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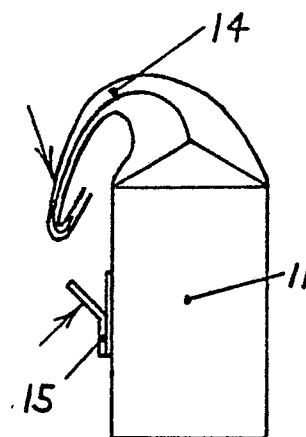
71 Applicant: **Anchor Continental Inc**  
**P.O. Drawer G. 2000 South Beltline**  
**Boulevard**  
**Columbia South Carolina 29250(US)**

72 Inventor: **Ciani, Faust Alexander**  
**14546 Anchorage Circle**  
**Largo Fla(US)**

74 Representative: **Williams, Trevor John et al**  
**J.A. KEMP & CO. 14 South Square Gray's Inn**  
**London WC1R 5EU(GB)**

54 **Flexible package.**

57 An attachment for a flexible package is disclosed to enable the user to fasten a reclosable package. A bifurcated adhesive member (15) is secured to the body portion of the package (11) at a distance from the opening thereof. The member has a jaw-like construction with a hingeline about which one of the jaws may pivot. When the jaws are opened by the user, the reclosed, folded end of the package may be inserted therebetween, and the jaws subsequently closed to retain the package in reclosed condition. It is particularly useful for flexible packages of corn-flakes, potato chips, cheese etc, where portions of the contents are removed over a period of time, gradually decreasing the volume of the contents and forming a sequentially smaller package which should be resealed to preserve the freshness of the contents.



**FIG 3**

**EP 0 302 600 A1**

## FLEXIBLE PACKAGE

This invention relates to a flexible package having an improved reusable closure.

Many flexible packaging containers have been developed for food products which are consumed over an extended period of time. It is important that the package be tightly re-closed to keep the remaining contents fresh for several days or weeks after the first opening of the package. Furthermore, the cost of the package must be kept low.

In some instances, the package is provided within a stiffer protective carton. In other cases it is a heavier gauge plastic material sufficiently strong to protect the contents without an outer carton.

Typical of this type of package is the glassine or wax-paper or plastic film material which is used in marketing dry breakfast food cereals such as cornflakes or potato chips or the like. Another typical food product is a small block of cheese sold in a clear plastic film.

In each of these products, the user opens the package, removes a portion of the contents, and then re-closes the package until used at a future time.

Although the products, when initially sold, are fresh and maintained so because of the effective nature of the package, once the package is opened the contents are subject to deterioration, spoilage or contamination.

Merely folding the flexible package is generally not sufficient because of the "memory" of the material and its tendency to open by itself when on storage shelves or in a refrigerator.

Many consumers have resorted to using pressure sensitive adhesive tape or a rubber band to hold the folded portion in place, but it is generally inconvenient because such devices are not always at hand.

In another consumer product, tape-tabs are used to fasten a disposable baby diaper around the infant. These tape-tabs are multi-part devices, which are applied to the movable end of the product, so that such movable end may be secured in place on another portion of the diaper. In one sense, the baby diaper can be considered a "package" to contain the baby. Prior practice had been the use of safety pins or other non-associated closing devices, but in the more recent past the tape-tabs have been developed with a "reclosable" or "refastenable" feature that permits the diaper to be opened, the baby to be examined, and the diaper to be closed several times.

In such a "package" the size of the contents (i.e. the baby) does not change from time to time as the "package" is opened or closed.

An early "tape-tab" closure for non-flexible

packaging was disclosed in US-A-3 616 114. This closure was used to fasten the stiff ends of a cardboard carton in "butting" relationship, and was attached to the movable end of the container.

US-A-3 620 217 disclosed a similar fastening for disposable baby diapers, with a further improvement disclosed in US-A-3 646 937.

The baby diaper market was rapidly expanding in the early 1970's, and US-A-3 848 594 showed how a "Y-form" configuration of this tape-tab would provide a further improvement in the closing of a baby diaper product.

The reclosing of flexible packages or bags was considered as early as 1967 and disclosed in US-A-3 301 466 and with subsequent improvement such as that shown in US-A-4 328 895.

One of the earliest package-sealing devices was shown in US-A-2 153 310 but, like all the others, the closure device was either secured to the movable end of the package or was intended to be fully removed therefrom during the resealing and reclosing process and reapplied similar to the application of a strip of pressure-sensitive adhesive tape.

During the later part of the 1970's and early part of the 1980's, the resealability in multiple-closures of many of these products became a critical commercial matter, and one of the improvements is disclosed in US-A-4 299 223. This patent particularly discloses how a tape-tab with a portion thereof having multiple strips of adhesive can be designed to provide a closure member which is strong in shear but weak in peel strength. However, this patent does not disclose the operative jaw-construction of the present invention.

An object of the present invention is to provide a flexible package having a reusable adhesive closure.

Another object of the present invention is to provide a flexible package having an inexpensive attachment to hold the reclosed end of the package in place as the package decreases in size.

The present invention, as characterised in claim 1 uses a closure as an adhesive member which is secured to the body of a package. It has a plurality of jaws, one of which has an adhesive surface thereon. The refolded operative end of the package can be inserted between the jaws. When the jaws are closed, the end of the package is held in place in closed position. The member is attached to the package near the non-open end thereof, so that as the package is progressively emptied and reclosed upon a lesser volume of contents, the "flap" of the package may still be inserted in the jaws of the member where it is held

in place until the next opening of the package.

The closure may be for a flexible food package to be applied to the original package for use by the purchaser of the food product.

Of course, it is to be understood that the invention can comprise flexible packages holding non-edible products which are used over a period of time, such as nails, bolts etc.

For the purpose of illustrating the invention, there is shown in the accompanying drawing a form thereof which is at present preferred, although it is to be understood that the several instrumentalities of which the invention consists can be variously arranged and organised and that the invention is not limited to the precise arrangements and organisations of the instrumentalities as herein shown and described.

In the drawing, wherein like reference characters indicate like parts:

Figure 1 is a side elevational view of the type of food package considered in the present invention.

Figure 2 is a perspective view of the collapsible inner portion of the food package of Figure 1, this inner package embodying the present invention in that it comprises a reusable closure.

Figure 3 is a side elevational view showing the inner portion of the package with some of the contents removed and with the operative end folded over and about to be secured by the closure.

Figure 4 is a side elevational view similar to Figure 3 showing the closure in operative conjunction with the operative end of the package.

Figure 5 is a side elevational view of a package of food in a plastic wrap with the closure attached thereto.

Figure 6 is a side elevational view similar to that in Figure 5 with the closure in use.

Figure 7 is a top plan view of a strip of silicone release paper with a plurality of the closures fastened thereto.

Figure 8 is an enlarged side elevational view of one of the closures.

Figure 9 is a sectional view taken along line 9-9 of Figure 8.

Referring to Figure 1, there is shown a food package which consists of a lightweight cardboard box (10) similar to that in which cornflakes are sold in the consumer market.

Within the box (10) there is a flexible, collapsible package made of wax paper, glassine or thin plastic foil (11) in which the cornflakes or the like are packaged.

The openable portion (12) is folded into a gable-like arrangement with the uppermost portion (13) disposed so as to be easily opened by the consumer when the top of the cardboard box (10) is opened to expose the package (11).

In normal practice, after the package (11) is opened and some of the contents are removed, the upper portions (12) and (13) are folded back inside the box (10), the top of the box closed, and the package replaced on the shelf in the kitchen. However, because such reclosing is not air-tight, and because the material from which the package (11) is made has "memory", there is a tendency for the package to open so that the contents are exposed and may generally deteriorate.

With the present closure, applied to the package (11), the package can be closed and the cover folded, as shown at (14) in Figure 3. This tightly-folded flap can then be tucked into the jaws of the closure (15) which is secured to the side of the package (11), generally near the lower, unopened end of the package.

In Figure 4, there is shown the arrangement where the package flap is tucked into the jaws of the closure (15) and the package tightly resealed.

In Figures 5 and 6, there is shown an alternative form of packaging which is often seen in the marketplace as a plastics-film wrapped block of cheese or the like. This package may be shrink-wrapped or sealed in an air-impermeable film. When the end (17) is opened and a portion of the contents removed therefrom, the package is generally just folded back upon itself and held in place with a rubber band or the like.

With the present invention, one of the closures (15) is placed on the side of the package and the flap (17) can be folded back upon itself and held tightly in place by the closure (15) as shown particularly in Figure 6.

The closure (15) is shown more particularly in Figures 7, 8 and 9 and may, in one preferred embodiment, be an oval-shaped disc about 5 cm (2") long in its maximum dimension. A plurality of such disc-like closures can be supplied on a strip of silicone release paper (18), in a manner well-known in the art. The closure (15) includes a base portion (19) which may be a thin sheet such as of polyethylene, polypropylene, paper, metal foil, or the like, with an aggressive adhesive (20) on one surface thereof to support the second member (21). Aggressive adhesives of this type are well-known in the art, and for this invention may be of the pressure-sensitive type, that has the necessary properties that will allow the product to stick (adhere) to the various substrates required. The adhesive (20) will stick to the silicone strip (18) for transportation, sale and use in an applicator device, but when the disc is removed from the silicone strip (18) and applied to the outer surface of the packages (11) or (17), the adhesive firmly and unremovably secures the disc (19) thereto.

The second member (21) of the closure (15) has a shape similar to the disc (19). A lower portion

(22) thereof also has an aggressive adhesive on one side thereof, which securely and irremovably holds the lower portion (22) of the disc (21) to the upper surface of the disc (19).

The remainder (23) of the disc (21) has either a less-aggressive adhesive applied thereto, or has an adhesive applied in strips or lines as at (24), and this permits the user to peel back the portion (23) of the disc (21) away from the surface of the disc (19), as is shown in Figure 8. This opens the "jaws" of the closure.

The type of adhesive or the line-disposition of such adhesive considered herein is illustrated in US-A-4 299 223.

The strip-type adhesive such as described in US-A-4 299 223 is advantageous because a more aggressive adhesive can be used in the areas (24). Because this material is strong in shear but weak in peel, and because only selected areas of the member (21) have adhesive thereon, it is relatively easy to peel back the jaw-portion (21) from the disc (19) up to the fold line or "hinge" line (25) which is the line of demarcation between the areas (22) and (23) on the disc (21).

The advantage of the above described closure is that it can be placed on the "body" of the package, rather than on the freely-moving flap portion. This permits the flap to be folded as much as is necessary to close the package (11) as the contents are progressively removed, and the folded portion of the flap can be tucked within the jaws of the closure to hold the flap tightly in place as shown in Figure 4.

Moreover, the reclosability or resealability of the adhesive mechanism permits this opening, closing, folding and resealing to be repeated as often as is necessary to ensure that the high quality of the contents is maintained until total consumption thereof.

## Claims

1. A smooth-surface flexible package comprising an adhesive closure (15) characterised in that the closure comprises a first member (19) adapted for permanent securement to said flexible package (11), a second member (21) having a fixed portion (22) and a movable portion (23), said fixed portion (22) being permanently secured to a portion of the first member (19), said movable portion (23) having adhesive (24) thereon for removable adhesion to a portion (17) of said flexible package and said movable portion (27) and adjacent portion of the first member (19) together forming a pair of jaws to receive the portion (17) of the flexible package therebetween.

2. A flexible package as claimed in claim 1, wherein an aggressive adhesive material is provided on that one side of the first member (19) which is adapted to be secured to the flexible package, a less-aggressive adhesive (24) is provided on the movable portion (23) of the second member (21), said aggressive adhesive on the first member being adapted to hold the first member permanently to the flexible package, and the less-aggressive adhesive on the movable portion of the second member being adapted to permit removable and repeated replacement of the movable portion to the surface of the flexible package.

3. A flexible package as claimed in claim 1, wherein the adhesive material (24) on the movable portion (23) is an aggressive adhesive occupying less than 100% of the surface of one side of the movable portion.

4. A flexible package as claimed in claim 3, wherein the aggressive adhesive is applied as a series of parallel spaced stripes on the surface of said one side of the movable portion, said stripes being adapted to be readily peeled in sequence from adherence to said first member and from said portion (17) of the flexible package when adhered thereto.

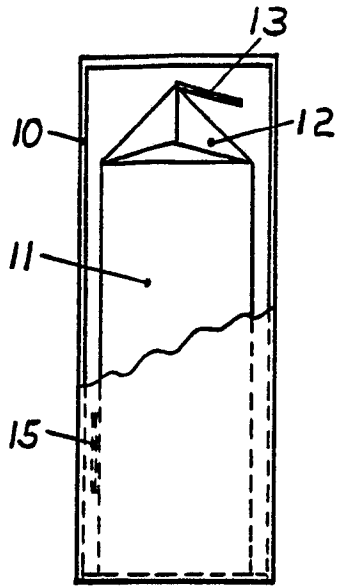


FIG 1

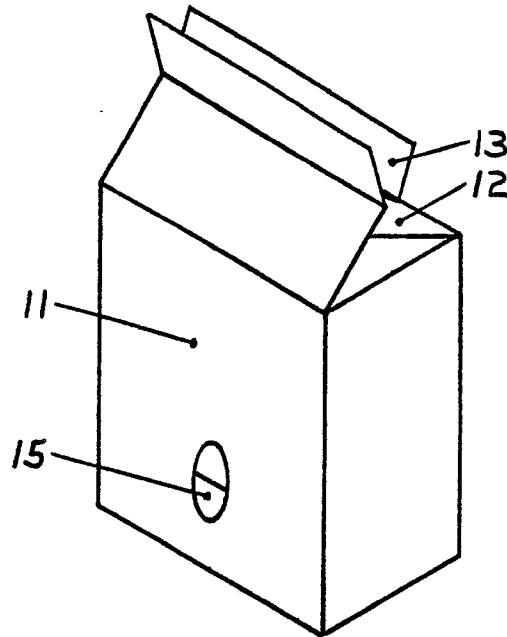


FIG 2

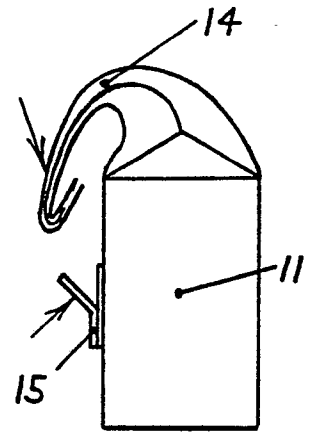


FIG 3

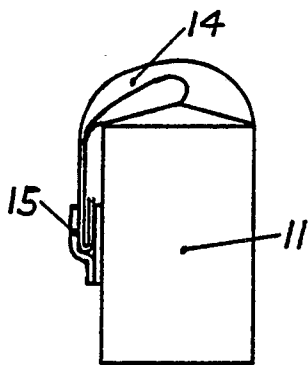


FIG 4

FIG 5

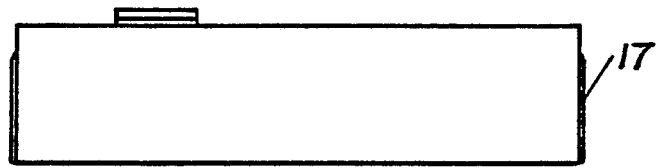


FIG 6

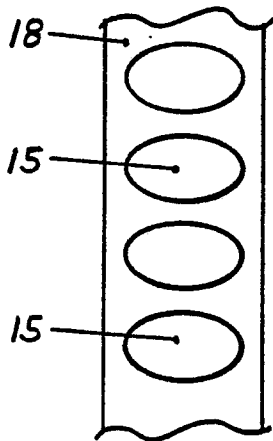
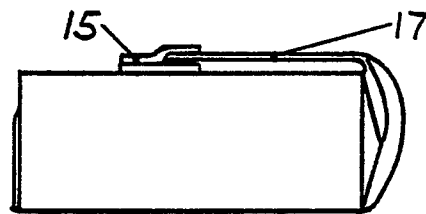


FIG 7

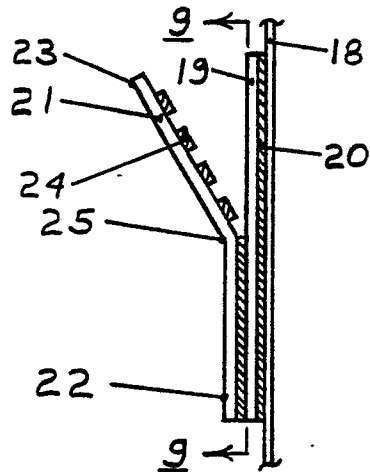


FIG 8

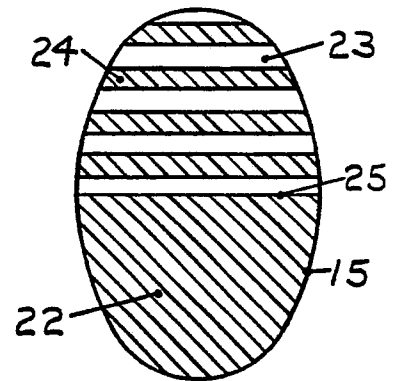


FIG 9



DOCUMENTS CONSIDERED TO BE RELEVANT					
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)		
Y	US-A-3 806 024 (MARCHESANI) * Column 1, lines 18-25; column 2, lines 27-65; figures * ----	1-4	B 65 D 33/16 B 65 D 77/14 B 65 D 65/08 G 09 F 3/02		
Y	US-A-4 584 201 (BOSTON) * Column 3, line 52 - column 4, line 11; column 4, line 52 - column 5, line 11; figures 2-4 * -----	1-4			
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)		
			B 65 D G 09 F A 41 B		
The present search report has been drawn up for all claims					
Place of search THE HAGUE		Date of completion of the search 22-09-1988	Examiner NEWELL P.G.		
<table><tr><td><b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</td><td>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... &amp; : member of the same patent family, corresponding document</td></tr></table>				<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document	T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document
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