June 5, 1956 L. PETERS 2,749,245

SOFT PLASTIC FOOD PACKAGE

Filed July 10, 1950 2 Sheets-Sheet 1

Fig. 1

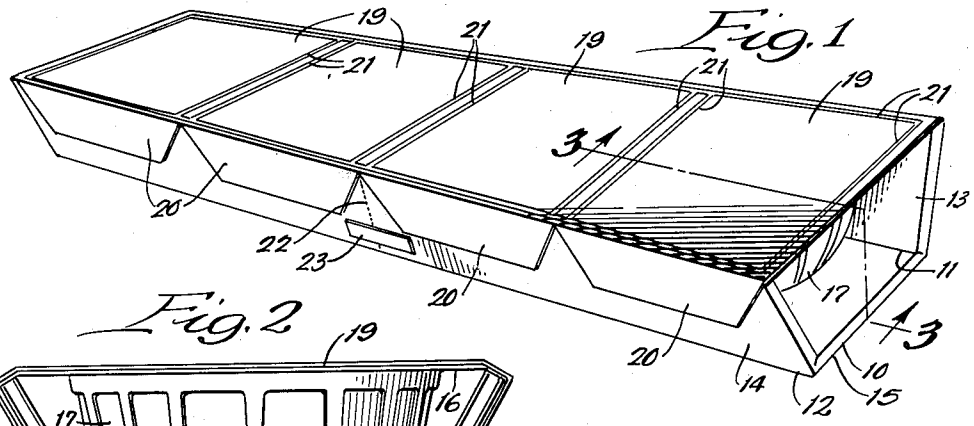


Fig. 2

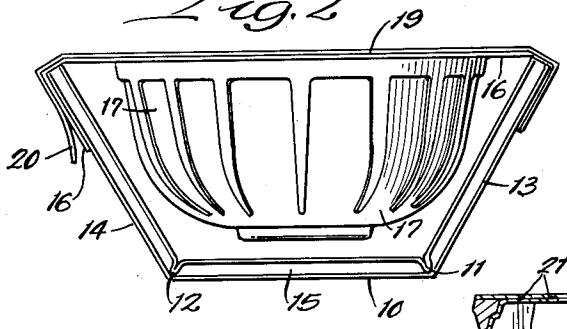


Fig. 3

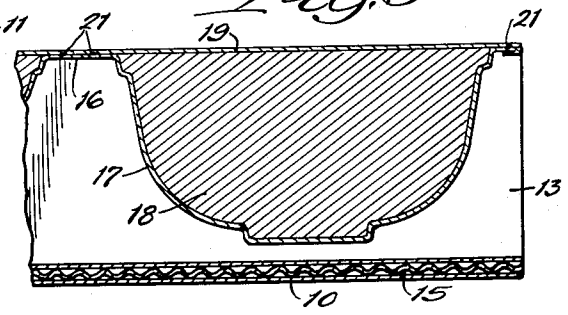
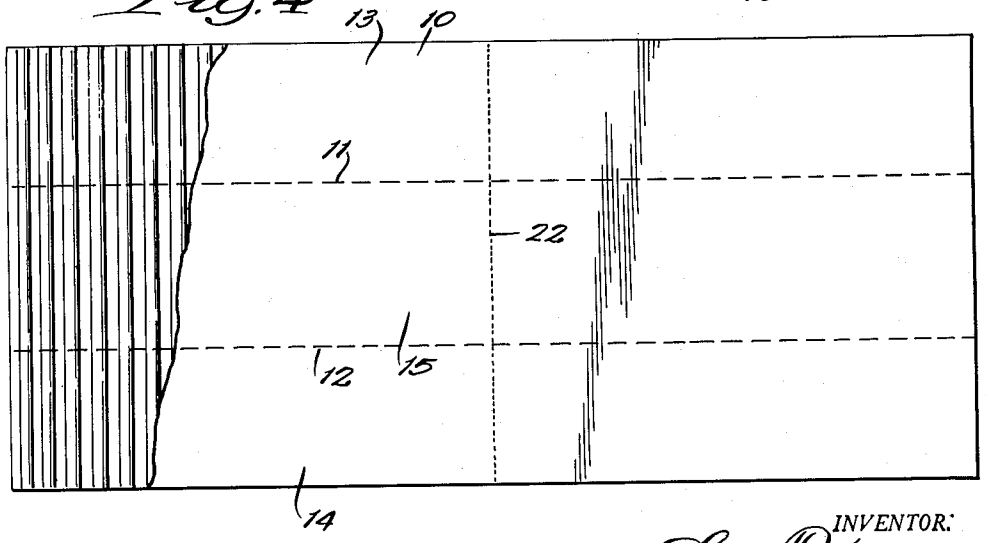


Fig. 4



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Fig. 5

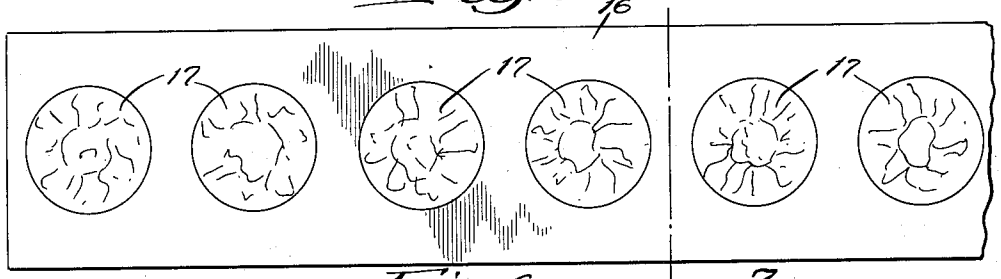


Fig. 6

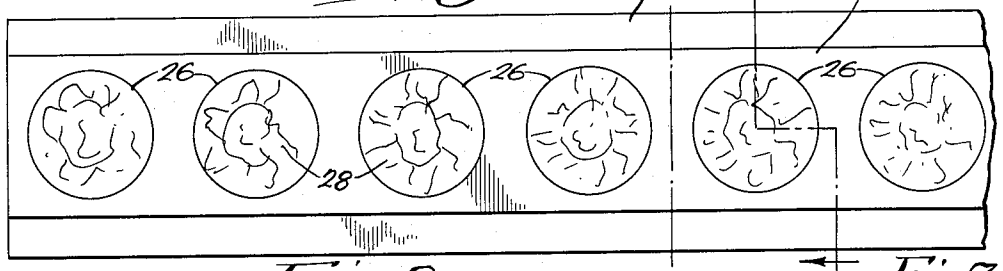
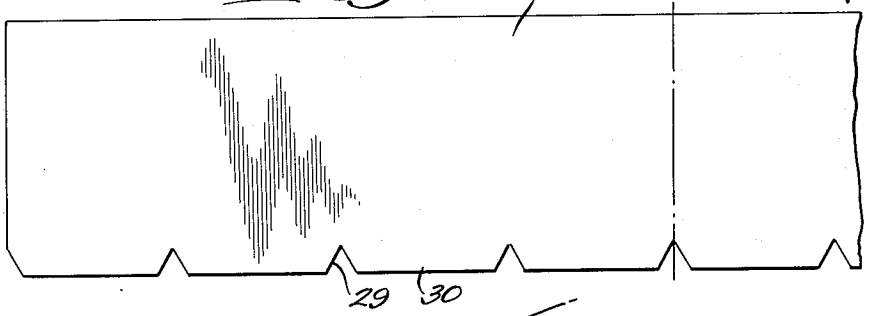


Fig. 8



7 Fig. 7

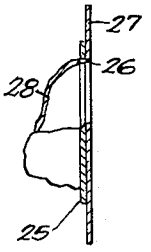
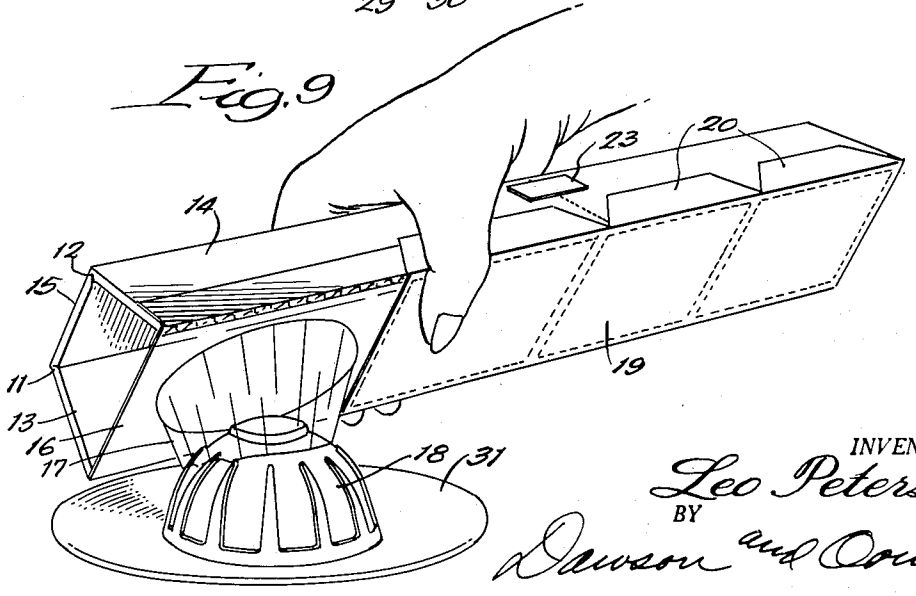


Fig. 9



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SOFT PLASTIC FOOD PACKAGE

Leo Peters, Evanston, Ill.

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4 Claims. (Cl. 99—171)

This invention relates to a package for soft plastic foods and is particularly useful in providing a resilient pack for foods.

One of the difficulties in packaging soft plastic foods is that of protection against bumps, jars and pressures which mutilate or disfigure the food contents while in transit from the packing plant to the retail outlet and thence to the consumer's home. To reduce such mutilation or disfiguration, it is common practice to package such foods in cake shapes which have flat sides and straight edges. Such products in the form of squares, rectangles and triangles can be packaged so that the contents, both in the retail package and the wholesale container, fit or nest compactly and tightly together with substantially no open spaces in between. Under pressure and jarring, the contents have no open spaces within the package into which they can burst or escape and the effect of the bumps or jars is thus minimized.

Should soft plastic foods, however, be packaged in shapes that will not nest or fit together and which have non-straight edges and non-flat sides, there are open spaces within the package into which the contents of the package can escape under jars and pressure. No successful solution of the problem heretofore has been presented.

The problem is further complicated by the fact that special supports and backings appear to be necessary for the supporting of the sheet enclosing the foods and such special backing and/or support require material, labor and expense which are disproportionately high for the sales price received for the product.

A further problem arises with respect to such proposed packages in that a carton-section is required that is complete on all sides in order to protect the consumer-size units inside and to prevent the carton from collapsing. Unless the sides are supported by end pieces or additional carton structural supports, the carton structure in which relatively small consumer-size units are supported is likely to collapse under the pressures encountered in shipping, storing, etc.

An object of the present invention is to provide a package overcoming the above-mentioned defects and solving the problems presented. Yet another object is to provide a package which relieves the pressure on the compartment walls, eliminates the need for a rigid and separate plate section on which to support the compartment sheeting in which the foods are enclosed, and eliminating the dependence on end pieces or a top side for preventing collapse of the container. Yet another object is to provide a retail-sized package in which soft foods are contained in consumer-size compartments formed from a continuous sheet, the sheet and the structure which maintains it in position providing a resilient, springing and cushioning action for the protection of the food in the compartments. Yet another object is to provide a package in which a film is suspended to support the soft plastic foods against bumps, jars, and pressures, and providing a recoiling action for the protection of the foods and for preventing mutilation or disfigurement of the molded food contents. Yet another object is to provide a structure in which a suspended film is employed to provide resilient cups for receiving molded food contents and which absorbs the bumps and jars by springing and recoiling and thus relieving the pressure on the cup compartment walls. A still further object is to provide a package of extremely few parts representing a simplified structure in which backing and plate supports are eliminated, while at the same time providing a spring-like supporting structure for the food contents. A still further object is to provide a package in which end pieces and top sides are eliminated while providing a resilient, spring-like tension for maintaining the film enclosing the contents in taut condition. Yet another object is to provide in such a structure a carton-section having side walls which extend at an obtuse angle to the base and which exert a spring action against a food-supporting film carried thereby whereby the movement of one side of the carton is automatically counteracted by a restraining movement of the other side, the extremely simple structure thus formed enabling containers to be stacked upon each other so as to support each other at very substantial heights. Yet another object is to provide a package which may be shipped to the packing plant or filling plant where the packages are assembled in flat, board-like or sheet-like condition or in rolls, and there readily assembled to form the desired packages. Yet another object is to provide a single continuous sheet which provides consumer-size compartments, acts as both the liner for and molder of the food contents, functions as a plate-like section to maintain the compartments in a level aligned position, and holds a supporting resilient base and sides in a terse, springing condition. Yet another object is to provide a package in which a corrugated paper board is creased and bent along a line at which the paper and sides meet and is held in this bent position by a plate-like section of sheeting so as to remain in a constantly tersed and resilient relationship to the sheeting. Other specific objects and advantages will appear as the specification proceeds.

The invention is shown in illustrated embodiments, by the accompanying drawings, in which—

Fig. 1 is a perspective view of a package embodying my invention; Fig. 2, an end view in elevation; Fig. 3, a broken longitudinal sectional view, the section being taken as indicated at line 3—3 of Fig. 1; Fig. 4, a plan view of a corrugated paper board provided with fold or weakened lines, a portion of the top sheet of the board being removed; Fig. 5, a broken top plan view of the package; Fig. 6, a broken top plan view of a modified form of package; Fig. 7, a broken detailed sectional view, the section being taken as indicated at line 7—7 of Fig. 6; Fig. 8, a plan view of a cover which may be employed; and Fig. 9, a perspective view illustrating the removal of the soft plastic food after a cover strip has been removed.

The package is adapted for use with a great variety of soft plastic foods such as, for example, butter, margarine, cheese, ice cream, gelatin, jellies, liver sausage, and similar meat products, etc. It will be understood that a great variety of foods may be packaged and sold in the container and the container is particularly useful in the molding of such foods so that when they reach the consumer's table a molded product of attractive design having non-straight edges and non-flat sides is placed without mutilation or disfigurement upon a dish or other receptacle.

In the form of the invention illustrated in Figs. 1 to 4, inclusive a corrugated paper board **10** is bent along lines **11** and **12** to provide upwardly-extending side walls **13** and **14** forming with the base **15** obtuse angles. Secured to the top of the side walls **13** and **14** is a film **16** having formed therein depending cups **17** adapted to receive the food contents **18**. The film **16** may be secured to the

walls 13 and 14 by rubber adhesive or by any other suitable material. The film 16 may be a thermoplastic film or other form of film or sheeting which will serve as an enclosure for the food products.

I prefer to provide individual covers or closures for the cups containing the foods. In the illustration given in Figs. 1 to 4, I employ a single thermoplastic sheet 19 which is provided on one side with a pull tab 20 and the sheet 19 is sealed to the inner film 16 by heat-sealing along lines 21. Thus, when the pull tab 20 is drawn, the tear occurs between the adjacent heat-sealed lines 21 so as to expose one cup while the adjacent cup is maintained in sealed condition.

If desired, the corrugated paper board 10 may be provided with a scored, cut, or weakened line 22, as indicated in Figs. 1 to 4, and the adjacent side walls of the package may be releasably held together by adhesive tape 23 or other suitable means. Thus, after two of the cups 17 at one end of the package have been freed of their contents, the tape 23 may be torn away on both sides of the package so as to release half of the package which has been emptied. The remaining half of the package will then occupy less space in the refrigerator. Further, if desired, the tape 23 may be removed even when all four of the cups are filled so as to permit one-half of the package to be folded over the other with the cover portions of the package abutting each other and the package thus is reduced in size for storage within the refrigerator.

In the illustration given in Fig. 5, the film 16 is shown as a continuous film having preformed cups therein in collapsed position, the film having no reinforcement.

In Fig. 6, I provide a reinforcement 25 having openings 26 formed therein. The resilient film 27 extends over the reinforcement sheets 25 and have depending portions extending through the openings 26 to provide cups 28. The reinforcement may be of thin or heavy paper stock. It serves as a means for presenting advertising or attractive backing material for the package and further strengthens the film 27, particularly at the points where the cups 28 are suspended.

In Fig. 8, there is shown a cover strip 24 of the type illustrated in Fig. 5 and the outer edge of the cover may be provided with notches 29 providing individual pull tabs 30 to facilitate tearing of the cover from cups that have been selected for emptying.

A method of emptying the contents of the package is illustrated in Fig. 9. After the removal of the cover, the user may turn the package so as to allow the molded contents 18 of the package to fall on the dish 31. Sometimes the dish is placed over the package and the package and dish rotated together to allow the contents of the film cup to drop onto the dish. If the plastic food should tend to cling to the film, when the package is inverted, the molded food can be pressed gently out of the film by inserting the fingers within the package and pressing against the inner surface of the cup film. In most operations, it is found that such pressure is not necessary and that the weight of the food itself, after the inversion of the package, allows it to peel away from the film and to come to rest upon the dish without disfigurement or mutilation.

The carton structure may be formed of cardboard, corrugated paper board, molded pulpwood, plastic, and of a variety of materials. The film may be formed of thermoplastic material or plastic material which flows under temperature or solvent conditions to provide a set cup or other container. For example, chlorinated rubber (Pliofilm), polyethylene, vinyl, acetate co-polymers, vinylidene chloride, polyamides, and a large number of such well-known resins may be used. Also, other sheeting material, such as certain treated parchment papers and cellulose products having cups molded therein and metal foil sheeting, may be employed. I prefer to employ the plastic and thermoplastic film because of the great strength provided and the ease with which they may be secured in position upon the carton.

While in the description given the film is shown attached by adhesive to the side walls of the carton, it will be understood that the film may be of a tubular shape entirely enclosing the corrugated paper board or other support.

While I have shown a support of a specific shape in which the side walls 13 and 14 form obtuse angles with the base 15, it will be understood that the support may be of different shapes while still providing diverging side walls which exert tension upon the film 16 extending therebetween, and thus maintain it in taut condition. For this purpose, a corrugated paper board having a single crease extending along its median longitudinal line will, when partially folded, provide diverging side walls for maintaining the film in taut condition. I prefer, however, the structure illustrated because the container may rest upon a flat bottom and maintain the film in a horizontal position. Further, the packages may be stacked upon each other and the tensile strength of the film is so great as to enable large numbers of the packages to be thus supported in stacked relation.

Operation

In the operation of the structure, the board 10 may be shipped in ordinary flat stacks to the packing plant or filling plant, while the film 16 having the cups 17 already molded therein may be shipped in flat condition or in the form of rolls to the plant. There the parts may be set up by hand or machine to form the completed package with the film uniting the spring walls 13 and 14, as illustrated best in Figs. 2 and 9. The molding cups 17 of a package are in practice filled simultaneously from a multinozzle filling machine and in a subsequent step the covers are heat-sealed in position or otherwise secured. The margarine or other product, which is preferably filled in a molten condition, quickly sets, after leaving the filling machine, to form a molded cake carrying the mold lines of the cup.

Certain plastic film may be provided with cups merely by the application of forming molds to the material and by stretching the material. In other cases, the cups are formed by the joint action of heat and pressure. I prefer to treat the film preliminarily to provide the molding cups before the film is sent to the filling station, but it will be understood that, if desired, the forming of the cups may be made in a production line immediately ahead of the filling step.

When the consumer desires to remove a consumer-size unit, which may be one-fifth, one-fourth, or any selected unit size provided by the cup, the consumer draws the pull portion 20 or 30 to tear the cover portion directly above a selected cup. She then turns the package to remove the contents, as illustrated in Fig. 9.

The new package is particularly effective in preventing the mutilation or disfigurement of the molded plastic food body despite bumps, jars and pressures. The film, which may be elastic in itself, is supported resiliently by the sides 13 and 14 and it thus provides a cushioning support for the molded food bodies. The side walls of the package require no end pieces or top walls because of the obtuse angles at which they extend and because of the great tensile strength of the plastic film connecting the side walls. The sides of the carton can neither fold nor collapse inwardly or outwardly even though the carton has no ends or tops. The movement of one side of the carton is automatically counterbalanced and restrained by the other side, thus holding both sides in their originally set-up positions. The final package consists of a minimum number of parts, while at the same time providing an extremely sturdy structure resiliently supporting a food product for ready removal.

The film may be readily shaped either by pressure or by heat, or both, to form the pockets or cups which serve

as molds for the soft plastic foods. By using thermoplastic film and applying a small amount of heat, a form is brought against or into contact with the film and the film accommodates itself to the form to provide the cup or pocket therein. Strangely enough, the pocket thus formed, while being readily collapsible, retains its mold lines so that at a later point when the plastic food is introduced therein, it serves as a mold and shapes the food into the desired molding shape. Thus a simple film provides in itself the molds for articles of irregular shapes, while at the same time the mold pockets or cups are readily collapsible and occupy no space in the shaping of the film. The process further lends itself to use in a continuous process in the filling plant itself, where the pockets or cups may be formed at a step just preceding the filling step. I prefer, however, to pre-form the pockets and to deliver the film equipped with the pockets in collapsed condition to filling apparatus where the cups readily open to full molding position under the weight of the soft plastic food.

While in the foregoing specification I have set forth specific structures in considerable detail for the purpose of illustrating embodiments of the invention, it will be understood that such details of structure may be varied widely by those skilled in the art without departing from the spirit of my invention.

I claim:

1. A soft plastic food package, comprising a support formed from resilient sheet material, said support providing a bottom wall and side walls extending upwardly therefrom at obtuse angles with folds between the side walls and the bottom wall providing spring hinges resiliently urging the side walls outwardly, a film extending between the upper end portions of said side walls and held yieldably taut by the action of said spring hinges on said side walls, said film providing at least one depending cup formed therein and spaced from the walls of said support, and a soft plastic food at least partially filling said cup.

2. A soft plastic food package, comprising a support formed from an integral sheet of corrugated paperboard, said support providing a bottom wall and side walls extending upwardly therefrom at obtuse angles with folds between the side walls and the bottom wall providing spring hinges resiliently urging the side walls outwardly, a film secured over the upper end portions of said side walls and held yieldably taut by the action of said spring hinges on said side walls, said film providing at least one depending cup formed integrally therein and spaced from both the side and bottom walls of said support, and a soft plastic food at least partially filling said cup.

3. A soft plastic food package, comprising a support formed from resilient sheet material, said support providing a bottom wall and side walls extending upwardly therefrom at obtuse angles with folds between the side walls and the bottom wall providing spring hinges resiliently urging the side walls outwardly, a thermoplastic film extending between the upper end portions of said side walls and adhesively attached thereto, said film being held yieldably taut by the action of said spring hinges on said side walls and providing a plurality of depending cups formed integrally therein, said cups being spaced from the walls of said support, and a soft plastic food at least partially filling said cups.

4. A soft plastic food package, comprising an open-ended, open-topped support formed from an integral sheet of corrugated paperboard, said support having a bottom wall and side walls extending upwardly therefrom at obtuse angles with folds between the side walls and the bottom wall providing spring hinges resiliently urging the side walls outwardly, a thermoplastic film secured over the upper end portions of said side walls and held yieldably taut by the action of said spring hinges on said side walls, said film providing at least one depending cup formed integrally therein and spaced from both the side and bottom walls of said support, and a soft plastic food at least partially filling said cup.

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