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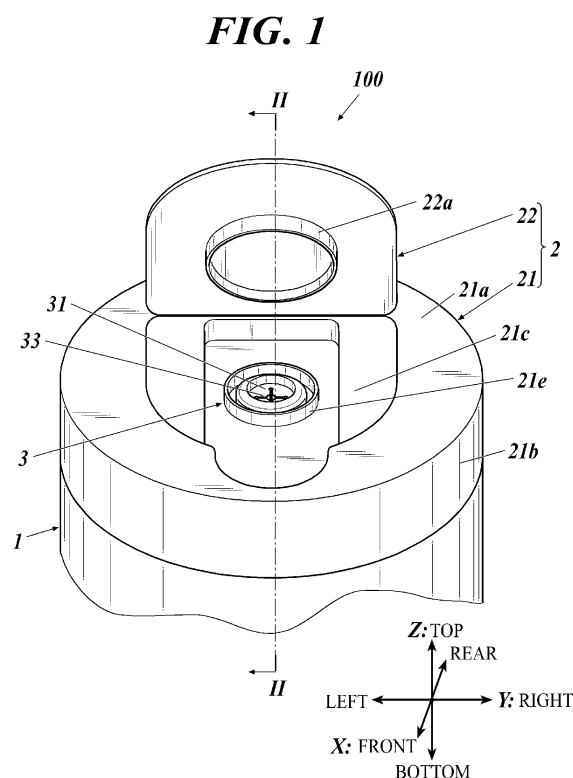
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(54) **HYGIENE THIN PAPER ACCOMMODATION CONTAINER, EXTRACTION MEMBER OF HYGIENE THIN PAPER ACCOMMODATION CONTAINER, AND METHOD FOR MANUFACTURING EXTRACTION MEMBER OF HYGIENE THIN PAPER ACCOMMODATION CONTAINER**

(57) A sanitary tissue paper storage container includes the following. A container body stores sanitary tissue paper inside. A lid is detachably attached to the container body and a hole is formed on an upper surface. An outlet member is used to form an outlet portion. The outlet portion is detachably attached to the lid and is provided with an outlet that applies resistance when the sanitary tissue paper stored inside the container body is taken out. The outlet member includes an elastomer and a resin with a hardness higher than the elastomer.



Description

TECHNICAL FIELD

5 **[0001]** The present invention relates to a sanitary tissue paper storage container, an outlet member of the sanitary tissue paper storage container, and a method for manufacturing the outlet member in the sanitary tissue paper storage container.

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.

[0003] As a sanitary tissue paper storage container, there has been known a sanitary tissue paper storage container that includes a detachable outlet member provided with an outlet in a hole portion provided in the storage container. A resistance is applied to sanitary tissue paper by the outlet and the sanitary tissue paper is cut off along perforations provided in the sanitary tissue paper (for example, see patent document 1).

CITATION LIST

20 Patent Literature

[0004] [Patent Document 1] JP 2012-192962

SUMMARY OF INVENTION

25 Technical Problem

[0005] In such sanitary tissue paper storage container, it is preferable that the container is provided with an outlet member with high performance when the sanitary tissue paper is taken out. That is, the outlet member can apply resistance suitable for cutting the sanitary tissue paper along the perforations, and the subsequent sheet of the sanitary tissue paper can be held by the outlet member with the end of the sanitary tissue paper protruding from the outlet at a suitable length without the sanitary tissue paper falling into the container.

[0006] However, when such performance of taking out the sanitary tissue paper is adjusted in the outlet member, it is necessary to change the shape of the outlet. This requires time and cost in creating a mold. The adjustment can be performed by changing a hardness of a material of the outlet member. However, this also requires time and cost.

[0007] The present invention is conceived in view of the above problems, and the purpose of the present invention is to provide a sanitary tissue paper storage container with which adjustment of the performance of the outlet member to take out the sanitary tissue paper can be easily performed, an outlet member of such sanitary tissue paper storage container, and a manufacturing method of the outlet member in such sanitary tissue paper storage container.

Solution to Problem

[0008] In order to solve the above problems, according to aspect 1 of the present invention, a sanitary tissue paper storage container includes: a container body that stores sanitary tissue paper inside; a lid that is detachably attached to the container body and in which a hole is formed on an upper surface; and an outlet member that is used to form an outlet portion, wherein the outlet portion is detachably attached to the lid and is provided with an outlet that applies resistance when the sanitary tissue paper stored inside the container body is taken out, wherein the outlet member includes an elastomer and a resin with a hardness higher than the elastomer.

[0009] According to aspect 2 of the present invention, the sanitary tissue paper storage container according to aspect 1, wherein the mixing ratio between the elastomer and the resin is within a range of 100:7.5 to 100:10.

[0010] According to aspect 3 of the present invention, the sanitary tissue paper storage container according to aspect 1 or 2, wherein the resin is polyester.

[0011] According to aspect 4 of the present invention, the sanitary tissue paper storage container according to any one of aspects 1 to 3, wherein the outlet is formed with a cut portion in which two straight lines intersect in a cross shape at a substantial center of the outlet portion in a plan view, and wherein the cut portion is provided with four straight line portions, a first circle portion provided in a portion where one end of the straight line portions cross each other, and a second circle portion provided in the other end of the straight line portions with a diameter smaller than the first circle portion.

[0012] According to aspect 5 of the present invention, an outlet member of a sanitary tissue paper storage container, wherein the outlet member is used to form an outlet portion including an outlet that applies resistance when sanitary tissue paper stored inside a container body of the sanitary tissue paper storage container is taken out, the outlet member includes: an elastomer, and a resin with a hardness higher than the elastomer.

[0013] According to aspect 6 of the present invention, a method for manufacturing an outlet member that is used to form an outlet portion including an outlet that applies resistance when sanitary tissue paper stored inside a container body of a sanitary tissue paper storage container is taken out, the method includes: adding pigment in an elastomer, wherein in the adding of the pigment in the elastomer, a predetermined amount of resin with a hardness higher than the elastomer is added to adjust the hardness.

Advantageous Effects of Invention

[0014] According to the present invention, it is possible to provide a sanitary tissue paper storage container with which adjustment of the performance of the outlet member to take out the sanitary tissue paper can be easily performed, an outlet member of such sanitary tissue paper storage container, and a manufacturing method of such outlet member.

BRIEF DESCRIPTION OF DRAWINGS

[0015]

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

FIG. 2 is a cross-sectional view of a II-II portion shown in FIG. 1.

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

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

FIG. 5 is a cross-sectional view of a V-V portion shown in FIG. 4.

FIG. 6 is a diagram for describing a shape of a chamfered part and is a cross sectional view of a VI-VI portion shown in FIG. 5.

FIG. 7 is a diagram for describing the shape of the chamfered part.

DESCRIPTION OF EMBODIMENTS

[0016] A specific embodiment of a sanitary tissue paper storage container according to an embodiment of the present invention is described in detail with reference to FIG. 1 to FIG. 7. However, the technical scope of the present invention is not limited to the illustrated examples.

[0017] In the following, as described in FIG. 1 to FIG. 7, an X-axis, a Y-axis, and a Z-axis and a front-rear direction, a left-right direction, and an up-down direction are defined and described. That is, in a sanitary tissue paper storage container 100, the side from which the sanitary tissue paper is taken out is to be up or the top, and the opposite side is to be down or the bottom. The front side in a plan view of the sanitary tissue paper storage container 100 is to be front and the opposite side is to be rear. The right hand side when viewing a front surface of the container from the front is to be right, and the left hand side when viewing the front surface of the container from the front is to be left. The axis along a front-rear direction is to be an X-axis, an axis along a left-right direction is to be the Y-axis, and the axis along an up-down direction is to be the Z-axis.

[Entire Configuration]

[0018] As shown in FIG. 1, the sanitary tissue paper storage container 100 includes a container body 1 in which the sanitary tissue paper is stored inside, a lid 2 that is detachably attached to the container body 1 so as to cover an opening, and an outlet portion 3 that is detachably attached to the lid 2.

[0019] 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.

[Sanitary Tissue Paper]

[0020] The sanitary tissue paper is, for example, rolled paper such as a wet sheet or wet tissues in a rolled state. 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 a Z-direction (height 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 is cut off along the perforations.

[0021] In the description below, the sanitary tissue paper is pulled out from a center side of the roll. However, the example is not limited to the above, and the sanitary tissue paper can be pulled out from the outer side.

5 [Container Body]

[0022] As shown in FIG 1 and FIG 2, the container body 1 is a container for storing the sanitary tissue paper. The container body 1 is formed in a bottomed cylindrical shape and has an opening in an upper surface. A male screw portion 11 is provided along a circumferential direction on an outer circumferential surface side of an upper end of a lateral surface, as shown in FIG. 2.

10 **[0023]** The container body 1 is formed of PE (polyethylene), PP (polypropylene), PET (polyethylene terephthalate), ABS resin, or the like, for example. The container body 1 is formed as one by injection molding, two-color molding, blow molding or the like.

15 **[0024]** The container body 1 is formed in a cylindrical shape that is a circle in a plan view with a diameter of preferably 60 mm to 200 mm, more preferably 65 mm to 110 mm, and that is preferably 175 mm to 200 mm, more preferably 175 mm to 185 mm in the Z-axis direction (height direction). The thickness of each surface is preferably 0.05 mm to 10.00 mm, more preferably 0.10 mm to 5.00 mm.

[Lid]

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[0025] As shown in FIG. 1 and FIG. 2, the lid 2 includes a lid main body 21 and a small lid 22.

(Lid Main Body)

25 **[0026]** 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 formed as one by injection molding, two-color molding, blow molding, or the like. The lid main body 21 is in a cylindrical shape in which a lower surface is open. The lid main body 21 includes a top surface 21a, a lateral surface 21b, a recessed portion 21c that is formed to be recessed downward on an inner circumferential side in a plan view of the top surface 21a, a hole portion 21d, and a main body side wall 21e

30 that is provided to stand in a cylindrical shape so as to surround the hole portion 21d inside the recessed portion 21c. **[0027]** The lid main body 21 is formed in a cylindrical shape that is a circle in a plan view with a diameter of preferably 60 mm to 200 mm, more preferably 65 mm to 110 mm, and that is preferably 15 mm to 50 mm, more preferably 33 mm to 45 mm in the Z-axis direction (height direction). The thickness of each surface is preferably 0.05 mm to 10.00 mm, more preferably 0.10 mm to 5.00 mm.

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(Top Surface)

[0028] As shown in FIG. 1 and FIG. 2, the top surface 21a is a portion on the outer circumference side other than the recessed portion 21c on the upper surface of the lid main body 21 formed in a cylindrical shape.

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(Lateral Surface)

[0029] As shown in FIG. 1 and FIG. 2, the lateral surface 21b is a portion that forms a lateral surface of the lid main body 21 formed in a cylindrical shape.

45 **[0030]** A female screw portion 211 in which the male screw 11 of the container body 1 screws is provided on the inner circumferential surface side of the lower end of the lateral surface 21b. With this, 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. Consequently, the lid 2 can be detached from the container body 1.

50 (Recessed Portion)

[0031] The recessed portion 21c is formed to have substantially the same shape as the small lid 22 in a plan view when the small lid 22 is closed, so that the small lid 22 can be fitted to the recessed portion 21c. The recessed portion 21 is formed to have a 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 to the recessed portion 21c. Thus, it is possible to hook a finger on the small lid 22 by using the gap.

55

(Hole Portion)

[0032] The hole portion 21d is a hole formed in a circle in a plan view in substantially the 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 described later.

(Main Body Side Wall)

[0033] 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 an outer diameter the same as or slightly smaller than an inner diameter of the small lid side wall 22a formed in the small lid 22.

(Small Lid)

[0034] 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 is formed as one by injection molding, two color molding, blow molding, or the like. The small lid 22 includes a small lid side wall 22a protruding from the surface on the lower side when the lid is closed. The small lid 22 is formed such that the shape in a plan view when the small lid 22 is closed substantially matches with the recessed portion 21c. With this, the small lid 22 can be fitted to the recessed portion 21c when the small lid 22 is closed.

(Small Lid Side Wall)

[0035] The small lid side wall 22a is formed in a cylindrical shape extending downward when the small lid 22 is closed. The small lid side wall 22a is formed to have an inner diameter that is the same or slightly larger than the outer diameter of the main body side wall 21e. When the small lid 22 is closed, the small lid side wall 22a comes into contact with an upper surface of the recessed portion 21c. With this, when the small lid 22 is closed, the small lid side wall 22a can fit to the main body side wall 21e. Consequently, 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 inside the sanitary tissue paper storage container 100 connected to the above space via the hole portion 21d.

[0036] According to the present embodiment, the airtightness inside the container body 1 is maintained by fitting the main body side wall 21e with the small lid side wall 22a. Alternatively, a configuration different from the above can be employed as long as the airtightness inside the container body 1 can be maintained.

[0037] If the stored sanitary tissue paper is not soaked in a chemical solution or the like and there is no need to avoid drying, the configuration does not need to be provided with measures for airtightness.

(Outlet Portion)

[0038] As shown in FIG. 3 and FIG. 4, the outlet portion 3 is an elastically deformable member (outlet member) that is formed in a substantial pillar shape which is a circle in a plan view. FIG. 4 is a bottom view of an outlet portion 3 and shows a state viewing the outlet portion 3 shown in FIG. 3 from below.

[0039] Specifically, the outlet portion 3 includes a recessed portion 31 which includes an inner bottom surface 3a formed in a center in a plan view, a narrow portion 32 formed on the lateral surface, an outlet 33 formed in a substantial center in a plan view of the recessed portion 31 (inner bottom surface 3a), and a chamfered portion 34 formed by chamfering peripheral portions of the outlet 33 on a lower surface 3b.

[0040] The outlet portion 3 is formed so that the thickness R1 of the outlet portion 3 in the Z-axis direction below the narrow portion 32 (dimension between the inner bottom surface 3a and the lower surface 3b) (see FIG. 5) is 1.0 mm to 5.0 mm, preferably 1.5 mm to 3.0 mm.

(Recessed Portion)

[0041] The recessed portion 31 is formed on the upper surface of the outlet portion 3. The recessed portion 31 is formed to be in a shape recessed downward in a circle shape from a plan view, with the peripheral portion remaining. The recessed portion 31 is formed so that the inner bottom surface 3a is flat.

[0042] The recessed portion 31 is formed so that the inner bottom surface 3a is flat.

(Narrow Portion)

[0043] The narrow portion 32 is formed in a groove shape recessed in a radial direction to have a depth that is equal to or larger than one twentieth and equal to or smaller than one tenth of the diameter of the outlet portion 3 in a plan view, surrounding the substantial center portion in the up-down direction of the lateral surface of the outlet portion 3 along the circumferential direction. Since the outlet portion 3 is formed to be slightly larger than the hole portion 21d in a plan view, 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)

[0044] The outlet 33 is a hole for taking out the sanitary tissue paper stored inside the container body 1.

[0045] 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 end protruding from the upper surface of the outlet portion 3 (inner bottom surface 3a of the recessed portion 31).

[0046] When the end of the sanitary tissue paper is in a state protruding from the upper surface of the outlet portion 3, the protruding amount is 5 mm to 39 mm, preferably, 13 mm to 20 mm. Since the protruding amount is equal to or more than 5 mm, the sanitary tissue paper can be easily picked by fingers of an average user, and the sanitary tissue paper can be taken out easily. Since the protruding amount is equal to or less than 39 mm, the end of the sanitary tissue paper does not pop out when the lid 2 is closed.

[0047] The outlet 33 is formed by a cut portion 330 in which two straight lines intersect in a cross shape at the substantial center of the outlet portion 3 in a plan view.

[0048] For example, as shown in FIG. 4, the cut portion 330 includes four straight line portions 331, a first circle portion 332 that is provided in a portion where one end of the straight line portion 331 intersects, and a second circle portion 333 that is provided in the other end of the straight line portion 331 and that has a diameter smaller than the first circle portion 332.

[0049] An entire length of the cut portion 330 is formed to be 5 mm to 30 mm, preferably 10 mm to 15 mm. For example, the entire length is set to be about 15 mm which is equal to or larger than the width of an index finger of a typical user. As described above, by forming the cut portion 330 to be a cross-shaped cut, the sanitary tissue paper can be more reliably held by the cut portion 330.

[0050] The diameter of the first circle portion 332 is formed to be 2.5 mm to 4.0 mm. By providing such first circle portion, the appearing portion held by the outlet portion 3 after the sheet is taken out can be made longer. By providing the second circle portion, the sheet can be taken out with less force.

[0051] FIG. 4 illustrates and describes an example in which the outlet 33 is formed in a cross shape. However, the shape of the outlet 33 is not limited to the above, and any shape can be selected if the above functions can be fulfilled. That is, a radial cut may be formed by three or more cuts in a straight line. The outlet 33 can be formed by one cut in a straight line, or can be formed in a circular shape, an oval shape or a substantial star shape.

(Chamfered Portion)

[0052] As shown in FIG. 4 and FIG. 5, the chamfered portion 34 is a region obtained by chamfering the corner formed by the lower surface 3b of the outlet portion 3 and a hole wall 33a of the outlet 33.

[0053] Specifically, the chamfered portion 34 is a flat chamfered portion obtained by chamfering the edge of the hole wall 33a of the outlet 33 in the lower surface 3b of the outlet portion 3 with an inclined flat face. Thus, the outlet 33 has a shape in which an opening area on the lower end side is larger than the opening area on the upper end side.

[0054] As shown in FIG. 6, the size of the chamfered portion 34 is preferably set such that a length L1 in a width direction (direction along an XY plane) of the outlet 33 from the hole wall 33a of the outlet 33 is within a range of 0.5 mm to 1.0 mm, and a length L2 in a height direction (direction along the Z-axis direction) from the lower end of the outlet 33 is within the range of 0.5 mm to 1.0 mm.

[0055] Here, an example of forming the chamfered portion 34 by chamfering to be a flat face is described by illustration. Alternatively, as shown in FIG. 7, the chamfered portion 34 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 33a of the outlet 33 to be a convex curved surface.

[0056] The outlet member used to form the above described outlet portion 3 needs to be able to be inserted in the hole portion 21d. The outlet member also needs to be not detached from the lid main body 21 when the sanitary tissue paper storage container 100 is used. Moreover, it is necessary that the sanitary tissue paper can be pressed in the outlet 33 with the finger. In view of the above, the outlet member needs to be formed using a material including a certain degree of elasticity. Specifically, preferably, the hardness is from 50 to 70. The hardness is measured by JIS K 6253 (type A

durometer).

[0057] Specifically, for example, elastomers such as styrenebutadiene type, polyester type, polyethylene type, and urethane type can be used, and the outlet member is formed by injection molding.

[0058] When color is added to the outlet portion 3, for example, a resin such as PE (polyethylene) mixed with any pigment is mixed with the elastomer (pigment adding process). Here, by changing a ratio of mixing the elastomer and the PE which is resin, the performance of the outlet portion 3 for taking out the sanitary tissue paper can be adjusted.

[0059] Here, the resin mixed with the elastomer should have a higher hardness than the elastomer.

[0060] When the force necessary to pull out the sanitary tissue paper from the outlet portion 3 is measured five times using a digital force gauge (manufactured by IMADA, model DS2-200N) and the average value is defined as a resistance value, preferably, the value of the resistance value is within a range of 5 N to 12 N, more preferably from 6 N to 10 N.

[0061] When the sanitary tissue paper rolled in one roll (for example, 80 sheets are connected with 79 perforations) is pulled out, the allowable range of the number of times that the subsequent sanitary tissue paper is continuously pulled out without the perforation being cut (number of times of linking) is 10 times or less, preferably 7 times or less.

[0062] Though the embodiment according to the present invention has been described in detail, the present invention is not limited to the above embodiment, and modifications can be made within the scope of the present invention.

[0063] For example, the sanitary tissue paper stored in the sanitary tissue paper storage container 100 is not necessarily limited to a rolled sheet. So-called pop-up sheets in which sheets are alternately layered on each other and which is formed so that the next sheet of sanitary tissue paper is pulled out to the outlet 33 when one sheet of sanitary tissue paper is taken out can be employed.

[0064] The shape of the sanitary tissue paper storage container 100 does not have to be a cylindrical shape, and may be a prismatic shape that is pentagonal, hexagonal, etc. in plan view, for example.

[Example]

[0065] Next, the following description describes the result of evaluating the change of the performance of taking out the sanitary tissue paper due to the change in the mixing ratio of the elastomer and the PE in the outlet portion 3. Below, the present invention is specifically described by the examples, but the present invention is not limited to these examples.

[Sample Preparation]

[0066] As the sanitary tissue paper storage container 100, a PE container shaped as shown in FIG. 1 and including a container body 1 and a lid 2 that is detachably attached to the container body 1 is prepared.

[0067] The outlet portions 3 according to the following examples 1 to 5 are attached to the lid 2 of the sanitary tissue paper storage container 100.

(Example 1)

[0068] The outlet portion 3 is made by mixing an elastomer with PE in a ratio of 100:5. The elastomer includes a styrene thermoplastic elastomer mixed with an acrylic elastomer.

[0069] The outlet portion 3 is shaped as shown in FIG. 3 to FIG. 7, and the thickness in the Z-axis direction is 3.0 mm with the exception of the recessed portion 31. The hardness of the outlet portion 3 based on the measurement by the type A durometer in accordance with JIS K 6523 is 58.3.

[0070] The outlet 33 is shaped in a cross-shape in a plan view as shown in FIG. 4, and the entire length of the outlet 33 is 29 mm viewed from above.

[0071] The lengths L1 and L2 of the chamfered portion 34 are set to be L1=L2=0.5 mm and L1=L2=1.0 mm in the Examples 1 and 2, respectively.

[0072] L1 is the length in the direction along the XY plane, and L2 is the length in the direction along the Z-axis.

(Example 2)

[0073] The outlet portion 3 is made by mixing an elastomer with PE in a ratio of 100:5. The elastomer includes a styrene thermoplastic elastomer mixed with an acrylic elastomer.

[0074] The hardness of the outlet portion 3 based on the measurement by the type A durometer in accordance with JIS K 6523 is 70.

[0075] The other conditions are the same as in Example 1.

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(Example 3)

[0076] The outlet portion 3 is made by mixing an elastomer with PE in a ratio of 100:5. The elastomer includes a styrene thermoplastic elastomer mixed with an acrylic elastomer.

[0077] The hardness of the outlet portion 3 based on the measurement by the type A durometer in accordance with JIS K 6523 is 80.

[0078] The other conditions are the same as in Example 1.

(Example 4)

[0079] The outlet portion 3 is made by mixing an elastomer with PE in a ratio of 100:7.5. The elastomer includes a styrene thermoplastic elastomer mixed with an acrylic elastomer.

[0080] Here, the hardness of the outlet portion 3 based on the measurement by the type A durometer in accordance with JIS K 6523 is 59.1.

[0081] The other conditions are the same as in Example 1.

(Example 5)

[0082] The outlet portion 3 is made by mixing an elastomer with PE in a ratio of 100:10. The elastomer includes a styrene thermoplastic elastomer mixed with an acrylic elastomer.

[0083] Here, the hardness of the outlet portion 3 based on the measurement by the type A durometer in accordance with JIS K 6523 is 60.5.

[0084] The other conditions are the same as in Example 1.

[0085] The following tests were performed using the sample including the outlet portions 3 prepared as described in the above examples 1 to 5.

[Test 1. Change in Performance due to Change in Hardness of Outlet Portion]

[0086] The sanitary tissue paper which is a rolled wet sheet in which 80 sheets are linked with 79 perforations provided at a predetermined interval in the length direction is stored in the container body 1 of the sanitary tissue paper storage container 100 provided with the above samples.

[0087] Next, the lid 2 is attached so that the end of the sanitary tissue paper protrudes from the outlet 33. The protruding end of the sanitary tissue paper is pulled out upward and a test of taking out all 80 sheets of the sanitary tissue paper is performed 5 times for the outlet portions 3 of each example. The following items are measured (1) number of times of falling, (2) number of times of linking, (3) average length of appearing (4) standard deviation (5) suitable appearing percentage, and (6) cross portion resistance.

(1) Number of Times of Falling

[0088] After the sheets are pulled using each sample, the average value of the number of times that the outlet portion 3 could not fully hold the end of the sanitary tissue paper and the sanitary tissue paper fell in the container body 1 is calculated as the number of times of falling.

(2) Number of Times of Linking

[0089] When the sheets are pulled out using each sample, the average value of the number of times that the subsequent sheet came out without being cut at the perforations is calculated as the number of times of linking.

(3) Average Length of Appearing

[0090] After the sheets are pulled out using the samples, the average value of the length of the end of the sanitary tissue paper held by the outlet portion 3 is calculated as the appearing average length.

(4) Standard Deviation

[0091] The standard deviation of the average length of appearing as described in (3) is calculated.

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(5) Suitable Appearing Percentage

[0092] After the sheet is pulled out using each sample, the percentage that the length of the end of the sanitary tissue paper held by the outlet portion 3 is within the range of 5 mm to 39 mm which is the suitable protruding amount is calculated as the suitable appearing percentage. When the length is equal to or less than 4 mm, it is difficult for the user to pick, and if the length is equal to or more than 40 mm, the sheet may stick out when the small lid 22 is closed.

(6) Cross Portion Resistance

[0093] When the sheets are pulled out using each sample, the average value of the power necessary to pull out the sheet measured using the digital force gauge (manufactured by IMADA, model DS2-200N) is calculated as the cross portion resistance.

[0094] The results of the tests are shown in Table I.

[Table 1]

[0095]

TABLE I

	EXAMPLE 1	EXAMPLE 2	EXAMPLE 3
ELASTOMER:PE	100:5	100:5	100:5
HARDNESS	58.3	70	80
NUMBER OF TIMES OF FALLING (TIMES)	1.8	2.8	3.0
NUMBER OF TIMES OF LINKING (TIMES)	5.8	0.5	0.0
AVERAGE LENGTH OF APPEARING (mm)	21.0	16.9	17.0
STANDARD DEVIATION	20.5	11.0	10.4
SUITABLE APPEARING PERCENTAGE (%)	81.2	85.5	88.2
CROSS PORTION RESISTANCE (N)	6.7	8.8	13.8

[Evaluation]

[0096] By comparing the examples 1 to 3 shown in Table I, it is possible to understand that the performance to take out the sanitary tissue paper by the outlet portion 3 greatly changes when the hardness is changed. Specifically, as the hardness is increased, the number of times of linking and the suitable appearing percentage are improved, and the variation in the length of appearing becomes small. However, the number of times of falling worsens and the cross portion resistance value increases.

[0097] This is presumably because due to the hardness increasing, and the resistance on the sheets becomes too large.

[Test 2. Change in Performance due to Change in Mixing Ratio of Elastomer and PE in Outlet Portion]

[0098] Next, the results of the tests performed for the samples corresponding to the examples 4 and 5 similar to the tests 1 are shown in Table II.

[Table 2]

[0099]

TABLE II

	EXAMPLE 1	EXAMPLE 4	EXAMPLE 5
ELASTOMER:PE	100:5	100:7.5	100:10
HARDNESS	58.3	59.1	60.5

(continued)

	EXAMPLE 1	EXAMPLE 4	EXAMPLE 5
NUMBER OF TIMES OF FALLING (TIMES)	1.8	1.8	0.8
NUMBER OF TIMES OF LINKING (TIMES)	5.8	1.8	2.8
AVERAGE LENGTH OF APPEARING (mm)	21.0	22.8	22.6
STANDARD DEVIATION	20.5	17.5	18.5
SUITABLE APPEARING PERCENTAGE (%)	81.2	83.2	76.5
CROSS PORTION RESISTANCE (N)	6.7	7.0	7.1

[Evaluation]

[0100] Comparing the examples 1 and 4 in table II, by increasing the percentage of PE included in the outlet portion 3, it is possible to understand that the number of times of linking is improved with the resistance value in the cross portion hardly changing.

[0101] This is presumably because the sheet is easily cut by increasing the resistance provided on the sheet.

[0102] Comparing the example 1 with the examples 4 and 5, it is possible to understand that the number of times of falling is improved with the percentage of PE included in the outlet portion 3 increasing.

[0103] This is presumably because the sheet is easily cut by increasing the resistance provided on the sheet.

[Effects of Embodiments]

[0104] According to the sanitary tissue paper storage container 100 of the present embodiment, the outlet portion 3 is provided by mixing the elastomer with the PE. By changing the mixing ratio of the above components, the hardness of the outlet portion 3 can be finely adjusted, and the performance to take out the sanitary tissue paper can be adjusted.

[0105] Normally, when the elastomers are colored, a mixture in which pigments are mixed in the PE is mixed in the elastomer. Therefore, the performance to take out the sanitary tissue paper by the outlet portion 3 can be easily adjusted by only changing the mixing ratio without consuming excessive time or cost such as adding processes or changing material.

[0106] Specifically, by changing the mixing ratio of the elastomer and the PE from 100:5 to a range from 100:7.5 to 100:10, the falling of the sheet becomes more difficult and the linking of the sheets becomes more difficult meaning the above are improved.

[0107] By changing the type of elastomer used as the material, different from changing the hardness of the outlet portion 3, even if the perforations of the sanitary tissue paper are adjusted so as to be easily cut, the change in the resistance value of the outlet 33 (corresponding to cross portion in the embodiment) can be suppressed, and the ease of pulling out the sanitary tissue paper from the sanitary tissue paper storage container 100 can be maintained substantially the same.

Industrial Applicability

[0108] The present invention can be used in a sanitary tissue paper storage container in which the performance to take out the sanitary tissue paper by the outlet member can be easily adjusted, an outlet member of the sanitary tissue paper storage container and a method for manufacturing the outlet member in the sanitary tissue paper storage container.

Reference Signs List

[0109]

100 sanitary tissue paper storage container

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
 21e main body side wall
 211 female screw portion
 22 small lid
 22a small lid side wall
 3 outlet portion
 3a inner bottom surface
 3b lower surface
 31 recessed portion
 32 narrow portion
 33 outlet
 33a hole wall
 330 cut portion
 331 straight line portion
 332 first circle portion
 333 second circle portion
 34 chamfered portion

Claims

1. A sanitary tissue paper storage container comprising:

a container body that stores sanitary tissue paper inside;
 a lid that is detachably attached to the container body and in which a hole is formed on an upper surface; and
 an outlet member that is used to form an outlet portion, wherein the outlet portion is detachably attached to the lid and is provided with an outlet that applies resistance when the sanitary tissue paper stored inside the container body is taken out,
 wherein the outlet member includes an elastomer and a resin with a hardness higher than the elastomer.

2. The sanitary tissue paper storage container according to claim 1, wherein the mixing ratio between the elastomer and the resin is within a range of 100:7.5 to 100:10.

3. The sanitary tissue paper storage container according to claim 1 or 2, wherein the resin is polyester.

4. The sanitary tissue paper storage container according to any one of claims 1 to 3,

wherein the outlet is formed with a cut portion in which two straight lines intersect in a cross shape at a substantial center of the outlet portion in a plan view, and
 wherein the cut portion is provided with four straight line portions, a first circle portion provided in a portion where one end of the straight line portions cross each other, and a second circle portion provided in the other end of the straight line portions with a diameter smaller than the first circle portion.

5. An outlet member of a sanitary tissue paper storage container, wherein the outlet member is used to form an outlet portion including an outlet that applies resistance when sanitary tissue paper stored inside a container body of the sanitary tissue paper storage container is taken out, the outlet member comprising:

an elastomer, and
 a resin with a hardness higher than the elastomer.

6. A method for manufacturing an outlet member that is used to form an outlet portion including an outlet that applies resistance when sanitary tissue paper stored inside a container body of a sanitary tissue paper storage container is taken out, the method comprising:

adding pigment in an elastomer,
 wherein in the adding of the pigment in the elastomer, a predetermined amount of resin with a hardness higher than the elastomer is added to adjust the hardness.

FIG. 1

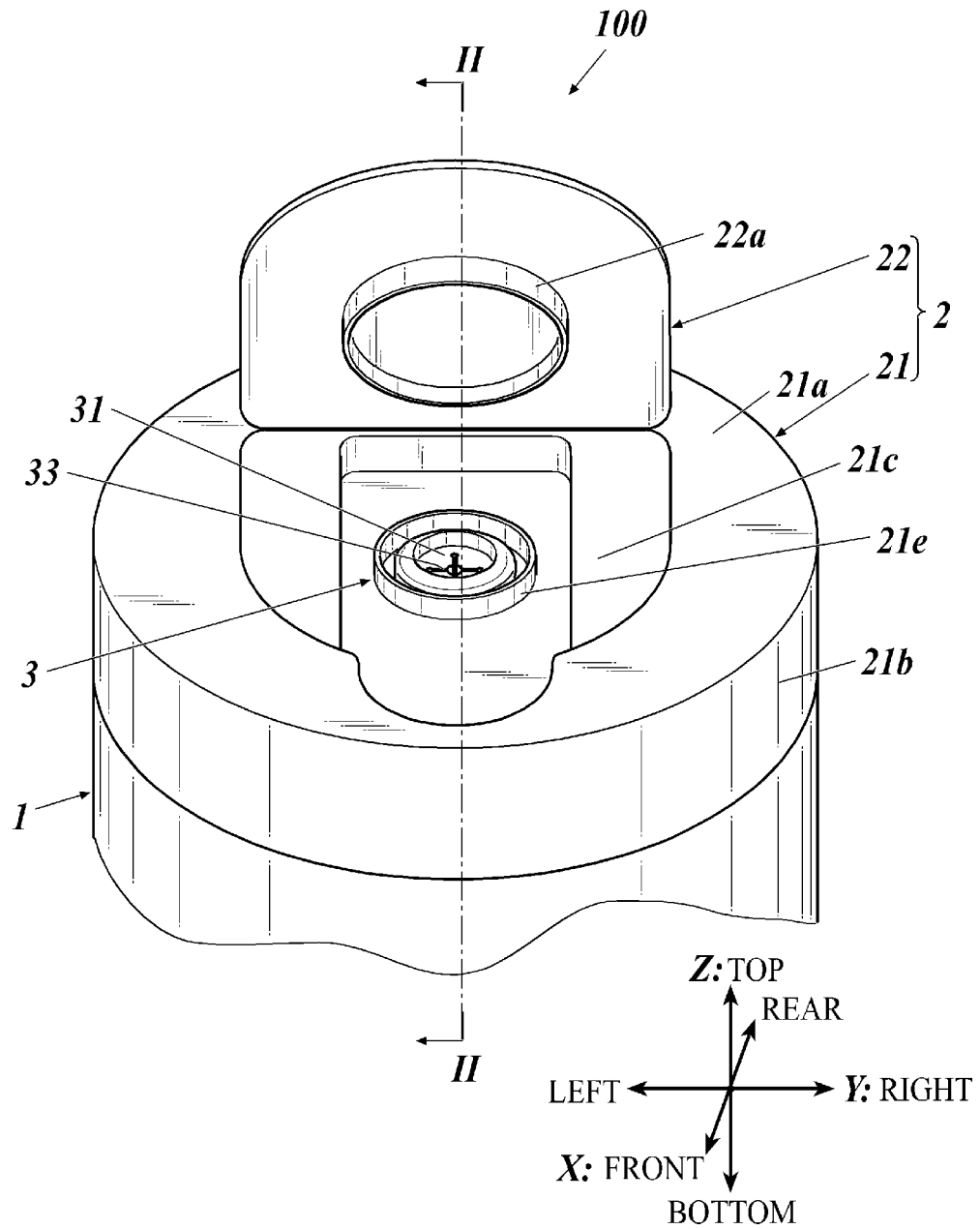


FIG. 2

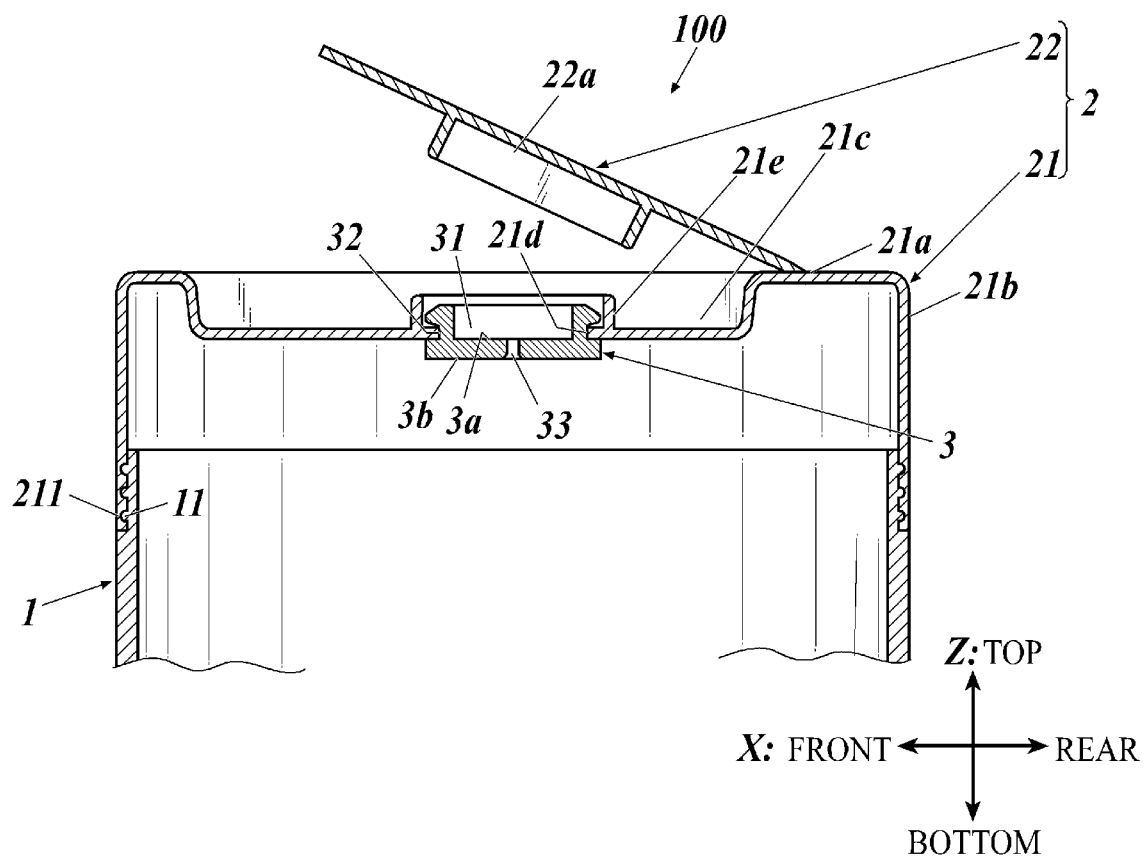


FIG. 3

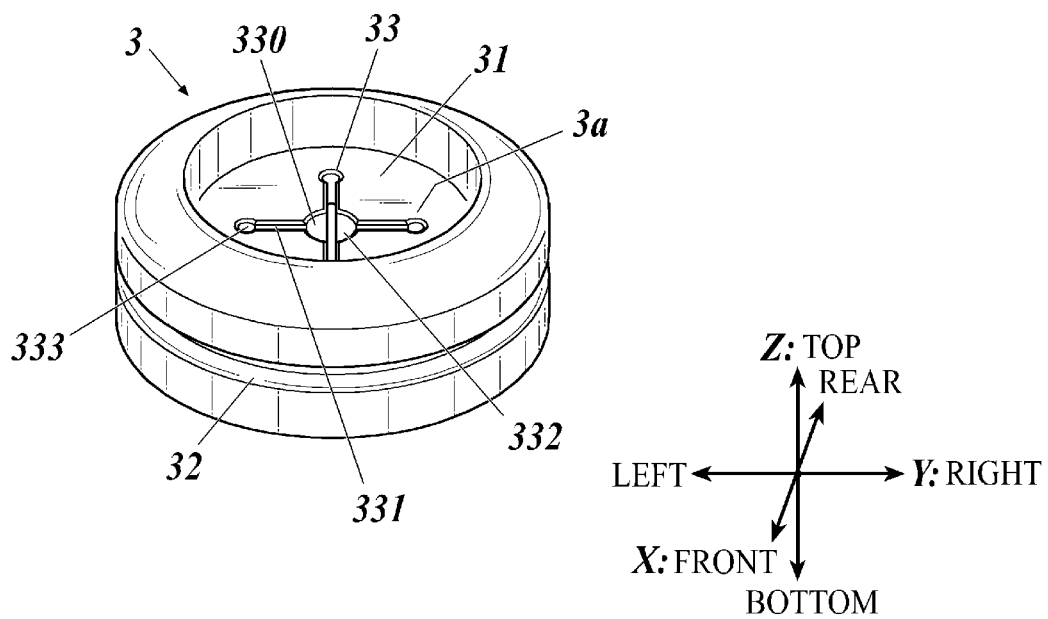


FIG. 4

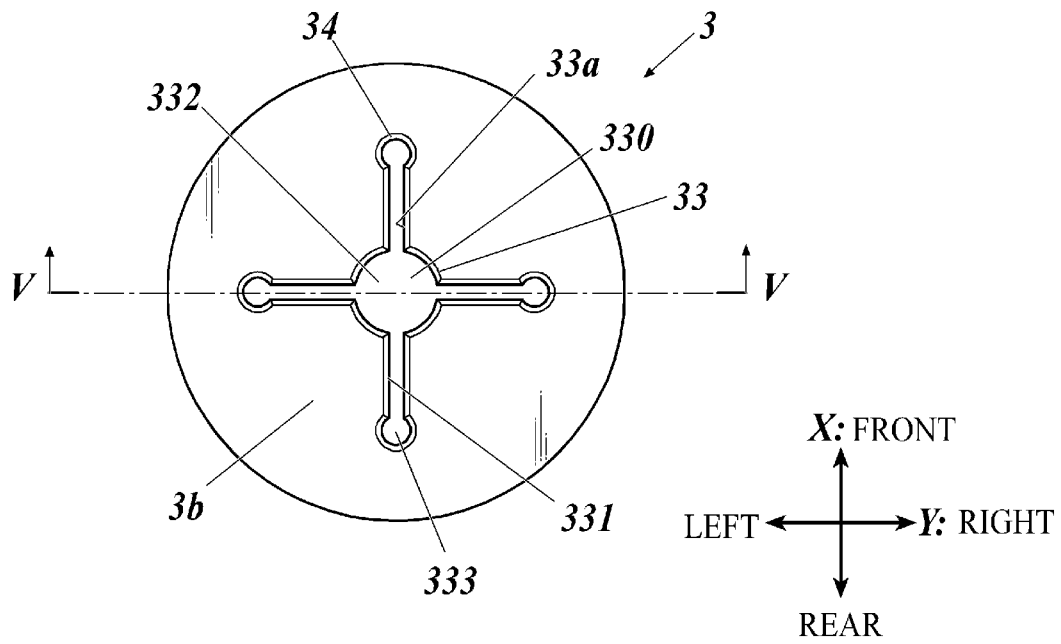


FIG. 5

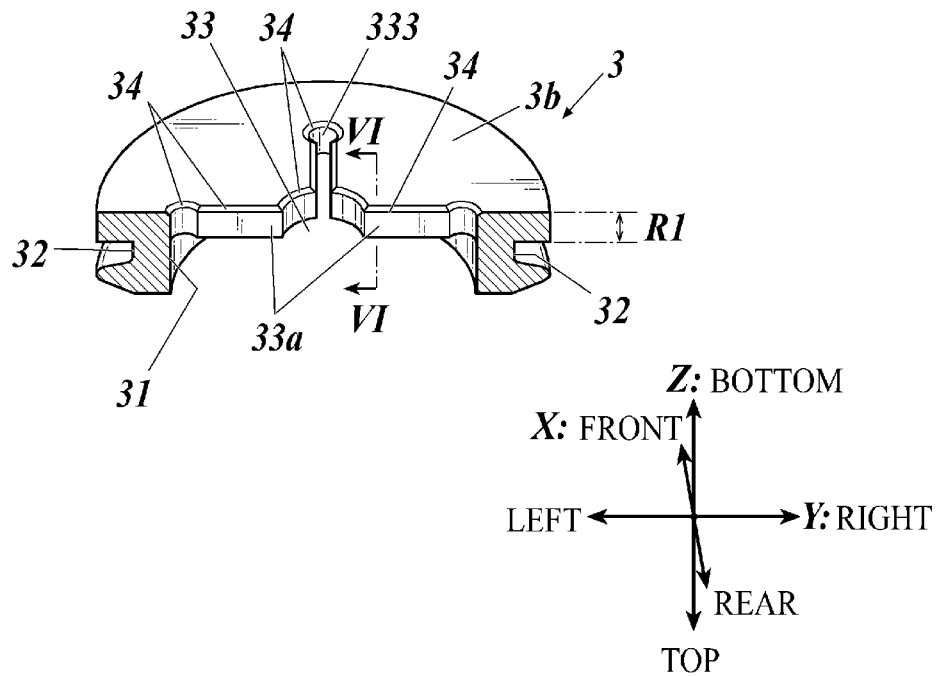


FIG. 6

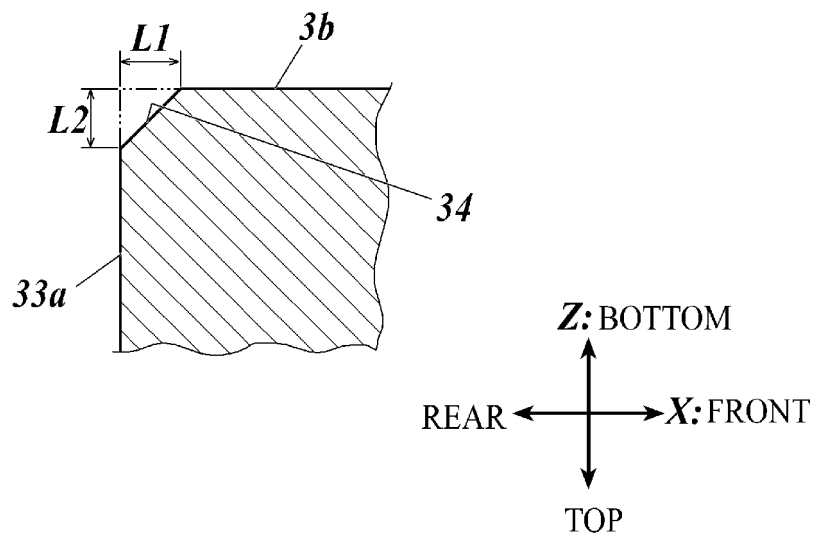
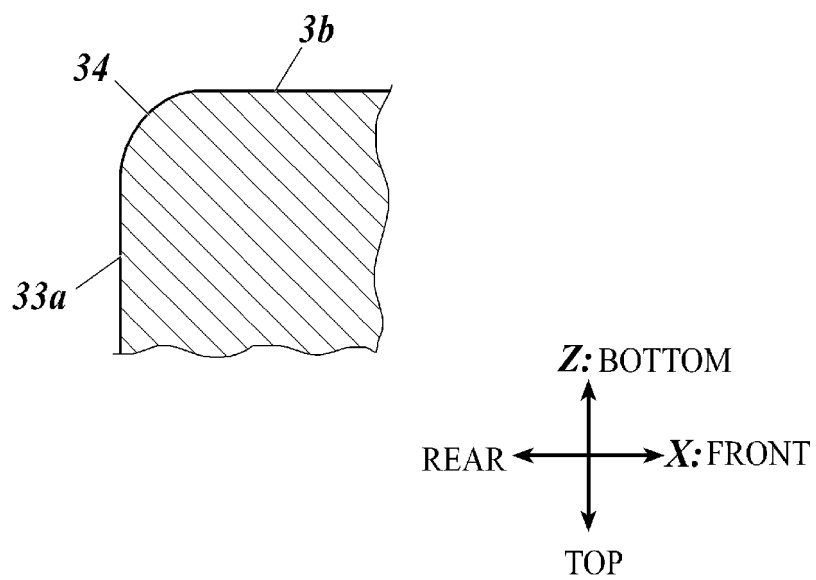


FIG. 7



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2020/033728

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl. B65D83/08 (2006.01) i, A47K10/18 (2006.01) i
 FI: B65D83/08B, A47K10/18

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, A47K10/18

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 2017-178359 A (DAIO PAPER CORPORATION) 05 October 2017 (2017-10-05), paragraphs [0015], [0021]-[0028], fig. 1-5	1-6
Y	JP 64-11133 A (DAINICHISEIKA COLOR & CHEMICALS MFG. CO., LTD.) 13 January 1989 (1989-01-13), page 1, lower right column, line 6 to page 3, upper left column, line 6	1-6
Y	JP 2014-122050 A (TOPPAN PRINTING CO., LTD.) 03 July 2014 (2014-07-03), fig. 7	4



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
 16 October 2020

Date of mailing of the international search report
 02 November 2020

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 3-4-3, Kasumigaseki, Chiyoda-ku,
 Tokyo 100-8915, Japan

Authorized officer

Telephone No.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No. PCT/JP2020/033728
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JP 2017-178359 A	05 October 2017	US 2019/0069732 A1 paragraphs [0020]-[0022], [0032]-[0047], fig. 1-5 WO 2017/169327 A1 TW 201733877 A CN 108778955 A
JP 64-11133 A	13 January 1989	(Family: none)
JP 2014-122050 A	03 July 2014	(Family: none)

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 2012192962 A [0004]