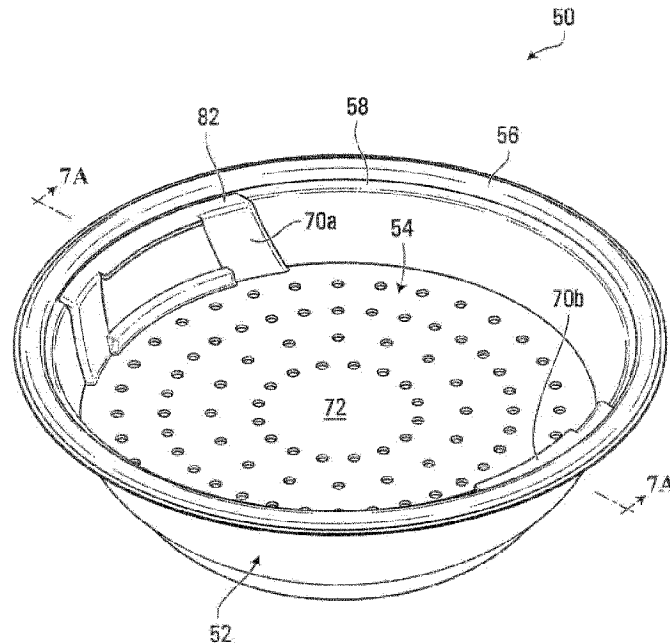




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(54) Title: FOOD PACKAGING



(57) **Abrégé/Abstract:**

Food packaging (50) has a food vessel (52) and a food tray (54). The vessel has an upper lip (56) and an inwardly projecting ledge (58) below the upper lip. The food tray has a pair of opposed handle structures (70a, 70b) and a tray portion (72) depending from the handle structures. Each handle structure has an outwardly projecting protuberance (82). The food tray is positioned within the food vessel with each protuberance resting on the inwardly projecting ledge such that the tray portion is suspended within the food vessel by the handle structures. This forms two food compartments (90, 92): one (90) below and one (92) above the tray portion. The vessel may be topped by a topping film (98).

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(54) Title: FOOD PACKAGING

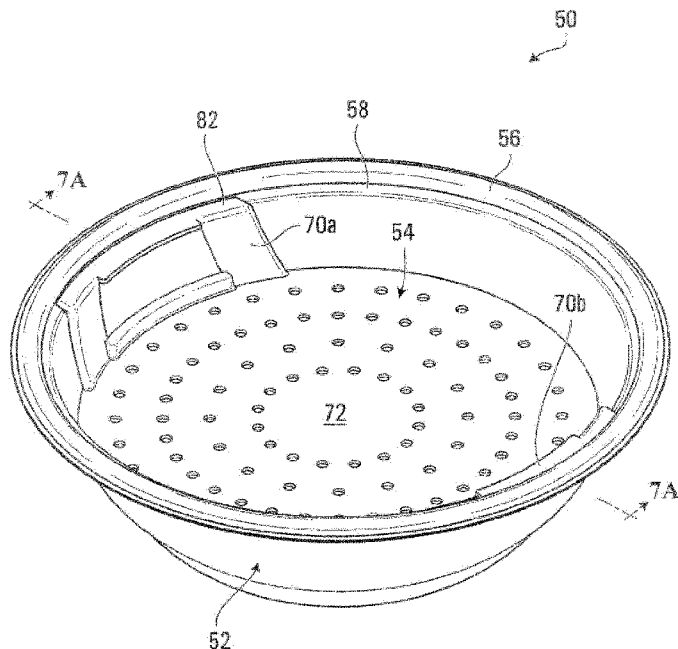


FIG. 1

(57) Abstract: Food packaging (50) has a food vessel (52) and a food tray (54). The vessel has an upper lip (56) and an inwardly projecting ledge (58) below the upper lip. The food tray has a pair of opposed handle structures (70a, 70b) and a tray portion (72) depending from the handle structures. Each handle structure has an outwardly projecting protuberance (82). The food tray is positioned within the food vessel with each protuberance resting on the inwardly projecting ledge such that the tray portion is suspended within the food vessel by the handle structures. This forms two food compartments (90, 92): one (90) below and one (92) above the tray portion. The vessel may be topped by a top-ping film (98).

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Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

— *of inventorship (Rule 4.17(iv))*

Published:

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FOOD PACKAGING

BACKGROUND

[0001] This invention relates to food packaging.

[0002] A great variety of packaged convenience foods are available to a consumer. However, there is a continuing need for packaged convenience foods that suit the tastes of as many consumers as possible.

SUMMARY

[0003] In an aspect of the present invention, food packaging has a food vessel and a food tray. The vessel has an upper lip and an inwardly projecting ledge below the upper lip. The food tray has a pair of opposed handle structures and a tray portion depending from the handle structures. Each handle structure has an outwardly projecting protuberance. The food tray is positioned within the food vessel with each protuberance resting on the inwardly projecting ledge such that the tray portion is suspended within the food vessel by the handle structures. This forms two food compartments: one below and one above the tray portion. The vessel may be topped by a topping film.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] In the drawings which illustrate example embodiments of this invention,

[0005] **FIG. 1** is a perspective view of food packaging made in accordance with an embodiment,

[0006] **FIG. 2** is an exploded view of the packaging of **FIG. 1**,

[0007] **FIG. 3** is a cross-sectional view of a food bowl of the packaging of **FIG. 1**,

[0008] **FIG. 4** is a cross-sectional view of the packaging of **FIG. 1** shown containing food components and covered with a topping film,

[0009] **FIGs. 5 and 6** are perspective views of the packaging of **FIG. 1** containing food components showing the packaging in use,

[0010] **FIG. 7A** is a cross-sectional view along the lines **7A-7A** of **FIG. 1**,

[0011] **FIG. 7B** is a cross-sectional view of the food bowl of the food packaging of **FIG. 1** and a tray in accordance with another embodiment,

[0012] **FIGs. 8 to 13** are perspective views of trays made in accordance with different embodiments, each for use with the food bowl of **FIG. 1**,

[0013] **FIG. 14** is a perspective view of a food bowl made in accordance with another embodiment,

[0014] **FIG. 15A** is a cross-sectional view of the food packaging in accordance with another embodiment,

[0015] **FIG. 15B** is a cross-sectional view of the food packaging in accordance with another embodiment, and

[0016] **FIG. 16** is a perspective view of a food bowl made in accordance with another embodiment.

DETAILED DESCRIPTION

[0017] Turning to **FIGs. 1 to 3**, food packaging **50** has a food vessel and a food tray **54** which rests within the food vessel.

[0018] The example food vessel is a food bowl **52** with a circumferential upper lip **56** and an inwardly projecting continuous circumferential ledge **58** in the side wall **60** of the bowl below the upper lip **56**. As will be apparent, the side wall **60** of the bowl is smooth and terminates at base wall **62**.

[0019] With reference to **FIGs. 1 and 2** food tray **54** has a pair of opposed handle structures **70a, 70b** with a disc-shaped tray portion **72** depending from the handle structures **70a, 70b**. Each handle structure **70a, 70b** has a pair of arms **74, 76** extending upwardly from the tray portion **72** and terminating in a cross-bar **80** which bridges the pair of arms. The cross-bar **80** has an outwardly projecting protuberance lip **82**. The arms **74, 76** are joined at their basal ends by a reinforcing ridge **84**. In

consequence, there is an opening **86** through the handle structures between the pair of arms **74**, **76**; this opening is sized so as to be able to receive the thumb of a user. The cross-bar **80** is curved with a radius of curvature matching the radius of curvature of the bowl **52** at the ledge **58**. The tray portion **72** of food tray **54** has a plurality of through holes **88** arranged in a pattern of concentric circles.

[0020] The food tray **54** can be positioned within the bowl **52** with the protuberance lip **82** of each handle structure **70a**, **70b** resting on the inwardly projecting ledge **58** such that the tray portion **72** is suspended within the bowl by the handle structures **70a**, **70b** as is illustrated by **FIGs. 1** and **7A**. In this regard, the diameter of the tray portion **72** may be chosen so as to be slightly less than the diameter of the bowl **52** at the level where the tray portion is suspended within the bowl by the handle structures. Because the cross-bars **80** have a radius of curvature matching that of the bowl at the ledge **58**, the tray portion **72** can be suspended within the bowl **52** at any angular orientation of the food tray **54** with respect to the bowl **52**. The cross-bars are laterally elongated so as to extend along a section of the ledge. This enhances the stability of the food tray within the bowl. The cross-bars **80** are designed so that, with the tray portion suspended within the bowl, the protuberance lips **82** of the cross-bars extend in close proximity to the side wall **60** of the bowl so that there is insufficient space between the outside edge of protuberance lips **82** and the bowl side wall **60** to admit a finger of a user. It will be apparent from **FIG. 7A** that, with the food tray **54** resting within the bowl **52**, the bowl is divided into a lower compartment **90** and an upper compartment **92**.

[0021] Food packaging **50** can be used to package a convenience food. For example, with reference to **FIG. 4**, bowl **52** may hold a first component **94** of a convenience food such as a food component that includes a liquid: for example, the first food component could comprise meat and a sauce. Food tray **54** may hold a second food component **86**, such as a solid component, for example, pasta.

[0022] Both the bowl **52** and food tray **54** may be made of a microwaveable material such as polypropylene. The bowl may be constructed by an injection moulding or thermoforming process. The tray could be constructed by injection moulding, or by a thermoforming process followed by secondary operations.

[0023] To package a convenience food, a first food component may be added to bowl **52**, food tray **54** may be placed within the bowl so that the tray portion **72** is suspended by handle structures **70a**, **70b** and a second food component added on top of the tray portion **72**. Next a topping film **98** may be adhered to the upper lip **56** of the bowl. The topping film may be a self-venting film or a steam impervious film. Typically, the food components will be frozen. To prepare the convenience food, the consumer may simply place the filled food packaging of **FIG. 4** in the microwave where the film **80** is self-venting. If the film is not self-venting, a portion of the film may be peeled back or the film may be punctured prior to microwave heating or cooking.

[0024] During microwave heating or cooking, the openings **88** in the tray portion **72** allow moisture from the first food component to rise through the second food component as steam.

[0025] Where the topping film **98** is a peelable film, at the conclusion of microwave heating or cooking, the consumer may peel away the film. Next, as illustrated in **FIG. 5**, the user may place a thumb (or finger) at and within the opening **86** in each handle structure **70a**, **70b** and draw upwardly on the cross-bars **80** of the handle structures to move the food tray **54** upwardly along the side wall **60** of the bowl. Once the cross-bars reach the top of the bowl, the user may grasp the cross-bars between the thumb and fingers of both hands, lift the food tray above the bowl, and tip the food tray to dispense (all or a selected amount of) the second food component into the first food component, as illustrated in **FIG. 6**. The food components may be stirred together, as desired and, optionally, consumed directly from the bowl **52**.

[0026] A user also has the option of dispensing the second food component into a separate food container if the user wished to enjoy the food components separately.

[0027] Turning to **FIGs. 7A** and **7B**, optionally food bowl **52** can be used with a second food tray **154** rather than with the aforescribed first food tray **54**. Second food tray **154** is similar to first food tray **54** except that the arms of handle structures **170a**, **170b** of food tray **154** are longer than the arms of handle structures **70a**, **70b** of food tray **54** and the diameter of the tray portion **172** of food tray **154** is less than the diameter of the tray portion **72** of food tray **54**. In consequence, tray portion **174** of food tray **154**, when suspended within bowl **52** by handle structures **170a**, **170b**, is positioned deeper within the bowl than is tray portion **74** of food tray **54**. Thus, the first food compartment **190** formed within bowl **52** by food tray **154** is smaller than the first food compartment **90** formed within bowl **52** by food tray **54** and the second food compartment **192** formed within bowl **52** by food tray **154** is larger than the second food compartment **92** formed within bowl **52** by food tray **54**. This adapts the food packaging for use with a convenience food with different relative portions of the first and second food components. Advantageously, therefore, different convenience foods can be packaged in the same food bowl **52** by using different food trays.

[0028] A variety of differently designed food trays may be used with food bowl **52**. For example, turning to **FIG. 8**, a food tray **254** has handle structures **270a**, **270b** each with an upstanding wall **274** terminating in an outwardly projecting protuberance lip **282**. Each wall **274** is buttressed by a radially inwardly directed fin **276** that is joined to the middle of the wall **274**. The sides of each fin have raised dimples **277**. The holes **288** in the tray portion **272** of the food tray **254** have a different pattern. In using food tray **254**, the user may grip the opposed fins **276** of the tray. The dimples frictionally enhance the grip of the tray. Optionally, the dimples may be concave rather than raised.

[0029] **FIG. 9** illustrates another food tray **354** that may be used with bowl **52**. Food tray **354** has a pair of spaced fins **376** bridged by a cross-bar **380** with protuberance lip **382**. The fins have dimples **377** on their outer sides. The tray portion **372** of food tray **354** has no through holes and so is suited for use with a food component that might otherwise drop through holes in the tray portion. In use, the user has the option of gripping the outer surface of each pair of fins between thumb and fingers or placing a thumb (or finger) in the hole **386** formed between the pair of fins **376** at the cross-bar **380** of each handle structure **370a**, **370b** in order to raise the food tray **354**.

[0030] Turning to **FIG. 10**, food tray **454** has handle structures **470a**, **470b** each with a concavely curved upstanding wall **474** terminating at either end in an outwardly projecting protuberance finger **480**, **480'**. The convex curve of wall **474** strengthens the wall. When in place within the bowl, the protuberance fingers rest on the ledge of the bowl. A user may grip the inner and outer sides of each wall in **474** order to lift the food tray **454** from the bowl.

[0031] The food tray **554** of **FIG. 11** is similar to the food tray **254** of **FIG. 8** except that the single fin of each handle structure of food tray **254** is replaced by a pair of adjacent fins **576** and **576'** in food tray **554**. Thus, each handle structure **570a**, **570b** of food tray **554** has an upstanding wall terminating in an outwardly projecting protuberance lip **582**. The fins **576**, **576'** are shown smooth walled which, especially for lighter second food components, may provide a sufficient gripping surface to allow a user to lift the food tray from the bowl.

[0032] The tray portion **672** of the food tray **654** of **FIG. 12** has opposed cut-out areas **671** from which upstanding walls **674** of handle structures **670a**, **670b** extend. The top of each upstanding wall **674** curves outwardly and protuberance fingers **680**, **680'** extend outwardly from the top of each wall at either end of the wall. The protuberance fingers are designed to rest on the ledge of the bowl when the food tray **654** is placed within the bowl. There is an opening **687** between the protuberance fingers such that a user's finger will fit between the wall **674** and the side wall of the bowl so that the user can raise the food tray **654** either by hooking his or her fingers

under the outwardly curved top of each wall **674** or by gripping the outer and inner sides of each wall **674**.

[0033] The tray portion **772** of food tray **754** of **FIG. 13** has opposed cut-out areas **771** from which upstanding walls **774** of handle structures **770a**, **770b** extend. Each wall **774** terminates in an outwardly protruding protuberance flange **780** that rests on the shelf of the bowl when the food tray **754** is placed within the bowl. The user may grip opposite ends of the flange **780** to raise the food tray from the bowl. The tray portion **772** has holes in the nature of slots **788** which may allow a greater amount of steam from the lower food component to pass through the upper food component during cooking.

[0034] Each of the described food trays may also be used with the food bowl **152** of **FIG. 14**. Referencing **FIG. 14**, food bowl **152** is a bowl similar to bowl **52** of **FIG. 2** except that its side wall **160** has an array of inwardly directed dimples **161** extending medially between the base wall **162** of the bowl and its upper lip **156**. In use, with a food tray set within bowl **152**, the dimples abut and frictionally engage the outer periphery of the tray portion of the food tray when the protuberances of the food tray rest on the inwardly directed ledge **158** of the bowl. Thus, the dimples assist to further stabilize the food tray within the bowl.

[0035] Optionally, as illustrated in **FIGs. 15A** and **15B**, the dimples **261** of the bowl **252** may be more vertically elongated than the dimples of bowl **152** of **FIG. 14** so that they will abut the outer periphery of the tray portion of both food trays **54** and **154** with different length handle structures.

[0036] Each of the described food trays may also be used with the food bowl **352** of **FIG. 16**. Food bowl **352** is a bowl similar to bowl **52** of **FIG. 2** except that its side wall **360** has an array of inwardly directed lugs **361**, **363** extending medially between the base wall **362** of the bowl and its upper lip **356**. In use, a food tray is positively set within bowl **352** such that the tray portion of the food tray snaps under lugs **363** to rest on lugs **361** when the protuberances of the food tray rest on the inwardly directed ledge **358** of the bowl. This strongly seats the food tray within the bowl.

[0037] While the example food trays are shown with a tray portion which is preferably a wall-less platform, optionally, the tray portion could be a platform with a peripheral wall.

[0038] While the example food vessels are round bowls, the food vessels may have any other desired shape (although this may constrain the orientation of the food tray within the food vessel).

[0039] Other features of the invention will be apparent to those skilled in the art and, therefore, the invention is defined in the claims.

CLAIMS:

1. Food packaging, comprising:
 - a food vessel having an upper lip and an inwardly projecting ledge below said upper lip;
 - a food tray having a pair of opposed handle structures and a tray portion depending from said handle structures, each handle structure having an outwardly projecting protuberance, said food tray positioned within said food vessel with each said protuberance resting on said inwardly projecting ledge such that said tray portion is suspended within said food vessel by said handle structures,
 - wherein each handle structure defines an opening between each said protuberance and a base of each said handle structure sized to receive a thumb or finger of a user.
2. The packaging according to claim 1 wherein said inwardly projecting ledge is a continuous ledge extending about a circumference of said food vessel.
3. The packaging according to claim 1 or 2, wherein said tray portion has a plurality of through holes.
4. The packaging according to any one of claims 1 to 3, wherein each said protuberance is laterally elongated so as to extend along a section of said ledge.
5. The packaging according to any one of claims 1 to 4, further comprising a topping film adhered to said upper lip of said food vessel.
6. The packaging according to claim 5 further comprising a first food component within said vessel below said tray portion of said food tray and a second food component supported on said tray portion of said food tray.

7. The packaging according to any one of claims 1 to 6, wherein said food vessel is a bowl.

8. The packaging according to claim 7, wherein each said handle structure comprises a pair of arms extending upwardly from said tray portion terminating in a cross-bar bridging said pair of arms, said cross-bar comprising said protuberance of said each handle structure.

9. The packaging according to claim 8, wherein each said protuberance has a radius of curvature matching a radius of curvature of said bowl at said inwardly projecting ledge.

10. The packaging according to claim 9, wherein an outer edge of each said cross-bar lies in close proximity to a side wall of said bowl so as not to admit a finger of a user between said cross-bar and said side wall whereby to encourage said user to remove said food tray from said bowl by placing a thumb or finger through each said opening and drawing said food tray upwardly along said side wall of said bowl.

11. The packaging according to claim 7, wherein said handle structures comprise opposed inwardly directed fins.

12. The packaging according to claim 11, wherein each fin has dimpled sides.

13. The packaging according to claim 7, wherein said bowl has a circumferential array of inwardly directed dimples extending medially between a base of said bowl and said upper lip frictionally engaging said tray portion of said food tray.

14. A food packaging system, comprising:
a food vessel having an upper lip and an inwardly projecting ledge below said upper lip;

a first food tray having a pair of opposed first handle structures and a first tray portion depending from said first handle structures, each first handle structure having an outwardly projecting first protuberance and defining an opening between opening each said protuberance and a base of each said handle structure sized to receive a thumb or finger of a user, said first food tray positionable within said food vessel with each said first protuberance resting on said inwardly projecting ledge such that said first tray portion is suspended within said food vessel by said first handle structures; and

a second food tray having a pair of opposed second handle structures and a second tray portion depending from said second handle structures, each second handle structure having an outwardly projecting second protuberance, said second handle structures being longer than said first handle structures, said second food tray positionable within said food vessel with each said second protuberance resting on said inwardly projecting ledge such that said second tray portion is suspended within said food vessel by said second handle structures at a level below which said first tray portion is located when suspended within said food vessel,

whereby a first food component may be added to said food vessel, one of said first food tray and said second food tray positioned within said food vessel, a second food component added on top of said one of said first food tray and said second food tray, and a topping film adhered to said upper lip of said food vessel to create a food package.

15. The packaging according to claim 14, wherein said food vessel is a bowl and wherein said bowl has a circumferential array of inwardly directed dimples extending medially between a base of said bowl and said upper lip, said dimples for frictionally engaging said first tray portion of said first food tray when positioned within said food vessel with each said first protuberance resting on said inwardly projecting ledge and for frictionally engaging said second tray portion of said second food tray when positioned within said food vessel with each said second protuberance resting on said inwardly projecting ledge.

16. A packaged convenience food comprising:

a food vessel having an upper lip, a side wall, a base wall, and an inwardly projecting ledge in said side wall;

a food tray having a pair of opposed handle structures and a tray portion depending from said handle structures, each handle structure having an outwardly projecting protuberance and defining an opening between each said protuberance and a base of each said handle structure sized to receive a thumb or finger of a user, said food tray positioned within said food vessel with each said protuberance resting on said inwardly projecting ledge such that said tray portion is suspended within said food vessel by said handle structures;

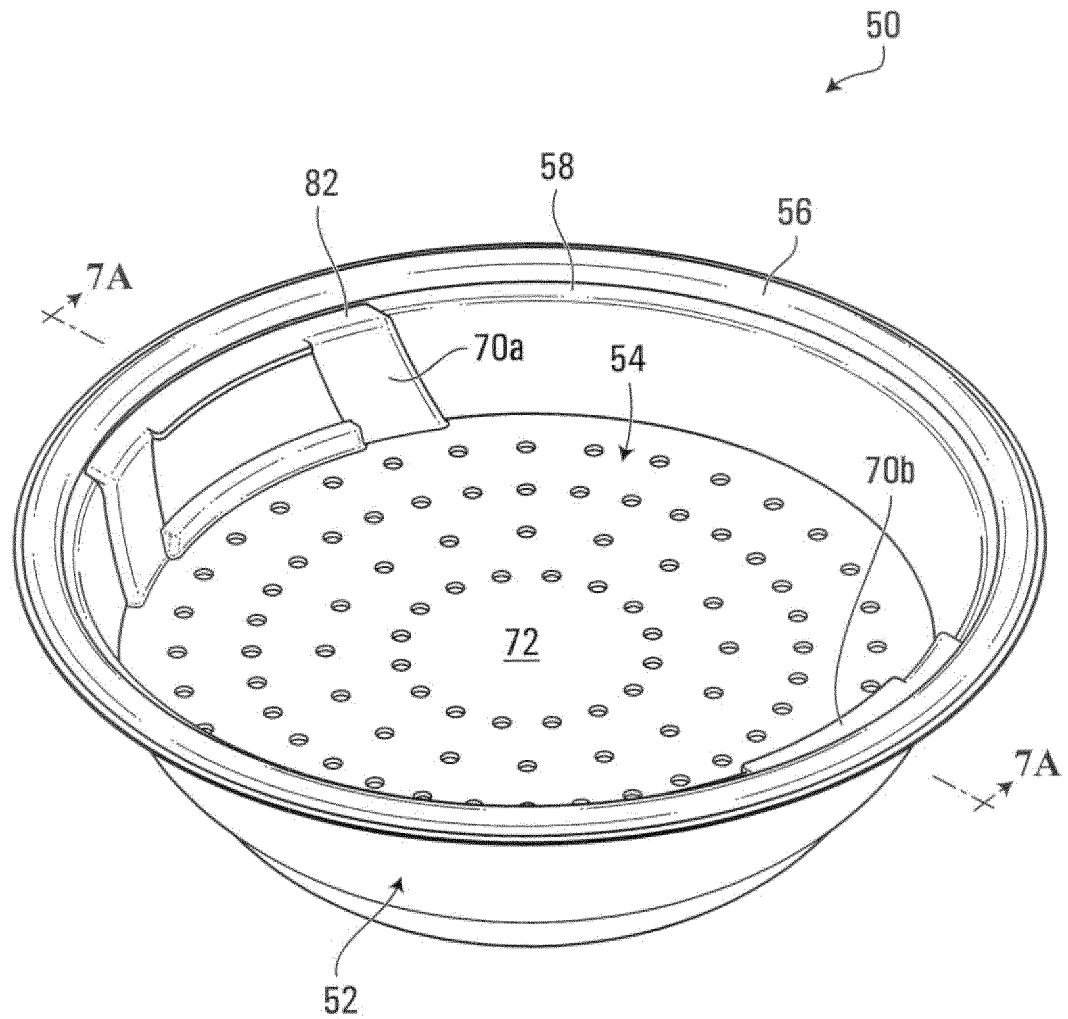
a topping film adhered to said upper lip of said food vessel;

a first food component within said food vessel between said base wall of said food vessel and said tray portion of said food tray; and

a second food component within said food vessel on top of said tray portion.

17. The packaged convenience food according to claim 16, wherein said food vessel is a bowl and said bowl has a circumferential array of inwardly directed dimples extending medially between a base of said bowl and said upper lip, said dimples frictionally engaging said tray portion of said food tray.

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**FIG. 1**

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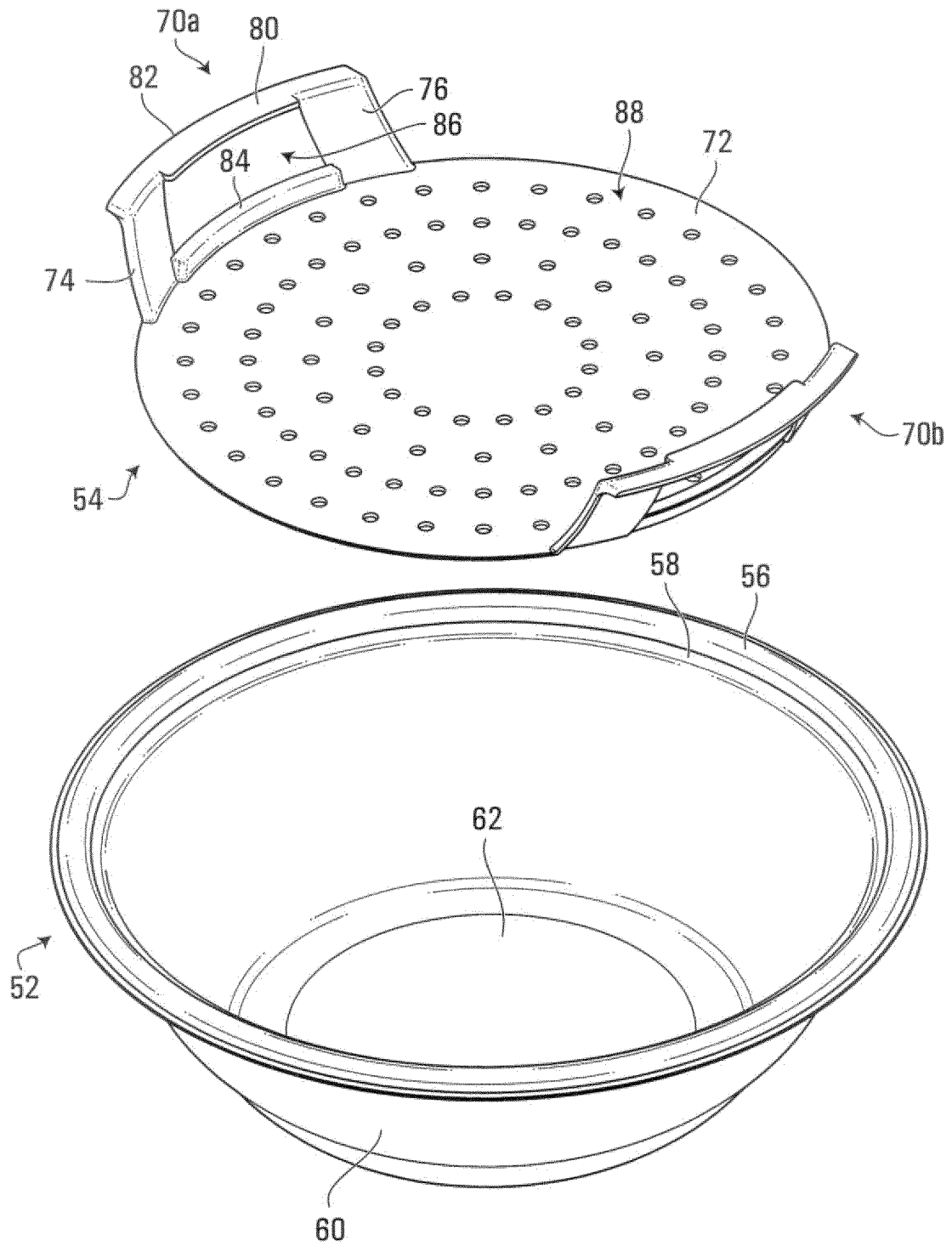
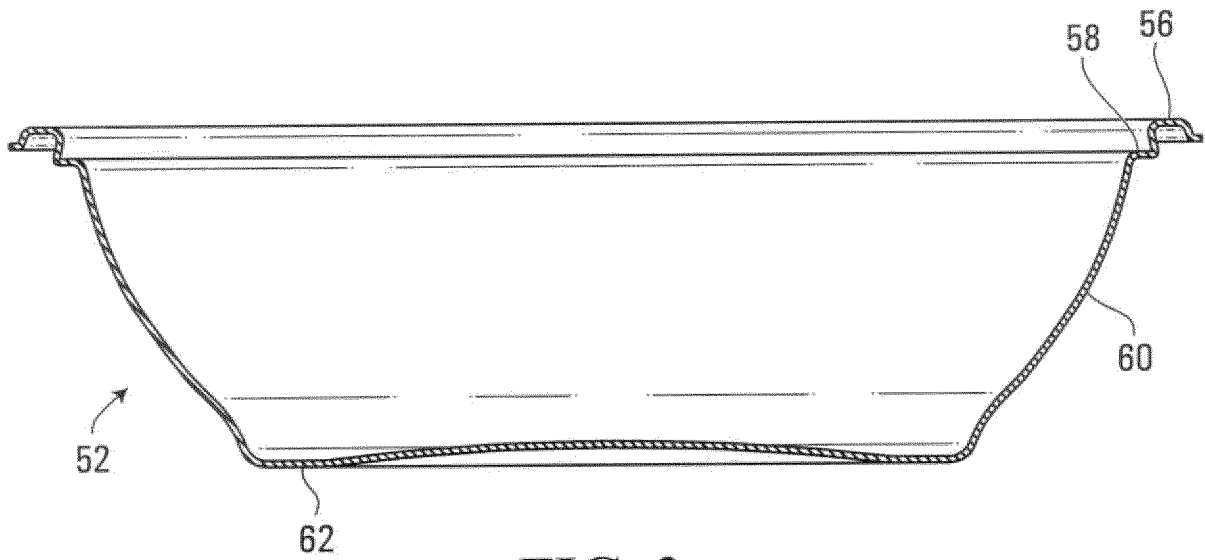
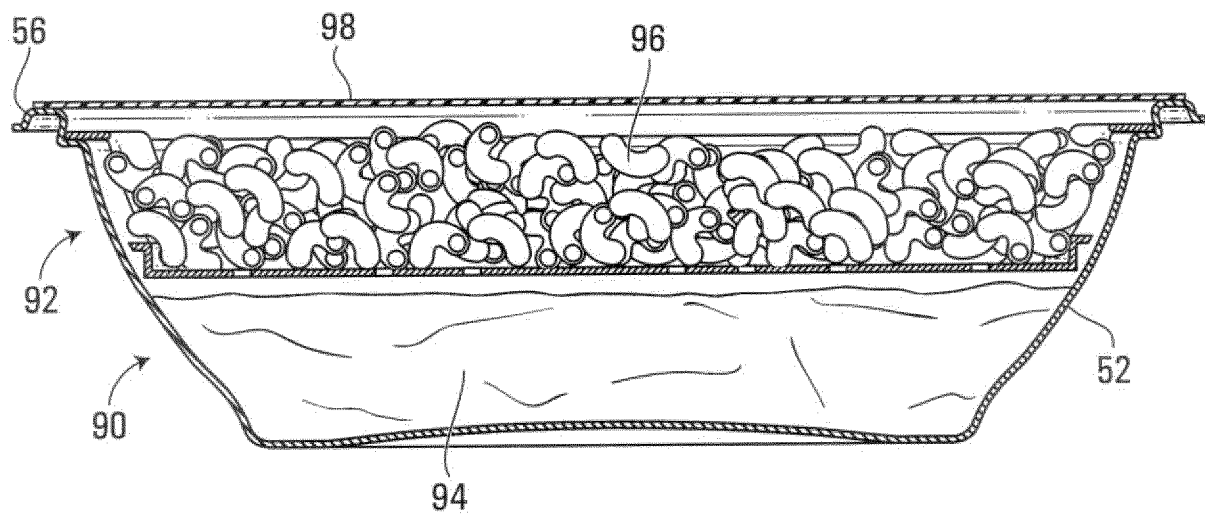
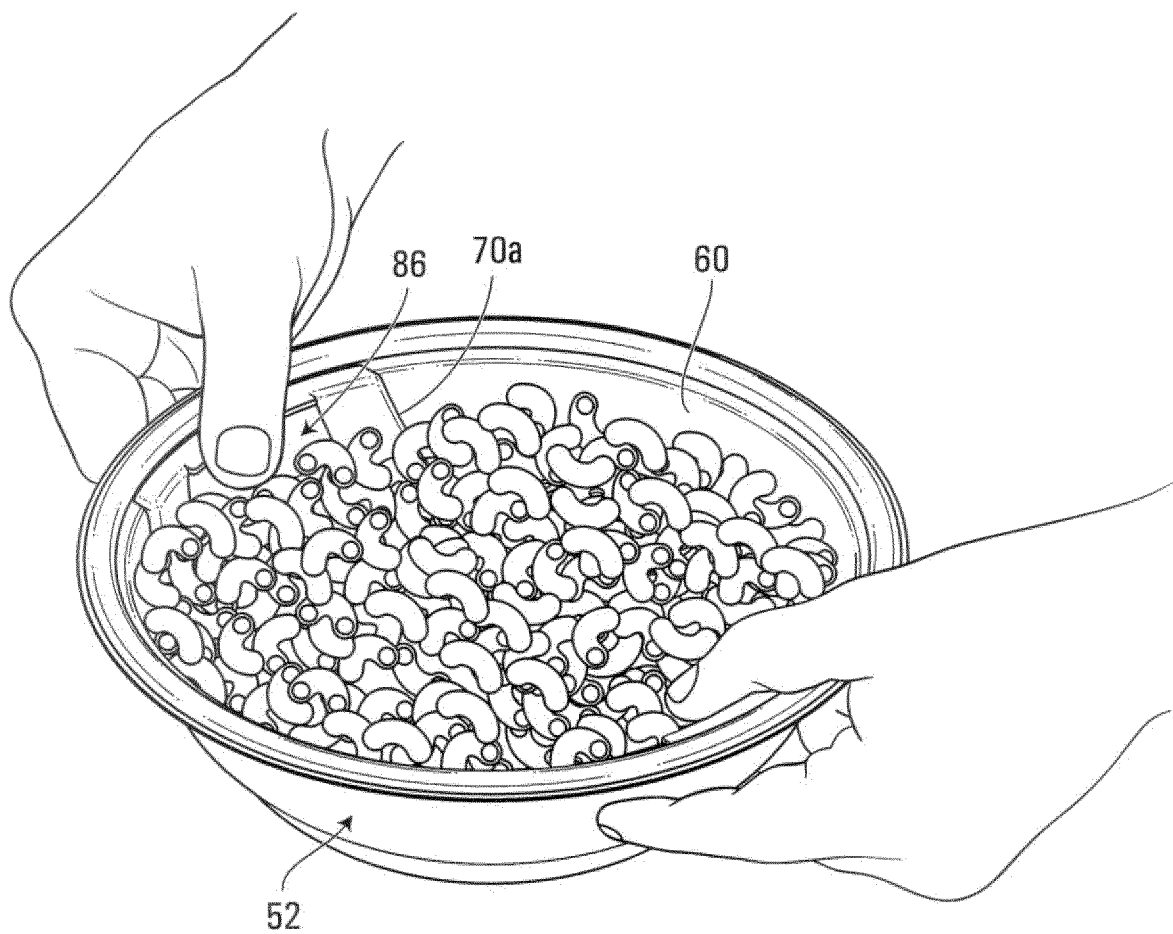


FIG. 2

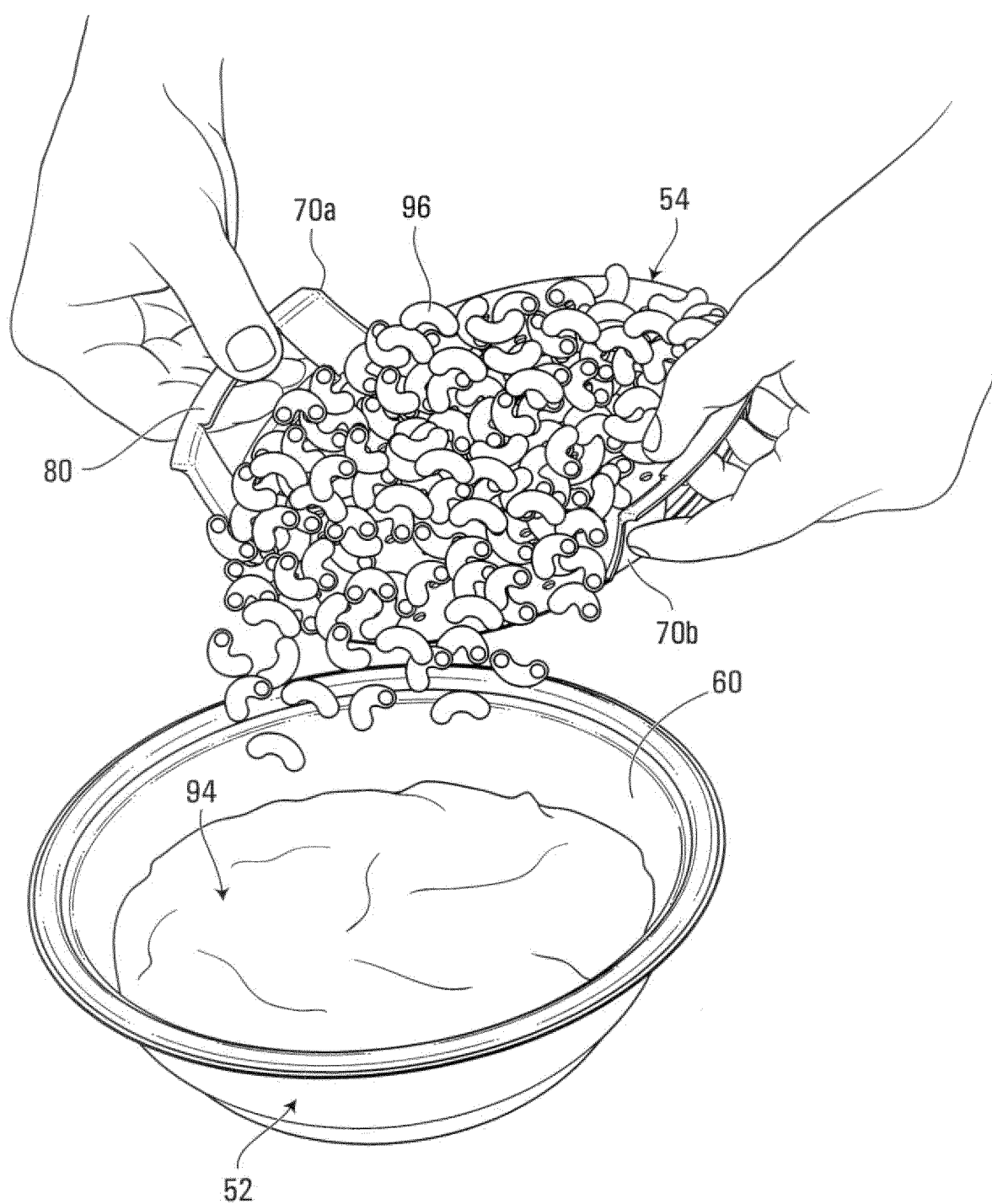
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**FIG. 3****FIG. 4**

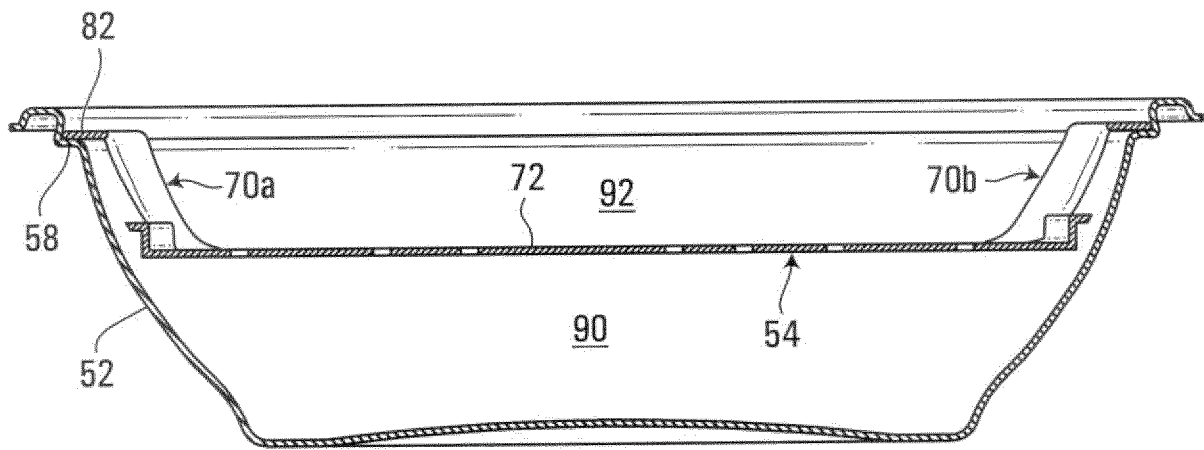
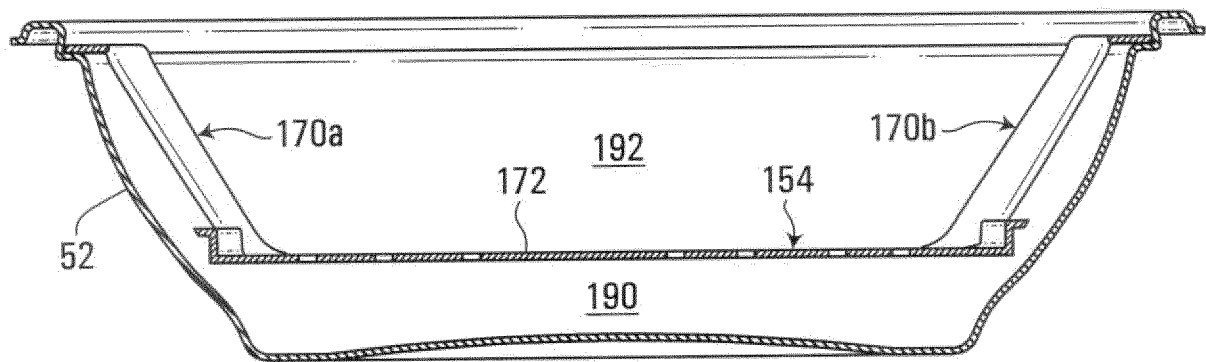
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**FIG. 5**

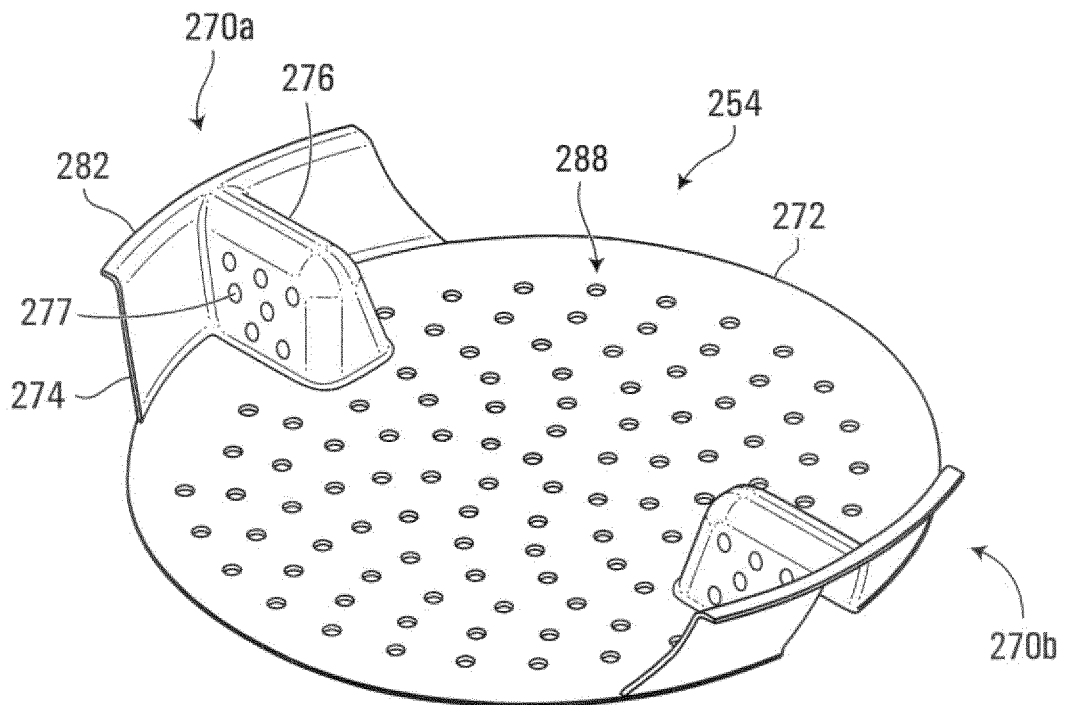
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**FIG. 6**

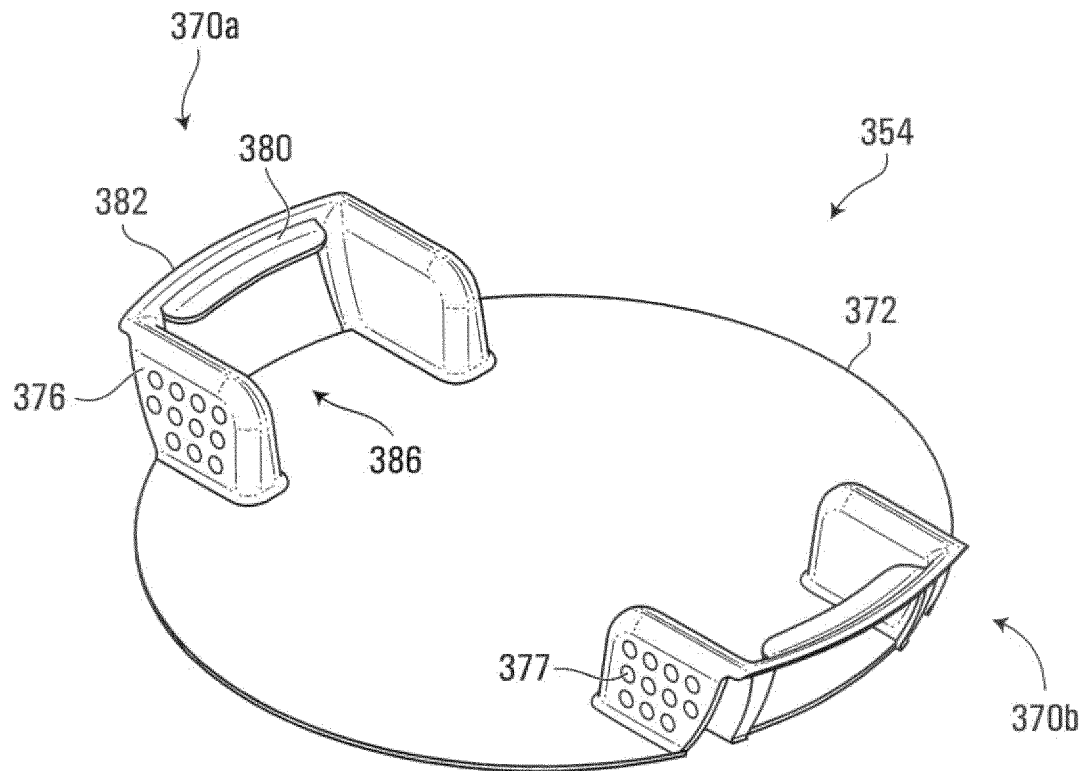
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**FIG. 7A****FIG. 7B**

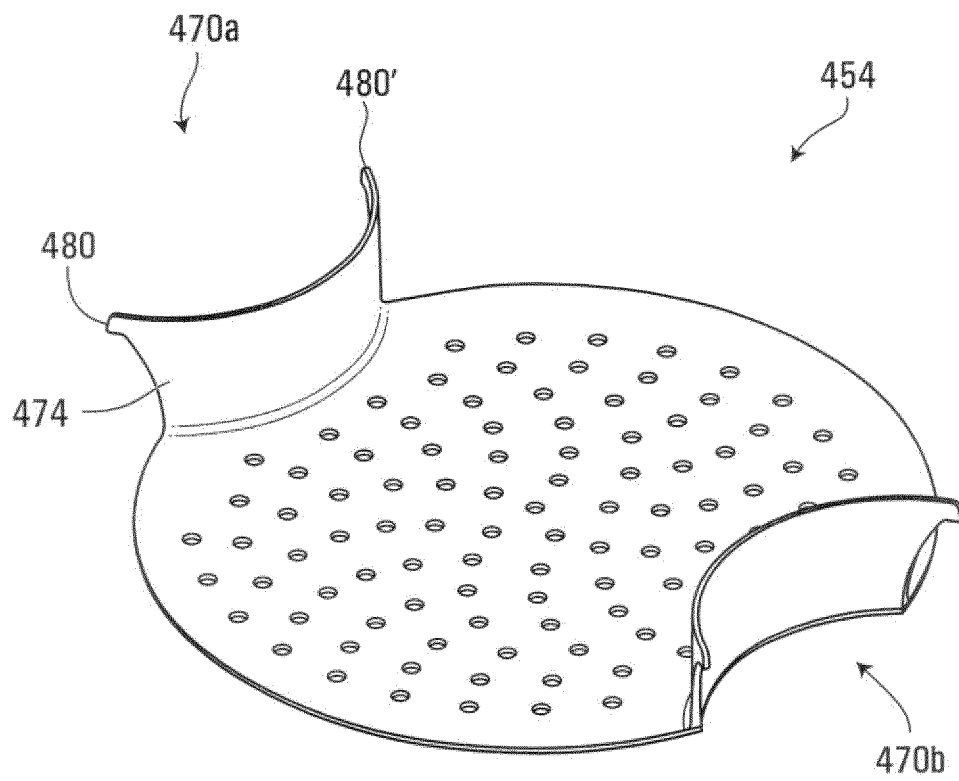
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**FIG. 8**

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**FIG. 9**

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**FIG. 10**

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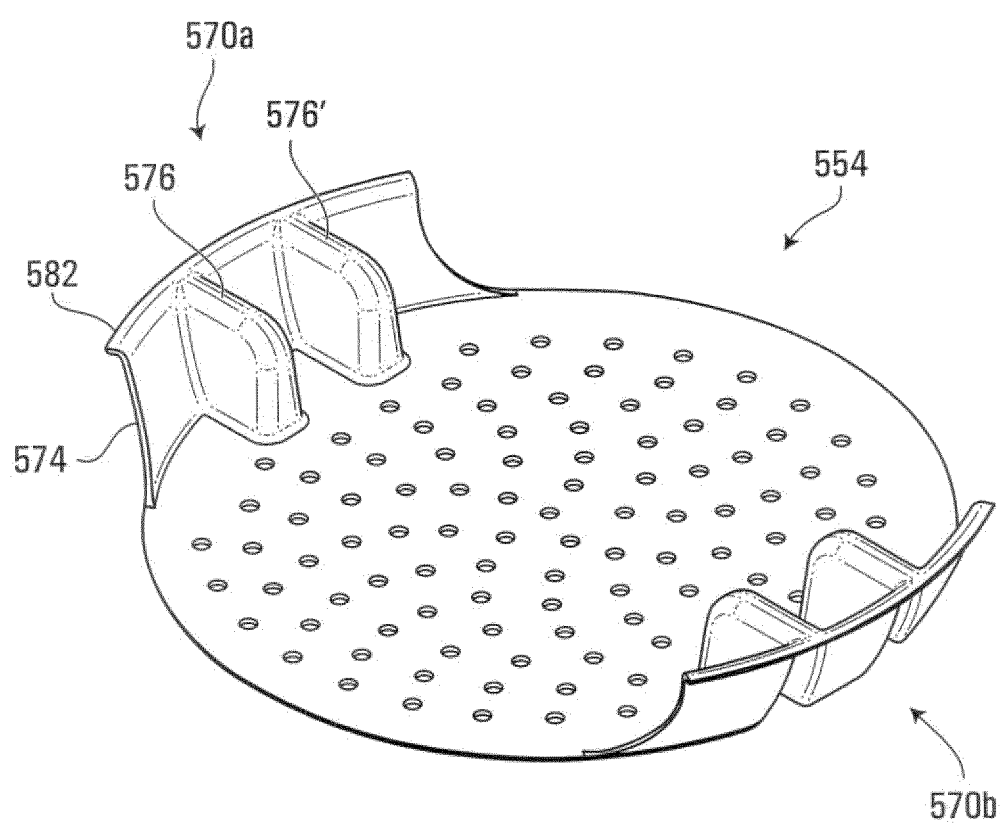
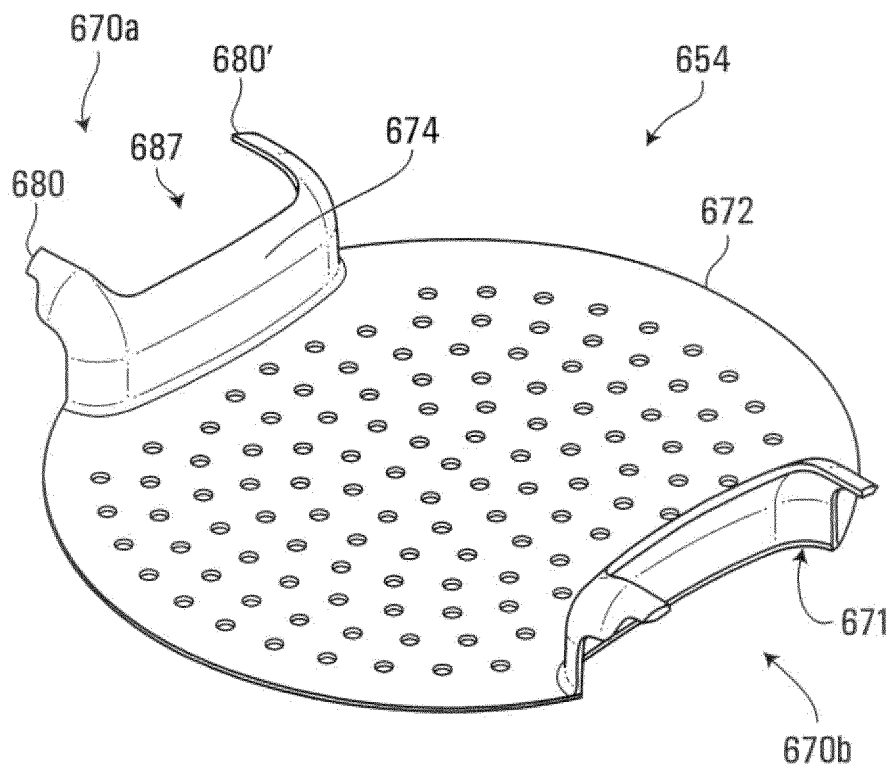
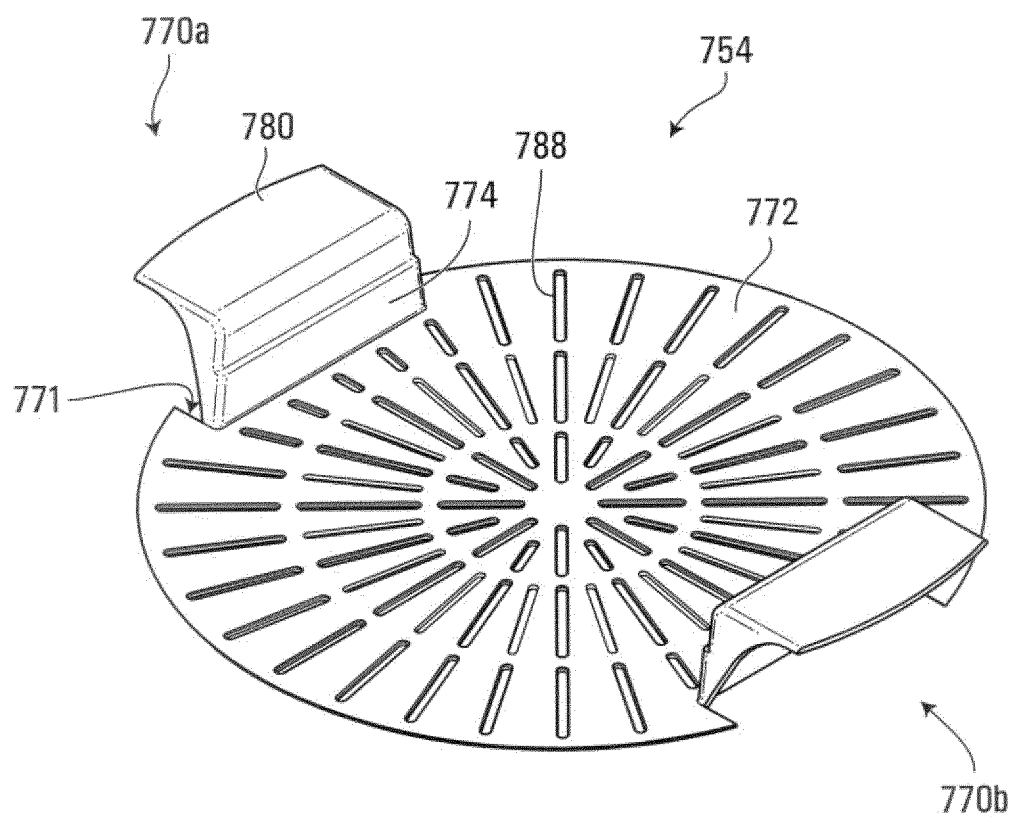


FIG. 11

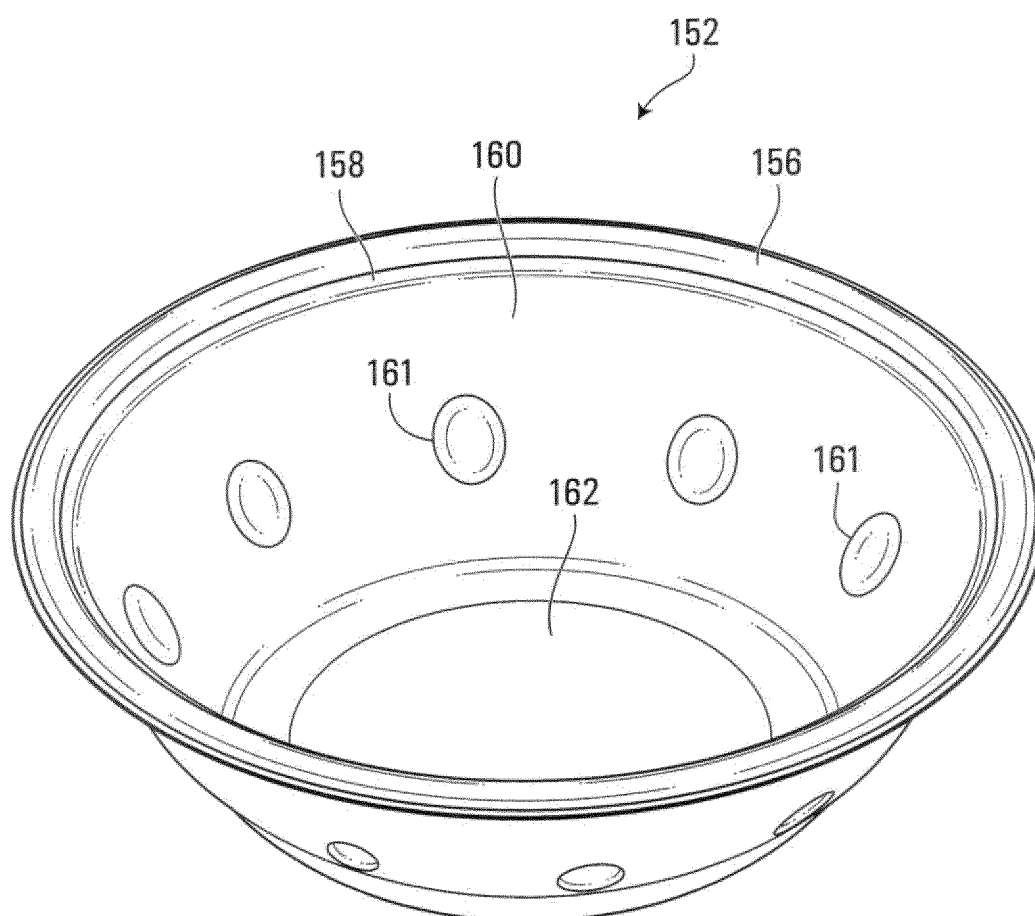
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**FIG. 12**

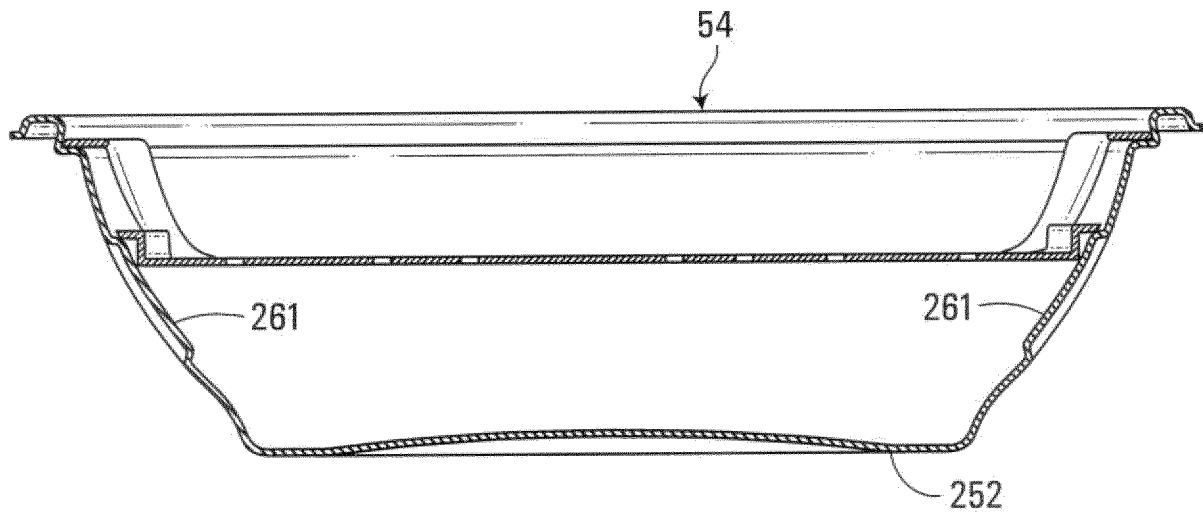
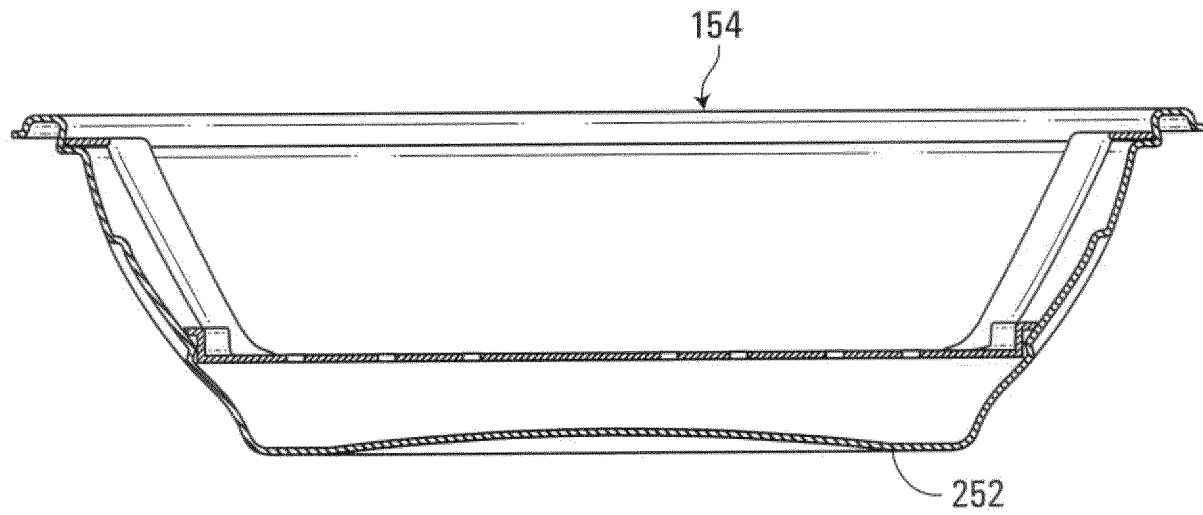
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**FIG. 13**

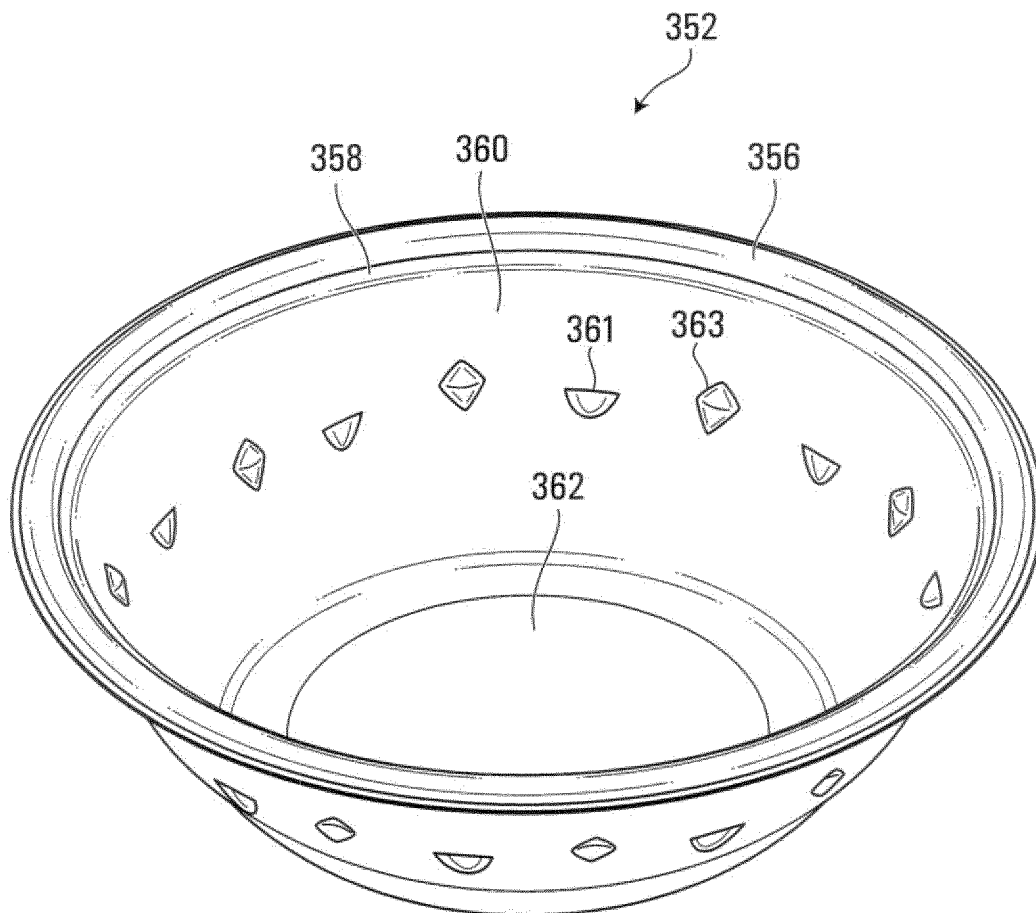
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**FIG. 14**

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**FIG. 15A****FIG. 15B**

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**FIG. 16**

