

DESCRIPTION

LID, CONTAINER WITH LID, COMBINATION OF LID AND CONTAINER,
AND METHOD FOR MANUFACTURING LID

Technical Field

[0001]

The present invention relates to a lid, a container with a lid, a combination of a lid and a container, and a method for manufacturing a lid.

Background Art

[0002]

It is widely practiced to provide food and drink or the like (hereinafter, also referred to as a "content") in a state where the inside of a container is closed by housing the food and drink in the container having an opening at an upper end and attaching a lid.

[0003]

As the lid attached to the container, it is required to use a lid using a paper-based material from the viewpoint of reducing the environmental load. As a method for attaching the lid to the container, a method for joining the lid to an edge forming an outer periphery of an opening at an upper end of the container using a method such as hot pressing (sealing method) is known. As a method for taking in the contents stored in the lid, a

method for removing the lid and a method for providing a tab like the lid described in Patent Literature 1 are known. In the lid disclosed in Patent Literature 1, when a user pinches and pulls up a tab, a bell-shaped or gourd-shaped hole is opened to form a straw.

[0004]

Furthermore, as a method for attaching the lid to the container, there is known a method (fitting method) of forming a state in which the lid is in contact with an edge forming an outer periphery of an opening at an upper end of the container by fitting a structure portion such as a bent part or a combination of the top surface portion and the side wall part to the edge of the container in a case where the lid has the top surface portion, the bent part, and the side wall part. As a method for forming such a lid, a method for forming the lid by shaping a blank material for forming the lid is known.

Citation List

Patent Literature

[0005]

Patent Literature 1: WO 2016/069755 A

Summary of Invention

Technical Problem

[0006]

In the technique described in Patent Literature 1, in a case where the lid is formed of a paper-based material, there is a possibility that moisture permeates into the fibers constituting the lid, stiffness of the lid is greatly impaired, and strength of the lid is reduced. Therefore, there is room for improvement in terms of suppressing moisture permeation into the fibers constituting the lid.

[0007]

Furthermore, in order to suppress the permeation of moisture, it is also conceivable to form a resin layer on the surface of the lid (on the opposing surface to the container or the like). However, a resin coating layer is usually formed on the surface of the container for waterproofing the container, and depending on the resin material constituting the resin layer, adhesiveness with the resin constituting the resin coating layer is impaired, and there is a possibility that it becomes difficult to bond the container and the lid to each other by a sealing method. Therefore, there is room for improvement in that it is possible to bond the container and the lid by the sealing method even if the type of resin constituting the resin coating layer formed on the surface of the container is diversified.

[0008]

Furthermore, in a case where the lid is formed of a paper-based material, in a case where the lid forms the top surface portion, the bent part, and the side wall part by shaping the blank material, the shape may be returned by the action of the restoring force of the paper-based material after the side wall part, the bent part, and the like are formed. Even when the lid is fitted to the container in a case where the shape is restored at the bent part or the like, there is a possibility that the contact between the lid and the container is loosened, a gap between the lid and the container is easily generated, and the contents of the container spills out from the gap.

[0009]

The present invention has been made in view of such problems, and an object of the present invention is to provide a lid, a container with a lid, a combination of the lid and the container, and a method for manufacturing the lid, which are capable of suppressing moisture permeation into fibers constituting the lid and capable of bonding the container and the lid by a sealing method even when the type of resin constituting a resin coating layer formed on the surface of the container is diversified. Furthermore, another object of the present invention is to provide a lid, a container with a lid, a combination of a lid and a

container, and a method for manufacturing a lid capable of suppressing returning of a shape of a blank material after shaping.

Solution to Problem

[0010]

The gist of the present invention is the following inventions (1) to (21).

[0011]

(1) A lid that is formed so as to be contactable with a container having an edge, and is formed of a blank material, in which the blank material includes a fiber sheet including fibers formed of a paper-based material, and a resin material is attached to at least some of the fibers forming an inside of the fiber sheet.

(2) The lid according to (1), including: a joining region corresponding portion that corresponds to a region joined to the container along the edge of the container; and a lid region corresponding portion that is configured by a portion inside the joining region corresponding portion, in which the resin material is attached to at least some of the fibers forming an inside of the fiber sheet at least in a portion corresponding to the joining region corresponding portion.

(3) The lid according to (2), including: a

penetrating portion that is cut from one surface to an other surface of the blank material, in which a cross section of the fiber sheet is exposed on a peripheral surface portion of the penetrating portion, and the resin material is exposed on at least a part of the cross section.

(4) The lid according to (3), including: an inclined portion that has the peripheral surface portion of the penetrating portion as an end portion and inclined upward in a direction away from the end portion.

(5) The lid according to (4), in which a density of the fibers constituting the fiber sheet in the inclined portion is higher at a position closer to the end portion of the inclined portion.

(6) The lid according to (3), in which the lid region corresponding portion is provided with a weakened portion that guides a division position in the lid region corresponding portion, and the weakened portion includes a plurality of the penetrating portions and at least one continuous portion formed between at least two of the penetrating portions.

(7) The lid according to (6), in which the continuous portion has a half-cut structure.

(8) The lid according to (6), in which the weakened portion radially forms the plurality of penetrating

portions around the continuous portion.

(9) The lid according to (3), in which the lid region corresponding portion includes a base portion having a small opening having an opening area smaller than an opening surrounded by the edge of the container, a small lid portion that opens and closes the small opening, and a hinge portion that connects the base portion and the small lid portion, the small lid portion is configured to be rotatable with respect to the base portion with the hinge portion as an axis, and at least a part of the penetrating portion is formed at a boundary position between an outer peripheral edge of the small lid portion and the opening edge of the small opening.

(10) The lid according to (9), in which a knob portion is provided on an upper surface side of the small lid portion.

(11) The lid according to (10), in which the knob portion includes a tab member, and the tab member is joined to the upper surface side of the small lid portion.

(12) The lid according to (9), including: a holding structure that holds the small lid portion in a state where the small opening is opened by rotating the small lid portion with respect to the base portion with the hinge portion as an axis.

(13) The lid according to (9), in which an extending

portion is formed on an outer peripheral edge of the base portion, and the base portion and the extending portion are integrally formed of the blank material.

(14) The lid according to (13), in which the hinge portion is formed between the extending portion and a tip of the small lid portion.

(15) The lid according to (9), including: a holding structure that holds the small lid portion in a state where the small opening is opened by rotating the small lid portion with respect to the base portion with the hinge portion as an axis, in which a knob portion is provided on an upper surface side of the small lid portion, the knob portion is provided with a claw portion, an extending portion is formed on an outer peripheral edge of the base portion, and the extending portion and the receiving portion form the holding structure.

(16) The lid according to (1), in which a raised part is formed.

(17) The lid according to (1), in which at least a part of the resin material is impregnated between at least a part of the fibers.

(18) A container with a lid, including: the lid according to (1); and the container having the edge, in which the lid is joined to the container.

(19) A combination of a lid and a container,

including: the lid according to (1); and the container having the edge.

(20) A method for manufacturing a lid, the method including: an immersion step of immersing a fiber sheet in an immersion liquid containing a resin material; and a drying step of drying the fiber sheet containing the immersion liquid.

(21) The method for manufacturing a lid according to (20), in which a shaping process of shaping the fiber sheet containing the immersion liquid is performed in a middle of the drying step or before the drying step.

Advantageous Effects of Invention

[0012]

According to the present invention, there are provided a lid, a container with a lid, a combination of the lid and the container, and a method for manufacturing the lid, which are capable of suppressing moisture permeation into fibers constituting the lid and capable of bonding the container and the lid by a sealing method even when the type of resin constituting a resin coating layer formed on the surface of the container is diversified. In a case where the lid is formed by shaping the blank material, it is possible to provide the lid, the container with a lid, the combination of the lid and the container,

and the method for manufacturing the lid capable of suppressing the shape return after the shaping of the blank material.

Brief Description of Drawings

[0013]

Fig. 1A is a plan view illustrating an example of a lid according to a first embodiment. Fig. 1B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line A-A in Fig. 1A. Fig. 1C is a cross-sectional view illustrating a part of a peripheral surface portion of the penetrating portion.

Figs. 2A and 2B are cross-sectional views illustrating an example of the inclined portion of the lid according to the first embodiment.

Fig. 3A is a plan view illustrating an example of a lid according to a first modification of the first embodiment. Fig. 3B is a plan view illustrating an example of a lid according to a second modification of the first embodiment.

Figs. 4A and 4B are plan views illustrating another example of the lid according to the first embodiment.

Fig. 5A is a plan view illustrating an example of a lid according to a third embodiment. Fig. 5B is a cross-sectional view schematically illustrating a state of a

longitudinal cross section taken along line B-B in Fig. 5A.

Fig. 6A is a plan view illustrating an example of a lid according to a fourth embodiment. Fig. 6B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line C-C in Fig. 6A.

Fig. 7A is a plan view illustrating an example of a lid according to a second embodiment. Fig. 7B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line D-D in Fig. 7A.

Fig. 8A is a plan view illustrating an example of a lid according to a first modification of the second embodiment. Fig. 8B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line E-E in Fig. 8A.

Fig. 9A is a plan view illustrating an example of a lid according to a third modification of the second embodiment. Fig. 9B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line F-F in Fig. 9A. Fig. 9C is a cross-sectional view schematically illustrating an example of a holding structure.

Fig. 10 is a plan view illustrating another example of the lid according to the third modification of the second embodiment.

Figs. 11A and 11B are plan views illustrating

another example of the lid according to the third embodiment. Fig. 11C is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line G-G in Fig. 11B.

Fig. 12A is a plan view illustrating an example of a connection structure of the lid according to the third embodiment. Fig. 12B is a cross-sectional view schematically illustrating a half-cut portion.

Fig. 13A is a plan view illustrating an example of a lid according to a second modification of the second embodiment. Fig. 13B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line H-H in Fig. 13A.

Fig. 14A is a plan view illustrating an example of a container with a lid. Fig. 14B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line I-I in Fig. 14A.

Fig. 15A is a perspective view illustrating an example of a lid according to a fifth embodiment. Fig. 15B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line N-N in Fig. 15A.

Fig. 16A is a perspective view illustrating an example of a lid according to a sixth embodiment. Fig. 16B is a cross-sectional view schematically illustrating a

state of a longitudinal cross section taken along line J-J in Fig. 16A.

Fig. 17A is a perspective view illustrating an example of a lid according to a seventh embodiment. Fig. 17B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line K-K in Fig. 17A.

Fig. 18A is a plan view illustrating an example of a lid according to a first modification of the fifth embodiment. Fig. 18B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line L-L in Fig. 18A8.

Figs. 19A and 19B are plan views illustrating an example of a blank material for a lid according to the first modification of the fifth embodiment.

Fig. 20A is a plan view illustrating an example of a lid according to a fourth modification of the fifth embodiment. Fig. 20B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line M-M in Fig. 20A.

Fig. 21 is a cross-sectional view illustrating an example of a container with a lid.

Description of Embodiments

[0014]

Hereinafter, a lid according to the present invention will be described in detail with reference to the drawings. Note that the lid according to the present invention will be described by exemplifying a lid used for a container (cup) for containing various beverages such as a coffee cup, but is not limited to a lid of a container for containing beverages, and can also be applied as a lid of a container for containing food items other than beverages. Furthermore, the lid according to the present invention can also be applied to various articles other than food and drink, for example, parts such as bolts and nuts, and containers capable of storing articles other than those described above. Moreover, although the lid according to the present invention will be described below using an example of a lid having a circular shape in plan view, the shape of the lid is not limited to a circular shape in plan view, and can be applied to various shapes other than a circular shape, such as an elliptical shape, a rectangular shape, a polygonal shape such as a triangular shape, a chamfered rectangular shape, and a chamfered polygonal shape.

[0015]

Hereinafter, a first embodiment, a second embodiment, a third embodiment, a fourth embodiment, a fifth embodiment, a sixth embodiment, a seventh embodiment,

an eighth embodiment, and application examples relating to the present invention will be sequentially described with reference to the drawings. In the present specification and the drawings, components having substantially the same functional configuration are denoted by the same reference numerals, and redundant description will be omitted.

[0016]

The following description is a preferred specific example of the present invention, and the content of the present invention is not limited to these embodiments and the like. Furthermore, in the following description, directions such as front and rear, left and right, up and down, and directions of a horizontal plane are shown in consideration of convenience of description, but the content of the present invention is not limited to these directions. In the examples of Figs. 1 to 21, it is assumed that a Z-axis direction is an up-down direction (upper side is a +Z direction, lower side is a -Z direction), an X-axis direction is a front-rear direction (rear side is in a +X direction, and front side is in a -X direction), directions along an X-axis and a Y-axis orthogonal to each other defined on a plane having the Z-axis direction as a normal line are the X-axis direction and the Y-axis direction, and an XY plane that is a plane pasted on the X-axis and the Y-axis is a horizontal plane.

The description will be given based on these. The relative magnitude ratios such as the sizes illustrated in Figs. 1 to 21 are described for convenience, and the actual magnitude ratios are not limited unless otherwise specified.

[0017]

[1 First Embodiment]

[1-1 Configuration]

As will be described later with reference to Figs. 14A and 14B and the like, a lid 1 according to a first embodiment is formed so as to be contactable with a container 101 having an opening 102 formed at an upper end and an edge 103 serving as an upper end edge forming an outer periphery of the opening 102. With respect to a state in which the lid 1 and the container are in contact with each other, as illustrated in Figs. 14A and 14B, the lid 1 is formed to be able to be joined to the container 101 having the opening 102 (opening 102 formed by a portion surrounded by the edge 103) formed at an upper end and the edge 103 to be an upper end edge forming an outer periphery of the opening 102. Figs. 14A and 14B are a perspective view and a cross-sectional view illustrating an example of a container with a lid 150 in which the lid 1 illustrated in Figs. 1A, 1B, and 1C is joined to the container 101. The lid 1 can be used by being joined along the edge 103.

In the lid 1, a region joined to the edge 103 in plan view of the lid 1 is referred to as a joining region R. Fig. 1A is a plan view illustrating an example of the lid 1. Fig. 1B is a cross-sectional view schematically illustrating a longitudinal cross section taken along line A-A in Fig. 1A. Fig. 1C is an enlarged view of a part of a peripheral surface portion 11 of a penetrating portion 10 described later. Note that, as the container 101, a container having flexibility at the edge 103 of the opening 102 is more preferably used. However, these do not prohibit the container 101 from being a container having less flexibility or hardly recognized, such as a metal container.

[0018]

In the example of Fig. 1A, the joining region R corresponds to a region formed in a substantially annular shape along the opening 102 in a shape corresponding to the opening 102 of the container 101.

[0019]

(Blank Material)

The lid 1 is formed of a blank material 30. The blank material 30 is obtained by processing a sheet material formed of a material corresponding to the material of the lid 1 into a shape corresponding to the shape of the lid 1. Note that the case where the lid 1 is formed of the

blank material 30 is not limited to the case where the lid 1 is formed of only the blank material 30, and includes a case where the lid 1 has a structure in which a member such as a tab member 22 is attached to the blank material 30, and also includes a case where the lid 1 is subjected to various processes such as a shaping process (emboss process or the like) on the blank material 30.

[0020]

(Blank Material)

The blank material 30 is formed of a sheet material including a fiber sheet 31 including fibers including a paper-based material and a resin material 32. In the example of the lid 1 according to the first embodiment illustrated in Fig. 1A, as illustrated in Fig. 1C, the sheet material forming the blank material 30 has a structure in which the resin material 32 is attached to at least some of the fibers 31A forming the inside of the fiber sheet 31. Similarly to the sheet material, the blank material 30 has a structure in which the resin material 32 is contained in at least some of the fibers 31A forming the inside of the fiber sheet 31.

[0021]

(Fiber Sheet containing Paper-Based Material)

Examples of the fiber sheet 31 containing a paper-based material include so-called paper obtained by

filtering out a slurry of fibrous raw materials on a net and drying, pressing and drying, and papermaking to form a sheet, so-called air-laid sheets obtained by stacking open fibrous raw materials such as crushed pulp obtained by crushing raw material sheets made of pulp-based fibers and the like with a crushing machine by an air flow and fixing fibers of a fibrous body with a binder, and so-called papers produced by sticking vegetable fibers and other fibers. Furthermore, the fiber sheet containing a paper-based material includes a fiber sheet having a laminated structure in which a plurality of papers as described above are laminated. Furthermore, the fiber sheet 31 includes, in addition to a paper-based material, a sheet material having fibers other than pulp, such as chemical fibers, fibers imparted with functions such as water resistance, metal fibers, and glass fibers.

[0022]

The fiber sheet 31 may be composed of only the fibers 31A (only entangled structure of the fibers 31A), or may have a structure in which a plurality of the fibers 31A are crosslinked with a crosslinking agent or the like, or may contain other additives except for the resin material described later. In the fiber sheet 31, since the plurality of the fibers 31A are crosslinked with each other by the crosslinking agent, the shape of the fiber sheet 31

is stabilized, and the fibrillated state is hardly formed.

[0023]

(Fiber)

The fibers 31A constituting fiber sheet 31 may be composed of one unit fiber, or may have a structure in which a plurality of unit fibers are entangled, and fibers having any structure may be included in fiber sheet 31. The fiber sheet 31 is preferably formed in a state in which a plurality of fibers having such a structure are further entangled.

[0024]

(Paper-Based Material)

The paper-based material may contain fibers such as non-pulp-based natural fibers, synthetic fibers, and regenerated fibers in addition to those composed only of pulp, but the paper-based material preferably contains pulp in an amount of 50 mass% or more, more preferably 70 mass% or more, further preferably 80 mass% or more, and particularly preferably 100 mass% of pulp. As the paper-based material, a wood-based material such as a nonwoven fabric or a wood foil, or a composite material with a material such as an aluminum foil can also be used, but in the case of forming a composite material, it is preferable that the pulp be contained in an amount of 50 mass% or more as the whole composite material, and it is particularly

preferable that the pulp be contained in an amount of 80 mass% or more. The higher the content of pulp is, the more easily the paper-based material is biodegraded, which is preferable.

[0025]

(Resin Material)

The resin material 32 attached to the fibers 31A is not particularly limited, and examples thereof include synthetic resins, natural resins, and the like. Examples of the synthetic resin include olefin-based resins such as polyethylene (PE) and polypropylene (PP), styrene-based resins such as polystyrene (PS), acryl-based resins such as polyacrylate and polymethacrylate, vinyl-based resins such as polyvinyl chloride (PVC) and polyvinyl acetate, polyamide-based resins, polyimide-based resins, polyester-based resins such as polyethylene terephthalate (PET), fluorine-based resins, polycarbonate-based resins (PC), polyether-based resins such as polyether ether ketone (PEEK) and polyether sulfone (PES), thermosetting resins such as phenol-based resins, urea-based resins, melamine-based resins, epoxy-based resins, urethane-based resins, silicon-based resins, polyacetal-based resins, polysulfone-based resins, polyetherimide-based resins and polybutylene terephthalate (PBT), polyvinyl alcohol (PVA), ethylene-vinyl acetate copolymer resins (EVA), polyvinyl alcohol

derivatives, and synthetic polymers such as polymers or copolymers of unsaturated carboxylic acids and salts thereof.

[0026]

Among various resins, the resin material 32 is preferably a biodegradable resin having less problem of environmental pollution. Examples of the biodegradable resin include microorganism product-based biodegradable resins such as polyhydroxyalkanoate (PHA) and PHA-based copolymers; natural product-based biodegradable resin such as starch-based resin mainly composed of cellulose derivatives such as cellulose acetate or starch such as corn starch; lactic acid-based resins such as polylactic acid (PLA), a polylactic acid/polycaprolactone copolymer, and a polylactic acid/polyether copolymer, succinate-based resins such as polybutylene succinate (PBS), polybutylene succinate adipate (PBSA), and polyethylene terephthalate succinate (PETS), chemically synthesized biodegradable resins such as polycaprolactone and polyvinyl alcohol (PVA), polysaccharide derivatives such as cellulose-based resins such as carboxymethyl cellulose (CMC), carboxyethyl cellulose, carboxymethylated starch or a salt thereof, starch, methyl cellulose, ethyl cellulose, nitrocellulose, and cellulose acetate, natural polysaccharides such as guar gum, trans gum, xanthan gum, sodium alginate, carrageenan,

gum arabic, gelatin, and casein, and, in addition,
polyglycolic acid (PGA), polybutylene
adipate/terephthalate, and biodegradable polyolefin
(product name: Biorecover, product name; Cra Drop etc).

[0027]

(Adhesive Structure of Resin Material)

At least a part of the resin material 32 is attached to at least some of the fibers 31A forming the inside of the fiber sheet 31. The case where the resin material 32 is attached to the fiber 31A includes a case where the resin material 32 is attached to the surface of the fiber 31A and a case where the resin material 32 is impregnated inside the fiber 31A. Furthermore, in a case where the fibers 31A constituting the fiber sheet 31 include fibers such as non-pulp-based natural fibers, synthetic fibers, and regenerated fibers in addition to pulp, at least a part of the resin material 32 adheres to fibers formed of pulp in the fibers 31A. That is, in the lid 1, it is preferable that at least a part of the resin material 32 be attached to fibers formed of pulp among the fibers 31A. However, this does not prohibit at least a part of the resin material 32 from adhering to fibers such as non-pulp natural fibers, synthetic fibers, and regenerated fibers among the fibers 31A.

[0028]

Furthermore, the resin material 32 may be filled in at least a part of a space (gap space) formed between the fibers 31A constituting fiber sheet 31 (that is, a state in which the resin material 32 is impregnated between at least some of the fibers 31A may be formed), and the gap space may be generally occupied by the resin material 32.

[0029]

The lid 1 includes a joining region corresponding portion 5A and a lid region corresponding portion 5B.

[0030]

(Joining Region Corresponding Portion)

The joining region corresponding portion 5A is a portion corresponding to a region of the lid 1 joined to the container 101 along the edge 103 of the container 101. That is, the joining region corresponding portion 5A is a portion of the lid 1 corresponding to the joining region R (a region facing the edge 103 of the container 101 and a region joined to the container 101). In the container with a lid 150, the joining region corresponding portion 5A is a portion of the lid 1 that forms a joining portion 151 between the lid 1 and the container 101. Specifically, a portion forming the joining region R is defined as the joining region corresponding portion 5A in plan view of the lid 1 (in the example of Fig. 1A, the Z-axis direction (up-down direction) is defined as a line-of-sight direction).

The joining region corresponding portion 5A is usually formed in an annular shape as illustrated in Fig. 1A. In particular, as illustrated in Fig. 1A, in a case where the edge 103 of the container 101 is formed in a substantially annular shape, the joining region R becomes an annular shape, and the joining region corresponding portion 5A also becomes a substantially annular shape in plan view of the lid 1. The outer edge of the joining region corresponding portion 5A is determined according to the position of the outer edge of the joining region R. The outer edge of the joining region corresponding portion 5A may be positioned at the outer peripheral edge of the lid 1, or may be positioned inside the outer peripheral edge of the lid 1 as shown in the example of Fig. 1A. In a case where the joining region R between the lid 1 and the container 101 is not continuously formed, a portion sandwiched between the adjacent joining regions R and a portion facing the edge 103 are also included in the joining region corresponding portion 5A to be described later.

[0031]

In the lid 1 shown in the example of Fig. 1A, in a portion corresponding to the joining region corresponding portion 5A, the resin material 32 adheres to at least some of the fibers 31A forming the inside of the fiber sheet 31.

[0032]

(Lid Region Corresponding Portion)

The lid region corresponding portion 5B is a portion of the lid 1 inside the joining region corresponding portion 5A. That is, the lid region corresponding portion 5B is a portion inside from the inner edge end of the joining region corresponding portion 5A, and the outer peripheral end of the lid region corresponding portion 5B is common to the inner edge end of the joining region corresponding portion 5A. The lid region corresponding portion 5B is a portion that covers the opening 102 in the container with a lid 150. Note that the portion covering the opening 102 is a portion covering at least a part of the opening 102, and includes a case where a window portion is partially formed as described in the third embodiment and a case where a small opening is provided as described in the second embodiment and the like. Note that, as shown in the example of Fig. 1, a portion outside the outer peripheral end of the lid region corresponding portion 5B of the lid 1 is called a lid region non-forming portion 5C (in the second embodiment described later, the lid region non-forming portion 5C corresponds to a portion of a base portion 2 outside the inner edge end of the joining region corresponding portion 5A).

[0033]

(Penetrating Portion)

In the lid 1, the penetrating portion 10 is preferably formed at least in the lid region corresponding portion 5B. The penetrating portion 10 has a structure (penetrating structure) cut in the up-down direction (thickness direction, Z-axis direction) from one surface to the other surface of the blank material 30, and is a so-called cut portion 8. The penetrating portion 10 has a peripheral surface portion 11 and an end portion 12. The peripheral surface portion 11 extends in the longitudinal direction of the penetrating portion 10, and the end portion 12 is formed at a cut end.

[0034]

In a case where the penetrating portion 10 is formed in the lid 1, the penetrating portion 10 can function as a degassing portion. Here, the degassing portion indicates a portion through which gas can pass from one surface side of the lid 1 to the other surface side (from an opposing surface 73 side to an exposed surface 72 side).

Furthermore, the penetrating portion 10 may also have another function in addition to the function as the degassing portion. For example, in a case where the lid 1 is used for the container with a lid 150, the penetrating portion 10 may function as an insertion port 19 or a portion constituting the insertion port 19 into which a member is inserted from the outside of the container with a

lid 150 toward the inside (space 105) of the container 101. In the example of Fig. 1A, an example is shown in which the lid 1 has the penetrating portion 10, and the penetrating portion 10 is formed so as to be able to function as the insertion port 19. For example, as a member that can be inserted from the insertion port 19, a straw or the like is exemplified. Note that the penetrating portion 10 illustrated in the example of Fig. 1A can also function as a degassing portion as described above.

[0035]

(Shape of Penetrating Portion)

The shape of the penetrating portion 10 is not particularly limited as long as it can be formed by cutting. For example, in the example of Fig. 1A, a cut portion 8 having a shape in which the blank material 30 is cut in a cross shape in the up-down direction is formed in the lid 1, and the cut portion 8 forms the penetrating portion 10. The penetrating portion 10 also serves as the insertion port 19 as described above. Note that this is an example, and the shape of the cut portion 8 forming the penetrating portion 10 is not limited to the cross shape as long as it can be used as the insertion port 19, and may be a C shape as exemplified in Figs. 4A and 4B, or various shapes such as a tongue shape may be used. Figs. 4A and 4B are plan views schematically illustrating another example

in a case where the lid 1 has the insertion port 19 as the penetrating portion 10.

[0036]

(Peripheral Surface Portion of Penetrating Portion)

In the lid 1, as illustrated in Fig. 1C, a cross section of the fiber sheet 31 is exposed on a region where the peripheral surface portion 11 of the penetrating portion 10 is formed (a region of the peripheral surface portion 11). Furthermore, at this time, at least a part of the resin material 32 is exposed on the peripheral surface portion 11, that is, at least a part of the cross section of the fiber sheet 31. Examples of the case where at least a part of the resin material 32 is exposed on the peripheral surface portion 11 include a case where a part of the resin material 32 faces a partial region of the peripheral surface portion 11 (a region of the cross section of the fiber sheet 31) as illustrated in Fig. 1C, and a case where a part of the resin material 32 faces the entire region of the peripheral surface portion 11 (the entire region of the cross section of the fiber sheet 31). In the example of Fig. 1C, a case where a cross section of at least some of the fibers 31A are exposed on the peripheral surface portion 11 is exemplified. However, this does not prohibit the case where the cross section of at least some of the fibers 31A are not exposed on the

peripheral surface portion 11, and does not prohibit the case where the side surface of the fiber 31A is exposed.

[0037]

(Inclined Portion)

In a case where the penetrating portion 10 is formed in the lid 1, an inclined portion 13 is preferably formed in a portion from the periphery of the penetrating portion 10 to the penetrating portion 10. The inclined portion 13 has the peripheral surface portion 11 of the penetrating portion 10 as an end portion 13A, and indicates a portion inclined upward in a direction away from the end portion 13A. The inclined portion 13 may be formed only on one surface side of the lid 1 as illustrated in Figs. 1B and 2A, or may be formed on both surfaces (exposed surface 72 (non-opposing surface) and a surface (opposing surface 73) facing the space 105 side of the container 101) of the lid 1 as illustrated in Fig. 2B. Note that, in Fig. 1B, the inclined portion 13 forms an inclined surface on the exposed surface 72 side of the lid 1, and in Fig. 2A, the inclined portion 13 forms an inclined surface on the opposing surface 73 side of the lid 1.

[0038]

(Density of Fiber in Inclined Portion)

In the lid 1, it is preferable that the density of the fibers 31A constituting the fiber sheet 31 in the

inclined portion 13 be higher at a position closer to an end portion of the inclined portion. For example, as illustrated in Figs. 1B, 2A, and 2B, in a case where a position P1 closer to the end portion 13A of the inclined portion 13 and a position P2 farther from the end portion 13A than the position P1 are selected, in the fiber sheet 31, the density of the fibers 31A at the position P1 is preferably higher than the density of the fibers 31A at the position P2. Such a structure can be realized by applying a stronger pressure to a position closer to the peripheral surface portion 11 of the penetrating portion 10 at the time of forming the penetrating portion 10. In this case, as illustrated in Figs. 1B, 2A, and 2B, the inclined portion 13 is formed in a shape inclined downward toward the penetrating portion 10. Note that the configuration of the fiber density in the inclined portion and the inclined portion is the same in the penetrating portions formed in the second to fourth embodiments described later.

[0039]

[1-2 Manufacturing Method]

The lid 1 according to the first embodiment can be manufactured, for example, as follows. The fiber sheet 31 as a raw fabric sheet formed of a material corresponding to the material of the lid 1 is immersed in an immersion liquid (immersion step). The immersion liquid is a liquid

(resin-containing liquid) containing the resin material 32. In the example described here, for example, the resin-containing liquid is a mixed liquid of the resin material 32, water, and a non-aqueous solvent. In a case where the resin material 32 is contained in the lid 1, the possibility of improving the waterproof property of the lid 1 can be increased. After the immersion step, a step (drying step) of drying the fiber sheet 31 (fiber sheet 31 containing the immersion liquid) subjected to the immersion step is performed. The fiber sheet 31 subjected to the drying step (fiber sheet 31 to which the resin material 32 is attached) is processed into a shape corresponding to the shape of the lid 1 to form the blank material 30. The blank material 30 may be used as it is as the lid 1. Note that, in the example of Fig. 1A, the penetrating portion 10 is formed by forming the cut portion 8 in the blank material 30, whereby the lid 1 is formed.

[0040]

In the manufacturing method described above, examples of the resin material 32 contained in the immersion liquid include an acrylic resin, a polyolefin resin, and the like, and a resin having biodegradability is preferable. The non-aqueous solvent is not particularly limited as long as it can mix the resin material, and examples thereof include an alcohol-based solvent such as

ethanol.

[0041]

In the drying step, the water and the non-aqueous solvent contained in the fiber sheet 31 containing the immersion liquid may be substantially completely evaporated, or some moisture and non-aqueous solvent may remain in the fiber sheet 31.

[0042]

[1-3 Operation and Effect]

Hitherto, in a case where the lid is formed of a paper-based material, there has been a possibility that moisture permeates into fibers constituting the paper-based material forming the lid, stiffness of the lid is greatly impaired, and strength of the lid is reduced. In this regard, it is conceivable to form a resin layer on both surfaces (exposed surface side and opposing surface side) of the lid in order to suppress permeation of moisture. However, when the container and the lid are bonded to each other by a sealing method, there is a possibility that adhesiveness is greatly reduced. That is, in general, a resin coating layer for waterproofing a container is often formed on a surface of the container for accommodating a moisture-containing material such as a beverage or a side dish. Since it is required to select an appropriate material for the material of the resin material for forming

the resin coating layer according to the contents stored in the container, there is a demand for a variety of materials for the resin material for forming the resin coating layer. For this reason, when the resin layer is formed on the surface of the lid, the adhesiveness with the resin constituting the resin coating layer is impaired depending on the material of the resin material constituting the resin layer, and it may be difficult to bond the container and the lid to each other by the sealing method. Therefore, there is room for improvement in that it is possible to bond the container and the lid by a sealing method even if the type of resin constituting the resin coating layer formed on the surface of the container is diversified.

[0043]

On the other hand, in the lid 1 according to the first embodiment, since at least a part of the resin material 32 is attached to at least some of the fibers 31A forming the inside of the fiber sheet 31 constituting the lid 1, moisture permeation into the fibers 31A can be suppressed by the resin material 32. Furthermore, in a case where the sealing method is applied when the lid 1 is attached to the container 101, a space may exist in at least a part between the fibers 31A constituting the fiber sheet 31, so that the resin constituting the resin coating

layer formed on the surface of the edge 103 of the container 101 can enter the space, and the bonded state between the resin coating layer and the lid 1 can be easily formed. That is, even if the material of the resin forming the resin coating layer is poor in adhesiveness to the resin material 32, the container 101 and the lid 1 can be easily bonded by the sealing method.

Next, a modification of the first embodiment will be described.

[0044]

[1-4 Modification]

(First Modification)

In the lid 1 according to the first embodiment, in a case where the penetrating portion 10 is formed in the lid 1, as illustrated in Fig. 3A, the penetrating portion 10 may form a part of a weakened portion 14. This embodiment is referred to as a first modification of the first embodiment. Fig. 3A is a plan view schematically illustrating an example of a lid 1 according to the first modification of the first embodiment.

[0045]

(Weakened Portion)

As illustrated in the example of Fig. 3A, the weakened portion 14 includes a plurality of penetrating portions 10 and at least one continuous portion 15 formed

between the end portions 12 of the at least two penetrating portions 10. The weakened portion 14 guides a position (division position) where division occurs when a force for lifting up or pushing down the weakened portion 14 is applied to form the divided portion in the lid. That is, the position where division occurs is formed generally along the weakened portion. For example, in the example of Fig. 3A, when a force to push down the portion corresponding to the insertion port 19 from the exposed surface 72 side to the opposing surface 73 side is applied, the continuous portion 15 is broken, and the continuous portion 15 is divided along the penetrating portion 10 having the end portion 12 to form the insertion port 19 (the insertion port 19 is opened).

[0046]

(Layout of Weakened Portion)

The layout of the weakened portion 14 is not particularly limited, and may be determined according to conditions such as the function of the weakened portion 14. In the example of the weakened portion 14 illustrated in the example of Fig. 3A, the continuous portion 15 is formed at one place, and a total of four penetrating portions 10 are formed. In this example, the penetrating portion 10 is formed so as to radially extend in four different directions from the continuous portion 15. Note that this

is an example of the weakened portion 14, and in a case where the weakened portion 14 has a plurality of penetrating portions 10 radially formed around the continuous portion 15, the penetrating portions 10 may extend in three directions in a direction away from the continuous portion 15, or may extend in five or more directions. Furthermore, the penetrating portion 10 may extend in two directions in a direction away from the continuous portion 15.

[0047]

Furthermore, in the example of Fig. 3A, the weakened portion 14 is formed in a cross shape, but may be formed in a C shape as illustrated in Fig. 4B. Furthermore, as shown in this example, the continuous portion 15 may be formed at a plurality of places without being limited to one place. In the example of Fig. 4B, the continuous portion 15 is formed at three locations, and the penetrating portions 10 (a total of four penetrating portions 10) are formed in two directions from each of the continuous portions 15. The plurality of penetrating portions 10 are formed of curved cut portions 8 so as to have a shape that simulates substantially the letter C as a whole of the weakened portion 14.

[0048]

The position of the weakened portion 14 is not

particularly limited, but is preferably provided in the lid region corresponding portion 5B. In this case, the division position is formed in the lid region corresponding portion 5B.

[0049]

(Continuous Portion)

The continuous portion 15 only needs to be a portion formed in a state of not penetrating the blank material 30 forming the lid 1, and may be a non-cut portion, or may be a half-cut portion 16 obtained by cutting the blank material 30 in the thickness direction within a range of avoiding penetrating the blank material 30 as illustrated in Fig. 12B. Fig. 12B is a view for explaining an example of the half-cut portion 16. The half-cut portion 16 is specified as a portion forming a half-cut structure which is a structure in which the lid 1 is cut halfway in the thickness direction of the lid 1. Note that the half-cut portion 16 is not limited to a portion cut to a half of the thickness of the lid 1 in the thickness direction of the lid 1. The half-cut portion 16 includes a structure in which a half or more of the thickness of the lid 1 is cut while avoiding penetration of the lid 1, and a structure in which the lid 1 is cut in the thickness direction of the lid 1 to an extent less than a half of the thickness of the lid 1.

[0050]

(Second Modification)

In the lid 1 according to the first embodiment, as illustrated in Fig. 3B, an extending portion may be formed. This embodiment is referred to as a second modification of the first embodiment. Fig. 3B is a plan view schematically illustrating an example of a lid 1 according to the second modification of the first embodiment.

[0051]

(Extending Portion)

In the lid 1 according to the second modification of the first embodiment, the position and the shape of an extending portion 7 are not particularly limited, but in the example of Fig. 1A, the extending portion 7 is formed on an outer peripheral edge 50 of the lid region non-forming portion 5C of the lid 1 (corresponding to an outer peripheral edge 2A of the base portion 2 in the second embodiment to be described later), and the shape of the extending portion 7 is determined such that an outer peripheral edge 7A of the extending portion 7 has a mountain shape gently curved in a convex shape.

[0052]

When the extending portion 7 is formed, a mark, a character, or the like indicating the container 101 corresponding to the lid 1 can be arranged on the extending

portion 7. For example, characters such as S, M, and L are arranged on the extending portion 7 by printing or the like. In a case where the size of the container 101 is a small size, the lid 1 printed with the letter S is used. In a case where the size of the container 101 is a medium size, the lid 1 printed with the letter M is used. In a case where the size of the container 101 is a large size, the types of the container 101 and the lid 1 are associated with each other such that the lid 1 printed with the letter L is used. Therefore, in a case where the lid 1 is joined to the container 101, it is possible to suppress a possibility that the container 101 and the lid 1 are joined to each other by using a combination having a wrong size.

[0053]

Furthermore, when the extending portion 7 is formed in the lid 1, the extending portion 7 can be used as a knob.

[0054]

[2 Second Embodiment]

In the first embodiment, the case where the penetrating portion 10 forms the insertion port 19 has been described as an example. The lid 1 is not limited thereto, and the penetrating portion 10 may form at least a part of the boundary between the opening edge of the small opening and the outer peripheral edge of the small lid portion as

illustrated in Figs. 7A and 7B. That is, as illustrated in Figs. 7A and 7B, the lid 1 may include a base portion having a small opening having an opening area smaller than the opening 102 of the container 101, a small lid portion that opens and closes the small opening, and a hinge portion that connects the base portion and the small lid portion. An embodiment having such a configuration is referred to as a second embodiment. Fig. 7A is a plan view illustrating an example of the lid 1 according to the second embodiment. Fig. 7B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line D-D in Fig. 7A. The second embodiment may be similar to the first embodiment in other points that the penetrating portion 10 forms at least a part of the boundary between the opening edge of the small opening and the outer peripheral edge of the small lid portion. Furthermore, in the second embodiment, the insertion port 19 also shown in the first embodiment may be further formed.

[0055]

[2-1 Configuration]

As illustrated in Figs. 7A, 7B, and the like, the lid 1 according to the second embodiment includes a base portion 2, a small lid portion 3, and a hinge portion 4. In the examples of Figs. 7A and 7B, the lid region

corresponding portion 5B of the lid 1 includes the base portion 2, the small lid portion 3, and the hinge portion 4, and the lid region non-forming portion 5C includes the base portion 2.

[0056]

(Base Portion)

The base portion 2 is defined as a portion having the joining region corresponding portion 5A and forming a small opening 6. The base portion 2 can be a portion that defines a reference of displacement of the small lid portion 3 described later. Note that, in the example of Fig. 7A, the base portion 2 and the small lid portion 3 form the exposed surface 72 of the lid 1 in plan view of the lid 1. In the second embodiment, in plan view of the lid 1 (in the example of Fig. 7A, in a case where the Z-axis direction (up-down direction) is set as the line-of-sight direction), the joining region corresponding portion 5A corresponds to a portion forming the joining region R, and is formed in the base portion 2.

[0057]

(Small Opening)

The small opening 6 is formed so as to penetrate the opposing surface 73 of the lid 1 with respect to the container 101 and the non-opposing surface (the exposed surface 72 of the lid 1) of the lid 1 with respect to the

container 101. The small opening 6 is formed inside a portion corresponding to the joining region corresponding portion 5A in plan view of the lid 1 so as to have an opening area smaller than that of the opening 102 of the container 101. The small opening 6 is for opening and forming an entrance of contents (for example, beverages, food and drink, and the like) in the space 105 of the container 101 in a state where the lid 1 is joined to the container 101. The small opening 6 forms an opening forming portion 20 in combination with the small lid portion 3 described later.

[0058]

(Opening Forming Portion)

As illustrated in Fig. 7A and the like, the opening forming portion 20 is defined as a portion having the small opening 6 and the small lid portion 3. In the opening forming portion 20, the small opening 6 is opened and closed as the small lid portion 3 is displaced. As illustrated in Fig. 7A, the opening forming portion 20 is formed such that the small lid portion 3 closes the small opening 6 and the small lid portion 3 is displaced to open the small opening 6. In a case where the small lid portion 3 is rotated so as to pull up the small lid portion 3 with reference to the base portion 2, the small opening 6 is exposed and serves as an exposure port. That is, the

opening forming portion 20 combines the small opening 6 and the small lid portion 3 so that the space 105 of the container 101 can be visually recognized from the small opening 6 when the small lid portion 3 is pulled up in a state where the lid 1 is attached to the container 101.

[0059]

Note that, in a state where the small opening 6 serves as an exposure port, as described later, the small opening 6 can serve as a supply port for a liquid such as an additional beverage or a solid such as ice. Furthermore, in a case where a liquid such as a beverage is present in the container 101 (space 105), the small opening 6 may be used as a straw or a spout for a beverage or the like.

[0060]

(Small Lid Portion)

The lid 1 is provided with a small lid portion 3. The small lid portion 3 is formed so as to cover the small opening 6 in an openable and closable manner. In the example of Fig. 7A, the small lid portion 3 is formed so as to be displaceable in a pulled-up state with respect to base portion 2 as described later with reference to Fig. 9C, and the small opening 6 is formed (opened) when the small lid portion 3 is pulled up. In the example illustrated in Fig. 7A, in a state where the small opening

6 is closed by the small lid portion 3, the shape of the small lid portion 3 can be determined such that the outer peripheral contour shape of the small lid portion 3 follows the shape of an opening edge 6A of the small opening 6. In this case, in a state where the small opening 6 is closed by the small lid portion 3, it is easy to bring the end surface of an outer peripheral edge 3A of the small lid portion 3 into contact with the end surface of the opening edge 6A of the small opening 6.

[0061]

In the lid 1 shown in the example of Fig. 7A, the small lid portion 3 is provided inside (lid region corresponding portion 5B) (center CT side) the joining region corresponding portion 5A in plan view of the lid 1. The small lid portion 3 is displaced (rotated) so that the small lid portion 3 is in a lifted-up state. The small lid portion 3 is connected to the base portion 2 by the hinge portion 4. The small opening 6 is exposed as the small lid portion 3 is lifted up with the hinge portion 4 as a support shaft.

[0062]

In the lid 1, in a state where the small lid portion 3 is raised, the small opening 6 is exposed as described above. This state is referred to as an open lid state. A state in which the small opening 6 is covered with the

small lid portion 3 is referred to as a closed lid state.

[0063]

In the lid 1, even after the lid 1 enters the open lid state (after the small opening 6 is exposed by raising the small lid portion 3), the lid 1 can be in the closed lid state again, and in a case where the lid 1 is in the closed lid state, the end surface of the opening edge 6A of the small opening 6 of the base portion 2 can face the end surface (outer peripheral end surface) of the outer peripheral edge 3A of the small lid portion 3.

[0064]

(Hinge Portion)

As described above, the lid 1 has the hinge portion 4. The hinge portion 4 is generally configured by a portion corresponding to a line segment connecting two base end portions 74 along the outer peripheral edge 3A of the small lid portion 3, and corresponds to a boundary portion between the base portion 2 and the small lid portion 3. The hinge portion 4 is a portion serving as a rotation shaft when the small lid portion 3 rotates. However, a case where the small lid portion 3 rotates includes not only a case where the small lid portion 3 rises from the base portion 2 at a constant angle at a position of the hinge portion 4, but also a case where the small lid portion 3 rises from the hinge portion 4 toward a front end

edge 75 of the small lid portion 3 while gradually curving.
[0065]

The base portion 2 is connected to the small lid portion 3 at least by the hinge portion 4. The structure of the hinge portion 4 is not particularly limited as long as it is a portion defined as a boundary between the base portion 2 and the small lid portion 3. The hinge portion 4 may have a perforated structure or a half-cut portion similarly to a connection structure 17 described later.
[0066]

(Boundary between Outer Peripheral Edge of Small Lid Portion and Opening Edge of Small Opening)

At the boundary position between the outer peripheral edge 3A of the small lid portion 3 and the opening edge 6A of the small opening 6, the small lid portion 3 and the small opening 6 may be divided (may enter a non-connected state), or the connection structure 17 may be formed as described later. In a case where the small lid portion 3 and the small opening 6 enter the non-connected state at a boundary position between the outer peripheral edge 3A of the small lid portion 3 and the opening edge 6A of the small opening 6, as illustrated in Fig. 7B, the penetrating portion 10 is formed as a structural portion that divides the outer peripheral edge 3A of the small lid portion 3 and the opening edge 6A of

the small opening 6. The peripheral surface portion 11 of the penetrating portion 10 forms an end surface of the outer peripheral edge 3A of the small lid portion 3 and an end surface of the opening edge 6A of the small opening 6. Furthermore, the end portion 12 of the penetrating portion 10 is located at the base end portion 74 of the hinge portion 4. Since the structure of the penetrating portion 10 is similar to that described in the first embodiment, the description thereof is omitted.

[0067]

(Connection Structure between Base Portion and Small Lid Portion)

In the lid 1, a structure (connection structure 17) in which the opening edge 6A of the small opening 6 of the base portion 2 and the outer peripheral edge 3A of the small lid portion 3 are connected as described above may be formed at the boundary position between the outer peripheral edge 3A of the small lid portion 3 and the opening edge 6A of the small opening 6. As illustrated in Fig. 12A, the connection structure 17 is preferably configured as a weakened portion 14 which is a portion more fragile than the small lid portion 3. Fig. 12A is a view illustrating an example in a case where the connection structure 17 is the weakened portion 14. Since the connection structure 17 is the weakened portion 14, the

weakened portion 14 can be broken (the continuous portion 15 can be broken) in a case where the small lid portion 3 rotates with respect to the base portion 2 about the hinge portion 4 as an axis. Furthermore, the small lid portion 3 is raised with respect to the base portion 2 while being separated from the base portion 2 generally along the connection structure 17.

[0068]

(Weakened Portion)

The weakened portion 14 is formed by a combination of the penetrating portion 10 and the continuous portion 15 as described in the first modification of the first embodiment. Therefore, in a case where the connection structure 17 is the weakened portion 14, at the boundary position between the outer peripheral edge 3A of the small lid portion 3 and the opening edge 6A of the small opening 6, the connection structure is formed by a combination of the penetrating portion 10 and the continuous portion 15. In the example of Fig. 12A, the combination structure is a structure (so-called perforated structure) in which the combination structures of the continuous portion 15 and the penetrating portion 10 are alternately arranged along the longitudinal direction of the portion where the end surface of the opening edge 6A of the small opening 6 and the end surface of the outer peripheral edge 3A of the small lid

portion 3 face each other.

[0069]

Note that the connection structure 17 is not limited to the perforated structure, and for example, the entire connection structure 17 may be formed as the half-cut portion 16 as illustrated in Fig. 12B. Since the half-cut portion 16 is the same as the half-cut portion 16 described in the first embodiment with reference to Fig. 12B, the description thereof will be omitted.

[0070]

Note that, in a case where the connection structure 17 has the continuous portion 15 and the penetrating portion 10, the continuous portion 15 may be the half-cut portion 16 as illustrated in Fig. 12B.

[0071]

In a case where the penetrating portion 10 is formed in the lid 1 according to the second embodiment, the penetrating portion 10 may be formed as a degassing portion at a position different from the boundary position between the outer peripheral edge of the small lid portion and the opening edge of the small opening. For example, in a case where the connection structure 17 is formed at the boundary position between the outer peripheral edge of the small lid portion and the opening edge of the small opening, and the entire connection structure 17 is formed as the half-cut

portion 16, the penetrating portion 10 may be formed as a configuration different from the connection structure 17.

[0072]

Furthermore, the penetrating portion 10 may be formed at a boundary position between the outer peripheral edge of the small lid portion and the opening edge of the small opening and at a position different from the boundary position. As described above, in the lid 1 according to the second embodiment, at least a part of the penetrating portion may be formed at a boundary position between the outer peripheral edge of the small lid portion and the opening edge of the small opening.

[0073]

[2-2 Operation and Effect]

The lid 1 according to the second embodiment can obtain the same effects as those of the first embodiment.

[0074]

The modification of the second embodiment will be further described.

[0075]

[2-3 Modification]

(First Modification)

In the lid 1 according to the second embodiment, as illustrated in Figs. 8A, 8B, and the like, a knob portion 21 may be provided in the small lid portion 3. The lid 1

having such a configuration is referred to as a first modification of the second embodiment. Fig. 8A is a plan view schematically illustrating an example of a lid 1 according to the first modification of the second embodiment. Fig. 8B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line E-E in Fig. 8A.

[0076]

Since the lid 1 according to the first modification of the second embodiment may be similar to the above-described second embodiment except for the configuration in which the knob portion 21 is provided in the small lid portion 3, description of other configurations (base portion 2, hinge portion 4, and the like) except for the configuration in which the knob portion 21 is provided in the small lid portion 3 is omitted.

[0077]

(Knob Portion)

In the example of the second embodiment illustrated in Figs. 8A and 8B, in a state where the small opening 6 is closed by the small lid portion 3, the knob portion 21 is provided on an upper surface side which is an exposed surface (exposed surface 72 of the lid 1) side of the small lid portion 3. The structure of the knob portion 21 is not particularly limited as long as the small lid portion 3 can

be rotated about the hinge portion 4, but in the examples of Figs. 8A and 8B, a tab member 22 is provided as the knob portion 21.

[0078]

(Tab Member)

In the examples of Figs. 8A and 8B, in a state where the small opening 6 is closed by the small lid portion 3, the tab member 22 has one end portion 22A of the tab member 22 joined to the small lid portion 3, and has other end portion 22B of the tab member 22 as a free end. A portion of the tab member 22 joined to the small lid portion 3 is referred to as a tab joining portion 23. Except for the tab joining portion 23 of the tab member 22, the shape and structure of the portion of the tab member 22 on the free end side (the portion on the other end portion 22B side) are not particularly limited as long as the portion is formed in such a size and shape that the tab member 22 can be gripped by a human hand. The material of the tab member 22 may be the same as the material of the blank material 30 described in the first embodiment, and may be a paper-based material.

[0079]

In the lid 1, a mounting position and a mounting direction of the tab member 22 in the small lid portion 3 are not particularly limited, but in the examples of Figs.

8A and 8B, the tab member 22 is joined to the small lid portion 3 at a position close to the tip of the small lid portion 3 (that is, near the front end edge 75).

[0080]

As a method for joining the tab member 22 to the small lid portion 3 (that is, a method for forming the tab joining portion 23), various methods such as ultrasonic joining, heat sealing, and joining with an adhesive can be exemplified. As a method for forming the tab joining portion 23, ultrasonic joining is preferable from the viewpoint of ease of joining, strength of joining, and the like among the methods described above. The formation position of the tab joining portion 23 in the small lid portion 3 is preferably a position shifted from the central portion of the small lid portion 3 from the viewpoint of easily raising the small lid portion 3 (rotating the small lid portion 3) by lifting up the tab member 22.

[0081]

(Orientation of Tab Member (Mounting Direction))

In the lid 1, in the example of Fig. 8A, the other end portion 22B side (free end side) of the tab member 22 is disposed closer to the hinge portion 4 side than the one end portion 22A of the tab member 22. However, this is an example, and the orientation of the tab member 22 may be an orientation other than the direction shown in the example

of Fig. 8A. For example, the tab member 22 may be disposed such that the other end portion 22B side of the tab member 22 is located farther away from the hinge portion 4 than the one end portion 22A of the tab member 22.

[0082]

In the lid 1 according to the first modification of the second embodiment, since the knob portion 21 is provided, the small lid portion 3 can be easily pulled up.

[0083]

(Second Modification)

In the lid 1 according to a second modification of the second embodiment, as shown in the examples of Figs. 13A, 13B, and the like, a holding structure forming portion which is a portion forming a holding structure for holding the small lid portion 3 in a state where the small lid portion 3 is rotated with respect to the base portion 2 with the hinge portion 4 as an axis to open the small opening 6 may be included. The lid 1 having such a configuration is referred to as a second modification of the second embodiment. Fig. 13A is a plan view schematically illustrating an example of a lid 1 according to the second modification of the second embodiment. Fig. 13B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line H-H in Fig. 13A.

[0084]

(Holding Structure Forming Portion)

The configuration of the holding structure forming portion is not particularly limited. For example, in the example of the lid 1 illustrated in Figs. 13A and 13B, a claw portion 24 and a receiving portion 25 form the holding structure forming portion.

[0085]

(Claw Portion)

As illustrated in the example of Fig. 13A, the claw portion 24 may be a portion having a structure capable of being locked to the receiving portion 25 described later by hooking, insertion, or the like. In the example of Fig. 13A, the claw portion 24 is provided on the tab member 22 as an example of the knob portion 21. Furthermore, in this example, the claw portion 24 is formed by a cut portion formed in a contour shape such as a generally mountain shape at a predetermined position of the tab member 22.

[0086]

(Receiving Portion)

The receiving portion 25 is formed in such a shape that the claw portion 24 can be engaged or inserted. In the example of Fig. 13A, the receiving portion 25 is a slit portion formed by cutting at a predetermined position of the base portion 2. In this case, the receiving portion 25

corresponds to the penetrating portion 10. The receiving portion 25 is formed at a position capable of facing the claw portion 24 when the tab member 22 is displaced so as to rotate the small lid portion 3.

[0087]

(Formation of Holding Structure)

In a case where the small lid portion 3 is lifted up in the lid 1, the knob portion 21 is pulled up. At this time, by pulling up the tab member 22 and bending a predetermined portion on the free end side (the other end portion 22B side) of the tab member 22, the claw portion 24 has a shape protruding downward or upward. Then, the tab member 22 is displaced so as to rotate the small lid portion 3 until the claw portion 24 of the small lid portion 3 reaches a position facing the receiving portion 25 or a position in the vicinity of the position. Then, the claw portion 24 of the tab member 22 is hooked or inserted into the receiving portion 25. Therefore, a holding structure for holding small lid portion 3 in a state where small opening 6 is exposed is formed.

[0088]

In the above description, the case where the holding structure forming portion includes the slit portion (penetrating portion 10) as the receiving portion 25 has been described, but as will be described later in a third

modification of the second embodiment, the structure corresponding to the receiving portion 25 is not limited to the slit portion.

[0089]

(Third Modification)

In the lid 1 according to the second embodiment, as in the second modification of the first embodiment, as illustrated in Figs. 9A, 9B, and the like, the extending portion 7 may be formed on the lid 1. This form is referred to as a third modification of the second embodiment. Fig. 9A is a plan view schematically illustrating an example of a lid according to the first modification of the second embodiment. Fig. 9B is a cross-sectional view schematically occupying a state of a longitudinal cross section taken along line F-F in Fig. 9A. In the lid 1 of the second embodiment, the configuration of the extending portion 7 is the same as that of the second modification of the first embodiment, and thus the description thereof is omitted. Note that Fig. 9A illustrates a case where the extending portion 7 is formed in the lid 1 according to the second modification of the second embodiment.

[0090]

Note that, in the example of Fig. 9A, with respect to the formation position of the extending portion 7, the

extending portion 7 is defined on the outer peripheral edge 2A of the base portion 2 such that the hinge portion 4 is positioned between the front end edge 75 forming the tip of the small lid portion 3 and the extending portion 7. In this case, the position of the front end edge 75 of the small lid portion 3 and the position of the extending portion 7 can be separated as much as possible. Since the position of the front end edge 75 of the small lid portion 3 and the position of the extending portion 7 are separated as much as possible in this manner, even if a person picks the extending portion 7 by hand and carries the lid 1, it is possible to suppress a possibility that a person who picks the lid 1 touches the small lid portion 3 of the lid 1, and it is possible to suppress contamination of the small lid portion 3 due to contact of the hand of the person.

[0091]

In the lid 1 according to the third modification of the second embodiment, the extending portion may also serve as the receiving portion described in the second modification of the second embodiment.

[0092]

(Holding Structure Forming Portion)

In the lid 1 illustrated in Fig. 9A, similarly to the example of Fig. 13A, the claw portion 24 is formed on

the knob portion 21 (tab member 22 in Figs. 13A and 9A), and the claw portion 24 and the extending portion 7 form the holding structure forming portion. In the example of Fig. 9A, the extending portion 7 is formed such that the outer peripheral edge 7A of the extending portion 7 can face the claw portion 24 when the tab member 22 is displaced so as to rotate the small lid portion 3.

[0093]

(Formation of Holding Structure)

Also in the lid 1 shown in the example of Fig. 9A, similarly to the example of Fig. 13A, the tab member 22 is pulled up in the direction of the arrow F1 in Fig. 9B in a case where the small lid portion 3 is raised. In the example of Fig. 9A, similarly to the example of Fig. 13A, by pulling up the tab member 22 and bending a predetermined portion on the free end side (the other end portion 22B side) of the tab member 22, the claw portion 24 has a shape protruding downward or upward. Then, the tab member 22 is displaced so as to rotate the small lid portion 3 until the claw portion 24 reaches a position facing the outer peripheral edge 7A of the extending portion 7 or a position in the vicinity of the position. Then, as illustrated in Fig. 9C, the claw portion 24 is hooked or inserted into the extending portion 7. Therefore, a holding structure for holding the small lid portion 3 in a state where the small

opening 6 is an exposure port of the space 105 is formed.

Fig. 9C is a cross-sectional view for explaining an example of the holding structure.

[0094]

(Size of Extending Portion)

In a case where the extending portion 7 has the function of the receiving portion 25, as illustrated in Fig. 10, an extension distance D1 of the extending portion 7 may be smaller than a separation distance D2 between the tip of the small opening 6 and the outer peripheral edge 2A of the base portion 2. Fig. 10 is a plan view for explaining an example of the extending portion 7. The extension distance D1 of the extending portion 7 indicates a longest separation distance from the outer peripheral edge 2A of the lid 1 to the outer peripheral edge 7A of the extending portion 7 along a direction away from the position of the center CT of the lid 1 in the radial direction. In this case, in a case where it is desired to use the small opening 6 as a straw by forming the tip of the small opening 6 (the front end edge 75 of the small lid portion 3) close to the outer peripheral edge 2A of the lid 1, the size of the extending portion 7 can be reduced, and it is possible to make it difficult for the user to recognize the extending portion 7 as a knob for forming the takeout port. That is, it is possible to make it difficult

for the user to use a tear hole generated by lifting up the extending portion 7 and tearing the lid 1 as a content takeout port.

[0095]

Furthermore, if the blank material 30 is made of the resin material attached to the fiber forming the inside of the fiber sheet, the stiffness of the blank material 30 is not too strong, and in a case where the claw portion 24 is hooked to the extending portion 7, the extending portion 7 can be slightly bent, and even in a state where the tip of the claw portion 24 enters the edge 103 of the container 101, the tip of the claw portion 24 can be slid to the extending portion 7 in a direction of releasing the locking between the extending portion 7 and the claw portion 24. Then, it is easy to form the holding structure in a state where the tip of the claw portion 24 is positioned outside the edge 103 of the container 101. When such a holding structure is formed, even if contamination occurs in the edge 103 of the container 101, the contamination does not spread to the claw portion 24 of the lid 1, and the sanitary state can be enhanced.

[0096]

The configuration of reducing the size of the extending portion 7 shown in the third modification of the second embodiment as illustrated in Fig. 10 can also be

applied to a lid using a sheet material in which a resin layer is formed on the surface of the fiber sheet 31 of at least one of the exposed surface 72 and the opposing surface 73, instead of the lid 1 having the blank material 30. However, when the lid 1 is the blank material 30 and the extending portion 7 is also formed of the blank material 30, it is more preferable in that the surface of the extending portion 7 is easily roughened and slight bending is easily generated in the extending portion 7 as compared with the case of using the sheet material in which the resin layer is formed.

[0097]

[3 Third Embodiment]

In the lid 1 according to the first embodiment and the second embodiment, as illustrated in Figs. 5A and 5B, a window portion may be formed. This embodiment is referred to as a third embodiment. Fig. 5A is a plan view illustrating an example of the lid 1 according to the third embodiment. Fig. 5B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line B-B of the lid 1 illustrated in Fig. 5A.

[0098]

(Window Portion)

A window portion 40 is a light transmitting portion

that improves the visibility in the space 105 from the outside in the container with a lid 150. The window portion 40 has a configuration in which an opening (lid inner opening 41) formed in the lid region corresponding portion 5B is covered with a window sheet 42 such as a light transmissive film. The window sheet 42 is not particularly limited as long as it has light transmissivity, such as a light transmissive film, and examples thereof include films made of the following materials. Examples of the material of the film forming the window sheet 42 include synthetic resins, natural resins, and the like. Examples of the synthetic resin and the natural resin include olefin-based resins such as polyethylene (PE) and polypropylene (PP), styrene-based resins such as polystyrene (PS), acryl-based resins such as polyacrylate and polymethacrylate, vinyl-based resins such as polyvinyl chloride (PVC) and polyvinyl acetate, polyamide-based resins, polyimide-based resins, polyester-based resins such as polyethylene terephthalate (PET), fluorine-based resins, polyether-based resins such as polycarbonate-based resins (PC), polyether ether ketone (PEEK) and polyether sulfone (PES), and the like. As a material of the film for forming the window sheet 42, a biodegradable resin or the like is preferable from the viewpoint of reducing the environmental load. Examples of

the biodegradable resin include microorganism product-based biodegradable resins such as polyhydroxyalkanoate (PHA) and PHA-based copolymers; natural product-based biodegradable resin such as starch-based resin mainly composed of cellulose derivatives such as cellulose acetate or starch such as corn starch; lactic acid-based resins such as polylactic acid (PLA), a polylactic acid/polycaprolactone copolymer, and a polylactic acid/polyether copolymer, succinate-based resins such as polybutylene succinate (PBS), polybutylene succinate adipate (PBSA), and polyethylene terephthalate succinate (PETS), chemically synthesized biodegradable resins such as polycaprolactone and polyvinyl alcohol (PVA), and, in addition, polyglycolic acid (PGA), polybutylene adipate/terephthalate, and biodegradable polyolefin (product name: Biorecover, product name; Cra Drop etc).

[0099]

Furthermore, in a case where the content of the container is liquid or the like, the window sheet 42 is preferably excellent in water resistance, oil resistance, and the like.

[0100]

The window sheet 42 provided in the window portion 40 forms a portion (bonded portion 46) bonded along a portion of the blank material 30 corresponding to the

periphery of the lid inner opening 41. A method for bonding the window sheet 42 to a portion corresponding to the periphery of the lid inner opening 41 is not particularly limited. For example, an application portion may be formed by applying hot melt between the periphery of the lid inner opening 41 and the window sheet 42, and the window sheet 42 may be bonded to a portion corresponding to the periphery of the lid inner opening 41 by heat sealing at the application portion to form the bonded portion 46. In the example of Fig. 5A, the window portion 40 is provided with respect to the lid 1 according to the first embodiment. However, as illustrated in Fig. 11A, the window portion may be provided with respect to the lid 1 according to the second embodiment, or as illustrated in Figs. 11B and 11C, the window portion may be provided with respect to the lid 1 according to a fourth embodiment described later. Figs. 11A and 11B are plan views showing another example of the lid 1 according to the third embodiment, and Fig. 11C is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line G-G in Fig. 11B.

[0101]

The configuration of the window portion 40 shown in the third embodiment can also be applied to a lid using a sheet material in which a resin layer is formed on the

surface of the fiber sheet 31 of at least one of the exposed surface 72 and the opposing surface 73 instead of the lid 1 having the blank material 30. However, if the lid 1 is the blank material 30, it is more preferable that the bonded portion 46 be formed between the window sheet 42 and the blank material 30 in that good bonding between the window sheet 42 and the blank material 30 can be expected even if various resin materials are used as a material such as hot melt for forming the bonded portion 46.

[0102]

[4 Fourth Embodiment]

In the lid 1 according to the first to third embodiments, as illustrated in Figs. 6A, 6B, and the like, a raised part (bulging portion) may be formed. This embodiment is referred to as a fourth embodiment.

[0103]

(Raised Part)

A raised part 43 is formed on the exposed surface 72 side of the lid 1, and is a portion (in the examples of Figs. 6A and 6B, a portion protruding to the +Z direction side with respect to the position of the joining region corresponding portion 5A) protruding upward (+Z direction side) with respect to the outside of the raised part 43 (outside the base end of the raised part 43). The raised part 43 is preferably provided inside from the inner edge

end of the joining region corresponding portion 5A. That is, the raised part 43 may be formed on the entire lid region corresponding portion 5B or may be provided on a part of the inside of the lid region corresponding portion 5B.

[0104]

(Depressed Portion)

A depressed portion 44 is formed in a portion corresponding to the raised part 43 (a portion opposite) on a surface side (opposing surface 73 side) opposite to the exposed surface 72 of the lid 1. In this case, a portion forming the raised part 43 is a convex structure portion in the emboss structure. Therefore, this makes it easy to maintain the state in which the lid 1 is attached without the contents coming into contact with the lid 1 even if the contents exist above the opening 102 of the container 101 in the state of the container with a lid 150. For example, in a case where a liquid such as coffee is contained in the container 101 as a content and the fresh cream is floated on the liquid level of the liquid, even if the upper end of the fresh cream is positioned above the opening 102 of the container 101, the upper end of the fresh cream can be contained in the space in the depressed portion 44, and the possibility that the upper end of the fresh cream adheres to the opposing surface 73 of the lid 1 can be suppressed.

[0105]

In a case where the raised part 43 is formed on the lid 1, as illustrated in Figs. 11B and 11C, it is preferable that the window portion 40 be formed in a region including a tip portion 43A of the raised part 43 from the viewpoint of making it easy to visually recognize the entire space (depressed portion 44) including the space 105 in the container 101 as a whole.

[0106]

Furthermore, in a case where the raised part 43 is formed in the lid 1, as illustrated in Figs. 6A and 6B, it is preferable that the outer peripheral edge 3A of the small lid portion 3 and the hinge portion 4 be formed along the base end portion of the raised part 43. In this case, in a case where the small lid portion 3 is pulled up around the hinge portion 4, the entire raised part 43 can be pulled up.

[0107]

(Manufacturing Method)

The lid 1 according to the fourth embodiment can be manufactured, for example, as follows. As described in [1-2 Manufacturing Method] in the first embodiment, the immersion step and the drying step are performed. However, in the middle of the drying step or before the drying step (after the immersion step (that is, between the immersion

step and the drying step)), a shaping process for shaping the fiber sheet 31 containing the immersion liquid is performed. The shaping process can be exemplified by an embossing process. In the shaping process, a structure corresponding to the raised part 43 is formed (a structure corresponding to the depressed portion 44 is also formed). After the shaping process and the drying step are performed, processing corresponding to the shape of the lid 1 is performed to form the blank material 30.

[0108]

In the drying step, the water and the non-aqueous solvent contained in the fiber sheet 31 containing the immersion liquid may be substantially completely evaporated, or some moisture and non-aqueous solvent may remain in the fiber sheet. Note that, if some moisture or non-aqueous solvent remains in the fiber sheet, the shaping process may be applied after the drying step. However, from the viewpoint of improving the appearance of the raised part formed by the shaping step, the shaping process is preferably applied in the middle of the drying step or before the drying step.

[0109]

The configuration of the raised part 43 (and the depressed portion 44) described in the fourth embodiment can also be applied to a lid using a sheet material in

which a resin layer is formed on the surface of the fiber sheet 31 of at least one of the exposed surface 72 and the opposing surface 73, instead of the lid 1 including the blank material 30. However, if the lid 1 is the blank material 30, it is more preferable in that the method for manufacturing the lid 1 according to the fourth embodiment can be easily applied, and the raised part 43 having a good appearance can be easily obtained.

[0110]

In the lid 1 according to the first to fourth embodiments described above, the lid 1 is joined to the container 101 in the state of the container with a lid 150 to be described later to form a joining portion 151. The joining portion 151 is a portion where the container 101 and the lid 1 are bonded (including adhesion) to each other, and the lid 1 and the container 101 are peeled off at the joining portion 151 in order to separate the lid 1 and the container 101. The lid 1 is not limited to such a configuration, and the lid 1 may be fitted to the container 101 as described below.

[0111]

[5 Fifth Embodiment]

[5-1 Configuration]

As illustrated in Figs. 15A and 15B, a lid 201 according to a fifth embodiment includes a top lid part 202

and a side wall part 203. As will be described later with reference to Fig. 21 and the like, a lid 201 according to the fifth embodiment is formed so as to be contactable with a container 101 having an opening 102 formed at an upper end and an edge 103 serving as an upper end edge forming an outer periphery of the opening 102. With respect to a state in which the lid 201 and the container are in contact with each other, the lid 201 is formed so as to be fitted to a container having an opening 102 formed at an upper end and an edge 103 serving as an upper end edge forming an outer periphery of the opening 102. Fig. 15A is a perspective view schematically illustrating an example of the lid according to the fifth embodiment. Fig. 15B is a cross-sectional view schematically illustrating an example of the lid according to the fifth embodiment. Note that Fig. 15B illustrates a state of a longitudinal cross section taken along line N-N in Fig. 15A. Fig. 21 is a cross-sectional view illustrating an example of the container with a lid 150 in which the lid 1 illustrated in Figs. 15A and 15B is joined to the container 101. Furthermore, in Fig. 15A, the line N-N is positioned so as to generally pass immediately above an insertion port 219. The same applies to the line J-J in Fig. 16A, the line K-K in Fig. 17A, and the line L-L in Fig. 18A.

[0112]

As shown in the examples of Figs. 15A and 15B, the lid 201 preferably has a bent part 204. The bent part 204 is a portion connecting the top lid part 202 and the side wall part 203, and in the example of Figs. 15A and 15B, the bent part 204 and the side wall part 203 are continuously (integrally) formed.

[0113]

(Top lid part)

As illustrated in Fig. 21, the top lid part 202 is a portion that covers the opening 102 of the container 101 in a case where the lid 201 is attached (mount) to the container 101. The shape of the top lid part 202 may be determined according to the shape of the container 101, and examples thereof include a circular shape, an elliptical shape, a triangular shape, a rectangular shape, a polygonal shape, a chamfered shape, and the like.

[0114]

(Bent Part)

The bent part 204 is formed so as to surround the outer peripheral edge of the top lid part 202, and is a portion forming a boundary between the top lid part 202 and the side wall part 203. The bent part 204 is formed such that the side wall part 203 faces a side wall 104 and the edge 103 of the container 101 in a case where the lid 201 is attached to the container 101. In the examples of Figs.

15A to 15B, the bent part 204 has a bent structure, but as will be described later, the bent part 204 is not limited to a case having a bent structure. Furthermore, the "portion forming the boundary between the top lid part 202 and the side wall part 203" includes both a case where the portion itself forms a boundary and a case where a boundary is defined in the inside or an end portion of the portion (a case where a part of the top lid part 202 and/or the side wall part 203 also serves as the bent part 204). The boundary between the top lid part 202 and the side wall part 203 is defined at the center of the bent part 204. In a case where the bent part 204 has a curved structure (for example, Figs. 20A to 20B illustrate an example of a fourth modification of the fourth embodiment to be described later), the bent part 204 is configured by a portion specified in a curved range, and a boundary between the top lid part 202 and the side wall part 203 is defined at substantially the center of the bent part 204.

[0115]

(Side Wall Part)

The side wall part 203 is formed in an annular shape along the outer peripheral end of the top lid part 202.

[0116]

The lid 201 according to the fifth embodiment can be obtained by integrally forming the top lid part 202, the

bent part 204, the side wall part 203, and the top lid part 202 by integrally molding a blank material 250 for forming the lid 201.

[0117]

(Blank Material)

In the lid 201 according to the fifth embodiment, the blank material 250 may be formed in the same manner as the blank material 30 described in the description of the first to fourth embodiments. That is, the blank material 250 is formed of a sheet material including a fiber sheet 260 containing fibers formed of a paper-based material and a resin material. The sheet material has a structure in which a resin material is attached to at least some of the fibers forming the inside of the fiber sheet 260. The resin material may be similar to the resin materials described in the first to fourth embodiments. The fiber sheet 260 may be similar to the fiber sheet 31 described in the first to fourth embodiments.

[0118]

(Contact Portion)

The lid 201 has a contact portion 274 that comes into contact with the container 101 in a state of being fitted to the container 101. The contact portion 274 is formed in a predetermined portion (first contact portion 274A) of the side wall part 203. Moreover, as illustrated

in Fig. 15B, the contact portion 274 is preferably formed in a portion (second contact portion 274B) of the top lid part 202 corresponding to a predetermined region on an opposing surface 273 side. Since the contact portion 274 is formed in a case where the lid 201 is fitted to the container 101, it is possible to suppress the possibility that the contents of the container 101 leak to the outside. The first contact portion 274A is preferably formed generally over the entire circumference of the outer surface end of the edge 103 of the container, and is preferably formed in an annular shape. The second contact portion 274B is preferably formed generally over the entire circumference of the upper end of the edge 103 of the container, and is preferably formed in an annular shape. The first contact portion 274A and the second contact portion 274B may be separated from each other or connected to each other. The same as the contact portion 274 (including the first contact portion 274A and the second contact portion 274B) described in the fifth embodiment applies to the sixth embodiment, the seventh embodiment, and the eighth embodiment (sixth to eighth embodiments) described later.

[0119]

Furthermore, in the examples of Figs. 15A and 15B, a penetrating portion 210 is formed at a predetermined

position of the top lid part 202. An insertion port 219 is formed as the penetrating portion 210. The penetrating portion 210 is formed of a cut portion 208. In the example of Fig. 15, the cut portion 208 is a cross cut. The insertion port 219 and the penetrating portion 210 may be formed in the same manner as the insertion port 19 and the penetrating portion 10 described in the first embodiment. The penetrating portion 210 is a portion that penetrates the top lid part 202 from an exposed surface 272 to the opposing surface 273. As described in the first embodiment, the cross section of the fiber sheet 260 is exposed on a region forming the peripheral surface portion of the penetrating portion 210 (a region similar to the region of the peripheral surface portion 11 described in the first embodiment). Furthermore, at least a part of the resin material is exposed on at least a part of the cross section of the fiber sheet 260 exposed on the peripheral surface portion of the penetrating portion 210. The exposure of the cross section of the fiber sheet 260 and the exposure of the resin material shown in the fifth embodiment are similar in the sixth to eighth embodiments described later.

[0120]

[5-2 Operation and Effect]

In a case where the blank material for forming the

lid having the bent part (the lid having the side wall part, the bent part, and the top lid part) is made of a paper-based material, and in a case where the blank material is shaped into the shape (three-dimensional shape) of the lid, many fine wrinkles, shirring, and the like are generated in the vicinity of the bent part and the side wall part. When the blank material is made of only a paper-based material, a restoring force acts on the fibers constituting the lid after the shaping, and such fine wrinkles and shirring may return to the shape due to the influence of a force applied to the lid in a case where the lid is handled, in a case where the lid is attached to a container, or the like. In this respect, in the lid 201 according to the fifth embodiment, it is possible to suppress the possibility of returning to the shape after the shape deformation (shaping) when the blank material 250 is integrally molded.

[0121]

[5-3 Modification]

(First Modification of Fifth Embodiment)

In the lid 201 according to the fifth embodiment, as illustrated in Figs. 18A, 18B, and the like, the top lid part 202 and the side wall part 203 may be formed of separate members (a first modification of the fifth embodiment). The first modification of the fifth

embodiment includes a case where a part of a member forming the top lid part 202 forms a part of the side wall part 203 and a case where a part of a member forming the side wall part 203 forms a part of the top lid part 202. Figs. 18A and 18B illustrate an example of a case where a part of a member forming the top lid part 202 forms a part of the side wall part 203.

[0122]

As for the lid 201 according to the first modification of the fifth embodiment illustrated in Figs. 18A, 18B, and the like, for example, a top lid part forming member 222 having a first portion 231 for forming the top lid part 202 and a side wall part forming member 223 for forming the side wall part 203 are prepared. A joining margin 230 configured to be able to be joined to the side wall part forming member 223 as a second portion 232 is extended to the outer end portion (outer edge end portion) of the first portion 231 of the top lid part forming member 222. The bent part 204 is formed by joining the top lid part forming member 222 and the side wall part forming member 223 by bonding the joining margin 230 of the top lid part forming member 222 to the upper end portion of the side wall part forming member 223. At this time, the lid 201 is formed. In this case, as the blank material, blank materials (referred to as a first blank material 251 and a

second blank material 252, respectively) for forming the top lid part forming member 222 and the side wall part forming member 223 can be used as illustrated in Figs. 19A, 19B, and the like. As the first blank material 251 for forming the top lid part forming member 222, a sheet material formed in a shape in which the joining margin 230 is matched with the shape of the top lid part 202 may be used. The second blank material 252 has a shape corresponding to the shape of the side wall part 203, and for example, in a case where the side wall part 203 has a shape reduced in diameter or increased in diameter toward the tip, a sheet material formed in a fan shape (formed in a partially fan shape) may be used. The end edges 253 and 253 at both ends of the second blank material 252 can be joined to obtain the side wall part forming member 223 forming the side wall part 203.

[0123]

In the first modification of the fifth embodiment, at least one blank material selected from the group consisting of the first blank material 251 and the second blank material 252 may be formed in the same manner as the blank material 30 described above. That is, at least one blank material selected from the group consisting of the first blank material 251 and the second blank material 252 has the fiber sheet 260 containing fibers formed of a

paper-based material. The resin material is attached to at least some of the fibers forming the inside of the fiber sheet. In the examples of Figs. 18A, 18B, 19A, and 19B, the first blank material and the second blank material have a fiber sheet 260 containing fibers formed of a paper-based material.

[0124]

(Second Modification of Fifth Embodiment)

In the examples of Figs. 15A and 15B, the side wall part 203 is formed to be decreasingly tapered downward (toward the -Z direction) (the cross-sectional inner diameter is decreased (diameter reduction)), but this is a preferred example, and the side wall part 203 may be formed to be increasingly tapered downward (the cross-sectional inner diameter is increased (diameter expansion)). Furthermore, the side wall part 203 may be formed so as not to be increasingly tapered or decreasingly tapered downward (the cross-sectional inner diameter becomes constant), and the side wall part 203 may be formed so as to have a portion that is increasingly tapered or decreasingly tapered downward (a portion where the cross-sectional inner diameter changes) (the second modification of the fifth embodiment). The second modification of the fifth embodiment is similar to the sixth to eighth embodiments described later. Note that the cross section indicates a

cut surface of the side wall part recognized in a case where a state in which the side wall part is cut along a plane with the up-down direction as a normal line is assumed. The cross-sectional inner diameter indicates a diameter on the inner peripheral surface side in a case where the cut surface (cross section) is generally annular. [0125]

(Third Modification of Fifth Embodiment)

The top lid part 202 of the lid 201 according to the fifth embodiment may be configured as described in the second to fourth embodiments (a third modification of the fifth embodiment). Therefore, in the third modification of the fifth embodiment, the top lid part 202 may have a configuration corresponding to the opening forming portion 20 (corresponding to the second embodiment), may have a configuration corresponding to the window portion 40 (corresponding to the third embodiment), may have a configuration corresponding to the raised part 43 (corresponding to the fourth embodiment), or may have a combination of these configurations at the same time. Furthermore, it is not prohibited to provide the lid 201 according to the fifth embodiment with the configurations corresponding to the modifications shown in the first embodiment and the second embodiment. The third modification of the fifth embodiment is similar to the

sixth to eighth embodiments described later. In the lid 201 according to the third modification of the fifth embodiment, the configuration of the insertion port 219 may be omitted.

[0126]

(Fourth Modification of Fifth Embodiment)

In the lid 201 according to the eighth embodiment, as illustrated in Figs. 20A to 20B, the bent part 204 may be configured by a projecting portion 226. Furthermore, a protrusion 225 may be formed at or near an end portion (outer end portion 228B) closer to the side wall part 203 among the end portions (Inner end portion 228A and outer end portion 228B) of the projecting portion 226.

[0127]

(Projecting Portion)

In an example of the lid 201 according to the modification of the eighth embodiment illustrated in Figs. 20A and 20B, the projecting portion 226 is formed as a structure in which a predetermined region on the outer peripheral end side of the top lid part 202 protrudes obliquely upward (projecting structure), but the projecting direction of the projecting portion 226 may be the upward direction or the lateral direction (planar direction of the top lid part 202). Furthermore, an inner surface 226A side of the projecting portion 226 is an immersed portion

(immersion portion 227). The shape of the immersion portion 227 is a shape corresponding to the shape of the projecting portion 26. This can be realized according to the shape of the mold when the lid 201 is formed from the blank material 250. The size of the immersion portion 227 is preferably such a size that the edge 103 of the container 101 can be fitted. In a case where the size of the immersion portion 227 is such a size, and the lid 201 is used as the container with a lid 150, the edge 103 generally enters the immersion portion 227, it is possible to bring an outer end portion of the edge 103 (an outer peripheral surface portion 111 of the edge 103 in the example of Fig. 20) into surface contact with the immersion portion 227, and it is easy to firmly attach the lid 201 at the edge 103 of the container 101.

[0128]

(Protrusion)

As illustrated in the examples of Figs. 20A to 20B, a protrusion 225 may be formed on the side wall part 203. For example, the protrusion 225 is defined as a portion protruding inward (center CT direction, direction from the outer peripheral surface 203B of the side wall part 203 toward the inner peripheral surface 203A) at a predetermined position of the side wall part 203. The protrusion 225 is preferably a protrusion formed in a strip

shape so as to go around the inner peripheral surface of the side wall part 203. The protruding structure of the protrusion 225 may be formed on the inner peripheral surface side of the side wall part 203, and a recess 224 may be formed at a position corresponding to the position where the protruding structure is formed on the outer peripheral surface 203B side of the side wall part 203. By forming such a structure, the shape of the side wall part 203 can be further stabilized.

[0129]

[6 Sixth Embodiment]

[6-1 Configuration]

As illustrated in Figs. 16A and 16B, a lid 201 according to the sixth embodiment is similar to that of the fifth embodiment in that the lid has a top lid part 202 and a side wall part 203 and can be fitted to a container. A lid 201A according to the sixth embodiment has a configuration in which a part of the side wall part 203 extends to the upper side and the lower side of the top lid part 202. The side wall part 203 has an annular (including tubular) shape and includes an upper wall 205 and a lower wall 206. The lower wall 206 is a portion extending downward of the top lid part 202, and the upper wall 205 is configured by a portion of the side wall part 203 excluding the lower wall 206. In the example of Figs. 16A and 16B,

the side wall part 203 is formed to be tapered downward. Furthermore, in the example of Figs. 16A and 16B, the penetrating portion 210 is formed at a predetermined position of the top lid part 202, but this is an example.

[0130]

(Members forming Top lid part and Side Wall Part)

In the sixth embodiment, as shown in the first modification of the fifth embodiment, the top lid part 202 and the side wall part 203 are formed of separate members. In the example of Figs. 16A and 16B, the lid 201 includes the top lid part forming member 222 and the side wall part forming member 223 as the above-described separate members, and includes a joining portion that joins the top lid part forming member 222 and the side wall part forming member 223.

[0131]

(Top lid part Forming Member)

The top lid part forming member 222 has a first portion (the first portion 231 of the top lid part forming member 222) corresponding to the top lid part 202 and a second portion (the second portion 232 of the top lid part forming member 222) extending from an outer peripheral end of the first portion 231, and the second portion 232 is the joining margin 230 shown in the first modification of the fifth embodiment. In the example of Fig. 16A, the second

portion 232 of the top lid part forming member 222 is a portion (rising portion) rising diagonally upward or immediately upward from the outer peripheral end of the first portion 231 in the state of the lid 201, and the second portion 232 is a part of the side wall part 203 in a state where the second portion 232 is joined to the side wall part forming member 223.

[0132]

(Side Wall Part Forming Member)

The side wall part forming member 223 is formed in an annular (including tubular) shape, and has a portion (upper forming portion) forming the upper wall 205 and a portion (lower forming portion) forming the lower wall 206. The upper forming portion has a portion (first contact wall portion 233) that is in contact with the joining margin 230 to be the second portion 232 of the top lid part forming member 222 at least on the outer surface side.

[0133]

In the example of Figs. 16A and 16B, the upper wall 205 (upper forming portion) includes the first contact wall portion 233, a portion (second contact wall portion 234) that is in contact with the joining margin 230 to be the second portion 232 of the top lid part forming member 222 on the inner surface side, and a continuous portion 235 that further connects the first contact wall portion 233

and the second contact wall portion 234, and the continuous portion 235 covers the upper end surface of the joining margin 230 to be the second portion of the top lid part forming member 222. The lower end of the second contact wall portion 234 is located on the upper surface side of the first portion 231 of the top lid part forming member 222, and is slightly separated from the first portion 231 in the example of Figs. 16A and 16B. However, this is merely an example, and the lower end of the second contact wall portion 234 may be in contact with the upper surface side of the first portion 231 of the top lid part forming member 222.

[0134]

In the example of Figs. 16A and 16B, the lower wall 206 (lower forming portion) is a portion extending downward (obliquely downward direction in Figs. 16A and 16B) with the lower end of the first contact wall portion 233 as a base end. For example, the lower wall 206 (lower forming portion) is preferably positioned below the lower surface of the first portion 231 of the top lid part forming member 222 with respect to the position in the up-down direction.

[0135]

(Blank Material)

The lid 201 according to the sixth embodiment can be formed by processing a blank material. As the blank

material, a blank material (as described above in the first modification of the fifth embodiment, the first blank material and the second blank material are referred to as a first blank material and a second blank material, respectively) for forming the top lid part forming member 222 and the side wall part forming member 223 can be used. At least one blank material selected from the group consisting of the first blank material and the second blank material may be formed in the same manner as the above-described blank material 30 as described above in the first modification of the fifth embodiment.

[0136]

As the first blank material for forming the top lid part forming member 222, the same one as the first blank material 251 described above in the first modification of the fifth embodiment may be used, and a sheet material formed in a shape in which the joining margin 230 is further combined with the shape of the top lid part 202 may be used. The top lid part forming member 222 preferably forms the first portion 231 corresponding to the top lid part 202 and the rising portion (the second portion 232 serving as a joining margin) by bending and molding the first blank material. That is, the second portion 232 is preferably formed by bending the first blank material upward at the position of the peripheral edge of the first

portion 231 (the base end of the joining margin 230).

[0137]

As the second blank material, the same one as the second blank material 252 described above in the first modification of the fifth embodiment may be used, and a sheet material formed in a fan shape may be used. A portion on the upper end side of the annular body, which forms the annular body by joining the end edges of the second blank material, is folded inward at a position corresponding to the continuous portion 235, so that the first contact wall portion 233, the second contact wall portion 234, and the continuous portion 235 can be formed, an upper forming portion (structural portion corresponding to the upper wall 205) can be formed, and a lower forming portion (structural portion corresponding to the lower wall 206) can be formed. The side wall part forming member 223 is formed by forming the upper forming portion and the lower forming portion. Note that at least the first contact wall portion 233 and the second contact wall portion 234 are bonded to the joining margin 230. In the example of Fig. 16B, the first contact wall portion 233, the second contact wall portion 234, and the continuous portion 235 are bonded to the joining margin 230 to form a bonded portion.

[0138]

Note that, in the production of the lid 201, it is preferable to use the above-described annular body formed of the second blank material. The lower end of the joining margin 230 (second portion 232) of the top lid part forming member 222 is aligned with a boundary position between the lower forming portion and the upper forming portion (a boundary position between an upper wall 2505 and the lower wall 206) on the inner peripheral surface of the annular body, and the joining margin 230 faces the inner peripheral surface of the annular body. Moreover, as described above, the joining margin 230 is covered from the upper end side by folding back the portion on the upper end side of the annular body inward at the position corresponding to the continuous portion 235 in the annular body. Then, the joining margin 230 is joined to the annular body to be the side wall part forming member 223 so as to be sandwiched between the first contact wall portion 233 and the second contact wall portion 234. Therefore, the side wall part forming member 223 is formed, and the lid 201 is obtained.

[0139]

[6-2 Operation and Effect]

In the lid 201 according to the sixth embodiment, as in the fifth embodiment, it is possible to suppress the possibility of returning to the shape after the shape deformation (shaping) when the lid 201 is obtained by

manufacturing the top lid part forming member 222 and the side wall part forming member 223 from the blank material (first blank material, second blank material).

[0140]

[7 Seventh Embodiment]

[7-1 Configuration]

As illustrated in Figs. 17A and 17B, a lid 201 according to the seventh embodiment is similar to that of the fifth embodiment in that the lid has a top lid part 202 and a side wall part 203 and can be fitted to a container. The lid 201 according to the seventh embodiment has a configuration in which a part of the side wall part 203 extends to the upper side and the lower side of the top lid part 202. The side wall part 203 has an annular (including tubular) shape and includes an upper wall 205 and a lower wall 206. The lower wall 206 is a portion extending downward of the top lid part 202, and the upper wall 205 is configured by a portion of the side wall part 203 excluding the lower wall 206. In the example of Figs. 17A and 17B, the side wall part 203 is formed to be tapered downward. Furthermore, in the example of Figs. 17A and 17B, the penetrating portion 210 is formed at a predetermined position of the top lid part 202, but this is an example.

[0141]

(Members forming Top lid part and Side Wall Part)

In the seventh embodiment, as shown in the first modification of the fifth embodiment and the sixth embodiment, the top lid part 202 and the side wall part 203 are formed as separate members. In the example of Figs. 17A and 17B, the lid 201 includes the top lid part forming member 222 and the side wall part forming member 223 as the above-described separate members, and includes a joining portion that joins the top lid part forming member 222 and the side wall part forming member 223.

[0142]

(Top lid part Forming Member)

The top lid part forming member 222 has a first portion (the first portion 231 of the top lid part forming member 222) corresponding to the top lid part 202 and a second portion (the second portion 232 of the top lid part forming member 222) extending from an outer peripheral end of the first portion 231, and the second portion 232 is the joining margin 230 shown in the first modification of the fifth embodiment. In the example of Fig. 16A, the second portion of the top lid part forming member 222 is a portion (hanging portion) extending obliquely downward or downward from the outer peripheral end of the first portion 231, and in a state where the second portion 232 is joined to the side wall part forming member 223, the second portion 232 is a part of the side wall part 203.

[0143]

(Side Wall Part Forming Member)

The side wall part forming member 223 is formed in an annular (including tubular) shape, and has a portion (upper forming portion) forming the upper wall 205 and a portion (lower forming portion) forming the lower wall 206. The lower forming portion has a portion (lower first contact wall portion 237) that is in contact with the joining margin 230 to be the second portion 232 of the top lid part forming member 222 at least on the outer surface side.

[0144]

In the example of Figs. 17A and 17B, the lower forming portion includes the lower first contact wall portion 237, a portion (lower second contact wall portion 238) that is in contact on the inner surface side with the joining margin 230 to be the second portion 232 of the top lid part forming member 222, and a lower end side continuous portion 239 that further connects the lower first contact wall portion 237 and the lower second contact wall portion 238, and the lower end side continuous portion 239 covers the lower end surface of the joining margin 230 to be the second portion 232 of the top lid part forming member 222. The upper end of the lower second contact wall portion 238 is positioned on the lower surface (opposing

surface 273) side of the first portion 231 of the top lid part forming member 222, and is preferably separated from the first portion 231 in the example of Figs. 17A and 17B. Preferably, it is possible for the edge 103 of the container 101 (for example, a part of the outer peripheral surface of the curled portion) to enter between the first portion and the upper end of the lower second contact wall portion 238.

[0145]

In the example of Figs. 17A and 17B, the upper wall 205 (upper forming portion) is a portion extending upward (in Fig. 17B, the obliquely upward direction) with the upper end of the lower first contact wall portion 237 as a base end. For example, the upper wall 205 (upper forming portion) is preferably positioned above the upper surface of the first portion 231 of the top lid part forming member 222 with respect to the position in the up-down direction. As shown in the example of Figs. 17A and 17B, it is preferable that a curled portion (side wall upper end curled portion 236) be formed on the upper end side of the upper forming portion. In this case, it is possible to suppress a state in which the end surface of the blank material (the second blank material for forming the side wall part forming member 223) is exposed from being formed at the upper end of the upper forming portion, and even in

a case where the user puts the mouth on the end surface of the blank material and takes in the content in the container 101, it is possible to suppress the discomfort caused by the user bringing the mouth into contact with the end surface of the blank. Furthermore, since the side wall upper end curled portion 236 is formed, the liquid is less likely to come into contact with the portion of the side wall part 203 corresponding to the end surface of the blank material.

[0146]

(Blank Material)

The lid 201 according to the seventh embodiment can be formed by processing a blank material. As the blank material, a blank material (as described above in the first modification of the fifth embodiment, the first blank material and the second blank material are referred to as a first blank material and a second blank material, respectively) for forming the top lid part forming member 222 and the side wall part forming member 223 can be used. At least one blank material selected from the group consisting of the first blank material and the second blank material may be formed in the same manner as the above-described blank material 30 as described above in the first modification of the fifth embodiment.

[0147]

As the first blank material for forming the top lid part forming member 222, the same one as the first blank material 251 described above in the first modification of the fifth embodiment may be used, and a sheet material formed in a shape in which the joining margin 230 is further combined with the shape of the top lid part 202 may be used. The top lid part forming member 222 preferably forms the first portion 231 corresponding to the top lid part 202 and the second portion 232 serving as the joining margin 230 by bending and molding the first blank material. That is, the second portion 232 is preferably formed by bending the first blank material downward at the position of the peripheral edge of the first portion 231.

[0148]

As the second blank material, the same one as the second blank material 252 described above in the first modification of the fifth embodiment may be used, and a sheet material formed in a fan shape may be used. The lower end side portion of the annular body, which forms the annular body by joining the end edges of the second blank material, is folded inward at a position corresponding to the lower end side continuous portion 239, so that the lower first contact wall portion 237, the lower second contact wall portion 238, and the lower end side continuous portion 239 can be formed, the lower forming portion (lower

wall 206) can be formed, and the upper forming portion (upper wall 205) can be further formed. The side wall part forming member 223 is formed by forming the lower forming portion and the upper forming portion.

[0149]

Note that, in the production of the lid 201, it is preferable to use the above-described annular body formed of the second blank material. The upper end of the joining margin 230 (second portion 232) of the top lid part forming member 222 is aligned with a boundary position between the lower forming portion and the upper forming portion (a boundary position between an upper wall 205 and the lower wall 206) on the inner peripheral surface of the annular body, and the joining margin 230 faces the inner peripheral surface of the annular body. Moreover, as described above, the joining margin 230 is covered from the lower end side by folding back the portion on the lower end side of the annular body inward at the position corresponding to the lower end side continuous portion 239 in the annular body. Then, the joining margin 230 is joined (bonded) to the lower forming portion (annular body forming the side wall part forming member 223) so as to be sandwiched between the lower first contact wall portion 237 and the lower second contact wall portion 238. Therefore, the side wall part forming member 223 is formed, and the lid 201 is obtained.

[0150]

[7-2 Operation and Effect]

In the lid 201 according to the seventh embodiment, as in the fifth embodiment, it is possible to suppress the possibility of returning to the shape after the shape deformation (shaping) when the lid 201 is obtained by manufacturing the top lid part forming member 222 and the side wall part forming member 223 from the blank material (first blank material, second blank material).

[0151]

[5 Application Example]

(First Example)

The lid 1 according to the first embodiment can be used for the container with a lid 150, for example, as illustrated in Figs. 14A and 14B. Fig. 14A is a perspective view illustrating an example in which the lid 1 according to the first embodiment is joined to the edge 103 forming the outer periphery of the opening 102 of the container 101 having the opening 102 formed at the upper end so as to bring the lid 1 into contact with the container 101 (the edge 103 and the opposing surface portion are brought into contact). Fig. 14B is a cross-sectional view schematically illustrating a state of a longitudinal cross section taken along line I-I in Fig. 14A. The container with a lid 150 will be continuously

described with reference to Figs. 14A and 14B.

[0152]

(Container with a Lid)

The container with a lid 150 has a joining portion 151 where the container 101 and the lid 1 are joined, and a region of the lid 1 forming the joining portion 151 is a joining region R. A method for joining the lid 1 and the container 101 is not particularly limited, and can be appropriately used with a joining method such as a pressure bonding method or a heat sealing method (heat sealing). Hereinafter, a case where the lid 1 according to the first embodiment is used for the container with a lid 150 will be described as an example.

[0153]

In the example illustrated in Figs. 14A and 14B, the container 101 includes: a container body 110 having a cylindrical side wall 104 and a bottom portion 107, the cylindrical side wall having a diameter increasing in the upward direction (decreasingly tapered in the downward direction), and forming a space 105 therein; and an opening 102 opened at an upper end of the container body 110 (an upper end of the side wall 104). Although not illustrated, the opening 102 of the container 101 is formed in a circular shape. However, the container 101 illustrated here is an example, and the configuration of the container

101 is not limited. For example, the container 101 may have the opening 102 formed in a rectangular shape. The container 101 may be any container as long as the opening 102 can be covered with the lid 1. Furthermore, a material to be stored in the inside (space 105) of the container 101 is not particularly limited, and for example, a liquid material, a solid material, or a combination thereof can be exemplified.

[0154]

In the container illustrated in Figs. 14A and 14B, the edge 103 forming the opening 102 (surrounding the opening 102) has a flange portion. The flange portion formed on the edge 103 may be a curled portion 108 in which a member forming the container body 110 is wound outward as illustrated in Figs. 14A, 14B, and the like, or may be formed as a portion (flange portion) extending on a plane in the outer direction.

[0155]

Furthermore, the lid 1 according to the first embodiment may be combined with the container 101 having the opening 102.

[0156]

(Second Example)

The lid 1 according to the fifth embodiment can be used for a container 350 with a lid, for example, as

illustrated in Fig. 21. Fig. 21 is a cross-sectional view illustrating an example in which the lid 1 according to the fifth embodiment is fitted to the edge 103 forming the outer periphery of the opening 102 of the container 101 having the opening 102 formed on the upper end so as to bring the lid 1 into contact with the container 101 (the edge 103 and the portion of the top lid part 202 are brought into contact).

[0157]

The container 350 with a lid can be obtained by fitting the lid 201 to the edge 103 so as to cover the opening 102 of the container 101.

[0158]

Furthermore, the lid 1 according to the fifth embodiment may be combined with the container 101 having the opening 102.

[0159]

What is shown in (First Example) of [5 Application Example] described above is not limited to the case of using the lid 1 according to the first embodiment.

Similarly to the lid 1 according to the first embodiment, the second embodiment to the fourth embodiment can also be used for the container with a lid 150 joined to the container 101 (not illustrated).

[0160]

What is shown in (Second Example) of [5 Application Example] described above is not limited to the case of using the lid 1 according to the fifth embodiment. Similarly to the lid 201 according to the fifth embodiment, the sixth to eighth embodiments can also be used for the container 350 with a lid joined to the container 101 (not illustrated).

[0161]

As described above, the lid bodies 1, 201 and the like according to the present invention can be applied to the lid bodies 1, 201 and the like of such many aspects. Furthermore, the present invention can also be applied to the lid bodies 1, 201 and the like of aspects other than those described above. Although the lid according to the present invention has been described in detail above, the above description is merely an example of the lid according to the present invention, and the lid is not limited thereto. Therefore, the present invention may be appropriately modified without departing from the gist of the present invention. Furthermore, in the above-described configuration of the lid, the configurations of the lid bodies of the respective examples may be independently used, or the configurations of the lid bodies of the respective examples may be appropriately combined and applied.

[0162]

Based on the above description of the present specification, the present invention may adopt the following configurations [E1] to [E22].

[0163]

[E1] A lid that is formed so as to be contactable with a container having an edge, and is formed of a blank material, in which the blank material includes a fiber sheet including fibers formed of a paper-based material, and a resin material is attached to at least some of the fibers forming an inside of the fiber sheet.

[E2] The lid according to [E1], including: a joining region corresponding portion that corresponds to a region joined to the container along the edge of the container; and a lid region corresponding portion that is configured by a portion inside the joining region corresponding portion, in which the resin material is attached to at least some of the fibers forming an inside of the fiber sheet at least in a portion corresponding to the joining region corresponding portion.

[E3] The lid according to [E1] or [E2], including: a penetrating portion that is cut from one surface to an other surface of the blank material, in which a cross section of the fiber sheet is exposed on a peripheral surface portion of the penetrating portion, and the resin

material is exposed on at least a part of the cross section.

[E4] The lid according to [E3], including: an inclined portion that has the peripheral surface portion of the penetrating portion as an end portion and inclined upward in a direction away from the end portion.

[E5] The lid according to [E3] or [E4], in which a density of the fibers constituting the fiber sheet in the inclined portion is higher at a position closer to the end portion of the inclined portion.

[E6] The lid according to any one of "[E3] to [E5]" dependent on [E2], in which the lid region corresponding portion is provided with a weakened portion that guides a division position in the lid region corresponding portion, and the weakened portion includes a plurality of the penetrating portions and at least one continuous portion formed between at least two of the penetrating portions.

[E7] The lid according to [E7], in which the continuous portion has a half-cut structure.

[E8] The lid according to [E6] or [E7], in which the weakened portion radially forms the plurality of penetrating portions around the continuous portion.

[E9] The lid according to any one of "[E3] to [E8]" dependent on [E2], in which the lid region corresponding portion includes a base portion having a small opening

having an opening area smaller than an opening surrounded by the edge of the container, a small lid portion that opens and closes the small opening, and a hinge portion that connects the base portion and the small lid portion, the small lid portion is configured to be rotatable with respect to the base portion with the hinge portion as an axis, and at least a part of the penetrating portion is formed at a boundary position between an outer peripheral edge of the small lid portion and the opening edge of the small opening.

[E10] The lid according to [E9], in which a knob portion is provided on an upper surface side of the small lid portion.

[E11] The lid according to [E10], in which the knob portion includes a tab member, and the tab member is joined to the upper surface side of the small lid portion.

[E12] The lid according to any one of [E9] to [E11], including: a holding structure that holds the small lid portion in a state where the small opening is opened by rotating the small lid portion with respect to the base portion with the hinge portion as an axis.

[E13] The lid according to any one of [E9] to [E12], in which an extending portion is formed on an outer peripheral edge of the base portion, and the base portion and the extending portion are integrally formed of the

blank material.

[E14] The lid according to [E13], in which the hinge portion is formed between the extending portion and a tip of the small lid portion.

[E15] The lid according to [E9], including: a holding structure that holds the small lid portion in a state where the small opening is opened by rotating the small lid portion with respect to the base portion with the hinge portion as an axis, in which a knob portion is provided on an upper surface side of the small lid portion, the knob portion is provided with a claw portion, an extending portion is formed on an outer peripheral edge of the base portion, and the extending portion and the receiving portion form the holding structure.

[E16] The lid according to any one of [E1] to [E15], in which a raised part is formed.

[E17] The lid according to any one of [E1] to [E16], in which a window portion is formed.

[E18] The lid according to any one of [E1] to [E17], in which at least a part of the resin material is impregnated between at least a part of the fibers.

[E19] The lid according to any one of [E1] to [E18], in which the lid is able to be joined and/or fitted to the container having the edge.

[E20] A container with a lid, including: the lid

according to any one of [E1] to [E19]; and the container having the edge, in which the lid is joined to the container.

[E21] A combination of a lid and a container, including: the lid according to any one of [E1] to [E19]; and the container having the edge.

[E22] A method for manufacturing a lid, the method including: an immersion step of immersing a fiber sheet in an immersion liquid containing a resin material; and a drying step of drying the fiber sheet containing the immersion liquid.

[E23] The method for manufacturing a lid according to [E22], in which a shaping process of shaping the fiber sheet containing the immersion liquid is performed in a middle of the drying step or before the drying step.

Reference Signs List

[0164]

- 1 lid
- 2 base portion
- 2A outer peripheral edge
- 3 small lid portion
- 3A outer peripheral edge
- 4 hinge portion
- 5A joining region corresponding portion

5B	lid region corresponding portion
5C	lid region non-forming portion
6	small opening
6A	opening edge
7	extending portion
7A	outer peripheral edge
8	cut portion
10	penetrating portion
11	peripheral surface portion
12	end portion
13	inclined portion
13A	end portion
14	weakened portion
15	continuous portion
16	half-cut portion
17	connection structure
19	input port
20	opening forming portion
21	knob portion
22	tab member
22A	one end portion
22B	other end portion
23	tab joining portion
24	claw portion
25	receiving portion

26 projecting portion
30 blank material
31 fiber sheet
31A fiber
32 resin material
40 window portion
41 lid inner opening
42 window sheet
43 raised part
43A tip portion
44 depressed portion
46 bonded portion
50 outer peripheral edge
72 exposed surface
73 opposing surface
74 base end portion
75 front end edge
101 container
102 opening
103 edge
104 side wall
105 space
107 bottom portion
108 curled portion
110 container body

111 outer peripheral surface portion
150 container with a lid
151 joining portion
201 lid
202 top lid part
203 side wall part
203A inner peripheral surface
203B outer peripheral surface
204 bent part
205 upper wall
206 lower wall
208 cut portion
210 penetrating portion
219 input port
222 top lid part forming member
223 side wall part forming member
224 recess
225 protrusion
226 projecting portion
226A inner surface
227 immersion portion
228A inner end portion
228B outer end portion
230 joining margin
231 first portion

232	second portion
233	first contact wall portion
234	second contact wall portion
235	continuous portion
236	side wall upper end curled portion
237	lower first contact wall portion
238	lower second contact wall portion
239	lower end side continuous portion
250	blank material
251	first blank material
252	second blank material
253	end edge
260	fiber sheet
272	exposed surface
273	opposing surface
274	contact portion
274A	first contact portion
274B	second contact portion
350	container with a lid
2505	upper wall
CT	center
D1	extension distance
D2	separation distance
F1	arrow
R	joining region

CLAIMS

1. A lid that is formed so as to be contactable with a container having an edge, and is formed of a blank material, wherein

the blank material includes a fiber sheet including fibers formed of a paper-based material, and

a resin material is attached to at least some of the fibers forming an inside of the fiber sheet.

2. The lid according to claim 1, comprising:

a joining region corresponding portion that corresponds to a region joined to the container along the edge of the container; and

a lid region corresponding portion that is configured by a portion inside the joining region corresponding portion, wherein

the resin material is attached to at least some of the fibers forming an inside of the fiber sheet at least in a portion corresponding to the joining region corresponding portion.

3. The lid according to claim 2, comprising:

a penetrating portion that is cut from one surface to an other surface of the blank material, wherein

a cross section of the fiber sheet is exposed on a peripheral surface portion of the penetrating portion, and the resin material is exposed on at least a part of the cross section.

4. The lid according to claim 3, comprising:

an inclined portion that has the peripheral surface portion of the penetrating portion as an end portion and inclined upward in a direction away from the end portion.

5. The lid according to claim 4, wherein

a density of the fibers constituting the fiber sheet in the inclined portion is higher at a position closer to the end portion of the inclined portion.

6. The lid according to claim 3, wherein

the lid region corresponding portion is provided with a weakened portion that guides a division position in the lid region corresponding portion, and

the weakened portion includes a plurality of the penetrating portions and at least one continuous portion formed between at least two of the penetrating portions.

7. The lid according to claim 6, wherein

the continuous portion has a half-cut structure.

8. The lid according to claim 6, wherein
the weakened portion radially forms the plurality of
penetrating portions around the continuous portion.

9. The lid according to claim 3, wherein
the lid region corresponding portion includes a base
portion having a small opening having an opening area
smaller than an opening surrounded by the edge of the
container, a small lid portion that opens and closes the
small opening, and a hinge portion that connects the base
portion and the small lid portion,

the small lid portion is configured to be rotatable
with respect to the base portion with the hinge portion as
an axis, and

at least a part of the penetrating portion is formed
at a boundary position between an outer peripheral edge of
the small lid portion and an opening edge of the small
opening.

10. The lid according to claim 9, wherein
a knob portion is provided on an upper surface side
of the small lid portion.

11. The lid according to claim 10, wherein

the knob portion includes a tab member, and
the tab member is joined to the upper surface side
of the small lid portion.

12. The lid according to claim 9, comprising:

a holding structure that holds the small lid portion
in a state where the small opening is opened by rotating
the small lid portion with respect to the base portion with
the hinge portion as an axis.

13. The lid according to claim 9, wherein

an extending portion is formed on an outer
peripheral edge of the base portion, and

the base portion and the extending portion are
integrally formed of the blank material.

14. The lid according to claim 13, wherein

the hinge portion is formed between the extending
portion and a tip of the small lid portion.

15. The lid according to claim 9, comprising:

a holding structure that holds the small lid portion
in a state where the small opening is opened by rotating
the small lid portion with respect to the base portion with
the hinge portion as an axis, wherein

a knob portion is provided on an upper surface side of the small lid portion,

the knob portion is provided with a claw portion,

an extending portion is formed on an outer peripheral edge of the base portion, and

the extending portion and the claw portion form the holding structure.

16. The lid according to claim 1, wherein a raised part is formed.

17. The lid according to claim 1, wherein at least a part of the resin material is impregnated between at least a part of the fibers.

18. A container with a lid, comprising:
the lid according to claim 1; and
the container having the portion, wherein the lid is joined to the container.

19. A combination of a lid and a container, comprising:
the lid according to claim 1; and
the container having the edge.

20. A method for manufacturing a lid, the method

comprising:

an immersion step of immersing a fiber sheet in an immersion liquid containing a resin material; and

a drying step of drying the fiber sheet containing the immersion liquid.

21. The method for manufacturing a lid according to claim 20, wherein

a shaping process of shaping the fiber sheet containing the immersion liquid is performed in a middle of the drying step or before the drying step.