International Judicial Symposium on Intellectual Property 2024
Case for Mock Trial; IP High Court of Japan

I Outline of the case

Pony Corp. (“Pony”) owns a patent right (“Patent Right”) for an invention titled “Lid” (“Invention”). The Invention relates to a lid used as a part of a storage container in which stored food can be heated in a microwave oven.

Donkey Corp. (“Donkey”) manufactures and sells lids (“Defendant’s Product(s)”) used as parts of storage containers in which stored food can be heated in a microwave oven.

Pony claimed that Donkey's manufacture and sale of the Defendant's Products infringed the Patent Right and filed a lawsuit against Donkey seeking an injunction against the manufacture and sale of the Defendant's Products and compensation for damage.

II Scope of Claims (Claim 1)

A A lid used as a part of a storage container in which stored food can be heated in a microwave oven, the lid comprising:

B a top plate portion that covers an opening of a container body forming a storage space and has a through hole formed therein;

C an attachment portion that is provided on an outer periphery of the top plate portion and is configured to be attachable to an upper edge that forms the opening of the container body; and

D a flap that is provided to be elastically deformable to rotate with respect to the top plate portion, and has a protrusion that can close the through hole,

E wherein the flap is configured such that the protrusion is spaced apart from the through hole in a natural condition and the through hole is maintained in a closed state by the protrusion, and

F wherein the through hole is formed outside a base end portion of the flap in plan view of the lid.

III Description

[Detailed Description of the Invention]

[Technical field]

[0001]

The present disclosure relates to a storage container in which stored food can be heated in a microwave oven.

[Background art]

[0002]

In addition to storing food in a refrigerator, there are known storage containers in which stored food can be heated in a microwave oven as it is.

[0003]

A storage container 7 of the prior art shown in FIG. 5 includes a container body 8 that forms a storage space, and a lid 9 that can be attached to the container body 8.

[0004]

As shown in FIG. 6, the lid 9 comprises a top plate portion 91, an attachment portion 92, and a flap 93. Note that the top plate portion 91, the attachment portion 92, and the flap 93 are integrally molded from plastic.

[0005]

The top plate portion 91 is a roughly rectangular plate-shaped portion that covers an opening of the container body 8. A through hole 911 is formed in the top plate portion 91 to release an excessive pressure inside the storage container 7 due to heating in a microwave oven.

[0006]

The attachment portion 92 is provided on an outer periphery of the top plate portion 91. The attachment portion 92 is configured to be attachable to an upper edge that forms the opening of the container body 8.

[0007]

The flap 93 is a plate-shaped portion extending from an edge of the attachment portion 92. The flap 93 has a protrusion 931 that can close the through hole 911.

[0008]

As shown in FIG. 7A, the flap 93 is positioned such that the protrusion 931 is spaced apart from the through hole 911 in a natural condition in which no external force is applied.

[0009]

As shown in FIG. 7B, when the user elastically deforms the flap 93 to fit the protrusion 931 into the through hole 911, the through hole 911 becomes closed state. Further, in this state, the protrusion 931 is fixed to the through hole 911 against the elastic force of the flap 93 that attempts to return to its original shape. Therefore, the closed state of the through hole 911 is maintained until the protrusion 931 is removed from the through hole 911 by the user.

[Outline of the Invention]

[Problem to be solved by the invention]

[0010]

The lid 9 of the storage container 7 of the prior art is configured such that a base end portion 93a, which is the base of the flap 93, is located at the edge of the attachment portion 92 for reasons such as ease of molding. Therefore, in a plan view of the lid 9, the base end portion 93a of the

flap 93 is located outside the through hole 911. In addition, in a plan view of the lid 9, the outer side means the side farther from the center of the lid.

[0011]

After heating the food stored in the storage container 7 in a microwave oven, there are cases where it is desired to remove only the excess water that has accumulated in the storage container 7. However, in the conventional storage container 7, when tilted to drain water through the through hole 911 as shown in Figure 8, the flap 93 was located below the through-hole 911, so there was a problem in that the water drained from the through hole 911 hits the flap and splatters.

[0012]

One aspect of the present disclosure is to provide a lid that can prevent water discharged from the through hole from hitting the flap.

[Means for solving the problem]

[0013]

One embodiment of the present disclosure is a lid used as a part of a storage container in which stored food can be heated in a microwave oven. The lid comprises a top plate portion, an attachment portion, and a flap. The top plate portion is a portion that covers an opening of a container body forming a storage space and has a through hole formed therein. The attachment portion is a portion that is provided on an outer periphery of the top plate portion and is configured to be attachable to an upper edge that forms the opening of the container body. The flap is a portion that is provided to be elastically deformable to rotate with respect to the top plate portion and has a protrusion that can close the through hole. The flap is configured such that the protrusion is spaced apart from the through hole in a natural condition and the through hole is maintained in a closed state by the protrusion. The through hole is formed outside a base end portion of the flap in a plan view of the lid.

[0014]

According to the present disclosure, it is possible to provide a lid that can prevent water from hitting the flap while discharged from the through hole.

[Brief description of the drawings]

[0015]

FIG. 1 is a perspective view of a storage container according to the embodiment.

FIG. 2 is a plan view of the storage container of the embodiment.

FIG. 3A is a partial cross-sectional view of the lid of the embodiment in a state where the through hole is open.

FIG. 3B is a partial cross-sectional view of the lid of the embodiment in a state where the through hole is closed.

FIG. 4 is a diagram showing a state in which water is discharged from the through hole in

the storage container of the embodiment.

FIG. 5 is a perspective view of a storage container of the prior art.

FIG. 6 is a plan view of a storage container of the prior art.

FIG. 7A is a partial cross-sectional view of a conventional lid in a state where the through hole is open.

FIG. 7B is a partial cross-sectional view of the conventional lid in a state where the through hole is closed.

FIG. 8 is a diagram showing a state in which water is discharged from the through hole in a storage container of the prior art.

[Description of embodiments]

[0016]

The storage container 1 of the embodiment shown in FIG. 1 comprises a container body 2 and a lid 3. The container body 2 and the lid 3 are made of plastic with a heat resistance temperature of -20 to 140°C. Therefore, in addition to storing food in the storage container 1 and storing it in the refrigerator, the user can heat the stored food directly in a microwave oven.

[0017]

The container body 2 is a roughly rectangular box-shaped component with an opening formed on the top surface. The container body 2 forms a storage space for storing food.

[0018]

The lid 3 is configured to be attachable to the container body 2. As shown in FIG. 2, the lid 3 comprises a top plate portion 31, an attachment portion 32, and a flap 33. Note that the top plate portion 31, the attachment portion 32, and the flap 33 are integrally molded from plastic.

[0019]

The top plate portion 31 is a roughly rectangular plate-shaped portion that covers the opening of the container body 2. A through hole 311 is formed in the top plate portion 31 to release an excessive pressure inside the storage container 1 due to heating in a microwave oven.

One (1) through hole 311 is formed at a corner of the top plate portion 31 (a position near the attachment portion 32). The through hole 311 is designed to have such a size that the water inside the storage container 1 can be smoothly discharged and the food inside the storage container 1 can be prevented from being discharged. When the through hole 311 is circular, its diameter is preferably within the range of 10 to 20 mm.

[0020]

The attachment portion 32 is a part provided on the outer periphery of the top plate portion 31. The attachment portion 32 is configured to be able to be mounted on the upper edge of the container body 2 that forms the opening. The storage container 1 is sealed by attaching the lid 3.

[0021]

The flap 33 is a plate-shaped portion that is formed to extend from the upper surface of the top plate portion 31 and is provided to be elastically deformable to rotate with respect to the top plate portion 31. Specifically, the flap 33 is provided at a position where the through hole 311 is outside the base end portion 33a of the flap 33 in the plan view of the lid 3. The flap 33 has a protrusion 331 that can close the through hole 311.

[0022]

As shown in FIG. 3A, the flap 33 is positioned such that the protrusion 331 is spaced apart from the through hole 311 in a natural condition in which no external force is applied.

[0023]

As shown in FIG. 3B, when the user elastically deforms the flap 33 by rotating it downward to fit the protrusion 331 into the through hole 311, the through hole 311 becomes in a closed state. Further, in this state, the protrusion 331 is fixed to the through hole 311 against the elastic force of the flap 33 that attempts to return to its original shape. Therefore, the closed state of the through hole 311 is maintained until the protrusion 331 is removed from the through hole 311 by the user.

[0024]

According to the storage container 1 of this embodiment, when the user wants to remove only the excess water accumulated in the storage container 1, the user can remove the excess water from the through hole 311 to drain water, as shown in FIG. 4, without hitting the flap 33.

[Explanation of letters or numerals]

[0025]

1: storage container, 2: container body, 3: lid, 31: top plate portion, 32: attachment portion, 33: flap, 33a: base end portion, 311: through hole, 331: protrusion.

[Fig.1]

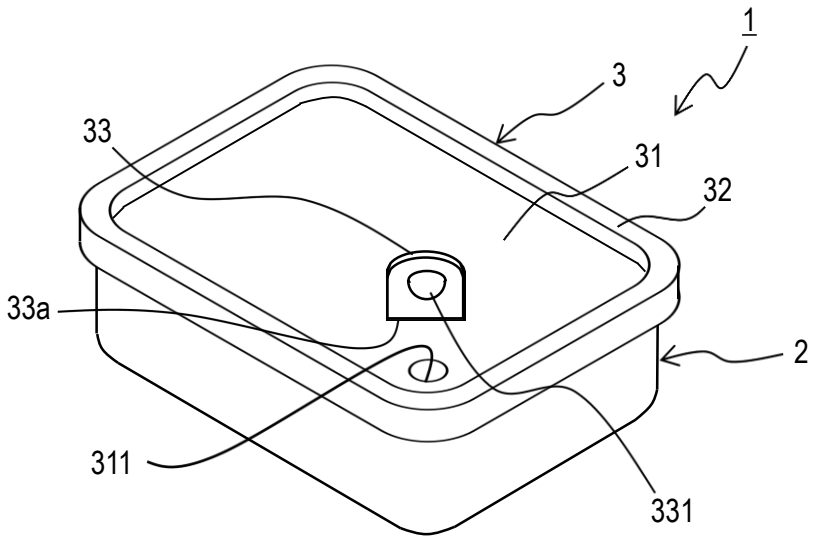


Fig.1

[Fig.2]

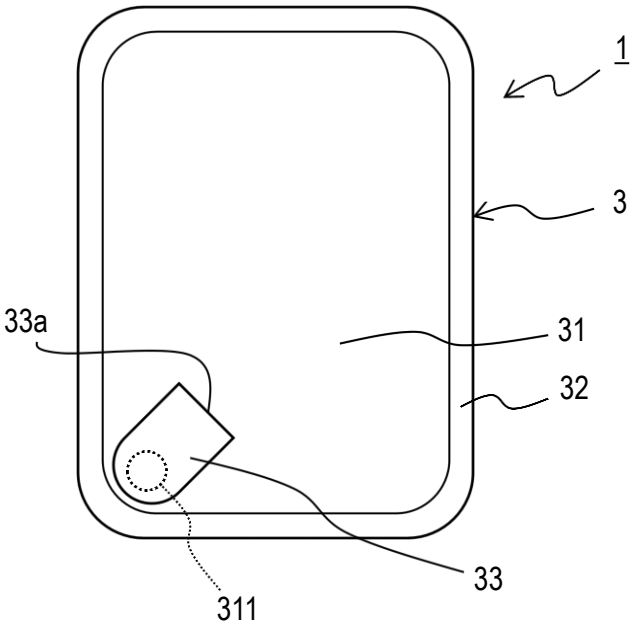


Fig.2

[Fig.3A]

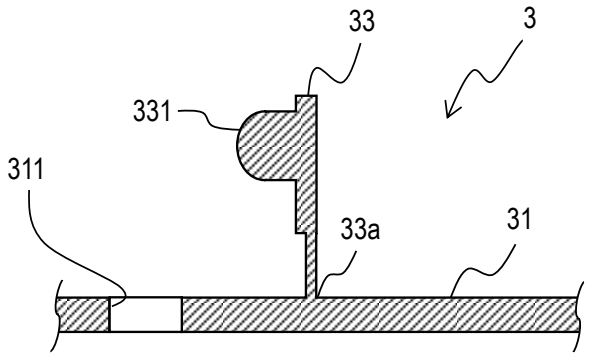


Fig.3A

[Fig.3B]

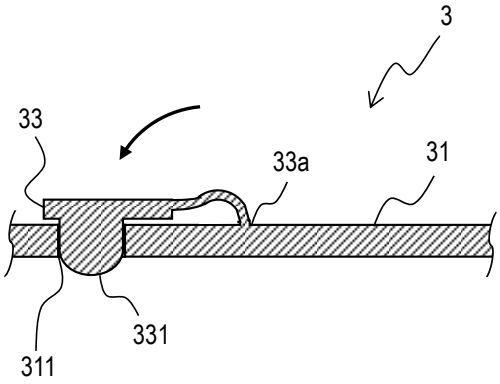


Fig.3B

[Fig.4]

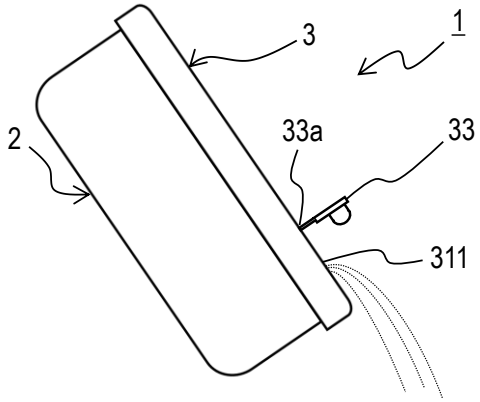


Fig.4

[Fig.5]

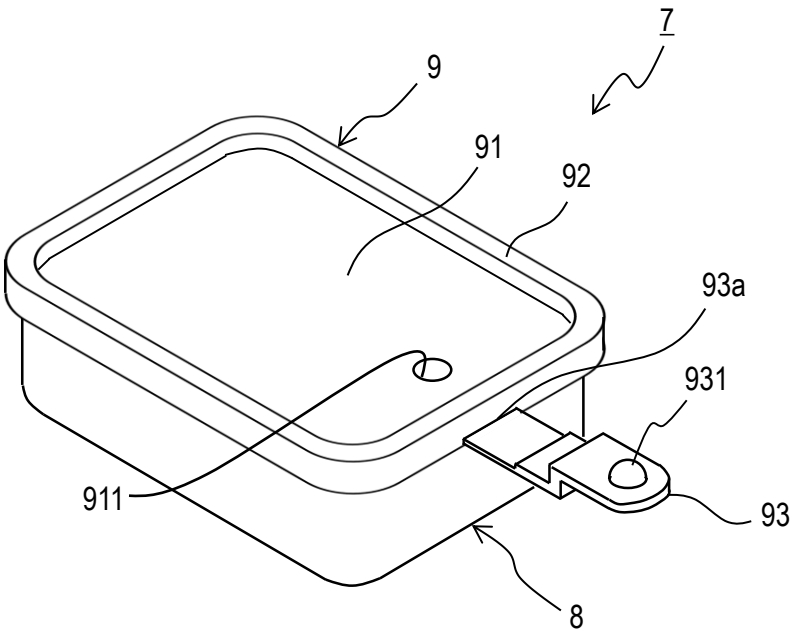


Fig.5

[Fig.6]

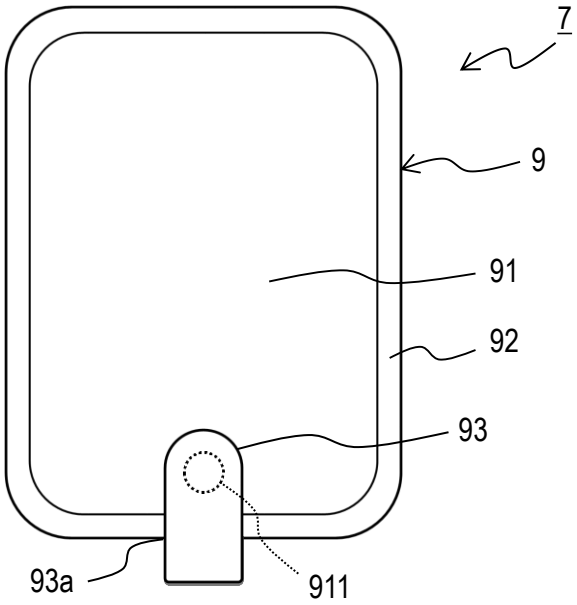


Fig.6

[Fig.7A]

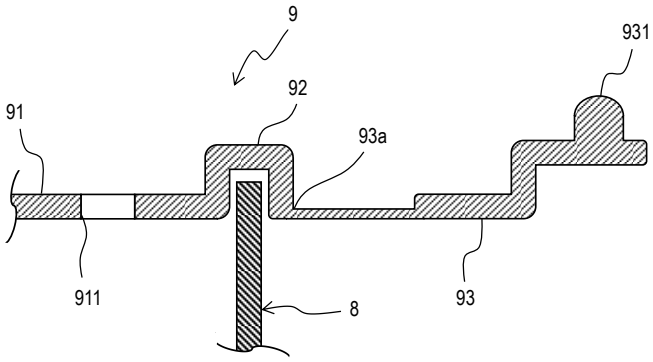


Fig.7A

[Fig.7B]

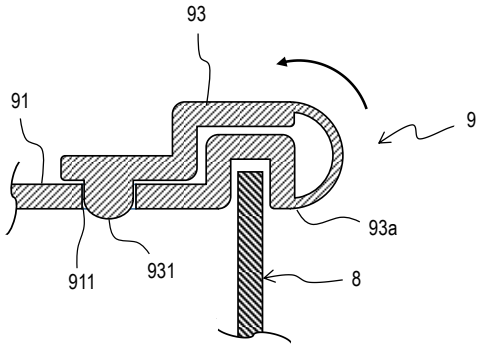


Fig.7B

[Fig.8]

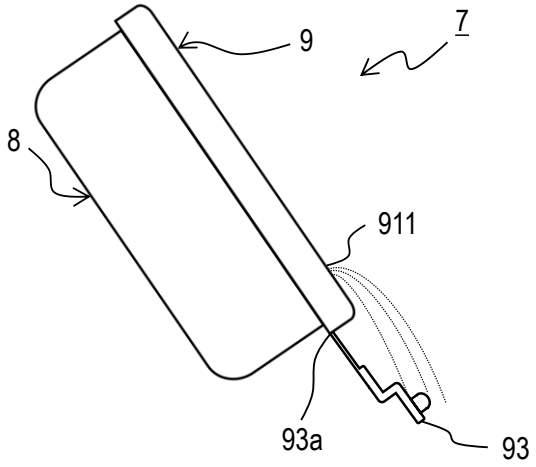


Fig.8

IV. Structure of the Defendant's Product

a. The Defendant's Product is a lid used as a part of a storage container for storing food, and the lid as well as a container body is made of heat-resistant plastic, comprising:

b. a top plate portion covering an opening of the container body, and having a through hole with a diameter of 3 mm,

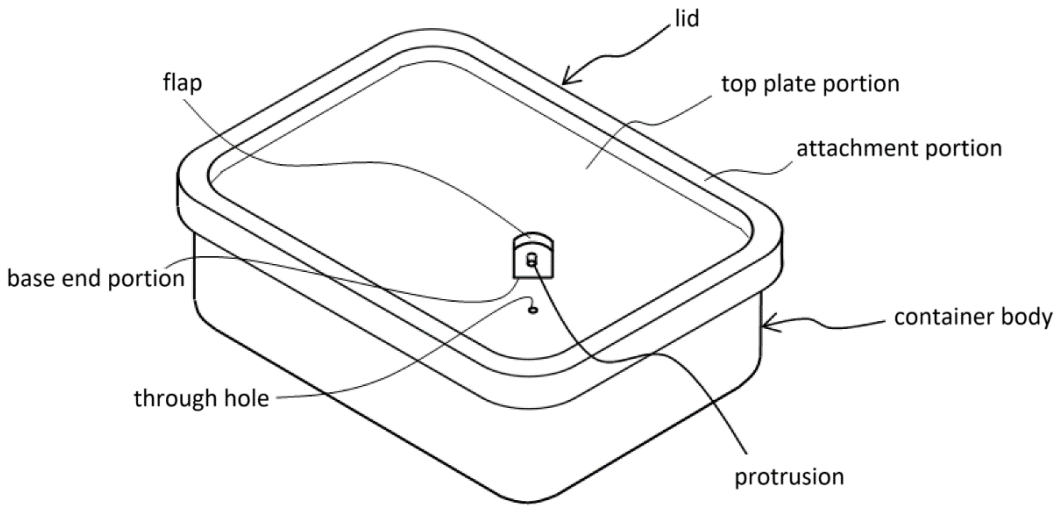
c. an attachment portion, which is integrally formed with the top plate portion, and is configured to be attachable to the upper edge portion that forms the opening of the container body, so as to seal the inside of the storage container,

d. a flap, which is integrally formed with the top plate portion, and is elastically deformable and has a protrusion that can close the through hole,

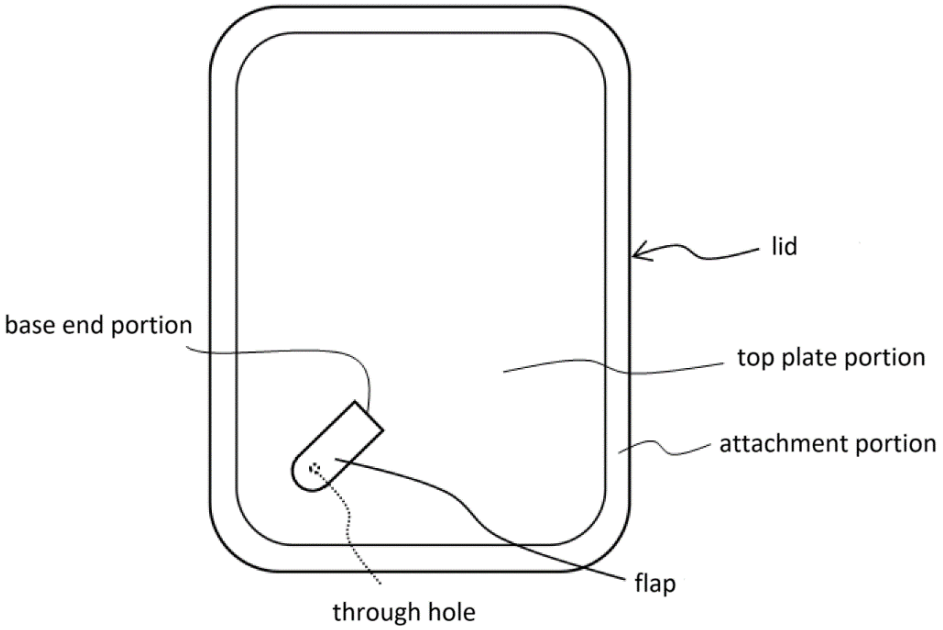
e. wherein the flap is configured such that the protrusion is spaced apart from the through hole in a natural condition and the through hole is maintained in a closed state by the protrusion, and

f. wherein the through hole is formed in a corner of the top plate portion, and outside a base end portion of the flap in plan view.

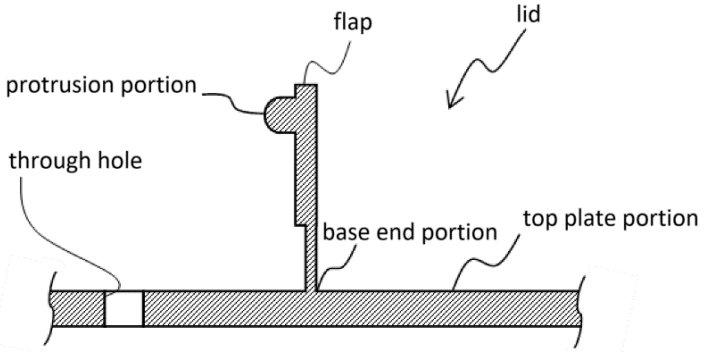
[Fig. 1] Perspective view of the Defendant Product (storage container)



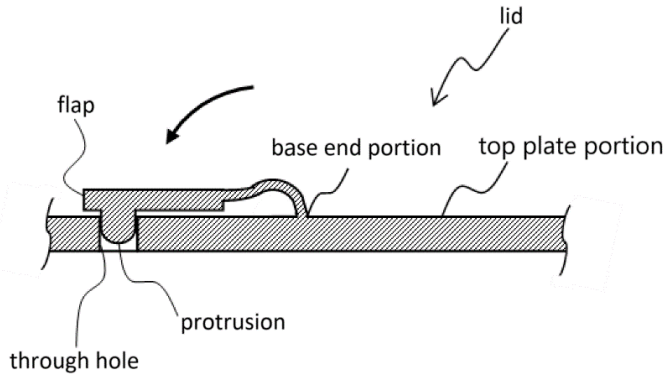
[Fig. 2] Plan view of the Defendant's Product (storage container)



[Fig. 3A] Partial cross-sectional view of the lid in the state where the through hole is open



[Fig. 3B] Partial cross-sectional view of the lid in the state where the through hole is closed



V. Argument of the parties regarding the issue of fulfillment of patented elements

1. Allegation of the plaintiff (patent holder)

The Defendant's Product satisfies all patented elements of the Invention.

2. Allegation of the defendant (alleged infringer)

The Invention adopts a patented element in which "the through hole is formed outside a base end portion of the flap in plan view of the lid" in order to solve the problem that "the water drained from the through hole" "hits the flap and splatters."

Since the above problem does not arise with a through hole that is not suitable for discharging water within the storage container, it should be understood that the "through hole" of the Invention is premised on being suitable for discharging water within the storage container.

The through hole of the Defendant's Product is only intended to release an excessive pressure within the storage container due to heating in a microwave oven and is not designed to discharge water within the storage container. Specifically, the through hole of the Defendant's Product is circular and 3mm in diameter, which is too small to discharge water.

When a third-party organization conducted tests to drain water within the storage container of the Defendant's Product, it became clear that, although the water did drain, it took more than 60 seconds to drain 100 cc of water.

Therefore, the Defendant's Product does not have any "through hole" referred to in patented element B, and D-F of the Invention.

3. Rebuttal of the plaintiff

In claim 1, the size of the through hole is not limited, and discharging water via the through hole is not a patented element.

Even if this point were a patented element, water is also discharged in the Defendant's Product, so all patented elements of the Invention are fulfilled.

The plaintiff also verified the performance of the Defendant's Product.

When the Defendant's Product was tilted and the upper part of the lid was slightly spaced apart from the container body, allowing air to enter the storage container, water was forcefully discharged from the through hole. Therefore, it is also clear that excess water accumulated in the storage container can be removed from the through hole when the Defendant's Product is used.

VI. First prior art reference in Invalidity Argument (specification of the US Patent Application Publication No. 2006/0077XX)

[Claims]

[Claim 1]

A lid used as a part of a storage container for storing food in a vacuum condition, the lid comprising:

a top plate portion covering an opening of a container body forming a storage space, and having a through hole formed therein for sucking air from within the storage container;

an attachment portion provided on the outer periphery of the top plate portion and configured to be attachable to an upper edge portion forming the opening of the container body; and

a flap for closing the through hole when the pressure inside the storage container is lower than the pressure outside the storage container,

wherein a dome-shaped thin wall portion protruding upward is formed on the top plate portion,

a pressure indicator is formed on the top plate portion, and

the pressure indicator deforms to be recessed when the pressure inside the storage container becomes sufficiently lower than the pressure outside the storage container.

[Detailed Description of the Invention]

[Technical field]

[0001]

The present disclosure relates to a storage container for storing food in a vacuum condition.

[Background art]

[0002]

A storage container is known that can create a vacuum condition by removing air from the storage space that contains food. The lid of this type of storage container is equipped with a through hole for vacuuming and a non-return valve.

[Summary of the invention]

[Problem to be solved by the invention]

[0003]

Users were unable to know whether the vacuum condition inside the storage container was being maintained.

[0004]

One aspect of the present disclosure is to provide a lid that allows a user to know whether a vacuum condition is being maintained inside a storage container.

[Means for solving the problem]

[0005]

One aspect of the present disclosure is a lid used as a part of a storage container for storing food in a vacuum condition. The lid comprises a top plate portion, an attachment portion, and a flap. The top plate portion is a part that covers an opening of a container body that forms a storage space and has a through hole for sucking air inside the storage container. The attachment portion is a part provided on the outer periphery of the top plate portion and is configured to be attachable to an upper edge portion that forms an opening of the container body. The flap closes the through hole when the pressure inside the storage container is lower than the pressure outside the storage container. A pressure indicator is formed on the top plate portion. The pressure indicator is a dome-shaped thin wall portion that protrudes upward and is deformed to be recessed when the pressure inside the storage container becomes sufficiently lower than the pressure outside the storage container.

[0006]

According to the present disclosure, a lid that allows a user to know whether a vacuum condition is being maintained inside a storage container can be provided.

[Brief description of the drawings]

[0007]

[Fig. 1] A perspective view of a storage container according to an embodiment.

[Fig. 2] A plan view of a storage container according to an embodiment.

[Fig. 3A] A partial cross-sectional view of a pressure indicator in a natural condition.

[Fig. 3B] A partial cross-sectional view of a pressure indicator when the inner pressure of the storage container is low.

[Fig. 4A] A partial cross-sectional view of a flap in a natural condition.

[Fig. 4B] A partial cross-sectional view of a flap when a vacuum pump is in use.

[Description of embodiments]

[0008]

The storage container 1 according to an embodiment shown in Fig. 1 is for storing food in a vacuum condition and comprises a container body 2 and a lid 3. The container body 2 and the lid 3 are made of plastic with a heat-resistant temperature range of -40 to 100℃. Therefore, a user can preserve food in the storage container 1 in a freezer and can also defrost the stored food in a microwave oven as it is.

[0009]

The container body 2 is a roughly rectangular box-shaped part with an opening on the top surface. The container body 2 forms a storage space for storing food ingredients.

[0010]

The lid 3 is configured to be attached to the container body 2. As shown in FIG. 2, the lid 3 has a top plate portion 31, an attachment portion 32, and a flap 33. The top plate portion 31, the attachment portion 32, and the flap 33 are integrally molded from plastic.

[0011]

The top plate portion 31 is a roughly rectangular plate-shaped portion that covers the opening of the container body 2. The top plate portion 31 is formed with a through hole 311 and a pressure indicator 312.

[0012]

The through hole 311 is a hole to prevent an excessive increase in an inner pressure of the storage container 1 due to heating in a microwave oven. One through hole 311 is formed at the end of the top plate portion 31 (close to the attachment portion 32). In this embodiment, the annular area around the through hole 311 on the upper surface of the top plate portion 31 protrudes slightly upward.

[0013]

As shown in Fig. 3A, the pressure indicator 312 is a dome-shaped thin wall part protruding upward. When the inner pressure of the storage container 1 becomes sufficiently lower than the outer pressure of the storage container 1, the pressure indicator 312 deforms to be concave as shown in Fig. 3B. The pressure indicator 312 may be provided with a spring to facilitate the return of the concave shape to its original shape.

[0014]

As shown in Figs. 1 and 2, the attachment portion 32 is a part provided on the outer periphery of the top plate portion 31. The attachment portion 32 is configured to be attachable to the upper edge portion that forms the opening of the container body 2. The storage container 1 is sealed by mounting the lid 3.

[0015]

The flap 33 is a plate-shaped portion formed to extend from the upper surface of the top plate portion 31 and is provided so as to be elastically deformable so as to rotate with respect to the top plate portion 31. Specifically, the flap 33 is provided at a position where the through hole 311 is located outside the base end portion 33a of the flap 33 in plan view of the lid 3. The flap 33 has a seal surface 331 that can close the through hole 311 by coming into close contact with an annular area around the through hole 311 on the upper surface of the top plate portion 31. In addition, a rubber sheet or the like may be attached to the seal surface 331 to improve airtightness.

[0016]

As shown in FIG. 4A, in a natural condition where no external force is applied, the flap 33 is positioned so that the seal surface 331 contacts the annular area around the through hole 311.

[0017]

As shown in FIG. 4B, when a user uses the vacuum pump 4 to suck air near the through hole 311 above the top plate portion 31, the pressure applied to the upper surface of the flap 33 that closes the through hole 311 becomes lower than the pressure applied to the lower surface. Therefore, the flap 33 elastically deforms to rotate upward, opening the through hole 311, and the air in the storage container 1 is sucked through the through hole 311 by the vacuum pump 4. Then, when the inner pressure of the storage container 1 is sufficiently reduced, the pressure indicator 312 deforms to be recessed (FIG. 3A → FIG. 3B). In addition, the vacuum pump 4 may be one that is manually operated by the user to suck.

[0018]

When the user finishes sucking air with the vacuum pump 4, the pressure applied to the upper surface of the flap 33 that closes the through hole 311 becomes higher than the pressure applied to the lower surface. Therefore, as shown in FIG. 4A, the flap 33 is pressed downward by the pressure difference, and the seal surface 331 comes into close contact with the annular area around the through hole 311, automatically closing the through hole 311. In other words, the flap 33 functions as a non-return valve that prevents air from flowing back from the outside of the storage container 1 into the storage container 1.

[0019]

According to the storage container 1 of this embodiment, the user can know whether the vacuum condition inside the storage container 1 is being maintained based on the shape of the pressure indicator 312.

[Explanation of letters or numerals]

[0020]

1: storage container, 2: container body, 3: lid, 31: top plate portion, 32: attachment portion, 33: flap, 33a: base end portion, 311: through hole, 312: pressure indicator, 331: seal surface

[Fig. 1]

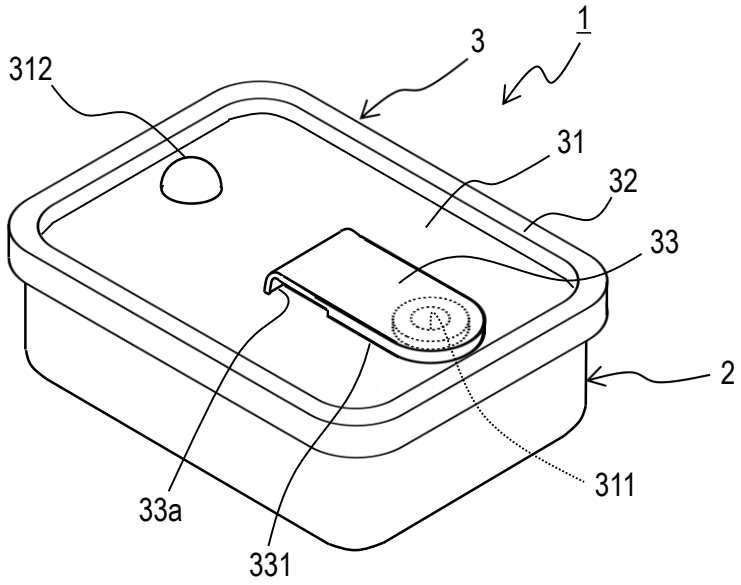


Fig.1

[Fig.2]

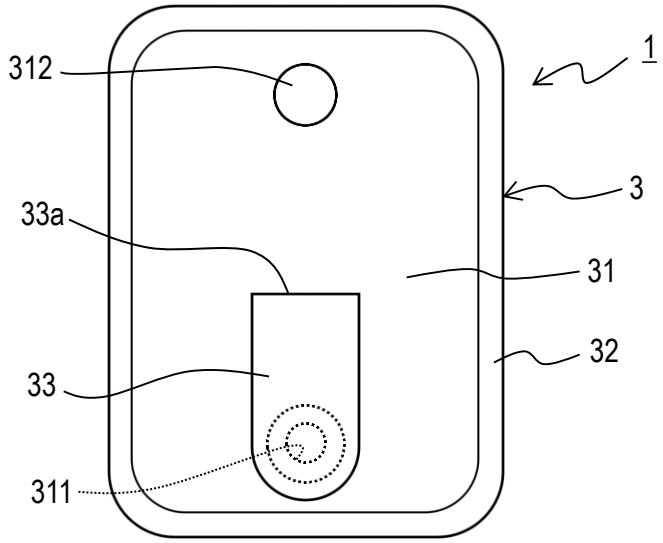


Fig.2

[Fig.3A]

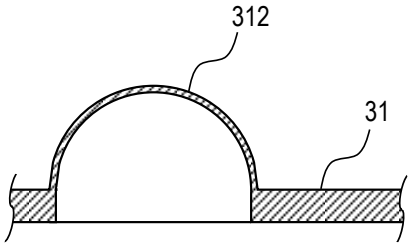


Fig.3A

[Fig.3B]

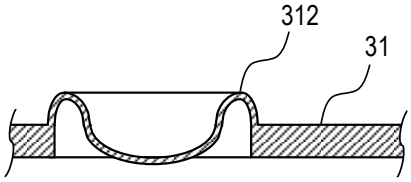


Fig.3B

[Fig.4A]

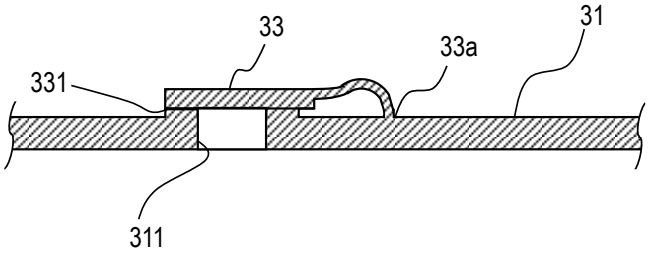


Fig.4A

[Fig.4B]

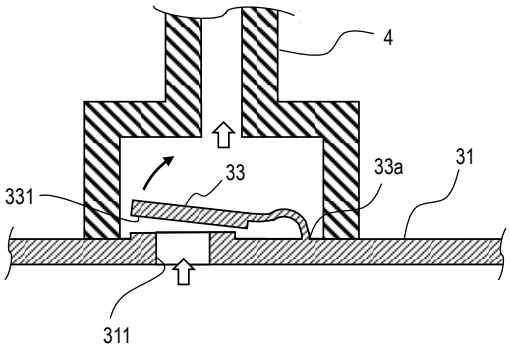


Fig.4B

VII. Well-Known Art

A storage container of which the base end portion of the flap, which is configured such that the protrusion is spaced apart from the through hole in a natural condition and the through hole is maintained in a closed state by the protrusion, is located at the attachment portion of the lid, and the through hole is formed inside the base end portion of the flap, is well-known art (prior art described in the description).

VIII. Differences between the Invention and the first prior art invention (not disputed)

1. Difference 1

The Invention is used to heat food in a microwave oven, while the first prior art invention is used to defrost food in a microwave oven.

2. Difference 2

The flap of the Invention has a protrusion that can close the through hole, and the protrusion is spaced apart from the through hole in the natural condition, and the closed state of the through hole is maintained by the protrusion.

On the other hand, the flap of the first prior art invention has a seal surface that can close the through hole by adhering closely to the area around the through hole on the upper surface of the top plate portion, and the seal surface is in contact with the area around the through hole on the upper surface of the top plate portion in the natural condition. When the pressure inside the storage container is relatively lower than the pressure outside the storage container, the flap is pressed downward by the pressure difference, the seal surface adheres closely to the area around the through hole on the upper surface of the top plate portion, closing the through hole. When the pressure outside the storage container becomes relatively lower than the pressure inside the storage container, the flap is elastically deformed to rotate upward by the pressure difference, and the seal surface is spaced apart from the area around the through hole on the upper surface of the top plate portion, opening the through hole.

IX. Argument of the parties regarding invalidity

1. Allegations of the defendant (alleged infringer)

Frozen food is defrosted when it is heated, and defrosting is merely one form of heating, so difference 1 is not a substantial difference.

The flap of the first prior art invention has the function of opening and closing the through hole in common with the flap of the Invention.

The presence or absence of a protrusion and the difference in the structure in the natural condition are merely design matters.

Even if it cannot be said to be a design matter, a flap which is configured such that the protrusion is spaced apart from the through hole in the natural condition and the through hole is maintained closed by the protrusion is a well-known technology, so it is easy to apply such a structure to the first prior art invention.

2. Arguments of the plaintiff (patent holder)

The storage container of the first prior art invention is "made of plastic with a heat-resistant temperature of -40 to 100°C." It is merely intended to be used for freezing food and defrosting in a microwave oven, and it is clearly not suitable for heating in a microwave oven. Therefore, the first prior art invention is not a "storage container ... can be heated in a microwave oven."

The flap of the first prior art invention functions as a non-return valve during vacuuming, and it is completely different from the flap of the Invention in terms of function and action, so these differences in structure cannot be considered as mere design matters. If the flap of the first prior art invention were replaced with a known flap having a protrusion that can block the through hole, the protrusion of the flap would be spaced apart from the through hole during suction by the vacuum pump.

Therefore, even when suction by the vacuum pump ends, the through hole would not automatically close, and air outside the storage container would flow into the storage container, which would be teaching away for such a replacement.

End