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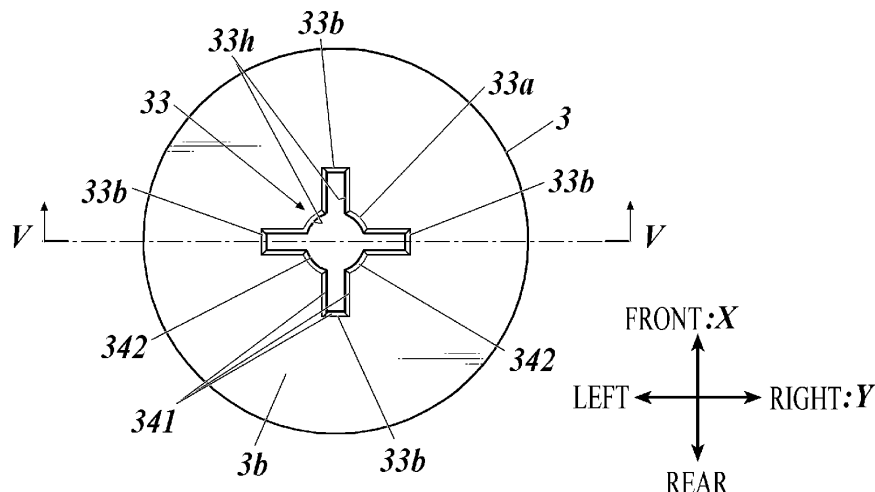
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(54) **SANITARY TISSUE PAPER STORAGE CONTAINER**

(57) A dispensing section 3 provided in this sanitary tissue paper storage container 100 is provided with a dispensing opening 33 through which sanitary tissue paper passes, and which holds the edge of the sanitary tissue paper that protrudes from the top surface of the dispensing section 3. The dispensing opening 33 includes: a roughly circular small opening 33a; and a plu-

rality of slits 33b that are formed radially outward from the small opening 33a. The lower edge of the dispensing opening 33 is provided with chamfer sections (first chamfer section 341, second chamfer section 342). Due to the foregoing, the sanitary tissue paper can be reliably held while enabling the sanitary tissue paper to be dispensed with ease.

FIG. 4



Description**Technical Field**

5 **[0001]** The present invention relates to a sanitary tissue paper storage container to store sanitary tissue paper such as wet sheets and wet tissues.

Background Art

10 **[0002]** There have been conventionally known sanitary tissue paper storage containers to store sanitary tissue paper for wiping floors and toilets in houses, human bodies, or the like.

15 **[0003]** As a sanitary tissue paper storage container, there has been known a sanitary tissue paper storage container that is configured to be a storage container in which a separate stopper is provided to a lid that is attached to the top of a bottle-shaped container and an outlet is formed in the stopper, and when the sanitary tissue paper stored in the storage container is taken out, resistance is applied to the sanitary tissue paper by the opening shape of the outlet, and the sanitary tissue paper is separated by perforations provided in the sanitary tissue paper (see, for example, Patent Document 1).

20 **[0004]** Patent documents 2 and 3 disclose technologies to make the stopper with the outlet relatively thick-walled using an elastic material with elasticity, and to make the stopper thinner toward the outlet.

Citation List**Patent Literatures**

25 **[0005]**

[Patent Document 1] JP 5850521 B

[Patent Document 2] JP H3-11889 U

[Patent Document 3] JP 2012-192962 A

Summary of Invention**Technical Problem**

35 **[0006]** In such a sanitary tissue paper storage container, in order to enable continuous use of sanitary tissue paper, when a sheet of the sanitary tissue paper is cut off along perforations, the subsequent sheet of the sanitary tissue paper needs to be held with the end thereof protruding from the outlet, without falling into the container.

40 **[0007]** However, when a higher resistance is applied to the sanitary tissue paper by the outlet in order to secure a sufficient holding function, the protruding length from the outlet of the end of the subsequent sheet of sanitary tissue paper is excessively short and taking out the subsequent sheet becomes difficult in some cases.

45 **[0008]** Furthermore, as shown in FIG. 9, when the sanitary tissue paper is taken out from the storage container, the sanitary tissue paper P contacts the edge of the outlet 330a of the stopper 330. If this edge is angular or if burrs remain on the edge, the edge may get caught in the perforation or the surface texture of the sanitary tissue paper, causing the sanitary tissue paper to be partially overloaded or to break off from there.

50 **[0009]** An object of the present invention is to provide a sanitary tissue paper storage container that achieves both of reliability of holding the sanitary tissue paper in the outlet and easiness of operation of taking out the sanitary tissue paper.

Solution to Problem

55 **[0010]** In order to achieve the object, according to the invention recited in claim 1, there is provided a sanitary tissue paper storage container including: a container body inside which sanitary tissue paper is stored; and a lid that is detachably attached to the container body and that has an outlet portion to take out the sanitary tissue paper stored in the container body, wherein the outlet portion includes an outlet through which the sanitary tissue paper is inserted and which holds an end of the sanitary tissue paper protruding from an upper surface of the outlet portion, the outlet includes a small hole that is nearly circular and multiple slits that are formed radially around the small hole, and a first chamfered portion is provided to a slit among the slits, the first chamfered portion being a corner that is chamfered, and the corner being formed by a hole wall of the slit and a lower surface of the outlet portion.

[0011] With the sanitary tissue paper storage container of this configuration, since a chamfered portion is provided to

the lower edge of the outlet which has a nearly circular small hole and multiple slits, it is possible to achieve both of reliability of holding the sanitary tissue paper and easiness of operation of taking out the sanitary tissue paper.

[0012] According to the invention recited in claim 2, there is provided the sanitary tissue paper storage container according to claim 1, wherein a second chamfered portion is provided to the small hole, the second chamfered portion being a corner that is chamfered, and the corner being formed by a hole wall of the small hole and the lower surface of the outlet portion.

[0013] According to the invention recited in claim 3, there is provided the sanitary tissue paper storage container according to claim 1 or 2, wherein the first chamfered portion is a flat chamfered portion in which the hole wall is chamfered to be a flat face, or the first chamfered portion is a curved chamfered portion in which the hole wall is chamfered to be a convex curved face.

[0014] According to the invention recited in claim 4, there is provided the sanitary tissue paper storage container according to claim 2 or 3, wherein the second chamfered portion is a flat chamfered portion in which the hole wall is chamfered to be a flat face, or the second chamfered portion is a curved chamfered portion in which the hole wall is chamfered to be a convex curved face.

[0015] According to the invention recited in claim 5, there is provided the sanitary tissue paper storage container according to any one of claims 1 to 4, wherein the lid includes a hole portion in an upper surface, and the outlet portion includes a narrow portion that is provided on a lateral surface, and an edge of the hole portion is fitted to the narrow portion to attach the outlet portion to the lid.

Advantageous Effects of Invention

[0016] According to the present invention, it is possible to obtain a sanitary tissue paper storage container that achieves both of reliability of holding the sanitary tissue paper in the outlet and easiness of operation of taking out the sanitary tissue paper.

Brief Description of Drawings

[0017]

FIG. 1 is a perspective view of a sanitary tissue paper storage container according to an embodiment.

FIG. 2 is a cross-sectional view in the II-II line of FIG. 1.

FIG. 3 is a perspective view of an outlet portion of the sanitary tissue paper storage container according to the embodiment.

FIG. 4 is a bottom view of the outlet portion.

FIG. 5 is a cross-sectional view in the V-V line of FIG. 4.

FIG. 6 is a view for explaining the shape of a chamfered portion, and is a cross-sectional view in the VI-VI line of FIG. 5.

FIG. 7 is a view for explaining the shape of a chamfered portion.

FIG. 8 is a bottom view of the outlet portion, showing a modification example of the outlet.

FIG. 9 is an explanation view showing the state when the sanitary tissue paper is taken out from the conventional storage container.

Description of Embodiments

[0018] The following is a detailed description of an embodiment of the sanitary tissue paper storage container according to the present invention with reference to the drawings. Though the embodiments described below are provided with various limitations that are technically desirable for implementing the present invention, the scope of the present invention is not limited to the following embodiment and illustrated examples.

[0019] In the following description, the front-rear direction, left-right direction and up-down direction, and the X-axis, Y-axis and Z-axis are defined as shown in FIG. 1. That is, in a sanitary tissue paper storage container 100, the side on which the sanitary tissue paper is taken out and the side opposite thereto are respectively referred to as up and down, the front side in a plan view of the sanitary tissue paper storage container 100 and the side opposite thereto are respectively referred to as front and rear, the right side when the front surface of the container is viewed from the front side is referred to as right, the left side when the front surface of the container is viewed from the front side is referred to as left, the axis along the front-rear direction is referred to as the X-axis, the axis along the left-right direction is referred to as the Y-axis, and the axis along the up-down direction is referred to as the Z-axis.

<Configuration of Embodiment>

(Entire Configuration)

- 5 **[0020]** As shown in FIG. 1, the sanitary tissue paper storage container 100 includes: a container body 1 inside which sanitary tissue paper (for example, roll paper such as a wet sheet or a wet tissue wound into a roll) is stored; a lid 2 that is detachably attached to the container body 1; and an outlet portion 3 that is detachably attached to the lid 2, for example.
- [0021]** Since the lid 2 is configured to be attachable and detachable with respect to the container body 1, it is possible to store the sanitary tissue paper inside the container body 1 and take out the sanitary tissue paper from inside, in a state in which the lid 2 is removed from the container body 1.
- 10 **[0022]** The sanitary tissue paper is stored in the container body 1 in a state in which the sanitary tissue paper is wound into a roll around an axis along the up-down direction. The sanitary tissue paper has perforations at regular intervals in a length direction, and the user uses a sheet of sanitary tissue paper which was cut off along the perforations.

15 (Container Body)

- [0023]** The container body 1 is a container for storing the sanitary tissue paper, which is formed in a bottomed cylindrical shape and has an opening in the upper surface. A male screw portion 11 is provided along the circumferential direction on the outer circumferential surface of the upper end portion of the lateral surface, as shown in FIG. 2.
- 20 **[0024]** The container body 1 is formed of PE (polyethylene), PP (polypropylene), PET (polyethylene terephthalate), ABS resin, or the like, for example.
- [0025]** The container body 1 is formed in a cylindrical shape that is a circle in a plan view with a diameter of 50 mm to 200 mm, 45 mm to 200 mm in the Z-axis direction (height), and has a thickness of each surface of 0.5 mm to 10 mm.

25 (Lid)

- [0026]** As shown in FIGS. 1 and 2, the lid 2 is configured by a lid main body 21 and a small lid 22.
- [0027]** The lid main body 21 is formed of PE (polyethylene), PP (polypropylene), PET (polyethylene terephthalate), ABS resin, or the like, for example. The lid main body 21 is in a cylindrical shape in which the lower surface is open, and includes a top surface 21a, a lateral surface 21b, a recessed portion 21c that is formed to be recessed downward on the inner circumferential side in a plan view of the top surface 21a, a hole portion 21d, and a main-body-side wall 21e that is provided to rise in a cylindrical shape so as to surround the hole portion 21d inside the recessed portion 21c.
- 30 **[0028]** The lid main body 21 is formed in a cylindrical shape that is a circle in a plan view with a diameter of 50 mm to 200 mm, 15 mm to 50 mm in the Z-axis direction (height), and has a thickness of each surface of 0.5 mm to 10 mm.
- 35 **[0029]** A female screw portion 211 into which the male screw portion 11 of the container body 1 screws is provided on the internal circumferential surface of the lower end of the lateral surface 21b. Thus, as shown in FIG. 2, the container body 1 and the lid 2 have an attachable and detachable connection structure via the male screw portion 11 and the female screw portion 211, which allows the lid 2 to be detached from the container body 1.

40 (Recessed Portion of Lid)

- [0030]** The recessed portion 21c is formed to have a nearly same shape in a plan view as the small lid 22 when the small lid 22 is closed, so that the small lid 22 can fit into the recessed portion 21c. The recessed portion 21c is formed to have the front end larger than the front end of the small lid 22 in a plan view so as to leave a slight gap even in a state in which the small lid 22 is fitted into the recessed portion 21c. Thus, it is possible to get a finger caught on the small lid 22 by using the gap.
- 45

(Hole Portion)

- 50 **[0031]** The hole portion 21d is a hole formed in a circle in a plan view in the nearly center in a plan view of the lid main body 21 and leading to the inside of the sanitary tissue paper storage container 100. The hole portion 21d is formed to be slightly smaller than the outlet portion 3 in a plan view and the outlet portion 3 is fixed to the hole portion 21d as mentioned later.

55 (Main-body-side Wall)

- [0032]** The main-body-side wall 21e is formed to protrude upward in a cylindrical shape inside the recessed portion 21c, so as to surround the hole portion 21d. The main-body-side wall 21e is formed to have the outer diameter same

as or slightly smaller than the internal diameter of a small-lid-side wall 22a formed in the small lid 22.

(Small Lid)

[0033] The small lid 22 is formed of PE (polyethylene), PP (polypropylene), PET (polyethylene terephthalate), ABS resin, or the like, for example. The small lid 22 has the end connected to the lid main body 21, and includes the small-lid-side wall 22a protruding from the lower surface at the time of closing. The small lid 22 is formed such that the shape in a plan view when the small lid 22 is closed nearly matches the shape of the recessed portion 21c and the small lid 22 can be fitted to the recessed portion 21c when the small lid 22 is closed.

(Small-lid-side Wall)

[0034] The small-lid-side wall 22a is formed in a cylindrical shape protruding downward when the small lid 22 is closed. The small-lid-side wall 22a is formed to have the internal diameter same as or slightly larger than the outer diameter of the main-body-side wall 21e. In addition, this small-lid-side wall 22a is configured to contact the upper surface of the recessed portion 21c when the small lid 22 is closed. Thus, when the small lid 22 is closed, the small-lid-side wall 22a can fit to the main-body-side wall 21e, and it is possible to maintain airtightness of the space surrounded by the small-lid-side wall 22a and the main-body-side wall 21e, and thus maintain airtightness of the space inside the sanitary tissue paper storage container 100 that is connected to the space via the hole portion 21d.

[0035] In the present embodiment, the airtightness inside the sanitary tissue paper storage container 100 is maintained by fitting the main-body-side wall 21e to the small-lid-side wall 22a. However, any configuration different from the above is possible as long as the configuration can maintain the airtightness inside the sanitary tissue paper storage container 100.

[0036] In a case where the sanitary tissue paper to be stored is not soaked with chemical solution or the like and does not need to avoid drying, any configuration not especially including air tightness means may be used.

(Outlet Portion)

[0037] As shown in FIGS. 3 and 4, the outlet portion 3 is an elastically deformable member that is formed in a nearly round pillar shape which is a circle in a plan view. The outlet portion 3 can be formed by injection molding, for example. FIG. 4 is a bottom view of the outlet portion 3, showing the state of outlet portion 3 of FIG. 3 seen from below.

[0038] To be specific, the outlet portion 3 includes a recess 31 that has an internal bottom surface 3a formed in the center in a plan view, a narrow portion 32 that is formed on the lateral surface, an outlet 33 that is formed in the nearly center in a plan view of the recess 31 (internal bottom surface 3a), and chamfered portions (first chamfered portions 341, second chamfered portions 342) that are formed by chamfering the peripheral edge of the outlet 33 on the lower surface 3b.

[0039] The outlet portion 3 has a circle shape that is slightly larger than the hole portion 21d between one tenth to one third inclusive the diameter of the lid main body 21 in a plan view.

[0040] The thickness R1 (see FIG. 5) in the Z-axis direction (dimension between the internal bottom surface 3a and the lower surface 3b) below the narrow portion 32 in the outlet portion 3 is between 1.0 mm and 5.0 mm, preferably between 1.5 mm and 3.0 mm. If the thickness in the Z-axis direction is excessively small, the sheet will not be cut and the sheets will come out continuously, and if the thickness in the Z-axis direction is excessively large, the sheet will be cut before the next sheet comes out.

(Recess of Outlet Portion)

[0041] On the upper surface of the outlet portion 3, the recess 31 is formed to be recessed downward in a circle from the upper view, leaving the peripheral portion. The depth (depth in Z-axis direction) of this recess 31 is between 2 mm and 10 mm.

[0042] The recess 31 is formed such that the internal bottom surface 3a is a flat face.

(Narrow Portion)

[0043] The narrow portion 32 is formed in a groove shape recessed in a radial direction to have a depth between one twentieth and one tenth inclusive the diameter of the outlet portion 3 in a plan view, surrounding the nearly central portion in the up-down direction of the lateral surface of the outlet portion 3 along the circumferential direction. The dimension in the Z-axis direction of the narrow portion 32 is between 0.5 mm and 3.0 mm.

[0044] Since the outlet portion 3 is formed to be slightly larger than the hole portion 21d in a plan view as described above, by fitting the edge of the hole portion 21d into the narrow portion 32, it is possible to fix the outlet portion 3 to the

lid main body 21.

(Outlet)

- 5 **[0045]** The outlet 33 is a hole for taking out the sanitary tissue paper stored inside the container body 1.
- [0046]** The sanitary tissue paper is inserted through the outlet 33 from the lower surface 3b side, and the outlet 33 holds the sanitary tissue paper with its tip-side end protruding from the upper surface of the outlet portion 3 (internal bottom surface 3a of the recess 31).
- 10 **[0047]** When the tip end of the sanitary tissue paper is in a state of protruding from the upper surface of the outlet portion 3, the protruding amount is 10 mm to 30 mm, preferably 13 mm to 20 mm. Such a protruding amount facilitates plucking with a general user's finger, and the taking-out operation can be performed easily.
- [0048]** The outlet 33 typically has a small hole 33a, which is nearly circular in a plan view, and multiple slits 33b formed radially around the small hole 33a. The term "nearly circular" here includes not only a perfect circle, but also an oval or a distorted circle.
- 15 **[0049]** In the embodiment, four slits 33b are provided around the small hole 33a, as shown in FIG. 3 and FIG. 4, for example. The slits 33b are provided at 90 degrees intervals around the small hole 33a.
- [0050]** The diameter of the small hole 33a is between 1.0 mm and 5.0 mm, preferably between 2.0 mm and 4.0 mm. If the diameter of the small hole 33a is excessively large, the next sheet will not be retained and will fall into the hole, and if the diameter of the small hole 33a is excessively small, more force will be required for taking out the sheet.
- 20 **[0051]** The length R2 of the slit 33b (see FIG. 5) is between 2 mm and 10 mm.
- [0052]** In this way, if the outlet 33 is composed of the small hole 33a and the multiple slits 33b, it is possible to achieve both of reliability of holding the sanitary tissue paper in the outlet 33 and easiness of pulling out the sanitary tissue paper that is held in the outlet 33.
- [0053]** In FIG. 3 and FIG. 4, a case in which four slits 33b are formed is illustrated and described, but the shape of the outlet 33 is not limited to this, and any number of slits 33b may be formed as long as the above functions can be fulfilled. In other words, the outlet 33 can be a combination of a small hole 33a of a perfect circle or oval and any number of slits 33b.

(Chamfered Portion)

- 30 **[0054]** As shown in FIGS. 4 and 5, each of the chamfered portions (first chamfered portions 341, second chamfered portions 342) is a region obtained by chamfering the corner that is formed by the lower surface 3b of the outlet portion 3 and the hole wall 33h of the outlet 33.
- [0055]** To be specific, each of the chamfered portions (first chamfered portions 341, second chamfered portions 342) is a flat chamfered portion obtained by chamfering the edge of the hole wall 33h of the outlet 33 on the lower surface 3b of the outlet portion 3 with an inclined flat face. By forming the chamfered portions, the outlet 33 has such a shape that the opening area on the lower end side is larger than the opening area on the upper end side.
- 35 **[0056]** In the embodiment, there are provided the first chamfered portions 341 each of which is formed by chamfering the corner formed by the hole wall 33h of the slit 33b and the lower surface 3b of the outlet portion 3, and the second chamfered portions 342 each of which is formed by chamfering the corner formed by the hole wall 33h of the small hole 33a and the lower surface 3b of the outlet portion 3.
- 40 **[0057]** As shown in FIG. 6, the size of each chamfered portion (first chamfered portion 341, second chamfered portion 342) is preferably set such that the length L1 in the width direction (direction along the XY plane) of the outlet 33 from the hole wall 33h of the outlet 33 is within the range of 0.1 mm to 0.5 mm and the length L2 in the height direction (direction along the Z-axis direction) from the lower end of the outlet 33 is within the range of 0.1 mm to 0.5 mm.
- 45 **[0058]** By providing such chamfered portions (first chamfered portions 341, second chamfered portions 342) at the lower edge of the outlet 33, it is possible to suitably pull out the sanitary tissue paper held by the outlet 33.
- [0059]** In the embodiment, the case of forming each of the chamfered portions (first chamfered portions 341, second chamfered portions 342) by chamfering to be a flat face has been described by illustration. However, as shown in FIG. 7, the chamfered portion may be a curved chamfered portion obtained by chamfering the corner, which is formed by the lower surface 3b of the outlet portion 3 and the hole wall 33h of the outlet 33, to be a convex curved face.
- 50 **[0060]** As shown in FIG. 8, only the slit 33b portions in the outlet 33 may have first chamfered portions 341, without forming chamfered portions at the small hole 33a portion in the outlet 33.
- [0061]** In a case where the force necessary to pull out the sanitary tissue paper in the above outlet portion 3 is measured 5 times by using a digital force gauge (manufactured by IMADA: model number DS2-200N) and the average value is defined as a resistance value, the value of such a resistance value is preferably within the range of 5 to 12 N, and more preferably 7 to 9 N.
- 55 **[0062]** When sanitary tissue paper wound in a single roll (for example, continuous 80 sheets having 79 lines of perforations) is pulled out, the allowable range of the number of times (number of continuations) that a sheet is not cut along

the perforations and the subsequent sheet of sanitary tissue paper comes out following the sheet is 10 times or less, and preferably 5 times or less.

<Action of Embodiment>

[0063] In the above-mentioned sanitary tissue paper storage container 100, by applying a resistance to the pulled-out sanitary tissue paper with the outlet 33 that has the small hole 33a and multiple slits 33b, the sheet of the sanitary tissue paper to be used is cut off along the perforations, and the subsequent sheet of the sanitary tissue paper can be held in a state in which the proper amount of end is protruding from the outlet 33.

[0064] In particular, by having the chamfered portions (first chamfered portions 341, second chamfered portions 342), the resistance when the sanitary tissue paper passes through the outlet 33 is reduced compared to the case of not having the chamfered portions. Thus, it is possible to sufficiently secure the protruding amount of the subsequent sheet of sanitary tissue paper protruding from the outlet 33, and the force necessary for pulling out is also reduced, thus facilitating the taking-out operation.

<Effects of Embodiment>

[0065] According to the embodiment, in a sanitary tissue paper storage container 100 including: a container body 1 inside which sanitary tissue paper is stored; and a lid 2 that is detachably attached to the container body 1 and that has an outlet portion 3 to take out the sanitary tissue paper stored in the container body 1, the outlet portion 3 includes an outlet 33 through which the sanitary tissue paper is inserted and which holds an end on a tip side of the sanitary tissue paper protruding from an upper surface (internal bottom surface 3a of the recess 31) of the outlet portion 3, the outlet 33 includes a small hole 33a that is nearly circular and multiple slits 33b that are formed radially around the small hole 33a. First chamfered portions 341 are provided to the slits 33b, each of the first chamfered portions 341 being a corner that is chamfered, and the corner being formed by a hole wall 33h of the slit 33b and a lower surface 3b of the outlet portion 3. In addition, second chamfered portions 342 may be provided to the small hole 33a of the outlet 33, each of the second chamfered portions 342 being a corner that is chamfered, and the corner being formed by a hole wall 33h of the small hole 33a and the lower surface 3b of the outlet portion 3.

[0066] Since the sanitary tissue paper storage container 100 in the embodiment has such a configuration, it is possible to achieve both of reliability of holding the sanitary tissue paper in the outlet 33 and easiness of operation of taking out the sanitary tissue paper.

[0067] According to the embodiment, each of the chamfered portions (first chamfered portions 341 and second chamfered portions 342) is a flat chamfered portion in which the hole wall 33h of the outlet 33 is chamfered to be a flat face, or a curved chamfered portion in which the hole wall 33h of the outlet 33 is chamfered to be a convex curved face.

[0068] By selecting either a flat chamfered portion or a curved chamfered portion as the chamfered portion to be formed on the outlet 33, the outlet 33 can be made suitable for taking out the sanitary tissue paper to be used. For example, by selecting the curved chamfered portions as the chamfered portions (first chamfered portions 341 and second chamfered portions 342), the outlet 33 can be made to make it easier to pull out the sanitary tissue paper.

[0069] According to the present embodiment, in the outlet 33 provided with the chamfered portions (first chamfered portions 341 and second chamfered portions 342) on its lower edge, an opening area on a lower end side is larger than an opening area on an upper end side.

[0070] Thus, it is possible to facilitate the operation of taking out the sanitary tissue paper.

[0071] According to the present embodiment, the lid 2 includes a hole portion 21d in an upper surface, and the outlet portion 3 includes a narrow portion 32 that is provided on a lateral surface, and an edge of the hole portion 21d is fitted to the narrow portion 32 to attach the outlet portion 3 to the lid 2.

[0072] Thus, it is possible to suitably attach the outlet portion 3 to the lid 2. In addition, it is also possible to replace the outlet portion 3.

(Others)

[0073] The sanitary tissue paper stored in the sanitary tissue paper storage container 100 is not necessarily limited to the sanitary tissue paper wound in a roll. For example, there can be used so called pop-up type sheets that are laminated in a state of being folded in an alternate manner and formed such that, when one sheet of sanitary tissue paper is taken out, the next sheet of sanitary tissue paper is also pulled out to the outlet 33.

[0074] The shape of the sanitary tissue paper storage container 100 may not necessarily be a cylindrical shape.

Examples

[0075] Next, the results of evaluating the easiness of taking out the sanitary tissue paper for Examples of the present invention and Comparative Examples are described. Hereinafter, though the present invention is described specifically by the Examples, the present invention is not limited to them.

<Sample Preparation>

(Sanitary tissue paper storage container)

[0076] As a sanitary tissue paper storage container 100, there was prepared a container that has the shape shown in FIG. 1 and is made of polyethylene, the container having a container body 1 and a lid 2 that is detachably attached to the container body 1.

[0077] The outlet portion 3 of each of the following Examples 1 to 3 and Comparative Examples 1 to 2 is attached to this sanitary tissue paper storage container 100.

(Examples 1, 2 and 3)

[0078] The outlet portion 3 of each of the Examples 1 to 3 has a shape shown in FIGS. 3 to 6, and made of elastomer.

[0079] The thickness R1 in the Z-axis direction of the outlet portion 3 is 3.0 mm.

[0080] The outlet 33 having a small hole 33a with the diameter of 2.8 mm (Example 1, Example 2), 3.8 mm (Example 3) and having slits 33b each with the length R2 of 5.1 mm (Example 1, Example 2), 4.6 mm (Example 3) was prepared.

[0081] This length of slit 33b was measured by using the ABS DIGIMATIC CALIPER (manufactured by Mitutoyo: model number CD-20APX).

[0082] The lengths L1 and L2 of each of the chamfered portions (first chamfered portions 341 and second chamfered portions 342) were L1=L2=0.1 mm (Example 1, Example 3) and L1=L2=1.0 mm (Example 2).

[0083] L1 is the length in the direction along the XY plane, and L2 is the length in the direction along the Z-axis.

(Comparative Examples 1 and 2)

[0084] The outlet portion 3 in the Comparative Example 1 was same as that of the Example 1, except that the chamfered portions were not provided (that is, L1=L2=0mm).

[0085] The outlet portion 3 in the Comparative Example 2 was same as that of the Example 3, except that the chamfered portions are not provided (that is, L1=L2=0mm).

(Sanitary Tissue Paper)

[0086] As the sanitary tissue paper, a wet sheet that is wound in a roll and has lines of perforations at regular intervals in the longitudinal direction was used. To be specific, the number of lines of perforations was 79 and the wet sheet having the 80 continuous sheets was used.

[0087] A general nonwoven fabric (e.g., a nonwoven fabric made of rayon) was used for the wet sheet here.

<Evaluation>

[0088] By using the samples of the Examples 1 to 3 and the Comparative Examples 1 to 2, (1) Protruding amount of subsequent sheet of sanitary tissue paper, (2) Resistance value at the time of taking out and (3) Number of continuations, were measured as follows and the results were shown in Table I.

(1) Protruding Amount of Subsequent Sheet of Sanitary Tissue Paper

The above one wet sheet wound in a roll was pulled out by using the samples of the above Examples 1 to 3 and Comparative Example 1, and the average value of measured values of the protruding amount of subsequent sheet in the wet sheet was calculated as a protruding amount of sanitary tissue paper.

The protruding amount of wet sheet was measured by using the ABS DIGIMATIC CALIPER (manufactured by Mitutoyo: model number CD-20APX).

(2) Resistance Value when Sanitary Tissue Paper was Taken Out

The above wet sheet wound in a roll was pulled out by using the samples of the above Examples 1 to 3 and Comparative Example 1, and the force necessary for the pulling out was measured by using the digital force gauge (manufactured by IMADA: model number DS2-200N). The measurement was performed 5 times for each sample,

and the average value thereof was determined as the resistance value.

(3) Number of Continuations

The above one wet sheet wound in a roll was pulled out by using the samples of the above Examples 1 to 3 and Comparative Example 1, and the number of times that a sheet is not cut along the perforations and the subsequent sheet of sanitary tissue paper comes out following the sheet was counted as the number of continuations.

[Table 1]

[0089]

TABLE I

		Example 1	Example 2	Example 3	Comparative Example 1	Comparative Example 2
	Diameter of Small Hole [mm]	2.8	2.8	3.8	2.8	3.8
	Length of Slit (R2) [mm]	5.1	5.1	4.6	5.1	4.6
	Chamfered Amount (L1=L2) [mm]	0.1	1.0	0.1	None (0.0)	None (0.0)
Evaluation	Protruding Amount [mm]	11.5	22.5	15.2	10.2	12.4
	Number of Continuations [times]	0.7	6.0	1.0	0.5	0.0
	Resistance Value [N]	10.3	5.9	7.8	13.1	8.5

[0090] In the results of Table 1, comparison between the Example 1 and the Comparative Example 1 show that the Example 1 having the chamfered portions on the outlet 33 has a longer protruding amount and a lower resistance value, and thus facilitates picking of the sanitary tissue paper and enables to suitably take out the sanitary tissue paper.

[0091] In addition, comparison between the Example 3 and the Comparative Example 2 show that the Example 3 having the chamfered portions on the outlet 33 has a longer protruding amount and a lower resistance value, and thus facilitates picking of the sanitary tissue paper and enables to suitably take out the sanitary tissue paper.

[0092] In particular, the Example 3 has the protrusion amount of 15.2 mm, the number of continuations of 1 time, and the resistance value of 7.8 N, which are more preferable numerical values in the respective evaluations. This means that the sanitary tissue paper can be picked more easily and taken out suitably.

[0093] As shown above, by having chamfered portions (first chamfered portions 341, second chamfered portions 342) on the lower edge of the outlet 33 having the small hole 33a and multiple slits 33b (Examples 1 to 3), it is possible to achieve both of reliability of holding the sanitary tissue paper and easiness of operation of taking out the sanitary tissue paper.

[0094] The application of the present invention is not limited to the above-mentioned embodiment, and modifications can be appropriately made within the scope of the present invention.

Industrial Applicability

[0095] Since the present invention is configured as described above, the present invention can be used as a sanitary tissue paper storage container that achieves both of reliability of holding the sanitary tissue paper in the outlet and easiness of operation of taking out the sanitary tissue paper.

Reference Signs List

[0096]

- 1 container body
- 11 male screw portion
- 2 lid
- 21 lid main body

	21a	top surface
	21b	lateral surface
	21c	recessed portion
	21d	hole portion
5	21e	main-body-side wall
	211	female screw portion
	22	small lid
	22a	small-lid-side wall
	3	outlet portion
10	3a	internal bottom surface
	3b	lower surface
	31	recess
	32	narrow portion
	33	outlet
15	33a	small hole
	33b	slit
	33h	hole wall
	341	first chamfered portion
	342	second chamfered portion
20	100	sanitary tissue paper storage container

Claims

- 25 1. A sanitary tissue paper storage container comprising:
- a container body inside which sanitary tissue paper is stored; and
a lid that is detachably attached to the container body and that has an outlet portion to take out the sanitary
tissue paper stored in the container body, wherein
30 the outlet portion includes an outlet through which the sanitary tissue paper is inserted and which holds an end
of the sanitary tissue paper protruding from an upper surface of the outlet portion,
the outlet includes a small hole that is nearly circular and multiple slits that are formed radially around the small
hole, and
35 a first chamfered portion is provided to a slit among the slits, the first chamfered portion being a corner that is
chamfered, and the corner being formed by a hole wall of the slit and a lower surface of the outlet portion.
2. The sanitary tissue paper storage container according to claim 1, wherein a second chamfered portion is provided
to the small hole, the second chamfered portion being a corner that is chamfered, and the corner being formed by
a hole wall of the small hole and the lower surface of the outlet portion.
- 40 3. The sanitary tissue paper storage container according to claim 1 or 2, wherein the first chamfered portion is a flat
chamfered portion in which the hole wall is chamfered to be a flat face, or the first chamfered portion is a curved
chamfered portion in which the hole wall is chamfered to be a convex curved face.
- 45 4. The sanitary tissue paper storage container according to claim 2 or 3, wherein the second chamfered portion is a
flat chamfered portion in which the hole wall is chamfered to be a flat face, or the second chamfered portion is a
curved chamfered portion in which the hole wall is chamfered to be a convex curved face.
- 50 5. The sanitary tissue paper storage container according to any one of claims 1 to 4, wherein
- the lid includes a hole portion in an upper surface, and
the outlet portion includes a narrow portion that is provided on a lateral surface, and an edge of the hole portion
is fitted to the narrow portion to attach the outlet portion to the lid.

55

FIG. 1

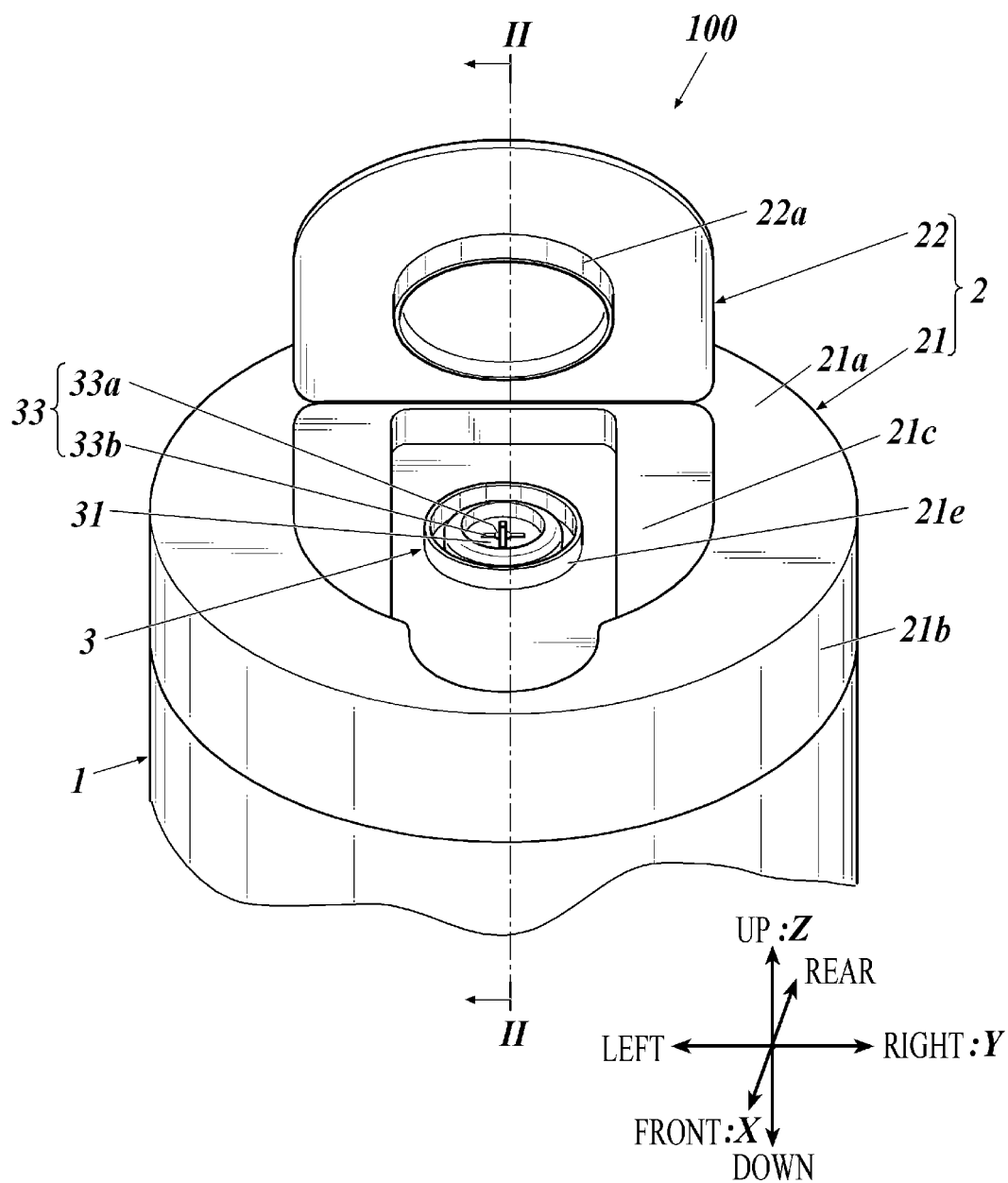


FIG. 2

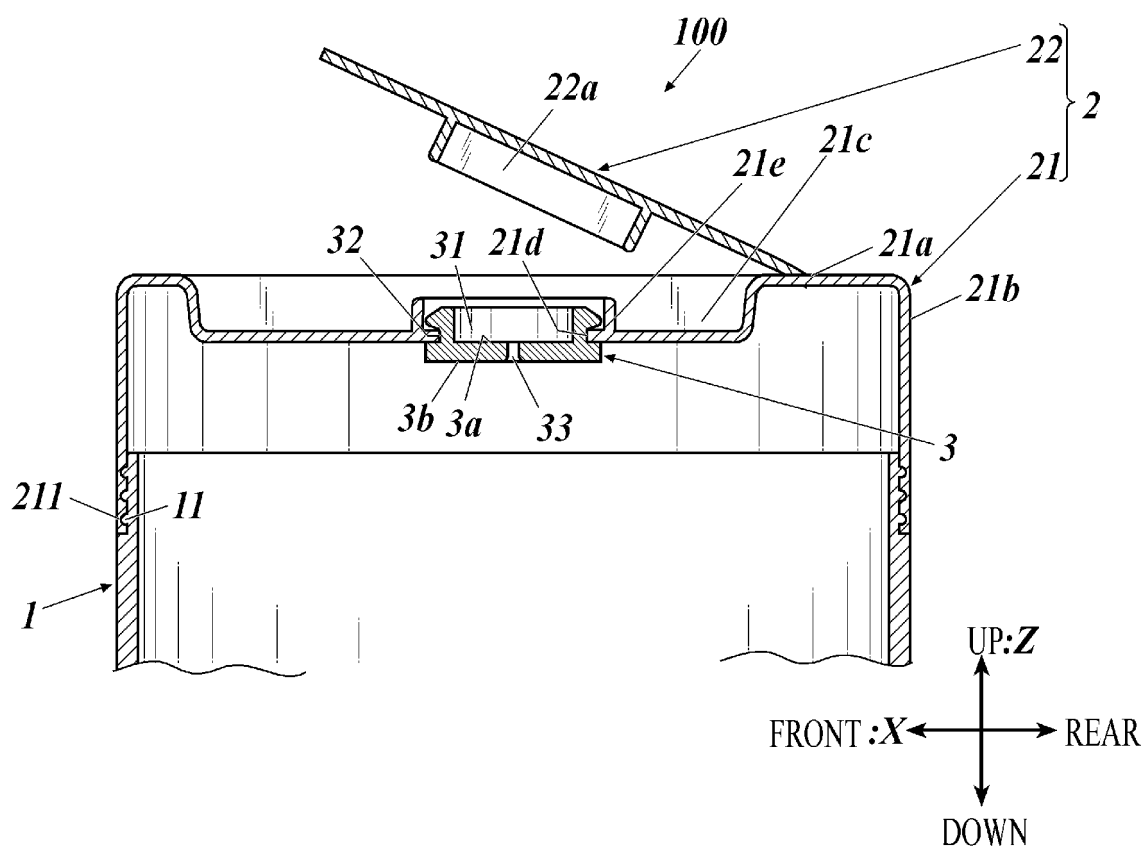


FIG. 3

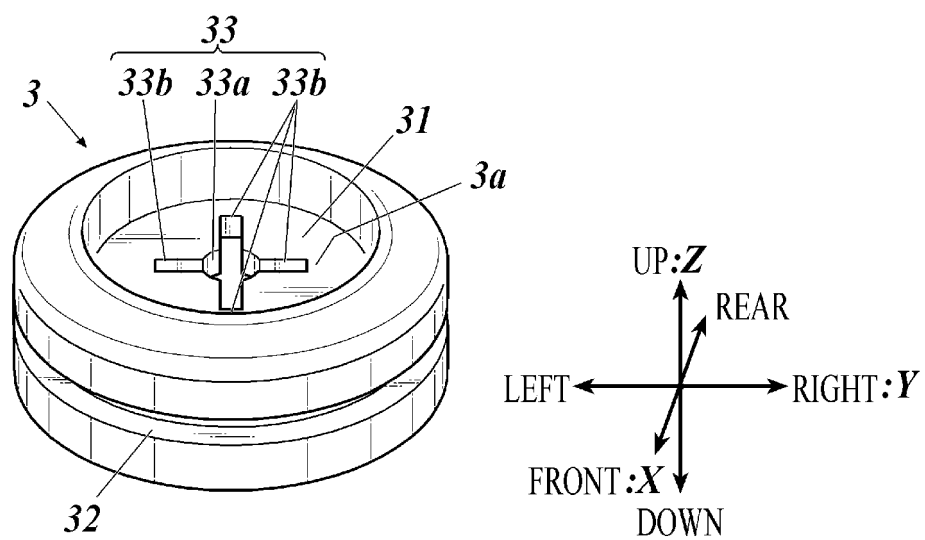


FIG. 4

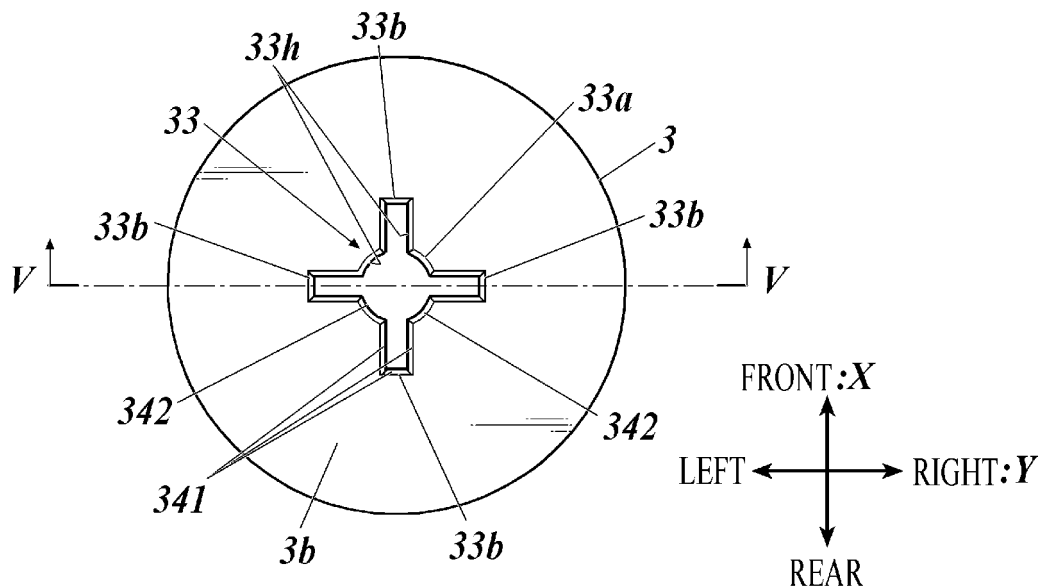


FIG. 5

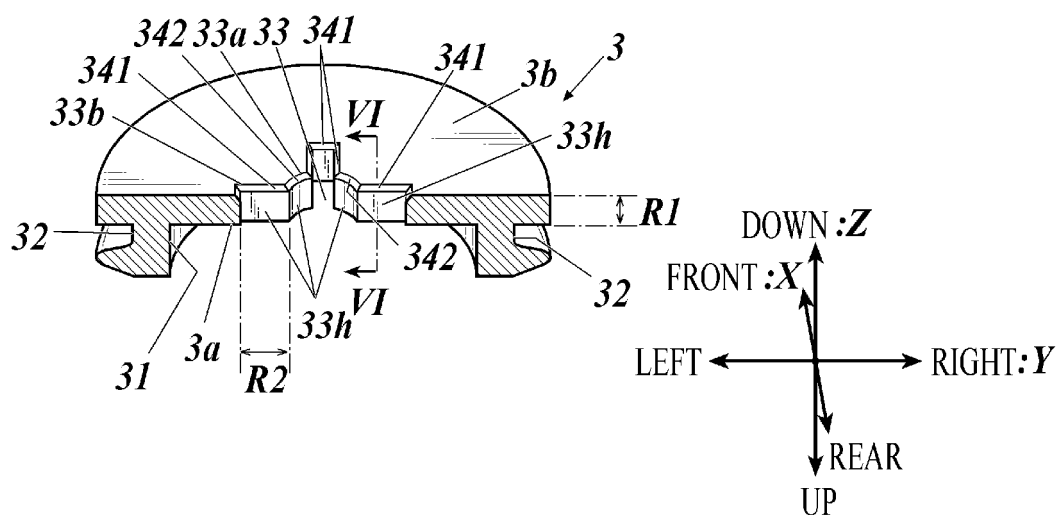


FIG. 6

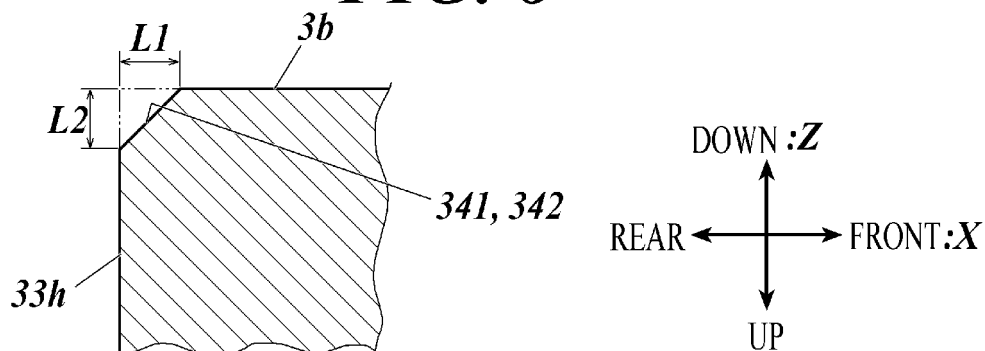


FIG. 7

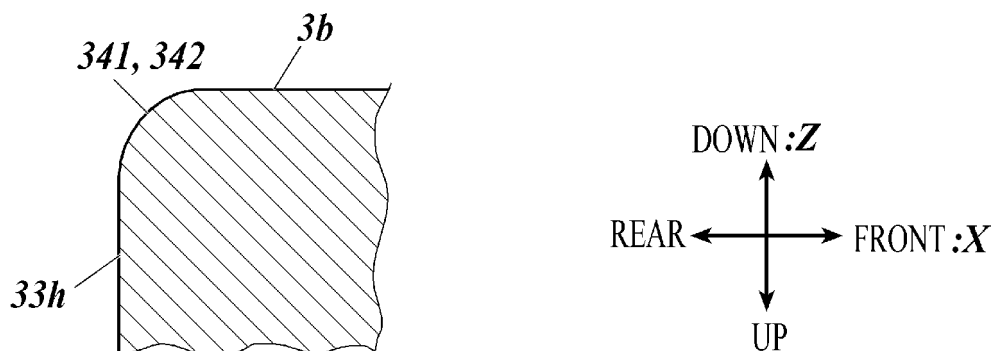


FIG. 8

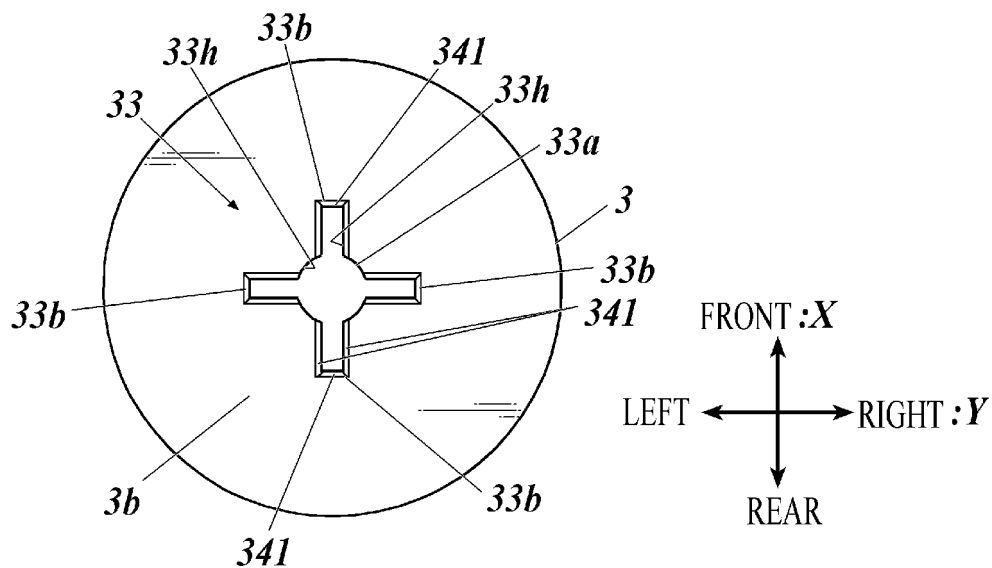
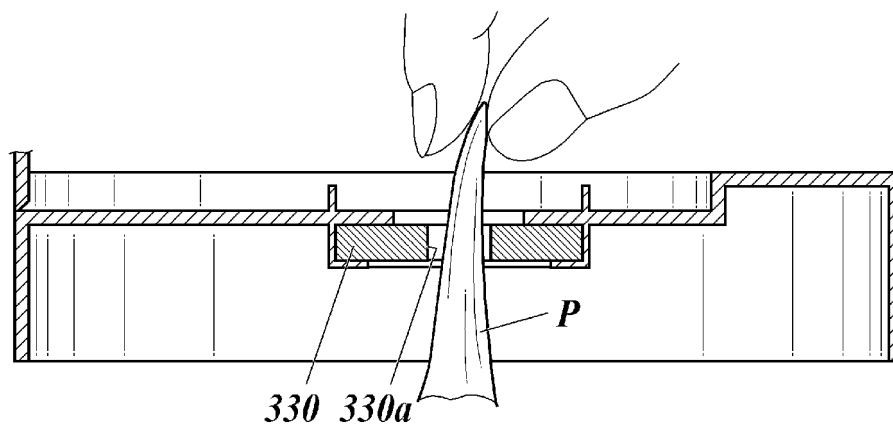


FIG. 9

Prior Art



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2020/030605

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl. B65D83/08 (2006.01) i, A47K7/00 (2006.01) i
 FI: B65D83/08B, A47K7/00H

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 Int.Cl. B65D83/08, A47K7/00

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

Published examined utility model applications of Japan	1922-1996
Published unexamined utility model applications of Japan	1971-2020
Registered utility model specifications of Japan	1996-2020
Published registered utility model applications of Japan	1994-2020

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2009-286427 A (DAIO PAPER CORPORATION) 10.12.2009 (2009-12-10), paragraphs [0009]-[0039], fig. 1-7	1-5
Y	JP 11-263384 A (KAWASAKI, Kiyoshi) 28.09.1999 (1999-09-28), paragraph [0012], fig. 9	1-5
Y	JP 10-101092 A (TOPPAN PRINTING CO., LTD.) 21.04.1998 (1998-04-21), paragraphs [0012], [0014], fig. 1, 3	2-5

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
11.09.2020

Date of mailing of the international search report
29.09.2020

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Japan Patent Office
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Tokyo 100-8915, Japan

Authorized officer

Telephone No.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No. PCT/JP2020/030605
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JP 2009-286427 A	10.12.2009	CN 101589929 A
		page 6, line 4 to page 12, line 21, fig. 1-7
		KR 10-2009-0124955 A

JP 11-263384 A	28.09.1999	(Family: none)
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JP 10-101092 A	21.04.1998	(Family: none)
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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 5850521 B [0005]
- JP H311889 U [0005]
- JP 2012192962 A [0005]