



(11)

EP 3 321 210 A1

(12)

EUROPEAN PATENT APPLICATION
published in accordance with Art. 153(4) EPC

(43) Date of publication:
16.05.2018 Bulletin 2018/20

(51) Int Cl.:
B65D 81/34 (2006.01)

(21) Application number: **16821156.3**

(86) International application number:
PCT/JP2016/066869

(22) Date of filing: **07.06.2016**

(87) International publication number:
WO 2017/006685 (12.01.2017 Gazette 2017/02)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
MA MD

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(30) Priority: **09.07.2015 JP 2015137848**

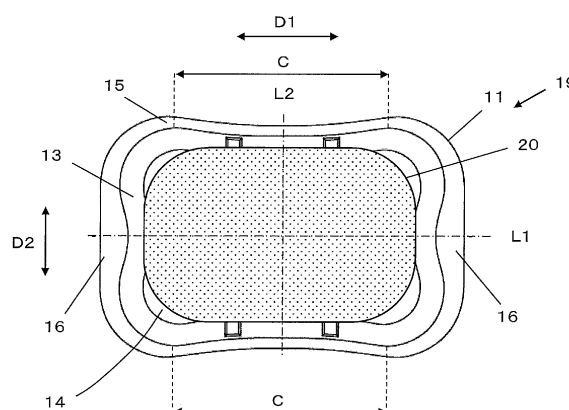
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(54) **PACKAGE**

(57) A package (19) comprises: a packaging container (11) having a containing section (14) open at the top and formed by a bottom (12) and by a peripheral wall (13) rising from the peripheral edge of the bottom (12), the packaging container (11) further having a flange (15) formed thereon, the flange (15) being provided along the entire circumference of the peripheral wall and protruding outward relative to the containing section from the upper end of the peripheral wall; a contained object (2) contained within the containing section and producing vapor when heated; and a top seal (21) joined to the flange along the entire circumference thereof to seal the inside of the containing section. The packaging container has a curved section (C) where a part of the peripheral wall is curved toward the containing section. A maximum deformation point (M) is formed in the curved section, the maximum deformation point (M) being the point where the deformation of the peripheral wall is maximum when pressure within the containing section increases to deform the top seal. The deformed top seal and the flange are pulled in the direction in which the deformed top seal and the flange are separated from each other, and when pressure within the containing section exceeds a set value, the top seal is separated from the flange at the maximum deformation point to release vapor within the containing section.

FIG. 4



Description

TECHNICAL FIELD

[0001] The present invention relates to a package, in particular, to a package in which a contained object generates steam when heated in a microwave oven.

BACKGROUND ART

[0002] In this type of package, cooked food or the like is contained and sealed in a packaging container for prevention of entry of dusts or others. The package as above may be heated in a microwave oven in order to cook the contained object.

[0003] Patent Literature 1, for example, discloses a tray-type packaging container sealed with a top seal.

CITATION LIST

PATENT LITERATURE

[0004] Patent Literature 1: JP 2014-239661 A

SUMMARY OF INVENTION

TECHNICAL PROBLEMS

[0005] However, since the packaging container disclosed by Patent Literature 1 is sealed, if the packaging container is heated as it is, the inner pressure thereof will continue to increase, and the package may burst so that the contained food may possibly be spattered to dirty the inside of the microwave oven. In order to prevent such situation, before the package is heated, a portion of the top seal needs to be peeled to provide a vent hole. Accordingly, the top seal of the packaging container of Patent Literature 1 is provided with a holding part for peeling, from which a portion of the top seal is to be peeled, and there is a drawback that an action of peeling a portion of the top seal from the holding part is required.

[0006] The present invention has been made to remove the conventional drawback as described above and an object of the present invention is to provide a package with which a contained object can be cooked without the need to peel a portion of a top seal before being heated in a microwave oven.

SOLUTION TO PROBLEMS

[0007] A package to be heated in a microwave oven according to the present invention includes: a packaging container that includes a containing part composed of a bottom part and a peripheral wall part and opening upward and that is provided with a flange part, the peripheral wall part rising from a periphery of the bottom part, and the flange part extending along a whole circumference of the peripheral wall part and projecting from an upper

edge of the peripheral wall part outward with respect to the containing part; a contained object that is contained in the containing part and that generates steam when heated; and a top seal a portion of which is joined to the flange part along a whole circumference of the flange part to thereby seal the containing part, wherein the packaging container includes a curving part that is a portion of the peripheral wall part, the portion curving to protrude toward the containing part, and a maximum deformation amount point is formed within the curving part, a deformation amount being largest at the maximum deformation amount point in the peripheral wall part when an inner pressure of the containing part increases to deform the top seal, and wherein, when the package is heated in the microwave oven, the inner pressure of the containing part increases due to steam generated from the contained object or gas expansion through heating so that the packaging container and the top seal deform, a bending angle formed between the top seal and the portion joined to the flange part of the packaging container becomes larger at the maximum deformation amount point than a bending angle at any other point along the peripheral wall part except the maximum deformation amount point, the top seal thus deformed and the flange part are pulled away from each other, and the top seal peels from the flange part at the maximum deformation amount point when the inner pressure of the containing part exceeds a set value, whereby steam in the containing part is discharged.

[0008] The upper edge of the peripheral wall part may include a pair of sides opposing each other, and the packaging container may include the curving part at each of the pair of sides.

[0009] Preferably, the upper edge of the peripheral wall part forms a substantially rectangular shape, and the packaging container includes the curving part at each of a pair of long sides of the rectangular shape.

[0010] The packaging container may include a handle part provided to the peripheral wall part except the curving part.

[0011] The flange part may include a joining projection part projecting in a direction opposite from the bottom part and extending along the whole circumference of the flange part.

[0012] Preferably, the top seal is joined to the flange part so as to have a joining width that is substantially same throughout the whole circumference of the flange part.

[0013] The contained object may be food, and may be frozen food. In addition, the packaging container may be made of resin or paper.

[0014] Moreover, the present invention can also constitute a packaging container used in these packages.

ADVANTAGEOUS EFFECTS OF INVENTION

[0015] According to the present invention, a packaging container includes a curving part that is a portion of a

peripheral wall part curving toward a containing part; a maximum deformation amount point is formed within the curving part, at which a deformation amount is largest throughout the peripheral wall part when an inner pressure of the containing part increases and the containing part receives a tensile force from a top seal that has deformed; when being heated in a microwave oven, the inner pressure of the containing part increases due to steam generated from a contained object so that a flange part is pulled up from the deformed top seal; and when the inner pressure of the containing part exceeds a preset value, the top seal is peeled from the flange part at the maximum deformation amount point, whereby steam in the containing part is discharged. Accordingly, the contained object can be cooked without the need to peel a portion of the top seal before being heated in a microwave oven.

BRIEF DESCRIPTION OF DRAWINGS

[0016]

[FIG. 1] FIG. 1 is a plan view showing a packaging container used in a package according to Embodiment 1 of the present invention.

[FIG. 2] FIG. 2 is a front view showing the packaging container.

[FIG. 3] FIG. 3 is side view showing the packaging container.

[FIG. 4] FIG. 4 is a plan view showing the package according to Embodiment 1.

[FIG. 5] FIG. 5 is a cross-sectional front view of the package taken along a central line L1 of FIG. 4.

[FIG. 6] FIG. 6 is a cross-sectional side view of the package taken along a central line L2 of FIG. 4.

[FIG. 7] FIG. 7 is an enlarged view of a main part of FIG. 5.

[FIG. 8] FIG. 8 is a view showing a result of quarter model simulation of the package.

[FIG. 9] FIG. 9 is a cross-sectional front view showing the package according to Embodiment 1 when being heated.

[FIG. 10] FIG. 10 is a cross-sectional side view showing the package according to Embodiment 1 when being heated.

[FIG. 11] FIG. 11 is an enlarged view of a main part of FIG. 9.

[FIG. 12] FIG. 12 is an enlarged view of a main part of FIG. 10.

[FIG. 13] FIG. 13 is a plan view showing a package according to Embodiment 2.

[FIG. 14] FIG. 14 is a plan view showing a package according to Embodiment 3.

[FIG. 15] FIG. 15 is a plan view showing a package according to Embodiment 4.

[FIG. 16] FIG. 16 is an enlarged cross-sectional view of a main part showing a joining projection part.

DESCRIPTION OF EMBODIMENTS

[0017] Embodiment 1 of the present invention is described below based on the appended drawings.

5 [0018] FIG. 1 is a plan view showing a packaging container 11 used in a package according to Embodiment 1. The packaging container 11 has a substantially rectangular outer shape when viewed from above and is symmetric with respect to a first central axis L1 that extends in a first direction D1 parallel to a long side of the rectangular shape and is also symmetric with respect to a second central axis L2 that extends in a second direction D2 parallel to a short side of the rectangular shape.

10 [0019] The packaging container 11 includes a bottom part 12 in a substantially rectangular planar shape, and a peripheral wall part 13 is formed at the periphery of the bottom part 12. The peripheral wall part 13 is rising from the periphery of the bottom part 12 as illustrated in FIGS. 2 and 3. The peripheral wall part 13 surrounds a space over the bottom part 12, and a containing part 14 opening upward is formed as illustrated in FIG. 1.

[0020] In the peripheral wall part 13, portions corresponding to a pair of long sides of the rectangular shape and extending in the first direction D1 curve to protrude toward the containing part 14 and each constitute a curving part C.

25 [0021] A flange part 15 is formed around the whole circumference of the peripheral wall part 13 so as to project from the upper edge of the peripheral wall part 13 outward with respect to the containing part 14. At a portion extending in the second direction D2 in the peripheral wall part 13, a handle part 16 is formed so as to project outward from the flange part 15 formed at the upper edge of the peripheral wall part 13; the handle part 16 is integrally connected with the flange part 15.

30 [0022] Since the curving part C curves to protrude toward the containing part 14, in the flange part 15, a portion formed on the upper edge of the curving part C curves to protrude toward the containing part 14.

35 [0023] A step part 17 is formed in the bottom part 12, and, in addition, a plurality of step parts 18 are also formed in the bottom part 12 and the curving part C. The step part 17 and the plurality of step parts 18 reinforce the strength of the packaging container 11 and are formed by arranging steps at parts of the bottom part 12 and the curving part C.

40 [0024] The packaging container 11 as above can be made of resin or paper.

45 [0025] FIG. 4 is a plan view showing a package 19 according to Embodiment 1 using the packaging container 11. A contained object 20, i.e., cooked food is contained in the containing part 14 of the packaging container 11, and the containing part 14 is sealed with a top seal formed of a resin film, whereby the package 19 is made. Note that the top seal is omitted in FIG. 4 in order to show the contained object 20 visibly. The package 19 is to be heated in a microwave oven, and the contained object 20 generates steam as its temperature increases through

heating.

[0026] FIG. 5 is a cross-sectional front view of the package 19 shown in FIG. 4 taken along the first central axis L1, and FIG. 6 is a cross-sectional side view of the package 19 shown in FIG. 4 taken along the second central axis L2.

[0027] As illustrated in FIGS. 5 and 6, the contained object 20 is contained in the containing part 14, and a top seal 21 is disposed so as to cover the containing part 14 and the contained object 20.

[0028] FIG. 5 shows portions of the peripheral wall part 13 shown in FIG. 4, which portions coincide with the first central axis L1. Meanwhile, FIG. 6 shows other portions of the peripheral wall part 13 shown in FIG. 4, which portions coincide with the second central axis L2. That is, the portions of the peripheral wall part 13 coinciding with the second central axis L2 each constitute the curving part C.

[0029] The top seal 21 is joined to the whole circumference of the flange part 15, and, accordingly, the containing part 14 is sealed with the top seal 21. At this time, the top seal 21 is joined so as to have an approximately same joining strength throughout the whole circumference of the flange part 15.

[0030] FIG. 7 is an enlarged view showing a vicinity of the flange part 15 of FIG. 5. As illustrated in FIGS. 5 and 6, the top seal 21 is joined to the whole circumference of the flange part 15 at a constant tension.

[0031] FIG. 8 shows a result of quarter model simulation in which the inner pressure of the containing part 14 sealed with the top seal 21 is increased to observe how the package 19 receives stress and deforms thereunder. The package 19 shown in FIG. 4 was divided at the first central axis L1 and the second central axis L2 to obtain a divided portion as a quarter model of the package 19 as illustrated in FIG. 8, and simulation was performed on the quarter model. In the simulation, the contained object 20 was omitted. In addition, in the simulation, it was supposed that divisional surfaces along the first central axis L1 and the second central axis L2 were each a free end that was not opened. Since the package 19 has a symmetric shape with respect to the first central axis L1 and also the second central axis L2, the simulation result of a quarter portion of the package 19 can be applied to the undivided package 19.

[0032] In FIG. 8, a dashed-dotted line indicates the shape of the packaging container 11 before the inner pressure of the containing part 14 is increased, whereas a solid line indicates the shape of the packaging container 11 after the inner pressure of the containing part 14 is increased.

[0033] As a result of the simulation, since the inner pressure of the containing part 14 sealed with the top seal 21 was increased, the top seal 21 deformed so as to swell upward and the peripheral wall part 13 also deformed. Such result was obtained perhaps because the whole circumference of the flange part 15 received a tensile force from the deformed top seal 21 while the in-

creased inner pressure of the containing part 14 acted on the entire peripheral wall part 13.

[0034] When the inner pressure of the containing part 14 was increased, the curving part C and the peripheral wall part 13 except the curving part C each deformed toward the containing part 14, with the deformation amount of the curving part C being larger than the deformation amount of the peripheral wall part 13 except the curving part C. This result suggests that the curving part C is more deformable than the peripheral wall part 13 except the curving part C. In addition, it was found that a maximum deformation amount point M at which the deformation amount is largest throughout the peripheral wall part 13 would be formed within the curving part C. The maximum deformation amount point M is situated at a portion, in the boundary portion between the top seal 21 and the flange part 15, where the curving part C and the second central axis L2 shown in FIG. 4 coincide with each other. It was also found that stress concentrated on the maximum deformation amount point M, and the portion of the flange part 15 at the maximum deformation amount point M received the larger force than at any other portion of the flange part 15.

[0035] When the package 19 shown in FIG. 4 is heated in a microwave oven, the temperature of the contained object 20 in the containing part 14 increases and steam is generated from the contained object 20. In this process, since the containing part 14 is sealed with the top seal 21 that is joined to the flange part 15, the inner pressure of the containing part 14 gradually increases due to generation of steam from the contained object 20 and expansion of the heated gas in the containing part 14 as the temperature of the contained object 20 increases.

[0036] As illustrated in FIGS. 9 and 10, while the inner pressure P of the containing part 14 increases, the top seal 21 deforms so as to swell upward with respect to the containing part 14. The increased inner pressure P acts evenly on the entire peripheral wall part 13, whereby the peripheral wall part 13 deforms toward the containing part 14.

[0037] The simulation result of the package 19 as described above shows that, as illustrated in FIG. 8, in the peripheral wall part 13 that evenly received force, the maximum deformation amount point M at which the deformation amount was largest was formed within the curving part C.

[0038] Accordingly, as illustrated in FIGS. 9 and 10, in the peripheral wall part 13 that deforms by the tensile force from the top seal 21 and the increased inner pressure P, in particular, the curving part C deforms more largely than the peripheral wall part 13 except the curving part C does as with the simulation result. As illustrated in FIG. 10, the maximum deformation amount point M at which the deformation amount is largest throughout the peripheral wall part 13 is thus formed within the curving part C.

[0039] Since the maximum deformation amount point M is formed in the curving part C where the peripheral

wall part 13 coincides with the second central axis L2 shown in FIG. 4 as with the simulation result, a pair of maximum deformation amount points M are formed so as to face each other across the containing part 14 as shown in FIG. 10.

[0040] As illustrated in FIG. 7, in the package 19 before being heated, the top seal 21 extended from a part thereof joined to the flange part 15 straightly without bending with respect to the flange part 15. When the package 19 is heated, the top seal 21 deforms while the whole circumference of the peripheral wall part 13 deforms toward the containing part 14, whereby the top seal 21 bends from the part joined to the flange part 15 at a preset bending angle with respect to the flange part 15.

[0041] FIG. 11 is an enlarged view showing a vicinity of the flange part 15 of FIG. 9. In a cross section of the deformed package 19 taken along the first central axis L1, the deformed top seal 21 bends from the part joined to the flange part 15 at a bending angle θ_1 with respect to the flange part 15.

[0042] FIG. 12 is an enlarged view showing a vicinity of the flange part 15 of FIG. 10. In a cross section of the deformed package 19 taken along the second central axis L2, the deformed top seal 21 bends from the part joined to the flange part 15 at a bending angle θ_2 with respect to the flange part 15.

[0043] At this time, since the deformation amount at the maximum deformation amount point M is larger than the deformation amount of the peripheral wall part 13 except the maximum deformation amount point M, the bending angle θ_2 shown in FIG. 12 is larger than the angle θ_1 shown in FIG. 11.

[0044] When the bending angle of the top seal 21 becomes larger, of the tensile force the flange part 15 receives from the top seal 21, a force component perpendicular to the flange part 15 becomes larger.

[0045] As illustrated in FIG. 11, within the flange part 15, the portion coinciding with the first central axis L1 receives a force component Fv1 perpendicular to the flange part 15. In addition, as illustrated in FIG. 12, within the flange part 15, the portion coinciding with the second central axis L2, i.e., the maximum deformation amount point M receives a force component Fv2 perpendicular to the flange part 15.

[0046] Since the bending angle θ_2 shown in FIG. 12 is larger than the bending angle θ_1 shown in FIG. 11 as described above, the force component Fv2 shown in FIG. 12 is larger than the force component Fv1 shown in FIG. 11.

[0047] As the inner pressure of the containing part 14 increases, the deformation amounts of the top seal 21 and the peripheral wall part 13 become large, whereby the bending angle of the top seal 21 becomes large. Furthermore, the tensile force of the top seal 21 also becomes so large that the force component perpendicular to the flange part 15 becomes large. The force component influences the process of peeling of the top seal 21; when a preset peeling force is reached, the top seal 21

peels from the flange part 15.

[0048] As the inner pressure P of the containing part 14 increases as illustrated in FIGS. 9 and 10, the deformation amounts of the top seal 21 and the peripheral wall part 13 also increase. In this process, as with the simulation result, the deformation amount at the maximum deformation amount point M becomes largest within the peripheral wall part 13, and the bending angle θ_2 shown in FIG. 12 becomes large. Furthermore, the tensile force of the top seal 21 also becomes so large that the force component Fv2 perpendicular to the flange part 15 at the maximum deformation amount point M comes closer to the preset peeling force.

[0049] When the inner pressure P of the containing part 14 exceeds the preset value while the force component Fv2 of the tensile force of the top seal 21 at the maximum deformation amount point M reaches the preset peeling force in this manner, a portion of the top seal 21 peels from the flange part 15 at the maximum deformation amount point M, whereby steam is discharged from the containing part 14. While the pair of curving parts C of the packaging container 11 each have the maximum deformation amount point M, the peeling process of the top seal 21 starts at either one of the pair of maximum deformation amount points M due to variations in shape and strength of the packaging container 11, variations in joining strength between the top seal 21 and the flange part 15 or other variations resulting from the production tolerances. Following the discharge of steam through a space between the peeled top seal 21 and the flange part 15, the inner pressure P of the containing part 14 rapidly decreases.

[0050] In a conventional package, since the packaging container is sealed, a portion of the top seal is required to be peeled to achieve a state where a vent hole is provided before being heated and thereafter the package is heated in a microwave oven. Accordingly, there is the need to peel a portion of the top seal from a holding part provided to the top seal, requiring an additional action.

[0051] On the other hand, in the package 19 according to Embodiment 1, even if the package 19 is heated in a microwave oven with the containing part 14 being sealed, once the inner pressure of the containing part 14 increases to exceed the preset value, the top seal 21 automatically peels, and then the inner pressure of the containing part 14 decreases. That is, the inner pressure of the containing part 14 does not continue to increase, and the contained object 20 is not caused to be spattered inside the microwave oven, so that the inside of the microwave oven does not become dirty. Accordingly, the contained object 20 can be cooked without requiring an action of peeling a portion of the top seal 21 before being heated.

[0052] In addition, until a portion of the top seal 21 automatically peels, the contained object 20 is cooked with the containing part 14 being sealed. Since the containing part 14 is sealed, steam with heat energy is not released outside and thus not wasted, and it is possible to cook with the higher pressure than the atmospheric pressure

with the containing part 14 being filled with steam. Therefore, the required cooking time can be also shortened.

Embodiment 2

[0053] FIG. 13 illustrates a package 31 according to Embodiment 2. While the pair of long sides of the substantially rectangular shape formed along the upper edge of the peripheral wall part 13 of the packaging container 11 in Embodiment 1 are each provided with the curving part C, each of the pair of long sides is not necessarily required to have the curving part C. That is, as illustrated in FIG. 13, either one of the pair of long sides of the substantially rectangular shape formed along the upper edge of the peripheral wall part 13 of a packaging container 32 may be provided with the curving part C.

[0054] In this case, as with Embodiment 1, when the package 31 is heated in a microwave oven, the top seal automatically peels from the flange part 15 at the maximum deformation amount point formed in the curving part C, whereby the contained object 20 can be cooked without requiring an action of peeling a portion of the top seal before being heated.

Embodiment 3

[0055] FIG. 14 illustrates a package 41 according to Embodiment 3. While the upper edge of the peripheral wall part 13 of the package 11 forms the substantially rectangular shape in Embodiment 1, portions of the peripheral wall part 13 extending in the second direction D2 are not necessarily required to protrude inward. That is, as illustrated in FIG. 14, in the peripheral wall part 13 of a packaging container 42, the portions extending in the second direction D2 may curve so as to protrude outward.

[0056] The upper edge of the peripheral wall part 13 of the packaging container 42 forms a closed shape, and the upper edge of the peripheral wall part 13 includes a pair of sides extending in the first direction D1 and opposing each other. The curving part C may be provided to each of the pair of sides.

[0057] Since the packaging container 42 is provided with the curving parts C in this manner, as with Embodiments 1 and 2, the package 41 can be heated and the contained object 20 can be cooked in a microwave oven without requiring an action of peeling a portion of the top seal before being heated.

Embodiment 4

[0058] FIG. 15 illustrates a package 51 according to Embodiment 4. While the upper edge of the peripheral wall part 13 of the package 11, 32 or 42 has a pair of opposing sides in Embodiments 1 to 3, as illustrated in FIG. 15, a packaging container 52 may have a circular or an oval shape when viewed from above.

[0059] A portion of a predetermined range in the peripheral wall part 13 of the packaging container 52 is bent

toward the containing part 14, whereby the curving part C can be formed.

[0060] Even when the packaging container 52 has such circular or oval shape when viewed from above, as with Embodiments 1 to 3, the package 51 can be heated and the contained object 20 can be cooked in a microwave oven without requiring an action of peeling a portion of the top seal before being heated.

[0061] It should be noted that as illustrated in FIG. 16, in the packaging container 11, 32, 42 or 52 used in the package 19, 31, 41 or 51 in Embodiments 1 to 4, the flange part 15 may be provided with a joining projection part 22 projecting in a direction opposite from the bottom part 12 and extending along the whole circumference of the flange part 15, and the top seal 21 may be joined to the joining projection part 22.

[0062] In addition, while a joining width between the top seal 21 and the flange part 15 may be substantially same throughout the whole circumference of the flange part 15, as long as the top seal 21 has the substantially same joining strength, the joining width is not necessarily required to be substantially same throughout. Moreover, as long as the sufficient joining strength is ensured throughout the whole circumference of the flange part 15, the joining width between the top seal 21 and the flange part 15 at the curving part C may be narrower than the joining width between the top seal 21 and the flange part 15 at the peripheral wall part 13 except the curving part C.

[0063] The top seal 21 may be joined by any conventional method, e.g., by using an adhesive or by heat-sealing. In addition, while the packaging containers 11, 32, 42 and 52 and the top seal 21 are formed of a resin film in Embodiments 1 to 4, any material such as, for example, a paper material laminated with resin may be used as long as the material allows joining between the top seal and the packaging container and does not release the inner pressure.

[0064] Furthermore, the handle part 16 of the packaging container 11, 32 or 42 used in the package 19, 31 or 41 in Embodiments 1 to 3 is not necessarily required to be integrally connected to the flange part 15; it is sufficient that the handle part 16 is formed on the peripheral wall part 13 except the curving part C. In addition, the packaging containers 11, 32 and 42 in Embodiments 1 to 3 may be configured so as not to include the handle part 16.

[0065] In Embodiments 1 to 4, uncooked food, frozen food and various other contained objects that generate steam when heated may be used in place of cooked food as the contained object 20.

REFERENCE SIGNS LIST

[0066] 11, 32, 42, 52 packaging container; 12 bottom part; 13 peripheral wall part; 14 containing part; 15 flange part; 16 handle part; 17, 18 step part; 19, 31, 41, 51 package; 20 contained object; 21 top seal; 22 joining projection part; C curving part; M maximum deformation

amount point; $\theta 0, \theta 1, \theta 2$ bending angle; P inner pressure; Fv1, Fv2 force component; D1 first direction; D2 second direction; L1 first central axis; L2 second central axis

Claims

1. A package to be heated in a microwave oven, comprising:

a packaging container that includes a containing part composed of a bottom part and a peripheral wall part and opening upward and that is provided with a flange part, the peripheral wall part rising from a periphery of the bottom part, and the flange part extending along a whole circumference of the peripheral wall part and projecting from an upper edge of the peripheral wall part outward with respect to the containing part; a contained object that is contained in the containing part and that generates steam when heated; and

a top seal a portion of which is joined to the flange part along a whole circumference of the flange part to thereby seal the containing part, wherein the packaging container includes a curving part that is a portion of the peripheral wall part, the portion curving to protrude toward the containing part, and a maximum deformation amount point is formed within the curving part, a deformation amount being largest at the maximum deformation amount point in the peripheral wall part when an inner pressure of the containing part increases to deform the top seal, and wherein, when the package is heated in the microwave oven, the inner pressure of the containing part increases due to steam generated from the contained object or gas expansion through heating so that the packaging container and the top seal deform, a bending angle formed between the top seal and the portion joined to the flange part of the packaging container becomes larger at the maximum deformation amount point than a bending angle at any other point along the peripheral wall part except the maximum deformation amount point, the top seal thus deformed and the flange part are pulled away from each other, and the top seal peels from the flange part at the maximum deformation amount point when the inner pressure of the containing part exceeds a set value, whereby steam in the containing part is discharged.

2. The package according to claim 1, wherein the upper edge of the peripheral wall part includes a pair of sides opposing each other, and wherein the packaging container includes the curving part at each of the pair of sides.

3. The package according to claim 2, wherein the upper edge of the peripheral wall part forms a substantially rectangular shape, and wherein the packaging container includes the curving part at each of a pair of long sides of the rectangular shape.
4. The package according to any one of claims 1 to 3, wherein the packaging container includes a handle part provided to the peripheral wall part except the curving part.
5. The package according to any one of claims 1 to 4, wherein the flange part includes a joining projection part projecting in a direction opposite from the bottom part and extending along the whole circumference of the flange part, and wherein the top seal is joined to the joining projection part.
6. The package according to any one of claims 1 to 5, wherein the top seal is joined to the flange part so as to have a joining width that is substantially same throughout the whole circumference of the flange part.
7. The package according to any one of claims 1 to 6, wherein the contained object is food.
8. The package according to claim 7, wherein the food is frozen food.
9. The package according to any one of claims 1 to 8, wherein the packaging container is made of resin or paper.
10. A packaging container used in the package according to any one of claims 1 to 9.

FIG. 1

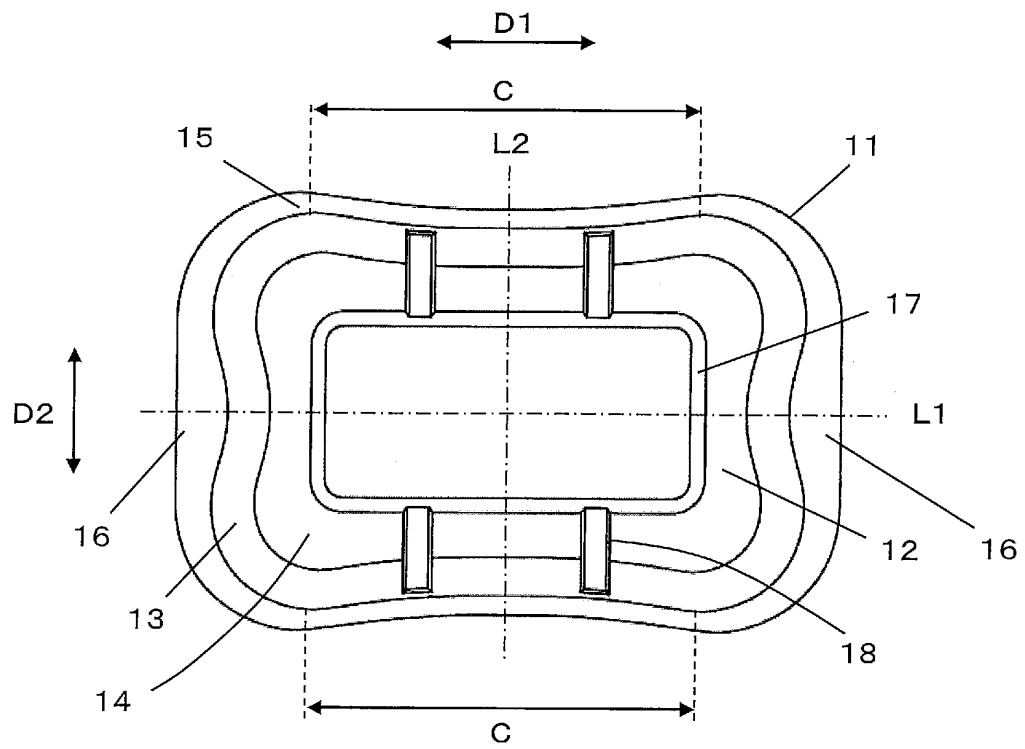


FIG. 2

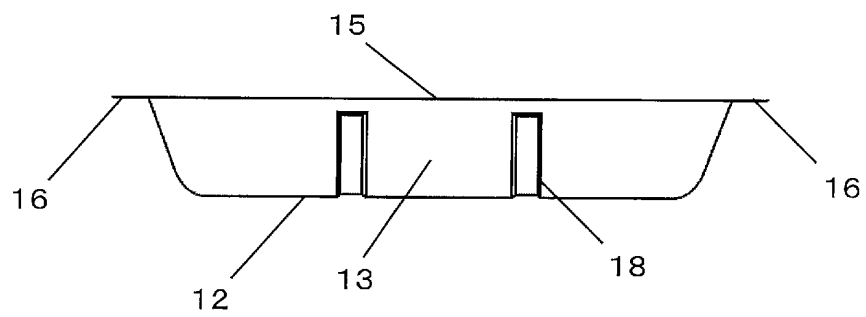


FIG. 3

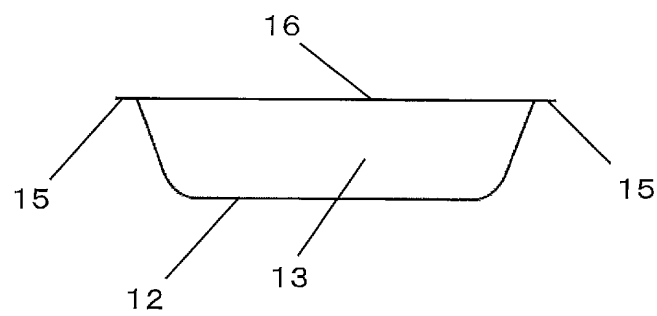


FIG. 4

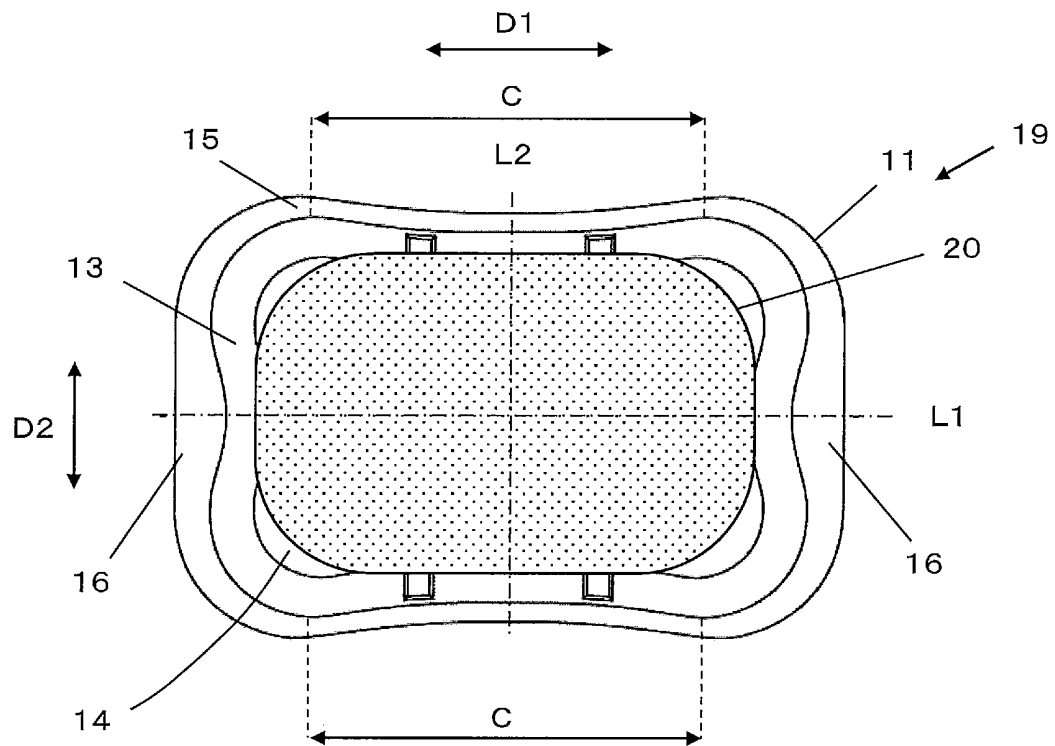


FIG. 5

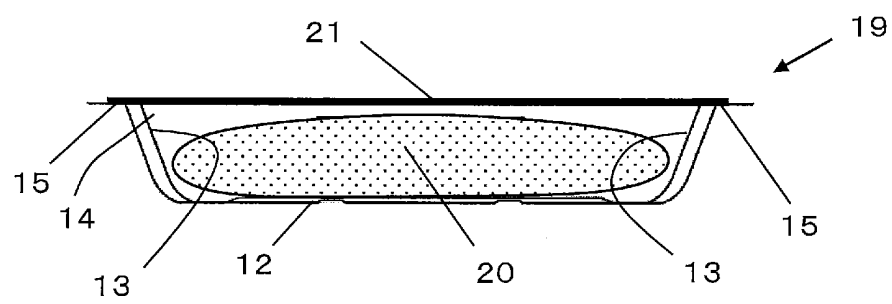


FIG. 6

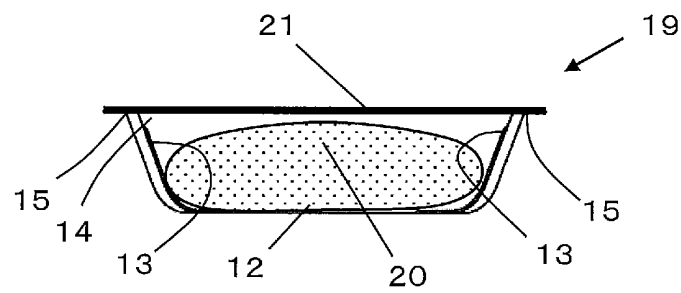


FIG. 7

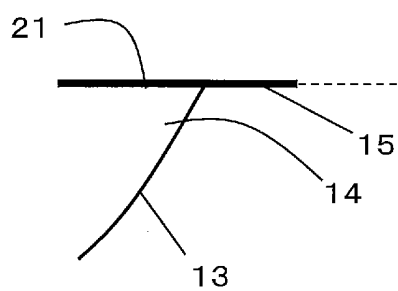


FIG. 8

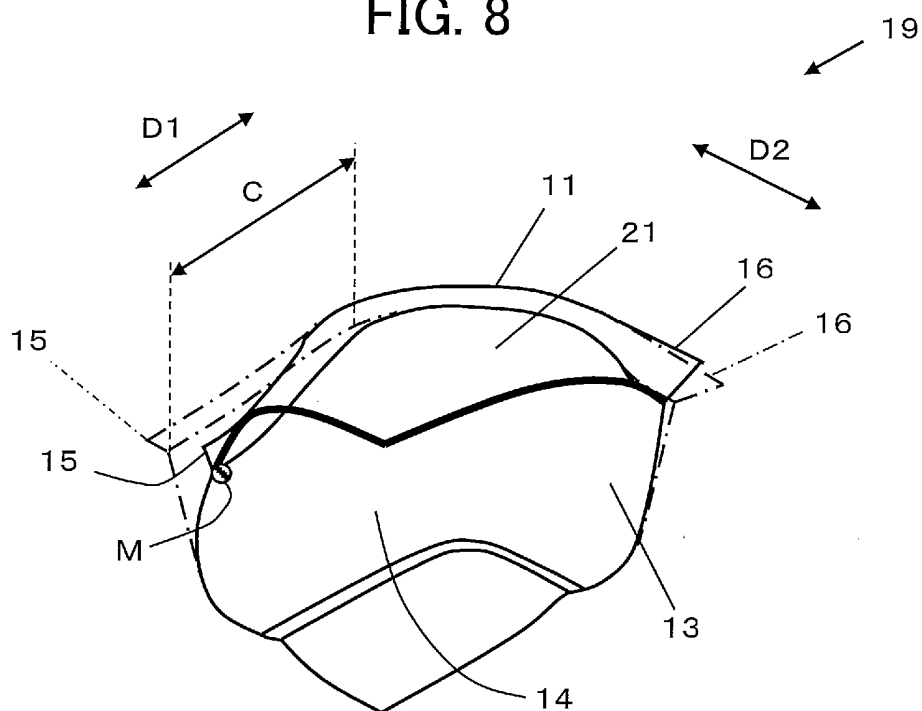


FIG. 9

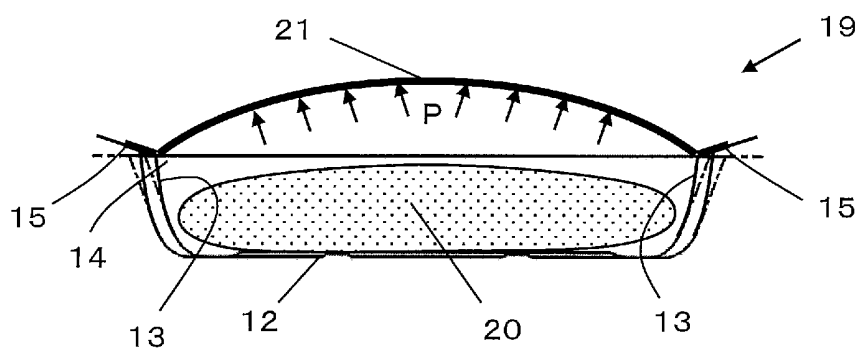


FIG. 10

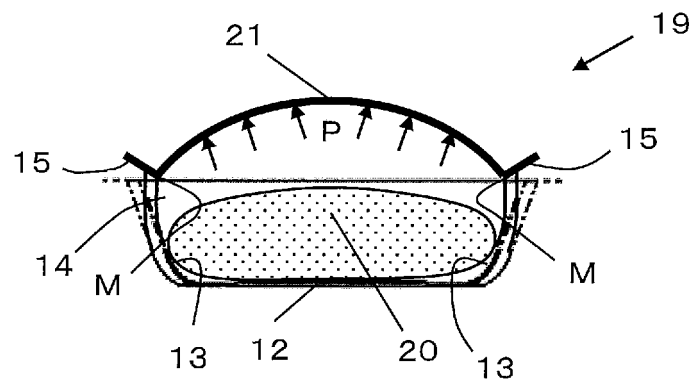


FIG. 11

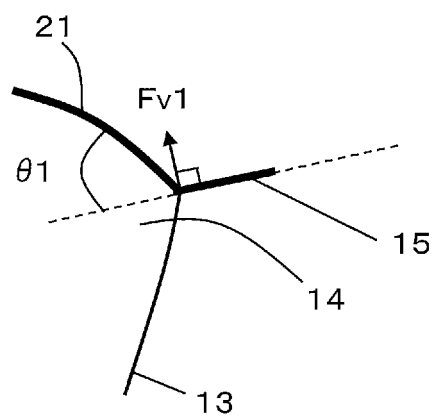


FIG. 12

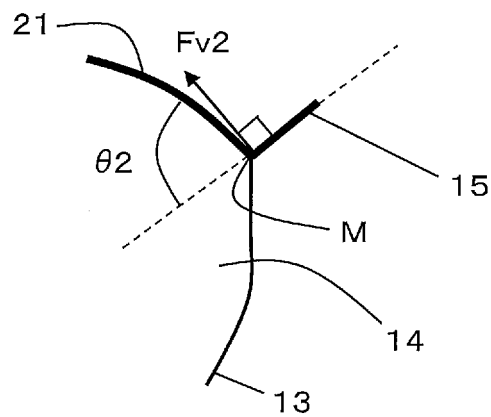


FIG. 13

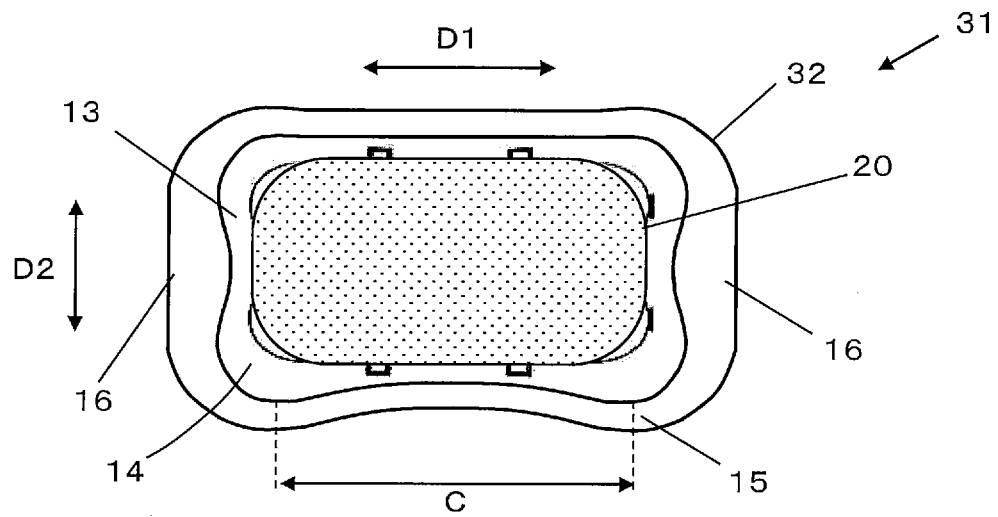


FIG. 14

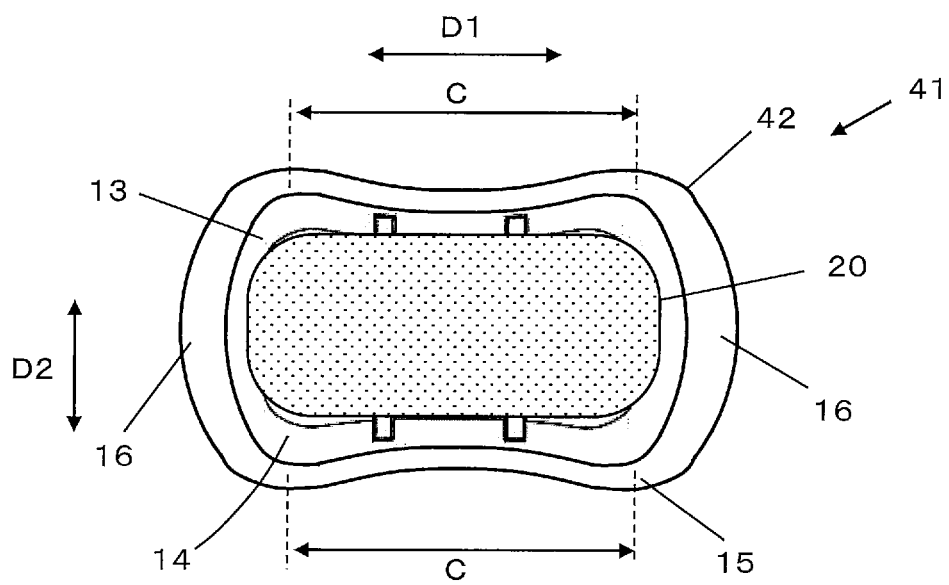


FIG. 15

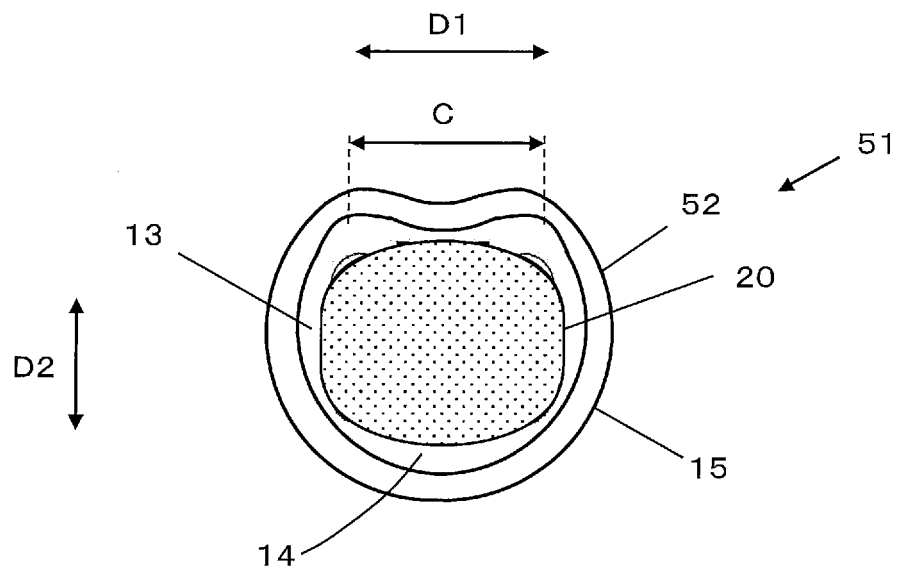
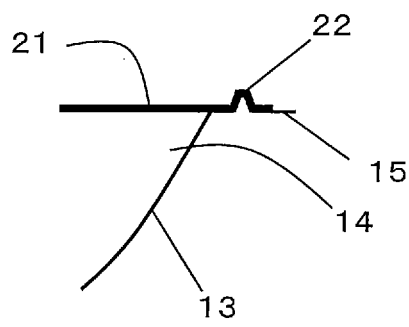


FIG. 16



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2016/066869

A. CLASSIFICATION OF SUBJECT MATTER

B65D81/34(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B65D81/34

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2016

Kokai Jitsuyo Shinan Koho 1971-2016 Toroku Jitsuyo Shinan Koho 1994-2016

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	JP 2013-147292 A (Fukuoka Marumoto Kabushiki Kaisha), 01 August 2013 (01.08.2013), paragraphs [0001], [0024] to [0034], [0042] to [0044]; fig. 1 to 4, 10 to 11 (Family: none)	1-2, 7, 9-10 3-6, 8
Y	JP 3807793 B2 (Tohcello Co., Ltd.), 09 August 2006 (09.08.2006), paragraphs [0045], [0050]; fig. 1, 4 (Family: none)	3-9
Y	US 2009/0263547 A1 (DUTAUT, Vincent), 22 October 2009 (22.10.2009), paragraphs [0049], [0052]; fig. 1 & WO 2006/066729 A1 & EP 1674407 A1	4-9

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Date of the actual completion of the international search
17 August 2016 (17.08.16)Date of mailing of the international search report
30 August 2016 (30.08.16)Name and mailing address of the ISA/
Japan Patent Office
3-4-3, Kasumigaseki, Chiyoda-ku,
Tokyo 100-8915, Japan

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INTERNATIONAL SEARCH REPORT

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PCT/JP2016/066869

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2001-328686 A (Kabushiki Kaisha Marumiya Sangyo), 27 November 2001 (27.11.2001), paragraphs [0010] to [0015]; fig. 1 to 2 (Family: none)	5-9
Y	JP 2013-233955 A (Daiwa Can Co.), 21 November 2013 (21.11.2013), paragraphs [0050] to [0051]; fig. 5 (Family: none)	5-9
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 149639/1989(Laid-open No. 087688/1991) (Sun A. Chemical Industries Co., Ltd.), 06 September 1991 (06.09.1991), specification, page 9, line 15 to page 10, line 3; fig. 1, 3 (Family: none)	6-9
Y	JP 08-025583 B2 (House Foods Corp.), 13 March 1996 (13.03.1996), column 4, lines 13 to 26; fig. 1 to 2 & US 4834247 A column 3, lines 3 to 20; fig. 1 to 2 & KR 10-1991-0001100 B1	6-9
Y	JP 4791876 B2 (Keihan Cellophane Co., Ltd.), 12 October 2011 (12.10.2011), paragraphs [0002], [0022] (Family: none)	8-9

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Patent documents cited in the description

- JP 2014239661 A [0004]