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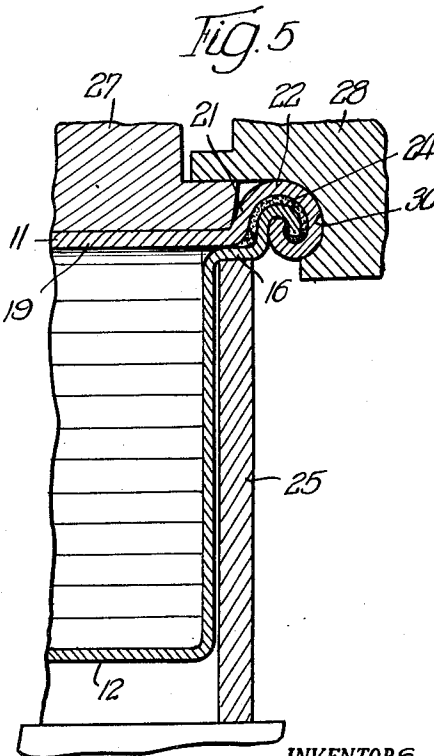
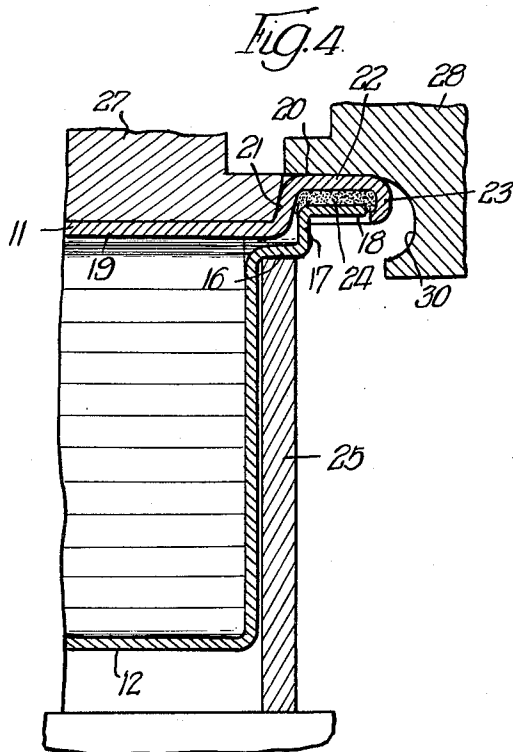
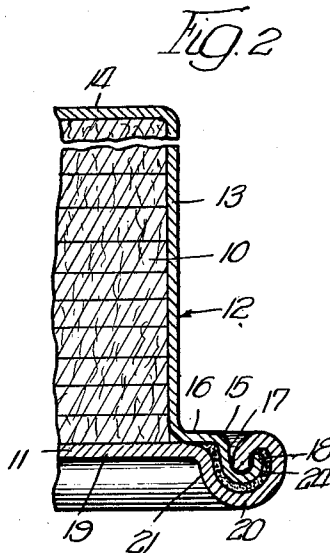
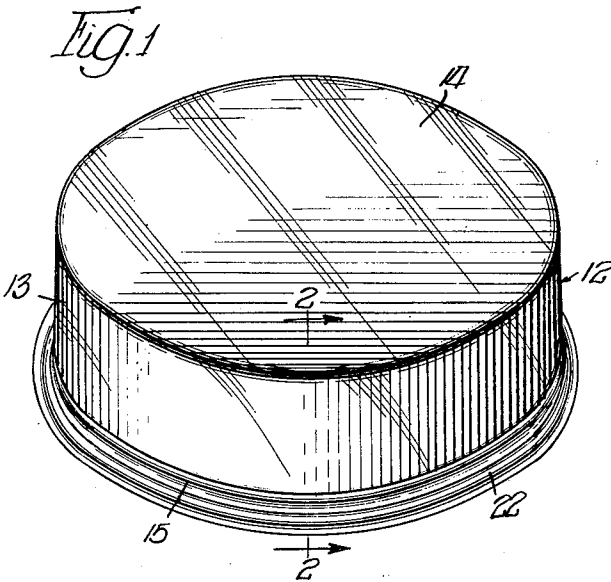
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3,070,446

FOOD PACKAGE

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2 Sheets-Sheet 1



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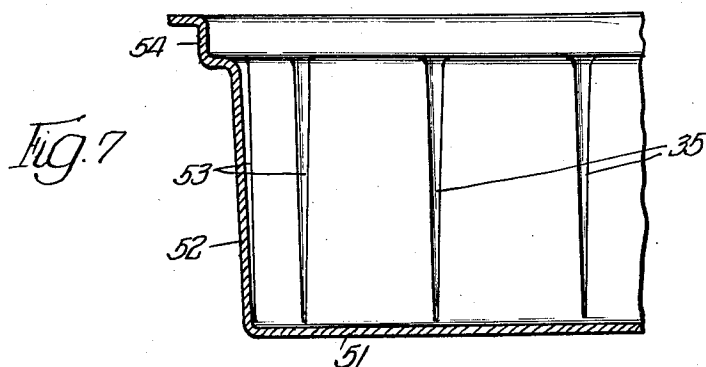
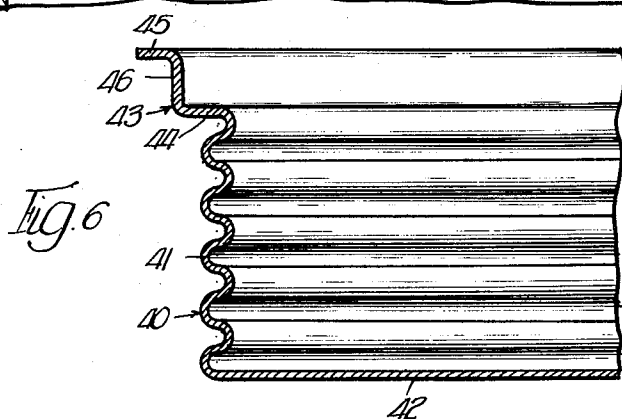
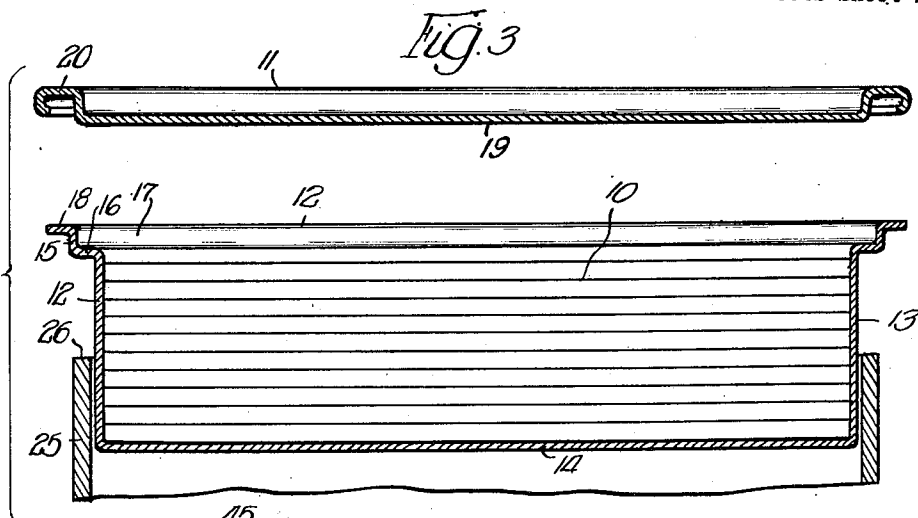
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FOOD PACKAGE

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This invention relates to packaging and is more particularly concerned with improvements in a package and a method of forming the same in which a predetermined quantity of a product is enclosed in a transparent cover member which forms the top and side walls of the package and which is sealed at its margins to the peripheral edges of a relatively rigid plate-like member which supports the product and forms the bottom wall of the package.

It is a general object of the invention to provide an improved package which is characterized by a transparent cover member in the form of an open ended tubular container, a closure therefor in the form of a panel member of relatively rigid material, and a predetermined quantity of a food product arranged therein so that it is supported by the rigid closure member and visible through the cover member with the latter having its marginal edges connected in sealed relation with the marginal edges of the closure member.

It is a more specific object of the invention to provide a package of a food product, such as, sliced meat, sliced cheese, or the like, and a method of forming the same wherein a predetermined quantity of the product is arranged in superimposed stacked relation on a relatively rigid plate-like supporting member and enclosed in a preformed cover or wrapper member of impermeable transparent material, the latter having its marginal edges in sealed relation with the marginal edges of the supporting member.

It is another object of the invention to provide a package and a method of forming the same wherein a predetermined quantity of a product is arranged on a bottom forming metal disc and enclosed in a preformed cup-like cover member of relatively thin, transparent plastic material having a stepped flange formed in the margins of the side walls for cooperating in forming a seam with flanged marginal edges provided on the metal disc, portions of the flanges being crimp sealed and providing a package which is hermetically sealed.

It is still another object of the invention to provide a hermetically sealed food package comprising a rigid metal panel member, a predetermined quantity of a food product supported in upright relation on the panel member, and a semi-rigid preformed plastic cover member enclosing the food product, the cover member having a stepped flange at its marginal edges engaging with a cooperating flange on the panel member, and the panel member having the marginal edge portion of its flange in coiled, crimp sealed relation with the marginal edge portion of the flange on the preformed container.

A further object of the invention is to provide a method of packaging a product which comprises placing a predetermined quantity of the product in an inverted cup-like cover member of relatively thin transparent plastic material which is preformed with a stepped flange formation on its peripheral edge, supporting the cover member in a form which has a shoulder-like top edge for receiving the inner portion of the stepped flange formation in supporting relation thereon, placing a metal plate closure member thereon which has a complementary flange formation on its edge, and forming a connecting seam by crimp sealing the flanges on the cover

2

and closure members while the assembly is supported on the form.

These and other objects and advantages of the invention will be apparent from a consideration of the package and the method of forming the same which is shown by way of illustration in the accompanying drawings wherein:

FIGURE 1 is a perspective view of a completed package which embodies therein the principal features of the invention;

FIGURE 2 is a fragmentary section taken on the line 2-2 of FIGURE 1, to an enlarged scale;

FIGURE 3 is an exploded sectional view, with portions broken away, illustrating the manner of assembling and supporting the package elements for the sealing operation;

FIGURE 4 is a fragmentary section, to an enlarged scale, on a diameter of the supporting member with the package elements assembled therewith in proper relation for forming the crimp seal at the base of the package;

FIGURE 5 is a fragmentary section similar to FIGURE 4 illustrating the position of the elements when the crimp seal is completed;

FIGURE 6 is a fragmentary section showing a modification of the preformed plastic cover or container for the package; and

FIGURE 7 is a fragmentary section of a further modification of the preformed plastic container for the package.

The package will be best understood by referring first to FIGURES 1 and 2 of the drawings in which the completed package is shown in the upright position in which it will normally be displayed. The package comprises a quantity of a product 10 which is indicated as a stack of meat slices or similar material, a bottom panel member 11 on which the product is supported and which forms a closure for a tray-like container or cover for the product. The cover or container 12 is preformed, of a transparent plastic, to provide the shape desired for the package or to conform with the shape of the material of the product to be packaged. The cover 12, which is illustrated, is cup shaped with a side wall 13 and an integral end wall 14, the latter becoming the top of the package when it is completed. The side wall 13 is provided at its marginal edge with a double or stepped flange formation 15, which flange formation comprises an inner flange 16 extending radially outwardly of the side wall 13 and merging into a cylindrical wall portion 17 at the inner edge of an outwardly extending outer flange portion 18, the latter constituting the peripheral margin of the cover. The metal end closure plate 11 has a central product supporting portion 19 which is of a diameter slightly less than the inside diameter of the cylindrical wall portion 17 of the stepped flange on the cover member 12. The closure plate 11 has a peripheral flange section 20 which extends outwardly of the central portion 19. The flange section 20 includes a cylindrical portion 21 and an outwardly extending seaming flange 22 with its outer edge bent downwardly and upwardly at 23 so as to form a channel for receiving therein the seaming flange 18 on the cover member 11. A sealing compound or gasket material, indicated at 24, is interposed between the sealing flange 18 of the cover member 12 and the sealing flange 22 of the closure member 11. The two seaming flanges 18 and 22 are coiled, as shown in FIGURE 2, to form a crimp seal with the flange forming portion 15 of the cover 12 being drawn into close contact with the marginal flange forming portions of the closure member 11.

The package is especially adapted for use in packaging sliced meat products wherein a plurality of slices of the

product are arranged in superimposed relation and supported in upright stack forming condition on the closure plate or disc member 11. However, the package may be employed in the merchandising of various other products of a similar character for which it is desirable to provide air tight protection and to preserve in uncontaminated condition for substantial periods of time. While the package is particularly adapted for a product of a self-supporting character, it may, however, be used for other products which are not of a self-supporting nature, particularly when the cover member 12 is preformed with sufficient rigidity to retain its shape.

The product supporting disc 11 comprises a substantially flat panel-like member preferably formed of rigid material such as sheet metal. The support member 11 may be round or square, depending upon the nature and size or shape of the product 10. The marginal portion of the member 11 is preformed or shaped to provide a flange 20 to match the stepped flange on the cover member 12 and to be rolled into a crimp sealed formation, or double seam. As initially supplied, the member 11 is shaped, as shown in FIGURES 3 and 4, so that it has a center product supporting portion 19 and a peripheral flange or sealing channel formation 22 which is connected thereto by the wall forming portion 21. The outwardly projecting flange portion 22 has its outer marginal edge 23 turned inwardly toward the center of the disc and forms a channel-like pocket for receiving a suitable sealing or gasket material 24. Several such materials are known and commercially available. For example, the gasket material may be a rubber base gasket emulsion, or it may be a microcrystalline wax having an oil content ranging from about 15% to about 50% as disclosed in our copending application Serial No. 777,519, filed December 1, 1958.

The cover member 12 is initially supplied as a cup-like container member which is preformed of a transparent plastic material, such as, "Mylar" (an oriented linear polyester resin), "Saran" (a vinylidene chloride polymer), polyethylene, vinyl or cellulose acetate. The plastic should be transparent and of sufficient thickness to hold its shape with the particular plastic being selected to meet the requirements of the product which is being packaged. For example, Mylar is most suitable where a low gas transmission is desired, while other forms of plastic may be suitable depending upon the need to protect the color or keeping quality of the product. The cover member 12 may be formed of a single ply of one material or it may be formed of a plurality of plies of one or a combination of materials. In any event, the member 12 is preformed to provide a generally cylindrical side wall 13, an integral top or end wall 14 and a stepped flange formation 15 which comprises the inner flange 16, the outer flange 18 and the connecting cylindrical wall section 17, as shown in FIGURES 3 and 4, with the seam forming outer flange 18 being of a width somewhat less than the width of the sealing channel in the flange portion 22 of the closure plate member 11 so that it will seat therein when the package elements are assembled for the seaming operation.

In forming the package, the product 10 is placed in the preformed cover 12 with the latter in inverted condition as shown in FIGURES 3 and 4, and the cover and product assembly are then placed in the open upper end of a hollow cylindrical support or form 25 which has an internal diameter sufficient to accommodate the body of the cover 12 and a ledge forming upper end edge 26 on which the inner flange 16 of the cover flange formation 15 is seated. The outer flange 18 extends beyond the outer periphery of the support member 25 and is received in the seaming channel of the closure member 11 which is assembled over the top of the product 10 with the channel-like seam forming portion 22 of the flange formation 20 receiving the seaming flange portion 18 of the cover member 12 and with the peripheral seam forming

portions of both the cover member 12 and the closure panel member 11 located above the supporting edge 26 of the form 25 so that when the assembly is moved into a crimp seal forming machine, preferably of the vacuum type, such as the vacuum sealer used in the canning industry, the upper clamping disc 27 of the seaming head will be received in the recess formed in the top of the closure disc 11 and provide a backing member for the seaming and crimping rolls 28 which are mounted for radial movement in the crimping head and provided with peripheral crimp forming grooves 30. The package assembly and the supporting and clamping members are moved relative to each other to bring the clamping plate 27 into engagement with the closure disc 11 with sufficient pressure being applied to engage the peripheral edge of the center section 19 of the disc 11 with the inner flange portion 16 of the cover 12 which is supported on the shoulder 26 of the support member 25. The package assembly and the supporting structure for the seam forming rollers 28 are then rotated relative to each other and the rollers 28 are moved inward into engagement with the seam forming flange elements to form the crimp seal. Thereafter, the seaming rollers 28 are withdrawn and the assembly is removed from the sealing machine after which the package is removed from the form 25, the form being then returned to the entry end of the machine for repeating the packaging operation.

The package may be fabricated with a preformed cover or container member which is modified as illustrated in FIGURE 6. In this form of the container 40 the side wall forming portion 41 thereof is corrugated with the corrugations extending circumferentially so as to allow for some expansion of the product in a direction normal to the top wall 42. The cover member 40 is otherwise constructed as shown in the form illustrated in FIGURES 1 to 5 with a stepped flange formation 43 at the edge of the open face which is identical with the flange formation 15 having an inner flange portion 44 and an outer securing flange portion 45 connected thereto by a cylindrical wall section 46. The folds or corrugations in the side walls permit the depth of the package to be varied and under vacuum packaging the folds will be compressed so that the cover will conform to the product.

A further modification of the preformed cup shaped cover or container member is illustrated in FIGURE 7. This form of the container 50 comprises integral end and side walls 51 and 52 with the cylindrical side wall 52 being provided with peripherally spaced, axially extending fold formations 53 which permit some variation in the diameter of the product being packaged. The side wall 52 is provided with a stepped edge flange formation 54 which is identical with the corresponding edge flange formations 15 and 43 in the previously described forms of the cover member.

While particular materials and specific details of construction have been referred to in describing the forms of the package which are illustrated, it will be understood that other materials and different details of construction may be resorted to within the spirit of the invention.

We claim:

1. A package which consists of a food product in the form of an upright mass, a relatively thin rigid metal disk having a center portion on which the product is supported and an outwardly extending peripheral seam forming flange, a cover member for said product which comprises an inverted cup-shaped member of at least semi-rigid transparent plastic material snugly enclosing the product, said cover member being preformed and having a top wall, a depending side wall and an outwardly extending stepped flange formation on the edge of the side wall which flange formation includes a relatively narrow shoulder forming inner flange and a relatively narrow seam forming outer flange portion connected to the innermost flange portion by a relatively narrow cylindrical wall forming portion, said innermost flange portion being seated on the marginal edge of the product supporting portion of said

5

metal disk and said outer seam forming flange portion being in tightly coiled seam forming relation with the seam forming flange of the metal disk, and the side wall of said cover member having peripherally extending fold formations therein whereby to accommodate the cover member to changes in the volume of the product in said package.

2. An hermetically sealed food package which consists of a food product arranged in the form of an upright mass, a relatively thin rigid metal disk having a raised center portion on which the product is supported and a flanged seam forming edge portion providing an upwardly facing, peripherally extending pocket, a cover member for said product which is in the form of an inverted cup-shaped member of at least semi-rigid transparent plastic material snugly enclosing the product, said cover member being preformed to provide an outwardly extending, downwardly stepped flange formation on its peripheral edge which flange formation comprises a shoulder forming inner flange portion seated on the peripheral margin of the product supporting portion of said metal disk and a seam

6

forming outer flange portion which is in a plane offset downwardly of the plane of the inner flange portion and which is seated in the pocket provided in the seam forming edge portion of the metal disk, with the seam forming flange portions in tightly coiled seam forming relation and with a sealing compound in said pocket between the opposed faces of the seam forming flange portions.

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