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[54] **RE-CLOSING ARRANGEMENT FOR PACKAGES OF CARDBOARD**

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[52] **U.S. Cl.** ..... **229/44 R**

[51] **Int. Cl.** **B65d 5/66**

[58] **Field of Search** ..... 229/44 R, 44 CB, 229/43

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[57] **ABSTRACT**

A cardboard package having a recloseable flat plastic lid. The upper edge of one side of the package is formed with a hinged flap for attachment of a plastic lid. The lid is flat and formed with a frame for embracing the cardboard sides. A depression in the lid forms, with a portion of the frame, a groove for engaging the flaps to secure the lid thereto. A further depression forms a further groove for engaging an upper edge of the cardboard package to secure the lid in a closed position.

4 Claims, 4 Drawing Figures

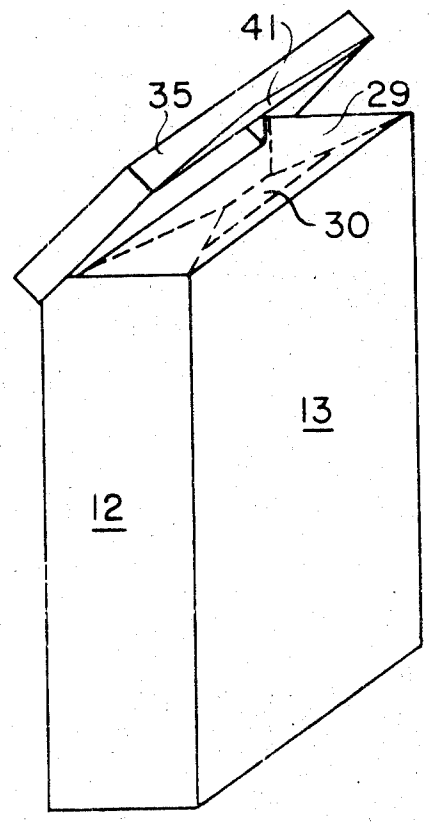
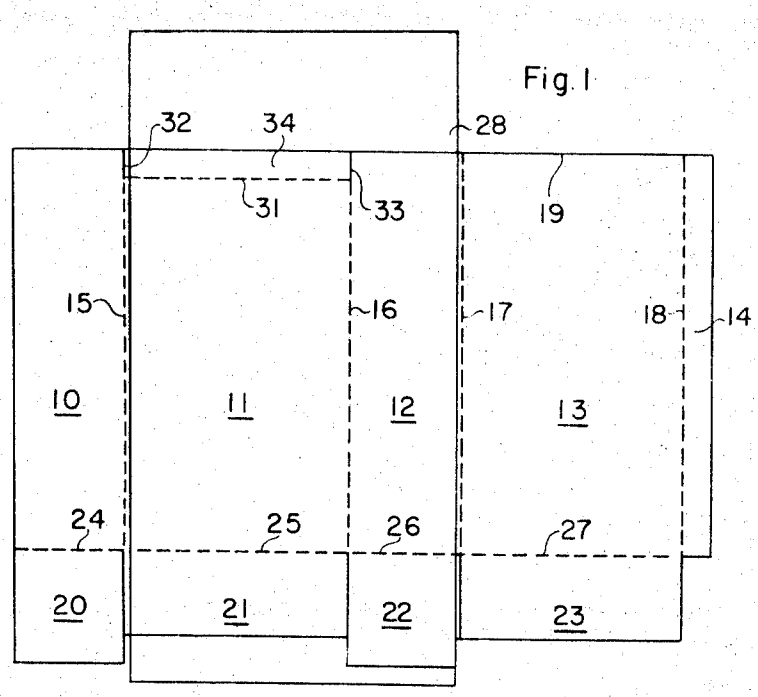


Fig. 1



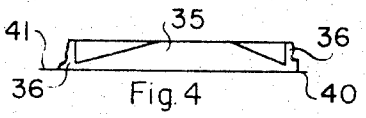
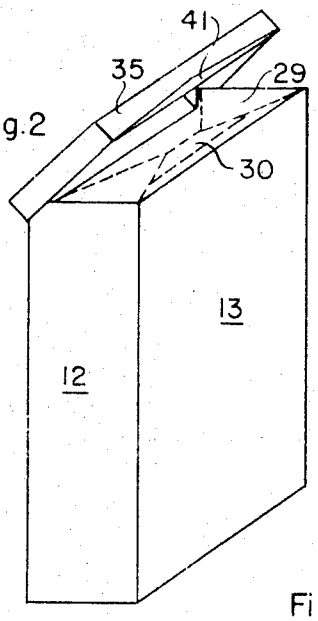


Fig. 4

Fig. 2



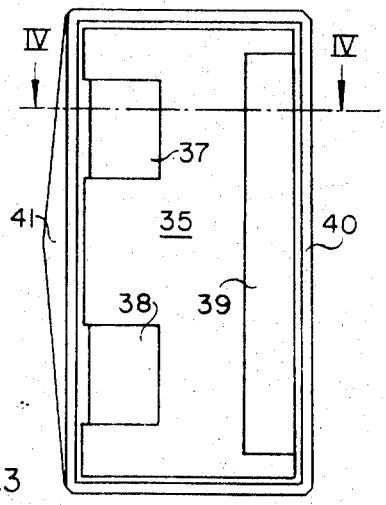


Fig. 3

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RE-CLOSING ARRANGEMENT FOR PACKAGES OF CARDBOARD

One kind of package is known, which in its initial state is tight, but after it has been opened, looses its tightness. One such package is made of cardboard with a plastic liner, which has been closed by plastic welding, wax soldering or in any other way. Such packages may be closed retaining the atmosphere, which exists in the interior of the package, but they may also be closed under replacement of this atmosphere by any other atmosphere, such as an inert gas. Since it happens rather often that, after the package has been opened, only a small quantity of the packed product is immediately used, it is obviously of great importance that one can re-close such a cardboard package under at least approximately satisfactory tightening against the influence of the outer atmosphere. Of course, one cannot restore a destroyed state of vacuum, and one can also not replace the oxygenous air, entering into the package when opened, by an inert gas, but nevertheless one wants to prevent the outer atmosphere from having free access to the interior of the package.

It is known for such re-closing purposes to provide a package with a separate re-closing lid, but this has not had any greater success. It means a troublesome step for the dealer to deliver two different parts, free from each other, and it has also proved that the customer from time to time will lose the lid.

It has also been proposed to arrange a re-closing lid, attached at the lower part of the package by means of a joint. This lid was made of plastic, and a border formed part of the lid was combined with the lower part of the package. The joint was applied in the limit line between this border formed part and the lid. This arrangement, however, has not proved advantageous. The reason for this is that any lid, in order to be sufficiently rigid, must be made from a rather stiff plastic. However, this means that the joint will be stiff to a corresponding degree, and the consequence has been that too strong resilient force was created in the joint. This stiffness tends to move the lid into a given position relative to the mouth of the package, for instance in completely closed position, whereby the resilient force counteracted the opening of the lid. Alternatively, when the lid is formed in a completely open position, it tends to remain in its open position, or when formed in an intermediate position, it is difficult to leave fully open or fully closed.

The present invention is based upon the idea that such resilient force does not exist in packaging material made from cardboard, provided that the cardboard is creased in a line which forms the joint. Consequently, the above mentioned disadvantages could be overcome if the lid is a plastic member, which does not have its own joint, but which is attached to a border formed part of a side of the package, said part being separated from the package by means of a creasing line. In so doing, however, some further difficulties arise regarding the attachment of the lid made of plastic to the border formed part of the package side separated by means of a creasing line, and these further disadvantages are also removed by the present invention.

The present invention, thus, refers to a package with a re-closing arrangement in the form of a lower part made of cardboard and a lid, make of stiff plastic.

According to the invention, the package is provided, by means of a creasing line, running in parallel to an upper edge, with a separated, border formed part, which is cut free at its ends from the adjacent package sides, and to which the stiff, flat, plastic lid is attached. The lid is provided with a flat upper part and a frame, embracing the outer sides of the package, as well as an inwardly directed impression along the side of the lid which is attached to the border formed part of the package so that there will between the frame and the impression be formed a narrow groove, in which the border formed part is inserted and attached.

The invention will be further described below in connection with a form of execution shown in the attached drawing, but it is understood that the invention shall not be limited to this specific form of execution but that all different kinds of modifications may occur within the frame of the invention.

In the drawing FIG. **1** shows the blank of a package of the kind concerned, whereas FIG. **2** shows a parallel perspective picture of the package with partly opened lid. FIG. **3** shows a picture from above of the lid of the package, and FIG. **4** shows a section through the lid according to FIG. **3** along the section line IV — IV.

The blank of the package according to FIG. **1**, in the usual way, includes four future package sides **10, 11, 12** and **13** and a sealing flap **14**, separated by means of creasing lines **15, 16, 17** and **18**, which have been shown by dotted lines in FIG. **1**. At its upper end the blank of the package is evenly cut off by means of cutting line **19**, and it is provided at its lower end with suitable closure arrangement, for instance four closing flaps **20, 21, 22**, and **23**, separated from the package sides concerned by means of creasing lines **24, 25, 26** and **27** as well as from each other by means of slits shown in full lines. Further, a conventional liner **28** of plastic in tube-form is attached to the package sides **11** and **12**. The liner is so long that it extends below the creasing line **24–27** as well as above the cutting edge **19** by such a distance that the extending part may be closed flat in a way known per se.

When developing the package blank into tube-form, one suitably proceeds in such a way that the blank is double-folded, that means it is folded 180°, along the two creasing lines **15** and **17**, after the liner and/or the two remaining sides **10** and **13** have been provided with spots of glue for causing attachment between the liner sides and these two package sides, and after the closing flap **14** has been provided with paste for attachment to the inwardly turned end of the package side **10**. In this state the package is pressed flat, and it is thereafter ready for delivery to the user, who has to fold the collapsed package up into tube form, close the liner at its bottom, close the package at its bottom, fill the package and close the liner at its top. Disregarding the lid, the filled package will have the appearance seen in FIG. **2**. The plane closure of the liner **28** is shown in FIG. **2** at **29**. One will observe the two triangular closing ears, created by the closure, which have been folded inwardly. The plane closing ridge is shown at **30**.

In the foregoing description, the package as well as the method for its closing is conventional, with the exception that one has omitted closing flaps at the upper end of the package. What will hereafter be described, on the otherhand, is new in connection with the package according to the present invention.

At the upper end of the side **11** a creasing line **31** is arranged, and two slits **32, 33** extend from the ends of the creasing line **31** in the vertical direction of the package or at least approximately in this direction, to the upper edge **19.** The flap **34** thereby created is intended to be attached to the stiff plastic lid which is shown in FIG. **3** and **4.** The lid **35** preferably is made by deep drawing of plastic over a mandrel, which has been given a border running all around, said border creating a groove **36** for the reception of the edge **19** of the package proper, and a few depressions **37, 38** and **39.** These depressions are so made that they provide an edge parallel to the vertical direction of the package, said edge forming one side of the groove **36,** and thereafter are inclined onto the flat upper surface of the lid **35** as shown in FIG. **3** and FIG. **4.** The long depression **39** thereby approaches the inner side of the flap **34,** and this flap is attached in the groove **36** by means of some suitable adhesive, for instance a plastic glue. Thereby, the lid **35** will be mechanically connected to the side **11** of the package, the creasing line **31** functioning as a joint between the package and the lid. When the lid is folded down to reclose the package, the upper edge **19** will enter into the groove **36** along two places at the depressions **37** and **38.** The groove in this place is somewhat narrowed, so that a given degree of locking is obtained for the lid. For stabilization, the lid is further provided on its outward side with a flange **40** which is widened at the front side **13** of the package to a narrow grip tongue **41.**

In its original closed state in which the package is used for sale of the packed product, the liner **28** is securely closed at the bottom of the package as well as at its top, the latter closure being seen at **30** in FIG. **2.** Further the lid **35** is folded downwardly. When the package is opened, one first opens the lid, so that the upper side of the liner **28** is available. The plane closing ridge **30** is raised, whereafter it may be cut off by a pair of scissors or broken up in any other suitable way. Thereafter, one may collect from the package as much of the desired material as required. Thereafter the package is re-closed by folding down the lid, whereby one will, of course, not get the same good tightness as in the original package but nevertheless a tight closure which is satisfactory in most cases.

I claim:

1. A cardboard package with a recloseable rectilinear plastic lid comprising:

a lower cardboard package portion including side walls and a bottom wall, one side of said cardboard package portion being provided with a crease line extending fully across said one side parallel to an upper edge of said one side and being further provided with two slits, one at each end of said crease line and extending to said upper edge of said one side, thus forming a hinged flap extending fully across said one side for the attachment of a lid to said cardboard portion of said package;

an upper stiff plastic lid portion having a substantially planar rectilinear upper surface and a downwardly extending frame portion extending downwardly around the periphery of said lid, a first downwardly extending member located inwardly of said frame portion and forming therewith a first inverted U-shaped groove under said lid adjacent a first side thereof, the hinged flap of said cardboard portion being inserted into said first groove and secured therein thus securing said plastic lid portion to said cardboard portion, said lid portion further including a second downwardly extending member located inwardly of said frame portion at a side of the lid remote from said flap and forming a second U-shaped groove under said lid adjacent the side thereof remote from said first lid side, said second groove being adapted to embrace an edge of said cardboard portion remote from said hinged flap portion when said lid is lowered.

2. A package according to claim **1** wherein said first and second downwardly extending members are formed by depressions in the plastic lid.

3. A package according to claim **1** wherein said lid is provided with an outwardly extending flange strengthening said lid.

4. A package according to claim **3** wherein said flange is provided on the portion of said lid remote from said attachment flange to facilitate opening and closure of said package.

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