

# PATENT SPECIFICATION

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## (54) A PACKAGE COMPRISING A STIFF OUTER COVER AND A FLEXIBLE INNER CONTAINER

(71) We, PLM AB., a Swedish Company of Djaknegatan 16, 201 10 Malmö 1, Sweden, do hereby declare the invention, for which we pray that a patent may be granted 5 to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a package 10 comprising a stiff outer cover and an inner container, placed within the outer cover, and made of a flexible material. Such a package can be used to keep powdered fluid, semi-solid, or solid substances.

As a package for substances of the above- 15 mentioned type, for instance, a combination of a stiff outer cover and an inner container made of foil has been used. The inner container can be fastened to the outer cover in several ways. In a known package, the 20 inner container is firmly linked to the outer cover at the outlet of the cover such that it is possible for the opened package to be closed by placing a lid against or around the outlet of the outer cover. The lid of the package 25 may be removable or may be connected to the outer cover. The outlet in the cover is fitted with an upwardly directed frame, so that the surface of the inner container in the outlet is below the upper part of the frame. 30 Thus, the inner container of the unopened package forms the surface of the package in the outlet when the lid has been removed or folded up.

Packages intended for keeping the above- 35 mentioned substances are often used in sizes holding about 1 kg or less. With a view to transportation, it is desirable that the packages can be stacked on each other without being deformed. The package above can 40 only be stacked if the lid is rigid and able to absorb the forces which arise when a number of packages are placed on top of each other. From a financial point of view the necessity 45 for a lid will give rise to additional costs, which in many cases will not be accepted by a buyer. The frame-like construction also complicates the construction of the package which results in an increase in manufacturing costs.

50 It is an object of the invention to provide a

package which can be stacked even if a lid is not provided, and which does not have an upwardly extending frame.

According to the present invention there is 55 provided a package comprising a stiff outer cover having an outlet bounded by a peripheral flange, an inner container within the outer cover for holding articles to be packed, the inner container being made of flexible material and being fastened to said flange such that a part of the inner container extends across the outlet, and a plate made of 60 the same material as the outer cover fastened to the outer surface of said part of the inner container, a groove being defined between the periphery of the plate and the edge of said flange around the entire periphery of the plate.

In an embodiment, the outlet comprises 65 almost a whole lateral face of the outer cover. In the outlet the inner container is equipped with the protective plate which is firmly fixed to the inner container. The protective plate is completely separate from the outer cover and thus the groove is defined between the protective plate and the outer cover. The inner container forms the base of the groove. 70

The package is opened by running sharp 75 object, e.g. a knife, along the groove to cut the inner container. The inner container can be cut such that the plate, together with the part of the inner container connected thereto, is completely separated from the package, or is only separated to such an extent that the plate together with the fixed part of the inner container can be folded up. In the latter case, the package can to some extent be closed again by folding the plate and the part of the inner container connected thereto back into the outlet. 80

In one embodiment of the invention a 85 tear-off tape which is attached to the inner container is arranged in the groove between the protective plate and the outer cover. In addition, the end of the tear-off tape may be fastened to the inner container and/or to the plate. The tear-off tape is arranged such that the protective plate, and the part of the inner container connected to the plate, is fully or 90 partly released from the package when the 100

tape is torn off.

One end of the tear-off tape can be fixed against the inner container where this is connected with the protective plate so that the plate is removed from the package by means of the tear-off tape when the tearing off operation has been finished. Additionally, or alternatively, the plate can be equipped with a gripping device.

If required, a lid can be provided for the package. The lid is, of course, optional as it is not required to enable the unopened packages to be safely stacked.

Embodiments of the invention will now be described with reference to the accompanying drawings, in which:

Figure 1 shows an embodiment of a filled package with a lid;

Figure 2 shows the filled package being opened by means of a knife;

Figure 3 shows a longitudinal section of the package of Figure 1;

Figure 4 shows a detail of the section of Figure 3 at the outlet; and

Figures 5 and 6 show a further embodiment of a package having an outlet protected by a circular plate provided with a tear-off tape.

Figures 1 to 4 show a package 10 consisting of an outer cover 11 and an inner container 12. The outer cover 11 is made of a relatively rigid material, for example, cardboard, whereas the inner container is made of a flexible material, for instance plastics material. The outer cover 11 determines the outer shape of the package. In the illustrated embodiment, the outer cover 11 has a number of side walls 13, a bottom surface 14, and an open top 15. The top edge of the outer cover 11 has a peripheral flange 42 which extends around the open mouth of the cover substantially parallel to the bottom surface 14 of the cover 11. The edge 22 of the peripheral flange 42 defines an outlet 26 in the top of the package. The inner container 12 is fastened to the flange 42. The inner container 12 has a substantially planar top surface which stretches over the whole of the open mouth of the outer cover 11. The part of the inner container 12 which extends across the outlet 26 is protected by a plate 20. The plate 20 is fixed to the inner container 12 and its outer surface extends substantially level with the outer surface of the peripheral flange 42 of the cover 11. The edge 21 of the plate 20 is spaced from and substantially parallel to the edge 22 of the peripheral flange 42 such that a groove 23 is defined therebetween. The inner container 12 forms the base of the groove 23. In the embodiment illustrated, the plate 20 is provided with a gripping device 27 formed as a cut-out flap in the top surface of the plate 20. The flap can be raised when used as shown in Figure 2. A lid 25 is arranged to fit around the top of the outer cover 11 and to lie true against the peripheral flange 42.

Figure 4 shows in detail the connection of the inner container 12 to the peripheral flange 42 of the outer cover 11. The inner container 12 is fixed to the lower surface of the flange 42 by a layer of glue or by welded joints 16. The connection is made such that the inner container 12 is in contact with substantially the entire edge 22 of the flange 42. In addition, the inner container 12 is in contact with a substantial part of the lower surface of the flange 42. The inner container 12 is also fixed to the lower surface of the plate 20, for example, by means of a layer of glue, or by means of welded joint(s) 17.

It will be apparent that the package can be opened by running a cutting edge along the groove 23 as indicated in Figure 2. The plate 20 and the part of the inner container 12 affixed thereto is then lifted off using the gripping device 27. The contents of the inner container 12 can then be removed through the outlet 26.

Figures 5 and 6 show an embodiment of the package in which a tear-off tape 24 is arranged within the groove 23 and attached to the inner container 12. One end of the tape 24 is fixed to the plate 20. Accordingly, when the tape 24 is removed, the plate 20 and the part of the inner container 12 affixed thereto are also removed, so that the package is opened. Figure 5 shows the package being opened and Figure 6 shows the package when the opening operation has been completed.

In the embodiment shown in Figures 5 and 6 the plate 20 has a circular profile, whereas in Figures 1 to 3 the plate 20 has a square profile. Of course, the profile of the plate 20 can be chosen as required. For example, the plate 20 may be rectangular, or it may have a curved profile other than a circular one, for example, it may be elliptical.

The edge 21 of the plate 20 and the edge 22 of the flange 42 are substantially plane edges which extend parallel with respect to each other. The distance between the edges 21 and 22 is chosen such that normally used cutting devices, such as a knife, can be inserted therebetween, and is constant over the length of the groove 23. The distance is usually between 0.25 mm and 8 mm, preferably 1 mm. A suitable material for the inside container is for instance a multi-layer plastics film. When the package is used for storage of coffee, for example, it is a requirement that the plastics film prevents the access of acid or water vapour from the atmosphere, and that aromatic compounds in the enclosed article are kept in the package. The present invention is obviously not dependent upon such requirements, but the qualities of the film material and plastics material used have to be adapted to the demands made by the 130

articles stored in the package.

The outer supporting cover is made from a material which has sufficient rigidity to maintain the shape of the package during filling of the package and subsequent transportation.

The outer cover may be made of cardboard, plastics metal or similar materials, whereas the inner container is, for example, made of plastics, paper, metal or similar materials, which have been processed so that they have the required flexibility.

A package according to the invention is generally filled through the part of the inner container which in the filled package is found in the bottom part of the package. When the inner container has been filled, it is sealed in a known way, for example, by means of welding and folding of flaps. The outer cover is then closed, for example, by folding it over the inner container. The package can be arranged so that it is filled after the inner container has been fastened to the outer cover. Alternatively, the inner container can be filled first and then fastened to the outer cover.

#### WHAT WE CLAIM IS:—

1. A package comprising a stiff outer cover having an outlet bounded by a peripheral flange, an inner container within the outer cover for holding articles to be packed, the inner container being made of flexible material and being fastened to said flange such that a part of the inner container extends across the outlet, and a plate made of the same material as the outer cover fastened to the outer surface of said part of the inner container, a groove being defined between the periphery of the plate and the edge of said flange around the entire periphery of the plate.
2. A package as claimed in claim 1, wherein the outer cover is made of cardboard, plastics material or metal.
3. A package as claimed in claim 1 or 2, wherein the inner container is made of one material.
4. A package as claimed in any of the preceding claims, wherein the inner container is made of plastics material, paper or metal.
5. A package as claimed in any of the preceding claims, wherein the plate is fastened to the inner container by means of a layer of glue or one or more welded joints.
6. A package as claimed in any of the preceding claims, wherein the plate carries a gripping device.
7. A package as claimed in claim 6, wherein the gripping device consists of a cut-out flap in the plate, which flap can be folded to project from the outer surface of the plate.
8. A package as claimed in any of the preceding claims, wherein the periphery of

the plate has a substantially plane edge.

9. A package as claimed in any of the preceding claims, wherein the groove has substantially the same width over its entire length.

10. A package as claimed in claim 9, wherein the width of the groove is between 0.25 mm and 8 mm.

11. A package as claimed in claim 10, wherein the width of the groove is 1 mm.

12. A package as claimed in any of the preceding claims, wherein a tear-off tape is arranged in said groove, is attached to the inner container, and extends along the full length of the groove.

13. A package as claimed in claim 12, wherein one end of the tear-off tape is fastened to the plate such that both the tape and the plate can be removed together to open the package.

14. A package as claimed in any of the preceding claims, wherein the plate extends substantially level with the peripheral flange.

15. A package as claimed in any of the preceding claims, wherein the edge of the periphery of the plate and the edge of said flange extend substantially parallel to each other such that the groove defined therebetween is parallel sided.

16. A package as claimed in any of the preceding claims, wherein the plate is circular or elliptical in shape.

17. A package as claimed in any of claims 1 to 15, wherein the plate is square or rectangular in shape.

18. A package as claimed in any of the preceding claims, wherein the outer cover has a bottom surface and upstanding side walls, and the peripheral flange extends from the top edges of the side walls, and further comprising a lid, which fits around the top edges of the side walls, and which is arranged to lie true against said peripheral flange.

19. A package substantially as hereinbefore described with reference to the accompanying drawings.

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Sheet 1*

Fig. 1

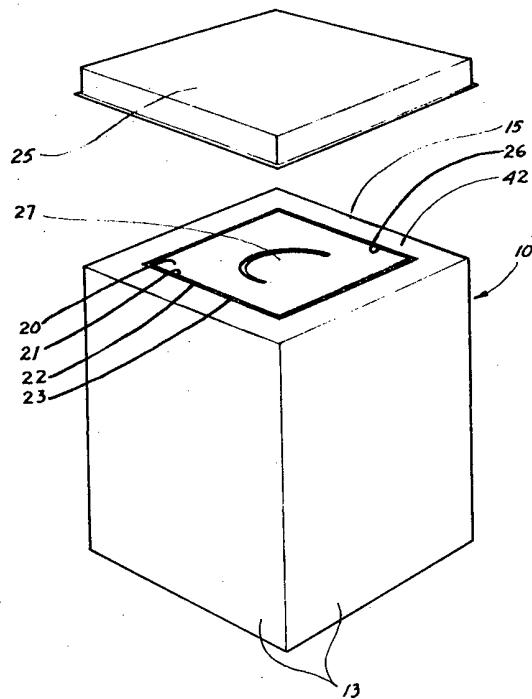
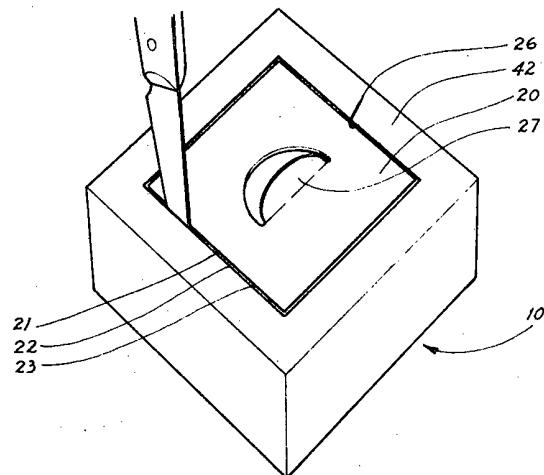
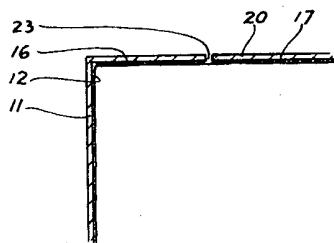
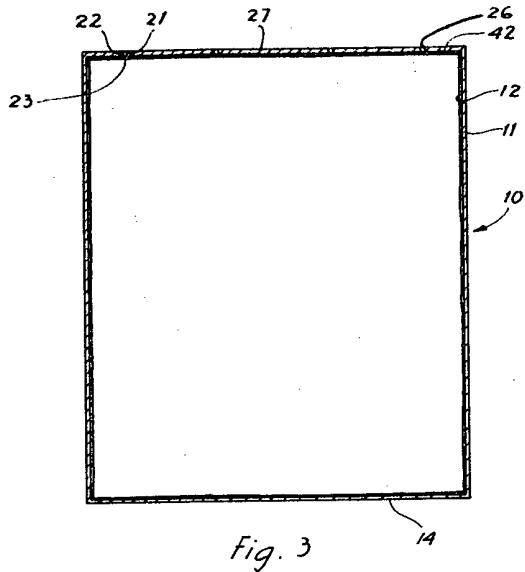


Fig. 2



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