(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 489 018 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
22.12.2004 Bulletin 2004/52

(51) Int Cl.[7]: **B65D 33/24**

(21) Application number: **04014063.4**

(22) Date of filing: **16.06.2004**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL HR LT LV MK

(30) Priority: **17.06.2003 IT mi20031222**

(71) Applicant: **BARILLA G. e R. Fratelli S.p.A.**
43100 Parma (IT)

(72) Inventors:
- **Amigoni, Michele**
  43100 Parma (IT)
- **Zanni, Paolo**
  43100 Parma (IT)

(74) Representative: **Ferreccio, Rinaldo**
c/o Botti & Ferrari S.r.l.
Via Locatelli 5
20124 Milano (IT)

(54) Bag with resealing device

(57) The present invention concerns a bag-type package (12) for perishable food products, in particular for baked products like biscuits, shortbread and the like, loosely packaged, having a mouth (20) hermetically sealed by at least one sealing line (21) and including a resealing device (10) of said mouth (20) when it has been opened so as to consume the respective products; said device comprises at least one hinge (10) with an upper wing (17) and a lower wing (18) fixed to a wall (14a) of said bag-type package (12) and hinged together to define a hinging axis (X-X) that is substantially parallel to said at least one sealing line (21) of said mouth (20), wherein, at a predetermined distance from said at least one sealing line (21), means (22) are provided for removably locking said at least one hinge (10) in a closed state, said upper wing (17) and said lower wing (18) of said at least one hinge (10) being juxtaposed.

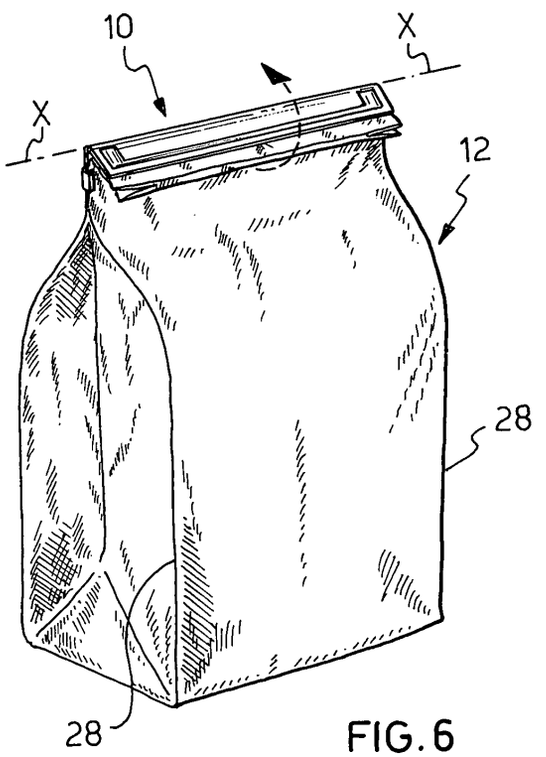

FIG. 6

EP 1 489 018 A2

Description

Field of application

[0001] The present invention, in its most general aspect, refers to a bag-type package particularly but not exclusively intended for perishable food products, like baked products and the like.

[0002] In particular, this invention concerns a bag-type package for biscuits, shortbread and similar baked food products, loosely packaged, including a resealing device, in other words a device that allows the bag to be closed and reopened at any time, as many times as one wishes, after it is first opened.

Prior art

[0003] It is known that one of the most urgent requirements in the field of the production and distribution of perishable foods is that of a packaging aimed at maximizing shelf-life, in other words extending the period within which it is reasonably possible to guarantee that the original organoleptic properties of the packaged foods can be conserved.

[0004] For such a purpose, appropriate paper materials have been studied, tested and provided for realizing packages, just as suitably shaped containers and appropriate techniques for sealing them, once filled with the desired products, have been designed and provided.

[0005] With regard to baked food products, like biscuits, shortbread and the like, which are generally loosely packaged in bag-type containers and which are generally consumed "bit by bit", in other words over many successive times, next to the aforementioned requirement a substantial need has emerged to guarantee that the organoleptic properties of such products can be maintained even after the package has been opened.

[0006] For such a purpose, containers, for example bag-type containers, have been designed and provided, equipped with devices or structural measures aimed at allowing the respective container to be resealed in a way that is comparable with, if not actually the same as, the original seal.

[0007] In the case of bag-type packages, to which the present invention particularly, but not exclusively, refers, a well known resealing device is that based upon the use of a self-adhesive item, for example a self-adhesive label: such a label is used to fix an upper part of the side walls of the bag-type package, comprising its mouth, in a condition folded over many times upon itself.

[0008] However, it is known that self-adhesive labels are suitable for good resealing only for a limited number of times, due to the rapid reduction in their adhesive properties and their use in the presence of fat, bits of food, etc.

[0009] Another known resealing device essentially consists of a sort of tie or string, of an appropriate plastically deformable material, associated with the bag-type package near to its sealed mouth, and extending parallel to it. Such a tie has a greater length than the width of the mouth of the bag, so as to have end portions extending or extendable along the side of the bag itself. After the package has been opened, the biscuits have been consumed and the part of package thus "emptied" has been folded many times over, the side portions of the tie or string are folded to hold the package in the folded state.

[0010] Such a device, however, has numerous drawbacks. Indeed, the ties often detach from the package right from the first time that they are used and are thus easily lost or even thrown away. Moreover, the side portions of said ties quickly lose their properties of maintaining the "folded" position on the package and, therefore, of guaranteeing an effective resealing of the package.

[0011] Other known types of sealing devices of bag-types packages foresee the use of removable locking systems of the plurality of folds that is given to the upper part of the package after the partial consumption of its contents: for example, small strips of Velcro® are used associated with the package, near to its mouth and on opposite sides thereof.

[0012] With this type of device there are nevertheless drawbacks. For example, the user must take care to carry out a precise folding of the upper part of the package, to make the two joining components of the Velcro® line up as best possible: this brings substantial difficulties above all when the package is almost empty and many folds must therefore be made, since in these cases the shape memory of the paper material used for these packages opposes a certain force. Moreover, it must also be considered that Velcro® itself has its own cost.

Summary of the invention

[0013] The problem underlying the present invention is that of providing a bag-type package with a resealing device of the type considered above, having structural and functional characteristics such as to overcome all of the quoted drawbacks with reference to the prior art in a simple and cost-effective way: in particular, a bag, the resealing device of which always guarantees, for an indeterminate number of times, the same quick and effective resealing.

[0014] This problem is solved, according to the present invention, by a bag-type package for perishable food products, in particular for baked products like biscuits, shortbread and the like, loosely packaged, having a mouth hermetically sealed by at least one sealing line and including a resealing device of said mouth when it has been opened so as to consume the respective products, characterized in that said device comprises at least one hinge with an upper wing and a lower wing fixed to a wall of said bag-type package and hinged together to define a hinging axis that is substantially parallel to said

at least one sealing line of said mouth, wherein, at a predetermined distance from said at least one sealing line, means are provided for removably locking said at least one hinge in a closed state, said upper wing and said lower wing of said at least one hinge being juxtaposed.

[0015] The advantages and characteristics of the bag-type package with resealing device, particularly for perishable food products, of the present invention shall become clearer from the description of an examplary embodiment thereof, made hereafter with reference to the attached drawings given by way of indication and not of limitation.

Brief description of the drawings

[0016]

Figure 1 schematically represents a perspective view of a resealing device of a bag for perishable food products, according to the present invention.

Figure 2 schematically represents a plan view from above of the device of figure 1, in an open configuration thereof.

Figure3 schematically represents a plan view from above of the device of figure 1, in a closed configuration thereof.

Figures 4, 5, 6 and 7 schematically represent perspective views of the resealing device of figure 1 mounted on a bag-type package, in different steps of use.

Figure 8 schematically represents a top side view of the bag-type package of figure 4, with the resealing device in open configuration.

Figure 9 schematically represents a top side view of the bag-type package of figure 5, with the resealing device in closed configuration.

Detailed description of a preferred embodiment

[0017] With reference to the figures, a resealing device is shown, in accordance with the present invention and generally indicated with 10, of a bag-type package 12 for perishable food products, in particular for baked products like biscuits, shortbread and the like, which are loosely packaged.

[0018] The bag-type package 12, hereafter simply called bag, is substantially parallelepiped with identical front 14 and rear 14a walls, and substantially bellows-shaped side walls 16, 16a.

[0019] The bag 12 has a mouth 20 that can, for example, be hermetically closed through heat sealing along at least one sealing line 21, extending for the entire length of said mouth and parallel to it.

[0020] Near to said mouth 20, the bag 12 is equipped with a resealing device essentially consisting of a hinge 10, with long preferably rectangular wings 17 and 18 that are substantially rigid and hinged together at their opposite long sides, defining a hinging axis X-X.

[0021] In particular and in accordance with a preferred embodiment, said hinge 10 is obtained from a rectangular plate 110 of an appropriate plastic material, having a groove 10a, of predetermined width and depth, extending along the greater perpendicular bisector of said plate, i.e the perpendicular bisector that is parallel to the long side of the rectangle. Near to the two longer sides of the rectangular plate, there are also reinforcing inner ribs 36. Said groove 10a defines, in the plate 110, the respective rectangular wings 17 and 18, constituting their hinging axis X-X.

[0022] The hinge 10 is applied onto a wall of the bag 12, for example on the rear wall 14a thereof, near to the mouth 20. In particular, the wings 17 and 18 of said hinge are fixed, for example glued or welded, to said wall with hinging axis X-X substantially parallel to said mouth 20 and at a predetermined distance from the sealing line 21. This distance must be such as to avoid that the upper wing 17 of the hinge even partially overlaps said sealing line 21. Preferably, said distance is selected so that between the free long side of said hinge wing 17 and the sealing line 21 there is sufficient space to allow easy "cutting", for example by ripping, of the package, as normally foreseen for the first time it is opened.

[0023] It should be noted that, with the hinge 10 applied to the rear wall of the bag 12, the respective hinging axis X-X (or the groove 10a of the plate 110) is positioned so that, by closing the hinge, the walls 14, 14a of the bag are situated between its wings 17, 18.

[0024] With the closing of the hinge 10, said walls 14, 14a are folded around a folding line that coincides with said hinging axis X-X. Basically, in accordance with one of the main characteristics of the present invention, each time the bag 12 is resealed, the folding line of the walls 14, 14a is forced.

[0025] Preferably, the hinge 10 has a greater length than the width of the mouth 20 of said bag. In such a case, its wings 17, 18 have end portions 17a, 17b and 18a, 18b, respectively, projecting laterally from the opposite ends of said mouth.

[0026] On the portions 17a, 18a and 17b, 18b, means 22 and countermeans 23, respectively, are foreseen, co-operating for a removable locking of the wings 17, 18 in juxtaposition, in other words of the hinge 10 in closed position.

[0027] The removable locking means 22 and countermeans 23 are preferably of the snap type. For example, on the portions 18a, 18b of the lower wing 18 appendixes 32 are foreseen, being shaped like a hook and outside of the walls 14 and 14a of the bag 12, which enter into engagement with the portions 17a and 17b of the upper wing 17, when the hinge is in closed position.

[0028] The operation of the bag-type package 12 with resealing device 10, according to the invention, is already clear to the reader and is specified hereafter, making particular reference to figures 4, 5, 6 and 7.

[0029] Figure 1 shows a bag 12 on which the hinge 10 is applied. The hinge 10 is in open position, with an angle of 180° between the two wings 17 and 18.

[0030] In figure 2 it can be seen how the resealing of the bag 12 occurs. The two walls 14, 14a of the bag 12 are brought together, so that the mouth 20 is substantially closed: at this point the hinge 10 is closed, i.e. the upper wing 17 is folded onto the lower wing 18, so that the angle between the two wings 17 and 18 substantially reduces to 0°. The two appendixes 32 thus project from the front wall 14 opposite the rear wall 14a where the hinge 10 is applied and the two hooks of the appendixes 32 themselves engage the end portions 17 and 17b of the upper wing 17.

[0031] In figure 3 a reopening step of the resealed bag 12 is shown, which occurs by releasing the two hooks of the appendixes 32 from the side ends portions 17a and 17b. Considering that the hinge 10 is preferably made from plastic material, it has a certain degree of flexibility for which reason one only has to pull a mouth portion 20 (which advantageously is free from the hinge 10 since, as stated, the latter is arranged slightly below the sealing line 21) upwards, for example centrally, to cause the automatic disconnection of the two hooks.

[0032] In figure 7 the bag 12 is shown totally open, with the upper 17 and lower 18 wings arranged substantially at 180°.

[0033] Preferably, the resealing device 10 of the invention is produced through injection moulding of thermoplastic material. Alternatively, a central reel of thermoformed plastics or paper/cardboard can be made with the appendixes made by injection moulding applied to the sides: in this case, it is obviously also necessary to foresee a cutting step of the single hinges from the thermoformed reel.

[0034] In the packaging operations, the hinge of the invention is preferably applied after the formation, filling and closing of the bag along the sealing line.

[0035] As has already been stated, the sealing of the bag is obtained by heat sealing, welding together the upper inner flaps of the bag. Preferably, the bag is coated on the inside with a so-called peel-away film and this allows a reliable closing operation through welding. Conventionally, the peel-away film is an oriented, co-extruded, white, expanded and metalized polypropylene (known in the field as "OPPcoex white expanded met"); there are, however, other materials that ensure this type of performance, based upon polyolefins (polypropylene PP or polyethylene PE) but also upon other materials (ionomeric resins, Surlyn®).

[0036] We wish to highlight how, with the resealing device 10 of the invention, the bag 12 is always resealed along the same folding line X-X, irrespective of how much of the food product remains in the bag 12.

[0037] The main advantage achieved by the bag-type package with resealing device for perishable food products, according to the present invention, lies in that it allows a practical, quick and effective resealing of the bag itself, which can be repeated a substantially greater number of times with respect to that which is possible with the prior art.

[0038] The bag-type package with resealing device, particularly for perishable food products, that has just been described is susceptible to other variants and modifications, all within the reach of the man skilled in the art and, as such, falling in the scope of protection of the present invention defined by the following claims.

[0039] In particular, we highlight the fact that the resealing device 10 can comprise, instead of a single hinge, a plurality of hinges, having the same hinging axis X-X.

[0040] In the case of a single hinge, it has a length substantially equal to the width of the front and rear walls 14, 14a of the bag 12, whereas in the case of more than one hinge, the two outer hinges are arranged on two ends, for example of the rear wall 14a, so that one of their sides is substantially next to a side edge 28 of the rear wall 14a of the bag 12.

[0041] The single hinge is equipped with two appendixes 32, whereas in the case of many hinges, there is one appendix 32 for each of the two outer hinges, and therefore one for each side edge 28 of the wall 14a.

[0042] The removable locking means 22 and countermeans 23 of the snap type can alternatively comprise a button, or else they can be of the Velcro® type.

Claims

1. A bag-type package (12) for perishable food products, in particular for baked products like biscuits, shortbread and the like, loosely packaged, having a mouth (20) hermetically sealed by at least one sealing line (21) and including a resealing device (10) of said mouth (20) when it has been opened so as to consume the respective products, **characterized in that** said device comprises at least one hinge (10) with an upper wing (17) and a lower wing (18) fixed to a wall (14a) of said bag-type package (12) and hinged together to define a hinging axis (X-X) that is substantially parallel to said at least one sealing line (21) of said mouth (20), wherein, at a predetermined distance from said at least one sealing line (21), means (22) are provided for removably locking said at least one hinge (10) in a closed state, said upper wing (17) and said lower wing (18) of said at least one hinge (10) being juxtaposed.

2. A bag-type package (12) according to claim 1, **characterized in that** said at least one hinge (10) has long, rectangular, substantially rigid wings (17, 18) hinged together at said hinging axis (X-X) at their

contiguous long sides.

3. A bag-type package (12) according to claim 1, **characterized in that** said at least one hinge (10) is obtained from a rectangular plate (110) of an appropriate plastic material, having a groove (10a), of predetermined width and depth, extending along the greater perpendicular bisector of said plate, i.e. the perpendicular bisector that is parallel to the long sides of the rectangular plate.

4. A bag-type package (12) according to claim 3, **characterized in that** near to the two longer sides of the rectangular plate, reinforcing inner ribs (36) are also foreseen, said groove (10a) defining, in the plate (110), said respective rectangular wings (17, 18), constituting their hinging axis (X-X).

5. A bag-type package (12) according to claim 1, **characterized in that** said wings (17, 18) of said at least one hinge (10) are glued or welded to said wall (14a), said predetermined distance from said at least one sealing line (21) being such as to avoid that said upper wing (17) even only partially overlaps said at least one sealing line (21).

6. A bag-type package (12) according to claim 1, **characterized in that**, with said at least one hinge (10) applied to said wall (14a), the respective hinging axis (X-X) is positioned so that, by closing said at least one hinge (10), said wall (14) and the opposite wall (14a) are situated between said wings (17, 18).

7. A bag-type package (12) according to claim 1, **characterized in that** said at least one hinge (10) has a greater length than the width of said mouth (20), said wings (17, 18) having end portions (17a, 17b, 18a, 18b) projecting laterally from the opposite ends of said mouth (20).

8. A bag-type package (12) according to claim 7, **characterized in that** said removable locking means (22) and countermeans (23) of the hinge in closed state are provided on said end portions (17a, 17b, 18a, 18b).

9. A bag-type package (12) according to claim 8, **characterized in that** said removable locking means (22) and countermeans (23) are of the snap type.

10. A bag-type package (12) according to claim 8, **characterized in that**, on said end portions (18a, 18b) of the lower wing (18), there are provided, outside of the walls (14, 14a) of said package (12), hook-shaped appendixes (32), which enter into engagement with said end portions (17a, 17b) of the upper wing (17), when said at least one hinge (10) is in closed position.

11. A bag-type package (12) according to claim 1, **characterized in that** said resealing device (10) is produced through injection moulding of thermoplastic material.

12. A bag-type package (12) according to claim 1, **characterized in that** said resealing device (10) is made from a central reel of thermoformed plastic or paper/cardboard.

13. A bag-type package (12) according to claim 1, **characterized in that** said mouth (20) can be hermetically closed through heat sealing along said at least one sealing line (21), extending for the entire length of said mouth (20) and parallel to it.

14. A bag-type package (12) according to claim 1, **characterized in that** a plurality of hinges are foreseen, having the same hinging axis (X-X), wherein there are two outer hinges arranged on two ends of said wall (14a) of said package (12), so that one of their sides is substantially next to a side edge (28) of said wall (14a).

15. A bag-type package (12) according to claims 10 and 14, **characterized in that** one appendix (32) is foreseen for each of the two outer hinges, and therefore one for each side edge (28) of said wall (14a).

16. A bag-type package (12) according to claim 9, **characterized in that** said removable locking means (22) and countermeans (23) are of the button type.

17. A bag-type package (12) according to claim 8, **characterized in that** said removable locking means (22) and countermeans (23) are of the Velcro® type.

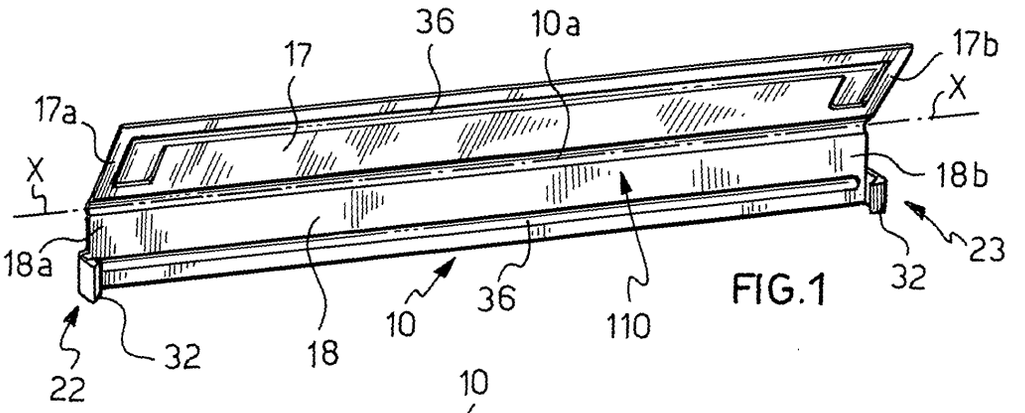

FIG.1

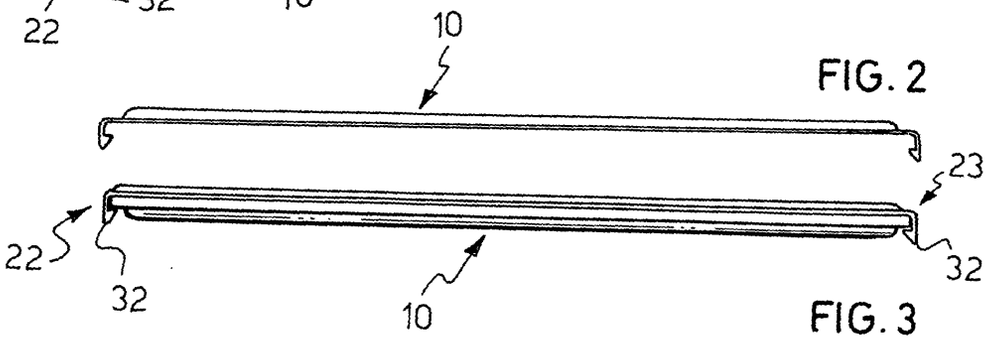

FIG. 2

FIG. 3

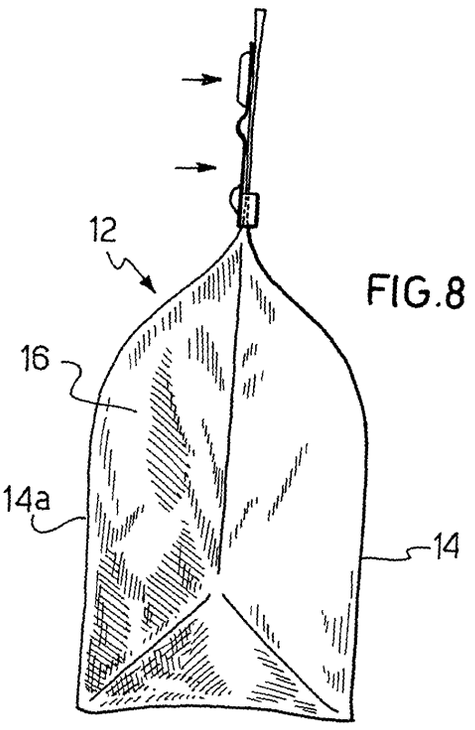

FIG.8

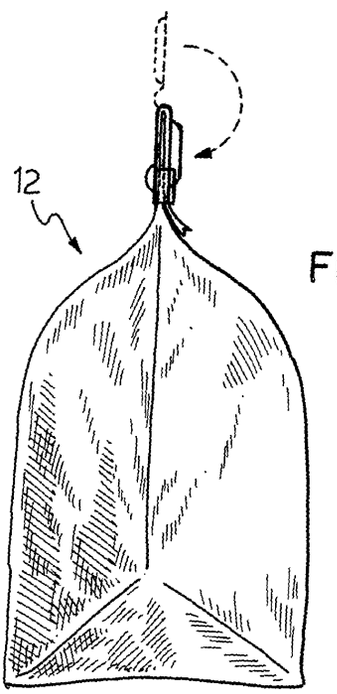

FIG.9

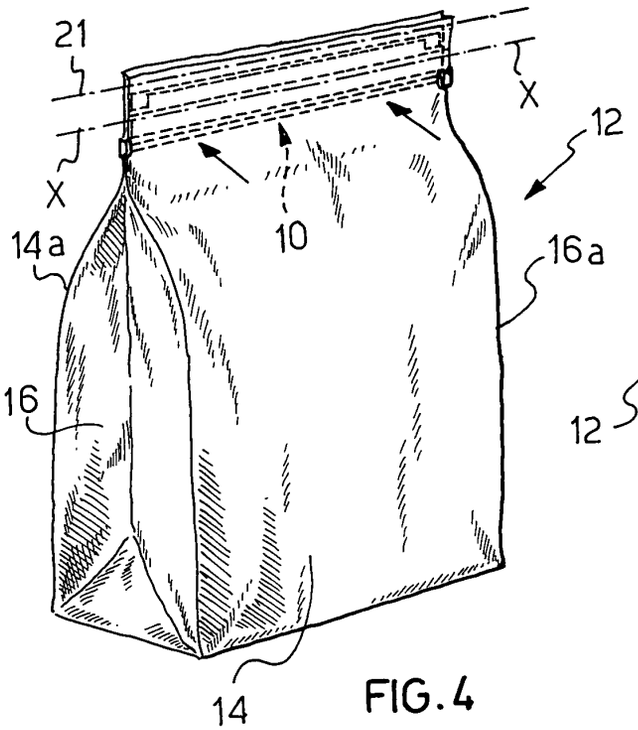

FIG. 4

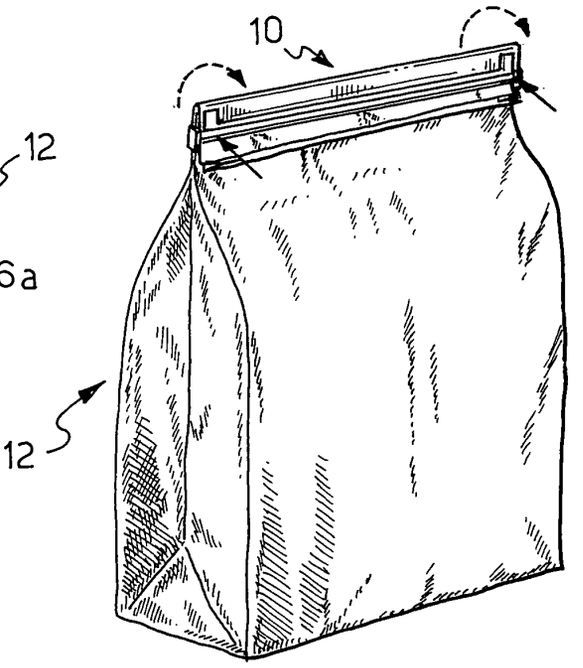

FIG. 5

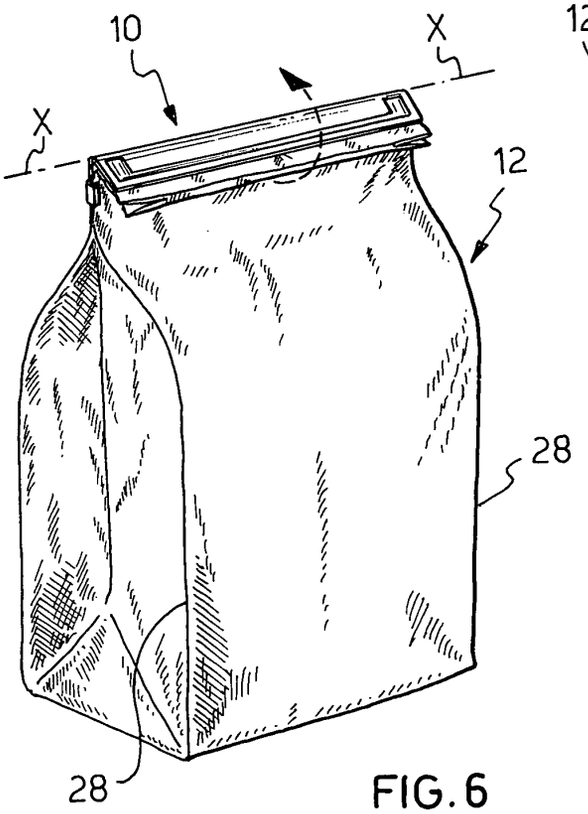

FIG. 6

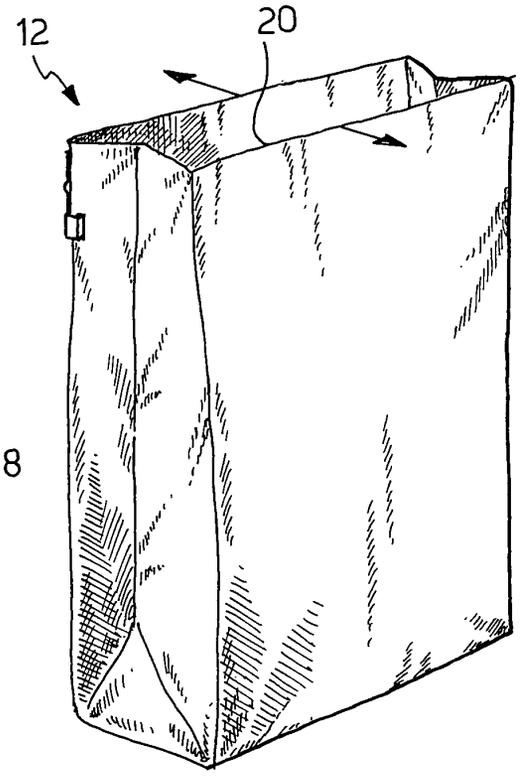

FIG. 7