4**. Such height H**1** may optionally correspond to a maximum height of the insert part **31** and is typically comprised between 5 and 40 mm.

[0099] A polygonal shape with at least four angles for both the sidewall **4** and the side wall **8** of the bag B is preferred

because the inner faces of the container **2** may be substantially planar and the axial guiding extensions E**1**, E**2**, E**3**, E**4** may be each provided with one planar guiding section or two planar guiding sections **28**, **29** configured with a L-shape when viewed in a plane perpendicular to the central axis (X). The upper edges **7** defined at each side of the bag B are thus held in a substantially rectilinear position, without significant undulations in a transverse plane (no folding perceived by the user). Angle of the L-shape may be not inferior to 90°, which is of interest to provide a guiding effect in two distinct directions by a same member of the insert part **35**. Each axial guiding extension E**1**, E**2**, E**3**, E**4** is provided with a curved midsection **67** (FIG. **4***a*), which defines a radius of curvature much smaller than the radius of curvature at the connections **6** or at the ends of the shorts sides **31***c*, **31***d*.

[0100] The transition part **38** is longitudinally curved to be tangentially connected to the insert part **35** that has a small radial deviation as compared to the longitudinal axis X. But such small deviation is of interest to progressively increase the pressing toward the inner faces F**1**, F**2** of the container sidewall **4**. It can be seen that the axial extensions E**1**, E**2**, E**3**, E**4** are each less slanted than the transition part **38**. The higher deviation of the transition part **38** and the substantially continuous curvature (with no horizontal surface) of the transition part **38** is here advantageous to prevent powder to accumulate on the transition part **38**, i.e. out of the bag B.

[0101] When the polygonal shape is a rectangular or square shape, the sidewall **4** of the container **2** is defined by four panels interconnected at the respective connections **6** that extend each rectilinearly from the bottom **20** to an angle **211**, **212**, **213**, **214** of the peripheral upper rim **21***a*, as in the non-limiting embodiment of FIG. **1**. The annular side wall **8** of the bag B is provided with four edges **80** (four longitudinal edges) and has a predetermined periphery sized and shaped so that each of the edges **80** is at less than 3 mm from one of the connections **6** when the bag B is stored in the interior volume V and the upper rim **21***a* is engaged into a groove G of the fitment part **13**. Such parallelepiped gusset bag B is of simple construction and may correspond to a conventional kind of bag.

[0102] In the illustrated embodiments, the insert part **35** may comprise four bridge portions **66** interconnected by the axial guiding extensions E**1**, E**2**, E**3**, E**4**. When the guiding extensions E**1**, E**2**, E**3**, E**4** have a L-shape section, the insert part **35** defines four substantially planar outer faces F**5**. Each of the bridge portions **66** (or similar notched part) tapers toward the bottom **20** with small deviation as compared to the direction of the central axis X. Such small deviation (see FIGS. **2** and **7** for instance) may be inferior or equal to 10°, preferably less than 4 or 5°. As the extensions E**1**, E**2**, E**3**, E**4** protrudes downwardly more than the arched midsections AS, they may deviate slightly more at the free edge FE (but typically with the same deviation angle) where the interspace D**2** with the container **2** is maximum. Such tapering is of interest because the gussets **9***a* and **9***b* can be here progressively moved toward the two opposite faces F**1**, F**2**, preferably planar, when the frame **31** is displaced proximate its fitted position and then fitted. More generally, it ensures a more progressive pressing effect in the opposite directions (toward the different sides **22***a*, **22***b*, **22***c*, **22***d* of the container **2**).

[0103] Each of the four bridge portions **66** here comprises:

[0104] a notch **61**, **62**, **63**, **64** extending between two axial guiding extensions E**1**, E**2**, E**3**, E**4** (for example the notch **63** extends on same side as and between the two extensions E**1** and E**4**); and

[0105] an arched section AS that extends above the notch **61**, **62**, **63**, **64**, between the two axial guiding extensions E**1**, E**2**, E**3**, E**4**.

[0106] It can be seen that each arched section AS may define a midsection of one of the respective outer faces F**5** of the insert part **35**. With such configuration with four notches **61**, **62**, **63**, **64**, each midsection of the upper edges **7** (here it can be seen that at least the shorter sides have a V-profile before the pressing) is pressed only at the end or nearly the end of the mounting of the frame **31** and the upper edges **7** of the bag B may be held in a substantially rectilinear position, along the planar outer faces F**5** at the end of the unfolding.

[0107] In the non limiting embodiment of FIG. **1**, here along the short sides **22***c* and **22***d*, a first notch **61** and a second notch **62** are located opposite each other. These notches **61**, **62** are preferably wider than high and the same applies for additional notches **63**, **64** that extend along the long sides **22***a*, **22***d*.

[0108] The almost vertical configuration of the axial extensions E**1**, E**2**, E**3**, E**4** is also advantageous because the insert part **35** does not obstruct the bag access. Only the optional retaining device **60** for receiving a measuring utensil **100** protrudes toward the central axis X, as shown in FIGS. **1**-**5**.

[0109] In some options, the bag B has an inner circumference provided with an initially energized annular elastic tape **65** (shown in FIG. **4***a*) interfering with the gussets **9***a*, **9***b* and arranged near the upper end. When the closing band **10** is removed, such elastic tape **65** deforms radially outwards so that the bag B automatically unfolds from an initial partially open configuration to another configuration that is close or identical to the fully open configuration. This option may be used to facilitate insertion of the insert part **35** through the opening **11** of the bag B.

[0110] Now referring to FIGS. **1**-**2** and **7**, the axial extensions E**1**, E**2**, E**3**, E**4** have the same profile in a cross section and have respective L-shaped free edges FE that all extend substantially in a same virtual transverse plane (horizontal plane in usual position of the packaging **1**). Of course a lower or higher number of such angled free edges FE could be used, depending on the geometry of the container sidewall **4**. Providing at least two diametrically opposed L-shaped extensions or opposite L-shaped extensions along a virtual diagonal is of interest to define at least four distinct radially outward directions for the pressing against the inner faces of the bag B. Accordingly, the opening **11** defined by the upper edges **7** of the bag B is expanded and the edges **7** are adequately positioned at a same axial level in the peripheral upper area around the insert part **35**, entirely above the angled free edges FE and above the notches **61**, **62**, **63**, **64** in the fitted configuration of the fitment part **13**.

[0111] Here, the small radial gap between the inner face of the container **2** and the upper half of the bag B is substantially constant because the upper edges **7** are not excessively stretched radially outwards. The change of geometrical conformation as illustrated at the top of FIGS. **4***a* and **4***b* occurs at constant surface for the bag (no overstretching causing deformation of bag material).

[0112] The insert part **35** has a maximum height H**1**, which is of course lower than the determined height H of the interior volume V, and typically inferior to 30 mm. In preferred embodiments, the following relation is satisfied:

$$H-H2<5\text{ mm}<H1$$

where H**2** is the predetermined height of the flexible gusset bag B in the fully open configuration. Referring to FIGS. **2** and **4***b*, such arrangement ensures that the upper edges **7** are in the upper part (which is narrower than the lower part with maximum radial distance D**2**) of the annular interspace defined between the insert part **35** and the corresponding inner face (for example the face F**1** or F**2**) of the container **2**.

[0113] When the packaging **1** is turned upside down, it is understood that a mass of food content **5** accumulates inside the volume defined by the closure system **3** and around the insert part **35**. Here with a bag B having the height H**2** as shown in FIGS. **4***a*-**4***b* and not radially spaced more than 5 or 6 mm from the container **2** at each side, preferably not more than 2 or 3 mm, there is no sufficient empty space around the bag B (see also FIG. **7**) to allow significant deformation and folding (even in a tilted position, no significant lateral bulge can be formed). Besides, as the space around the insert part **35** is small, pressure exerted by food content **5** near the edges **7** (when the packaging is turned upside down) is not sufficient to locally deform the bag B, whereby there is no substantial loss of product.

[0114] Of course, the insert part **35** may be configured with a reduced number of notches and/or have a difference in height for at least one side of the insert part **35**. More generally, the insert part **35** is provided with one or two notches **61**, **62**, defined between two of the axial guiding extensions E**1**, E**2**, E**3**, E**4**, and extending along one of the two opposite inner faces F**1**, F**2** (here along the short sides **22***c*, **22***d* of the container **2**). When having only one notch **62** and two gussets **9***a*, **9***b*, it may be easier to slightly tilt the frame **31** toward the side **31***c* without notch, so that this side **31***c* will push a first gusset **9***a* toward the corresponding face F**1** or F**2**. Then the second gusset **9***b* that is less pressed than the first gusset **9***a* can unfold through the notch **62**.

[0115] The notch **61**, **62**, **63**, **64** opens downwardly and is preferably not divided into several slots or thin longitudinal notches. Such notch **61**, **62**, **63**, **64** can be obtained when molding the frame **31** or by a cutting operation. Of course the term "notch" should not be interpreted in a restricted manner, as understood by one skilled in the art.

[0116] Now, the arrangement of a device for interacting with a measuring utensil **100** will be described with reference to FIGS. **2**-**3**, **5** and **7**-**8**.

[0117] With regard to the measuring utensil **100** as illustrated in FIGS. **3** and **5**, this is similar to a spoon in the embodiments shown, that is to say it has a cup **101** which defines a fixed measuring volume and is, in such option, substantially cylindrical up to the open side of this cup **101**. A handle **102** extends from the cup **101** to a free end. The measuring utensil **100** thus has an elongate form and is made of plastic material or equivalent material. For a circular container **2**, the length of the measuring utensil **100** must of course be less than the inside diameter of the frame **31**. For a rectangular container **2**, this length must be less than the inside diagonal of the frame **31**. The measuring utensil **100** is a measuring device of predetermined form, preferably designed to be sold with the whole packaging **1**, possibly without the gusset bag B in some options. But it is understood that the fixed measuring volume of such measuring utensil **100** is specific to the content **5** in question, here a food product such as powdered milk.

[0118] When sold with the packaging **1**, the measuring utensil **100** may be initially wrapped in a bag, inside the interior volume V and/or below the top wall **33** of the lid **32** or in a separated bag fastened onto an outer surface of the container **2**. At least after the first opening of the closure system **3**, the measuring utensil **100** can be received through a hole **60***a* in a retaining device **60** that is formed on the frame **31**, and preferably integrally formed with the frame **31**. This hole **60***a* is sized to retain the cup **101**. The retaining device **60** is here integrally formed with the closure system **3** and extends between at least one base portion connected to the short side **31***c* and at least one free edge **72** that is optionally configured as a part of a levelling element **70**. The retaining device **60** here extends substantially perpendicular to the central axis X. Referring to FIG. **2**, the free edge **72**, which is of greater size than the opening side of the cup **101**, may be either curved, or rectilinear. The rigid free edge **72** may extend between two opposite ends **73**, **74** of the levelling element **70** that are connected to the inner annular face of the frame **31**. The levelling element **70** may be connected to two adjacent sides of a polygonal frame (here the rectangular frame **31**). The ends **73**, **74** may thus be arranged each adjacent to the same axial extension E**4** of the insert part **35**.

[0119] As shown in FIG. **8**, the base portion BP of the retaining device **60**, opposite to the free edge **72**, may be defined at a junction with the annular transition part **38** longitudinally extending between the fitment part **13** and the insert part **35**. The free edge **72** may be provided with a lower protrusion to perform the levelling without need to tilt the measuring utensil or with a slightly tilted position. The user is thus not obliged to incline the measuring utensil **100** almost vertically which could cause some of the food content **5** to fall out and thereby lead to a mismeasurement,

[0120] In a first embodiment as shown in FIGS. **1**-**4**B and **8**, a stabilizing relief **60***b* or at least one similar projection that protrudes upwardly may be provided adjacent to the free edge **72** and as an extension at a surround **26** of the opening **60**. The retaining device **60** is provided with a hole **60***a*, for example a circular hole, to store the measuring utensil **100** in a storage position, in which the handle **102** extends entirely above the insert part **35**, substantially parallel to the top wall **33** of the lid **32**. The cup **101** has a minimum height which is higher than space between the hole **60***a* and the top wall **33** of the lid **32**, so that the measuring utensil **100** cannot escape when the closure system **3** remains in a closed position.

[0121] Here the first notch **61** is at least partly adjacent to the cup **101** in the storage position. The cup **101** may extend along an axial guiding extension E**4**, proximate to the junction between the sort side **22***c* and the long side **22***b*. The retaining device **60** may be connected to a first side **31***c* of the frame **31** and optionally to another side adjacent to the first side **31***c*. When the insert part **35** is provided with two opposite notches **61**, **62**, the second notch **62** may extend proximate to a second side **31***d* of the frame **31** which is parallel to the first side **31***c*. The handle **102** extends from the cup **101** toward such second side **31***d*.

[0122] In order to have the upper face of the lid **32** close to the opening plane defined by the upper rim, the lid **32** is

of a substantially flat configuration and is provided with a top wall **33** defining a planar upper face, along which the measuring utensil **100** extends in the storage position. Here the levelling edge **72** is curved.

[0123] It can be seen that distance D**4** between the hole **60***a* and the upper rim **21***a* is typically lower than maximum height H**1** of each axial extension E**1**, E**2**, E**3**, E**4** and lower than the characteristic size D**3** (inner diameter for example) of the hole **60***a*. A distance D**4** lower than 10 mm, preferably lower than 5 or 6 mm may be provided, which means that the interspace D**2** between a free edge FE and the outer container **2** can be typically less than 3 or 4 mm. The distance D**5** between the hole **60***a* and the central axis X may thus be of at least 20 or 30 mm, which is of interest for levelling operation (easy access and no need to tilt the measuring utensil **100** more than 45°, even when such utensil has a length similar or greater than the opening size along the short sides **22***c*, **22***d* of the container **2**—see FIG. **5** for example).

[0124] While FIGS. **1**-**4**B show a retaining device **60** and/or a free edge **72** of a levelling element **70** in a corner area of a rectangular frame **31**, it is understood that such kind of device for interacting with the measuring utensil **100** may be arranged differently. For example FIG. **7** shows a retaining element **60** having a free rectilinear edge **72** arranged perpendicular to the two opposite short sides, at a distance from the corners.

[0125] In the variant shown in FIG. **5**, it can be seen that the retaining device **60**, also formed on the frame **31**, is only connected to the first side **31***c* and is distant from the curved portions of the frame **31**. A clip **69** may be provided adjacent the cup **101** in the storage position to lock this position by engagement with a part of the handle **102**. Of course, the retaining device **60** may also form a rectilinear free edge **72**.

[0126] In the variant illustrated in FIGS. **9**-**10**, attachment of the frame **31** to the container **2** is performed by engaging inner reliefs **39** of the frame **31** under the outer collar **2***c* and/or in outer recesses of this outer collar **2***c*. The inner reliefs **39** are defined in the groove G and protrude radially inwards from an outer annular wall of the frame **31**. Referring to FIG. **10**, the outer collar **2***c* may have corner portions CP each provided with a recess **82** obtained by local reduction in height. At the corners of the frame **31**, the inner reliefs **39** may be defined below respective windows **37**. This increase local flexibility of the frame corners and thus facilitates a snap fitting between the inner reliefs **39** that are defined in the groove G and the outer collar **2***c* of the container **2**. It is understood that such kind of attachment of the frame **31** may apply for any of the depicted embodiments and in any other variants. The peripheral upper rim **21***a* may have a surface rounded in cross section, which is of interest for insertion (with progressively increasing contact forces) inside the groove G provided with the inner reliefs. With such arrangement, the frame **31** of the closure system **3** is:

[0127] firmly secured to the container **2** on the one hand (and there is no particular requirement for attaching a part of the lid **32** to the container **2**);

[0128] easy to remove from the container by a specific pushing action simultaneously under two of the corner parts defined by the frame **31** on a same side (such pushing action releasing the corresponding inner reliefs **39** on the same side, to obtain a disengaged position), the closure system **3** being then removed by simply pivoting the frame **31** relative to the outer collar **2***c* of the container **2** (the other inner reliefs **39** on opposite side, typically the hinge side, being released due to the rotation effect).

[0129] As in any of the preceding depicted embodiments, an engagement rim **18'** is provided for locking the closed configuration of the lid **32** (lid not shown in FIG. **9** for clarifying the viewing, such lid being already described in FIGS. **1** and **5**), by retaining the tab T. But here, such engagement rim **18'** is formed on the frame **31** as shown in FIG. **9**. Of course, such option may apply for the preceding embodiments. This arrangement may be preferred to simplify the container **2**.

[0130] The frame **31** shown in FIG. **9** is similar to the frame shown in FIGS. **1** and **5** and the hinge connection with the lid **32** is not shown. While the position of the hole **60***a* defined by the retaining device **60** is identical to the position shown in embodiment of FIGS. **1**-**2** and **4***a*-**4***b*, the insert part **35** is here slightly different. It can be seen in FIG. **9** that an axial guiding extension E**4'** extends between two notches **61**, **63** from a base **43** adjacent to the hole **60***a*. The axial guiding extension E**4'** adjacent to the hole **60***a* may optionally have a C-shape or L-shape section when viewed in a plane perpendicular to the central axis X, in the mounted configuration of the closure system **3**. The base **43** may be joined to the base portion BP (FIG. **8**).

[0131] Here, the notches **62** and **64** are less pronounced that the corresponding notches in the other depicted embodiments. Additionally or alternatively, the axial extensions E**1**, E**2**, E**3** are slightly more slanted than in the examples of FIGS. **1**-**2** and **7**, with exception of the axial extension E**4'** that is elongated and narrower than the other axial guiding extensions E**1**, E**2**, E**3**. This arrangement with some axial guiding extensions more slanted is of interest to have the bag B easily engaged, especially with correct positioning at the top corners of the bag B, by the consumer.

[0132] FIG. **10** illustrates the fact that the shape of the container sidewall **4** is matching with the annular side wall **8** of the bag B. Here with a length L**1** of the container **2** significantly superior to the width L**2**, it is impossible to accommodate the open bag B in other upright position different from a predetermined position inside the interior volume V of the container **2**. Here the term "matching" means that the shape (form) is identical or sufficiently similar to prevent any unsuitable position where the side wall **8** of the bag B does not extend along the sidewall **4** of the container **2**. Such matching in shape is well-known in the art (see for example bag-in-a-box systems and similar refill systems) to accommodate an inner bag B in an outer container **2** and is clearly understood by those skilled in the art. While height H**2** of the open bag B as been described as sufficient to have relation H−H**2**≤5 mm, it is understood that the bag B has not necessarily a constant height H**2** since notches or non-pronounced irregularities can be provided, preferably at a distance from the corners, without impairing correct guiding by the insert part **35**. For example, such relation may be verified only at the top corners of the open bag B.

[0133] It can be seen in FIGS. **1** and **5** that the hole **60***a* is not intersected by the central axis. The same applies for the hole **60***a* defined by retaining device **60** in the frame **31** shown in FIG. **9**. A relatively flat configuration can be obtained for the lid **32** due to the horizontal storage position of the measuring utensil **100**, such utensil being at least partly inserted in the interior volume V of the container **2**.

[0134] In these different embodiments, the handle **102** is easy to catch and there is no need to touch the measuring utensil **100** at or near the cup **101**. The handle **102** of the measuring utensil **100** extends in a plane of the opening **21** or above the upper rim **21***a*, which means that the consumer fingers will not touch the inner faces of the bag when catching the measuring utensil **100**. This centered position of the handle **100**, outside the bag B, is advantageous to avoid contacts that would tend to spoil the food content **5**.

[0135] The packaging **1** may thus combine several features without impairing efficiency of the closure and it can be reused with a new bag B filled with content **5**, after removal of the empty bag. The handling of the frame **31** of the closure system **3** is not troublesome and there is no need to place fingers inside the new bag.

[0136] Clearly, the embodiments described above are not restrictive in any way, and numerous variants as to the geometry of the parts making up the container **2** and the closure system **3** are possible without departing from the scope of the invention as claimed.

[0137] For instance, while the closure system **3** is here described as made of a single piece of molded plastic, it is understood that an assembly of two or more elements can be used to define the closure system. More generally, it will be obvious that the use of the verb "to comprise" and its conjugations does not exclude the presence of any other elements besides those defined in any claim.

[0138] The word "a" or "an" preceding an element does not exclude the presence of a plurality of such elements. Any reference sign in the following claims should not be construed as limiting the claim.

[0139] Of course, the inner circumference of the container **2** is not necessarily sized exactly as the annular side wall **8** of the bag B so as to provide a tight fit of the bag B inside the outer container. A global fit is sufficient and the inner circumference of the container **2** is, more generally, adapted to guide the annular side wall **8** of the bag B so as to locate the bag B in a predetermined position inside the interior volume V.

1-17. (canceled)

18. A packaging for a food product comprising:

an outer container longitudinally extending about a central axis from a bottom to an upper face having an opening, the outer container having a peripheral upper rim delimiting the opening and a sidewall defining an interior volume of a determined height, the sidewall having two opposite inner faces,

a closure system comprising a frame which is annular and fixed in a removable manner to the peripheral upper rim, and a lid which closes the opening of the outer container in a closed position, the frame comprising an upper fitment part covering the upper rim; and

a gusset bag filled with food product and flexible, comprising a bottom, an upper end adapted to define an opening of the bag at the opposite from the bottom, an annular side wall provided with at least one gusset, so that the bag is adapted to unfold from a partially open configuration to a fully open configuration;

wherein the bag is located in a predetermined position inside the interior volume when surrounded by the sidewall of the outer container, the bag having an opening facing upwardly at the opposite from the bottom in the predetermined position, and wherein the lid is hinged to the frame to allow movement of the lid between an open position and the closed position, the frame further comprising:

an insert part that extends in the interior volume and is radially spaced inwardly from the sidewall of the outer container, the insert part extending annularly entirely below the upper rim,

a plurality of axial guiding extensions that belong to the insert part and configured to engage the bag through the opening of the bag to hold open the bag, the insert part having a notch defined between two of the axial guiding extensions, along one of said two opposite inner faces.

19. The packaging according to claim **18**, wherein at least one of the two opposite inner faces) is formed by a panel in contact with the upper fitment part and extends between two connections that each define an angle between two adjacent panels of the sidewall of the outer container.

20. The packaging according to claim **18**, wherein the sidewall of the outer container is defined by four panels interconnected at respective connections that extend each rectilinearly from the bottom to an angle of the peripheral upper rim, while the annular side wall of the bag is provided with four edges and has a predetermined periphery sized and shaped so that each of the edges is at less than 3 mm from one of the connections when the bag is stored in the interior volume and the upper rim is engaged into a groove of the upper fitment part.

21. The packaging according to claim **18**, wherein the notch extends between two planar portions of two axial extensions that are angled to have each a L-shape section when viewed in a plane perpendicular to the central axis.

22. The packaging according to claim **21**, wherein the insert part comprises four bridge portions each tapering toward the bottom with a deviation angle as compared to the central axis, the deviation angle being inferior or equal to 10°, and wherein each of the four bridge portions comprises:

a notch extending between two axial guiding extensions;

an arched section that extends above the notch, between the two axial guiding extensions.

23. The packaging according to claim **22**, wherein the insert part has four planar outer faces, each arched section defining a midsection of said outer faces of the insert part.

24. The packaging according to claim **21**, wherein the insert part comprises four axial guiding extensions.

25. The packaging according to claim **18**, wherein the insert part has a maximum height lower than the determined height, the following relation being satisfied:

$$H-H2<5\text{ mm}<H1$$

where

H**1** is the maximum height of the insert part,

H**2** is a height of the flexible gusset bag in the fully open configuration, and

H is the determined height of the interior volume, measured between the bottom of the outer container and the opening of the outer container.

26. The packaging according to claim **18**, wherein the bag and the outer container have each a polygonal shape, the axial guiding extensions being provided each with an angled free edge in order to guide each upper edges of the bag in a peripheral upper area that is defined between the insert part and an upper part of the outer container, entirely above the angled free edges in a fitted configuration of the upper fitment part.

27. The packaging according to claim **18**, wherein the insert part is provided with a first notch and a second notch at the opposite from the first notch, each of the first notch and the second notch being wider than high, the bag comprising two opposite gussets that unfold by engaging through the first notch and the second notch, respectively.

28. The packaging according to claim **27**, further comprising:

a measuring utensil having a cup and a handle; and

a retaining device for storing the measuring utensil in a storage position, in which the handle extends entirely above the insert part,

wherein the first notch is at least partly adjacent to the cup in the storage position, the retaining device being connected to a first side of the frame, the second notch extending proximate to a second side of the frame which is parallel to the first side of the frame.

29. The packaging according to claim **27**, wherein the bag has an inner face provided with at least one initially energized annular elastic tape in a folded configuration of the gussets when the opening of the bag is closed by a detachable closing band, the elastic tape extending transversally with respect to the gussets and being configured to deform radially outwards when the closing band is detached so that the bag automatically unfolds from an initial partially open configuration to another configuration that is close or identical to the fully open configuration.

30. The packaging according to claim **18**, wherein the frame comprises an annular transition part between the insert part and the upper fitment part, the transition part tapering downwardly and defining a concave surface facing outwardly.

31. The packaging according to claim **30**, wherein the frame comprises a retaining device that extends perpendicular to the central axis and provided with a hole, the retaining device being directly connected to the annular transition part.

32. The packaging according to claim **18**, wherein the frame comprises a levelling element provided with:

a rigid free edge that extends transversally to the central axis, and

two opposite ends,

the levelling element being adjacent to a same axial guiding extension of the axial guiding extensions at each of the two opposite ends.

33. The packaging according to claim **18**, wherein the lid comprises an interior skirt pressing at least partially against an inner face of the upper fitment part in the closed position to prevent food content to accumulate in a lid-frame contact area.

34. The packaging according to claim **18**, wherein the two opposite inner faces are less spaced in an area proximate the bottom of the outer container, so as to have less interspace between the bag and the outer container in a lower part of the interior volume.

35. The packaging according to claim **18**, wherein the annular side wall of the bag is provided with two opposite gussets, the bag and the outer container having each a rectangular shape, the insert part being provided with a first notch and a second notch, each of the first notch and the second notch being:

wider than high;

intersected by a virtual median plane of the outer container, the central axis being included in the virtual median plane.

* * * * *