

[54] **PACKAGE FOR UNIFORMLY SHAPED
CHIP TYPE SNACK FOOD PRODUCTS**

[75] Inventor: Nelson J. Beall, Albertville, Minn.

[73] Assignee: General Mills, Inc., Minneapolis, Minn.

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[63] Continuation-in-part of Ser. No. 159,891, July 6, 1971, abandoned.

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[51] Int. Cl. B65b 23/00

[58] Field of Search 99/171 C, 171 CT, 171 TC, 99/171 MP, 171 LM, 171 R, 100 P; 206/65 K, 65 R, 45, 34, 303, 304; 1/99, 11, 1; 9/193; 426/106, 110, 112, 115, 119, 121, 145, 392, 394, 411, 413; 229/2.5

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Primary Examiner—Frank W. Lutter

Assistant Examiner—Steven L. Weinstein

Attorney, Agent, or Firm—Anthony A. Juettner; Gene O. Enockson; Norman P. Friederichs

[57] **ABSTRACT**

Snack food product chips of uniform shape and size are nested one within another in closely fitting relationship preferably in the form of a circular or loop array. The nested chips are supported on edge and placed within a preformed container, for example, having a bowl shape. The bowl shape may conform to the outside curvature and bottom configuration of the circular array. A cover is applied to the top of the bowl to seal the same.

5 Claims, 5 Drawing Figures

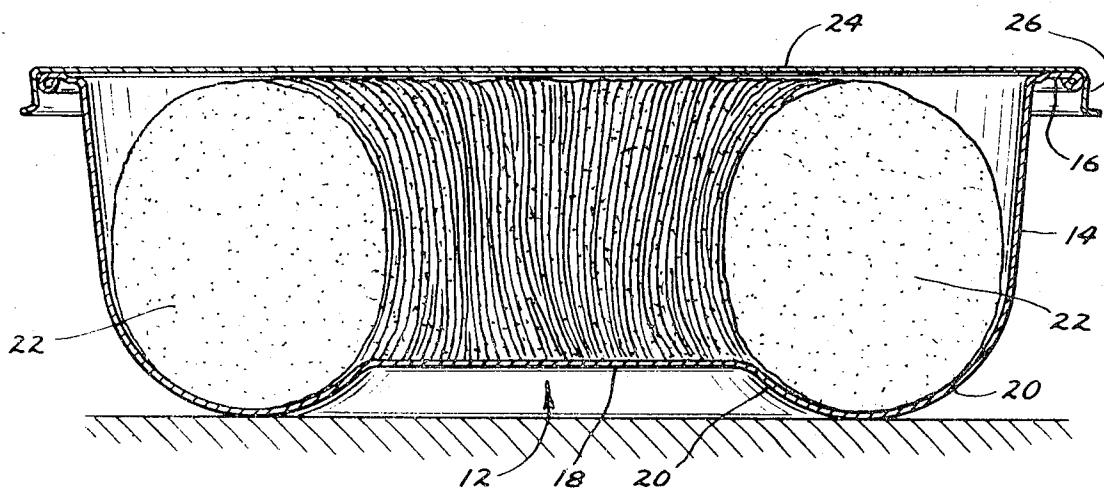


FIG. 1

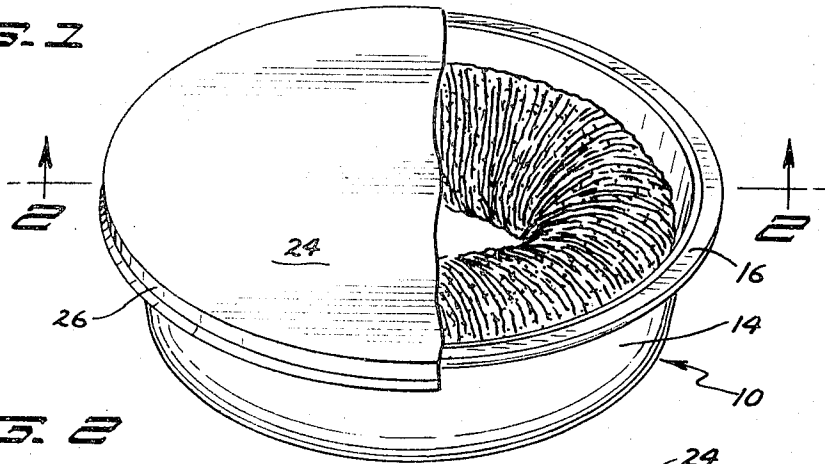


FIG. 2

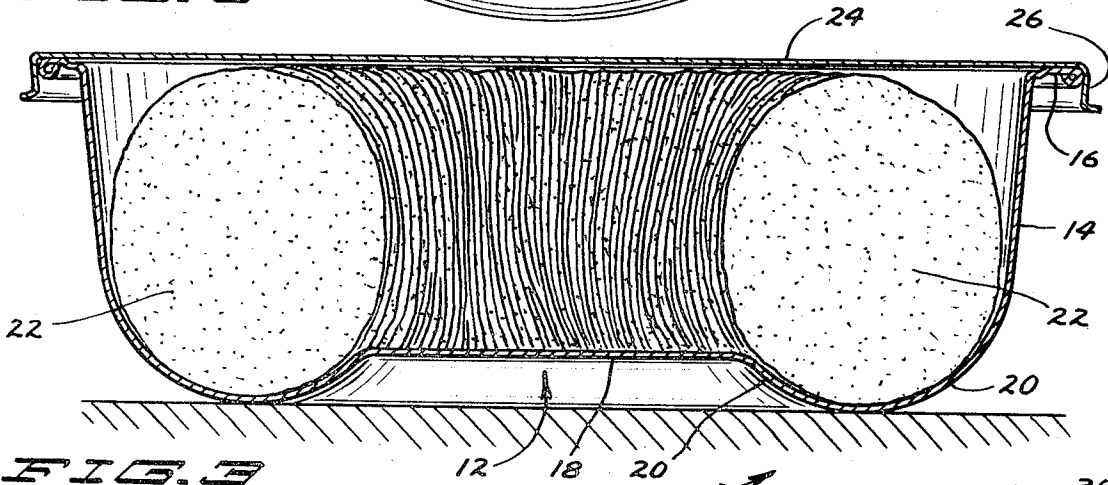


FIG. 3

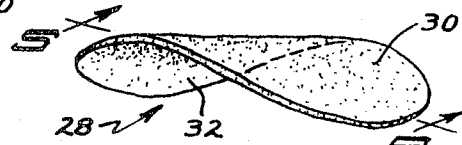
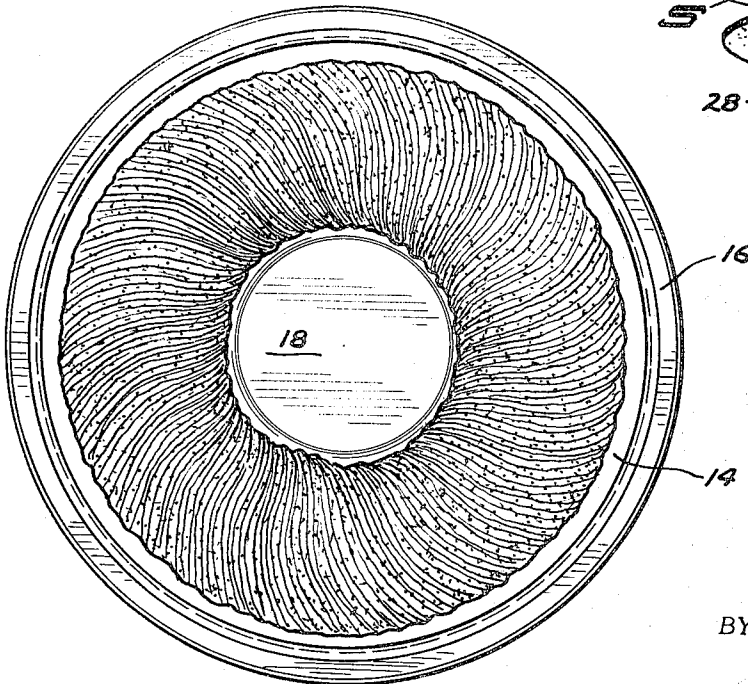


FIG. 4

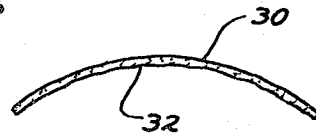


FIG. 5

INVENTOR.
NELSON J. BEALL

BY

Kenneth D. Gabe

ATTORNEY

PACKAGE FOR UNIFORMLY SHAPED CHIP TYPE SNACK FOOD PRODUCTS

This is a continuation-in-part of patent application, Ser. No. 159,891 filed July 6, 1971, now abandoned.

The packaging of chip-type snack food products, such as potato chips, as generally practiced, involves placing the product into a bag in a random unoriented manner. Such bags are made from one or more sheets of waxed paper or glassine. This type of bag, while relatively inexpensive, provides little protection to the fragile chips from handling and shipping loads. Thus, it is quite common to have a number of broken chips in the bags.

Another possible package for chip-type snack food products involves vertically stacking the chips one upon the other to form a straight column and placing such column within a substantially rigid, tubular container. The tubular container may be sealed closed by securing ends thereto. It has been found that when such a container is dropped down on one of such ends that the chips nearest such end break. Broken chips do not normally meet with consumer acceptance.

Accordingly, it is one object of the present invention to provide a protective package for uniformly shaped, fragile chip-type snack food products which package will prevent breakage of such items while in shipment and handling. It has been found that chip breakage is reduced when the chips are supported on their edges. In other words, the chips are disposed with their major surfaces perpendicular to the bottom of the container. The chip breakage is even further reduced when the chips are nested in a loop array.

Other objects and advantages of the invention will be apparent from the following description in which certain preferred embodiments of the invention are disclosed. In the drawings which form a part of this application:

FIG. 1 is an elevational view of a package according to the present invention partially broken away to show the arrangement of the contents within the container;

FIG. 2 is a cross-sectional view of the package shown in FIG. 1 taken along the line 2—2;

FIG. 3 is a top view of the package shown in FIG. 1 with the top of the package removed;

FIG. 4 is a perspective view of one form of chip which may be contained in the package shown in FIG. 1; and

FIG. 5 is a cross-sectional view of the chip shown in FIG. 4 taken along the line 5—5.

Referring now to the drawings, FIGS. 1 and 2 show a container 10 having a bottom 12 of circular shape, an upstanding side wall 14, and an outwardly extending top flange 16. The bottom 12 has a raised portion 18 and a curved portion 20. The side walls 14 and curved portion 20 are designed to conform to the outside curvature and bottom configuration, respectively, of the chip-type snack food product 22 to be packaged therein.

The outwardly extending top flange 16 is adapted to hold a cover 24 in place across the top of the container 10. The cover 24 is snugly fit over the flange 16 by means of a downwardly extending lip 26. The container 10 and cover 24 can be constructed of any material that can be formed, such as metal, plastic, paper, or combination thereof, and which are sufficiently strong

and rigid to withstand handling and shipping loads. Drawn aluminum has been used to make a container 10 while pressboard lined with aluminum foil has been used to make a cover 24.

The cover 24 may also be secured to the flange 16 by gluing, heat sealing or other adhesive means.

It is an essential element of the present invention that the products to be packaged are thin and substantially uniform on both shape and size so they can be nested one within the other to form a loop, preferably, a closed loop. Preferably this closed loop is in the form of a circular array. Non-uniform products cannot be effectively nested in a closed loop and thus must be randomly distributed within the package. Such an approach results in a package which permits the products to be more easily damaged in handling. The uniformity of the products of the present invention extends to the size of the products as well as the general shape and surface curvature.

FIGS. 4 and 5 illustrate a type of uniform product which can be successfully packaged according to the present invention. The product 28 preferably has an upper curved major surface 30 and a lower curved major surface 32. These surfaces 30 and 32 are formed from single curves. Alternatively, the products could have upper and lower major surfaces curved in each of two orthogonal planes. While many shaped variations within this framework are possible, it is desirable in the marketing of potato chips or similar products to use the general shape in which such chips are presently marketed since that is a form with which customers are familiar.

Although it is possible to use uniform products having a planar disc-type shape, it is preferred that the products used in practicing the present invention be non-planar in shape. This permits some degree of interfitting of adjacent chips.

The products illustrated for use with the present invention are non-planar shaped. They are first formed into the desired curved shape. This permits nesting one within another to permit forming them in a closed loop as readily seen in FIG. 3. In the circular array of the products as shown in FIG. 3, the products are nested one within another with their corresponding surfaces similarly oriented. Each of the chips has major surfaces positioned in abutting relationship with major surfaces of adjacent chips. They are then placed in a substantially rigid container which is adapted to enclose this loop array. After being placed into such a container, it is sealed closed by securing the cover to the flange thereof. The products can be conveniently removed from the container after removing the cover therefrom either individually, in batches of two or more, or by inverting the container and thereby permit the entire looped array to be placed on a surface as a looped array.

The present invention is applicable to packaging, numerous chip-type snack food products which are uniform in size and shape so they can be nested one within another to form a loop array. Specifically, it can be used with chips made from thin slices of raw potato. Alternatively, it can be used with chips which are made from a formulated, potato-based dough which is rolled into sheets having a thickness of from about 0.009 inch to about 0.30 inch, preferably, about 0.020 to 0.10 inch, typically 0.050 inch and from which substantially equal shaped sections are cut and fried.

While the invention has been described in detail with specific examples, such examples are illustrative and are not given as limitations since other modifications within the sphere and scope of the invention will be apparent to those skilled in the art. For example, the size and shape of the products to be packaged may be varied widely as long as the particular size and shape of a given product placed in a single package are all uniform. The chips may be nested and supported on edge in a horizontal column.

In view of the principles set forth herein, some of the specific ways of carrying out the present invention have been shown and other equivalents are suggested by the disclosures.

I claim:

1. A package of uniformly shaped chip-type snack food products, said package comprising a plurality of chips of substantially uniform shape, size, and thickness, each of said chips having major surfaces curved in at least one plane, each of said chips being nested with adjacent chips and having its major surfaces thereof positioned in abutting relationship with major surfaces of other of said chips in interlocking effect to provide a closed loop array having outer and lower exterior edges, a substantially rigid bowl shaped container having a side wall and a bottom wall, said side wall conforming to at least the lower portion of the outer exterior edges of said closed loop array of said chips adjacent thereto, said bottom wall having a portion thereof conforming with at least a portion of the lower edges

of said closed loop array, said bottom wall further having means defining a raised portion for holding said chips in said closed loop array and a cover secured along the upper edge of said side wall.

2. The package of claim 1 wherein said closed loop array is a circular array and said bottom wall is circular.

3. A package of uniformly shaped chip-type snack food products, said package comprising a plurality of chips of substantially uniform shape, size and thickness, each of said chips having major surfaces curved in at least one plane, each of said chips being nested with adjacent chips and having at least one of its major surfaces thereof positioned in abutting relationship with major surfaces of other of said chips in interlocking effect to provide a loop array having outer and lower exterior edges, a substantially rigid bowl shaped container having a side wall and a bottom wall, said side wall conforming to at least the lower portion of the outer exterior edges of said loop array of said chips adjacent thereto, said bottom wall having a portion thereof conforming with at least a portion of the lower edges of said loop array, said bottom wall further having means defining a raised portion for holding said chips in said loop array and a cover secured along the upper edge of said side wall.

4. The package of claim 3 wherein said loop array is a closed loop array.

5. The package of claim 4 wherein said closed loop array is a circular array and said bottom wall is circular.

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