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(19) **United States**(12) **Patent Application Publication****Geiger et al.**(10) **Pub. No.: US 2022/0041343 A1**(43) **Pub. Date: Feb. 10, 2022**(54) **TAMPER EVIDENT PACKAGE OR CONTAINER**(71) Applicant: **Portage Plastics Corporation**, Portage, WI (US)(72) Inventors: **Sam Geiger**, Portage, WI (US);
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Mauro Fisher, Portage, WI (US); **Julio C. Mendoza**, Brownsville, TX (US)(21) Appl. No.: **17/396,060**(22) Filed: **Aug. 6, 2021****Related U.S. Application Data**

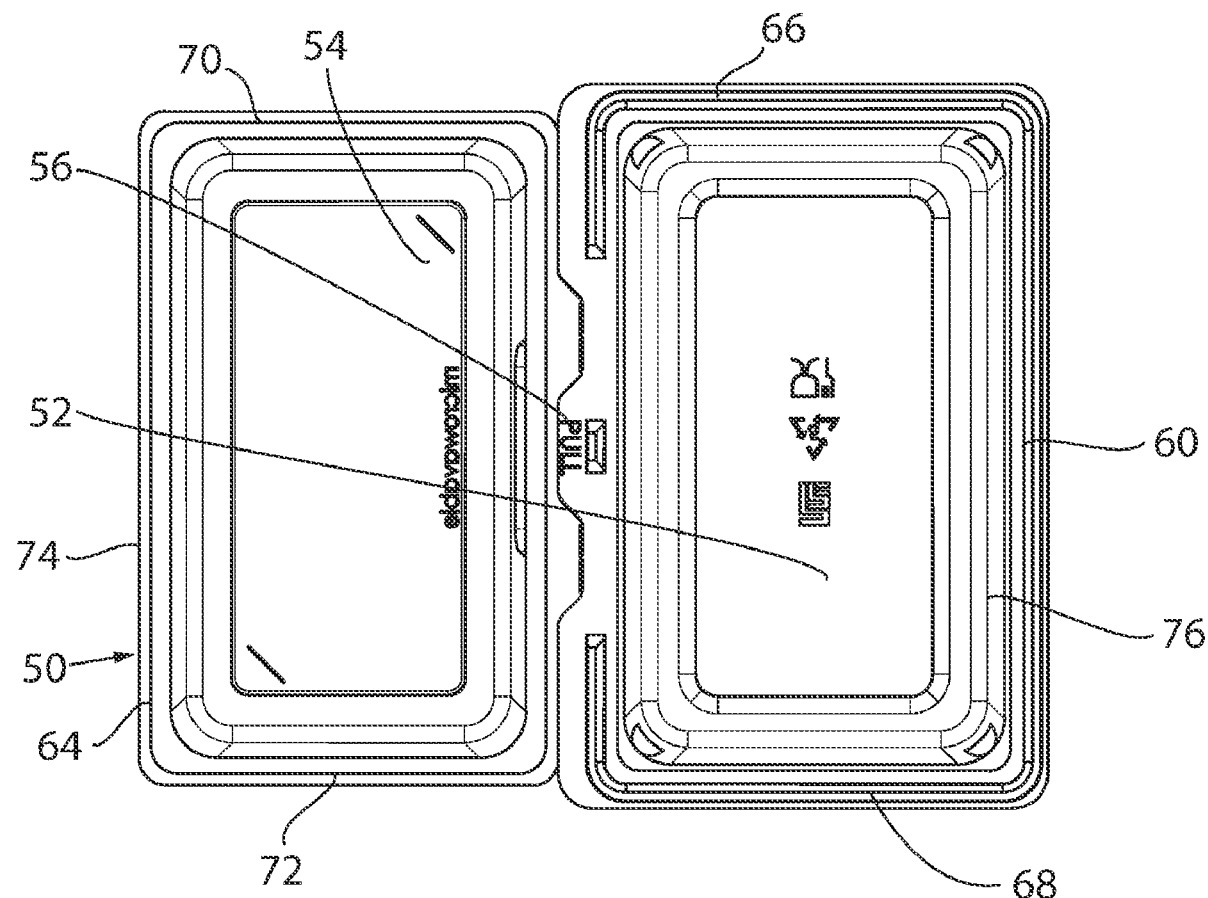
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(2013.01)

(57)

ABSTRACT

A single piece thermoformed package or container configured to allow a user to visually determine whether the package or container has been tampered with. The container includes a base, a lid, and a hinge. The lid is pivotable relative to the base about the hinge to move the container from an opened position to the closed position. Once in the closed position, it is difficult to remove the lid without disengaging a tamper evident feature. The tamper evident feature may include a perforated section formed in the hinge and one or more pull or push sections. When the tamper evident feature is disengaged using the one or more pull or push sections, the perforation section allows the hinge to be broken such that the entire lid is removed. The container is made of polypropylene and thus can safely be microwaved and includes vents to release pressure.



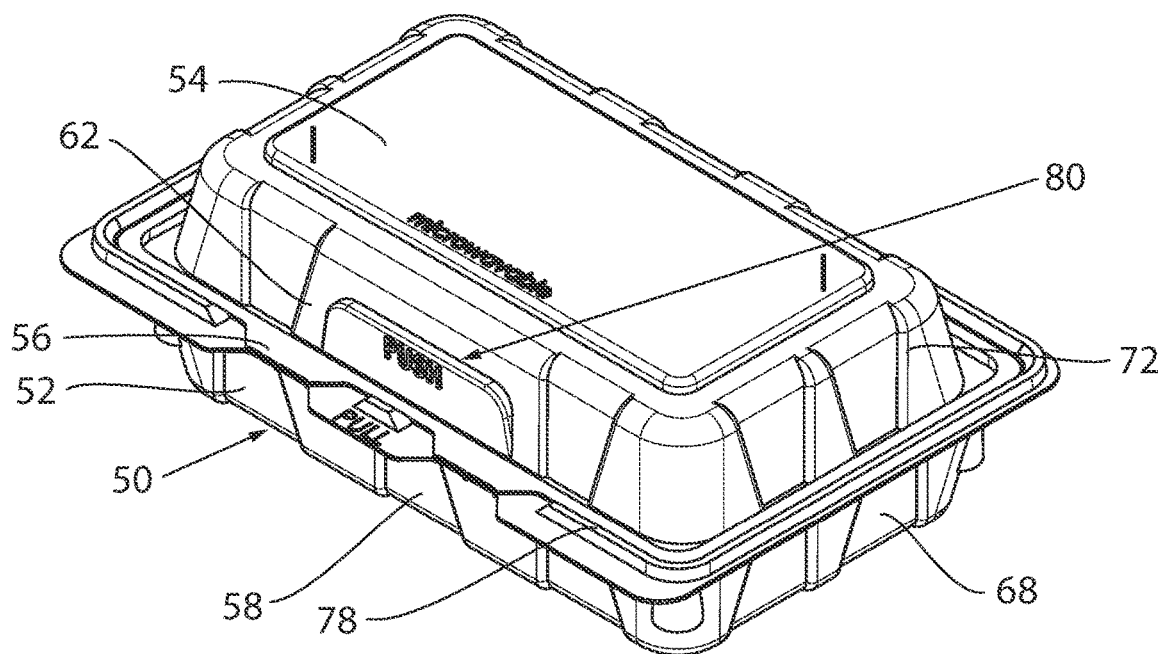


FIG. 1

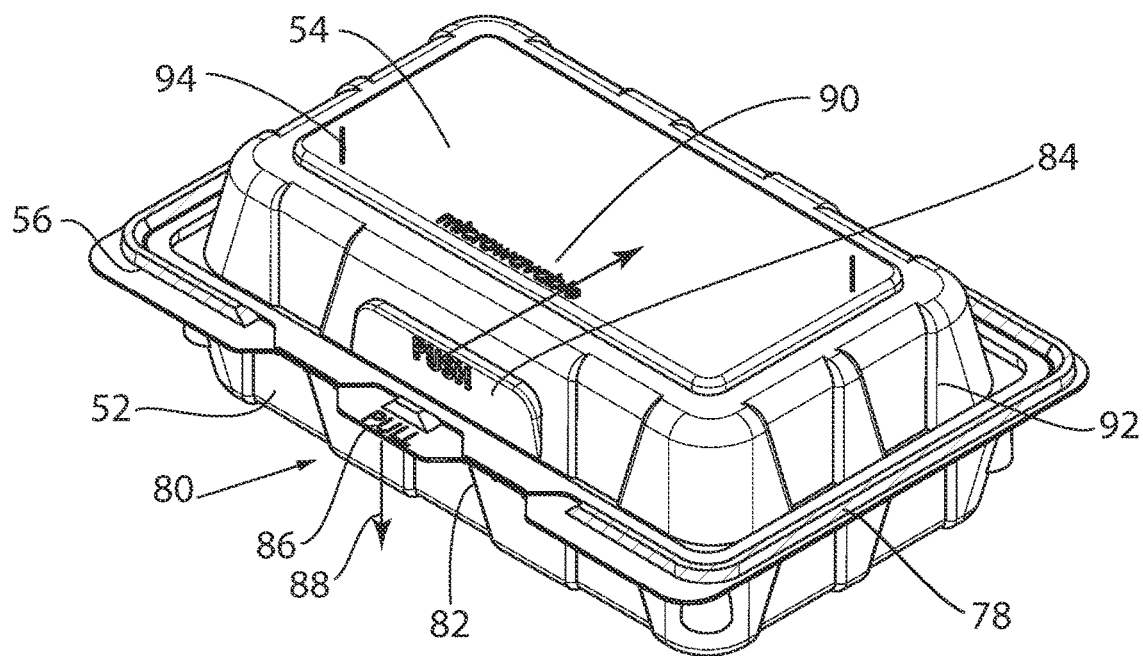
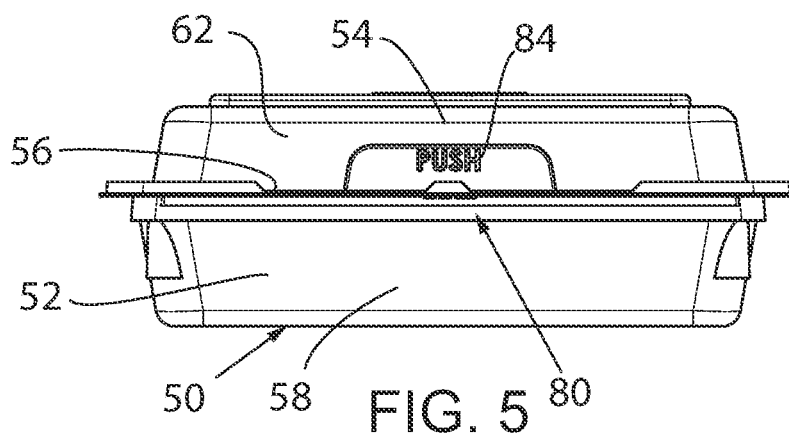
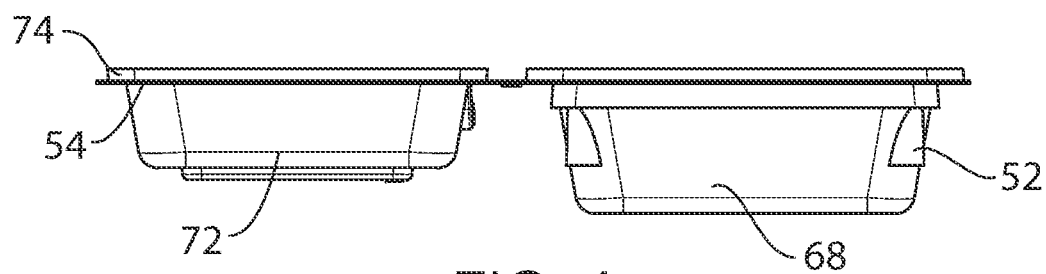
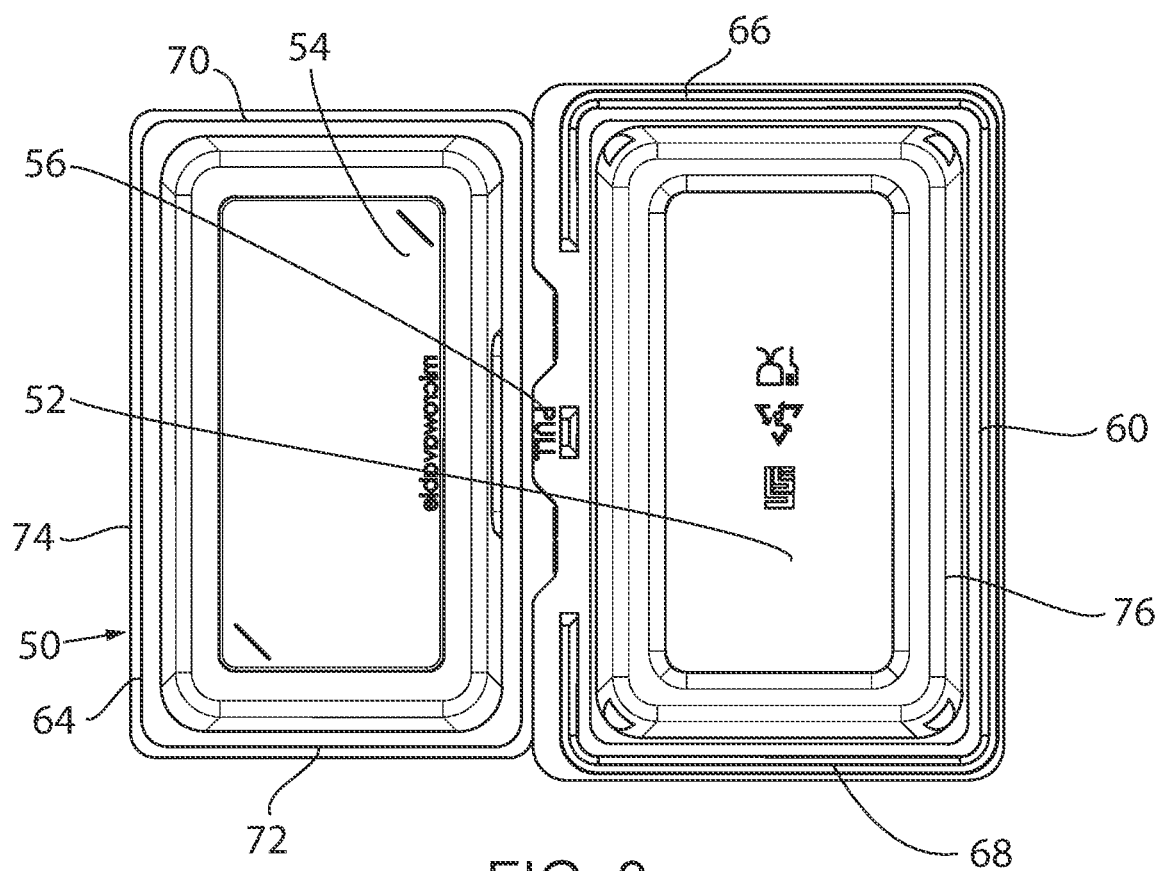


FIG. 2



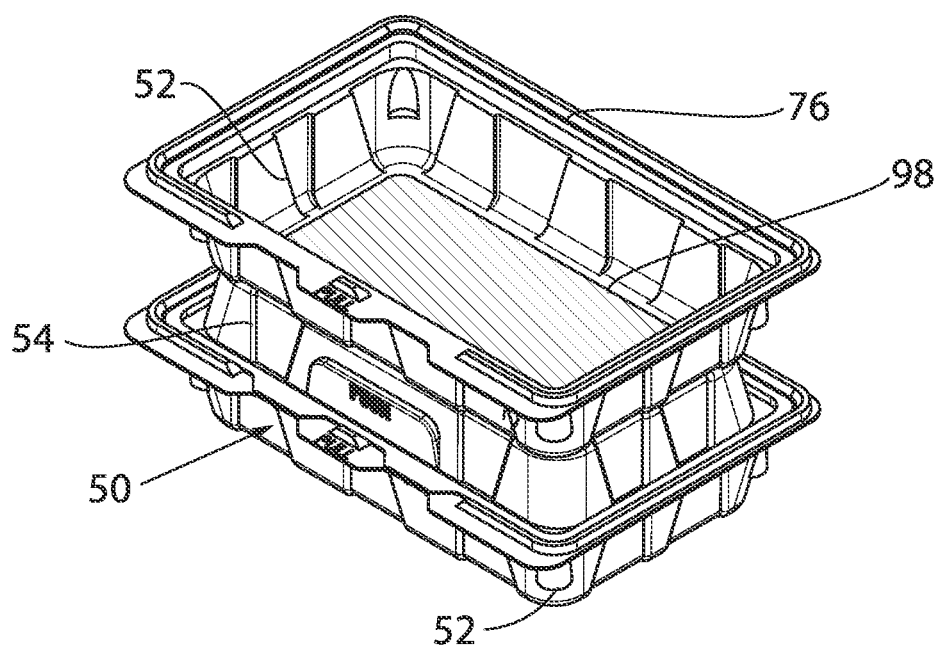


FIG. 6

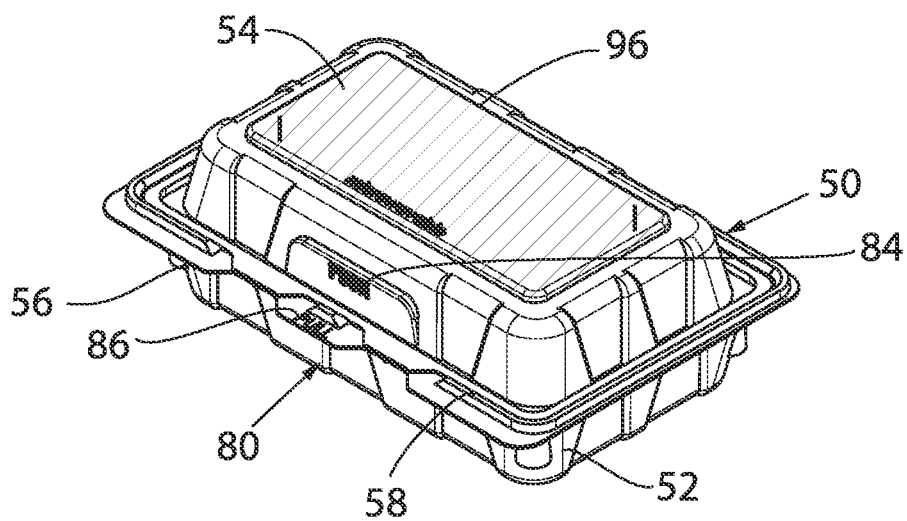


FIG. 7

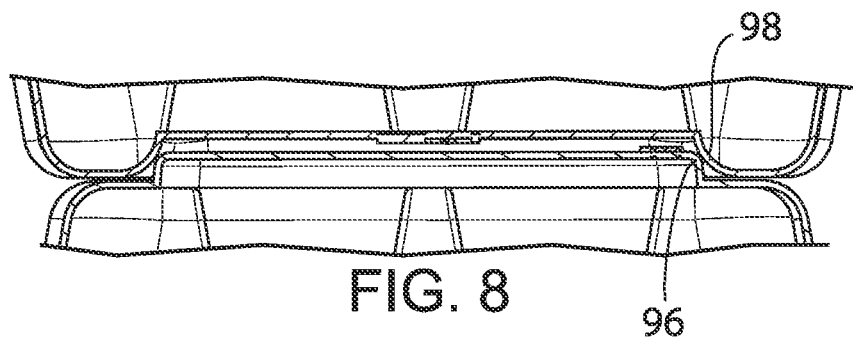
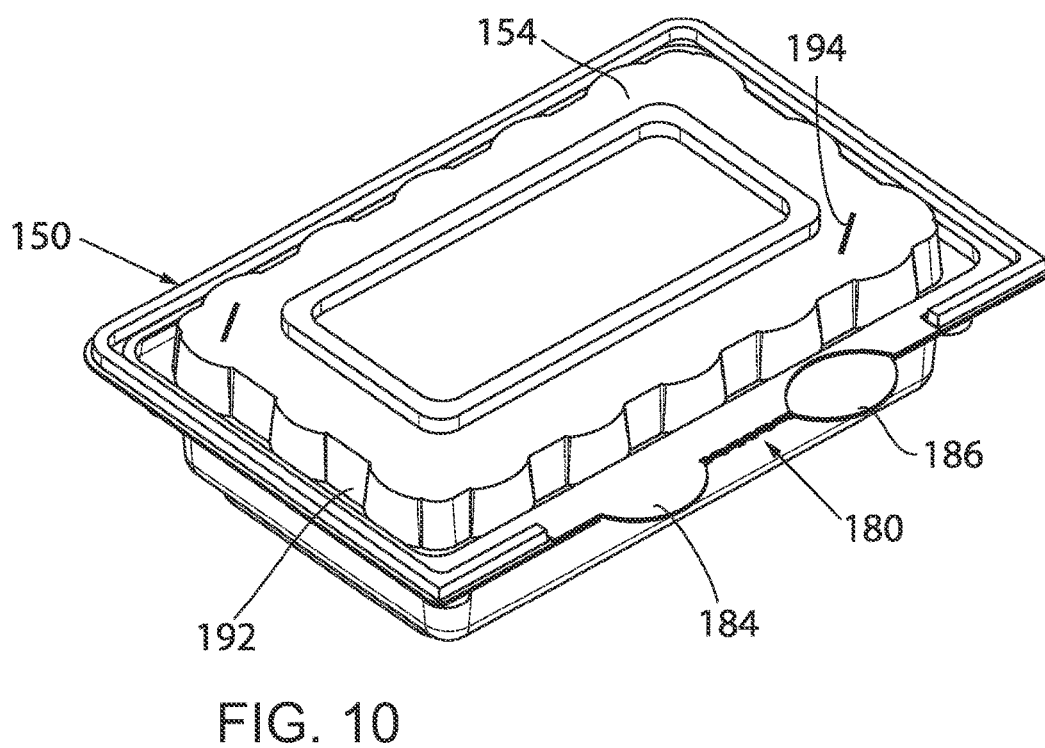
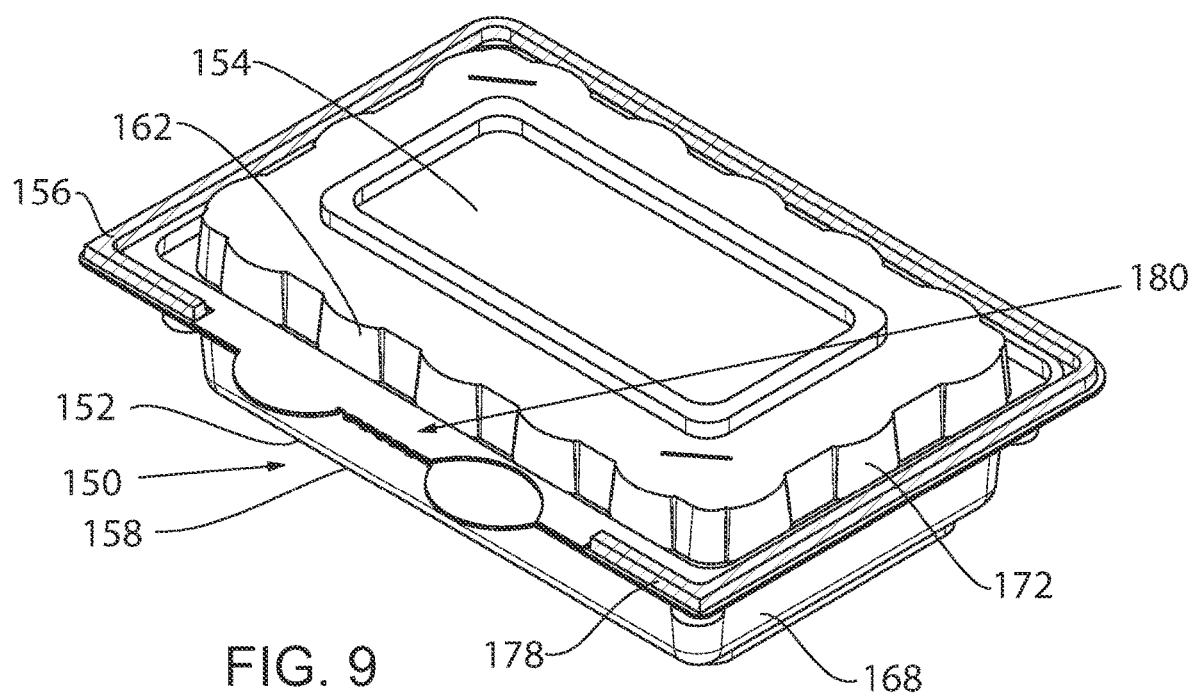


FIG. 8



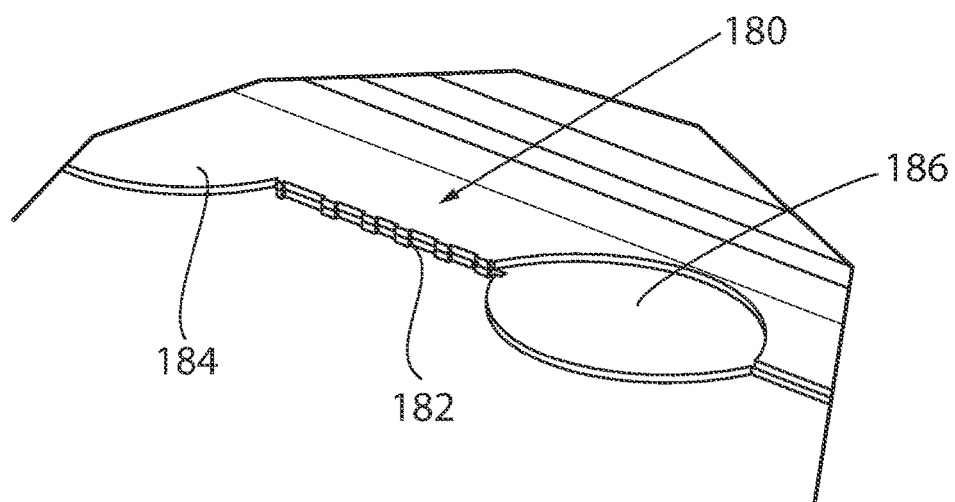


FIG. 11

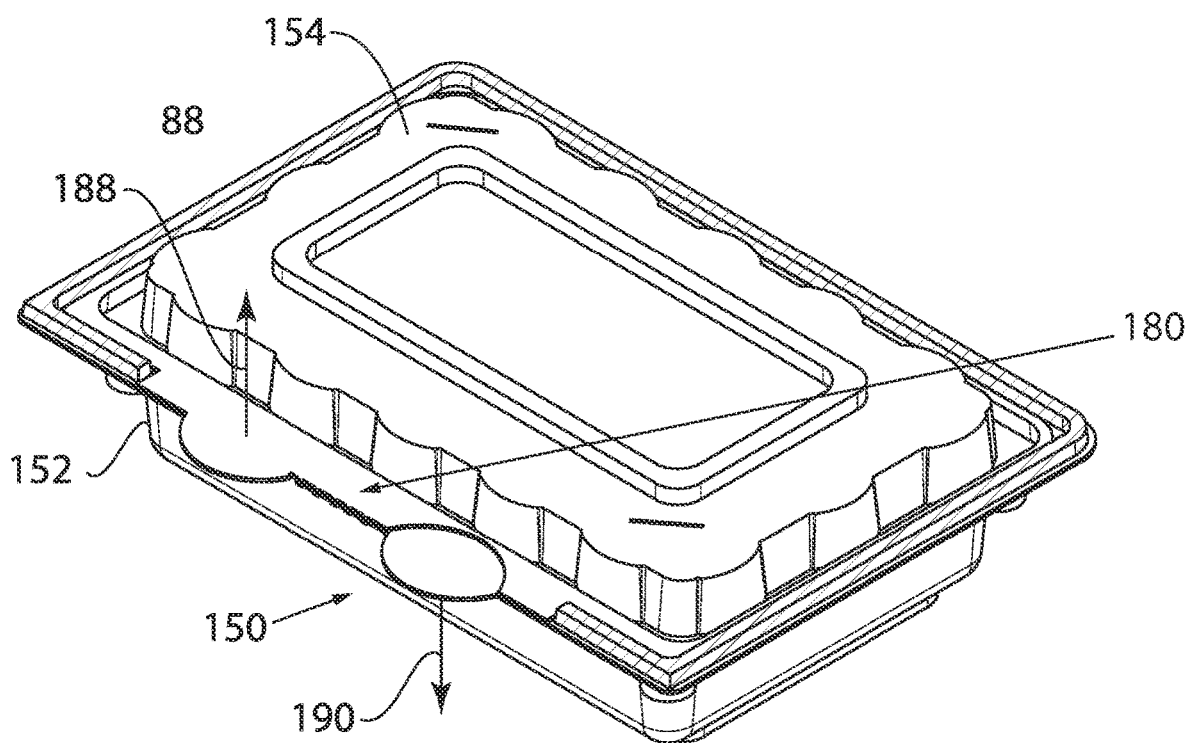


FIG. 12

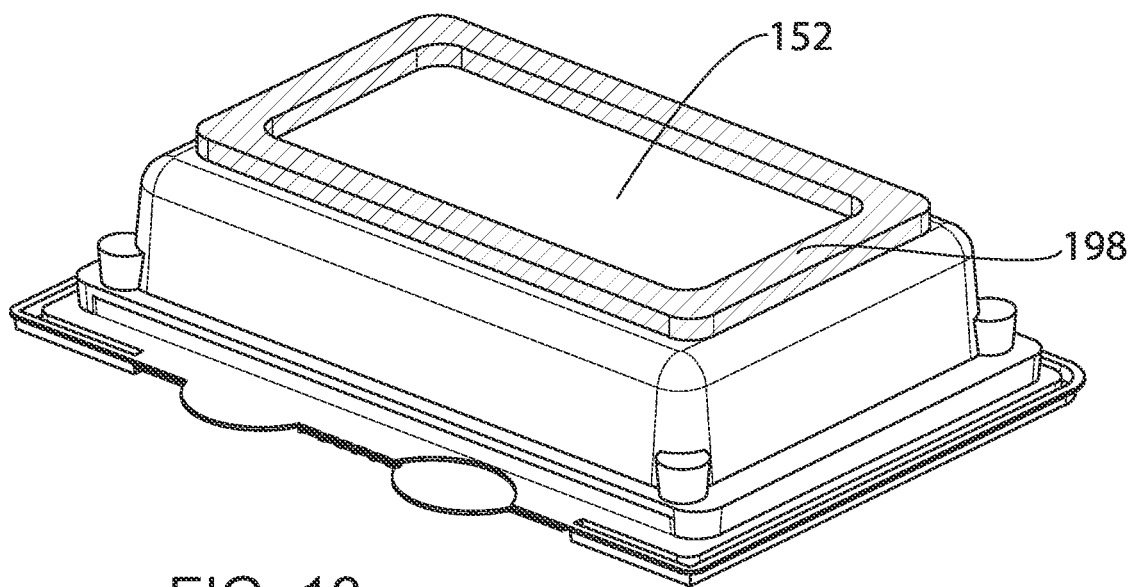


FIG. 13

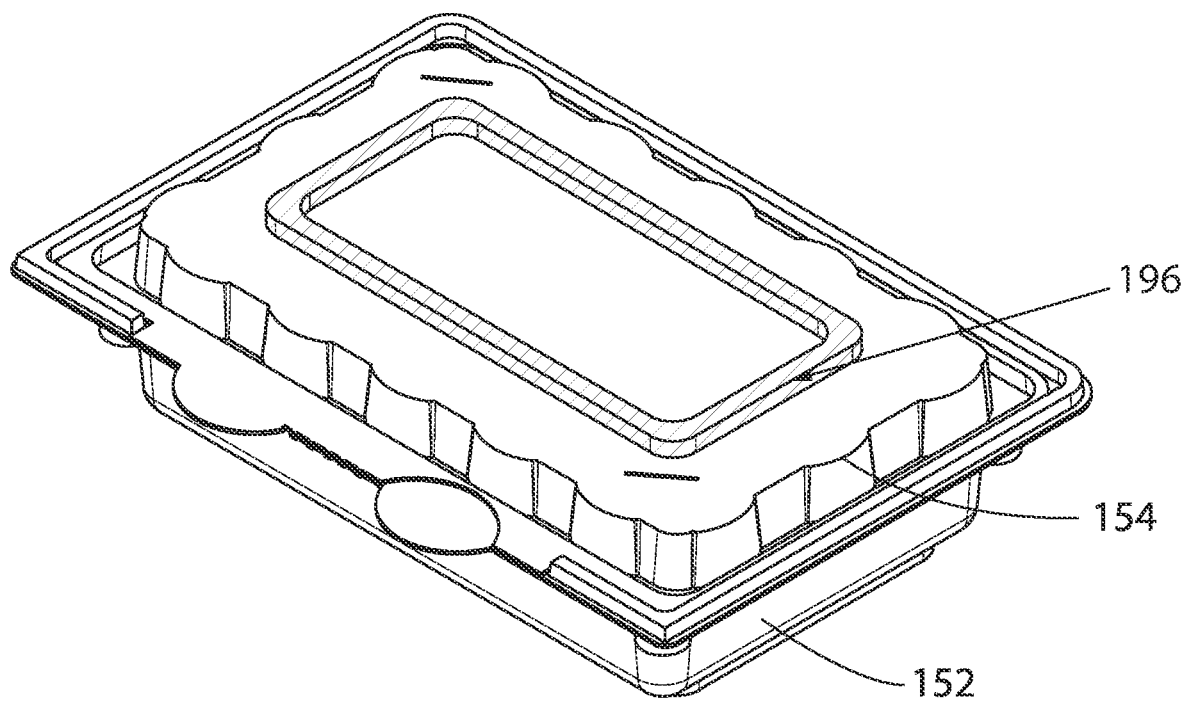
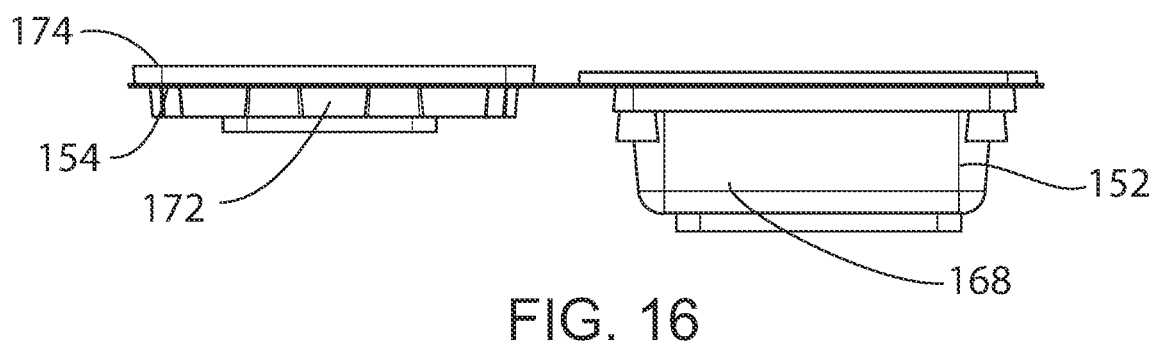
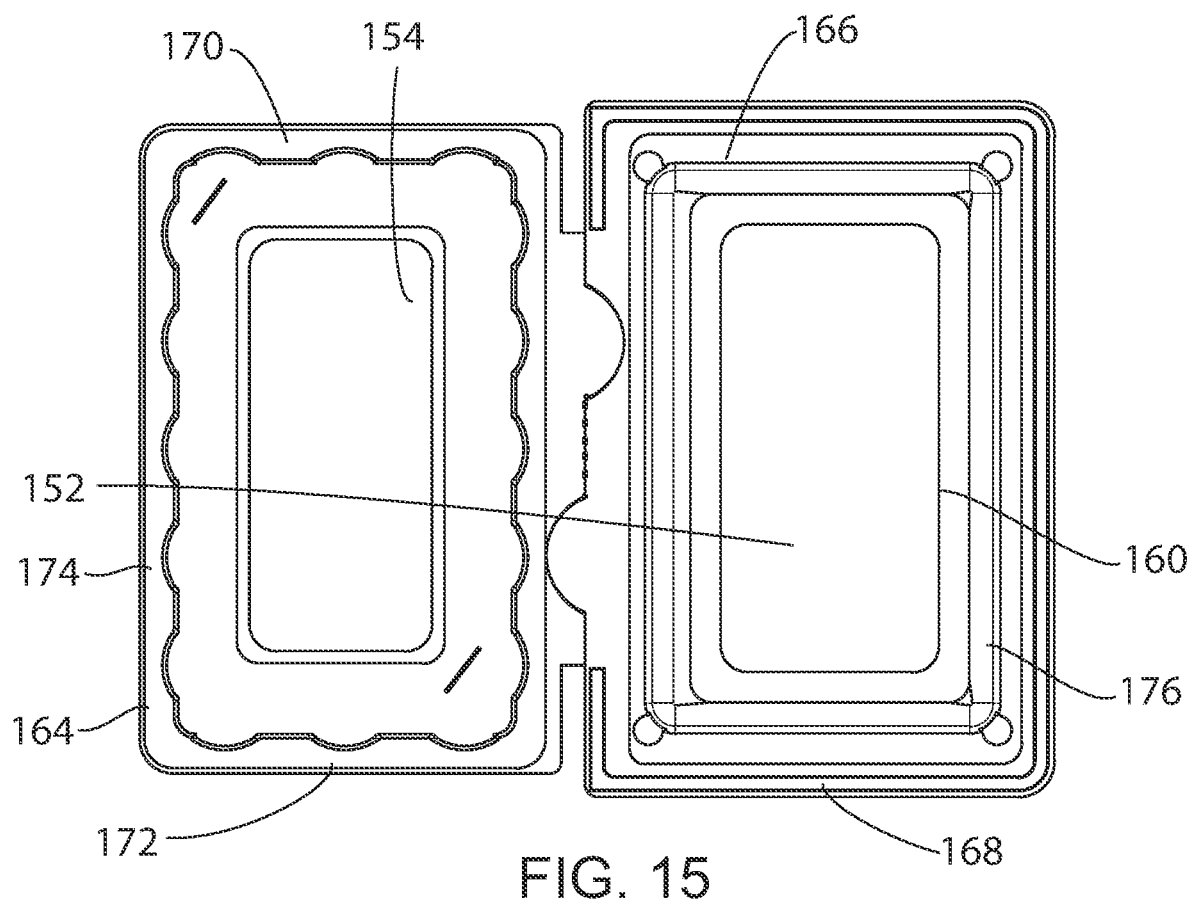


FIG. 14



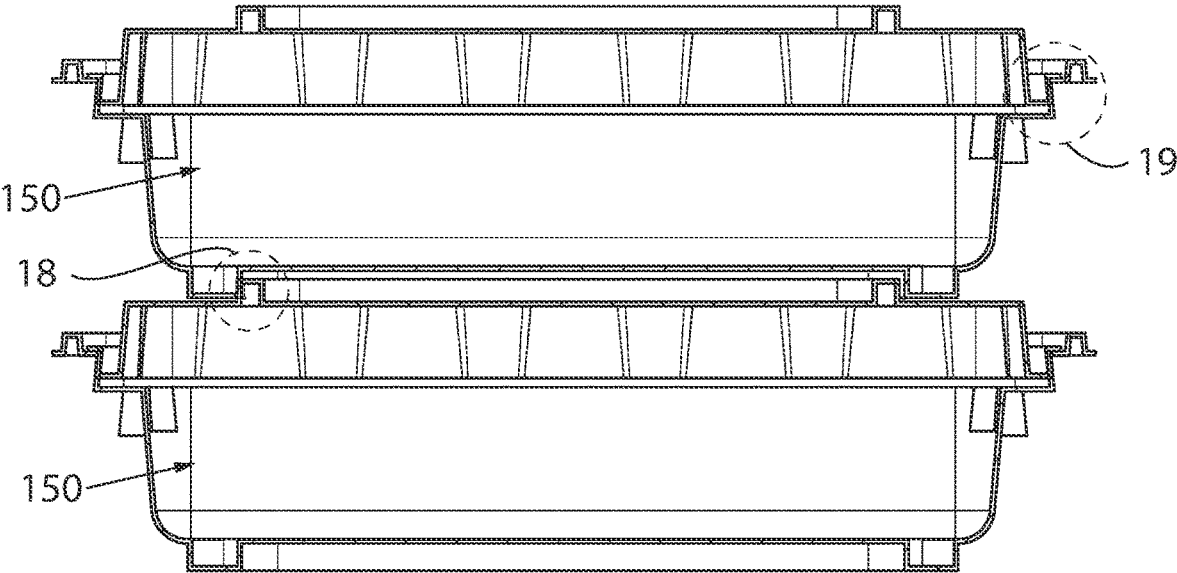


FIG. 17

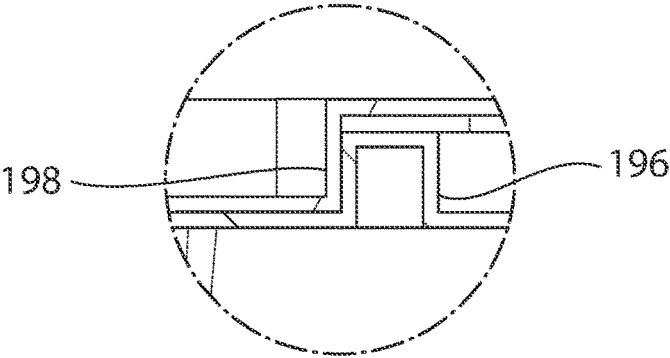


FIG. 18

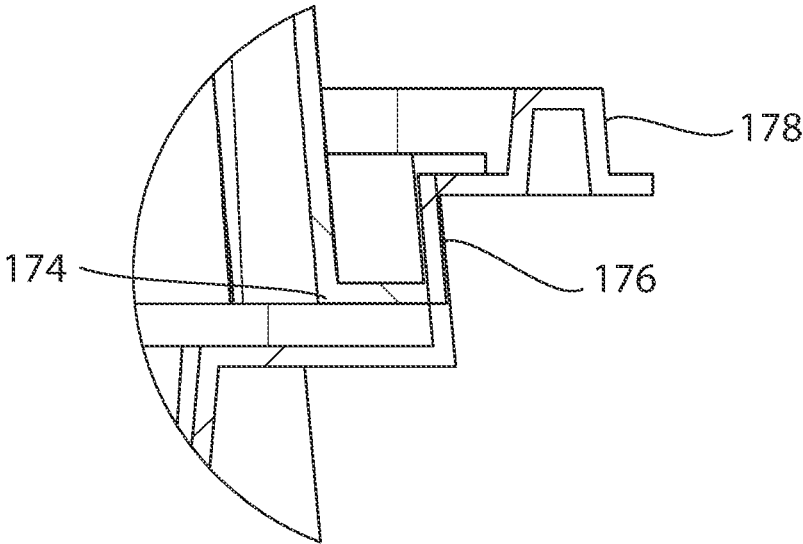


FIG. 19

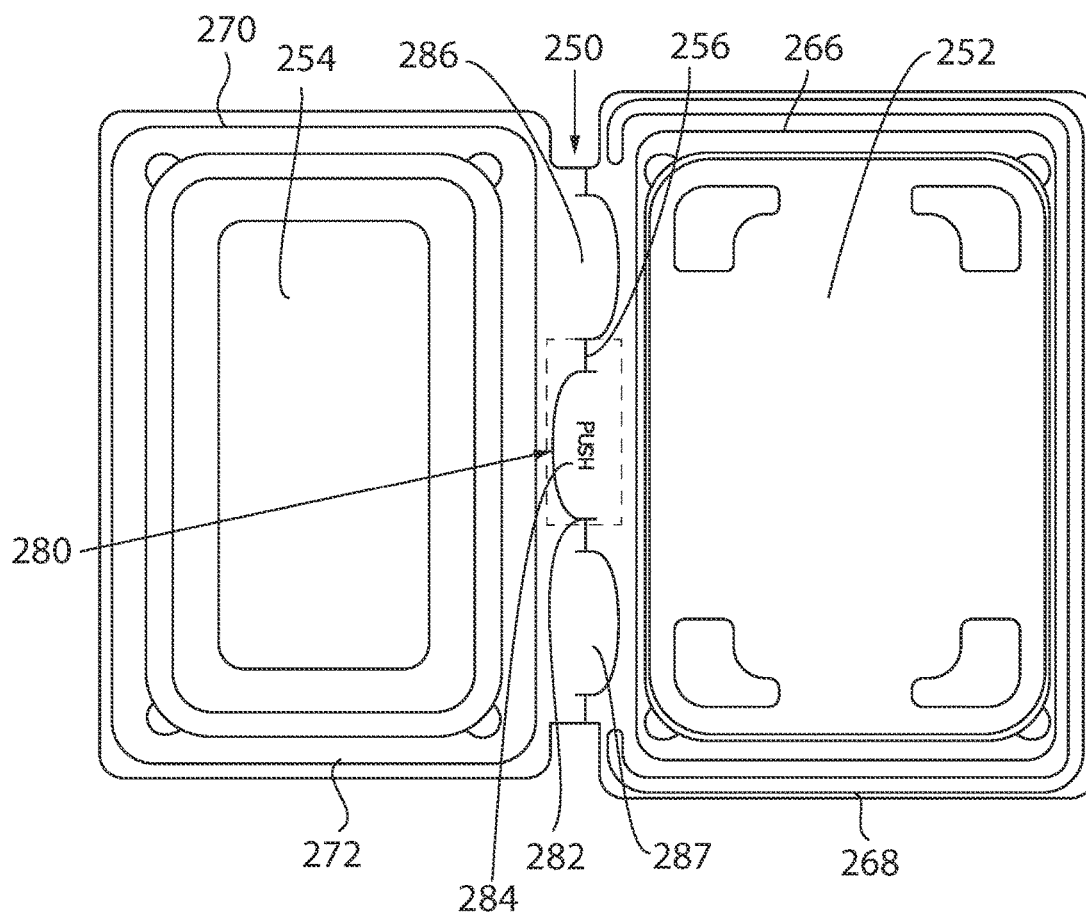


FIG. 20

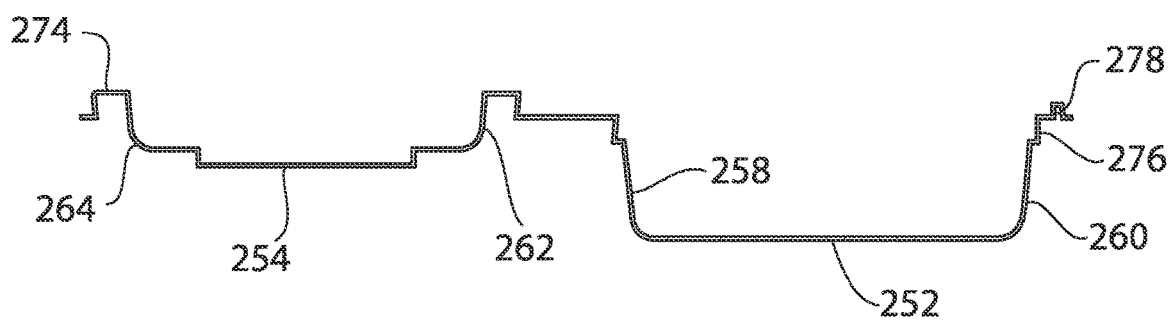


FIG. 21

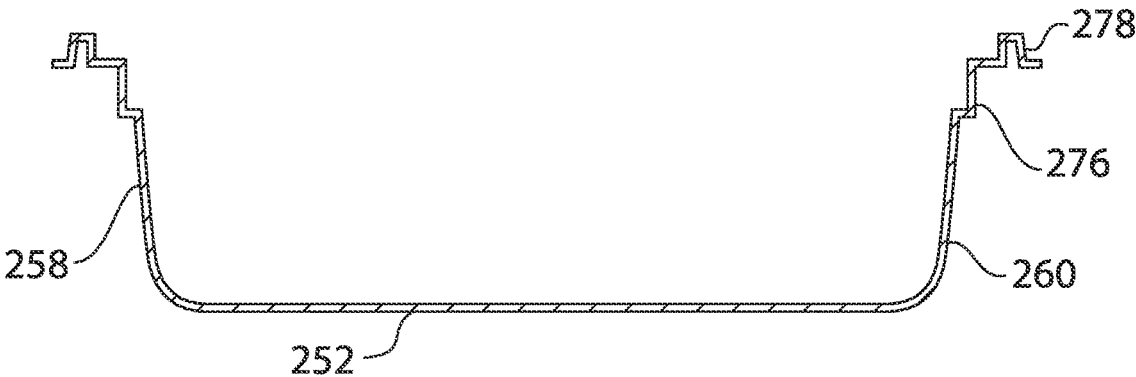


FIG. 22

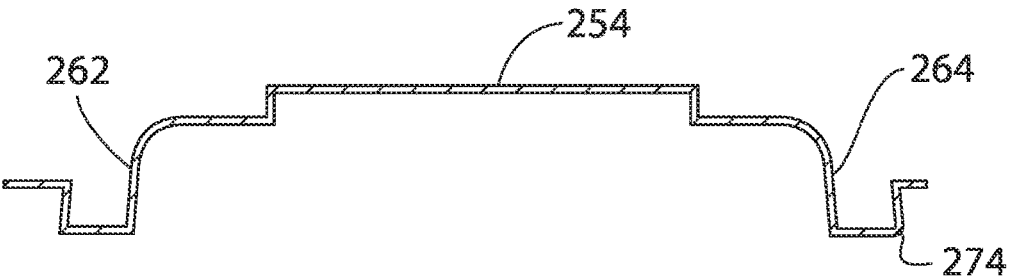


FIG. 23

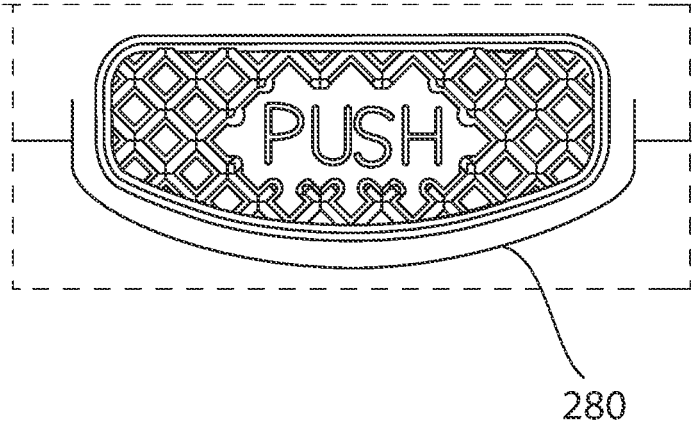


FIG. 24

TAMPER EVIDENT PACKAGE OR CONTAINER

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims priority to U.S. Provisional Application No. 63/062,822, filed on Aug. 7, 2020, the entire contents of which are hereby expressly incorporated by reference into this application.

FIELD

[0002] The present invention relates generally to a packaging or container design and more particularly to a package having a lid or base portion that is tamper evident so that a user can visually inspect whether the contents within the package have been accessed.

INTRODUCTION OF THE INVENTION

[0003] Thermoformed packages are routinely used to contain, protect, and transport a variety of different items. For instance, thermoformed packages are routinely used to contain, protect, and transport various consumable products as well as other consumer products. Traditionally speaking, most thermoformed packages can easily be repeatedly opened and closed. In many industries, consumers purchasing products contained within thermoformed packages may wish to proactively know if any third parties have opened the package and accessed the contents. For instance, when the packages are used to contain a consumable product such as various food and drink, consumers do not want third parties to access the consumable product after the consumable product has been prepared and inserted into the product. Thus, consumers would prefer that thermoformed packages filled with food or other consumable products at restaurants, groceries, convenience stores, and the like not be accessed by other customers or by individuals responsible for the delivery of the consumable products. Similarly, consumers would prefer that sensitive contents such as pharmaceutical prescriptions not be accessible by others. Also, in many instances, consumers would prefer that consumer products contained within packages are not accessed by third parties for fear that contents may be damaged or stolen.

[0004] To address these concerns, there are some packages that include various features that help to inform a consumer that the package has been opened after it was initially prepared. For instance, some thermoformed packages have a lid that is secured to the base, after which a consumer must remove a pull tab strip in order to open the lid. In the event that the pull tab strip is no longer engaged with the package, a potential consumer will know that there is a strong possibility that the contents of the package have been accessed by a third party. Other features are commonly used with thermoformed packages to similarly detect unwanted access to the interior of the package. However, these features typically have very small pieces that can easily fall into the interior of the package. Doing so could cause multiple issues, including potential contamination of the contents of the package and/or a choking hazard. Especially when the package is used to hold consumable products, it is undesirable to have the pull tab strip or other pieces fall into the consumable food. Additionally, there are currently no tamper evident containers thermoformed using a polypropylene

material. Current tamper evident containers are instead made of other materials, which may be unsafe to microwave.

[0005] What is needed is a package that includes tamper evident feature that allows a consumer to easily determine whether the package has been tampered with, which could indicate that a third party has accessed the contents of the package. What is further needed is a tamper evident package that minimizes the risk that small pieces of the thermoformed package fall into the interior of the package and potentially contaminating the contents located therein. What is further needed is a tamper evident package that can be thermoformed of polypropylene material to enable to the package to safely be microwaved.

SUMMARY

[0006] By way of summary, the present invention is directed to a tamper evident thermoformed container that includes a base, a lid connected to the base about a hinge, and a tamper evident feature. The lid is movable between an open position and a closed position in which the lid is releasably secured to the base. The tamper evident feature provides visible confirmation that the lid has been moved from the closed position.

[0007] According to an aspect of a preferred embodiment, the tamper evident feature includes a pull section that is associated with one of the base and the lid and a push section that is associated with the other of the base and the lid. The tamper evident feature also includes a perforation that is formed along the hinge. To break the perforation, the pull section is pulled and the push section is pushed to separate the hinge about the perforation. The pull section is pulled in a first direction and the push section is pushed in a second direction, where the first direction is substantially perpendicular to the second direction.

[0008] According to another aspect of another preferred embodiment, the tamper evident feature includes a first pull section associated with one of the base and the lid, a second pull section associated with the other of the base and the lid, and a perforation section formed along the hinge. The first pull section and the section pull section are pulled to break the perforation section and separate the hinge. For instance, the first pull section is pulled in a first direction, whereas the second pull section is pulled in a second direction where the first direction is in substantially opposite direction as the second direction.

[0009] According to yet another aspect of the present invention, the container includes a flange extending from one of the base and the lid and a rim is formed in the other of the base and the lid. The flange is secured against the rim to form a snap or interference fit between the base and the lid. Additionally, the container may include a perimeter wall located adjacent to the flange and the rim. The perimeter wall prevents access to the flange and the rim. The container may include additional features such as a vent formed in the base or the lid and at least one rib formed in the base or the lid.

[0010] According to another aspect of the present invention, a method of using a single-piece polypropylene tamper evidence thermoformed container includes the steps of inserting contents into a base of the container, pivoting a lid of the container relative to the base about a hinge, securing the lid to the base, and disengaging a tamper evident feature to access the contents held within the base. In one preferred embodiment the disengaging step may also including the

steps of pulling a pull section associated with one of the base and the lid, pushing a push section associated with the other of the base and the lid, and breaking a perforation section formed along the hinge. The pull section may be pulled in a first direction, and the push section can be pushed in a second direction substantially perpendicular to the first direction in order to separate the lid from the base. In another preferred embodiment, a first pull section associated with one of the base and the lid is pulled, a second pull section associated with the other of the base and the lid is pulled, and a perforation section formed along the hinge is broken. The first pull section is pulled in a first direction, the second pull section is pulled in a second direction that is substantially opposite the first direction, and the lid is separated from the base. Additionally the securing step may further comprise the step of securing a flange extending from one of the base and the lid with a rim formed in the other of the base and the lid. The securing step may also further comprise the step of forming a snap fit or interference fit between the base and the lid.

[0011] According to another aspect of the present invention, a single-piece polypropylene tamper evident thermoformed container is provided that includes a base having at least three sides, a lid having at least three sides, and a tamper evident feature. The tamper evident feature may include a perforation section and at least one push section or pull section associated with at least one of the base and the lid. The lid is movable between a first open position in which the lid is connected to the base about a hinge, a closed position in which the lid is releasably secured to the base, and a second open position in which the tamper evident feature is disengaged. The tamper evident feature provides visible confirmation that the lid has been moved to the second open position.

[0012] These and other aspects and objects of the present invention will be better appreciated and understood when considered in conjunction with the following description and accompanying drawings. It should be understood, however, that the following description, while indicating preferred embodiments of the present invention, is given by way of illustration and not of limitation. Many changes and modifications may be made within the scope of the present invention without departing from the spirit thereof, and the invention includes all such modifications.

DRAWING DESCRIPTION

[0013] One or more preferred exemplary embodiments of the invention are illustrated in the accompanying drawings in which like reference numerals represent like parts throughout and in which:

[0014] FIG. 1 is a first isometric view of a first tamper evident package;

[0015] FIG. 2 is a second isometric view of the first tamper evident package of FIG. 1;

[0016] FIG. 3 is a top plan view of the first tamper evident package of FIGS. 1 and 2;

[0017] FIG. 4 is a front elevation view of the first tamper evident package of FIGS. 1-3;

[0018] FIG. 5 is a side elevation view of the first tamper evident package of FIGS. 1-4;

[0019] FIG. 6 is an isometric view of stacked tamper evident packages of FIGS. 1-5;

[0020] FIG. 7 is an isometric view of the first tamper evident package of FIGS. 1-5;

[0021] FIG. 8 is a cutaway side view of the stacked tamper evident packages of FIG. 6;

[0022] FIG. 9 is a first isometric view of a second tamper evident package;

[0023] FIG. 10 is a second isometric view of the second tamper evident package of FIG. 9;

[0024] FIG. 11 is a detailed isometric view of the second tamper evident package of FIGS. 9 and 10;

[0025] FIG. 12 is another isometric view of the second tamper evident package of FIGS. 9-11;

[0026] FIG. 13 is another isometric view of the second tamper evident package of FIGS. 9-12;

[0027] FIG. 14 is another isometric view of the second tamper evident package of FIGS. 9-13;

[0028] FIG. 15 is a top plan view of the second tamper evident package of FIGS. 9-14;

[0029] FIG. 16 is a front elevation view of the second tamper evident package of FIGS. 9-15;

[0030] FIG. 17 is a side elevation view of stacked tamper evident packages of FIGS. 9-16;

[0031] FIG. 18 is a detailed side elevation of a feature of the tamper evident packages of FIG. 17 about the circle identified as 18 in FIG. 17;

[0032] FIG. 19 is a detailed side elevation of a feature of the tamper evident packages of FIG. 17 about the circle identified as 19 in FIG. 17;

[0033] FIG. 20 is a top plan view of a third tamper evident package;

[0034] FIG. 21 is a front elevation sectional view of the third tamper evident package of FIG. 20;

[0035] FIG. 22 is a side elevation sectional view of the base of the third tamper evident package of FIGS. 20 and 21;

[0036] FIG. 23 is a side elevation sectional view of the lid of the third tamper evident package of FIGS. 20 and 21; and

[0037] FIG. 24 is a detailed view of a feature of the third tamper evident package of FIG. 20.

[0038] Before explaining one or more embodiments of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and the arrangement of the components set forth in the following description and illustrated in the drawings. The invention is capable of other embodiments or being practiced or carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein is for the purpose of description and should not be regarded as limiting.

DETAILED DESCRIPTION

[0039] The figures illustrate a number of different tamper evident thermoformed packages and containers. These packages and containers are configured to initially be in an open position in which an interior is easily accessible. After a product is inserted into the package or container, the package or container can be closed. Once the package or container has been closed, it can be reopened by the removal of a tamper evident portion of the container. Thus, it will be easy for a consumer to determine whether the package or container has been reopened without extensive inspection.

[0040] Turning initially to FIGS. 1-8, a first container 50 is shown. The container 50 includes a base 52 and a lid 54. When the container 50 is manufactured, it is thermoformed, for instance with a polypropylene material, which allows the container to be microwave safe. The entire container 50 is a one-piece container that is thermoformed together, with the

lid 54 being pivotable relative to the base 52 about a hinge 56 in an initial opened position. See FIGS. 3 and 4. Because this is a one-piece container 50, it can more affordably be produced by a single piece tool design.

[0041] As shown, the container 50 is in a generally rectangular shape, where the base 52 and the lid 54 have generally complimentary dimensions. For instance, the base 52 has front and back walls 58, 60 that are generally complimentary in dimensions and layout as front and back walls 62, 64 of the lid 54. Further, the base 52 has side walls 66, 68 that are generally complimentary in dimensions and layout as side walls 70, 72 of the lid 54. As shown, the hinge 56 is located where the front wall 58 of the base 52 meets the front wall 62 of the lid 54. Although the illustrated embodiment shows a generally rectangular container 50, the container could similarly be made in any number of other shapes, including a square, a circle, an oval, and any other shape.

[0042] The lid 54 may be pivoted relative to the base 52 about the hinge 56 to a closed position. See FIGS. 1, 2, 5, and 7. The container 50 has components that allow the lid 54 to remain in the closed position until a tamper evident portion has been disabled. More specifically, one of the base 52 and the lid 54 may have a flange 74 that extends around the walls, and the other of the base 52 and the lid 54 may have a rim 76 that extends around the walls. The flange 74 is configured to securely rest against the rim 76 to form a snap fit. More specifically, the dimensions of the flange 74 and the rim 76 are such that the flange 74 may be moved to rest against the rim 76 to form an interference fit when the lid 54 is moved relative to the hinge 56. As a result of this snap and/or interference or other fit, it may be difficult to remove the lid 54 from the base 52 without first disengaging the tamper evident feature, which will be further described below. While the illustrated embodiment shows a snap fit or interference fit that secures the lid 54 to the base 52 in the closed position, the lid 54 and base 52 may be temporarily secured to one another using any other type of connection interface used with other packages and containers.

[0043] Further still, a protective perimeter wall 78 may extend around the rim 76. For instance, as shown, the base 52 features a perimeter wall 78 that extends directly adjacent to and around the location where the flange 74 is secured within the rim 76. In this way, the protective perimeter wall 78 makes it very difficult for a user to try to disengage the lid 54 by squeezing a fingernail between the base 52 and the lid 54 where the flange 74 and rim 76 form the snap fit or interference fit to disengage the snap fit or interference fit. Instead, the tamper evident feature needs to be disengaged, at which point the entire lid can be removed.

[0044] The tamper evident feature 80 of the container 50 shown in FIGS. 1-8 will now further be described. The tamper evident feature 80 includes a perforated section 82, a push section 84, and a pull section 86. According to other embodiments, the tamper evident feature may include additional push sections or pull sections. As seen, the push section 84 is associated with the lid 54 and the pull section 86 is associated with the base 52. However, these sections 84, 86 could be associated with either of the lid 54 or the base 52. The push section 84 serves as an area that a user pushes towards the center of the container 50. The pull section 86 serves as an area or tab that a user grips with his or her fingers to hold the pull section 86 in place or pull downwardly while the push section 84 is pushed towards the

center of the container 50. For instance, the pull section 86 and the push section 84 may be forced in substantially perpendicular directions. By way of example, FIG. 2 includes a first arrow 88 showing the direction in which the pull section 86 is moved and a second arrow 90 showing the direction in which the push section 84 is moved. The perforated section 82 is formed into the hinge 56. This perforated section 82 remains intact while the container 50 is manufactured, filled, and when the lid 54 is pivoted relative to the base 52 to the closed orientation. However, when the pull section 86 and the push section 84 are moved or pushed and pulled as shown by arrows 88, 90, the perforation section 82 breaks about the hinge 56. When this occurs, the flange 74 is disengaged from the rim 76, and the entire lid 54 is removed from the base 52. Because this results in the entire lid 54 being removed, a consumer can easily detect whether a third party has accessed the interior.

[0045] The container 50 has additional features to optimize use. For instance, the container 50 may include a variety of ribs 92 formed therein to help improve the strength and structural rigidity of the container 50. Additionally, since the container 50 is made of polypropylene, and thus can be safely microwaved, vents 94 may be formed into one of the base 52 and/or the lid 54 to allow for steam to be dissipated while preventing pressure buildup.

[0046] Additionally, multiple containers 50 may be stacked on top of one another in the initial opened position, where the lids 54 of adjacent containers are nested within one another and where the bases 52 of adjacent containers are nested within one another. Similarly, once the containers 50 are filled with contents and closed, the containers 50 are configured for stacking. See FIG. 6. For instance, the lid 54 may have a top ridge 96 extending therefrom (see shaded portion of FIG. 7), and the base 52 may have an outer ridge 98 (see shaded portion of FIG. 6). The outer ridge 98 may be slightly larger than the top ridge 96 such that the top ridge 96 can nest within the outer ridge 98. This is shown in a cross sectional view in FIG. 8.

[0047] Manufacture and use of the container 50 will now be described. Initially, the container 50 is thermoformed in a single piece, which includes the base 52, the lid 54, and the hinge 56 that joins the base 52 and the lid 54. Multiple containers 50 may be stacked for efficient transportation, where bases 52 of respective containers 50 are nested relative to one another and lids 54 of respective containers are nested relative to one another. When a container 50 is to be used, contents are added to the interior. Once the contents have been inserted into the interior of the container 50, the lid 54 is pivoted relative to the base 52 about the hinge 56. The lid 54 is pivoted until it is secured to the base 52 once the flange 74 is seated within the rim 76, and snap fit/interference fit is formed. Thereafter, it is difficult to open the container 50 without disengaging the tamper evident feature 80. To do so, a user may grip the pull section 86 and push the push section 84 toward the center of the container 50. As a result of this pushing force against the push section 84, the perforation section 82 of the hinge 56 is disengaged. As this occurs, the snap fit/interference fit between the flange 74 and the rim 76 is broken and the lid 54 is separated from the base 52. At this point, a consumer may access the contents of the container 50. In the event that a third party disengages the tamper evident feature 80, it will be obvious because the lid 54 will likely no longer be on the base 52, or if it is, the perforation section 82 will be destroyed such

that the hinge 56 is no longer intact. Especially in industries such as food preparation and delivery, it is appealing for a consumer to be able to quickly and easily identify whether the contents of the container 50 have been interfered with.

[0048] Turning next to FIGS. 9-19, a second container 150 is shown. The container 150 includes a base 152 and a lid 154. When the container 150 is manufactured, it is thermoformed, for instance with a polypropylene material, which allows the container to be microwave safe. The entire container 150 is a one-piece container that is thermoformed together, with the lid 154 being pivotable relative to the base 152 about a hinge 156 in an initial opened position. See FIGS. 15 and 16. Because this is a one-piece container 150, it can more affordably be produced by a single piece tool design.

[0049] As shown, the container 150 is in a generally rectangular shape, where the base 152 and the lid 154 have generally complimentary dimensions. For instance, the base 152 has front and back walls 158, 160 that are generally complimentary in dimensions and layout as front and back walls 162, 164 in the lid 154. Further, the base 152 has side walls 166, 168 that are generally complimentary in dimensions and layout as side walls 170, 172 of the lid 154. As shown, the hinge 156 is located where the front wall 158 of the base 152 meets the front wall 162 of the lid 154. Although the illustrated embodiment shows a generally rectangular container 150, the container could similarly be made in any number of other shapes, including a square, a circle, an oval, and any other shape.

[0050] The lid 154 may be pivoted relative to the base 152 about the hinge 156 to a closed position. See FIGS. 9-14. The container 150 has components that allow the lid 154 to remain in the closed position until a tamper evident portion has been disabled. More specifically, one of the base 152 and the lid 154 may have a flange 174 that extends around the walls, and the other of the base 152 and the lid 154 may have a rim 176 that extends around the walls. The flange 174 is configured to securely rest against the rim 176 to form a snap fit. More specifically, the dimensions of the flange 174 and the rim 176 are such that the flange 174 may be moved to rest against the rim 176 to form an interference fit when the lid 154 is moved relative to the hinge. See FIG. 19. As a result of this snap and/or interference or other fit, it may be difficult to remove the lid 154 from the base 152 without first disengaging the tamper evident feature, which will be further described below. While the illustrated embodiment shows a snap fit or interference fit that secures the lid 154 to the base 152 in the closed position, the lid 154 and base 152 may be temporarily secured to one another using any other type of connection interface used with other packages and containers.

[0051] Further still, a protective perimeter wall 178 may extend around the rim 176. For instance, as shown, the base 152 features a perimeter wall 178 that extends directly adjacent to and around the location where the flange 174 is secured within the rim 176. In this way, the protective perimeter wall 178 makes it very difficult for a user to try to disengage the lid 154 by squeezing a fingernail between the base 152 and the lid 154 where the flange 174 and rim 176 form the snap fit or interference fit to disengage the snap fit or interference fit. Instead, the tamper evident feature needs to be disengaged, at which point the entire lid 154 can be removed.

[0052] The tamper evident feature 180 of the container 150 will now further be described. The tamper evident feature 180 includes a perforated section 182, a first pull section 184, and a second pull section 186. As seen, the first pull section 184 is associated with the lid 154 and the second pull section 186 is associated with the base 152. Although the illustrated pull sections 184, 186 are shown as tabs that are mirror images of one another, these sections 184, 186 could similarly be in different shapes and configurations. When a user wishes to open the container 150, he or she grips the first pull section 184 with a first hand and the second pull section 186 with a second hand. Thereafter, the user pulls the pull sections 184, 186 in opposite directions. For instance, as shown in FIG. 12, the user pulls the first pull section 184 in a first direction, as shown upwardly by arrow 188, and the second pull section 186 in a second direction, as shown downwardly by arrow 190. The perforated section 182 is formed into the hinge 156. This perforated section 182 remains intact while the container 150 is manufactured, filled, and when the lid 154 is pivoted relative to the base 152. However, when the first pull section 184 and the second pull section 186 are moved or pushed and pulled as shown by arrows 188, 190, the perforation section 182 breaks about the hinge 156. When this occurs, the flange 174 is disengaged from the rim 176, and the entire lid 154 is removed from the base 152. Because this results in the entire lid 154 being removed, a consumer can easily detect whether a third party has accessed the interior.

[0053] The container 150 has additional features to optimize use. For instance, the container 150 may include a variety of ribs 192 formed therein to help improve the strength and structural rigidity of the container 150. Additionally, since the container 150 is made of polypropylene, and thus can be safely microwaved, vents 194 may be formed into one of the base 152 and/or the lid 154 to allow for steam to be dissipated while preventing pressure buildup.

[0054] Additionally, multiple containers 150 may be stacked on top of one another in the initial opened position, where the lids 154 of adjacent containers are nested within one another and where the bases 152 of adjacent containers are nested within one another. Similarly, once the containers 150 are filled with contents and closed, the containers 150 are configured for stacking. See FIG. 17. For instance, the lid 154 may have a top ridge 196 extending therefrom and the base 152 may have an outer ridge 198. The outer ridge 198 may be slightly larger than the top ridge 196 such that the top ridge 196 can nest within the outer ridge 198. See FIG. 18.

[0055] Manufacture and use of the container 150 will now be described. Initially, the container 150 is thermoformed in a single piece, which includes the base 152, the lid 154, and the hinge 156 that joins the base 152 and the lid 154. Multiple containers 150 may be stacked for efficient transportation, where bases 152 of respective containers 150 are nested relative to one another and lids 154 of respective containers are nested relative to one another. When a container 150 is to be used, contents are added to the interior. Once the contents have been inserted into the container 150, the lid 154 is pivoted relative to the base 152 about the hinge 156. The lid 154 is pivoted until it is secured to the base 152 once the flange 174 is seated within the rim 176, and snap fit/interference fit occurs. Thereafter, it is difficult to open the container 150 without disengaging the tamper evident feature 180. To do so, a user may grip the first pull section 184 and the second pull 186 and pull the two in opposite

directions. As a result of these pulling forces, the perforation section **182** of the hinge **156** is disengaged. As this occurs, the snap fit/interference fit between the flange **174** and the rim **176** is broken and the lid **154** is separated from the base **152**. At this point, a consumer may access the contents of the container **150**. In the event that a third party disengages the tamper evident feature **180**, it will be obvious because the lid **154** will likely no longer be on the base **152**, or if it is, the perforation section **182** will be destroyed such that the hinge **156** is no longer intact. Especially in industries such as food preparation and delivery, it is appealing for a consumer to be able to quickly and easily identify whether the contents of the container **150** have been interfered with.

[0056] Turning finally to FIGS. **20-24**, a third container **250** is shown. The container **250** includes a base **252** and a lid **254**. When the container **250** is manufactured, it is thermoformed, for instance with a polypropylene material, which allows the container to be microwave safe. The entire container **250** is a one-piece container that is thermoformed together, with the lid **254** being pivotable relative to the base **252** about a hinge **256** in an initial opened position. See FIGS. **20** and **21**. Because this is a one-piece container **250**, it can more affordably be produced by a single piece tool design.

[0057] As shown, the container **250** is in a generally rectangular shape, where the base **252** and the lid **254** have generally complimentary dimensions. For instance, the base **252** has front and back walls **258**, **260** that are generally complimentary in dimensions and layout as front and back walls **262**, **264** of the lid **254**. Further, the base **252** has side walls **266**, **268** that are generally complimentary in dimensions and layout as side walls **270**, **272** of the lid **254**. As shown, the hinge **256** is located where the front wall **258** of the base **252** meets the front wall **262** of the lid **254**. Although the illustrated embodiment shows a generally rectangular container **250**, the container could similarly be made in any number of other shapes, including a square, a circle, an oval, and any other shape.

[0058] The lid **254** may be pivoted relative to the base **252** about the hinge **256** to a closed position. The container **250** has components that allow the lid **254** to remain in the closed position until a tamper evident portion has been disabled. More specifically, one of the base **252** and the lid **254** may have a flange **274** that extends around the walls, and the other of the base **252** and the lid **254** may have a rim **276** that extends around the walls. The flange **274** is configured to securely rest against the rim **276** to form a snap fit. More specifically, the dimensions of the flange **274** and the rim **276** are such that the flange **274** may be moved to rest against the rim **276** to form an interference fit when the lid **254** is moved relative to the hinge **256**. As a result of this snap and/or interference or other fit, it may be difficult to remove the lid **254** from the base **252** without first disengaging the tamper evident feature, which will be further described below. While the illustrated embodiment shows a snap fit or interference fit that secures the lid **254** to the base **252** in the closed position, the lid **254** and base **252** may be temporarily secured to one another using any other type of connection interface used with other packages and containers.

[0059] Further still, a protective perimeter wall **278** may extend around the rim **276**. For instance, as shown, the base **252** features a perimeter wall **278** that extends directly adjacent to and around the location where the flange **274** is

secured within the rim **276**. In this way, the protective perimeter wall **278** makes it very difficult for a user to try to disengage the lid **254** by squeezing a fingernail between the base **252** and the lid **254** where the flange **274** and rim **276** form the snap fit or interference fit to disengage the snap fit or interference fit. Instead, the tamper evident feature needs to be disengaged, at which point the entire lid can be removed.

[0060] The tamper evident feature **280** of the container **250** shown in FIGS. **20-24** will now further be described. The tamper evident feature **280** includes a perforated section **282**, a push section **284**, and first and second pull sections **286**, **287**. The presence of one push section **284** and two pull sections **286**, **287** helps to make it easier for a user to lid **254** from the base **252** when the tamper evident feature **280** is separated about the perforated section **282**. As seen, the push section **284** and the pull sections **286**, **287** are located next to one another along the hinge **256**. The push section **284** serves as an area that a user pushes the container **250** at the hinge **256**, and the pull sections **286**, **287** serve as areas that a user pulls at the hinge **256**. The push section **284** serves as an area or tab that a user grips with his or her fingers to move the base **252** in a first direction, and the pull sections **286**, **287** serve as areas or tabs that user grips with his or her fingers to move the lid **254** in a second direction away from the first direction. For instance, the pull section **286**, **287** and the push section **284** may be forced in substantially opposite directions. The perforated section **282** is formed into the hinge **256**. This perforated section **282** remains intact while the container **250** is manufactured, filled, and when the lid **254** is pivoted relative to the base **252** to the closed orientation. However, when the pull sections **286**, **287** and the push section **284** are moved or pushed and pulled, the perforation section **282** breaks about the hinge **256**. When this occurs, the flange **274** is disengaged from the rim **276**, and the entire lid **254** is removed from the base **252**. Because this results in the entire lid **254** being removed, a consumer can easily detect whether a third party has accessed the interior.

[0061] The container **250** has additional features to optimize use. For instance, the container **250** may include a variety of ribs **2292** formed therein to help improve the strength and structural rigidity of the container **50**. Additionally, since the container **250** is made of polypropylene, and thus can be safely microwaved, vents (not shown) may be formed into one of the base **252** and/or the lid **254** to allow for steam to be dissipated while preventing pressure buildup.

[0062] Additionally, multiple containers **250** may be stacked on top of one another in the initial opened position, where the lids **254** of adjacent containers are nested within one another and where the bases **252** of adjacent containers are nested within one another. Similarly, once the containers **250** are filled with contents and closed, the containers **250** are configured for stacking.

[0063] Manufacture and use of the container **250** will now be described. Initially, the container **250** is thermoformed in a single piece, which includes the base **252**, the lid **254**, and the hinge **256** that joins the base **252** and the lid **254**. Multiple containers **250** may be stacked for efficient transportation, where bases **252** of respective containers **250** are nested relative to one another and lids **254** of respective containers are nested relative to one another. When a container **250** is to be used, contents are added to the interior.

Once the contents have been inserted into the interior of the container 250, the lid 254 is pivoted relative to the base 252 about the hinge 256. The lid 254 is pivoted until it is secured to the base 252 once the flange 274 is seated within the rim 276, and snap fit/interference fit is formed. Thereafter, it is difficult to open the container 250 without disengaging the tamper evident feature 280. To do so, a user may grip the pull sections 286, 287 and push the push section 284. As a result of these pushing and pulling forces, the perforation section 282 of the hinge 256 is disengaged. As this occurs, the snap fit/interference fit between the flange 274 and the rim 276 is broken and the lid 254 is separated from the base 252. At this point, a consumer may access the contents of the container 250. In the event that a third party disengages the tamper evident feature 280, it will be obvious because the lid 254 will likely no longer be on the base 252, or if it is, the perforation section 282 will be destroyed such that the hinge 256 is no longer intact. Especially in industries such as food preparation and delivery, it is appealing for a consumer to be able to quickly and easily identify whether the contents of the container 250 have been interfered with.

[0064] Understandably, the present invention has been described above in terms of one or more preferred embodiments and methods. It is recognized that various alternatives and modifications may be made to these embodiments and methods which are within the scope of the present invention.

What is claimed is:

1. A tamper evident thermoformed container comprising:
 - a base;
 - a lid connected to the base about a hinge; and
 - a tamper evident feature;
 wherein the lid is movable between:
 - an open position; and
 - a closed position in which the lid is releasably secured to the base;
 wherein the tamper evident feature provides visible confirmation that the lid has been moved from the closed position.
2. The tamper evident thermoformed container of claim 1, wherein the tamper evident feature further comprises:
 - at least one pull section associated with one of the base and the lid;
 - at least one push section associated with the other of the base and the lid; and
 - a perforation section formed along the hinge;
 wherein the at least one pull section is pulled and the at least one push section is pushed to break the perforation section and separate the hinge.
3. The tamper evident thermoformed container of claim 2, wherein the at least one pull section is pulled in a first direction;
 - wherein the at least one push section is pushed in a second direction; and
 - wherein the first direction is substantially perpendicular to the second direction.
4. The tamper evident thermoformed container of claim 1, wherein the tamper evident feature further comprises:
 - a first pull section associated with one of the base and the lid;
 - a second pull section associated with the other of the base and the lid; and
 - a perforation section formed along the hinge;

wherein the first pull section and the second pull section are pulled to break the perforation section and separate the hinge.

5. The tamper evident thermoformed container of claim 4, wherein the first pull section is pulled in a first direction; wherein the second pull section is pulled in a second direction; and wherein the first direction is in substantially the opposite direction of the second direction.

6. The tamper evident thermoformed container of claim 1, further comprising:

- a flange extending from one of the base and the lid; and
- a rim formed in the other of the base and the lid;

wherein the flange is secured against the rim to form a snap or interference fit between the base and the lid.

7. The tamper evident thermoformed container of claim 7, further comprising a perimeter wall located adjacent to the flange and the rim;

- wherein the perimeter wall prevents access to the flange and the rim.

8. The tamper evident thermoformed container of claim 1, further comprising:

- at least one vent formed in the base or the lid; and
- at least one rib formed in the base or the lid.

9. A method of using a single-piece polypropylene tamper evident thermoformed container comprising the steps of:

- inserting contents into a base of the container;
- pivoting a lid of the container relative to the base about a hinge;
- securing the lid to the base; and
- disengaging a tamper evident feature to access the contents held within the base.

10. The method of claim 9, wherein the disengaging step further comprises the steps of:

- pulling a pull section associated with one of the base and the lid;
- pushing a push section associated with the other of the base and the lid; and
- breaking a perforation section formed along the hinge.

11. The method of claim 10, further comprising the steps of:

- pulling the pull section in a first direction;
- pushing the push section in a second direction substantially perpendicular to the first direction; and
- separating the lid from the base.

12. The method of claim 9, wherein the disengaging step further comprises the steps of:

- pulling a first pull section associated with one of the base and the lid;
- pulling a second pull section associated with the other of the base and the lid; and
- breaking a perforation section formed along the hinge.

13. The method of claim 12, further comprising the steps of:

- pulling the first pull section in a first direction;
- pulling the second pull section in a second direction that is substantially opposite of the first direction; and
- separating the lid from the base.

14. The method of claim 9, wherein the securing step further comprises the step of securing a flange extending from one of the base and the lid with a rim formed in the other of the base and the lid.

15. The method of claim **14**, wherein the securing step further comprises the step of forming a snap fit or interference fit between the base and the lid.

16. A single-piece polypropylene tamper evident thermoformed container comprising:

- a base having at least three sides;
- a lid having at least three sides; and
- a tamper evident feature comprising:
 - a perforation section; and
 - at least one push section or pull section associated with at least one of the base and the lid;

wherein the lid is movable between:

- a first open position in which the lid is connected to the base about a hinge;
- a closed position in which the lid is releasably secured to the base; and
- a second open position in which the tamper evident feature is disengaged;

wherein the tamper evident feature provides visible confirmation that the lid has been moved to the second open position.

17. The single-piece polypropylene tamper evident thermoformed container of claim **16**, wherein the tamper evident feature further comprises:

- a pull section associated with the base; and
- a push section associated with the lid;

wherein the pull section is pulled in a first direction and the push section is pushed in a second direction to break the perforation section and separate the hinge; and wherein the first direction is substantially perpendicular to the second direction.

18. The single-piece polypropylene tamper evident thermoformed container of claim **16**, wherein the tamper evident feature further comprises:

- a first pull section associated with the base; and
 - a second pull section associated with the lid;
- wherein the first pull section is pulled in a first direction and the second pull section is pulled in a second direction in substantially the opposite direction as the first direction to break the perforation section and separate the hinge.

19. The single-piece polypropylene tamper evident thermoformed container of claim **16**, further comprising:

- a flange extending from one of the base and the lid; and
 - a rim formed in the other of the base and the lid;
- wherein the flange is secured against the rim to form a snap or interference fit between the base and the lid.

20. The single-piece polypropylene tamper evident thermoformed container of claim **19**, further comprising a perimeter wall located adjacent to the flange and the rim; wherein the perimeter wall prevents access to the flange and the rim.

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