

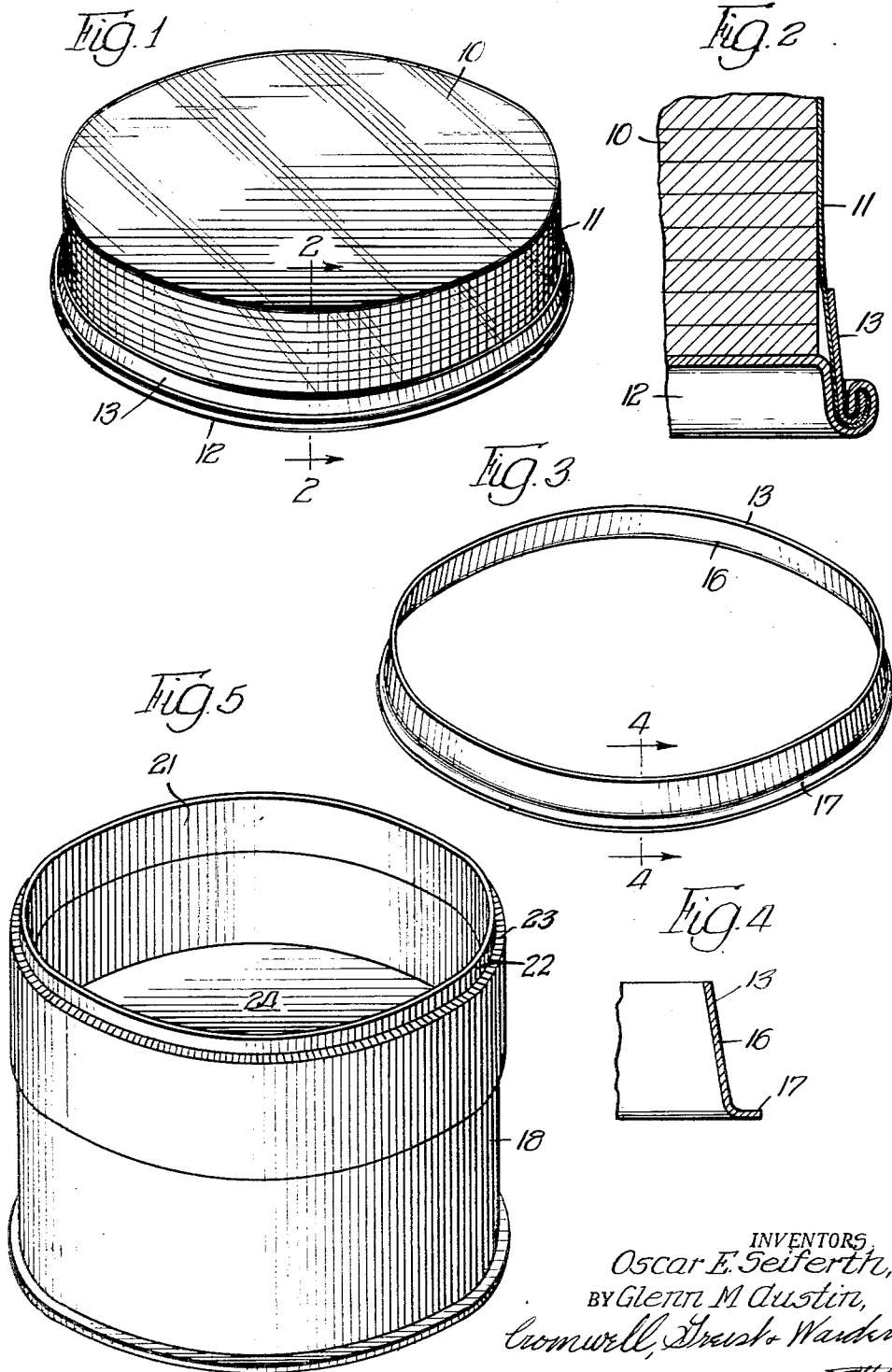
May 31, 1960

O. E. SEIFERTH ET AL
FOOD PACKAGE

2,938,801

Filed Nov. 21, 1955

2 Sheets-Sheet 1



INVENTORS
Oscar E. Seifert,
BY Glenn M. Austin,
Cromwell, Trust & Warden
Attys

May 31, 1960

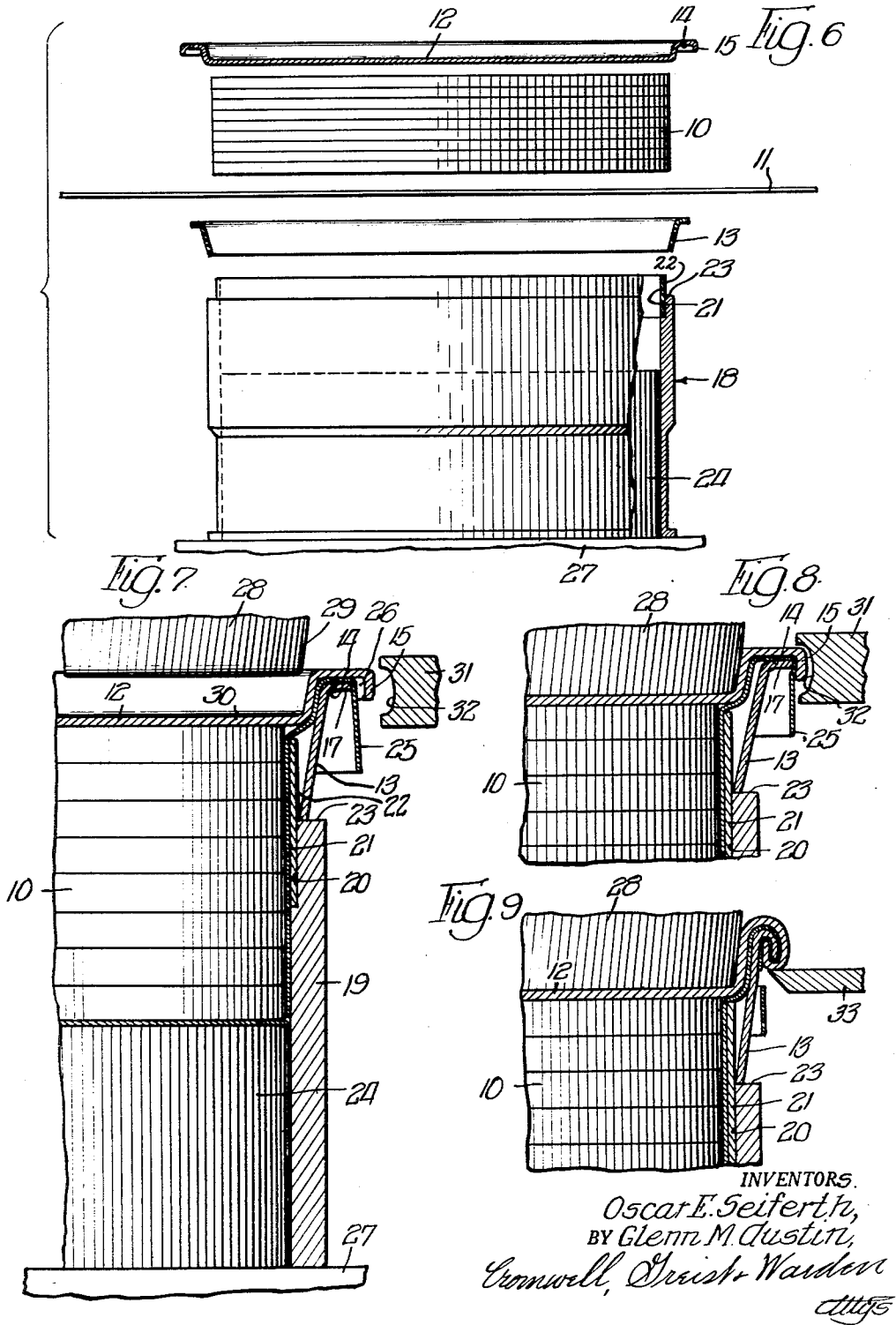
O. E. SEIFERTH ET AL

2,938,801

FOOD PACKAGE

Filed Nov. 21. 1955

2 Sheets-Sheet 2



1

2,938,801

FOOD PACKAGE

Oscar E. Seiferth and Glenn M. Austin, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois

Filed Nov. 21, 1955, Ser. No. 548,093

6 Claims. (Cl. 99—174)

This invention relates to packaging and is more particularly concerned with improvements in a package and a method and apparatus for forming the same in which a predetermined quantity of a product is enclosed in a relatively flexible transparent wrapper 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 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 wrapper in the form of a bag, a closure therefor in the form of a relatively rigid panel member, and a predetermined quantity of a food product arranged therein so that it is supported by the rigid closure member and visible through the bag or wrapper which is arranged with its marginal edges in sealed relation with the closure member.

It is a more specific object of the invention to provide a package of a food product, for example, sliced bologna, and a method and apparatus for forming the same wherein a predetermined quantity of the sliced food product is arranged in superimposed stacked relation on a relatively rigid supporting member and enclosed in an impermeable transparent wrapper of relatively thin film material, the wrapper having its marginal edges in sealed relation with the marginal edges of the supporting member and wherein a relatively narrow band of at least semi-rigid material is arranged around the product with one end thereof which is adjacent the margins of the supporting member secured in crimped relation to the peripheral portions of the supporting member and the marginal edges of the transparent wrapper.

It is another object of the invention to provide a package of a sliced meat product and a method of forming the same wherein a plurality of the slices of the product are arranged in stacked relation with one end of the stack supported on a bottom forming metal disk and with the sides thereof enclosed in a relatively thin flexible transparent wrapping material and wherein a peripheral band of at least semi-rigid continuous plastic material encompasses the end of the product which is adjacent the bottom forming metal disk with the marginal edges of the wrapping material and the end of the band being crimp sealed to the edges of the bottom forming metal disk while the package is vacuumized whereby to form a hermetically sealed package.

It is another object of the invention to provide a hermetically sealed food package comprising a rigid metal panel member, a relatively thin narrow band formed of at least semi-rigid polystyrene plastic extending around the periphery of the panel member, a bag formed of a transparent film having the mouth thereof securely crimped between an outwardly flared edge of the band and the panel member and a quantity of a food product contained in the bag and supported on the panel member, the panel member having its marginal edge initially turned upwardly and the band having its adjacent margin

2

flared outwardly and the latter being adapted to be expanded sufficiently to bring the edge of the band with the margins of the bag material draped thereover into snug engagement with the upwardly turned edge of the panel member whereby the edges of the material are held together while a crimp seal is formed thereon.

It is another object of the invention to provide in an apparatus for forming a package of the character described, a support for the bag forming film material and a predetermined quantity of the food product to be packaged therein together with the sealing band forming member and the rigid closure forming panel member while the margins of the latter are crimped sealed to the edge of the band and the margin of the film.

It is a further object of the invention to provide a method of forming a package of the character described wherein a supporting form is provided for the bag forming material and the product being packaged, which form has a ledge around the periphery of the upper edge for receiving a sealing band member with the marginal portions of the bag material draped thereover and a rigid panel member supported thereon while the marginal edges of the latter and the marginal portions of the bag and of the sealing band member are crimp sealed to each other.

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

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

Fig. 2 is a fragmentary section taken on the line 2—2 of Fig. 1 to an enlarged scale;

Fig. 3 is a perspective view of a sealing ring or band member which is employed in forming the package;

Fig. 4 is a fragmentary section taken on the line 4—4 of Fig. 3, to an enlarged scale;

Fig. 5 is a perspective view of a cylindrical support or holder member which is employed in forming the package;

Fig. 6 is an elevation of the support member shown in Fig. 4 with the package elements arranged above the same, portions of the view being broken away and other portions thereof being in section;

Fig. 7 is a fragmentary section on a diameter of the support member with the package elements assembled therewith in proper relationship for forming the crimp seal at the base of the package;

Fig. 8 is a fragmentary section similar to Fig. 7 with the support member and the package elements clamped in position for the crimp seal operation; and

Fig. 9 is a fragmentary section similar to Fig. 8 illustrating the completed crimp seal and trimming operation.

The package and the method of forming the same will be best understood by referring first to Figs. 1 and 2 of the drawings in which the completed package is shown. The illustrated package comprises a quantity of a product 10 which is indicated as a sliced bologna or similar material, a wrapper 11 of transparent sheet material, which is in the form of a bag and which encloses one end and the greater portion of the side walls of the product 10, a bottom forming closure disk 12, which overlies the open end of the wrapper in engagement with one end of the contents or product 10, and a relatively narrow band member 13 surrounding the end portions of the side walls of the product 10 and which is secured to the marginal portions of the wrapper 11 and to peripheral portions of the closure disk 12 in crimp sealed relation therewith.

The package is especially adapted for use in packaging

sliced products with a plurality of slices of the product arranged in superimposed relation and supported in upright stack forming condition on the closure disk 12. However, the package may be employed in the merchandising of various other products of a similar character such as sliced cheese, meat loaf or a solid block or the like.

The wrapper or bag forming member 11 is preferably a sheet of relatively thin flexible transparent film material such as vinylidene chloride, that is, "Saran," or other continuous plastic film or combinations of the same having similar characteristics. The film may be a single ply as illustrated in the drawings or it may be formed of a plurality of plies and for superior results, the plies are separated by a film of oil in the manner disclosed in co-pending application Serial No. 473,879, filed December 8, 1954, now Patent No. 2,787,552.

The closure disk or support member 12 comprises a substantially flat panel-like member preferably formed of rigid material such as sheet metal. The support member 12 may be round or square, depending upon the nature and size or shape of the product 10. The marginal portion of member 12 is adapted to be rolled into a crimped seal formation, or double seam as it is known in the canning art. As initially supplied, the member 12 is provided, as shown in Figs. 6 and 7, with a sealing channel 14 extending around the peripheral margin thereof and the peripheral side portions 15 may be turned slightly inwardly towards the center of the disk 12.

The sealing band or ring member 13, as shown in Figs. 3 and 4, consists of a frusto-conical section preferably formed of a suitable plastic material, for example, polystyrene. It is relatively thin but of sufficient thickness to give it substantial rigidity while at the same time permitting it to be stretched somewhat and to be cold worked without rupture. In cross section it consists of an upwardly and inwardly tapered wall section 16 and an outwardly flared relatively narrow flange-like base portion 17.

In forming the package, the product 10, the wrapper 11, the band 13 and the disk 12 are all assembled with a form 18, which is shown in Figs. 5 to 7, and which supports the package elements in assembled relation during the crimp sealing operation. The form 18 comprises a cylindrical section 19 which may be of any suitable metal such as iron or brass and which is provided at its uppermost edge with an inner peripheral recess or counterbore 20 in which there is secured by a press fit or the like a spring steel band member 21, the latter extending above the upper edge of the section 19 and providing thereon an outer peripheral recess or rabbet 22 with a bottom forming abutment shoulder 23 which is grooved or knurled as shown in Fig. 5. The supporting form 18 is provided with a bottom forming insert or disk 24 which may be removed and replaced by a like disk of a different height so as to produce packages of different depth or height.

In assembling the package elements for the crimp sealing operation, the band 13 is first positioned in inverted relation on the shoulder or ledge 23 of the form 18 as shown in Fig. 7. The wrapper sheet 11 is placed over the top of the form 18 with the band 13 in place and the stack of meat slices or other product is pushed down into the recess formed between the bottom forming member 24 and the top of the form 18 carrying the wrapper 11 with the same and allowing the marginal portions 25 thereof to extend in outwardly and downwardly draped relation over the bottom flange 17 of the band 13 as shown in Fig. 7. The bottom forming disk 12 is then positioned over the top of the assembled product 10 with the seal forming recess 14 encompassing the top edge of the flange 17 of the band 13. The normal outside diameter of the flange 17 of the band 13 is somewhat less than the inside diameter of the flanged marginal edge 15 of the closure disk 12 so that there is a definite clear-

ance 26 for the flange 17 to seat in the recess 14, as shown in Fig. 7. The assembly is at this stage positioned in a crimp seal forming machine of known type, such as a sealer used in the canning industry, which includes a platform or support member 27 and an upper clamping disk 28 which are movable relative to each other. The clamping disk 28 has its peripheral wall tapered at 29 to fit within the recess 30 in the top of the closure disk 12.

The assembly is positioned in the machine as shown in Fig. 7 with the seam forming portions of the package elements aligned with crimping rollers 31 which are mounted for radial movement in the crimping head and provided with peripheral crimp forming grooves 32. The package assembly and the supporting and clamping members are moved relative to each other to bring the clamping plate 28 into engagement with the closure disk 12 with sufficient pressure being applied to cause the band 13 to expand in a radial direction and force the flange forming portion 17 and the wrapper margins 25 into engagement with the flange 15 of the disk 12. The package assembly and the supporting structure for the seam forming rollers 31 are then rotated relative to each other and the rollers 31 are moved inward into engagement with the overlapped margins of the package forming elements to form the crimp seal. Thereafter, the projecting edge portions of the margins 25 of the wrapper member 11 are removed by a suitable cutter element which may be a cutting roller or disk 33 (Fig. 9). After the trimming operation the form 18 with the completed package therein is removed from the sealing machine and the package is removed therefrom, the form being then returned to its initial location for repeating the package forming cycle of operations.

While the form 18 is shown as a tubular section with a removable bottom forming member 24, it may be any shape desired depending upon the nature of the product which is being packaged. Also, the depth of the recess provided in the form may be readily adjusted by providing bottom forming inserts 24 of different depth. The diameter of the recess may also be varied by providing tubular inserts (not shown) of varying wall thickness which permits the use of the same size form 18 and the same size wrapping elements where the product is of less diameter than the normal diameter of the package. The details of the seam forming mechanism which are referred to are illustrative and the seaming operations may be performed with any suitable apparatus while the package forming elements are supported in assembled relation in the supporting form or jig 18. The package elements are clamped in the form 18 during relative movement of the form 18 and the crimp sealing members with sufficient pressure to prevent rotation of the package elements relative to the form 18, the corrugations on the shoulder 22 serving to resist any tendency of the plastic band 13 to rotate. The clamping plate 28 also forms an anvil opposite the crimping members 31 during the seam forming operation.

We claim:

1. An hermetically sealed package comprising a relatively thin rigid metal panel member, a quantity of a food product arranged to form an upright mass and supported at one end on said panel member, a bag formed of a relatively thin, pliable, continuous plastic film material enclosing the other end and the side walls of the product, and a relatively narrow, thin sealing ring member connecting the mouth of the bag with the peripheral edge portion of the panel member, said sealing ring member being in the form of a tubular section of a polystyrene plastic material having sufficient thickness to give it substantial rigidity and which is slightly stretchable and deformable, said sealing ring member having an outwardly extending flanged edge portion, said sealing ring member being arranged in encompassing relation with the mouth of the bag, said bag having the marginal edge portion of the mouth thereof reversely folded about the flanged edge

5

portion of said ring, and the edge portion of the mouth of the bag, the flanged edge portion of the sealing ring member, and the peripheral edge portion of the panel member being in double seam forming crimp sealed relation whereby the product is enclosed in hermetically sealed relation in said package.

2. A package which consists of a stack of relatively thin slices of meat arranged to form an upright mass, said package comprising in combination with said product a wrapper of transparent material which is draped over one end of the product in snug engagement with the top end and adjoining side walls thereof, said wrapper consisting of a relatively thin pliable transparent plastic film material, an open ended band member in the form of a tubular section of a continuous plastic material which is relatively thin, slightly stretchable and adapted to be cold worked without rupture, said band member having sufficient thickness to give it substantial rigidity, said band member being relatively narrow and being telescopically associated with the wrapper and enclosed product at one end only thereof, thereby to expose the other end of the product including substantial portions of the side walls thereof, and a substantially flat rigid metal disk closing the open end of said wrapper and supporting the adjoining end of the product, said wrapper having its margins reversely folded about the outer end edges of said band member, and said metal disk having its marginal edges in tightly coiled double seam forming relation with the marginal edges of said wrapper and with end edges of said band member, whereby to enclose the product in hermetically sealed relation in the package.

3. A package which consists of a stack of relatively thin slices of meat arranged to form an upright mass, said package comprising in combination with said product a wrapper of flexible material which is draped over one end of the product in snug engagement with the top end and adjoining side walls thereof, said wrapper consisting of a relatively thin transparent continuous plastic film material, an open ended band member formed of a continuous plastic material which is slightly stretchable and which is deformable without rupture when in the cold state and said band member having sufficient thickness to give it substantial rigidity, said band member being of substantially less length in the axial direction than the axial dimension of the product and being telescopically associated with the wrapper so as to enclose the product at one end only thereof whereby the other end of the product including substantial portions of the side walls thereof is visible through the transparent wrapper, and a substantially flat rigid metal disk closing the open end of said wrapper and supporting the adjoining end of the product, said wrapper having its margins reversely folded about the outer end edges of said band member, said band member having its end edges stretched and coiled into close engagement with the reversely fold margins of the wrapper and said metal disk having its marginal edges in tightly clamped and coiled relation with the marginal edges of said wrapper and the stretched and coiled end edges of said band member.

4. A method of forming a hermetically sealed food package which is characterized by a stack of relatively thin slices which is arranged in the form of an upright mass supported on a relatively rigid panel member having its peripheral edge crimp sealed to marginal portions of a wrapper of flexible plastic film which encloses the product and to the edge portions of a relatively narrow sealing band which is in the form of a tubular section of a polystyrene plastic material and which telescopes the end of the product adjacent the panel member, said sealing band being stretchable and deformable and having sufficient thickness to give it substantial rigidity, said method comprising placing the sealing band in edgewise engagement with end edge portions of a rigid hollow supporting form, positioning the wrapper and a quantity

6

of the product within the form with the margins of the wrapper draped over the open end of the form and the uppermost edge of the sealing band supported thereon, positioning a closure forming panel member of relatively thin metal having a seam forming flange thereon which is somewhat larger in diameter than the normal external diameter of the sealing band over the open end of the form with its seam forming flange surrounding the sealing band, applying sufficient pressure to the panel member to cause the sealing band to expand in an outward direction and bring the peripheral edge portion thereof and the marginal portions of the wrapper which are draped over said edge portion into snug engagement with the seam forming flange on the panel member, and forming a tightly coiled edge seam by crimp sealing the edge portions of the sealing band and the panel member with marginal portions of the wrapper between the same while said panel member is held under pressure and the sealing band is in expanded condition.

5. A method of forming a hermetically sealed package which is characterized by a mass of a food product supported in upright relation on a relatively rigid panel member and enclosed in a flexible plastic wrapper, said panel member having its peripheral edge crimp sealed to marginal portions of said wrapper and to edge portions of a relatively narrow sealing band which is in the form of a tubular section of a continuous plastic material and which telescopes the end of the product adjacent the panel member, said sealing band being stretchable and deformable and having sufficient thickness to give it substantial rigidity, said method comprising supporting the sealing band in edgewise engagement with end edge portions of a rigid hollow supporting form, positioning the flexible plastic wrapper and a quantity of the product within the form with the margins of the wrapper draped over the open end of the form and the top forming edge of the sealing band supported on the form, positioning a closure forming panel member of relatively thin metal having a seam forming flange thereon which is somewhat larger in diameter than the normal external diameter of the sealing band over the open end of the form with its seam forming flange surrounding the bottom forming edge of the sealing band, applying sufficient pressure to the panel member to cause the sealing band to expand in an outward direction and bring the peripheral edge portion thereof and the marginal portions of the wrapper which are draped over said edge portion into snug engagement with the seam forming flange on the panel member, and forming a tightly coiled edge seam by crimp sealing the edge portions of the sealing band and the panel member with marginal portions of the wrapper between the same while said panel member is held under pressure and the sealing band is in expanded condition.

6. A method of forming a hermetically sealed package which is characterized by a food product arranged in the form of an upright mass on a relatively rigid panel member having its peripheral edge crimp sealed to marginal portions of a flexible wrapper of plastic film material which encloses the product and to the flanged outer peripheral edge portion of a relatively narrow, thin, sealing band which telescopes the end of the product adjacent the panel member, said band being formed of a continuous plastic material which is stretchable and deformable and which has sufficient thickness to give it substantial rigidity, said method comprising supporting the sealing band in edgewise engagement with end edge portions of a rigid hollow tubular supporting form, assembling the wrapper and a quantity of the product within the form with the margins of the wrapper reversely turned over the open end of the form and the flanged edge of the sealing band supported thereon, positioning a closure forming panel member of relatively thin metal having a seam forming flange thereon over the end of the form with the seam forming flange extending around the edge of the sealing

7

band, applying sufficient clamping pressure to the panel member in the direction of the longitudinal axis of the form to cause the flanged outer edge of the sealing band to expand in the outward direction and move the turned over margins of the wrapper into tight engagement with the inner face of the seam forming flange on the panel member, and crimping the flanged edges of the panel member and the wrapper covered sealing band while they are held in tight engagement with each other to form thereby a substantially leak proof seam.

References Cited in the file of this patent

UNITED STATES PATENTS

1,537,384 Sullivan ----- May 12, 1925

1,955,851

2,614,727

2,621,129

2,652,148

2,754,959

2,780,045

2,787,552

8

Heller ----- Apr. 24, 1934

Robinson ----- Oct. 21, 1952

Ramsbottom et al. ----- Dec. 9, 1952

Pfiefer ----- Sept. 15, 1953

McCarty ----- July 17, 1956

Kabrick ----- Feb. 5, 1957

Seiferth ----- Apr. 2, 1957

OTHER REFERENCES

- 10 Molded Gasket Makes the Package, Modern Plastics, vol. 32, August 1955, p. 111.