

Nov. 7, 1967

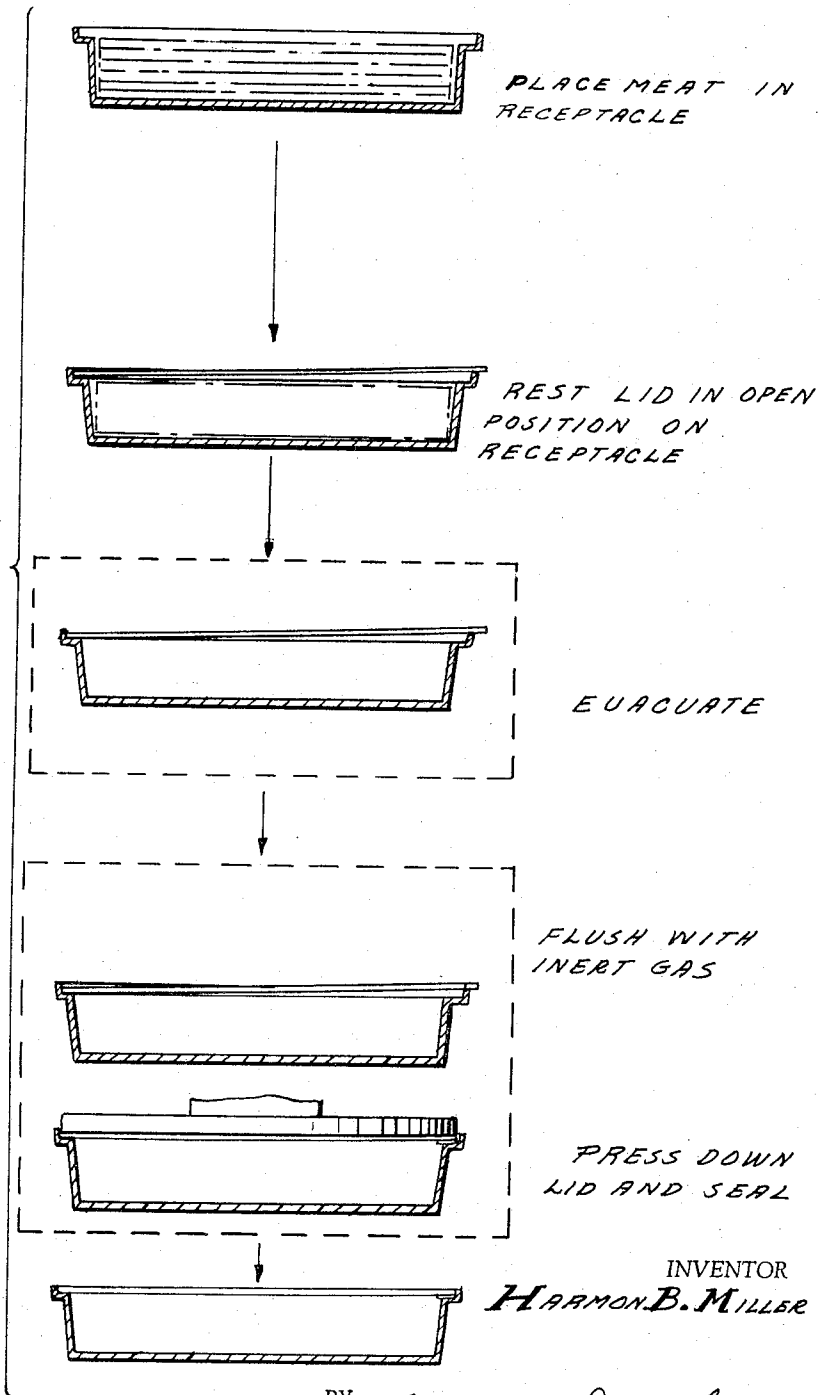
H. B. MILLER
CONTAINER AND CLOSURE

3,351,265

Filed July 24, 1964

2 Sheets-Sheet 1

Fig. 1.



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2 Sheets-Sheet 2

Fig. 2.

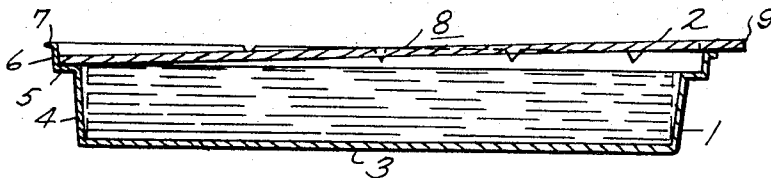


Fig. 3.

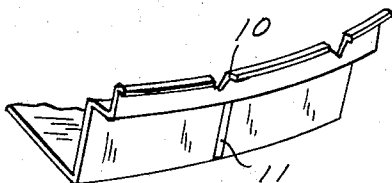


Fig. 4.

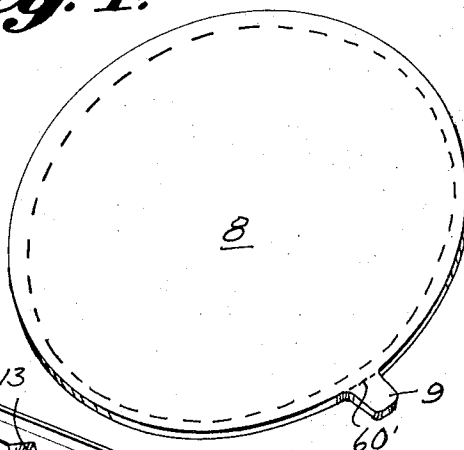


Fig. 5.

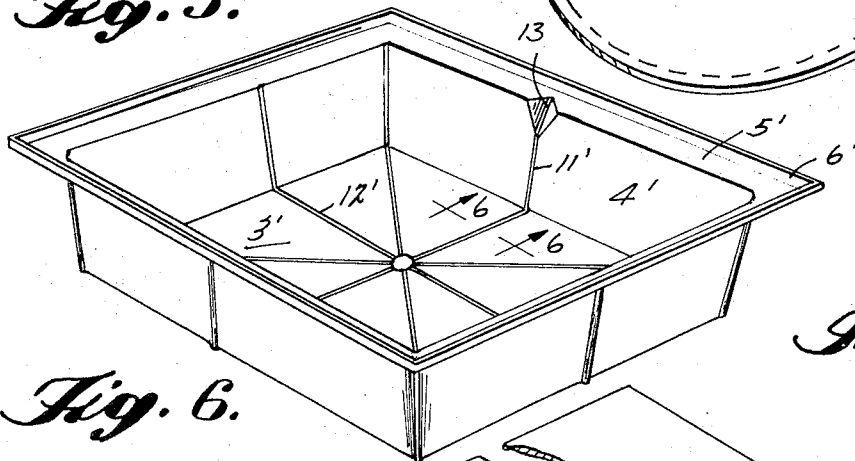


Fig. 6.

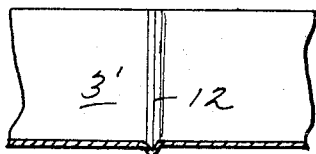


Fig. 8

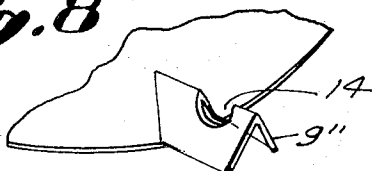
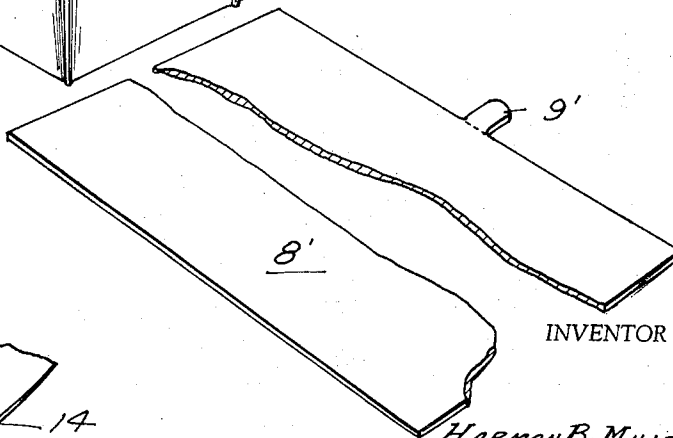


Fig. 7.



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CONTAINER AND CLOSURE

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3 Claims. (Cl. 229-43)

The present invention relates to packaging and, more particularly, to packaging in containers of rigid, transparent or translucent plastic of products such as sliced luncheon meats and other perishable goods. The invention embraces a novel package construction and a method of using it so as to remove air and fill it with an inert gas.

It is an important object of the present invention to provide improvements in the packaging of sliced luncheon meat for display in open cases of self-service stores. A large proportion of all sliced luncheon meats such as ham, salami, corned beef and bologna sold is now prepackaged in transparent plastic wrapping for display in refrigerated cases. Several types of package are available for such purposes. Of these, many are constructed of flexible plastic film wrapped tightly about the meat. Recently stiff backings have been used and the meat has been wrapped in a flexible plastic film secured to the rigid backing. One form of this type of package which is used is made under United States Patents 2,787,552 and 3,086,869.

There is a significant disadvantage inherent in most packages made of flexible wrapping in that they are not permanent receptacles for the contents. Frequently, the flexible wrapping must be torn or unfolded to remove the contents, making reclosing difficult. In addition, when the contents are removed, it is often difficult to replace the unused portion.

Because of these difficulties, a package has recently been made available which has a compartment of a rigid transparent plastic sheet and a metal lid. The metal lid has a beaded edge which engages the edge of the plastic compartment and a tacky material is employed to releasably seal and reseal these edges together.

The new package has enjoyed considerable success and has been well received because of its advantages and more attractive appearance. However, it is considerably more expensive than packages made of flexible films, costing approximately two cents more per package at the present time. This extra cost must be balanced by the use of poorer quality meat if the packaged product is to remain competitively priced. Consequently, there is a need for a rigid plastic package which has the advantages of this construction but which can be produced at approximately the same cost as those constructed of flexible packaging material.

There is another problem associated with packaging sliced luncheon meats owing to their sensitivity to oxygen in the air. Because of this problem, it has been customary to subject the packages to fairly strong vacuum before sealing. Vacuum is particularly useful with packages wrapped in flexible film because the film is drawn against the contents to provide a neat package. However, this is not entirely satisfactory because the vacuum tends to draw moisture and flavor from the meat and give it a slimy appearance.

In accordance with the present invention, a package is provided which possesses the advantages of the above-

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described rigid plastic container and which is adapted to package sliced luncheon meats enclosed in a blanket of inert gas, thereby avoiding previous difficulties associated with vacuum packaging. This package, because of its construction, will be significantly less expensive than the previously described rigid plastic container.

The package comprises a hollow receptacle member or compartment of rigid plastic sheet having a bottom and sides and a laterally-extending, generally flat sealing flange at the upper edges of the sides. An upright lip extends from at least a part and preferably all of the outer edge of the sealing flange for uses to be described more fully herein. A lid is provided of approximately the same size and shape as the upper portion of the container which is sufficiently large to overlie the sealing flange and fit relatively tightly against the inner side of said lip. The lip has a laterally protruding tab which, prior to closing the container, rests on a lip, and which is bent, during the closing step, to permit the lid to be pressed down against the sealing flange. When closed, the lid is preferably heat sealed to the sealing flange.

The invention now will be described in detail in connection with the preferred embodiments and by reference to the drawing in which:

FIGURE 1 is a flow diagram showing in cross-section a package of luncheon meat being subjected to the several steps of the process;

FIGURE 2 is a vertical cross-section through the center of a package of luncheon meat prior to closing;

FIGURE 3 is an enlarged view in perspective of a portion of a receptacle used in the package of FIGURE 2;

FIGURE 4 is a perspective view of a lid used in the embodiment of FIGURE 1;

FIGURE 5 is a perspective view of another form of receptacle;

FIGURE 6 is an enlarged perspective view, partially in section, along lines 6-6 of FIGURE 5;

FIGURE 7 is a perspective view of a lid for use with the receptacle of FIGURE 5; and

FIGURE 8 is a perspective view of a part of a modified form of lid.

As shown in FIGURE 2, the package comprises a receptacle or compartment 1 and a lid 2. The receptacle has a bottom portion 3, which in this embodiment is circular and flat, and an upright wall 4 extending upwardly from the sides of the bottom portion 3. This wall is tapered somewhat outwardly and upwardly to provide for more easy insertion of meat slices into it. At the upper end of the wall 4, there is an outwardly extending horizontal and flat sealing flange 5 and, projecting upwardly from the outer edge of this flange is a lip 6. The upper edge of the lip is rolled over at 7 to prevent it from cutting the hands of a person handling the container.

As shown in FIGURE 4, the lid 8 of the container is circular and has a tab 9 extending from one side thereof. Preferably the lid is grooved along line 109 to make the tab 9 foldable in relation to the lid 8. The diameter of the lid 8 is approximately equal to the outer diameter of the sealing flange 5 so that, when the package is closed, the outer edges of the lid will fit snugly against the inner wall of the lip 6. Initially, the lid is placed on the receptacle 1 with the tab 9 unfolded and lying against the upper edge 7 of the lip 6. The opposite end of the lid 8 designated by 9 in FIGURE 2 rests down against

the sealing flange 5. With the lid thus propped open, it is possible for air to be evacuated from the container and for inert gas to be swept through it to drive out portions of the air.

As shown, particularly in FIGURE 3, the lip 6 has notches 10 through it. This preferred embodiment facilitates the entrance and exit of gases into and from the container. These notches may extend throughout the perimeter of the container or be only in one part thereof.

The receptacle 1, in addition to the means described above for permitting access to the meat by inert gas has grooves 11 on its vertical side walls which communicate with the upper portion of the receptacle for ingress and egress of gases. Efforts have been made to provide a similar effect by the cutting of a notch in the meat itself. However, this is not entirely satisfactory because the freshly cut and exposed meat surfaces tend to discolor much more quickly than the outer surface of the meat as it is obtained.

The mating surfaces of the sealing flange 5 and outer portion of lid 8 is covered with a suitable heat-sealing coating. After the container has been filled with inert gas, the lid is pressed down, e.g., with a metal plunger, and heat is applied to the outer portion of the lid to cause sealing. Any known heat-sealing composition may be used, but it is preferred to employ one of the type which is relatively weak. This type permits the consumer to open the package by breaking the heat seal. Heat seals of this type are well known to those skilled in the art and of themselves form no part of the present invention.

In place of heat sealing, it is possible to employ a pressure-sensitive coating on the sealing flange, the outer portion of the lid or both. Coatings of this type are well known to those skilled in the art.

The receptacle 1 may be made of any substantially rigid plastic material which is transparent or translucent such as Mylar, polyethylene, polypropylene and the like. The plastic may be coated with another plastic, such as Saran, to improve its gas barrier properties. The sheet must be relatively thick to render it essentially non-flexible, at least to the extent that it will assume a permanent shape when subjected to heat-forming operations. For example, in the case of Mylar, the sheet should be at least about 1.5 mils thick. This sheet is given the shape of the receptacle 1 shown in FIGURE 2 by conventional plastic working techniques.

The lid may be of any suitable stiff material. However, since it will usually be printed, a stiff glassine paper will be particularly satisfactory. The back of the paper may have a layer of barrier material such as Saran or silicone, and, in its outer area, a heat seal or pressure-sensitive layer to effect sealing with the sealing flange 5.

In FIGURE 5, there is shown another embodiment in which the package is square. The package has a bottom 3', side walls 4', a sealing flange 5', and a lip 6'. In this case, the edges are not rolled but have been treated to make them relatively round and non-hazardous. There is used with this receptacle a lid 8' which has a tab 9' employed in the manner described above. There are grooves 11' in the walls 4' of the container and additional grooves 12 communicating with the grooves 11' and extending transversely across the bottom of the container. In addition, on one side, there is a notch 13 at the upper edge of the wall 4' which communicates with the groove 11' and further facilitates the ingress and egress of air and gases. When a lid is placed on this container, the tab will be positioned adjacent the notch 13 so as to facilitate movement of air and inert gas.

A further embodiment of a lid is shown in FIGURE 8 in which the tab 9'' is folded upwardly at its center to provide a ready passageway for air. In this embodiment, there also is a circular hole 14 through the tab 9'' which is employed in hanging the container. This hanging feature is particularly adapted to a new form of display case. In these new cases, meat and other products are

suspended from rods over a case and a "curtain" of refrigerated air is flowed over them continuously.

The preferred embodiments illustrated in the drawing have a lip 6 extending around the entire perimeter of the container. However, it is possible to use a lip extending only a part of the distance around the container. In the preferred embodiments, the lip holds the lid 8 in place by frictional engagement with it when the container is re-closed. If the lip does not extend around the entire container, the lid correspondingly will not be held in place as well. However, when a pressure-sensitive adhesive is employed in place of or in addition to the heat sealing, frictional engagement between the lid 8 and the lip 6 is less necessary.

In use, sliced meat is placed in the receptacle 1 and a lid is placed over it as shown in the first two steps in FIGURE 1. Then the meat is placed in a chamber of at least partially reduced vacuum and air is removed. It is then placed in a chamber in which an inert gas is present, preferably at a pressure slightly above atmospheric. The inert gas may, for example, be carbon dioxide or nitrogen. Then a plunger is pressed down against the top of the lid, which causes the tab 9 to be folded back along score line 109 and the lid moves against the sealing flange. If heat sealing is used, the outer portion of the plunger is heated and remains against the lid until heat sealing is effected.

It will be appreciated that, while the invention has been described with reference to sliced luncheon meats, various other food and other products may be packaged in the containers described. The shape of the container may be modified to accommodate various articles as necessary, and other changes may be made in the details of construction and mode of operation without departing from the scope of the invention, as defined in the appended claims.

I claim:

1. A container adapted for use in vacuum-gas packaging of sliced luncheon meats and like articles comprising a substantially rigid receptacle having a bottom, side members, a sealing flange projecting laterally outwardly from said side members and a lip projecting upwardly from said sealing flange, and a lid member having a laterally projecting tab, the lid member being of approximately the same size as the area within said lip, so that said tab will overlie said lip and raise a portion of said lid above said sealing flange to permit egress and ingress of air and gas while another portion of said tab is resting on said sealing flange, said tab being foldable with relation to said lid along the lines joining them so that the lid may be pressed down against said sealing flange, there being at least one notch through said lip to facilitate egress and ingress of air and gas into and from said container prior to closing said lid.

2. A container adapted for use in vacuum-gas packaging of sliced luncheon meats and like articles comprising a substantially rigid receptacle having a bottom, side members, a sealing flange projecting laterally outwardly from said side members and a lip projecting upwardly from said sealing flange, and a lid member having a laterally projecting tab, the lid member being of approximately the same size as the area within said lip, so that said tab will overlie said lip and raise a portion of said lid above said sealing flange to permit egress and ingress of air and gas while another portion of said tab is resting on said sealing flange, said tab being foldable with relation to said lid along the lines joining them so that the lid may be pressed down against said sealing flange, there being at least one fold in said lid to raise a portion thereof out of line with the lid and form a passageway for ingress and egress of air and gas.

3. A container adapted for use in vacuum-gas packaging of sliced luncheon meats and like articles comprising a substantially rigid receptacle having a bottom, side members, a sealing flange projecting laterally outwardly

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from said side members and a lip projecting upwardly from said sealing flange, and a lid member having a laterally projecting tab, the lid member being of approximately the same size as the area within said lip, so that said tab will overlie said lip and raise a portion of said lid above said sealing flange to permit egress and ingress of air and gas while another portion of said tab is resting on said sealing flange, said tab being foldable with relation to said lid along the lines joining them so that the lid may be pressed down against said sealing flange, there being at least one groove in a wall of the container communicating with the area adjacent said sealing flange to facilitate movement of air and gas to the spaces surrounding the contents of the container.

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