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54 Titre : A package for food products.

57 Abrégé :

Described herein is a package (1) for food products, comprising: - a container (2) with a dose of food product (P), said container (2) having a mouth part (2B) with a respective rim; and - a lid (3) applied for closing said mouth part (2B) of said container (2) which lid can be selectively configured in a condition for opening and a condition for closing the container. The package comprises a particular sealing foil (20) made of a heat-shrinking film, coated on the inside with an adhesive material, in order to provide hermetic closing of the package itself.

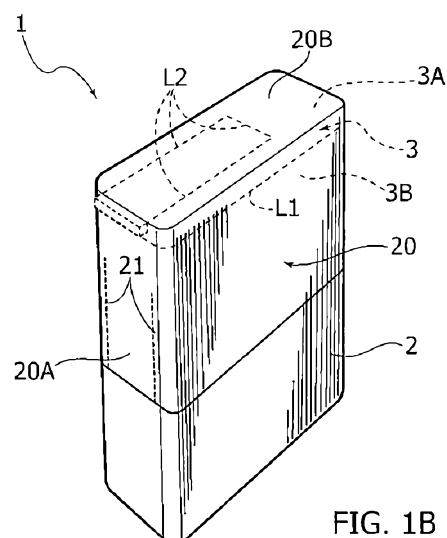
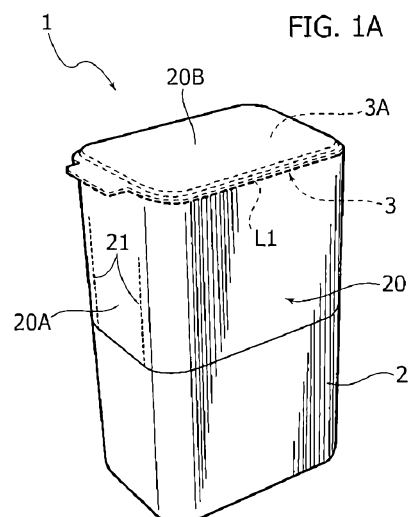


FIG. 1B

A package for food products

The present invention regards a package for food products, in particular grain-like products such as, for example, pills, lozenges, tablets, or comfits, etc., comprising:

- a container with a dose of food product, said container having a mouth part with a respective rim;
- a lid applied for closing said mouth part of said container; and
- a sealing foil for hermetic closing of said package.

A package of this type is known from the international patent application No. WO2008125930 filed in the name of the present applicant.

In the solution described in the above application the sealing foil is represented by a removable label applied on the lid. This label provides a hermetic seal for the package in a simple and effective way.

The solution in question presents, however, some drawbacks, discussed in detail in what follows, that the present invention intends to overcome.

The above object is achieved via a package having the characteristics specified in the claims.

The claims form an integral part of the technical teaching provided herein in relation to the invention.

Further characteristics and advantages of the invention will emerge clearly from the ensuing description with reference to the annexed drawings, which are provided purely by way of non-limiting example and in which:

- Figures 1A and 1B are perspective views, respectively, of a first embodiment and a second embodiment of the package described herein;
- Figures 2 and 3 are perspective views of the

ensemble constituted by the container and the lid according to the first embodiment described herein, in the conditions where the container is open and closed, respectively; and

5 - Figures 4 and 5 are perspective views of the ensemble constituted by the container and the lid of the second embodiment described herein, in the conditions where the container is open and closed, respectively.

10 In the ensuing description various specific details are illustrated aimed at providing an in-depth understanding of the embodiments. The embodiments may be obtained without one or more of the specific details, or with other methods, components, materials,
15 etc. In other cases, known structures, materials, or operations are not shown or described in detail so that various aspects of the embodiment will not be obscured.

 The references used herein are only provided for convenience and hence do not define the sphere of
20 protection or the scope of the embodiments.

 The package described herein, designated in Figures 1A and 1B by the reference number 1, is a package for food products. In particular, this package may be advantageously used for packaging and delivering
25 grain-like products such as pills, lozenges, tablets, or comfits, for example, the comfits sold with the trademark TIC TAC® by the companies of the Ferrero group. Of course, reference to this possible application is not to be understood as in any way
30 limiting the scope of the invention.

 The package 1 is basically made up of three parts or elements.

 A first part is constituted by a container 2 provided for containing products. This is basically a
35 hollow containment body, having a general basin or bowl

conformation and preferably having an as-a-whole flattened shape with an approximately parallelepipedal conformation. In various embodiments, as in the two examples illustrated in the figures, the container has
5 a development at least slightly divergent from its bottom base to the mouth part, the latter being designated in the figures by the reference 2B. The container 2 is usually made of plastic material, preferably transparent, but, of course, it is possible
10 to use other types of materials.

In use, the container 2 is designed to receive inside it a dose of grain-like products, designated as a whole by the reference P.

The second element of the package 1 is constituted
15 by a lid 3, which is also made of plastic material and is to engage the mouth part 2B for closing the container 2.

In various embodiments, as in the two examples illustrated in the figures, the lid 3 comprises a top
20 portion 3A, preferably having a planar shape, which is shaped so as to cover completely the opening defined by the mouth part 2B. In particular, in the examples illustrated in the figures, the top portion 3A has larger dimensions than the aforesaid opening and bears
25 upon the top rim of the mouth part 2B, projecting beyond this, and possibly also beyond the outside of the outer wall of the container.

In various embodiments, as in both of the examples illustrated in the figures, the top portion 3A of the
30 lid is carried by a connection portion 3B that is to insert into the mouth part 2B of the container 2 and engage it by being slotted therein. In particular, the portion 3B has an outer surface of a shape complementary to the inner surface of the mouth part 2B
35 and may have, on its outer surface, one or more

formations 3', for example ribbings, which are designed to co-operate with corresponding formations 2', for example grooves, made on the inner surface of the mouth part, in order to enable slotted coupling between the lid 3 and the mouth part 2B.

In various embodiments, as in the example illustrated in Figures 4 and 5, the lid 3 is provided, at its top portion 3A, with an opening 10 for delivery of the products, associated to which is a tab 11 that is orientable so as to be able selectively to cover (and hence close) or else disengage (and hence leave open) the opening 10. In this case, delivery of the products P is hence obtained through said opening without any need to remove each time the lid 3. The tab 11 projects laterally with respect to the outer surface of the container 2 in order to facilitate the operation of flipping it open by the user.

In various alternative embodiments, as in the one illustrated in Figures 2 and 3, the lid 3 is, instead, without the aforesaid tab 11 and opening 10, and is, itself, hinged to the container 2, preferably via a flexible membrane 4 so as to remain connected thereto also in the open condition. In this case, delivery of the products P is obtained by raising the lid 3 of the container 2. The lid 3 projects laterally with respect to the outer surface of the container 2 in order to facilitate opening thereof by the user.

The latter solution is preferred for embodiments in which the container and the lid are of small dimensions (for example, of a height equal to or less than 3-4 cm), in so far as it facilitates delivery of the products and at the same time prevents the lid from getting lost once it has been removed from the container. Preferably, the lid and the container of these embodiments are co-moulded within one and the

same injection-moulding process.

The lid 3 and the container 2 form together the pack or box 1' for packaging and delivery of the grain-like products P.

5 As may be seen in the figures, the outer surface of the box 1' exhibits on the outside a series of interruption lines Li, where by the term "interruption lines" are meant the lines of separation between the various contiguous parts of the box, which identify a
10 solution of continuity in this surface. These lines evidently constitute points where air can infiltrate. First interruption lines are defined first of all between the lid 3 and the mouth part 2B, all around the lateral surface of the box 1', these being designated
15 in the figures by the reference L1. In the example of Figures 4 and 5, further interruption lines, designated in the figures by the reference L2, are moreover defined on the lid 3 itself between the tab 11 and the opening 10.

20 The third element of the package is finally constituted by a sealing foil applied on the box so as to provide hermetic closing thereof. For this purpose, the sealing foil is applied on the box so as to cover the interruption lines indicated above.

25 As mentioned at the start, in the solution described in the document No. WO2008125930 the sealing foil is constituted by an adhesive label applied on the lid of the box. The label in question has a shape cut precisely so as to cover the aforesaid interruption
30 lines. Now it is to be noted, as regards this solution, that exact positioning of the label on the box is of fundamental importance to obtain an effective hermetic closing, so that any possible imprecision in the packaging process may prevent this type of closing from
35 being effectively obtained. Moreover, the present

applicant has found that the edges of the above label may easily get damaged or be removed during transport and handling of the package, this possibly jeopardizing irremediably hermetic closing thereof.

5 The above drawbacks are, instead, overcome by the sealing foil provided in the package described herein, designated in the figures by the reference 20. It has a cap-like conformation and is applied at the top on the box so as to cover the lid 3 and at least a top portion
10 of the side wall of the container 2. In particular, the sealing foil defines a tubular part 20A having a shape complementary to that of the side wall of the container 2, and a top part 20B that is to cover the top portion 3A of the lid 3. Preferred embodiments of the package,
15 like the one illustrated in Figures 1A and 1B, envisage that the tubular portion 20A of the foil will present an extension such as to coat a substantial part of the side wall of the container, for example up to approximately half the height of the wall. In addition,
20 the top part 20B preferably closes completely or almost completely the top end of the tubular part 20A of the foil, so as to cover completely, or practically completely, the top portion 3A of the lid.

 The sealing foil 20 is made of a heat-shrinking
25 film, preferably plastic material (for example, constituted by polyethylene, polypropylene, etc.), coated on the inside with a heat-sealing or thermo-adhesive material (a so-called "thermal glue").

 The process of application of the foil 20
30 envisages a first step in which the foil is fitted on the box 1'. In preferred embodiments, the foil 20 is, initially, folded on itself to form a sleeve, i.e., a tubular portion and, in this configuration, is fitted on the box. The step in question may envisage use of a
35 referencing element designed to determine the vertical

position of the sleeve on the box. This sleeve may coat the entire lateral surface of the box or else only part thereof. The sleeve in question may be formed in any way known to the person skilled in the sector, for
5 example by extrusion during production of the foil 20. In alternative embodiments, the foil 20 may, instead, be fitted on the box 1' already shaped like a cap; in this case, the foil 20 may, for example, be obtained via thermoforming.

10 The process then envisages a step of heating of the foil fitted on the box up to a pre-set temperature. As a result of heating, the film constituting the sealing foil shrinks and adheres on the box in a state of mechanical tension that may be unidirectional or
15 bidirectional. At the same time, the rise in temperature activates the heat-sealing material with which the foil is internally coated, causing the latter to adhere to the box. In order to ensure a stable adhesion, the method in question may also envisage a
20 step of mechanical compression of the foil against the box, carried out applying heat.

In the preferred embodiments indicated above in which the foil 20 is initially shaped to form a sleeve, once heat-shrinkage has taken place, the top flaps of
25 the sleeve are again folded and glued, once again applying heat, against the top portion 3A of the lid 3.

At the end of the above operations, the foil 20 is perfectly adherent, with its tubular part 20A and the top part 20B, to the outer surfaces of the box, and is
30 completely bonded to.

Finally, the foil 20 is cooled so as to preserve the configuration assumed, and the package 1 is thus completed.

It should be noted that in the finished package
35 the foil 20 is completely bonded to the box and at the

same time perfectly stretched out flat and without any creases or folds so as to guarantee perfect hermetic closing.

With reference to the figures, Figure 1A
5 represents the complete package obtained with the box 1' illustrated in Figures 2 and 3, whereas Figure 1B represents the package obtained with the box 1' illustrated in Figures 4 and 5.

It should be noted that the sealing foil described
10 herein presents the advantage of enabling easy handling during the process of application on the box, and moreover, unlike the solution of the known art discussed above, can guarantee hermetic closing also in the case where it is positioned on the box with slight
15 misalignment.

The initial dimensions of the foil 20, before it is applied on the box and heated, may vary according to the shape and dimensions of the box and the degree of tension that it is desired to bestow on the foil. In
20 general, the tubular part 20A of the foil, or else the sleeve itself in which this is initially folded on itself, if applied to the box according to the preferred modalities illustrated above, presents initial transverse dimensions greater than those of the
25 box, which then are reduced in the process of heat-shrinkage until it adheres perfectly thereto. In an example of embodiment, the sleeve applied on the box shrinks, in the transverse plane, by an amount of approximately 50%. Preferably, in the condition where
30 it is applied, the foil 20 is in a state of unidirectional or bidirectional mechanical tension.

It should be noted that the sealing foil 20 is suited to being used indifferently on both types of box illustrated above, given that it is able to cover with
35 its top part 20B and its tubular part 20A all the

interruption lines L1 and L2. In general, then, it guarantees a perfect hermetic closing of the package, that is altogether resistant and unalterable as a result of handling and movement to which the package
5 may be subjected.

Finally, in various embodiments, as in the one illustrated, on the tubular part 20A of the sealing foil at least one notch or pre-score is provided, representing a trigger point for tearing of the foil in
10 order to enable the consumer to remove the foil easily from the box by tearing it. In preferred embodiments, on the part 20A two vertical tear lines 21 are in particular provided, which are each constituted by a succession of notch segments and are located in a
15 position corresponding to a side wall of the box, each in the proximity respectively of one of the two opposed vertical edges of this wall.

The present invention also regards a method for producing the package described herein, which comprises
20 the steps of:

- providing a container with a dose of food product, said container having a mouth part with a respective rim;
- providing a lid applied for closing said mouth
25 part of said container;
- providing a sealing foil made of a heat-shrinking film coated on the inside with an adhesive material; and
- applying said foil on said container closed by
30 said lid and subjecting said foil applied on said container to a heating process such that said foil adheres by heat-shrinkage to said lid and to said container and bonds to these, thus providing hermetic closing of the package.

35 Hermetic closing of the package obtained according

to the teachings described above on the one hand prevents infiltration of foreign agents into the container, such as for example humidity, which might otherwise deteriorate the product, and on the other
5 hand prevents dispersion outwards of flavours or other volatile substances of the product. Thanks to this hermetic closing, the structural and organoleptic characteristics of the product can hence remain unaltered over time, even in environments that are
10 usually unfavourable and problematical in regard to preservation of food products, such as tropical countries.

Of course, without prejudice to the principle of the invention, the details of construction and the
15 embodiments may vary, even significantly, with respect to what is illustrated herein purely by way of non-limiting example, without thereby departing from the scope of the invention, as defined by the annexed claims. In particular, in the package described herein
20 there may be envisaged, in addition to the sealing foil 20, also application of glue or adhesive lacquer between the parts of the lid and the container in mutual contact, once again in order to guarantee total hermetic closing of the package. The glue may be chosen
25 from among the ones commonly used in the foodstuff sector. Preferably, the glue is applied on the top rim of the mouth part of the container, upon which the lid bears.

CLAIMS

1. A package (1) for food products, preferably grain-like products such as, for example, pills, lozenges, tablets, or comfits, comprising:

5 - a container (2) with a dose of food product (P), said container (2) having a mouth part (2B) with a respective rim;

 - a lid (3), which is applied for closing said mouth part (2B) of said container (2) and can be
10 selectively configured in a condition for opening and a condition for closing said container, wherein the outer surface of the ensemble constituted by said container and said lid exhibits on the outside a series of interruption lines (L1, L2) representing points where
15 air can infiltrate; and

 - a sealing foil (20);

 said package being characterized in that said sealing foil (20) defines a tubular part (20A) and a top part (20B), and is applied at the top on said
20 container closed by said lid so as to cover said interruption lines, said top part (20B) covering at least a portion of said lid (3), and said tubular part (20A) covering at least a top portion of the outer wall of said container, wherein said package is, moreover,
25 characterized in that said sealing foil (20) is made of a heat-shrinking film coated on the inside with an adhesive material, and in that said foil adheres by heat-shrinkage to said lid and to said portion of said outer wall, and is bonded thereto, thus providing a
30 hermetic closing of said package.

2. The package according to Claim 1, wherein said coating material is a heat-sealing or thermo-adhesive material.

3. The package according to Claim 1 or Claim 2,
35 wherein said adhesive material coats the inside of said

sealing foil (20) completely.

4. The package according to any one of the preceding claims, wherein said foil is constituted of a film of plastic material, in particular polyester, preferably polyethylene terephthalate (PET), polypropylene (PP), polystyrene, preferably biaxially oriented polystyrene (BOPS), polyethylene (PE), possibly in combination with one another.

5. The package according to any one of the preceding claims, wherein said foil (20) adheres to said container and/or lid in a state of mechanical tension.

6. The package according to any one of the preceding claims, wherein said foil (20) adheres to said container and/or lid as a result of the sealing obtained by said adhesive material, said adhesive material being glue or heat-sealing lacquer.

7. The package according to any one of the preceding claims, wherein said foil is made of a single piece.

8. The package according to any one of the preceding claims, wherein said lid (3) has an opening (10) for delivery of the product (P) with a closing element (11) coupled thereto, which is mobile in order to open and close selectively said opening (10) for delivery of the product.

9. The package according to any one of the preceding claims, wherein said top part (20B) closes said tubular part (20A) at the top.

10. The package according to any one of the preceding claims, wherein said lid (3) is hinged to said container (2).

11. The package according to any one of the preceding claims, wherein a layer of glue or adhesive lacquer is applied between the mutually coupled parts

of said lid and said container.

12. A method for producing a hermetic package for food products, preferably grain-like products such as, for example, pills, lozenges, tablets, or comfits, comprising the steps of:

- providing a container (2) with a dose of food product (P), said container (2) having a mouth part (2B) with a respective rim;

- providing a lid (3), which is applied for closing said mouth part (2B) of said container (2), and can be selectively configured in a condition for opening and a condition for closing said container, wherein the outer surface of the ensemble constituted by said container and said lid exhibits on the outside a series of interruption lines (L1, L2) representing points where air can infiltrate;

- providing a sealing foil (20);

said method being characterized in that in said step of providing a sealing foil (20) said foil is constituted by a heat-shrinking film coated on the inside with an adhesive material,

said method envisaging applying said foil (20) on said container closed by said lid and subjecting said foil applied on said container to a heating process such that said foil adheres by heat-shrinkage to said lid and to said container and is bonded to these, covering said interruption lines and providing a hermetic closing of said package.

13. The method according to Claim 12, wherein said adhesive material coats the inside of said sealing foil (20) completely.

ABSTRACT

Described herein is a package (1) for food products, comprising: • - a container (2) with a dose of food product (P), said container (2) having a mouth part (2B) with a respective rim; and • - a lid (3) applied for closing said mouth part (2B) of said container (2) which lid can be selectively configured in a condition for opening and a condition for closing the container. The package comprises a particular sealing foil (20) made of a heat-shrinking film, coated on the inside with an adhesive material, in order to provide hermetic closing of the package itself.

FIG. 1A

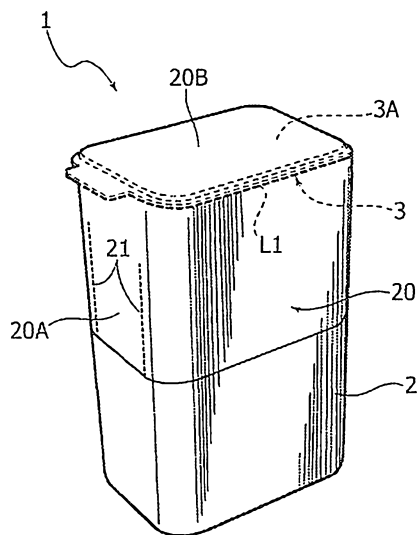


FIG. 1B

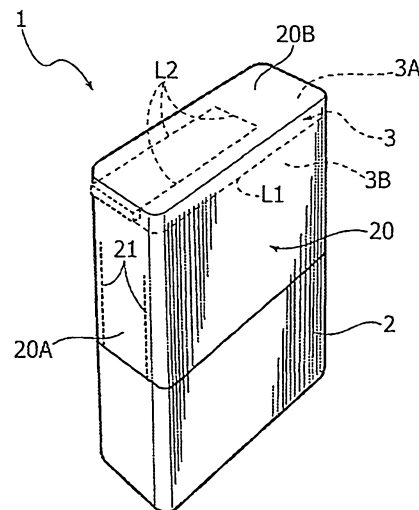


FIG. 1A

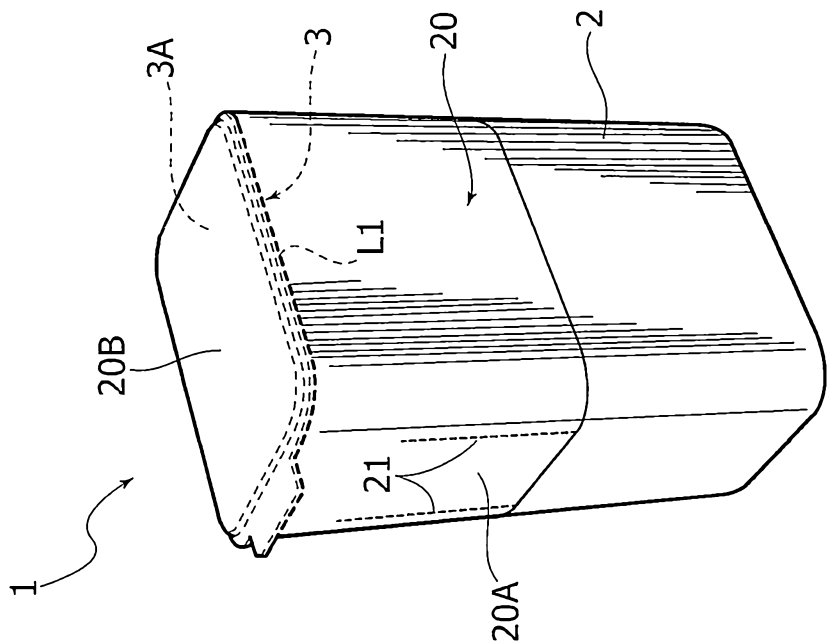


FIG. 1B

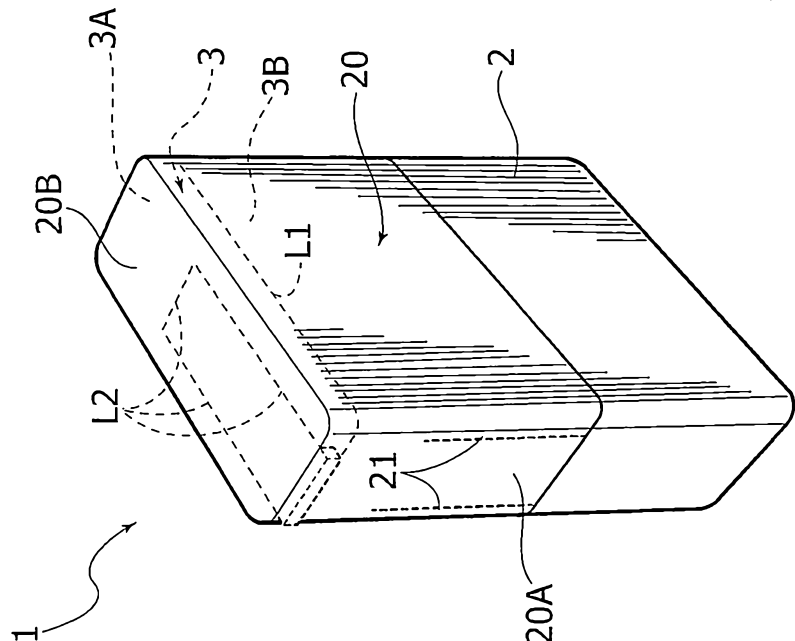


FIG. 3

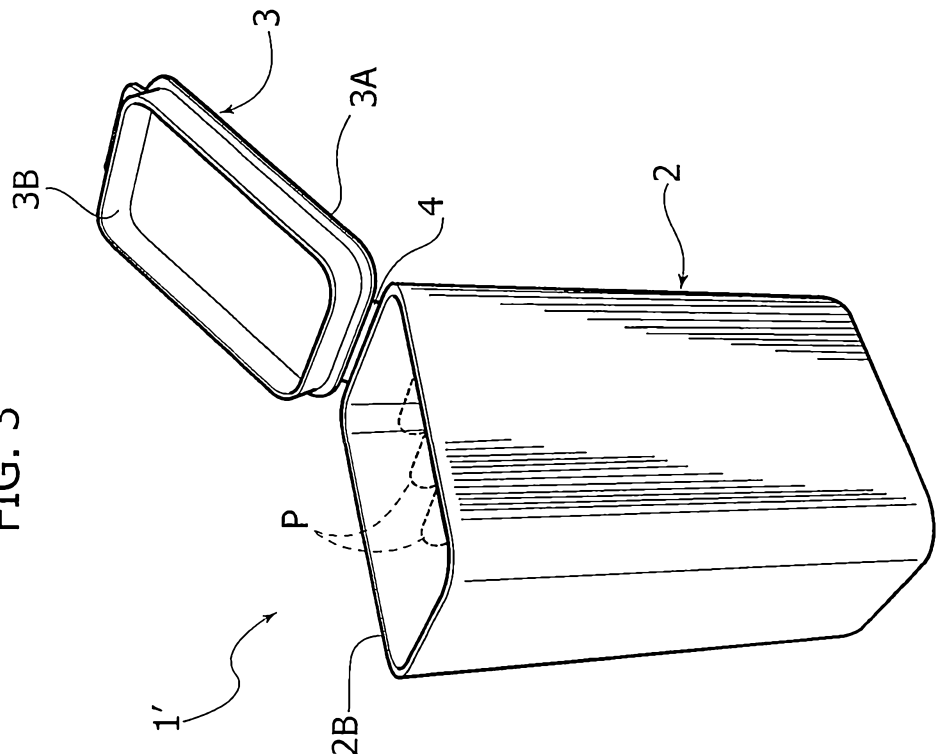


FIG. 2

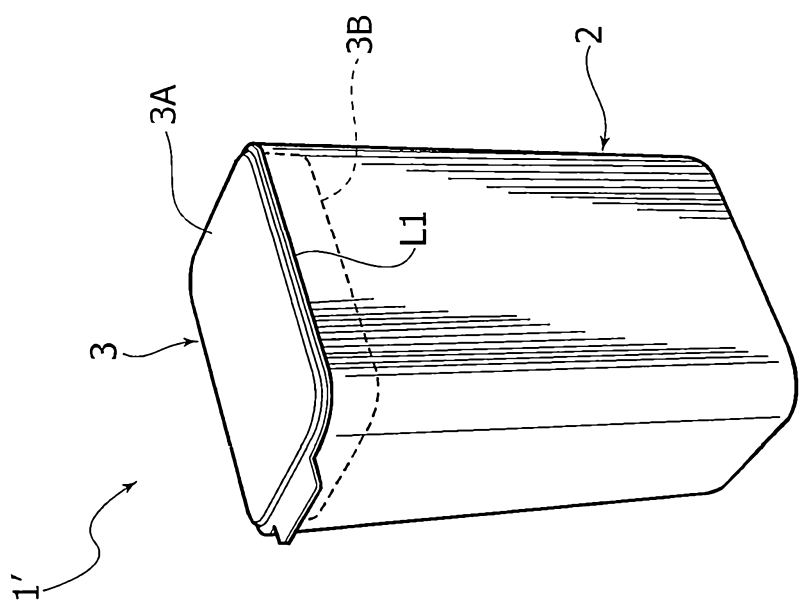


FIG. 5

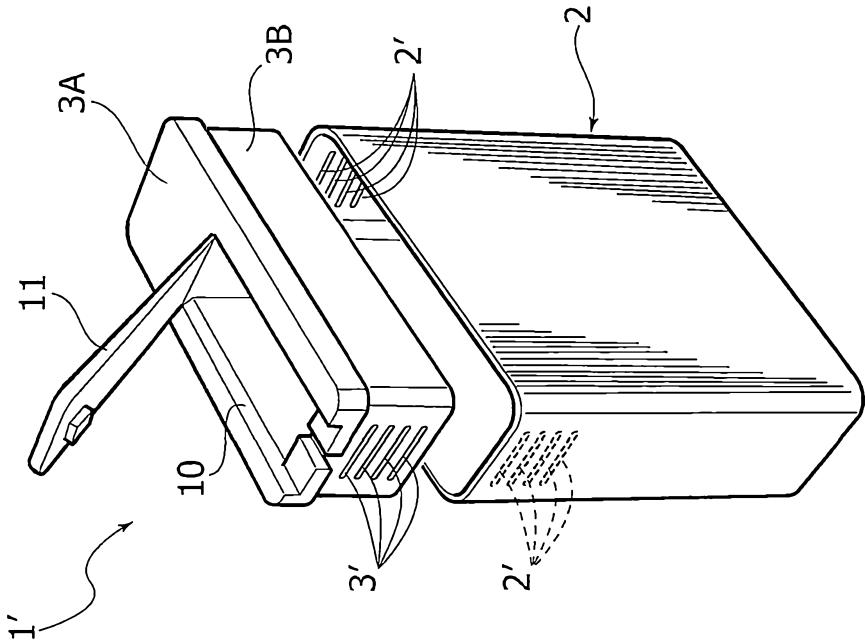


FIG. 4

