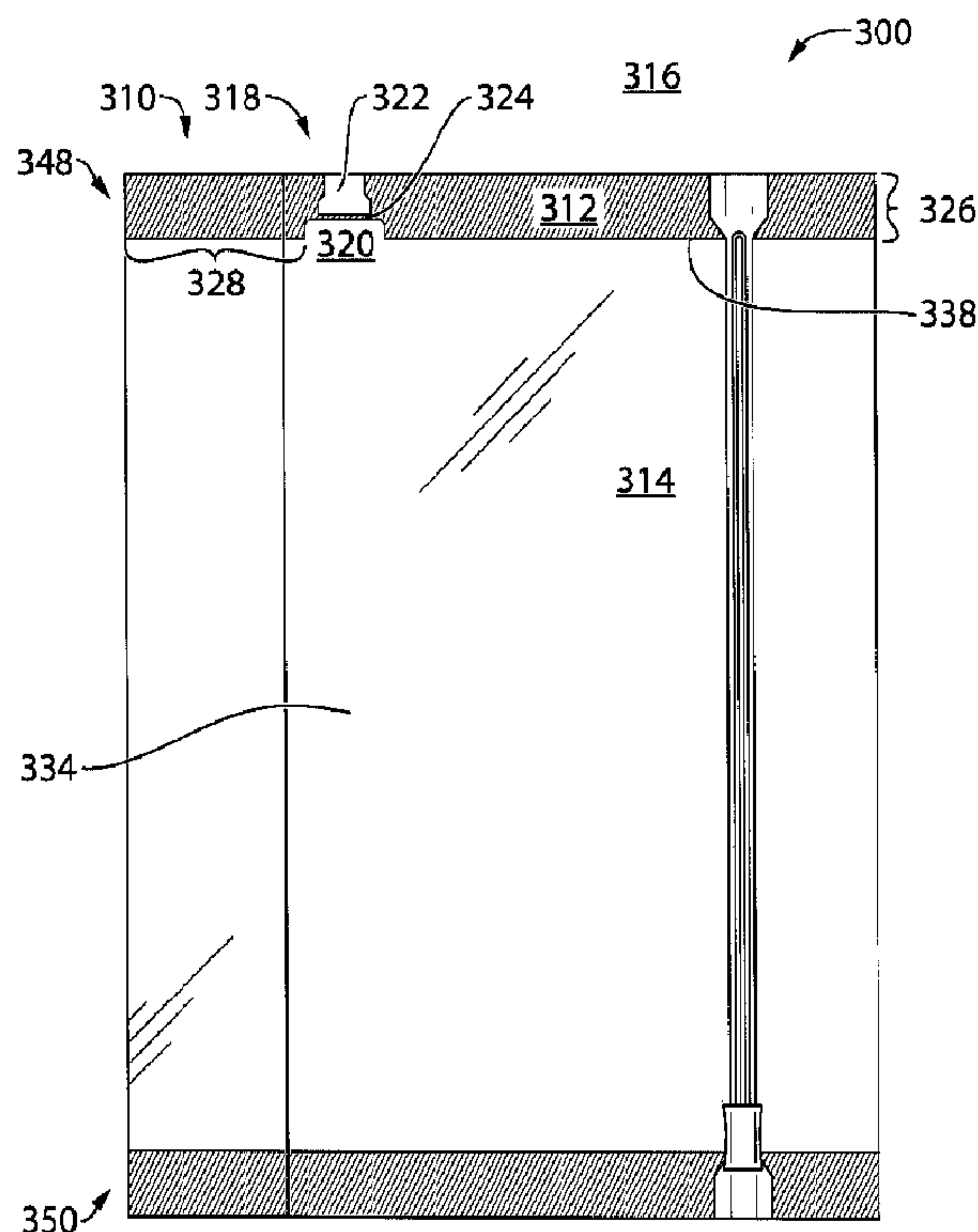




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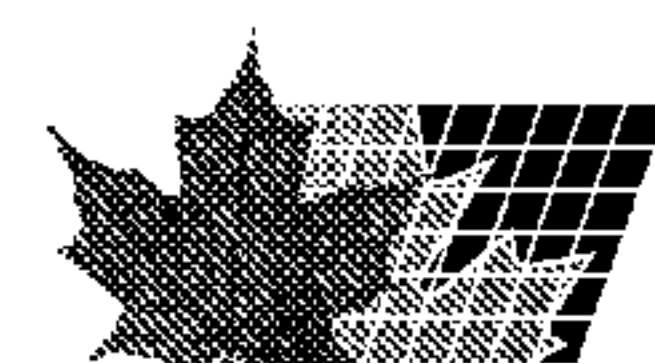
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(72) Inventeur/Inventor:
VON GLASOW, CHRISTIAN, CA
(73) Propriétaire/Owner:
ULTRAPERF TECHNOLOGIES INC., CA
(74) Agent: FASKEN MARTINEAU DUMOULIN LLP

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(54) Title: SELF VENTING STEAM VALVE FOR FLEXIBLE PACKAGING BAGS AND POUCHES USED IN COOKING
OF FOODS



(57) Abrégé/Abstract:

The present document describes a cooking container for cooking foodstuff comprising: an edge having a seal separating the interior from the exterior of the cooking container; a steam valve formed in the seal, the steam valve comprising: a pressure



(57) **Abrégé(suite)/Abstract(continued):**

accumulating portion; a pressure controlling portion; and a breakable seal between the pressure accumulating portion and the pressure controlling portion; whereby the breakable seal is breakable under an increase in pressure in the pressure accumulating portion during cooking thereby forming a gap/passage in the seal and permitting controlled evacuation of pressure from the interior of the cooking container through the gap/passage to the exterior, the pressure controlling portion restricting the evacuation of pressure relative to the pressure accumulating portion after the breakable seal is broken.

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(71) Applicant (for all designated States except US): **UL-TRAPERF TECHNOLOGIES INC.** [CA/CA]; 745, Grand Bernier Nord, St-Jean-sur-Richelieu, Québec J3B 8H7 (CA).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **VON GLASOW, Christian** [CA/CA]; 230, avenue des Pyrenees, St-Lambert, Québec J4S 1L4 (CA).

(74) Agent: **BENOÎT & CÔTÉ, ASSOCIÉS INC.**; 1001, de Maisonneuve Ouest, Bureau 210, Montréal, Québec H3A 3C8 (CA).

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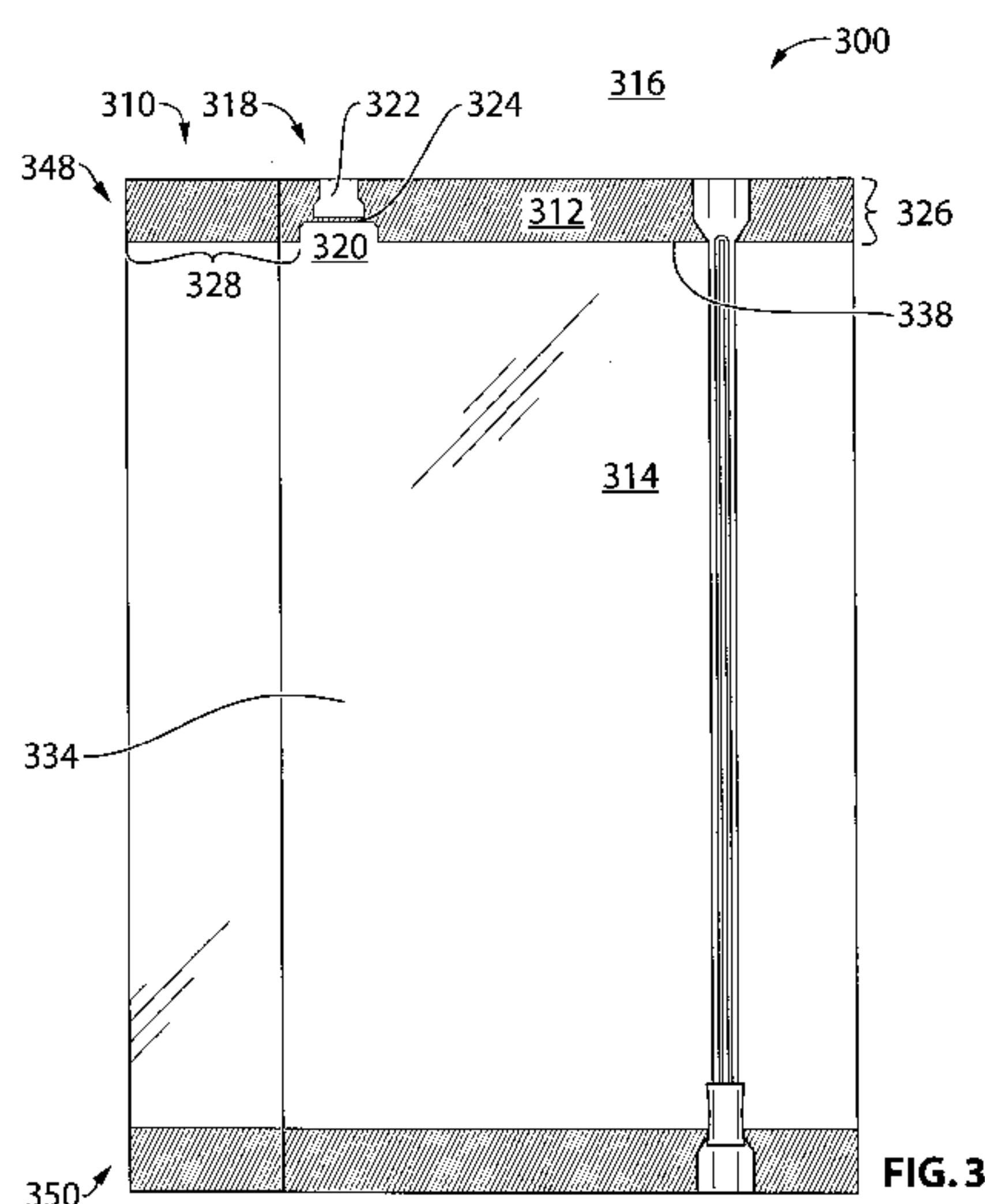


FIG. 3

(57) Abstract: The present document describes a cooking container for cooking foodstuff comprising: an edge having a seal separating the interior from the exterior of the cooking container; a steam valve formed in the seal, the steam valve comprising: a pressure accumulating portion; a pressure controlling portion; and a breakable seal between the pressure accumulating portion and the pressure controlling portion; whereby the breakable seal is breakable under an increase in pressure in the pressure accumulating portion during cooking thereby forming a gap/passage in the seal and permitting controlled evacuation of pressure from the interior of the cooking container through the gap/passage to the exterior, the pressure controlling portion restricting the evacuation of pressure relative to the pressure accumulating portion after the breakable seal is broken.

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**SELF VENTING STEAM VALVE FOR FLEXIBLE PACKAGING BAGS AND
POUCHES USED IN COOKING OF FOODS**

5

BACKGROUND

10 This description relates to a bag or pouch for storing foodstuff. More particularly, the present description relates to polymer-based bags or pouches adapted to enable the venting of steam pressure during the cooking of foodstuffs stored therein while maintaining a positive pressure inside the package.

15 The availability of prepared ready to cook foods packaged in microwavable bags and pouches has increased significantly during recent years. Typically the consumer must puncture the bag prior to cooking to allow the steam pressure created during cooking to vent out of the package. Not allowing the steam to escape often results in the package “exploding” which creates a mess
20 in the oven. Food suppliers and processors continually attempt to provide increased convenience to the consumer relating to ease of cooking. The result is a trend towards self venting bags which eliminate the step by the consumer to manually pierce a hole or opening into the bag prior to cooking. The bags contain a vent system incorporated into the film. There are various patents in this
25 domain. One system is to perforate a given number of very small holes into the bag, the size and number determined by the foodstuff to be packaged and the corresponding cooking time required. Over the small holes there is placed a thin plastic membrane providing a hermetic seal, but with an adhesive/pressure combination to allow this membrane to dislodge from the primary bag material as
30 the steam pressure builds inside the bag allowing the steam to vent through the

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small holes at a controlled rate. This system functions well for both fresh and frozen foods and fresh produce, since a controlled atmosphere can be maintained in the package. The drawback with this process is the production equipment set up required to pierce the holes in the quantity required for the foodstuff and the application of the membrane on each package with the correct adhesive/pressure combination to enable release of the membrane relative to the size required to cover any given number of holes. Production speeds are reduced which negatively impact cost.

Another system is the lamination of two polymer films, end to end with a very small space between the two films over which a very thin membrane strip is laminated. The polymer film can be made into a bag or pouch and as steam pressure builds inside the package during cooking the thin membrane strip will rupture at a random point along the length of the strip in the package and allow the steam to vent out of the bag. Maintaining positive pressure inside the package is difficult since this mechanism does not provide for a controlled rate of steam venting. Maintaining positive steam pressure inside a package is desirable since high levels of steam optimize the cooking of the foodstuff and significantly reduces dehydration of the foodstuff. This process works relatively well with fresh and frozen foods, but does not work well for packaging of fresh produce since the thin membrane does not provide a sufficient gas barrier to control the atmosphere inside the package due to excessive gas exchange.

Another venting system available is to micro perforate the entire package with various quantities of holes based on the food stuff to be cooked and the corresponding cook time. This is the least effective system since moisture loss due to freezer burn cannot be controlled in the case of packaging frozen foods, and for the packaging of fresh produce the number of micro perforations required to allow sufficient steam venting does not necessarily correspond to the number of micro perforations required to provide the ideal

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atmosphere through controlled gas exchange inside the package to maximize product life of most vegetables.

SUMMARY

5 The present disclosure provides the design and method for a self venting steam valve integrated into the vertical or horizontal seal of a bag or pouch to allow the dissipation of steam that is produced during the cooking of food.

10 The present disclosure relates to a self venting steam valve integrated into the vertical and horizontal seal of bags and pouches made from flexible packaging for microwave and/or oven cooking of fresh vegetables and/or fresh/frozen foods.

15 A self venting steam valve integrated into a section of the vertical or horizontal seal area of a bag or pouch, which is achieved by machining the enclosed steam vent design into the seal bars of commercially available bag, pouch or vertical/horizontal form fill seal machines.

20 The steam produced by microwave or oven cooking escapes when the thin breakable seal is ruptured at a certain temperature, cook time, or pressure, each or combined, which may vary depending on the food item to be cooked. The steam escapes at a rate which is determined by the width of the horizontal opening in the vertical seal, which may be determined by the food item to be cooked and the quality of cook desired.

25 If it is desirable to maintain higher levels of steam inside the package then a narrower horizontal opening can be machined into the seal bars to reduce the flow of steam escaping from the package. If it is desirable to allow steam to vent faster, the horizontal opening can be widened. In both cases it is desirable to maintain positive pressure inside the package to optimize cooking quality which can be easily achieved by machining the seal bars to obtain a horizontal opening which will achieve this, while maintaining sufficient steam flow

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exiting the package to eliminate the possibility of the bag or pouch from 'exploding" due to excess steam contained in the package and not being able to escape sufficiently fast.

5 This steam vent design will work with most commercially available heat sealable mono or multilayer polymer films that are considered "microwave able films" that typically withstand elevated cooking temperatures, which would include but are not be limited to polyethylene terephthalate (polyester) and biaxially oriented polypropylene and certain high temperature resistant polyethylene films.

10 According to an embodiment, there is provided a cooking container for cooking foodstuff comprising an edge having a seal separating the interior from the exterior of the cooking container; a steam valve formed in the seal, the steam valve comprising: a pressure accumulating portion; a pressure controlling portion; and a breakable seal between the pressure accumulating portion and the
15 pressure controlling portion; whereby the breakable seal is breakable under an increase in pressure in the pressure accumulating portion during cooking thereby forming a gap/passage in the seal and permitting controlled evacuation of pressure from the interior of the cooking container through the gap/passage to the exterior, the pressure controlling portion restricting the evacuation of pressure
20 relative to the pressure accumulating portion after the breakable seal is broken.

According to another embodiment, the seal has a first width along a substantial length of the edge and wherein the breakable seal has a second width along another length of the edge, the first width being greater than the second width.

25 According to another embodiment, the other length is smaller than the substantial length.

According to another embodiment, the second width is between 1/32 inches and 1/8 inches.

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According to another embodiment, the first width is between $\frac{3}{8}$ inches and $\frac{1}{2}$ inches and the second width is between $\frac{1}{32}$ inches and $\frac{1}{8}$ inches.

5 According to another embodiment, the breakable seal longitudinally extends from the seal, wherein the breakable seal and the seal form a continuous sealing element.

According to another embodiment, the cooking container is a pouch or a bag made of a microwaveable film.

10 According to another embodiment, a first edge of a first microwaveable film and a second edge of a second microwaveable film form the edge separating the interior from the exterior of the cooking container.

According to another embodiment, the cooking container comprises a tray having an opening and a microwaveable film for covering the opening.

15 According to another embodiment, a first edge of a first microwaveable film and a flange of the tray form the edge separating the interior from the exterior of the cooking container.

According to another embodiment, the seal and the breakable seal comprise a heat-sealable polyester film.

20 According to another embodiment, the pressure controlling portion comprises a series of holes in the cooking container between the breakable seal and the exterior of the cooking container and on the controlling portion.

According to another embodiment, the other length is greater than $\frac{1}{2}$ in.

25 According to another embodiment, the seal is in two parts and the breakable seal is located so as to join the two parts of the seal before it is broken.

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According to another embodiment, the seal has an inside boundary and wherein the breakable seal is located $\frac{3}{16}$ inches to $\frac{1}{4}$ inches from the inside boundary.

5 According to another embodiment, the cooking container comprising: more than one seals; and more than one valves extending from a respective one seal of the more than one seals.

10 According to another embodiment, the pressure accumulating portion comprises a pressure accumulating portion section having a first length and wherein the pressure controlling portion comprises a pressure controlling portion section having a second length, the first length of the pressure accumulating portion section being longer than the second length of the pressure controlling portion section.

15 According to another embodiment, there is provided a cooking container for cooking foodstuff comprising: an edge having a seal separating the interior from the exterior of the cooking container; a steam valve formed in the seal, the steam valve comprising: a pressure accumulating portion; and a breakable seal in contact with the pressure accumulating portion; whereby the breakable seal is breakable under an increase in pressure in the pressure accumulating portion during cooking thereby forming a gap/passage having a set
20 predetermined size in the seal and permitting controlled evacuation of pressure in the cooking container through the gap/passage.

25 Features and advantages of the subject matter hereof will become more apparent in light of the following detailed description of selected embodiments, as illustrated in the accompanying figures. As will be realized, the subject matter disclosed and claimed is capable of modifications in various respects, all without departing from the scope of the claims. Accordingly, the drawings and the description are to be regarded as illustrative in nature, and not as restrictive and the full scope of the subject matter is set forth in the claims.

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BRIEF DESCRIPTION OF THE DRAWINGS

Further features and advantages of the present disclosure will become apparent from the following detailed description, taken in combination with the appended drawings, in which:

5 Fig. 1 illustrates a breakable seal of an edge of a cooking container for foodstuff according to an embodiment;

Fig. 2 illustrates a breakable seal of an edge of a cooking container for foodstuff according to another embodiment;

10 Fig. 3 illustrates a valve on an edge of a cooking container for foodstuff according to an embodiment;

Fig. 4 illustrates the valve of Fig. 3;

Fig. 5 illustrates different configurations for the breakable seal of the steam valve; and

15 Fig. 6 illustrates a valve on an edge of a tray according to an embodiment.

It will be noted that throughout the appended drawings, like features are identified by like reference numerals.

DETAILED DESCRIPTION

20 In embodiments described herein, there is disclosed a cooking container for foodstuff, such as fresh vegetables, which assists in optimizing quality and shelf-life of the perishable food product. This is achieved by the bag, pouch or the lid film containing micro perforations having a diameter of between 40-80 microns that effectively control the gas exchange of O₂ and CO₂ which leads to extended product life.

25 The cooking container for foodstuff including the perishable food product within may be positioned for steam cooking within a microwave oven. Other cooking techniques as contemplate by those of ordinary skill in the art may

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be employed for cooking the perishable food product within the cooking container for foodstuff.

It is also contemplated that the cooking container for foodstuff may be used for storing and distributing perishable meat products.

5 The novel steam vent described herein serves at least two purposes, namely 1) maintain a controlled atmosphere prior to cooking inside the cooking container in the case of contents being fresh vegetables, and 2) allow the buildup of steam to a certain pressure inside the cooking container before venting which optimizes cooking quality of the food.

10 Referring now to the drawings, and more particularly to Fig. 1, there is illustrated a breakable seal **24** of an edge **12** of a cooking container **10** for foodstuff according to an embodiment. In another embodiment, the breakable seal is positioned in a back seal (not shown) instead of the edge **12**.

15 More specifically, the cooking container **10** for foodstuff is in the form of a pouch made of a microwaveable heat-sealable polyester film. The cooking container **10** first includes an edge **12** and an edge seal **14** along the edge **12**. The edge seal **14** of the cooking container **10** is having a first width **16** along a substantial length **20** of the edge **12** and a second width **18** along another length **22** of the edge **12** in which the other length **22** is being shorter
20 than the substantial length **20** and the first width **16** is being wider than the second width **18**.

 The cooking container **10** for foodstuff also includes a breakable seal **24**, which is breakable under an increase in pressure inside the pouch during microwave cooking. The cooking container **10** for foodstuff further
25 includes an opening **26**, which permits the evacuation of pressure inside the pouch after the breakable seal **24** is broken. The breakable seal **24** of the cooking container **10** for foodstuff closes off the opening **26** from the exterior.

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There is also shown that the opening **26** of the cooking container **10** for foodstuff is located between the breakable seal **24** and the outside **34** of the cooking container **10**. As shown on Fig.1, the opening **26** of the food container comprises a gap **28** in a portion of the edge **12** having the second width **18**. As steam pressure builds during cooking, it pushes against the gap **28** separating the film and allowing the steam to vent through the gap **28** at a controlled rate.

Also, for the cooking container **10** for foodstuff, the first width **16** is between 1/4 inches and 1 inch and the second width **18** is between 1/16 inches and 1/2 inches. The breakable seal **24** of the cooking container **10** for foodstuff has a width **36** between 1/32 inches and 1/8 inches. Moreover, the breakable seal **24** of the cooking container **10** has a length **32** of more than 1/4 inches. The opening being smaller than the length of the length of breakable seal. According to an embodiment, the opening **26** has a width (vertically on Fig. 1) between, 1/16 inches to 1/2 inches. These dimensions can vary greatly since they are adapted to the quantity and weight of the foodstuff meant to be stored and cooked in the cooking container.

Additionally, the first width **16** is in two parts and the breakable seal **24** is located so as to join the two parts before it is broken. Still shown on Fig. 1, the edge seal **14** of the cooking container **10** for foodstuff is having the first width **16** having an inside boundary **38** and the breakable seal **24** is located about 3/16 inches to about 1/4 inches from the inside boundary **38**.

Now referring to Fig. 2, there is shown another embodiment of a breakable seal **124** of an edge **112** of a cooking container **110** for foodstuff.

More specifically, the cooking container **110** for foodstuff is in the form of a pouch made of a microwaveable heat-sealable polyester film. The cooking container **110** first includes an edge **112** and an edge seal **114** along the edge **112**. The edge seal **114** of the cooking container **110** is having a first width

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116 along a substantial length **120** of the edge **112** and a second width **118** along another length **122** of the edge **112** in which the other length **122** is being shorter than the substantial length **120** and the first width **116** is being wider than the second width **118**.

5 The cooking container **110** for foodstuff also includes a breakable seal **124**, which is breakable under an increase in pressure inside the pouch during microwave cooking. The cooking container **110** for foodstuff further includes an opening **126**, which permits the evacuation of pressure inside the pouch after the breakable seal **124** is broken. The breakable seal **124** of the
10 cooking container **110** for foodstuff closes off the opening **126** from the exterior.

 There is also shown that the opening **126** of the cooking container **10** for foodstuff is located between the breakable seal **124** and the outside of the cooking container. As shown on Fig. 2, the opening **126** of the food container comprises a series of holes **128** in a portion of the edge **112** having the second
15 width **118**. As steam pressure builds during cooking, it pushes against the series of holes **128** separating the film and allowing the steam to vent through the series of holes **128** at a controlled rate. The series of holes **128** may be positioned as close of the back of the seal as possible. It is also to be noted that the series of holes may be defined by any other suitable shapes and may not necessarily be
20 limited to circular shapes.

 Also, for the cooking container **110** for foodstuff, the first width is between 3/8 inches and 1/2 inches and the second width **118** is between 1/8 inches and 1/4 inches. The breakable seal **124** of the cooking container **110** for foodstuff has a width **136** between 1/32 inches and 1/8 inches. Moreover, the
25 breakable seal **124** of the cooking container **110** has a length **132** of more than 1/2 inches.

 Additionally, the edge seal **114** has the first width **116** in two sections and the breakable seal **124** is located so as to join the two sections

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before it is broken. Still shown on Fig. 2, the edge seal **114** of the cooking container **110** for foodstuff is having the first width **116** having an inside boundary **138** and the breakable seal **124** is located about 3/16 inches to about 1/4 inches from the inside boundary **138**.

5 It is to be noted that the cooking containers **10** and **110** may include more than an edge seal for providing the steam to vent through the gap **28** or the series of holes **128** at a controlled rate. Also, by adjusting the width of the opening in the seal edge, the quantity of steam escaping from the cooking container can be controlled, thereby maintaining a positive pressure inside the
10 bag which again optimizes the quality of the cooking.

 According to another embodiment and referring now to Figs. 3 and 4, there is shown cooking container **300** for cooking foodstuff. The cooking container **300** comprises an edge **310** having a seal **312** separating the interior **314** from the exterior **316** of the cooking container **300**. The cooking container
15 **300** also comprises a steam valve **318** formed in the seal **312**. The steam valve **318** of the cooking container **300** comprises a pressure accumulating portion **320**, a pressure controlling portion **322** and a breakable seal **324**. The breakable seal **324** is between the pressure accumulating portion **320** and the pressure controlling portion **322**.

20 In the cooking container **300**, the breakable seal **324** is breakable under an increase in pressure in the pressure accumulating portion **320** during cooking thereby forming a gap, or a passage, in the seal **312**. This permits controlled evacuation of pressure from the interior **314** of the cooking container **300** through the gap, or passage, to the exterior **316**. Also, in the embodiment
25 shown here, the pressure controlling portion **322** restricts the evacuation of pressure relative to the pressure accumulating portion **320** after the breakable seal **324** is broken. As will be shown later, the pressure controlling portion **322** can be the same width as the pressure accumulating portion **320**. In yet other embodiment, the pressure controlling portion **322** is integrated with the pressure

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accumulating portion **320**. The pressure controlling function is simply provided by the set predetermined size of the passage in the seal **312**.

According to an embodiment, the seal **312** of the cooking container **300** has a first width **326** along a substantial length **328** of the edge **310** and the breakable seal **324** of the cooking container **300** has a second width **330** along another length **332** of the edge **310**. It is to be noted that the first width **326** is greater than the second width **330** according to this embodiment. According to an embodiment, the other length **332** of the edge **310** of the cooking container **300** is smaller than the substantial length **328** of the edge **310** of the cooking container **300**.

According to an embodiment, the breakable seal **324** of the cooking container **300** longitudinally extends from the seal **312**, in which the breakable seal **324** and the seal **312** form a continuous sealing element. It is also to be noted that the seal **312** and the breakable seal **324** may be made of either different parts or materials.

According to another embodiment, the cooking container **300** may be a pouch or a bag made of a microwaveable film **334**. The pouch or bag may comprise an edge **310** having a seal **312** separating the interior **314** from the exterior **316** of the pouch or bag. The pouch or bag may also comprise a steam valve **318** formed in the seal **312**. The steam valve **318** of the pouch or bag may comprise a pressure accumulating portion **320**, a pressure controlling portion **322** and a breakable seal **324**. The breakable seal **324** is between the pressure accumulating portion **320** and the pressure controlling portion **322**.

In the pouch or bag, the breakable seal **324** is breakable under an increase in pressure in the pressure accumulating portion **320** during cooking thereby forming a gap, or a passage, in the seal **312**. This permits controlled evacuation of pressure in the pouch or bag through the gap, or passage. Also, the pressure controlling portion **322** is narrower than the pressure accumulating

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portion **320** after the breakable seal is broken. According to this embodiment, a first edge **348** of a first microwaveable film and a second edge **350** of a second microwaveable film form the edge **310** separating the interior **314** from the exterior **316** of the pouch or the bag.

5 According to an embodiment, the seal **312** and the breakable seal **324** of the cooking container **300** comprise a heat-sealable polyester film.

 According to an embodiment, the cooking container **300** further comprises an opening located between the breakable seal **324** and the outside of the cooking container **300**. The opening may be in the seal **312**. Moreover, the
10 pressure controlling portion **322** may comprise a series of holes in the cooking container **300** between the breakable seal **324** and the exterior **316** of the cooking container **300** and on the pressure controlling portion **322**, as illustrated in Fig. 2.

 According to an embodiment, the breakable seal **324** has second
15 width **330** that may be between 1/32 inches and 1/16 inches. The first width **326** may be between 3/8 inches and 1/2 inches while the second width **330** may be between 1/8 inches and 1/4 inches.

 According to an embodiment, the other length **332** of the cooking container **300** may be greater than 1/2 in.

20 According another embodiment, the seal **312** of the cooking container **300** may be in two parts and the breakable seal **324** may be located so as to join the two parts of the seal **312** before it is broken.

 According to a further embodiment, the seal **312** of the cooking container **300** may have an inside boundary **338** and the breakable seal **324** may
25 be located from about 3/16 inches to about 1/4 inches from the inside boundary **338**.

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According to an embodiment, the cooking container **300** as described above may comprise more than one seal **312**; and more than one steam valve **318** extending from a respective one seal **312** of the more than one seal **312**. For instance, the cooking container **300** may comprise two edges **310** and two, three or four steam valves **318** disposed on each edge **310**.

According to an embodiment, the pressure accumulating portion **320** of the cooking container **300** comprises a pressure accumulating portion section **340** having a first length **342** and the pressure controlling portion **322** of the cooking container **300** comprises a pressure controlling portion section **344** having a second length **346**, in which the first length **342** of the pressure accumulating portion section **340** is being longer than the second length **346** of the pressure controlling portion section **344**.

According to a further embodiment, and now referring to Fig. 6, the cooking container **300** may be a tray **302** having an opening **304** and a microwaveable film **334** for covering the opening. The tray **302** comprises a microwaveable film **334** that comprises an edge **310** having a seal **312** separating the interior **314** from the exterior **316** of the tray **302** comprising a microwaveable film **334**. The tray comprises a microwaveable film may also comprise a steam valve **318** formed in the seal **312**. The steam valve **318** of the tray **302** functions in the same way as the one described earlier and will not be further described.

According to another embodiment, and referring to Figs. 3, 4 and 6, there is provided a cooking container **300** for cooking foodstuff. The cooking container **10** comprises an edge **310**. The edge **310** has a seal **312** separating the interior **314** from the exterior **316** of the cooking container **300**. The cooking container **300** also includes a steam valve **318** formed in the seal **312**. The steam valve **318** comprises a pressure accumulating portion **320** and a breakable seal **324**. The breakable seal **324** is in contact with the pressure accumulating portion **320**, in where the breakable seal **324** is breakable under an increase in pressure

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in the pressure accumulating portion **320** during cooking, thereby forming a gap/passage having a set predetermined size in the seal **312** and permitting controlled evacuation of pressure in the cooking container **300** through the gap/passage.

5 It is also to be noted that the breakable seal **324** of the steam valve **318** of the cooking container **300** may adopt different shapes and configurations, as shown in Fig. 5. However, an optimal shape/configuration of the breakable seal **324** of the steam valve **318** is illustrated in Figs. 3 and 4.

10 While preferred embodiments have been described above and illustrated in the accompanying drawings, it will be evident to those skilled in the art that modifications may be made without departing from this disclosure. Such modifications are considered as possible variants comprised in the scope of the disclosure.

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CLAIMS:

1. A cooking container for cooking foodstuff comprising:
 - an edge having a seal separating the interior from the exterior of the cooking container;
 - a steam valve formed in the seal, the steam valve comprising:
 - a pressure accumulating portion;
 - a pressure controlling portion; and
 - a breakable seal between the pressure accumulating portion and the pressure controlling portion;

whereby the breakable seal is breakable under an increase in pressure in the pressure accumulating portion during cooking thereby forming a gap/passage in the seal and permitting controlled evacuation of pressure from the interior of the cooking container through the gap/passage to the exterior, the pressure controlling portion restricting the evacuation of pressure relative to the pressure accumulating portion after the breakable seal is broken.
2. The cooking container of claim 1, wherein the seal has a first width along a substantial length of the edge and wherein the breakable seal has a second width along another length of the edge, the first width being greater than the second width.
3. The cooking container of claim 2, wherein the other length is smaller than the substantial length.
4. The cooking container any one of claims 2 and 3, wherein the second width is between 1/32 inches and 1/8 inches.

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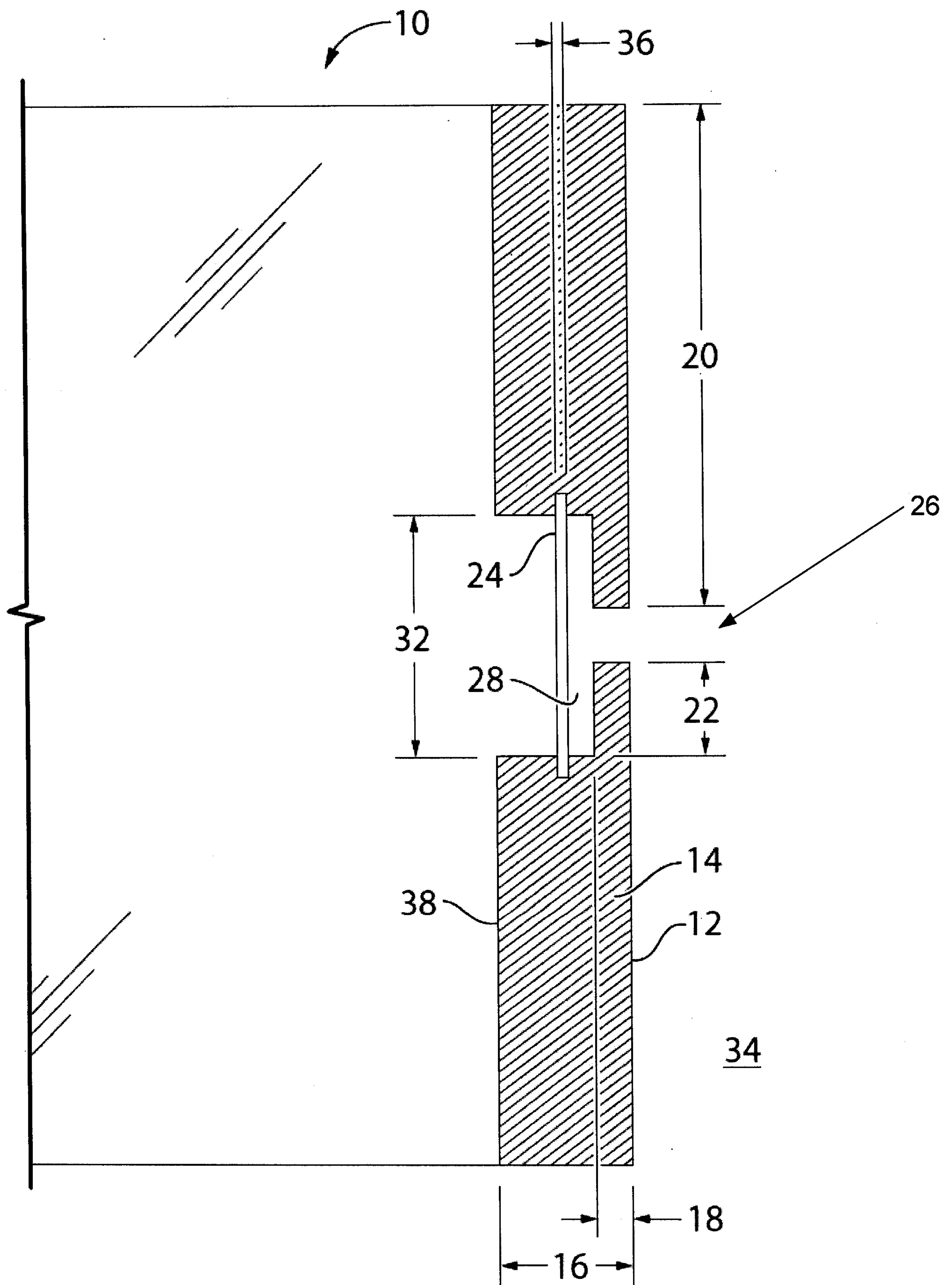
5. The cooking container of any one of claims 2 and 3, wherein the first width is between $\frac{3}{8}$ inches and $\frac{1}{2}$ inches and the second width is between $\frac{1}{32}$ inches and $\frac{1}{8}$ inches.
- 5 6. The cooking container of any one of claims 1 to 5, wherein the breakable seal longitudinally extends from the seal, wherein the breakable seal and the seal form a continuous sealing element.
7. The cooking container of any one of claims 1 to 6, wherein the cooking
10 container is a pouch or a bag made of a microwaveable film.
8. The cooking container of claim 7, wherein a first edge of a first microwaveable film and a second edge of a second microwaveable film form the edge separating the interior from the exterior of the cooking container.
15
9. The cooking container of any one of claims 1 to 6, wherein the cooking container comprises a tray having an opening and a microwaveable film for covering the opening.
- 20 10. The cooking container of claim 9, wherein a first edge of a first microwaveable film and a flange of the tray form the edge separating the interior from the exterior of the cooking container.
11. The cooking container of any one of claims 1 to 10, wherein the seal and
25 the breakable seal comprise a heat-sealable polyester film.
12. The cooking container of any one of claims 1 to 11, wherein the pressure controlling portion comprises a series of holes between the breakable seal and the exterior of the cooking container.

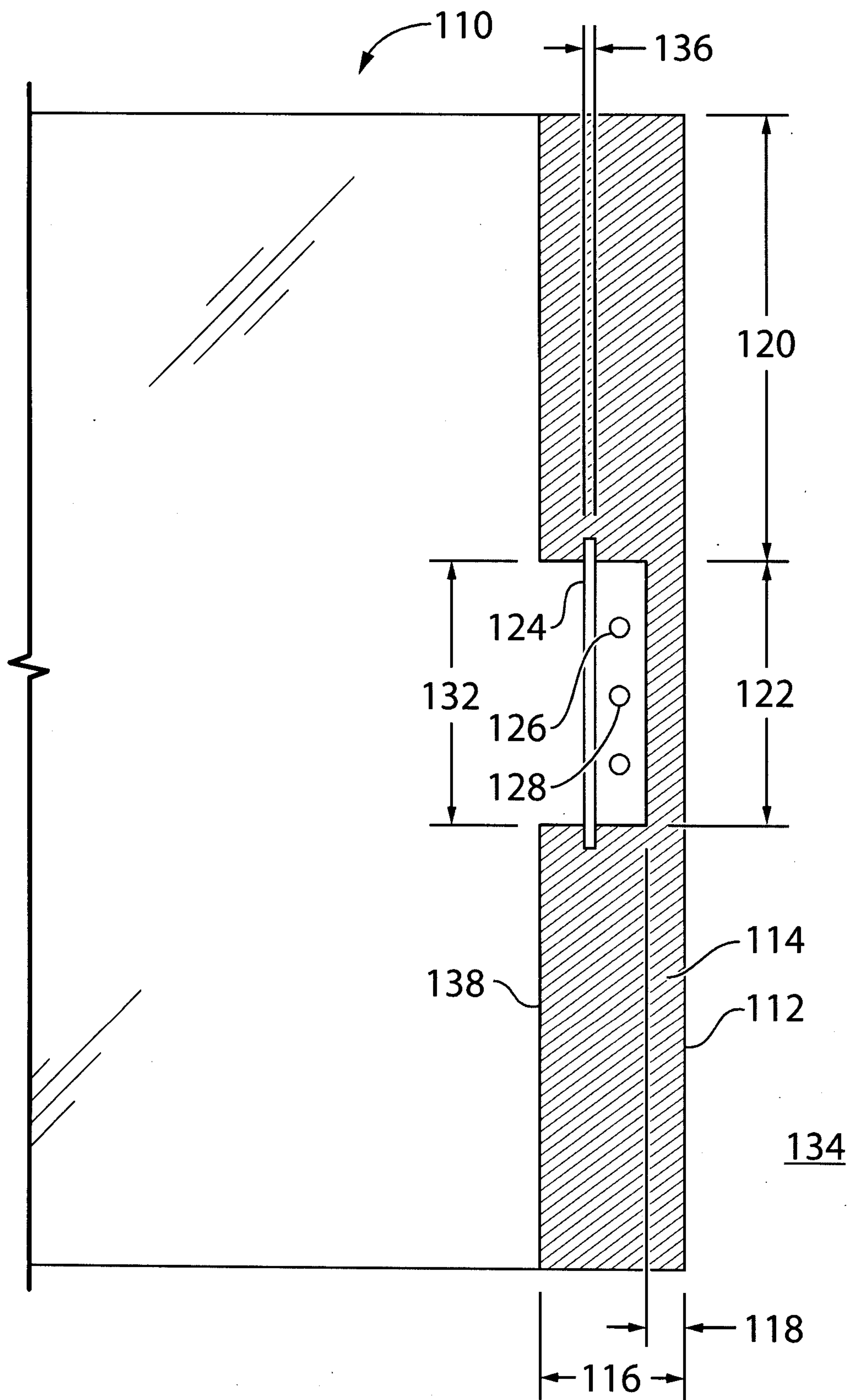
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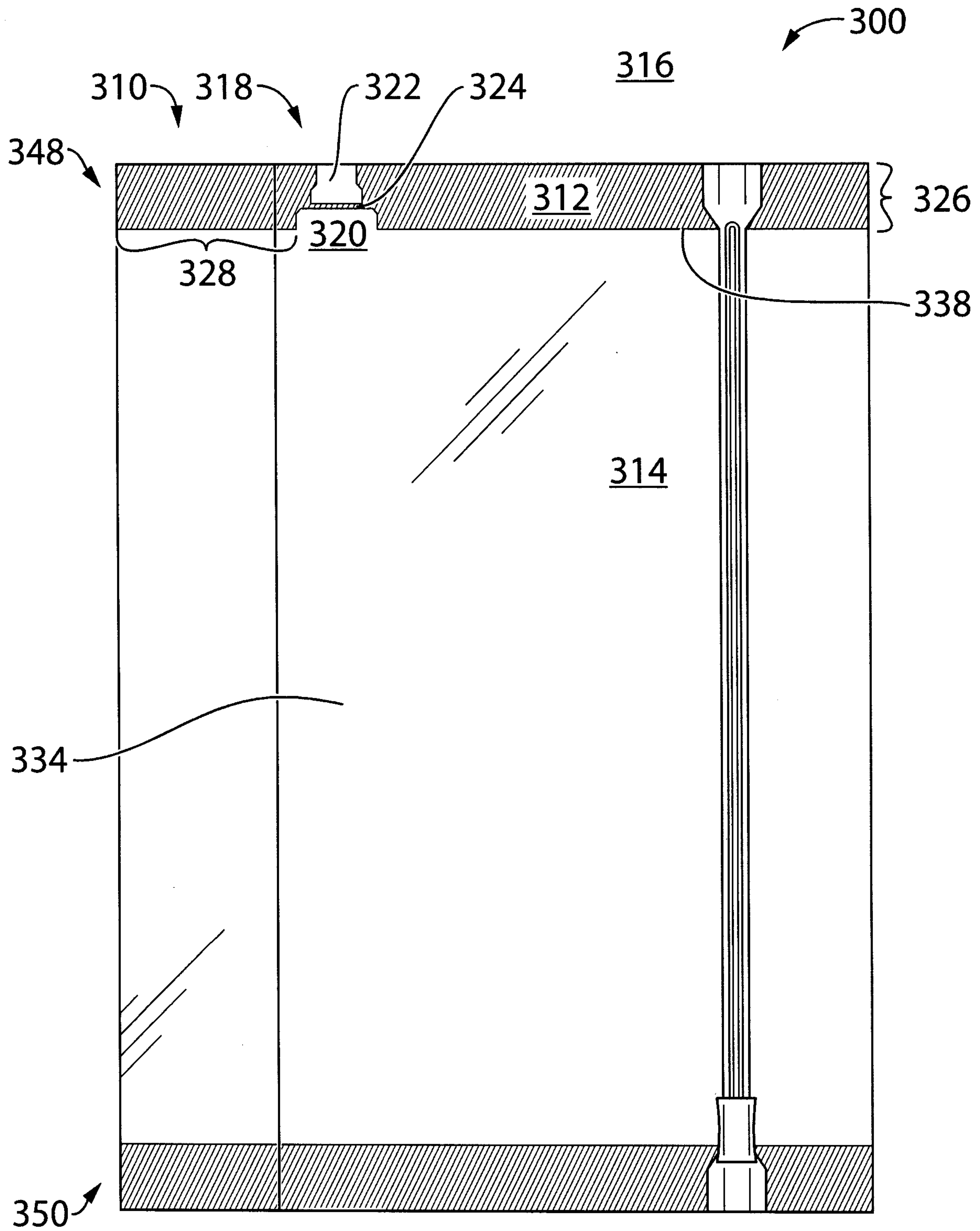
13. The cooking container of any one of claims 2 to 5, wherein the other length is greater than 1/2 in.
- 5 14. The cooking container of any one of claims 1 to 13, wherein the seal is in two parts and the breakable seal is located so as to join the two parts of the seal before it is broken.
- 10 15. The cooking container of any one of claims 1 to 14, wherein the seal has an inside boundary and wherein the breakable seal is located 3/16 inches to 1/4 inches from the inside boundary.
- 15 16. The cooking container of claim 1, the cooking container comprising:
more than one seals; and
more than one valves extending from a respective one seal of the more than one seals.
- 20 17. The cooking container of any one of claims 1 to 16, wherein the pressure accumulating portion comprises a pressure accumulating portion section having a first length and wherein the pressure controlling portion comprises a pressure controlling portion section having a second length, the first length of the pressure accumulating portion section being longer than the second length of the pressure controlling portion section.
- 25 18. A cooking container for cooking foodstuff comprising:
- an edge having a seal separating the interior from the exterior of the cooking container;
- a steam valve formed in the seal, the steam valve comprising:
a pressure accumulating portion; and

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5 a breakable seal in contact with the pressure accumulating portion;
whereby the breakable seal is breakable under an increase in pressure in
the pressure accumulating portion during cooking thereby forming a
gap/passage having a set predetermined size in the seal and permitting
controlled evacuation of pressure in the cooking container through the
gap/passage.

**FIG. 1**

**FIG. 2**

**FIG. 3**

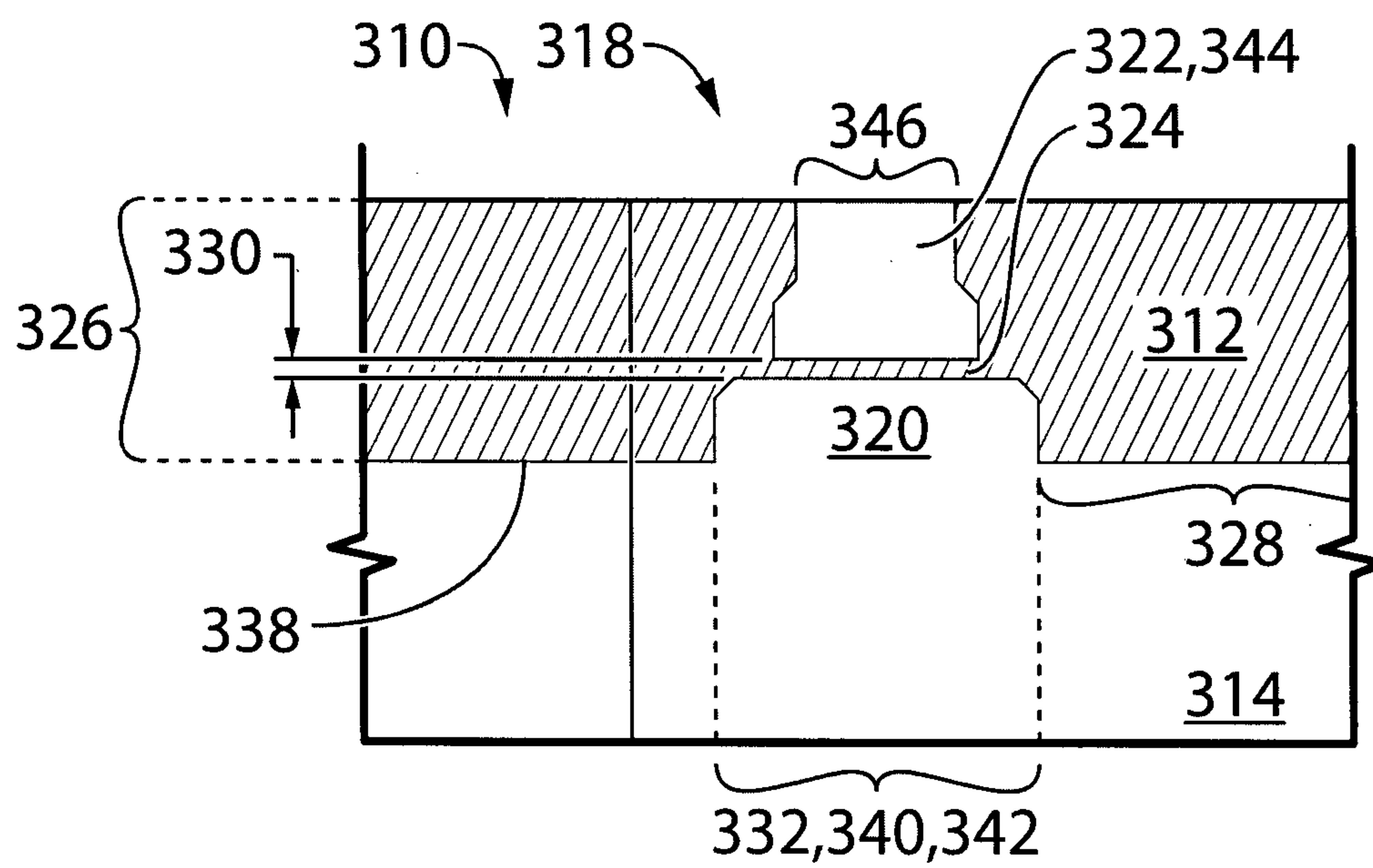
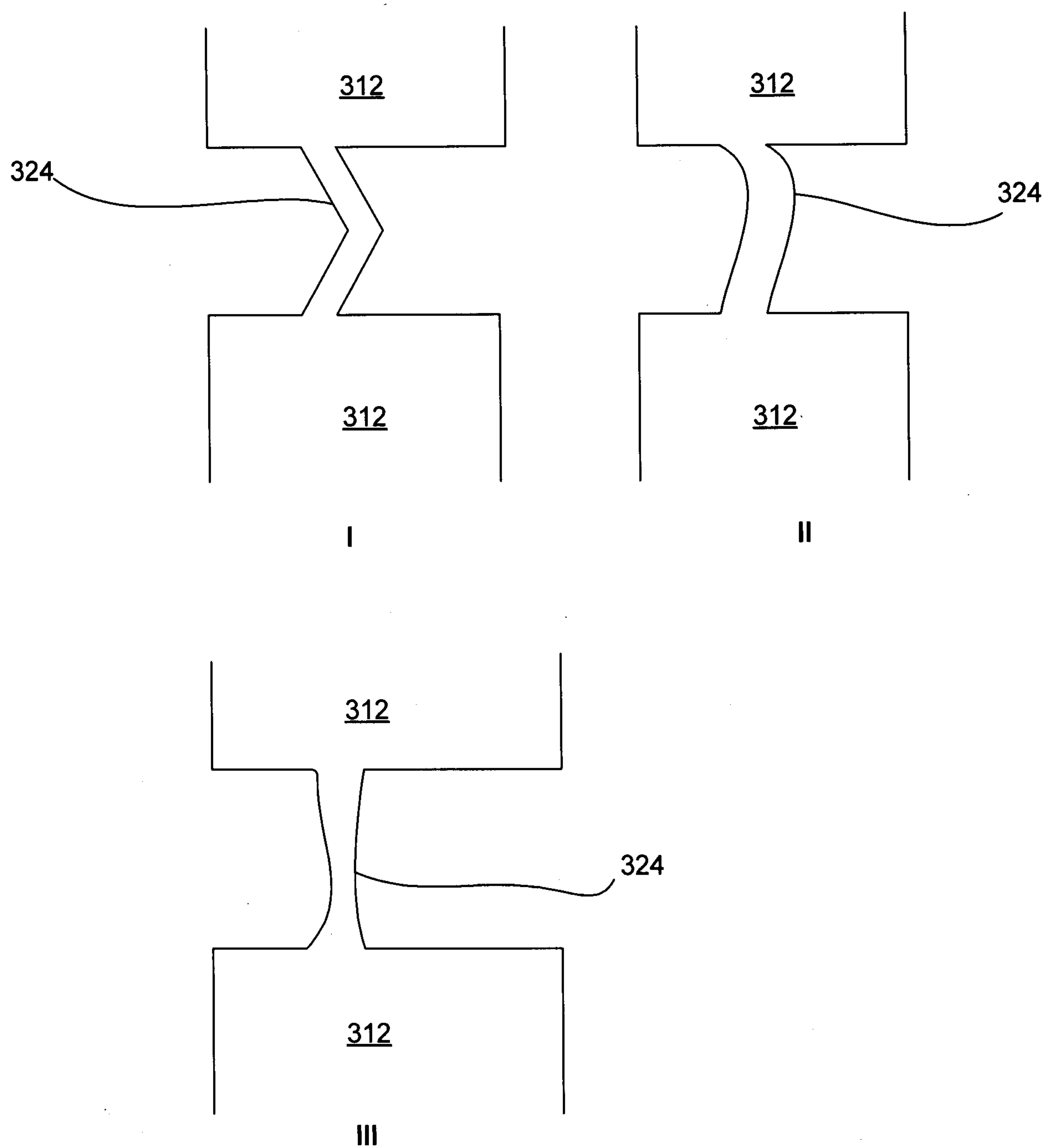


FIG. 4

**Fig. 5**

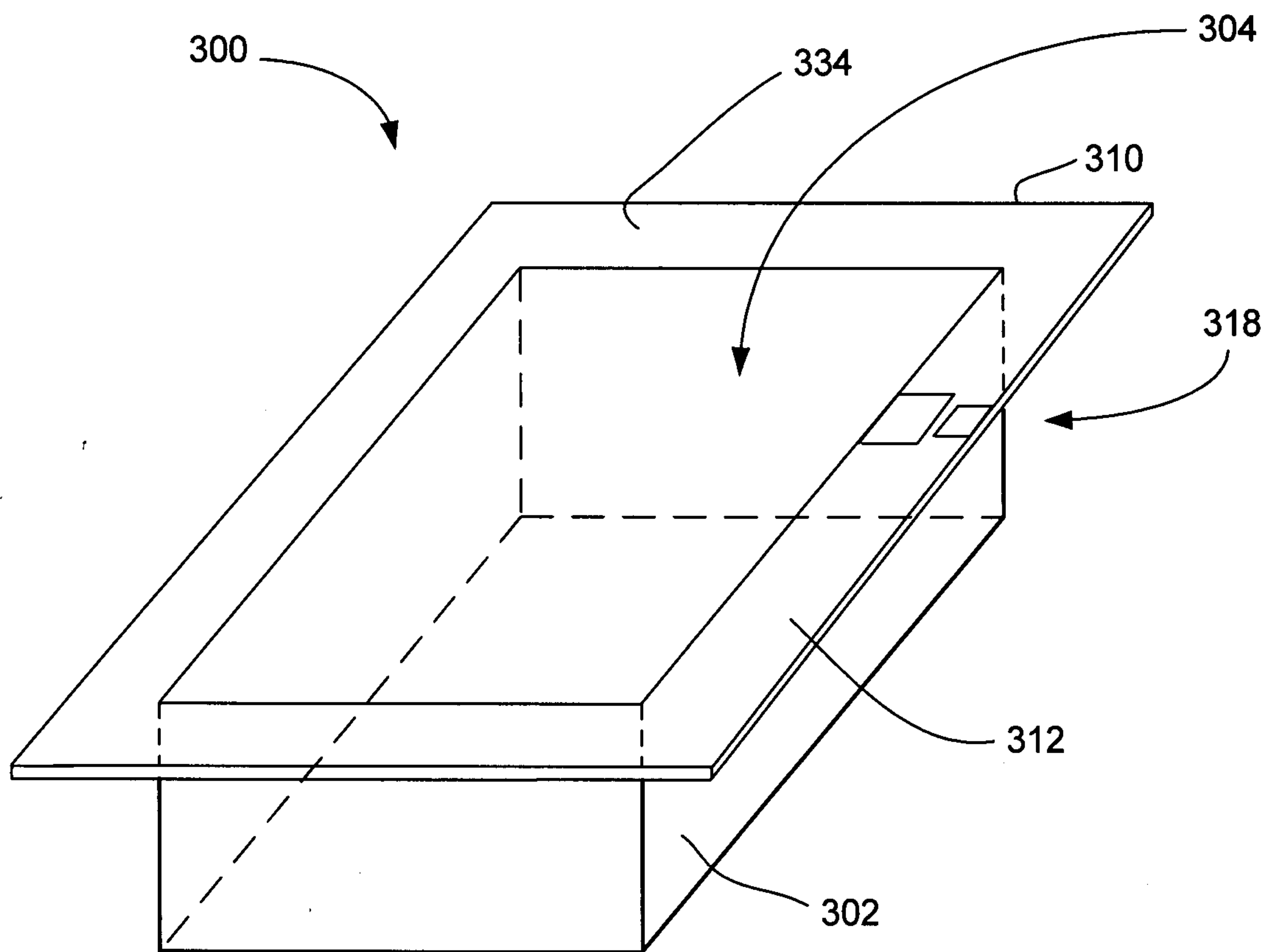


FIG. 6

