

[54] **VENTABLE SEALED CONTAINER**

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[58] Field of Search .... **220/44, 60, DIG. 27; 215/56; 229/DIG. 14; 206/46**

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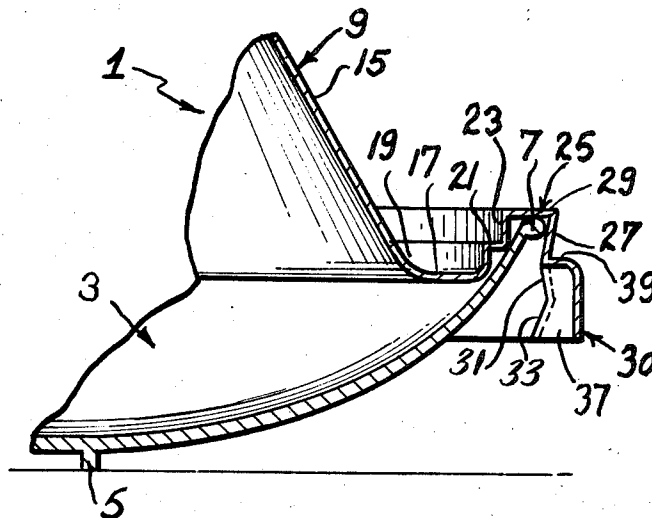
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[57]

**ABSTRACT**

The cover of the container, which may also serve as a plate, is attached to the peripheral lip of the receptacle and is movable between a lowered position wherein the lip is seated in a channel recess sealing the container closed and a raised position wherein the lip is engaged in a V-shaped recess defined by the cover skirt. A plurality of venting ports in the form of U-shaped channels are formed at spaced intervals in the cover skirt and vent the interior of the container to the atmosphere when the cover is in the raised position. The cover is designed so that a predetermined degree of positive internal pressure will move the cover from the lowered sealed position to the upper vented position and the container may be resealed by applying downward pressure on the cover to move the lip of the receptacle past a restricted portion of the skirt and into the channel.

**9 Claims, 6 Drawing Figures**



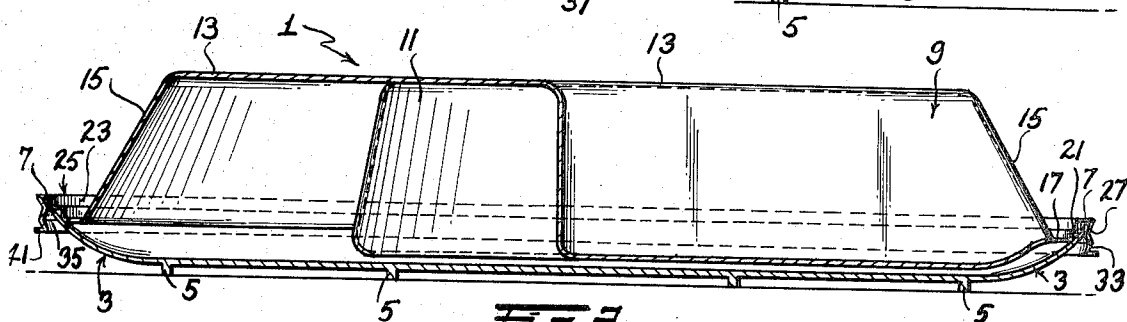
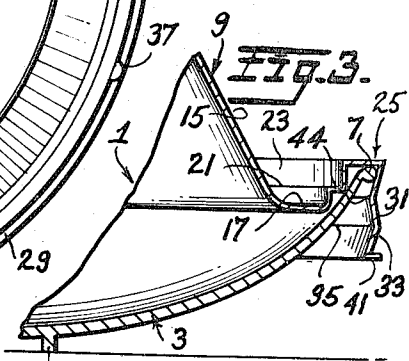
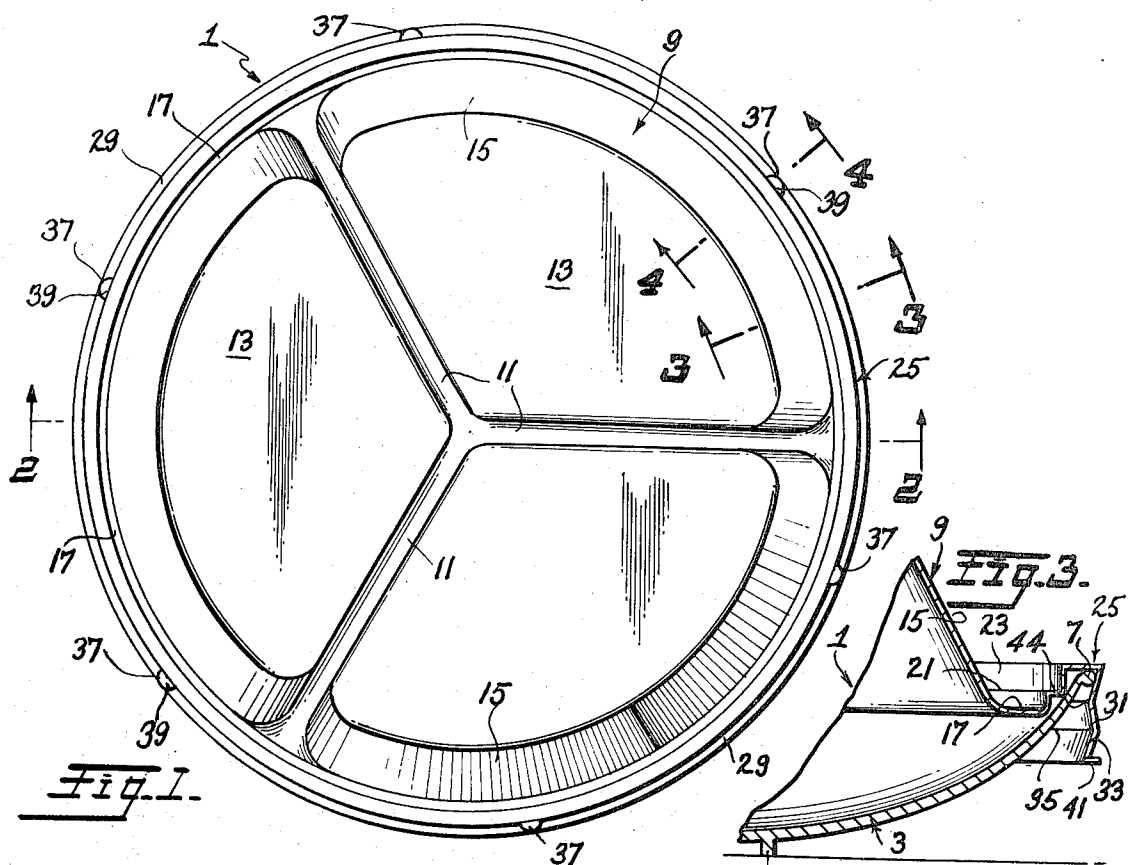


Fig. 4.

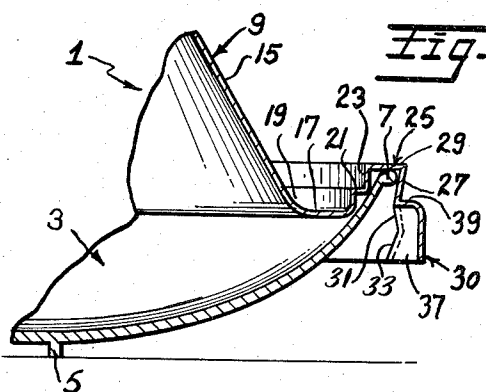


Fig. 5.

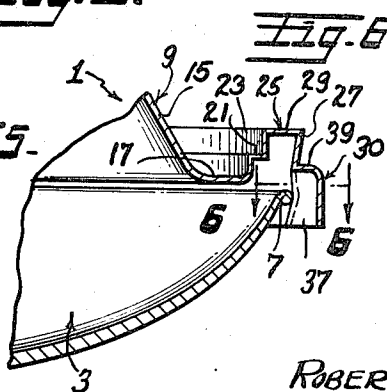
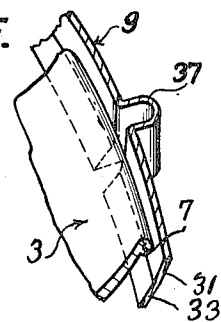


Fig. 6.



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## VENTABLE SEALED CONTAINER

This invention relates to a container wherein the receptacle or body portion of the container is a substantially rigid vessel which may be employed for holding in a sanitary manner food or other material which is to be cooled, heated, stored or handled and the cover of the container incorporates resiliency and flexibility and may be in the form of a plate for receiving or serving the food or other material packaged in the container.

It is an object of this invention to provide a container for packaged food and other material which may be stored for long periods of time in a sealed, sanitary condition.

Another object of the invention is to provide a sealed container which will automatically vent the interior thereof in response to a predetermined internal pressure while still maintaining the container in a closed condition.

An additional object of the invention is to provide a container which may be resealed after heating the contents thereof so as to maintain the interior of the container and its contents in a sanitary condition and to prevent cooling of the contents.

A further object of the invention is to provide a container which may be vented and resealed as often as desired.

It is also an object to provide a ventable sealed container with a cover which may be employed as a plate for receiving and serving the contents of the container.

These and other important objects and advantages of the invention will become more apparent from the following detailed description of a preferred form of the invention when taken in conjunction with the drawings in which:

FIG. 1 is a plan view of the container of the present invention;

FIG. 2 is an enlarged vertical sectional view, taken on the line 2—2 of FIG. 1;

FIG. 3 is an enlarged fragmentary vertical sectional view, taken on the line 3—3 of FIG. 1 showing the cover in the lowered, sealed position;

FIG. 4 is an enlarged fragmentary vertical sectional view, through one of the venting ports, taken on the line 4—4 of FIG. 1;

FIG. 5 is an enlarged fragmentary vertical sectional view, similar to FIG. 3, illustrating the cover raised to the venting position; and

FIG. 6 is a fragmentary perspective through the venting port of FIG. 5, taken on the line 6—6 thereof.

The container of this invention, generally indicated by the reference numeral 1, includes a receptacle 3 which forms the body portion of the container. The receptacle 3 may be formed of metal, ceramic material, wood, plastic or any other suitable material which is substantially rigid and in which food may be refrigerated or heated.

While the receptacle 3 shown in the drawings is rather shallow and has a concave upper surface, it is to be understood that the receptacle may have other shapes. The lower surface of the receptacle may be provided with legs or ribs 5 for supporting the lower surface of the receptacle a short distance above the surface on which it is placed.

A lip 7 of generally circular configuration as viewed in cross section, is integral with the outer edge of the

receptacle and extends entirely around the periphery thereof. The receptacle 3 is preferably round as observed in plan view with the lip 7 extending laterally outwardly thereof. However, the exact shape of the receptacle is not vital as long as the outer peripheral lip forms a true circle around the receptacle.

The cover 9 of the container 1 may be employed as a plate for serving the contents of the container after being removed from the receptacle and inverted. As shown, the cover includes three radially extending ribs 11 which divide the interior of the cover 9 into three sections.

The cover 9 is formed of material which is inherently somewhat resilient and flexible, such as self-sustaining plastic material, treated cardboard or paperboard or the like which may be formed into the desired shape by pressing or by molding.

The body portion of the cover includes the generally flat central portion 13 and the surrounding sloping portion 15. A flat circular rim portion 17 extends radially outwardly from the sloping portion 15 with a vertical wall 19 extending upwardly from the outer edge of the rim portion 17 and a horizontal step extending radially outwardly from the upper edge of the vertical wall 19. The inner wall 23 of a generally U-shaped, inverted channel portion 25 extends upwardly from the outer edge of the horizontal step 21 and the outer side wall 27 of the channel portion 25 extends downwardly from the bottom wall 29 of the channel 25 and inwardly at a small angle toward the inner wall 23 so as to form an acute angle with the bottom wall 29 and provide a sealing recess for receiving and holding therein the lip 7.

A skirt portion 30 extends downwardly from the lower edge of the channel outer side wall 27 and includes a first wall portion 31 which extends downwardly and outwardly at a small angle from the lower edge of the wall 27 and a second wall portion 33 which extends downwardly and inwardly at a small angle from the lower edge of the first wall portion 31 so as to provide with the first wall portion a generally V-shaped recess 35 which receives and holds therein the lip 7 when the cover 9 is in the raised vented position.

The internal diameter of the channel outer side wall 27 at its upper edge where it joins the channel bottom wall 29 is at least as small as and preferably a few thousandths of an inch smaller, that is up to three or four thousandths, than the outer diameter of the lip 7 so that the lip is held sealed in frictional engagement with the interior surface of the walls 27 and 29 when the cover is in the lowered position.

The internal diameter of the lower edge of the channel outer side wall and of the upper edge of the skirt wall 31 where they join provides a restriction 44 which is substantially smaller than the outer diameter of the lip 7, that is from about five thousandths to about two hundred fifty thousandths of an inch smaller, depending upon the size of the container and the material from which the cover is formed.

The internal diameter of the recess 35 may be from substantially the same as the outside diameter of the lip 7 to about one hundred fifty thousandths of an inch smaller than that of the lip while the internal diameter of the lower edge of the wall 33, which is reinforced by a small outwardly extending flange 41, may be from ten to two hundred fifty thousandths of an inch smaller than the external diameter of the lip 7.

A plurality of U-shaped vent ports 37 are formed at spaced intervals in the skirt 30 of the cover and provide vertically extending channels as best shown in FIGS. 4, 5 and 6 of the drawings. Since all of the vent ports 37 are alike, only one will be described in detail. At each vent port, the first and second wall portions 31 and 33 extend radially outwardly a short distance to provide a vertical U-shaped channel, see FIG. 6, with the mouth of the channel facing inwardly toward the lip 7 of the receptacle 3. The upper end of each vent port 37 is closed by an end wall 39 while the bottom end is open to the atmosphere. As clearly shown in FIG. 5, the vent port 37 connects the interior of the container with the atmosphere when the lip 7 of the receptacle 3 is seated in the V-shaped recess 35.

The container, after being filled with food or other material, may be stored in a sealed sanitary condition with the lip 7 of the receptacle engaged in the channel 25 as described above and as illustrated in FIGS. 2, 3 and 4 and may be subsequently handled without contaminating the contents thereof. Upon placing the sealed container with food therein in an oven for heating the contents thereof, a predetermined, relatively small positive pressure developed within the container as a result of heating its contents and acting against the underside of the cover 9 will create sufficient pressure to force the cover upwardly and flex the channel wall 27 and the skirt 30 outwardly until the lip 7 passes the restriction 44 whereupon the wall 27 and the skirt 30 will return to their normal position and the lip 7 will be engaged in the V-shaped recess 35, FIGS. 5 and 6, to hold the cover in the raised vented position connecting the interior of the container with the atmosphere through the vent ports 37. After heating the contents of the container, the cover 9 may be pushed downwardly to the lowered sealed position with the lip 7 confined in the sealing channel 25 as illustrated in FIGS. 2-4 by applying sufficient force thereto to flex the wall 27 and the skirt 30 outwardly a distance sufficient to permit the lip 7 to pass the restriction 44.

While a preferred form of the invention has been described and disclosed above, it is to be understood that such changes and alterations as would occur to those skilled in the art are to be considered with the purview of this invention as fall within the scope of the appended claims.

What I claim is:

1. An automatic venting and resealable closed container for food and the like, comprising: an imperforate, non-porous receptacle having a lip integral therewith and extending laterally outwardly around the entire periphery thereof; and a self-sustaining, imperforate, substantially non-porous cover member for enclosing the contents of the receptacle and having a substantial degree of resiliency and flexibility mounted on said receptacle for movement between a lowered, sealed position and a raised vented position, said cover comprising a continuous annular seal portion adjacent the periphery thereof resiliently engagable with the receptacle lip when said cover is in the lowered position for holding the cover therein and sealing the container, a supporting and venting portion disposed below said seal portion and having a holding portion resiliently engagable with said circular lip when said cover is moved from the sealed to the vented position for holding the cover in the raised position; and a restriction portion smaller in diameter than said lip disposed between and

connecting said seal portion and said venting portion, said venting portion having venting means connecting the interior of the container with the atmosphere only when said cover is in the raised position said holding portion being disposed below and spaced from said restriction portion, being smaller in diameter than said lip and holding said cover in said raised position whereby said restriction portion is spaced from said lip and communicates with said venting means.

2. A ventable container for food and the like comprising: a non-porous receptacle having a lip integral therewith and extending laterally outwardly around the entire periphery thereof; and a cover movably mounted on the lip of said receptacle, said cover comprising a central impervious body portion for enclosing the contents of the receptacle, and a circular, resilient, sealing and venting peripheral portion integral with said body portion, said sealing portion being impervious and having a sealing surface resiliently engaging with said lip when the cover is in a lowered position and for sealing the interior of the container, said venting portion having venting passage means therein below said seal portion and having a discontinuous, substantially vertical holding surface below said venting passage means resiliently engaging with said lip when the cover is in the raised position with said venting passage means connecting the interior of the container to atmosphere while maintaining the container in a substantially closed condition.

3. A cover to be mounted on a receptacle for food or the like provided with a continuous, radially extending, peripheral lip to provide a sanitary ventable container, said cover comprising: a central body portion for enclosing the contents of the receptacle, and resilient, sealing and venting peripheral portions extending from said body portion, said sealing portion having a sealing surface resiliently engaging with said receptacle lip when the cover is in a lowered position for holding the cover in the lowered position and for sealing the interior of the container, said venting portion having venting passage means therein and having a holding surface resiliently engaging with said lip when the cover is in a raised position for holding the cover in said raised position with said venting passage means connecting the interior of the container to atmosphere while maintaining the container in a substantially closed condition, said sealing portion comprises an inverted, generally U-shaped channel having a bottom wall and an outer side wall extending downwardly and inwardly from said bottom wall, the inner surface of said bottom wall and of said outer side wall in the vicinity of the juncture thereof providing said sealing surface.

4. A cover according to claim 3 in which said venting portion comprises a first wall portion extending downwardly and outwardly from the lower edge of the sealing portion and a second wall portion extending downwardly and inwardly from the lower edge of said first wall portion, the inner surface of said first and second wall portions in the vicinity of the juncture thereof forming an annular recess and providing said holding surface.

5. A cover according to claim 3 in which said sealing portion comprises an inverted, generally U-shaped channel having a bottom wall and an outer side wall extending downwardly and inwardly from said bottom wall, the inner surface of said bottom wall and of said outer side wall in the vicinity of the juncture thereof

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providing said sealing surface, and said venting portion comprises a first wall portion extending downwardly and outwardly from the lower edge of the sealing portion and a second wall portion extending downwardly and inwardly from the lower edge of said first wall portion, the inner surface of said first and second wall portions in the vicinity of the juncture thereof forming an annular recess and providing said holding surface.

6. A cover according to claim 3 in which said venting passage means comprises at least one vertically extending, generally U-shaped channel formed in the first and second wall portions with the mouth of the channel facing inwardly of the venting portion and extending downwardly from the lower edge of the sealing portion to the lower edge of the venting portion.

7. A cover according to claim 3 in which said sealing and venting peripheral portion includes a restriction portion disposed between said sealing portion and said venting portion which is slightly smaller in diameter than said lip.

8. A cover according to claim 5 in which said venting passage means comprises at least one vertically extending, generally U-shaped channel formed in the first and second wall portions with the mouth of the channel facing inwardly of the venting portion and extending downwardly from the lower edge of the sealing portion

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to the lower edge of the venting portion, and said sealing and venting peripheral portion includes a restriction portion which is slightly smaller in diameter than said lip and is disposed between said sealing portion and said venting portion.

9. A cover for use with a food receptacle or the like having an external peripheral lip, said cover comprising: a body portion shaped to substantially cover the open end of said receptacle and to thereby enclose the space within said receptacle; means depending from said body portion along the entire periphery thereof and defining an inwardly directed annular sealing recess, said sealing recess being shaped to sealingly engage said peripheral lip when said cover is in a first, sealed, position; support and latching means having a diameter less than said lip mounted below said sealing recess to engage said peripheral lip and to thereby support said body portion on said peripheral lip at a level above said peripheral lip and preventing movement of the body portion in either direction when said cover is in a second, vented, position; and vent means provided in said cover to provide venting communication to the exterior from the open area between said sealing recess and said support means.

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