

Aug. 3, 1971

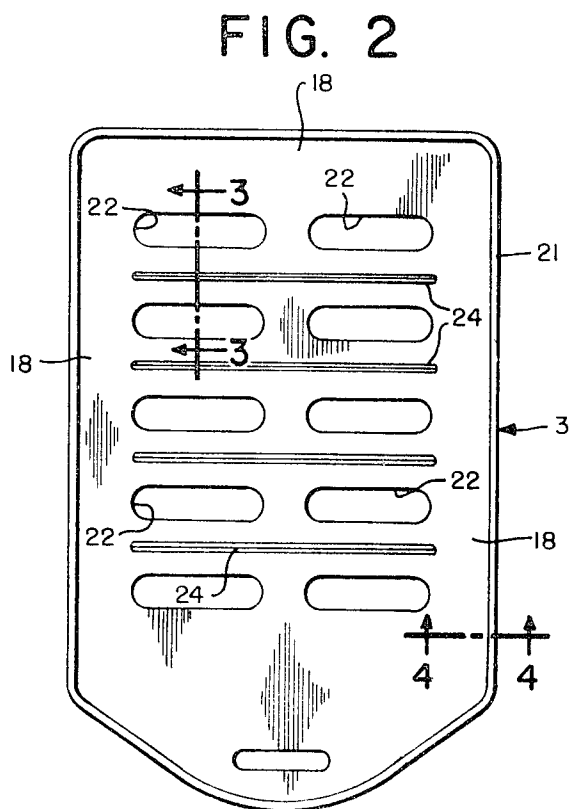
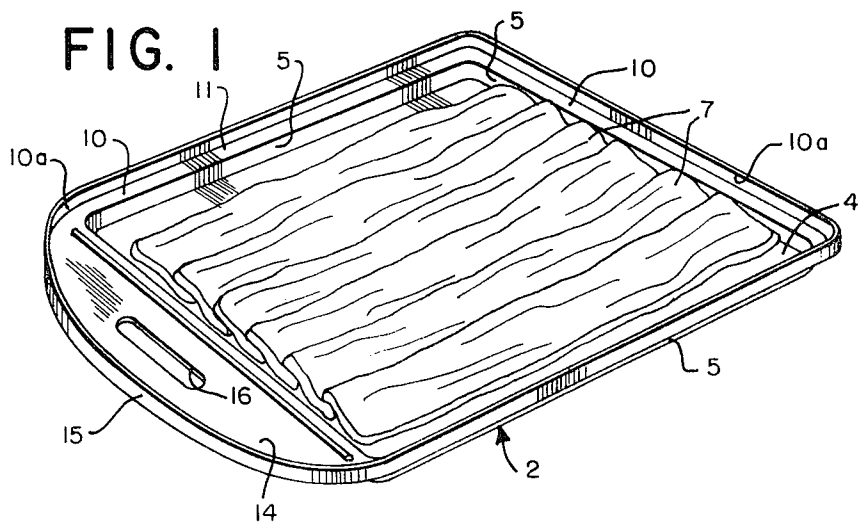
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3,597,238

PRE-COOKED FOOD PACKAGE

Filed May 14, 1969

2 Sheets-Sheet 1



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FIG. 3

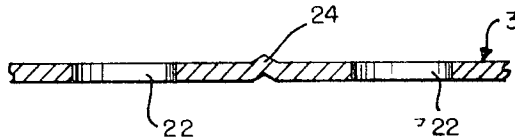


FIG. 4

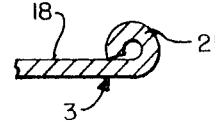


FIG. 5

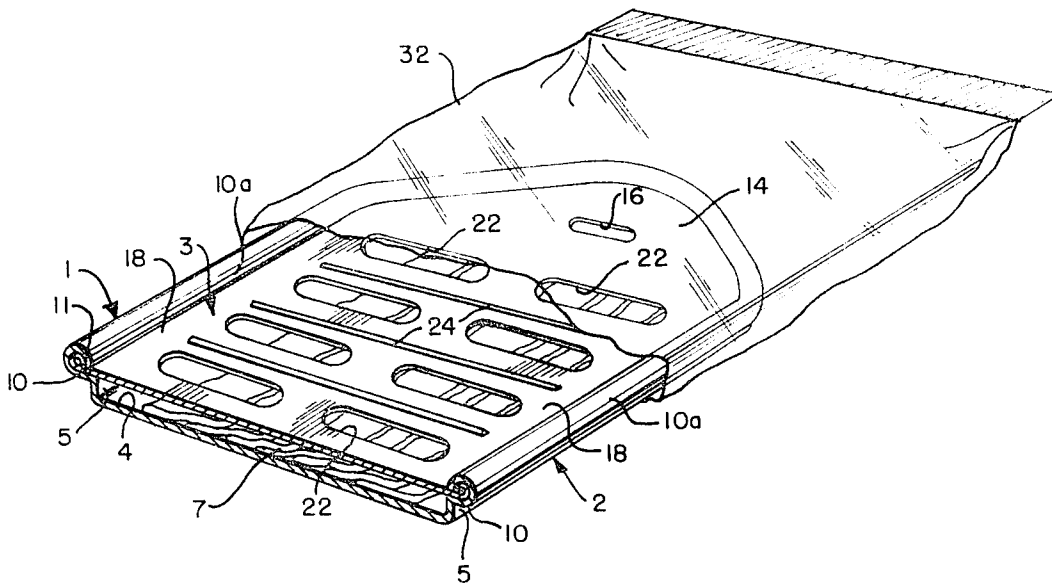
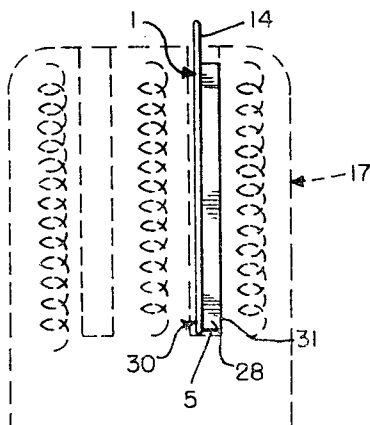


FIG. 6



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PRE-COOKED FOOD PACKAGE

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5 Claims

ABSTRACT OF THE DISCLOSURE

A package for containing pre-cooked foodstuffs and the like is disclosed consisting generally of a metal foil pan and lid, the lid having a plurality of vent openings and being strengthened by a series of embossed ribs extending transversely across the surface thereof, the construction being such that the pan and lid together support the food contents in an upright manner when the package is inserted into a toaster. The exterior of said package is coated with a dielectric insulating composition and the entire package is disposed within a hermetically sealed outer wrapping.

BACKGROUND OF THE INVENTION

Present food preparation and packaging techniques have developed a need for containers which may package pre-cooked foods of various kinds and which serve additionally as a cooking utensil.

This need has been particularly great in the packaging of preprocessed foodstuffs such as bacon, sausage products and the like into a package which can be inserted into a conventional toaster for cooking. The meat is usually pre-cooked before packaging so that all that remains for the housewife to do by way of final preparation is to heat the contents of the package to the proper temperature and serve. By constructing the package of dimensions suitable for insertion into a conventional toaster, the housewife can take advantage of the automatic timing device associated with such a toaster.

While packages containing preprocessed foodstuffs of the prior art have been proposed, their construction has been such as to militate against their everyday use. One drawback to prior packaging of this type is the manner in which the contents are hermetically sealed to prevent spoilage. Such hermetically sealed packages have usually been made by sealing the overlapping margins of sheets of metal foil, the opposed surfaces of which have been provided with a liner of heat-sealable and heat degradable thermoplastic sealing material, so that when pressed together under the influence of heat, a hermetic seal is formed around the edges of the package. However, due to the buildup of steam or other hot gases as the contents are heated, such a package must be provided with sufficient venting to permit escape of such gases to prevent the package from bursting while being heated.

Many venting means heretofore developed are complex requiring elaborate steps in the manufacturing process and sometimes necessitating the performance of a preliminary operation on the package by the housewife prior to heating. Thus venting and hermetic seals have often been found to fail. This is because known means of venting must not impair the hermetic seal required prior to the time when the package is heated. Another problem not wholly solved by prior art packaging devices is the prevention of short circuits should a package come into contact with electric heating elements, as in a toaster for example.

Packages of the prior art often failed to provide easy opening for removal of the contents after heating. This is particularly true of those packages which require the package itself to be hermetically sealed, since the adhe-

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sive bond between the sheets of the package made opening of the package very difficult.

Finally, packages of the prior art have many times failed to provide a means whereby the contents of the package can be inspected prior to use. Inspection is desirable so that spoilage resulting from a faulty package can be detected prior to heating and appropriate steps taken to remedy the situation.

SUMMARY OF THE INVENTION

The subject matter of this invention relates to a package for cooking and heating preprocessed foodstuffs which is adaptable for use in various manners, such as in a toaster, hot plate or on a stove burner, broiler or oven, as typical examples. The package comprises a metal foil pan having a bottom surface and an upright side wall and a lid to cover said pan. The lid, bottom surface and the lower side wall together hold and support the food contents in an upright position in a toaster. The lid is provided with a plurality of openings on its surface and is clamped to the pan by an overlapping flange attached to said pan and extending laterally outward from the side walls thereof. The flange is folded inwardly to overlap a raised rim extending along the edge of the lid and pressed firmly into contact therewith to clamp the lid and pan together into a unified package. The lid is further provided with a series of embossed ribs extending transversely across the lid's surface intermediate to the vent openings therein. The package has a slotted handle which extends laterally outward from the side wall of said pan. A dielectric coating is disposed on the exterior surface of the package.

The vent openings in the lid serve several important functions. Foremost among them is that these openings facilitate the transmission of infrared heat radiation through the lid stock to the contents of the package. These openings further provide a built-in ventilation system while at the same time providing windows for inspecting the contents of the package, all of which will be more fully explained hereinafter. Furthermore, because of the interrelation of ribs and vent openings, marginal edges of the vent openings form gripping edges to support the food contents when in an upright position and the interior of the ribs permit internal venting transversely of the package. Hermetic sealing is provided by an outer wrapping that is separate and distinct from the package which will be inserted into the toaster for heating. By providing such an arrangement, ventilation of the package necessary in the heating phase is accomplished without any danger that the venting means will interfere with the hermetic seal required to be present prior to the time the package is inserted into the toaster for heating. When it is desired to heat the package, the hermetically sealed wrapping is merely removed and discarded and the package inserted into the toaster in much the same way that any food is removed from its package for cooking. The need for performing a preliminary operation on the package itself to insure proper venting while at the same time exercising proper caution to insure that the package is not unduly torn is thereby eliminated.

Various other detailed advantages of the invention will in part become apparent and in part be stated in the following detailed description of the same.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an isometric view of the pan;

FIG. 2 is a plan view of the lid;

FIG. 3 is a cross-sectional view of the lid taken along lines 3—3 of FIG. 2;

FIG. 4 is a cross-sectional view of the lid taken along lines 4—4 of FIG. 2;

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FIG. 5 is an isometric cross-sectional view of the pan and lid in assembled condition; and

FIG. 6 is a cross-sectional view of the toaster and the package contained therein.

DETAILED DESCRIPTION OF THE INVENTION

The assembled package 1 is basically constructed of a pan 2 and a lid 3, and is best seen in FIGS. 1-5. The pan 2 is a shallow, drawn metal foil pan which has a bottom surface 4 and upright side walls 5 so as to define a receptacle into which the contents 7 can be inserted. The depth of the pan is quite shallow. In the illustration shown in FIG. 1, the contents consist of strips of pre-cooked bacon arranged in shingled fashion. However, in keeping with the intended use of this package, the contents may consist of other appropriate foods, pre-cooked or otherwise.

A flange 10 extends peripherally and perpendicularly from side walls 5. Also extending laterally outward from the side walls 5 is a handle 14. The handle 14 is mounted at its outer edge 15 and is provided with a slot 16 centered on the outermost surface area thereof to aid in inserting the package into and out of the toaster 17 (FIG. 6). The flange 10 is provided with a raised lip 10a for a purpose which will be presently made clear.

The lid 3 extends across the opening of the pan 2 and has a marginal portion 18 overlying the upper surface 11 of the flange 10. The lid 3 is preferably made of a continuous strip of metal foil such as aluminum or a pre-formed stamping of a coated metal formed to have a curled edge or raised rim 21 (see FIG. 4).

The lid 3 is further provided with a plurality of openings 22 which in the illustrated embodiment are symmetrically disposed over the surface of the lid with an equal number of such openings on each half of the lid surface. These openings 22 provide several important advantages. Most notably these openings facilitate the transmission of infrared heat radiation to the contents of the package. Additionally, these openings provide windows through which the contents of the package can be inspected for spoilage or other deterioration which may have occurred. Finally, these openings provide a means by which to vent the package as it is being heated, thereby permitting gases and moisture generated in the heating process to escape.

While the openings 22 are shown in FIG. 2 as having a substantially rectangular shape with rounded ends, they may be of any other shape suitable for achieving their intended function and can be formed by subjecting the metal foil of which the lid is made to any suitable stamping or punching operation. It should be noted, however, the experimentation has indicated that these openings should preferably comprise at least 50 percent of the surface area of the lid 3 to obtain optimum conditions for infrared heat transmission and package strength.

Extending transversely across the surface of the lid 3 and disposed between adjacent rows of openings 22 are embossed ribs 24. These ribs can be formed in any suitable manner, which usually consists of passing the metal foil strip of which the lid is constructed between a pan of positively driven corrugating or embossing rollers (not shown) provided with cooperating ribs and depressions adapted to provide such strip with the required number of embossed ribs arranged in appropriate spaced relationship.

The ribs 24 serve an important function of adding strength to the lid 3. By this means, not only is packaging strength improved but the lid itself is made strong enough to cooperate with the bottom 4 in securely holding the food contents in an upright position when the package is inserted into a toaster. Furthermore, the spacing of ribs 24 intermediate openings 22 produces certain other desirable effects. The marginal edges of the lid which define the vent openings bear against the food contents to secure such contents in an upright position while the relieved internal areas of the lid formed by embossed ribs 24 provide an additional means of internal venting.

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Also, as is apparent by reference to FIG. 2, the ribs 24 end at some distance from the raised rim 21 extending along the edge of the lid 3. Therefore, the lid could be further strengthened and internal venting promoted by increasing the number of such ribs by placing such ribs in different locations over the surface of the lid 3, or by positioning such ribs in a different orientation from that shown in the drawings. For instance, the embossed ribs could be provided in the open area at each end of the embossed ribs shown in FIG. 2.

The manner in which the lid and pad are clamped together to provide a durable and sturdy unitary package is best understood by reference to FIG. 5. As stated previously, strips of bacon 1 are arranged in shingled fashion in the bottom surface 4 of the pan 2. The lid 3 is then placed across the opening of the pan 2 in such a manner that its marginal portion 18 overlies the flange 10. The lip 10a of the flange member 10 is then folded inward over the rim 21 of the lid 3 and pressed firmly into contact therewith so that the lip 10a is in mating contact with the rim 21, thereby forming a mechanical interlock between the pan and the lid. Thus, it is clearly seen as indicated previously, that in addition to adding strength to the lid 3, the rim 21 also provides a gripping surface for the flange lip 10a which effects a strong mechanical interlock between the pan and the lip.

If the toaster is to be kept in working order, it will become apparent in packages of the type described above that it is necessary to prevent drippings, which are generated as the bacon is cooked or reheated, from spilling out into the internal parts of the toaster. In this connection, the assembled package of this invention provides a trap 28 for collecting such drippings while the package is disposed within the toaster 17 for heating. The trap is indicated in FIG. 6 and is defined generally by the lowermost portions 30 and 31 of the lid and pan respectively. The term "lowermost" is used only in connection with FIG. 6 which shows the assembled package in its operative upright posture within the toaster 17.

When the package has been sufficiently heated in the toaster 17 to ensure thorough cooking of the bacon or other contents 7, the package is removed from the toaster by means of handle member 14 and is easily opened by merely unfolding the flange lip 10a from its clamped position around the raised rim 21 and successively removing the lid and contents of the package. Alternatively, the package may be opened simply by placing a knife or other suitable kitchen utensil under the lid by inserting the knife through one of the openings 22 in the lid 3 and gently prying upward. This prying action will loosen the mechanical interlock between the flange member 10 and the raised rim 21, thereby permitting the lid 3 to easily slide out from under the flange member 10.

It will be appreciated that immediate problems arise when a metal foil package as contemplated by this invention is inserted into an electrical appliance, such as a toaster. For such intended use, it is essential that the package be protected from the current in the electrical appliance in order to insure the safety of the person inserting and removing the package. For this reason, the entire exterior surface of the package is coated with a dielectric coating composition which has properties sufficient to resist the passage of current through the package. In this connection, it will be readily apparent that the exterior surfaces of the pan and lid, must be coated.

Furthermore, in order to obtain uniform heating over the entire package in the shortest possible time once the package has been inserted into the toaster, it is desirable to diminish as much as possible the repelling effect a metal foil surface would have on infrared radiation. It is apparent that those portions of the contents which are shielded by the metal foil of the pan and lid will absorb infrared heat radiation at a slower rate than those portions of the contents which are located adjacent to the openings 22 of the lid 3 and therefore directly exposed to in-

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frared heat radiation. To overcome this repelling effect, the coating should also be highly absorbent to infrared radiation. It has been found that a good dielectric coating composition to use for such a purpose is a clear silicone lacquer.

From the foregoing description of the package which is the subject matter of this invention it will be readily seen that air and atmospheric impurities associated therewith can easily come into contact with the contents of the package through the openings 22 in the lid 3 causing possible spoilage and decay. This problem is not particularly acute if the contents of the package is kept in a frozen state. However, for numerous reasons apparent to those skilled in the art, freezing certain foodstuffs has proved impractical.

To overcome this problem while the package is being handled in the various channels of commerce before use by the ultimate consumer, the package is provided with an outer wrapping 32 in the form of a printed, transparent pouch gassed with nitrogen and hermetically sealed. Such outer wrapping 32 permits the package of this invention to be handled under ordinary storage conditions needed to preserve the contents.

Providing a barrier to air and other gases by use of a separate hermetically sealed outer wrapping eliminates the need for providing the package itself with a hermetic seal. Such an arrangement as previously noted effectively eliminates the difficulty associated with packages that have considered it necessary to hermetically seal the package itself while at the same time developing an effective venting means to allow escape of gases while the package is being heated in the toaster.

While a preferred specific embodiment of the invention has been heretofore described, it is to be clearly understood that various modifications can be made in the details of the invention described herein without departing from the spirit of this invention or from the scope of the appended claims.

I claim:

1. The combination of a package and a foodstuff such as strips of bacon and the like contained by said package, said package comprising an elongated, shallow drawn body of metallic foil of an exterior size and shape for insertion into a conventional electric toaster, a lid forming a closure for said body, said foodstuff being sandwiched between said lid and body and supporting the same while being located in an upright position in said toaster, a handle connected to said body to extend from said toaster, a plurality of elongated vent openings defined by said lid

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across the width thereof, an outwardly protruding rib intermediate each of said openings across the width of said lid and relieving interior portions of said lid immediately adjacent said foodstuff to provide internal vent means, said openings being of sufficient size to permit inspection of the foodstuff and to admit large amounts of radiant heat to enter the interior of said container while internal edge portions of said openings form gripping surfaces to support the foodstuff upright during heating in the toaster.

2. The combination according to claim 1 in which said package is coated with an infrared absorbent dielectric coating.

3. The combination of claim 1 in which said vent openings comprise at least 50 percent of said lid area.

4. The combination of claim 1 which includes mechanical interlock means to secure said lid to said body, said interlock means comprising a flange extending laterally adjacent to the upper edge of said body, a flange lip extending perpendicularly upwardly from said flange along the periphery thereof, said lid having a raised rim about its periphery, said lid being disposed across the body opening and overlapping inner portions of said flange, said flange lip being folded over the outer edges of said lip to clamp said lid to the body.

5. The combination of claim 1 further comprising an outer wrapping which is hermetically sealed to prevent spoilage of the foodstuff contained within said package due to atmospheric contact.

References Cited

UNITED STATES PATENTS

2,881,078	4/1959	Oritt	99—174X
2,912,336	10/1959	Perino	99—174
3,083,107	3/1963	Tindall	206—45.33X
3,185,372	5/1965	Ferraro	99—174UX
3,219,460	11/1965	Brown	99—174UX
3,410,700	11/1968	Gstohl	99—171(H)X
3,469,998	9/1969	Lane	99—174X

FOREIGN PATENTS

671,933	5/1952	England	99—171(H)
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