Dec. 5, 1967 R. D. LOWRY 3,355,854

METHOD OF MAKING A DISPENSER PACKAGE

Original Filed May 18, 1964

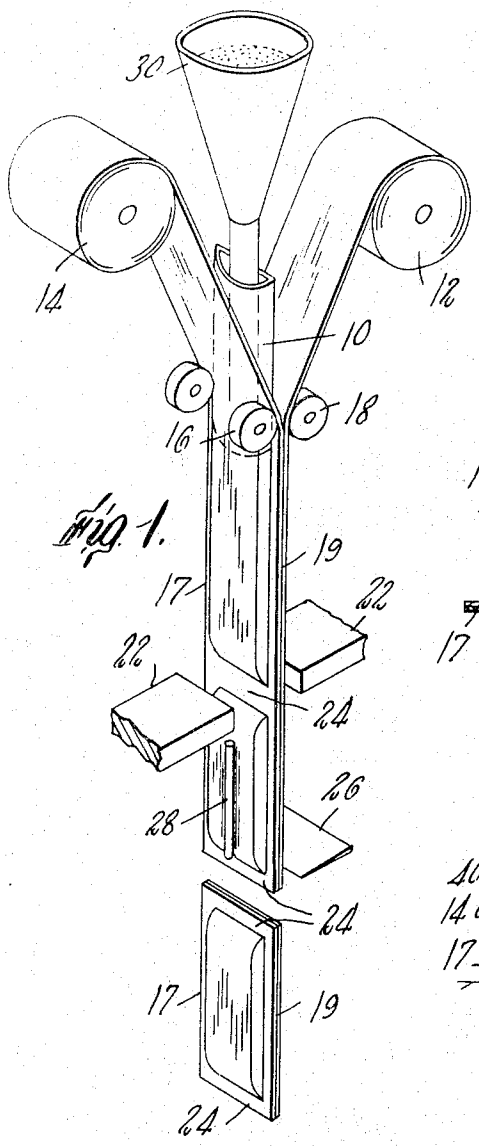


Fig. 1.

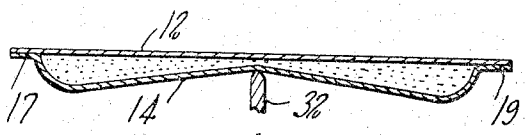


Fig. 2.

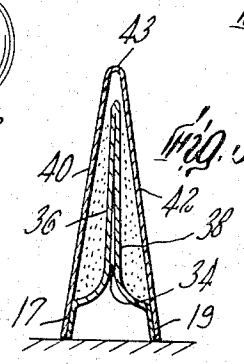


Fig. 3.

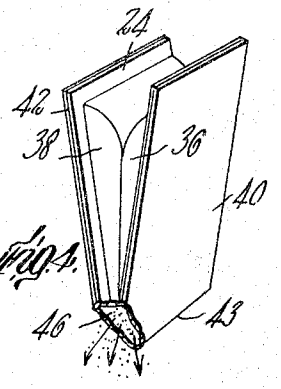


Fig. 4.

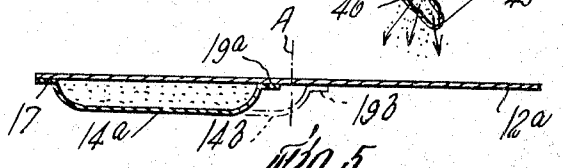


Fig. 5.

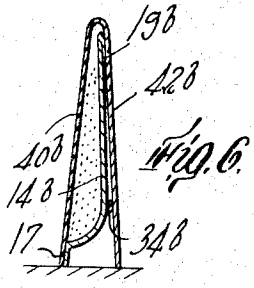


Fig. 6.

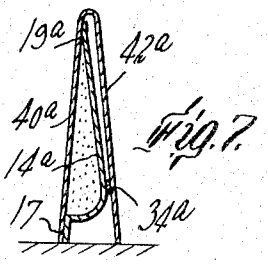


Fig. 7.

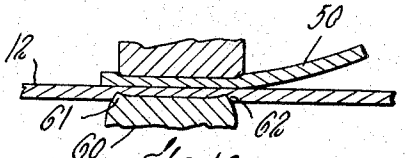


Fig. 10.

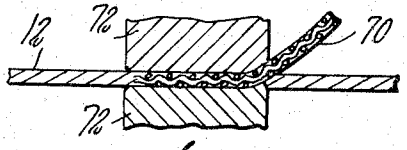


Fig. 11.

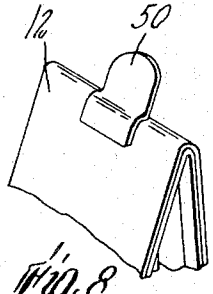


Fig. 8.

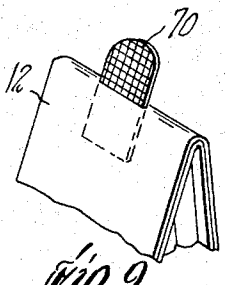


Fig. 9.

United States Patent Office 3,355,854 Patented Dec. 5, 1967

3,355,854

METHOD OF MAKING A DISPENSER PACKAGE

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Original application, May 18, 1964, Ser No. 367,969, now Patent No. 3,315,801, dated Apr. 25, 1967. Divided and this application Dec. 22, 1966, Ser. No. 619,103
7 Claims. (Cl. 53—28)

This application is a division of United States patent application Ser. No. 367,969 filed May 18, 1964, now Patent No. 3,315,801, issued Apr. 25, 1967.

This invention relates to commodity packaging and more particularly to a dispenser package for containing an individual portion or serving of a liquid or semi-liquid food, such as ketchup, mustard, salad dressing, jam, jelly, cream, tartar and other sauces, or of other such commodities, edible or otherwise. Packages of this invention may be used with any flowable material, but they are particularly adapted for use with commodities which flow more readily under applied pressure, since packages of the invention may be collapsed under pressure applied as between the thumb and fingers.

It is a particular object of the invention to provide a package which can be collapsed as by applying pressure between the thumb and fingers, to dispense the contents and which, at the same time, will, after dispensing only part of the contents through a suitable top opening, stand upright by itself so that the remainder of the contents will not spill and thus be available for further helpings.

It is a further object of the invention to provide such a package which is adapted for fabrication with its contained food serving or other commodity in a continuous automatic machine operation and which is of uncomplicated structure and few parts, so as to render the packages amenable to rapid production at low cost.

To this end, the dispensing collapsibility is provided by enclosing the commodity between the folds of an outer fairly stiff package wall which is folded medially along a straight line constituting a hinge line for a bellows type squeeze-together of the outer stiff folds. The commodity is retained between the walls in a hollow pillow-like sack formed by reason of attachment of a more flexible sheet material around its marginal edge portions to at least one and preferably to both folded panels of the outer wall, forming a hermetically sealed hollow enclosure sandwiched between the folded walls of the outer stiff material.

These and other objects of the invention will be more fully understood when taken in connection with typical embodiments thereof, as shown in the accompanying drawings, wherein:

FIG. 1 is a diagrammatic view illustrating mechanism used in the initial formative steps of making the package;

FIG. 2 is a cross-sectional view illustrating a succeeding step;

FIG. 3 is a cross-sectional view of the completed package;

FIG. 4 shows the completed package after it has been opened for dispensing its contents and demonstrating its dispensing use;

FIG. 5 is a cross-sectional view of a modified form of the invention at an intermediate stage of formation, and showing additionally in dotted lines a further alternative modification;

FIG. 6 is a cross-sectional view of the alternative dotted line form of package illustrated in FIG. 5 after folding;

FIG. 7 is a view similar to FIG. 6 of the full line FIG. 5 modification after folding; and

FIGS. 8–11, inclusive, illustrate two additional alternative forms of opening means for the packages.

Since the structure of the packages may more readily be understood by following the steps in their fabrication, reference is made to FIG. 1, which shows diagrammatically a typical mechanism for making and filling packages from sheet material, being conventional in every respect save possibly for the use of a D-shaped horn **10**.

Roll **12** comprises a rolled length of relatively stiff sheet material which, when unwound, supports itself in generally the same plane, for example, 3 mil cellulose acetate. Opposed roll **14** comprises a rolled length of limper material, i.e. of greater flexibility and which does not necessarily support itself, and of slightly greater width than that of the material **12**, being, for example, 1 mil polyethylene, polypropylene, polyester, cellulose acetate or a vinyl plastic, or laminations of any of these to each other or to a metal foil. Vacuum coated metallic deposits may be made on either or both of the materials to form linings which will render the package gas, as well as liquid, impervious when packaging volatile or oxygen-sensitive commodities to retain aroma or prevent spoilage. The materials are thus chosen for their particular moisture, grease or gas transmission-resistant qualities, depending upon the particular commodity being packaged. Preferably, the materials are of such nature that they can be heat-sealed together, though adhesives may be used if necessary.

Pairs of heated rollers **16** and **18**, respectively, are positioned to heat-seal the longitudinal edges of the two strips **12** and **14** together as they advance downwardly through the machine to form longitudinal seals **17** and **19**, respectively. Spaced below the level of the rollers **16** and **18** are opposed reciprocating heating elements **22** which are brought into contact with the descending strips to seal them transversely as at **24** at equidistant intervals.

A knife **26** severs the sheets across the middle of the transverse seals **24**. The elements **22** and knife **26** operate during a dwell in an intermittent feed. Alternatively, of course, mechanisms having a continuous feed may be used or multiple side-by-side mechanisms to which multiple width single sheets **12** and **14** are simultaneously fed. Slitting knives subsequently separate the multiple side-by-side packages.

The horn **10** gives a fullness to the limper sheet material **14** so that, after the longitudinal transverse sealing at **24**, the package has a pillow shaped contour as indicated at the bottom of FIG. 1. If desired, the horn **10** may be heated, particularly when the material **14** is a thermoplastic material that can be stretched under heat without rupture, in which case the material **14** need not be wider than the material **12**.

The horn **10** is hollow to accommodate a feed tube leading down from a hopper **30** which is metered in a known manner to stop its feed periodically during at least a portion of the strip travel. **28** represents a fixed rod which squeezes the loose part of sheet **14** centrally against the sheet **12** after the filling operation to eliminate excess internal air, particularly when the metered portion is only a partial fill. This renders it easier to perform the next folding step.

Other mechanisms may be utilized to form the filled unfolded packages, for example, by advancing the sheet material **14** in multiple width horizontally over cavities, vacuum or pressure forming the pockets in the cavities, loading from above and then covering with multiple width sheet material **12** is it continuously advances down over the advancing loaded pockets. Such a method gives better opportunity for varying the internal shape of the pockets and for providing stiffening embossings along the seal lines.

After the individual packages are severed by the knife **26**, the walls **12** and **14** are folded medially as over a mandrel **32** shown in FIG. 2, while a spot or line of adhesive **34** is interposed between the two panels or folds **36** and **38**

of the inner limp sheet to hold the package in the shape shown in FIG. 3. In FIG. 3, **40** represents one fold or panel of sheet **12**, **42** the other panel, and **43** the intervening fold line with the folds **36** and **38** of limper sheet **14** sandwiched therebetween.

Because of the lateral stiffness of the package, imparted by self-supporting relatively stiff sheet **12**, it may be picked up between the thumb and finger on its end edges, and then a top corner of the package along the fold line may be severed as with a pair of scissors and the package inverted to discharge the contents through the resulting opening **46**, as shown in FIG. 4. If only a portion of the serving is desired, the package may then be reinverted and will stand on the bottom edges of panels **40** and **42**.

Also, as indicated in FIG. 4, the two angularly inclined panels **40** and **42** may be squeezed together about fold line **43** to apply pressure to the contents to extrude them from the opening.

As will be understood, if in the operation of FIG. 1 the packages are wider than they are high, it may be desirable that the fold be made in a direction parallel to the line of advance through the mechanism of FIG. 1, rather than transversely thereof.

In the modifications shown in FIGS. 5, 6 and 7, the stiffer sheet material **12***a* is a little more than double in width with respect to the width of limper material **14***a* so that the packaging and filling process in effect takes place on only a portion of the stiff sheet **12***a*, with longitudinal seal **19***a* being at the edge of only the limper sheet **14***a*. When, then, the package of FIG. 5 is folded, it may be folded along the medial line A of sheet **12***a* to create a structure as shown in FIG. 7, wherein the pod or pillow container is attached solely to one panel **40***a* of the folded stiffer sheet. The adhesive **34***a* then is interposed between panel **42***a* and sheet **14***a*.

The dotted lines in FIG. 5 show an alternative structure wherein the limp sheet material **14***b* is slightly more than half the width of the stiff material **12***a*. When the fold line is therefore made along A, the package resembles that shown in cross-section in FIG. 6, one longitudinal seal **19***b* being located as shown in FIG. 6.

In both cases cutting or tearing the outer fold will expose the contents, since the fold line is closely adjacent one of the marginally sealed edge portions of the limper sheet.

Instead of relying upon cutting or severing with an external instrument, the roll **12** of sheet material may have dispensing holes, slits of lines of perforations preformed in sheet **12** along or near the subsequent fold lines A and covered with strips of pressure-sensitive adhesive tape which act as closures for the dispensing openings until removed by the user. Or, opening tabs of any desired size or shape may be incorporated into the package, examples of which the shown in FIGS. 8 and 9. FIG. 8 shows a tab **50** of a material which is adhered to the stiff sheet either with an adhesive which is stronger than the material itself, or by heat sealing, so when the tab **50** is pulled downwardly, it will rupture the underlying sheet material. Such rupture is aided by shaping the dies used to attach tab **50** in such manner as to pinch the sheet material **12** at or near the edges of the tab to weaken the structure in this area and allow it to rupture when the tab is lifted. Thus in FIG. 10 the die **60** has two sharp edges **61** and **62** for this purpose.

In the example shown in FIGS. 9 and 11, a fabric tab **70** is securely embedded and amalgamated into the sheet material **12** between hot dies **72**, so then when the tab is stripped upwardly from the material, it will tear the material and cause a hole to be made therein.

These removable closure attaching operations can readily be performed on sheet material **12** before or as it is being fed to the package forming mechanism, as may other desirable operations, such as printing, embossing or other form-changing appearance or strengthening operations.

What is claimed is:

1. The method of making a dispenser package comprising sealing a relatively stiff sheet of material to the marginal edge portions of a sheet of limper material while loading a flowable commodity into the enclosure defined by said marginal seals, and folding the stiffer sheet to sandwich the commodity and the limper sheet between folds of the stiffer sheet.

2. The method of making a dispenser package comprising sealing a relatively stiff sheet of material to the marginal edge portions of a sheet of limper material while loading a flowable commodity into the enclosure defined by said marginal seals, and folding the composite sheet substantially medially to sandwich the commodity and the limper sheet between folds of the stiffer sheet.

3. The method of making a dispenser package comprising sealing a relatively stiff sheet of material to the marginal edge portions of a sheet of limper material while loading a flowable commodity into the enclosure defined by said marginal seals, folding the composite sheet substantially medially to sandwich the commodity and the limper sheet between folds of the stiffer sheet, and adhering the walls of the folded limper sheet together to retain the package in folded configuration.

4. The method of making a dispenser package containing a flowable commodity, comprising advancing a length of flexible sheet material, while forming a pocket therein, into opposed relation with a relatively stiffer sheet, loading the pocket with a flowable commodity and sealing the edges of said less stiff sheet around said pocket to the stiffer sheet and then folding the stiffer sheet to sandwich the less stiff sheet and the contained commodity between angularly related folds of the stiffer sheet.

5. The method of making a succession of dispenser packages, each containing a flowable commodity, comprising advancing separate lengths of relatively stiffer and relatively less stiff sheet material into opposed relation facing each other, continuously sealing the longitudinal side edges of said less stiff sheet to the stiffer sheet as the lengths advance to form a hollow flattened tube, D-shaped in cross-section, periodically sealing the side sealed sheets together transversely as they advance at spaced distances along said lengths while loading a flowable commodity into said tube between each transverse sealing step, folding the stiffer sheet between said transverse seals to sandwich the limper sheet and the contained commodity between angularly related folds of the stiffer sheet, and at some stage in the method subsequent to the commodity loading operation cross-severing the lengths internally of the cross-seals to cut off the individual side and cross-sealed packages to succession from said tube.

6. The method of making a dispenser package as claimed in claim **4** which includes the step of adhering the walls of the folded limper sheet together to retain the package in folded configuration.

7. The method of making a series of dispenser packages each containing a flowable commodity by the method claimed in claim **4** wherein a series of pockets are successively formed in said flexible sheet material, said pockets are successively loaded with said flowable commodity, said edges are successively sealed around each pocket, each sealed pocket is separated from a succeeding pocket by severing the sealed sheet material and stiffer sheet and the separated sealed pockets are separately folded to form a plurality of folded dispenser packages.

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