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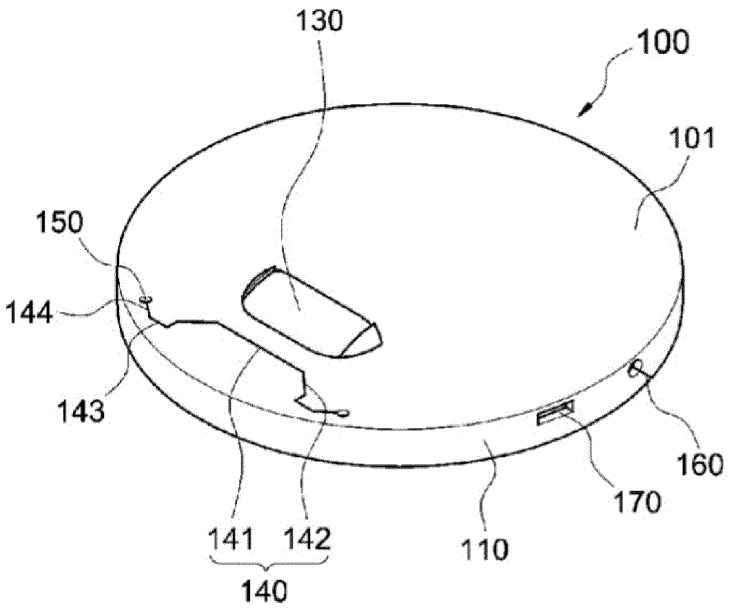
(54) SAFETY OPENING CAP

(57) The safety opening cap of the present disclosure is a safety opening cap for opening a can lid of a can including, a protruding rim formed to protrude from an upper part of a can in which food is stored, a can lid formed inside the protruding rim and covering the upper part of the can, and a tab having one side coupled to the can lid, wherein the safety opening cap includes, a cap body forming a main body, an outer wall extended downwards from an outer peripheral surface of the cap body, a tab lifting part formed to be protruding from an upper surface of the cap body by a predetermined thickness and having an inclined surface, and a tab passing means formed on the upper surface of the cap body for forming a space in which the tab can be inserted when the cap body is pressed downwards.

[FIG. 1]



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Description

[Technical Field]

[0001] The present disclosure relates to a safety opening cap that allows a user to safely open a can lid, and is directed to propose a safety opening cap that prevents damage of the user's nails or fingers in any case of an operation of lifting a tab to open the can lid or an operation of pulling the tab to open the can lid.

[Background Art]

[0002] Generally, in order to store and distribute food for a long period of time, cans, also called canned foods, are used. Such cans are usually made of a metal material, and a can lid is provided so that an upper part of the can can be opened when taking out the stored food.

[0003] In order to take out the food stored in such a can, in a state where the tab attached to the can lid is lifted up from the can lid, a finger is hooked on the tab and then by taking action of lifting the tab up with a predetermined force, the can lid is made to be torn. At this time, the can lid is provided with a cut part on the periphery of the can lid so that the can lid can be easily torn by the action of lifting the tab up.

[0004] For example, in the case of the commonly consumed tuna cans, a cut line is provided along the periphery of the can lid provided on the top of the can so that the can lid can be opened without a separate tool for opening the can lid. This allows the can lid to be opened while tearing the can lid along the cut line by the action of hooking a finger on the tab and pulling the tab, so that the can can be opened without additional tools.

[0005] At this time, a user holds the outer periphery of the can with one hand to fix the can, and pulls the tab upward with the finger of the other hand hooked on the tab to open the can lid.

[0006] However, since the material of the can for storing foods for a long time is made of a metal material, and the can lid is also made of a metal material, the cut surface of the can lid is inevitably sharp. Thus, cases of physical safety accidents frequently occur in which the hand of the user opening the can is cut by the cut surface of the can lid.

[0007] (Patent Document 1) KR 10-1479529 B

[0008] In the case of Patent Document 1, a safety cap is proposed to prevent safety accidents when the can lid is opened, and a flat plate cap part and an opening for making a tab exposed to the outside are disclosed as components for preventing the occurrence of safety accidents.

[0009] However, in Patent Document 1, there is a danger that the user's nail may be scratched or the nail may be broken when the user performs a lifting operation to rotate the tab of the can lid before pulling the tab.

[0010] Further, in Patent Document 1, in the process of pulling the tab to open the can lid, the sharp edge of the can lid is exposed as it is, and there is a very high possibility that the user's hand or finger may be cut.

[Summary of the Invention]

[Technical Problem]

[0011] The present disclosure is directed to propose an apparatus capable of ensuring the safety of a user in opening a can lid in which food is stored, wherein the apparatus is capable of considering the safety of the user over all operations including, an operation of lifting a tab formed on the can lid, a primary opening operation of the user pulling the lifted tab, and a secondary opening operation of completely opening the can lid by continuously pulling the tab.

[0012] In particular, the safety opening cap of the present disclosure is made such that a user presses an upper surface of the safety opening cap, and the tab is lifted up gradually by moving the safety opening cap in close contact towards the tab which is in close contact with the can lid. By doing so, a safety opening cap is proposed in which the tab lying in close contact with the can lid does not need to be directly lifted by the nail.

[0013] Furthermore, the present disclosure proposes a safety opening cap that can guide the can lid to be folded or bent stably during the opening process of the can lid, and prevents safety accidents from occurring during the opening process by the can lid having a sharp surface.

[Technical Solution]

[0014] The safety opening cap of the present disclosure is a safety opening cap for opening a can lid of a can including, a protruding rim formed to protrude from an upper part of a can in which food is stored, a can lid formed inside the protruding rim and covering the upper part of the can, and a tab having one side coupled to the can lid, the safety opening cap including: a cap body forming a main body, an outer wall extended downwards from an outer peripheral surface of the cap body, a tab lifting part formed to be protruding from an upper surface of the cap body by a predetermined thickness and having an inclined surface, and a tab passing means formed on the upper surface of the cap body for forming a space in which the tab can be inserted when the cap body is pressed downwards.

[Advantageous Effects]

[0015] According to the safety opening cap of the present disclosure, the safety of the user can be ensured over all operations including, an operation of lifting a tab formed on the can lid, a primary opening operation of the user pulling the lifted tab, and a secondary opening operation of completely opening the can lid by continuously pulling the tab.

[0016] Further, it is advantageous in that since the user does not need to directly lift the tab up with a nail, the nail can be prevented from breaking when the tab is lifted.

[Brief Description of the Drawings]

[0017]

FIGS. 1 to 4 are views illustrating a configuration of a safety opening cap according to a first embodiment of the present disclosure.

FIG. 5 is a view illustrating a structure different from that of FIG. 4 in the lower surface structure of the safety opening cap of the present embodiment.

FIGS. 6 and 7 are views illustrating a configuration of a safety opening cap according to a second embodiment of the present disclosure.

FIGS. 8 to 10 are views for explaining a bending cut line and a bending cut hole which can be applied to the safety opening cap of the present embodiment.

FIGS. 11 to 15 are views illustrating a process of opening a can lid using a safety opening cap according to an embodiment of the present disclosure.

FIG. 16 is a view illustrating the lower surface when the can lid is opened using the safety opening cap according to an embodiment of the present disclosure.

FIGS. 17 and 18 are views illustrating a configuration of an upper surface of a safety opening cap according to a third embodiment of the present disclosure.

FIGS. 19 and 20 are views illustrating a configuration of an upper surface of a safety opening cap according to a fourth embodiment of the present disclosure.

FIGS. 21 to 23 are views illustrating various shapes of the inner wall constituting the safety opening cap of the present embodiment.

FIG. 24 is a view illustrating a lower surface of the safety opening cap of the present embodiment.

FIG. 25 is a view illustrating a configuration of a safety opening cap according to another embodiment of the present disclosure.

FIG. 26 is a view for explaining a process of opening a can lid using the safety opening cap of the present embodiment.

[Detailed Description of the Invention]

[0018] FIGS. 1 to 4 are views illustrating a configuration of a safety opening cap according to a first embodiment of the present disclosure.

[0019] First, referring to FIGS. 1 and 2, the configuration of an upper part side of the safety opening cap of the present embodiment will be described. The safety opening cap 100 includes a cap body 101 having a shape corresponding to the shape of a can lid formed on a can, a cutout part 140 formed on the cap body 101, a tab lifting part 130 having a shape protruding from the cap body 101 by a predetermined thickness, and an outer wall 110 formed to be extending downward from the cap body 101 to be fixed in close contact with the outside of a protruding rim 40 of a can 10.

[0020] The cap body 101 is configured to form a main body of the safety opening cap, and in the figures, has a circular shape. However, if the safety opening cap is implemented on a can of a square shape or another shape, the shape of the safety opening cap may be determined to correspond to the shape of the can or the shape of the can lid.

[0021] Generally, when the can lid 20 is opened, the tab 30 is first raised with a nail, and then the tab 30 is pulled to open. Therefore, when the tab 30 is raised, accidents may occur where the nail is broken, or a finger is cut by the outer periphery of the can lid 20 during the opening process. In order to prevent this, a tool may be used for opening.

[0022] The present disclosure is made to be combined integrally with a can 10 to be distributed and stored, and when consuming the food from the can 10, the tab 30 is fitted between the cutout part 140 as shown in FIG. 15 and then the tab 30 is pulled so as to be opened safely.

[0023] That is, there is no need for other tools, and the tab 30 lying in close contact with the can lid 20 can be raised without using a nail, and accidents of a finger getting cut during the opening process can be prevented and thereby, the can lid 20 can be opened safely.

[0024] Further, by using the safety opening cap 100 at the time of opening, the nail is protected and finger safety accidents can be prevented by a simple operation of inserting the tab 30 into the cutout part 140 and opening it without separate operation action such as flipping the safety opening cap 100. In this way, the can lid 20 can be safely opened, thereby improving simplicity and effectiveness.

[0025] The configuration of the safety opening cap 100 according to the present disclosure can be classified into a part that enables the tab 30 to be raised while protecting the nail when raising the tab 30, and a part that enables safe opening by preventing accidents caused by the can lid 20 during the opening process.

[0026] Components that enable the tab 30 to be raised while protecting the nail include the cutout part 140 and the tab lifting part 130 formed on the upper surface of the cap body 101 as mentioned above.

[0027] In addition, components for preventing accidents due to the can lid 20 during the opening process include the cutout part 140, a refraction cut line 160 and a bent cutout hole 170 formed on the outer wall 110 to be described below separately for each part, and an inner wall 120 and a lid hooking piece 121 formed on the lower surface of the cap body 101.

[0028] When inserting the tab 30 into the cutout part 140, the cutout part 140 can be inserted into the tab 30 after raising the tab 30 with a nail, or in order to protect the nail while raising the tab 30, the tab 30 can be inserted in a state where it is lying in close contact with the can lid 20, as shown in FIG. 12.

[0029] First, the cutout part 140 and the tab lifting part 130 for raising the tab 30 while protecting the nail will be described in detail.

[0030] As described above, the cutout part 140 becomes a tab passing means for exposing the tab 30 to the upper surface of the cap body 101 by passing the tab 30 that is in close contact with the can lid 20 through the cutout part 140 when opening the can lid 20. As will be described below, the tab passing means in the present embodiment is configured as the cutout part 140, or can be configured as a hole formed in the cap body like a tab inlet hole 340 illustrated in FIG. 19 and FIG. 20.

[0031] The cutout part 140 is a position where the tab 30 is raised at the time of opening, wherein when the tab 30 is attempted to be raised while protecting the nail as shown in FIGS. 11 to 13, the cutout part 140 has the function of widening a gap between the can lid 20 and the tab 30 which are in close contact with each other. Also, at the time of opening, when opening by pulling the raised tab 30 as shown in FIG. 15, the cutout part 140 enables safe opening by functioning as a support that prevents the tab 30 from being pushed down, downward (in the direction in which the tab is pulled) from the raised position.

[0032] The cutout part 140 includes a first cut line 141 corresponding to a portion cut between one side end part (edge) of the cap body 101 and the tab lifting part 130, and a second cut line 142 formed between the first cut line 141 and one side end part of the cap body 101, cut in a different direction form the first cut line 141 in order to increase the opening size of the cap body.

[0033] That is, if the first cut line 141 is a portion cut in a first direction, the second cut line 142 may be a cut portion extending from the first cut line 141 while being a section in which the cut is formed in a direction different from the first direction.

[0034] At the time of opening, if a user places the cutout part 140 below the end of the handle (loop part) of the tab 30 while pressing the cap body 101 downward, as shown in FIGS. 11 and 12, and the cap body 101 is pushed and moved in an axis (rivet) direction of the tab 30, a gap is formed between the tab 30 and the can lid 20 while the tab 30 starts to be inserted into the cutout part 140.

[0035] Further, as shown in FIG. 13, the tab 30 is gradually pulled apart from the can lid 20 by the tab lifting part 130 while the tab 30 is inserted into the cutout part 140. When the cap body 101 is pressed downward, in order for the cap body 101 to be lowered smoothly and the tab 30 to be easily inserted into the cutout part 140, a first sub-cut line 143 and a second sub-cut line 144 may be further formed for expanding the width opened together with the first cut line 141 and the second cut line 142.

[0036] The first sub-cut line 143 is a cut portion extending from an end part of the second cut line 142, and is formed so as to be cut in a direction different from the direction of the second cut line 142. The second sub-cut line 144 is formed in a shape extending from one end of the first sub-cut line 143, and the first sub-cut line 143 and the second sub-cut line 144 may also be configured to be cut in different directions.

[0037] In addition, at the end parts of the cut lines interconnected but having different cutting directions, a cut severance hole 150 for severing the cut is formed. By forming the cut severance hole 150, it is possible to prevent a part of the cap body from being torn or damaged up to a region where a cut line is not formed when a portion of the cap body is opened by the cut line.

[0038] Meanwhile, when a part of the cap body 101 is opened by the cutout part 140 and the user moves the safety opening cap 100 to the tab side, a tab lifting part 130 causes one side end part of the tab to rotate in a vertical direction which corresponds to the direction of coming apart from the can lid so as to cause a lifting action, and a more detailed description will be given of the tab lifting part 130.

[0039] The tab lifting part 130 has a shape protruding from the upper surface of the cap body 101 by a predetermined thickness, and a tab guide step 132 is formed to protrude from the upper surface of the tab lifting part 130 for guiding the movement of the tab 30 flowing therein.

[0040] The tab guide step 132 is for guiding the moving direction of the tab as the area of the tab contacting the tab lifting part 130 is gradually increased. For example, a pair of tab guide steps may be formed spaced apart from each other.

[0041] In addition, as shown in FIG. 3, the tab lifting part 130 has a shape whose height gradually increases from one side to the other side, that is, an inclined surface 131 is formed. Due to such a shape, the vertical rotation of the tab 30 is naturally performed as the inflow area of the tab 30 gradually increases.

[0042] Here, the front of the safety opening cap can be defined as the area side where the tab 30 of the can is inserted into the upper surface of the cap body with respect to the center of the cap body 101, and the rear of the safety opening cap can be defined as a position opposite of the front with respect to the center of the cap body 101. That is, with respect to the center part of the cap body 101, the direction in which the tab lifting part is formed can be defined as the front, and the opposite direction can be defined as the rear.

[0043] In detail, the cutout part 140 and the tab lifting part 130 are configured at positions eccentric to any one side from the center part of the cap body 101. When the cap body 101 is viewed from a state where the cap body 101 is connected to the protruding rim 40 of the can, the cutout part 140 is formed at the center part of the axis (rivet) of the tab 30. As shown in FIG. 1, the tab lifting part 130 may be adjacent to or contacted by the first cut line 141 so that the tab coming in through the cutout part 140 can be naturally lifted. As described above, these components are arranged at positions eccentric in one direction from the center part of the cap body 101.

[0044] The tab lifting part 130 may be formed in a rec-

tangular shape that extends in one direction (longitudinal direction), and the first cut line 141 may be formed in parallel with the longitudinal direction of the tab lifting part 130. In addition, the second cut line 142 serves to expand an open area so that the tab 30 can be easily inserted into the upper surface of the cap body 101 together with the first cut line 141, and has a shape that leads from each end part to the outside.

[0045] Here, the embodiment of the opening process will be described in more detail. FIGS. 11 to 15 are views illustrating a process of opening a can lid using a safety opening cap according to an embodiment of the present disclosure.

[0046] First, as shown in FIG. 11, after separating the can 10 and the safety opening cap 100 which is integrally connected to the can, the user presses the upper surface of the cap body 101 while protecting the nails to start the opening of the can lid.

[0047] As shown in FIG. 12, when the user presses the cap body 101 of the safety opening cap 100 with a finger to open the can lid 20 provided for sealing the upper part of the can 10, due to the the cutout parts 140, a part of the tab lifting part 130 is lowered to a position lower than the first cut line 141, and due to the cutout parts 140, a gap is formed into which the tab 30 can be inserted into the cap body 101.

[0048] Then, when the safety opening cap 100 is pushed toward the tab 30, one side of the tab 30 is gradually inserted into the gap of the cutout part 140 from a state in contact with the can lid 20, and the other side of the tab 30 is left in a state connected to the can lid 20.

[0049] When a part of the end part of the tab 30 is inserted into the cutout part 140 of the safety opening cap 100, the user gradually pushes the safety opening cap 100 toward the tab 30 side. At this time, while the tab lifting part 130 formed on the upper surface of the cap body 101 is pushed into the lower side of the tab 30, a rotating operation in which one end of the tab 30 gradually spreads apart from the can lid 20 occurs (see FIGS. 11 to 13).

[0050] The tab 30 is gradually lifted up by the tab lifting part 130, so that it is possible to prevent the nail or finger from being damaged while the tab 30 is brought into close contact with the can lid 20. That is, as shown in FIG. 13, when the tab 30 is rotated so as to be separated from the can lid 20 by a predetermined distance, it is not necessary to use nails, and the lifted tab 30 is easily vertically raised with a finger(see FIG. 14).

[0051] When the safety opening cap 100 is pushed into the tab 30 side, a refraction cut line 160 is formed on the outer wall 110, but the refraction cut line 160 is formed at an acute angle, so the outer wall 110 is not caught or obstructed by the protrusion rim 40. The refraction cut line 160 will be described below.

[0052] As shown in FIG. 14, when the user lifts the tab 30 almost perpendicular to the can lid 20, the tab 30 is brought adjacent to or into contact with the position of the first cut line 141 as shown in FIG. 15(in the case of the embodiment of FIG. 17, the tab 30 is brought adjacent to or into contact with the position of the second cut line 242), and when the tab 30 is pulled, the tab 30 is supported by the surface cut by the first cut line 141 (in the case of FIG. 17, the surface cut by the second cut line 242) and the position of the tab 30 is fixed without being pushed and lowered. Therefore, when the tab 30 is pulled, the can lid 20 and the cap body 101 are opened together while being bent equally. Accordingly, the can lid 20 and the cap body 101 are bent or bent in parallel to improve the close contact. As a result, the phenomenon of a gap forming between the can lid 20 and the cap body 101 is remarkably reduced, and the can lid 20 can be prevented from being exposed to the outside of the cap body 101 and can be safely opened.

[0053] Next, the inner wall 120, the lid hooking piece 121, the refraction cut line 160, and the refraction cutout hole 170, which prevent the accident caused by the can lid 20 in the process of pulling and opening the tab 30, will be sequentially described.

[0054] FIGS. 4 and 5 show the lower part configuration of the safety opening cap of the present embodiment.

[0055] FIGS. 4 and 5 each show other embodiments, and in the case of FIG. 5, the lid hooking piece 121 is formed on the inner wall 120.

[0056] First, referring to FIG. 4, the safety opening cap 100 of the present embodiment includes the above-mentioned outer wall 110 and the inner wall formed inside the outer wall 110, so as to be coupled with a protruding rim 40 (see FIG. 12) usually formed on a can for storing food. An outer side wall 110 and an inner side wall 120 formed inside the outer side wall 110 are included.

[0057] The inner wall 120 is formed to prevent the safety opening cap 100 from being suddenly detached from the protruding rim 40 of the can when the tab 30 is pulled at the time of opening.

[0058] The inner wall 120 has a vertically projecting shape extending from the lower surface of the cap body 101 which is not bent and has a planar shape, while the inner wall 120 is formed on the entire lower surface of the cap body 101 or a part of the lower surface of the cap body 101.

[0059] That is, the inner wall 120 is disposed so as to be separated from the outer wall 110 by a predetermined distance, and the protruding rim 40 of the can is inserted between the inner wall 120 and the outer wall 110. Further, at the time of opening, the can lid 20 is allowed to be inserted into the inside of the inner wall 120.

[0060] If the inner wall 120 is not formed, when opening the can lid 20 by pulling the tab 30 at the time of opening, the tension of pulling the tab 30 causes the safety opening cap 100 to be slid and disengaged suddenly downward from the protruding rim 40 of the can. As a result, the sharp surface of the can lid is exposed as it is, and leads to an accident of the body (see FIGS. 15 and 26). Therefore, the inner wall 120 is formed to prevent the safety opening cap 100 from being detached from the can 10. That is, when the can lid 20 is opened, the force for pulling

the tab 30 is concentrated on the rear side of the cap body 101 opposite to the front side of the cap body 101 where the tab 30 is located, and so a force that pushes the safety opening cap 100 behind the protruding rim 40 and urges detachment is applied. However, since the inner wall 120 is caught on the inner surface of the protruding rim 40 and receives resistance, it is possible to prevent the safety opening cap from being pushed backward and being detached from the can.

[0061] Further, the inner wall 120 serves to surround the outer periphery of the sharp can lid 20 so as not to be exposed during the opening process. This will be described below.

[0062] In addition, the inner wall 120 may also have a refraction cut line and a refraction cut hole formed at a position corresponding to the refraction cut line or the refraction cut hole formed on the outer wall.

[0063] As shown in FIGS. 5 and 16, in order to prevent the sharp end part of the can lid from being exposed due to deformation wherein the can lid is bent or folded when the can lid is opened, a lid hooking piece 121 may be formed protruding by a predetermined thickness on the inner peripheral surface of the inner side wall 120 where the can lid 20 is located in the opening process of the can.

[0064] If the lid hooking piece 121 is not formed, when opening by pulling the tab 30, the deformation of the can lid 20 being bent or folded so that the risk of a safety accident becomes extremely high. That is, if the force for pulling is not constant when the tab 30 is pulled to be swung right and left, the outer periphery of the can lid 20 that is bent or folded and is separated apart from the lower surface of the cap body 101 is exposed and may injure the fingers.

[0065] However, since the lid hooking piece 121 is formed on the inner peripheral surface of the inner side wall 120, safety can be strongly assured in the process of opening the can lid 20.

[0066] It is only possible for the lid hooking piece 121 to be formed because the inner wall 120 is formed to project vertically downward from the cap body 101 having a planar shape without bending. That is, the inner wall 120 serves as a base on which the lid hooking piece 121 can be formed. The lid hooking piece 121 will be described in detail.

[0067] FIG. 16 shows a view of the lower surface when the can lid 20 is opened using the safety opening cap 100 according to the embodiment of the present disclosure. As shown in FIG. 16, the can lid 20 comes into contact with the lid hooking piece 121 while being opened, and the lid hooking piece 121 is bent and folded by the tension of pulling the tab 30 while the can lid 20 is led into the lower surface of the cap body 101 to be seated inside the inner wall 120. As a result, the inner wall 120 and the outer wall 110 wrap the outer periphery of the can lid 20 in a double manner. During the opening process, when the tab 30 is swung right and left to open, even if the pulling force for the tab 30 is not constant, since the can lid 20 being shaken is hooked on the lid hooking piece 121, the position of the can lid 20 is maintained without being exposed to the outside from the inner wall 120 or without being detached. Further, even when the can 10 and the can lid 20 are completely separated and opened, the lid hooking piece 121 prevents the can lid 20 from being detached, thereby preventing safety accidents due to the sharp can lid 20.

[0068] FIGS. 21 to 23 are views illustrating various shapes of the inner wall 120 constituting the safety opening cap of the present embodiment.

[0069] The inner wall 120 shown in FIGS. 4 and 5 has an overall 'C' shape since the inner wall is not formed near the position where the tab lifting part 130 is formed.

[0070] In another embodiment, as shown in FIG. 21, the inner wall 120 may have a shape corresponding to the outer wall 110 formed along the outer peripheral surface of the cap body 101, and the inner wall 120 may have an overall circular or elliptical shape, and more precisely may be formed to have a shape corresponding to the shape of the protruding rim of the can.

[0071] In yet another embodiment, as shown in FIG. 22, an inner wall may be formed in a remaining area other than a portion in the front and a portion in the rear of the cap body 101. In this case, the wall includes a first inner wall 122 formed on one side of the cap body 101 and a second inner wall 123 formed on the other side of the cap body 101.

[0072] In yet another embodiment, as shown in FIG. 23, an inner wall may be formed only on a portion in the rear of the cap body 101, and in this case, only a rear inner wall 124 is formed.

[0073] The outer wall 110 may be formed with the refraction cut line 160 and the refraction cut hole 170 described above, and the contact protrusion 111.

[0074] The refraction cut line 160 and the refraction cut hole 170 are formed so as to prevent accidents caused by the can lid 20 and to facilitate opening when the can lid 20 is opened. The contact protrusion 111 is formed to prevent the safety opening cap 100 connected to the can 10 from being easily removed during the distribution process.

[0075] First, the contact protrusion 111 will be described in detail. As shown in FIG. 4, the contact protrusion 111 is formed to protrude from the inner peripheral surface of the outer wall 110 by a predetermined thickness, and is fixed to the outside of the protruding rim 40 of the can.

[0076] As described above, the formation of the contact protrusions 111 can prevent the safety opening cap 100 from being easily removed from the can 10 during the distribution process. The contact protrusion 111 may be formed on the entire inner peripheral surface of the outer wall 110 or may not be formed on a part thereof.

[0077] FIG. 24 is a view of the lower surface of the safety opening cap illustrating that the contact protrusion 111 of the present disclosure is formed only on a part of the inner peripheral surface of the outer wall 110.

[0078] In the case where the contact protrusion 111 is

formed on the entire inner peripheral surface of the outer wall 110 differently from FIG. 24 (circular form), at the time of opening when the tab 30 is raised and then the tab 30 is initially pulled, the protruding contact protrusion 111 is caught on the protruding rim 40 of the can 10 as shown in FIG. 4, and the safe opening cap 100 does not easily come off from the protruding rim 40, so that the opening becomes difficult. As a result, the tab 30 may be pulled with force and the tab 30 may break off.

[0079] Therefore, with the position crossing in the longitudinal direction of the first cut line 141 as reference, when the direction of the tab lifting part 130 is referred as the rear, the inner peripheral surface part of the outer wall 110 on the front side (opposite direction from the tab lifting part 130), the contact protrusion 111 is not formed as shown in FIG. 24 (see FIG. 1 for the positions of the first cut line 141 and the tab lifting part 130). Thus, when the tab 30 is initially pulled, the safety opening cap 100 is easily detached from the protruding rim 40 of the can 10 to prevent the tab 30 from being broken off.

[0080] That is, the contact protrusion 111 may be formed in a 'C' shape, or may be partially removed at the position where the refraction cut hole 170 is located.

[0081] If the contact protrusion 111 is provided on the outer wall 110 where the refraction cut hole 170 is located, a repulsive force is generated in the bending and folding action of the outer wall 110 at the time of opening due to the thickness of the protruded contact protrusion 111. Therefore, the contact protrusion 111 is partially removed at the position where the refraction cut hole 170 is located, so that the repulsive force of the bending and folding action of the outer wall 110 is reduced at the time of opening, so that the opening is facilitated.

[0082] The above-mentioned refraction cut line 160 formed on the outer wall 110 will be described. As shown in FIGS. 4 and 15, the refraction cut line 160 is formed on the outer wall 110 symmetrically to the left and right from around the center part of the cap body 101 that supports the thumb at the time the cap is opened.

[0083] The formation of the refraction cut line 160 eliminates the repulsive force of the outer wall 110 generated during the opening process of the can lid 20, improves the close contact between the can lid 20 and the cap body 101, and is formed to safely open the can lid 20.

[0084] In the case where the safety opening cap 100 is opened without forming the refraction cut line 160 on the outer wall 110, the can lid 20 which is deformed by being bent concavely and folded during the opening process, and the cap body 101 that does not bend or fold easily due to the repulsive force of the outer wall 110, cannot be bent or folded equally. Therefore, when shaking the can lid 20 left and right to open, the can lid 20 and the cap body 101 are lifted up without maintaining close contact, and an accident may occur in which a finger is injured by the exposed sharp can lid 20. However, safe opening is possible due to the formation of the refraction cut line 160.

[0085] The repulsive force of the outer wall 100 during the opening process is caused because the outer wall 110 is vertically projected downward from the outer peripheral surface of the cap body 101 in a ring (loop) shape as shown in FIGS. 4 and 5.

[0086] Therefore, the refraction cut line 160 is formed on the outer wall 110, and the refraction cut line 160 formed on the outer wall 110 is naturally completely cut when the tab 30 is pulled at the time of opening, so that the repulsive force of the outer wall 110 is eliminated. As a result, the repulsive force of the outer wall 110 is eliminated and the cap body 101 is easily bent, and the cap body 101 and the can lid 20 are bent equally to improve the close contact. Therefore, when the tab 30 is swung left and right in the opening process and pulled, the can lid 20 is prevented from being exposed even if the pulling force is not constant, and can be opened safely (see FIGS. 15, 16 and 26). For reference, FIG. 26 is a partially enlarged view illustrating a configuration in which the inner wall 120 is brought into close contact with the protruding rim 40 of the can when the tab is pulled, so that the safety opening cap is prevented from sliding downwards and being detached.

[0087] Further, if the refraction cut line 160 is not formed on the outer wall 110, the outer wall 110 is vertically projected downward from the cap body 101 in a ring (loop) shape, and a phenomenon occurs in which the outer wall 110 is cringed when the tab 30 is pulled. Accordingly, when the tab 30 is pulled while the safety opening cap 100 is coupled to the protruding rim 40 of the can 10, the contact protrusion 111 protruding from the inner surface of the outer wall 110 is exactly fitted to the protruding rim 40 of the can and so the opening is not easy (see the close contact protrusion in FIGS. 4 and 24).

[0088] Therefore, if the tab 30 is pulled with excessive force, the tab 30 may break off. However, when the refraction cut line 160 is formed, the refraction cut line 160 formed on the ring (loop) shaped outer wall 110 is naturally completely cut as the tab 30 is pulled and opened, so phenomenon of cringing is eliminated. Thereby, the tab 30 can be easily opened while preventing the tab 30 from being broken off. It goes without saying that the cap body 101 can be used by the user by completely cutting the refraction cut line 160 artificially before opening.

[0089] The refraction cut line 160 may be formed at an acute angle or vertically from the cap body 101, as shown in FIGS. 9 and 10, and a cut severance hole 161 may be formed so as to prevent additional cuts and breaks from occurring when being cut during the opening process. The cut severance hole 161 may or may not be formed as necessary.

[0090] The refraction cut line 160 is partially cut and a part is made to have incisions thereon so that the cap body 101 is firmly connected to the protruding rim 40 of the can 10 during the distribution process, and when the tab 30 is pulled at the time of opening, the cap body 101 is naturally completely cut.

[0091] The outer wall 110 may be formed to have one or more refraction cut lines 160 corresponding to the left

and right depending on the size of the can 10, or as shown in FIGS. 11 to 15, the refraction cut line 160 and the refraction cut hole 170 may be formed in parallel.

[0092] The position formed when the refraction cut line 160 and the refraction cut hole 170 are formed in parallel is, as shown in FIG. 8 and FIG. 11 as embodiments, when the center portion of the cap body 101 is shown as a 'C' shape, and the lifting part 130 side is defined as the front and the opposite side is defined as the rear, the refraction cut hole 170 is formed at a position eccentric to the front side, and oppositely, the refraction cut line 160 may be formed at a position eccentric to the rear side.

[0093] As described above, the refraction cut hole 170 and the refraction cut line 160 can be formed in parallel. Alternatively, only the refraction cut line 160 may be added without being parallel, and both the front and rear may be formed with the refraction cut line 160, or both the front and rear may be formed with the refraction cut hole.

[0094] In more detail, at least one or more refraction cut lines 160 or at least one or more refraction cut holes 170 may be formed at positions corresponding to the left and right sides with respect to the tab lifting part 130, or both the refraction cut line 160 and the refraction cut hole 170 may be formed. For example, the refraction cut hole 170 may be formed on the front side of the cap body 101 with respect to the center part of the cap body 101, and the refraction cut line 160 may be formed on the rear side of the cap body 101. Conversely, the refraction cut line 160 may be formed on the front side of the cap body 101, and the refraction cut hole 170 may be formed on the rear side of the cap body 101.

[0095] The shape of the refraction cut hole 170 may be a shape such as a square, a triangle, and a circle.

[0096] As described above, when the refraction cut hole 170 and the refraction cut line 160 are formed in the front and rear of the cap body 101 in parallel, or when the refraction cut line 160 or the refraction cut hole 170 is formed in both the front and rear sides, the opening process based on the supporting position of the thumb supporting the cap body 101 as shown in FIG. 15, will be described.

[0097] When the position the thumb is supporting when pulling the tab 30 at the time of opening is far towards the rear of the cap body 101 as shown in FIG. 15, the refraction cut line 160 becomes an incision, and the repulsive force against the bending and folding action of the outer wall 110 and the inner wall 120 is weakened, and the opening is facilitated. When the position where the thumb is supporting is close to the tab lifting part 130, since a position close to the tab 30 is pressed by the thumb while the tab 30 is pulled, the opening is difficult. However, since the refraction cut hole 170 (hole or groove shape) or the refraction cut line 160 can be formed on the front side of the cap body 101, the repulsive force of the bending and folding action of the outer wall 110 and the inner wall 120 is weakened, and the opening is facilitated. Therefore, the position where the thumb supports the can lid 20 may be free.

[0098] Further, when the tab 30 is pulled during the opening process, the can lid 20 is bent and folded to deform in shape. However, the bending and folding of the can lid 20 are performed around the refraction cut line 160 or the refraction cut hole 170, so the can lid 20 and the cap body 101 are bent or folded equally to improve the close contact.

[0099] Accordingly, when the tab 30 is swung right and left in the opening process and pulled, even if the pulling force is not constant, the phenomenon that a gap is formed between the can lid 20 and the cap body 101 is remarkably reduced, and can be opened safely.

[0100] Next, the refraction cut line 160 and the refraction cut hole 170 will be described in the operation process of pressing the safety opening cap 100 of the present disclosure while moving and pushing toward the tab 30, to lift up the tab 30 so as to be spread apart from the can lid 20.

[0101] When the can lid 20 is opened, if the refraction cut line 160 is formed on the outer wall 110 or the refraction cut line 160 and the refraction cut hole 170 are formed in parallel, easy opening and safety can be ensured.

[0102] The angle between the refraction cut line 160 and the upper surface of the cap body 101 can be variously changed. However, when the safety opening cap 100 is pushed toward the tab 30 while being pressed and moved, the refraction cut line 160 is caught on the protruding rim 40 of the can 10, so it is made not to interfere with the movement of the safety opening cap 100 while being pushed.

[0103] Referring to FIGS. 11 to 13, if the refraction cut line 160 is formed on the forward (in the direction of the tab lifting part 130) from the center part of the cap body 101, when the safety opening cap 100 is pressed while being pushed and moved toward the tab 30, the gap of the refraction cut line 160 is caught on the protruding rim 40 of the can 10 and interferes.

[0104] Therefore, a refraction cut hole 170 formed by a hole or a groove is formed in the front of the cap body 101.

[0105] Further, although the above-mentioned refraction cut line 160 which is completely cut when opened may be formed at the rear, if it is formed vertically as shown in FIG. 10, it will be caught by the protruding rim 40 of the can 10, so as shown in FIG. 9, it is formed as an acute angle, to allow the safety opening cap 100 to be smoothly moved toward the tab 30.

[0106] Of course, as shown in FIG. 12, before starting to open, first, the refraction cut line 160 may be cut by hand, and then the safety opening cap 100 may be moved toward the tab 30 while pressing the safety opening cap 100 to start opening. In this case, since the repulsive force of the outer wall 110 is weakened, it is easy to grip and press the safety opening cap 100 and to push and move the safety opening cap 100 toward the tab 30.

[0107] FIGS. 6 and 7 are views illustrating a configuration of a safety opening cap according to a second embodiment of the present disclosure.

[0108] In the case of the safety opening cap shown in FIGS. 6 and 7, which is a case wherein a cut line crossing the center of the cap body 101 is formed, the bending and the folding is facilitated when the can lid is opened using the safety opening cap, to improve the close contact of the cap body 101 and the can lid 20 during the opening process.

[0109] That is, the cap body 101 is formed with a cap body refraction cut line 210 for bending the center part of the cap body 101 when the can lid 20 is opened. The cap body refraction cut line 210 is formed to cross the cap body near the center part of the cap body, and is formed to be connected to the refraction cut hole 170 and the refraction cut line 160, or may be formed without being connected to the refraction cut hole and the refraction cut line 160. The cap body refraction cut line 210 may be formed one or more depending on the size of the can 10, and the cap body refraction cut line 210 may have incisions made or be formed to have a thin thickness.

[0110] FIGS. 17 and 18 are views illustrating the configuration of the upper surface of the safety opening cap according to the third embodiment of the present disclosure.

[0111] Referring to FIGS. 17 and 18, there is illustrated a case where the tab passing means is formed with a cut line different from the cutout part illustrated in the previous embodiments and a case where a lifting part support wall 243 is formed is exemplified.

[0112] That is, as shown, when the user presses the cap body 101 downward, a gap is formed so that the tab 30 can be inserted in front of the tab lifting part 130, and a cutout part 240 is formed to allow the tab lifting part 130 to come into contact with the lower surface of the tab when when the safety opening cap 100 is pushed toward the tab 30 to insert the tab.

[0113] The cutout part 240 is formed such that a first cut line 241, cut so that a part of the tab lifting part 130 is lowered when the cap body 101 is pressed, is connected to a second cut line 242 formed at a position separated from the tab lifting part 130 by a predetermined distance.

[0114] When the cap body 101 is pressed down and pushed to be moved toward the tab 30, a part of the tab lifting part 130 is lowered to a position lower than the second cut line 242, and a rotation operation occurs in which one side end part of the tab 30 is spread apart from the can lid 20 by the tab lifting part 130 while the tab 30 is inserted between the second cut line 242 and the tab lifting part 130.

[0115] As described above, in the case of the third embodiment, as shown in FIG. 17, the tab lifting part 130 is formed so it is possible to raise the tab 30 that has been spread apart from the can lid 20 by the tab lifting part 130 with a finger, without using a nail. Further, as shown in FIG. 18, the lifting part support wall 243 projecting at the same height as the rear (higher side of the inclined surface) of the tab lifting part 130 having the inclined surface 131 may be formed to be adjacent to or in contact with the tab lifting part 130.

[0116] The lifting part support wall 243 is for preventing the tab lifting part 130 from being excessively lifted up when lifting and pulling the tab 30 at the time of opening.

[0117] That is, when pressing the cap body 101 or the tab lifting part 130 downward while pushing toward the tab 30, as shown in FIG. 18, the first cut line 241 is formed up to the tab lifting part 130, so only a part of the tab lifting part 130 is lowered to a lower position, and the lifting part support wall 243 remains as it is.

[0118] In addition, when the tab 30 is pulled while being lifted up, the lowered tab lifting part 130 rises, but the lifting part support wall 243 supports the tab lifting part 130 and the tab lifting part 130 can be prevented from being excessively lifted.

[0119] FIGS. 19 and 20 are views illustrating the configuration of the upper surface of the safety opening cap according to the fourth embodiment of the present disclosure.

[0120] In the safety opening cap 100 of the fourth embodiment, it is identical in that the tab lifting part 130 is formed on the upper surface of the cap body 101, but instead of the cutout part or the cut line in front of the tab lifted part 130, this is a case where the tab passing means is formed with a tab inlet hole 340 having a size that allows the tab 30 to be inserted.

[0121] In FIGS. 19 and 20, the tab inlet hole 340 has a fan shape or a rhombus shape, but any shape such as a rectangular shape or an elliptical shape can be used as long as the tab 30 can be inserted or introduced.

[0122] Also in the case of the fourth embodiment, if the user presses the cap body 101 downward, the tab lifting part 130 will be lowered, and if the user pushes the safety opening cap 100 toward the tab, the lower surface of the tab 30 is rotated while being lifted up by the tab lifting part 130 while the tab 30 is inserted through the tab inlet hole 340.

[0123] Then, if the lifted tab 30 is vertically raised with a finger instead of a nail, the tab 30 is adjacent to or in contact with the tab support surface 341.

[0124] Therefore, if the tab 30 raised at the time of opening is pulled, the tab 30 is supported by the tab support surface 341 so it is not pushed down, and the position of the tab 30 is fixed. Then, the can lid 20 and the cap body 101 are opened together, and the can lid 20 and the cap body 101 are bent or folded equally during the opening process to improve the close contact, to enable safe opening.

[0125] In the case of the fourth embodiment, as shown in FIG. 20, the outer wall 110 in contact with the tab inlet hole 340 can be removed.

[0126] FIG. 25 is a view illustrating a configuration of a safety opening cap according to yet another embodiment of the present disclosure.

[0127] In the case of the upper surface of the safety opening cap shown in FIG. 25, it may be configured without the can lifting part 130, and the first cut line 141 and the second cut line 142 of the cutout part 140 as the tab passing means, and the first sub cut line 143 and the

second sub cut line 144 and the cut severance hole 150 may be provided.

[0128] As described above, the first sub cut line 143 and the second sub cut line 144 enlarge the width opened together with the cutout part 140. Accordingly, it is possible to facilitate pressing the safety opening cap 100 and inserting the tab 30 into the cutout part 140.

[0129] The use of the safety opening cap 100 configured as described above is performed by pressing the safety opening cap 100 downward while pushing the safety opening cap 100 to move toward the tab 30, and inserting the tab 30 into the gap of the cutout part 140. It is possible to open without raising the tab 30 with a nail or finger, by putting a hand in the lower surface in the rear of the safety opening cap 100 to lift the safety opening cap 100 and raising the tab 30, and the tab 30 can be pulled to open.

[0130] It goes without saying that the first sub cut line 143 and the second sub cut line 144 can be formed as curves without forming corners as necessary.

[Industrial applicability]

[0131] The present disclosure is intended to enable safe opening of a can lid in which food is stored, and has industrial applicability.

Claims

1. A safety opening cap for opening a can lid of a can comprising, a protruding rim formed to protrude from an upper part of a can in which food is stored, a can lid formed inside the protruding rim and covering the upper part of the can, and a tab having one side coupled to the can lid, the safety opening cap comprising:

a cap body forming a main body,
an outer wall extended downwards from an outer peripheral surface of the cap body,
a tab lifting part formed of an inclined surface shape protruding from an upper surface of the cap body by a predetermined thickness for protecting a nail when raising the tab, wherein the tab lifting part is disposed to be in contact with or spaced apart from an axis or rivet of the tab by a predetermined distance when the tab is raised, and
a tab passing means formed on the upper surface of the cap body for forming a space in which the tab can be inserted when the cap body is pressed downwards,
wherein the tab passing means is configured with a cutout part in which a part of the cap body is cut,
wherein the cutout part comprises a first cut line formed at a position in contact with the tab lifting part or spaced apart from the tab lifting part by a predetermined distance, and a second cut line formed to be extended from the first cut line while being formed in a different direction from the first cut line,
wherein at least one or more refraction cut lines or refraction cut holes, or both the refraction cut line and the refraction cut hole disposed in a position corresponding to the left and right with respect to the tab lifting part for facilitating bending or folding of the cap body during the opening process while preventing the tab from breaking off when pulling the tab at the time of opening the can lid,
wherein if the direction the tab lifting part is formed in defined as the front with respect to a center part of the cap body, and the opposite direction of the front is defined as the rear, the refraction cut hole is formed at the front side of the cap body and the refraction cut line is formed at the rear side of the cap body, or the refraction cut line is formed at the front side of the cap body and the refraction cut hole is formed at the rear side of the cap body, and
wherein the refraction cut line is formed to be inclined so as to be vertical or acute with respect to an upper surface of the cap body.

2. The safety opening cap of claim 1, wherein the cutout part further comprises a sub cut line cut to a predetermined length adjacent to the protruding rim along the protruding rim in a direction different from the second cut line while extending from an end part of the second cut line for expanding an opening width of the cutout part.

3. The safety opening cap of claim 2, wherein a cut severance hole having a hole structure is formed at one side end part of the sub cut line so as to prevent the cut from being further extended by pressing the cap body.

4. The safety opening cap of claim 1, wherein a lifting part support wall protruding to a height corresponding to a rear height of the tab lifting part is formed to be adjacent to or in contact with the rear of the tab lifting part.

5. The safety opening cap of claim 1, wherein, in order to prevent the outer wall from being detached from the protruding rim, a contact protrusion is formed inwardly along an inner peripheral surface of the outer wall by a predetermined thickness, and the contact protrusion is formed so as to be in contact with the outer peripheral surface of the protruding rim, and the contact protrusion is not formed as much as a preset length in the inner peripheral surface of the outer wall on the front side adjacent to the tab lifting

part.

6. The safety opening cap of claim 1, wherein, an inner wall projecting downward from a rear surface of the cap body is formed, and the inner wall is separated from the outer wall by a predetermined distance, so that the protruding rim is in close contact between the outside of the inner wall and the outer wall, and the can lid is inserted into the inside of the inner wall at the time the can lid is opened.

7. The safety opening cap of claim 6, wherein, at least one or more lid hooking pieces are formed protruding inward on the inner wall, for preventing the can lid from being exposed or detached to the outside from an inner position of the inner wall in the process of opening the can lid, and the lid hooking piece is disposed corresponding to both sides with respect to the tab lifting part.

8. The safety opening cap of claim 1, wherein, with respect to the center part of the cap body, when the direction in which the tab lifting part is formed is defined as the front, and the opposite direction is defined as the rear, the tab lifting part is formed to have a gradually increasing thickness from the front towards the rear of the cap body.

9. The safety opening cap of claim 8, wherein, a pair of tab guide steps are formed protruding from both sides of an upper surface of the tab lifting part by a predetermined thickness at predetermined intervals to guide the movement of the tab.

10. The safety opening cap of claim 1, wherein, the tab passing means comprises a tab inlet hole from which a part of the cap body is removed, and the tab inlet hole is formed between one side end part of the cap body and the tab lifting part, and is formed to have a size that allows insertion of the tab.

11. The safety opening cap of claim 10, wherein, the tab passing means is formed by removing the outer wall of a portion where the tab inlet hole is located.

12. A safety opening cap for opening a can lid of a can comprising: a protruding rim formed to protrude from an upper part of a can in which food is stored, a can lid formed inside the protruding rim and covering the upper part of the can, and a tab having one side coupled to the can lid, wherein the safety opening cap comprises:

a cap body forming a main body,
an outer wall extended downwards from an outer peripheral surface of the cap body,
a tab passing means formed on the upper surface of the cap body for forming a space in which a part of an end part of the tab can be gradually inserted when the cap body is pressed downwards, and
an inner wall projecting downward from a rear surface of the cap body is formed, and the inner wall is separated from the outer wall by a predetermined distance, so that the protruding rim is in close contact between the outside of the inner wall and the outer wall, and the can lid is inserted into the inside of the inner wall at the time the can lid is opened,
wherein, the tab passing means is configured with a cutout part in which a part of the cap body is cut, and
wherein the cutout part is formed to be in contact with or adjacent to an axis or rivet of the tab when the tab is raised at one side of an upper surface of the cap body, and the cutout part comprises a second cut line formed to be extended from the first cut line while being formed in a different direction from the first cut line, and a sub cut line cut to a predetermined length adjacent to the protruding rim along the protruding rim in a direction different from the second cut line while extending from an end part of the second cut line for expanding an opening width of the cutout part.

13. The safety opening cap of claim 12, further comprising a tab lifting part having an inclined surface shape protruding from an upper surface of the cap body by a predetermined thickness, and is disposed to be in contact with or spaced apart from an axis or rivet of the tab by a predetermined distance when the tab is raised.

14. The safety opening cap of claim 12, wherein, in order to prevent the outer wall from being detached from the protruding rim, a contact protrusion is formed inwardly along an inner peripheral surface of the outer wall by a predetermined thickness, and the contact protrusion is formed so as to be in contact with the outer peripheral surface of the protruding rim, and the contact protrusion is not formed as much as a preset length in the inner peripheral surface of the outer wall on the front side adjacent to the tab lifting part.

15. A safety opening cap for opening a can lid of a can comprising, a protruding rim formed to protrude from an upper part of a can in which food is stored, a can lid formed inside the protruding rim and covering the upper part of the can, and a tab having one side coupled to the can lid, the safety opening cap comprising:

a cap body forming a main body,
an outer wall extended downwards from an outer

peripheral surface of the cap body,

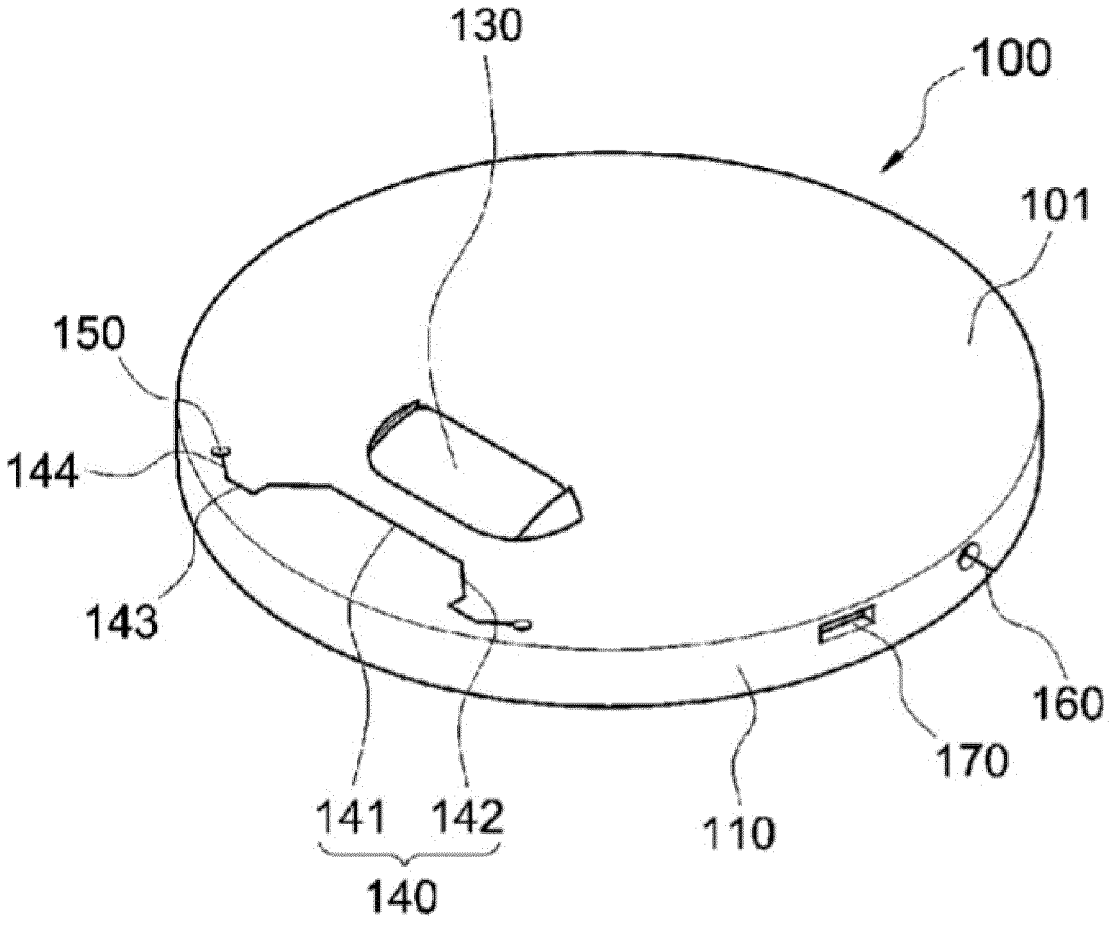
a tab lifting part formed of an inclined surface shape protruding from an upper surface of the cap body by a predetermined thickness for protecting a nail when raising the tab, wherein the tab lifting part is disposed to be in contact with or spaced apart from an axis or rivet of the tab by a predetermined distance when the tab is raised, and

a tab passing means formed on the upper surface of the cap body for forming a space in which a part of an end part of the tab can be gradually inserted when the cap body is pressed downwards,

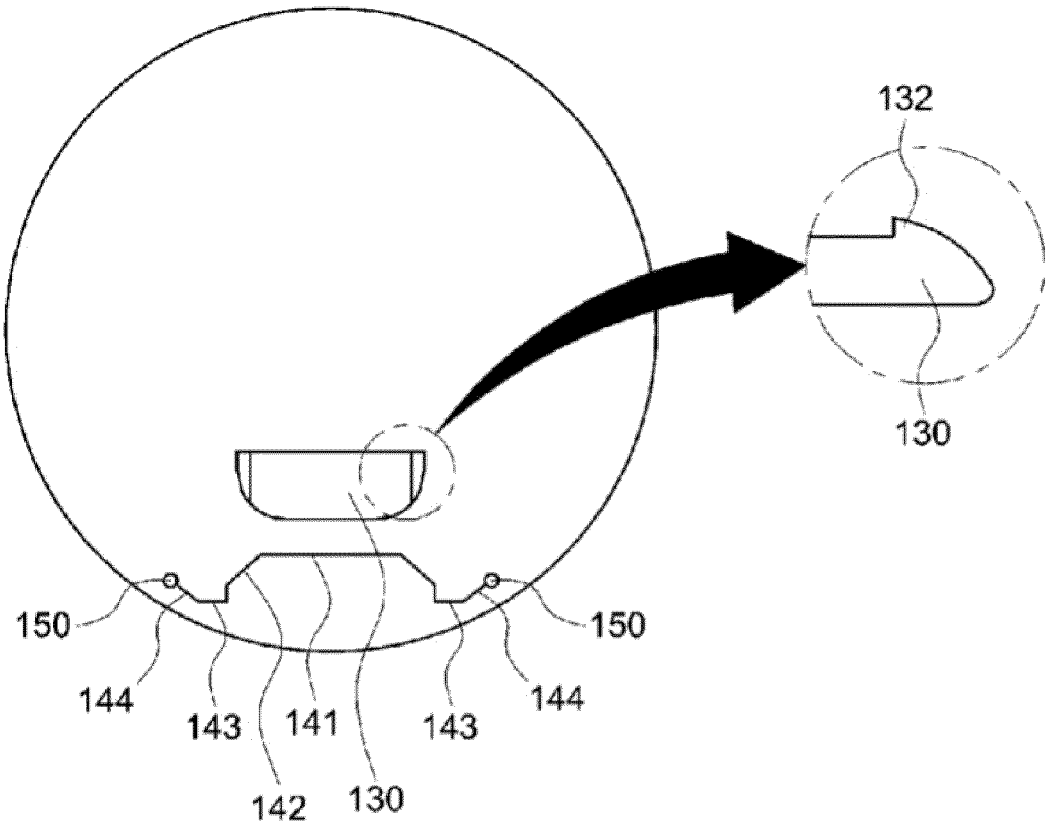
wherein the tab passing means is configured with a cutout part in which a part of the cap body is cut, and

wherein the cutout part comprises a first cut line formed at a position in contact with the tab lifting part or spaced apart from the tab lifting part by a predetermined distance, and a second cut line formed to be extended from the first cut line while being formed in a different direction from the first cut line.

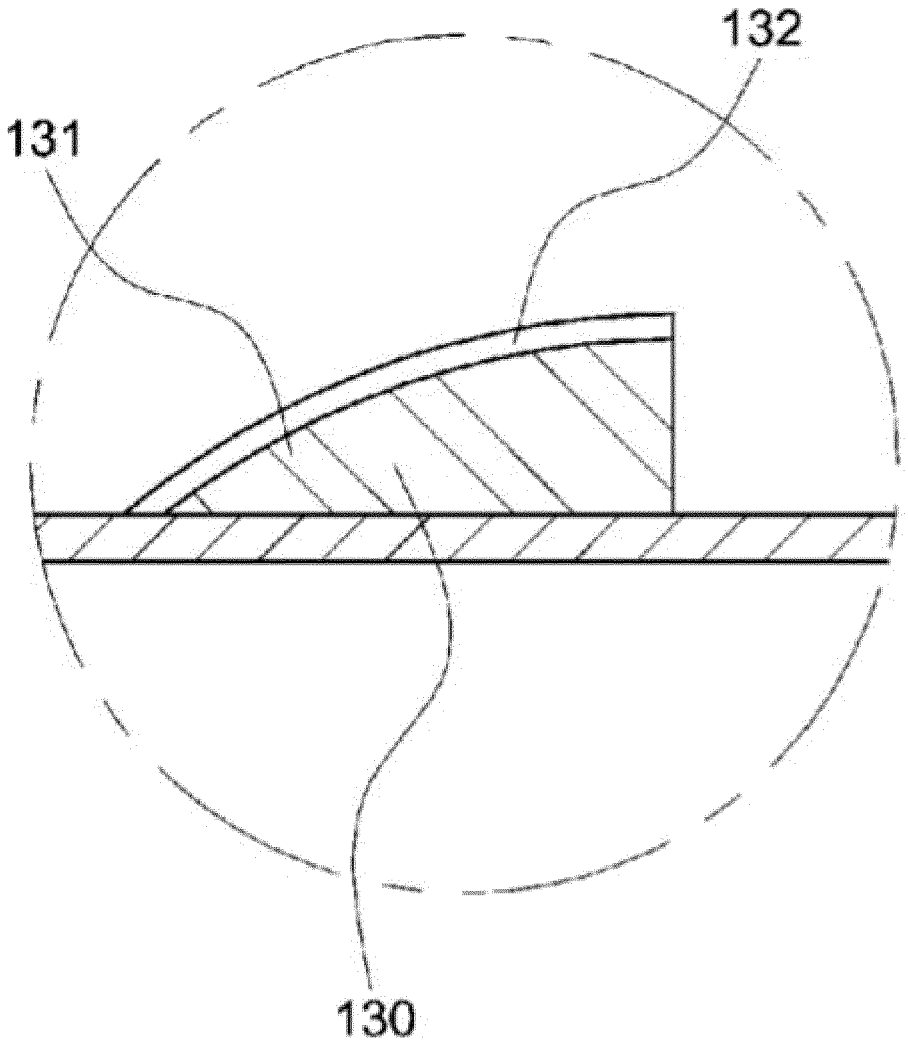
[FIG. 1]



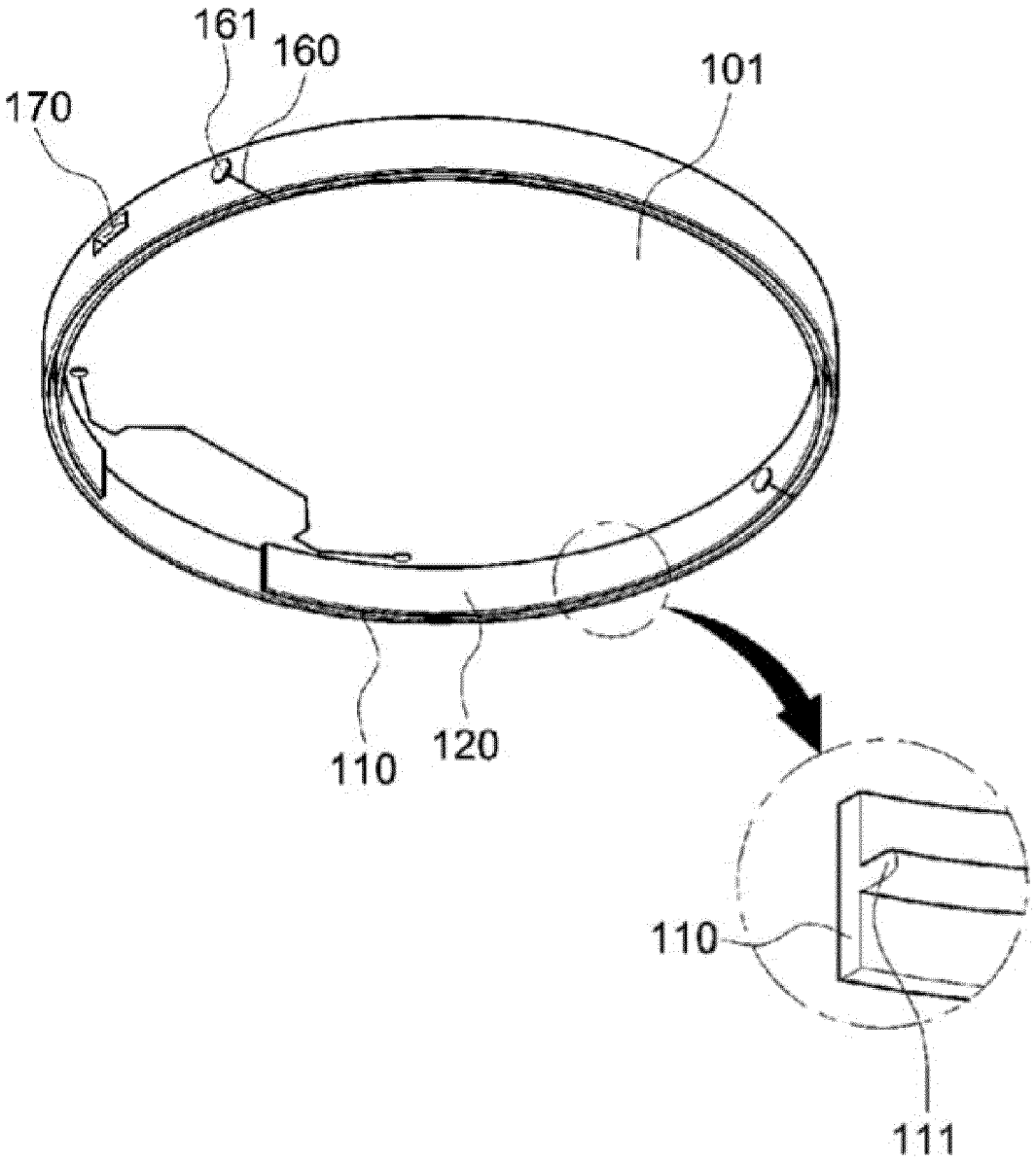
[FIG. 2]



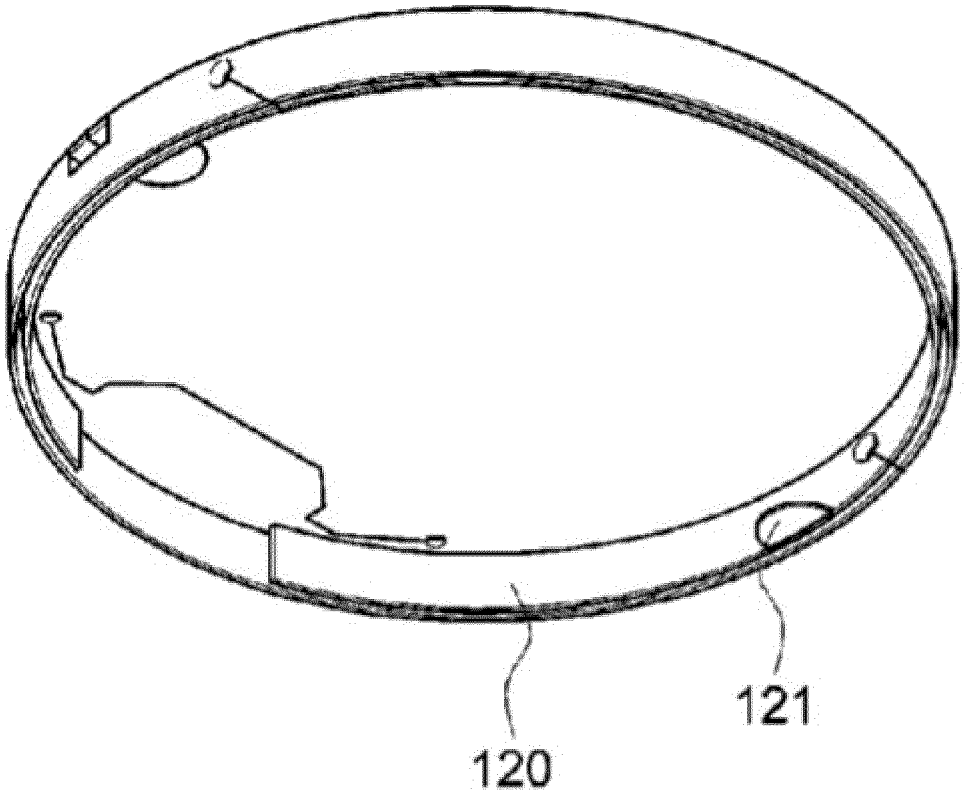
[FIG. 3]



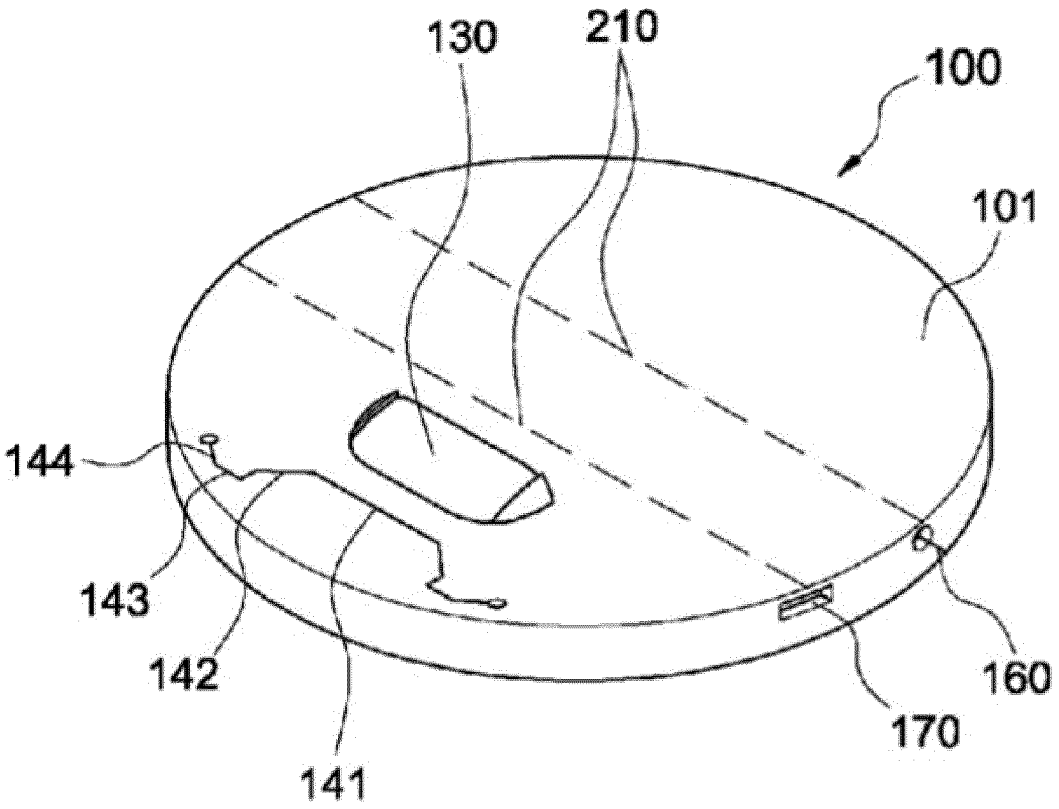
[FIG. 4]



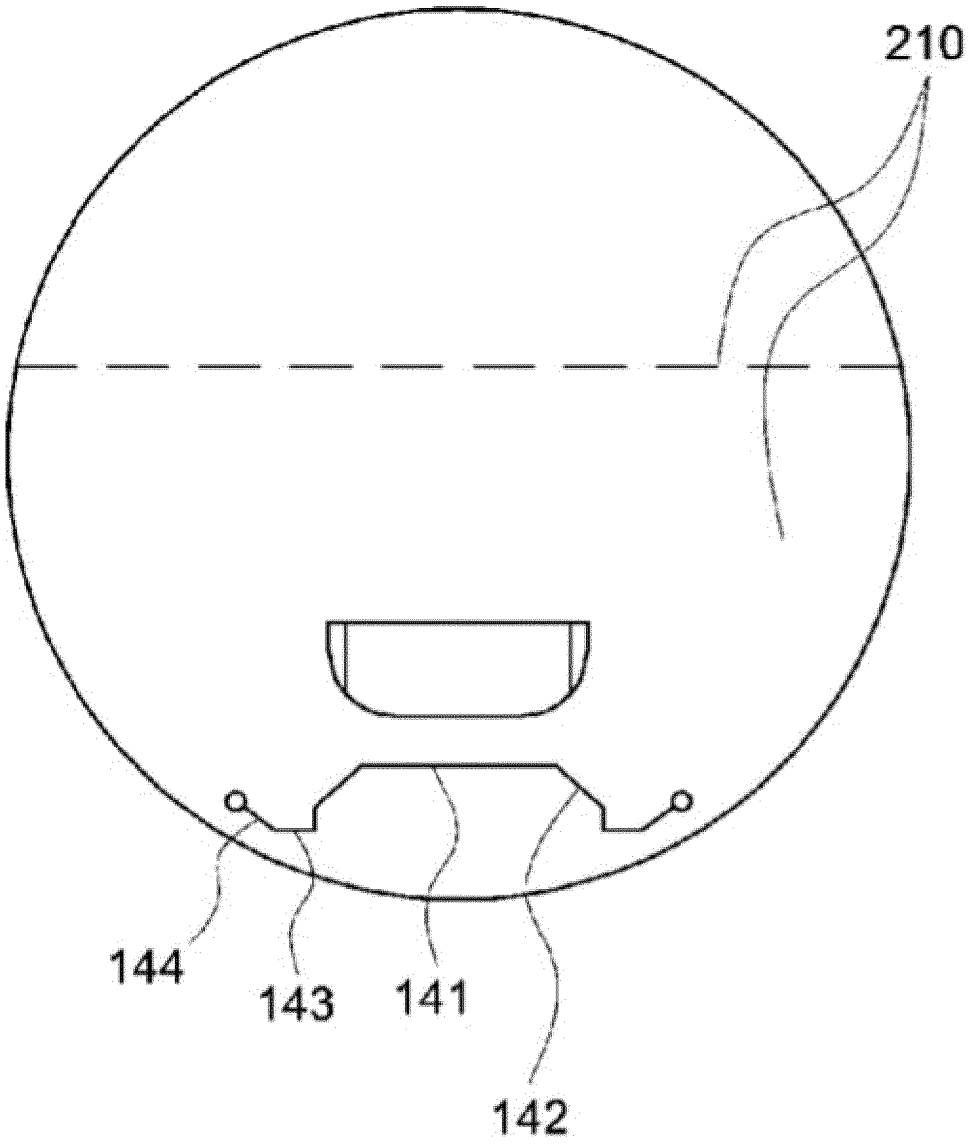
[FIG. 5]



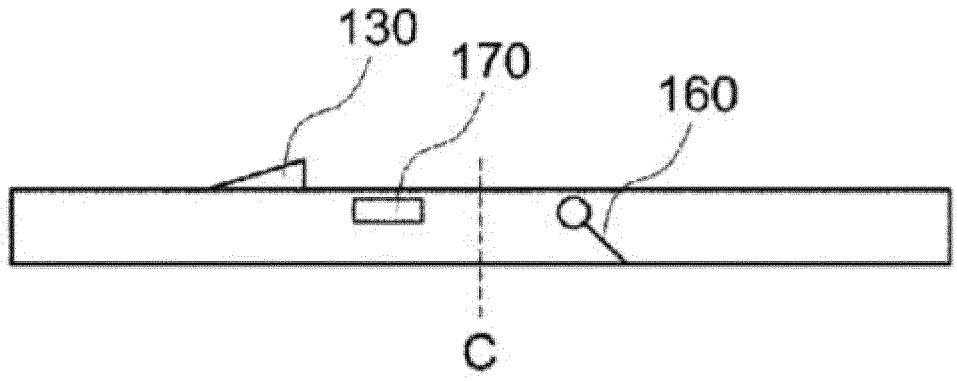
[FIG. 6]



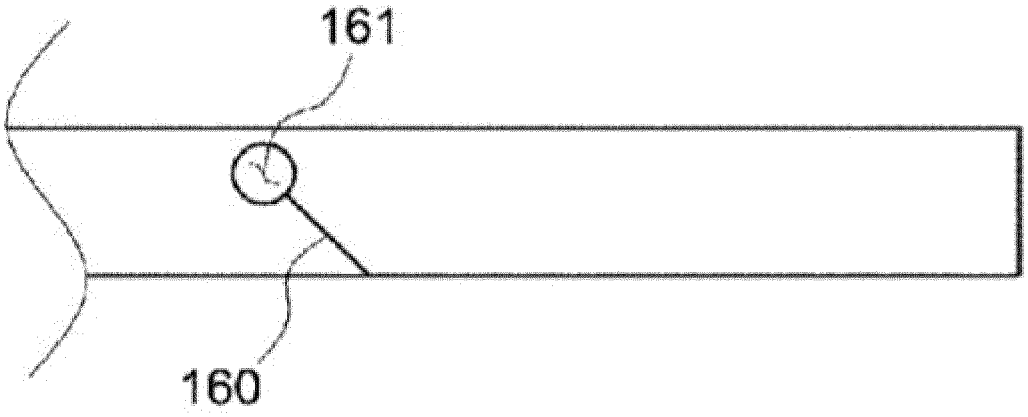
[FIG. 7]



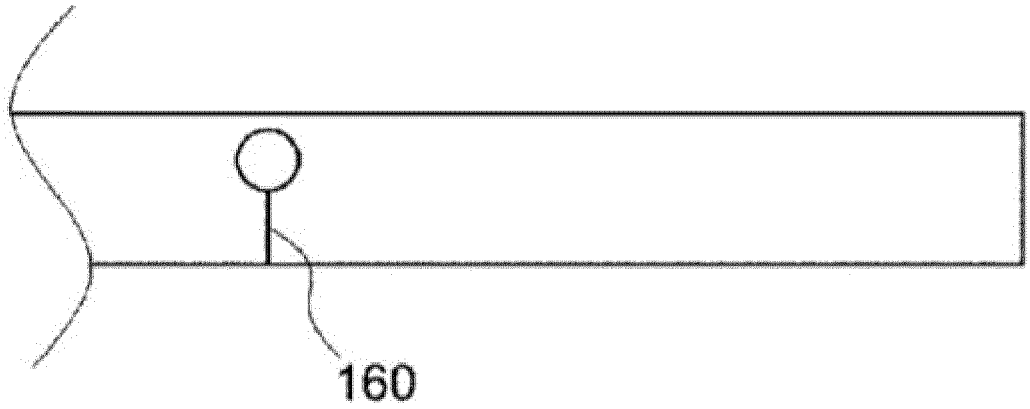
[FIG. 8]



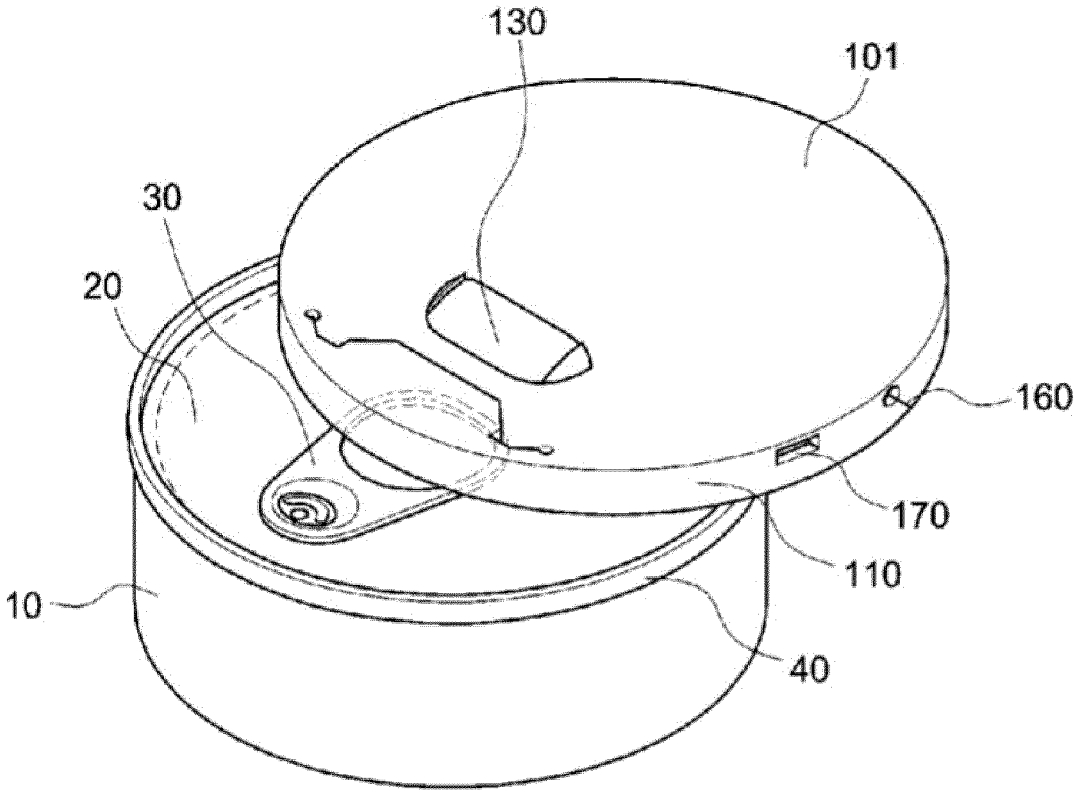
[FIG. 9]



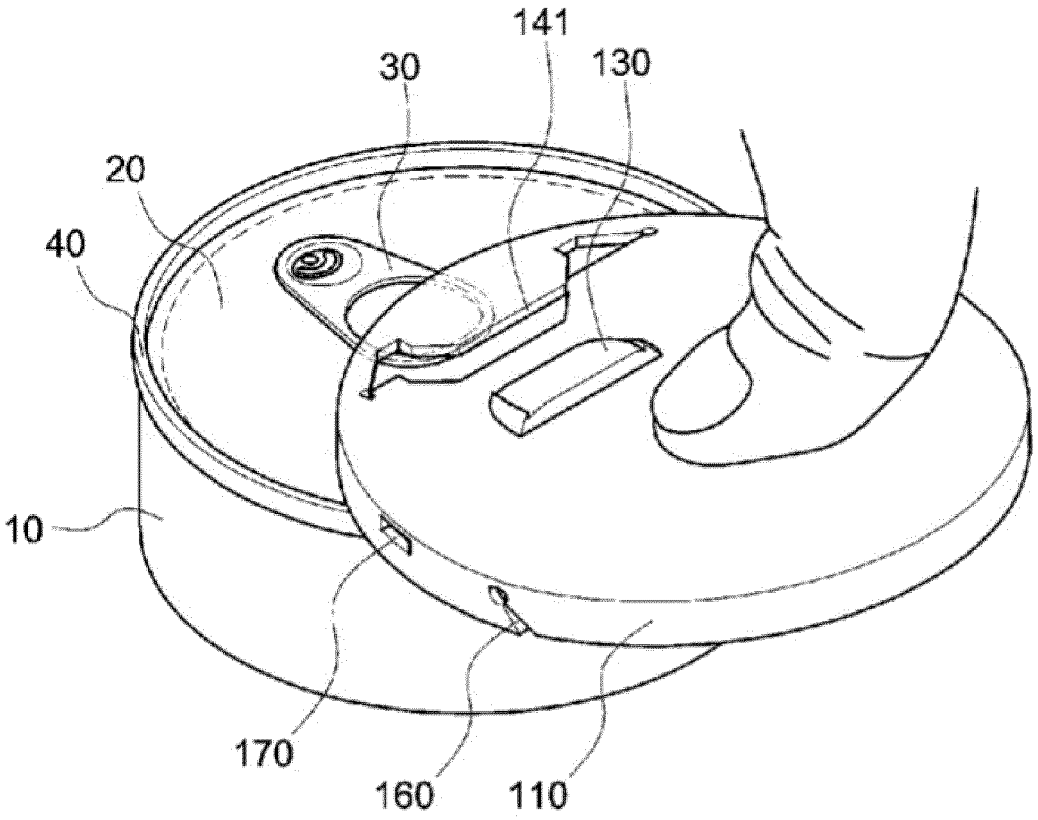
[FIG. 10]



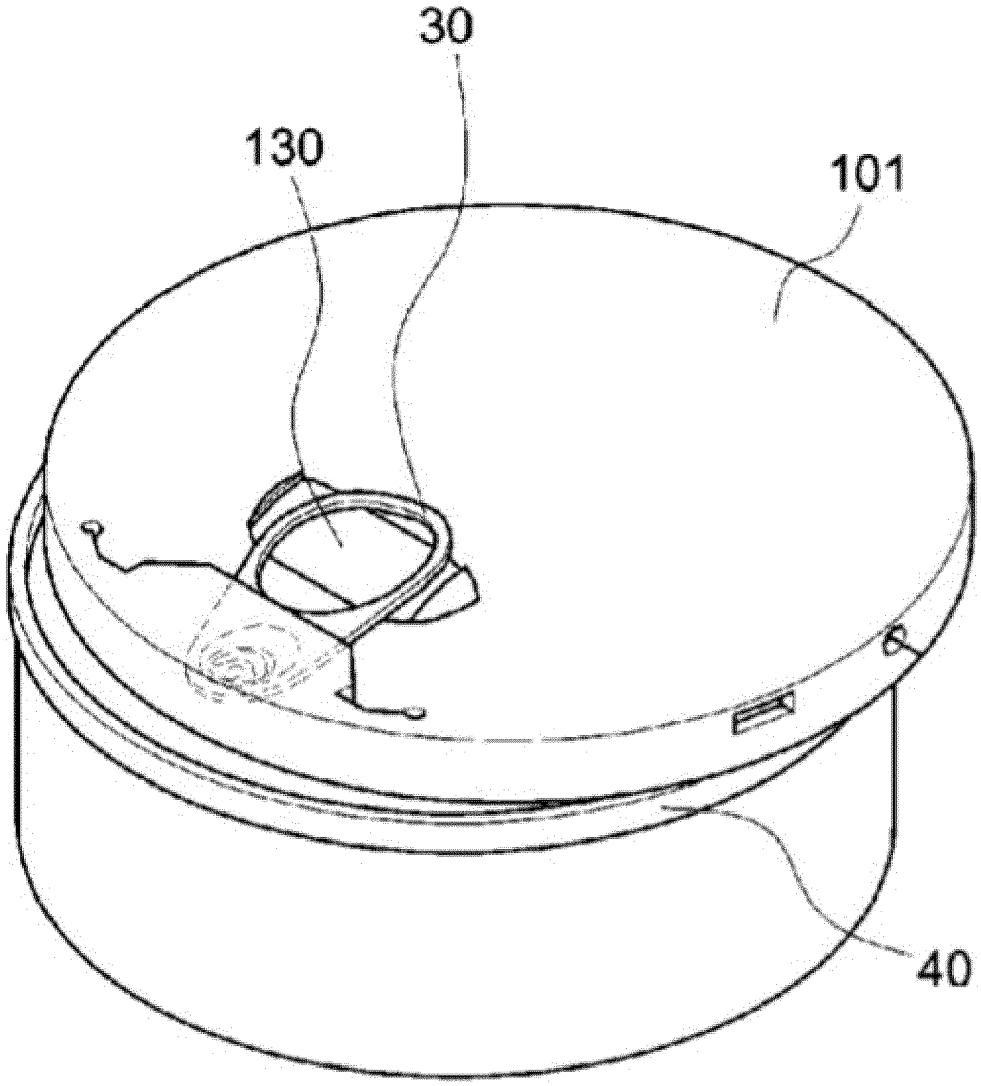
[FIG. 11]



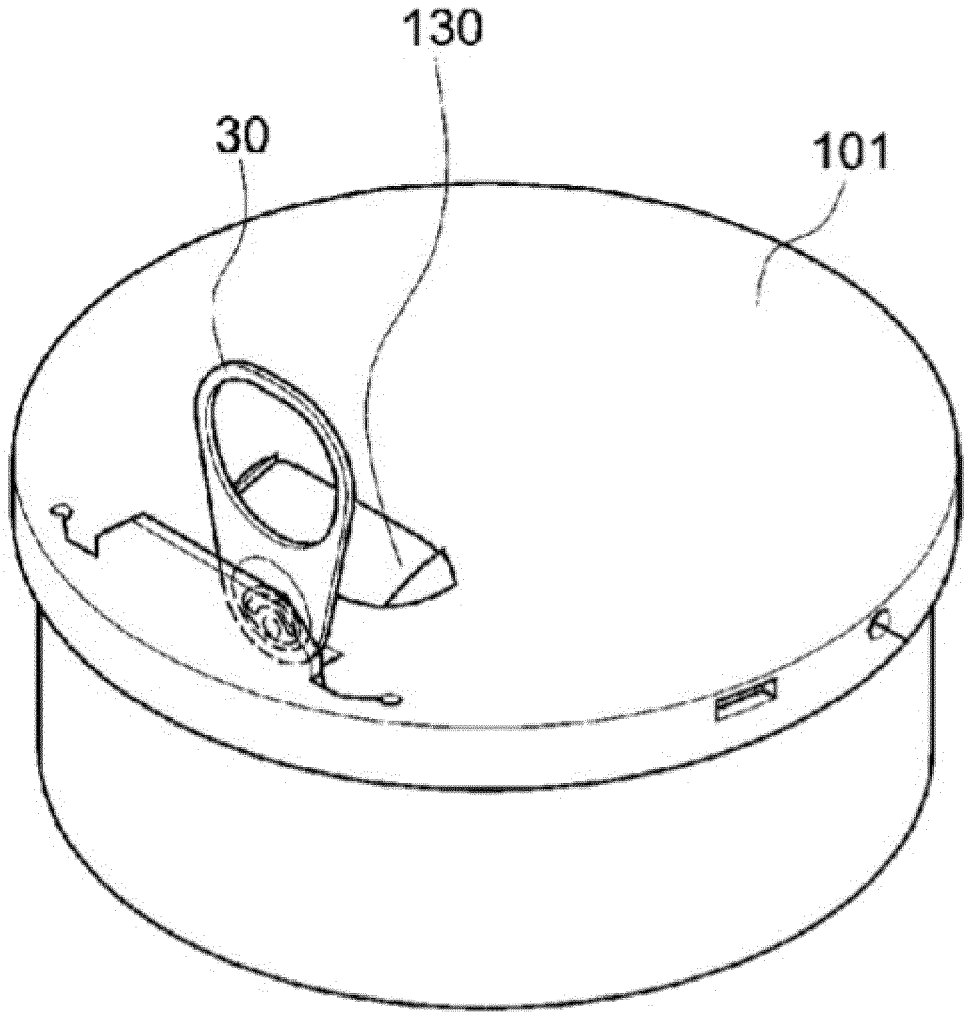
[FIG. 12]



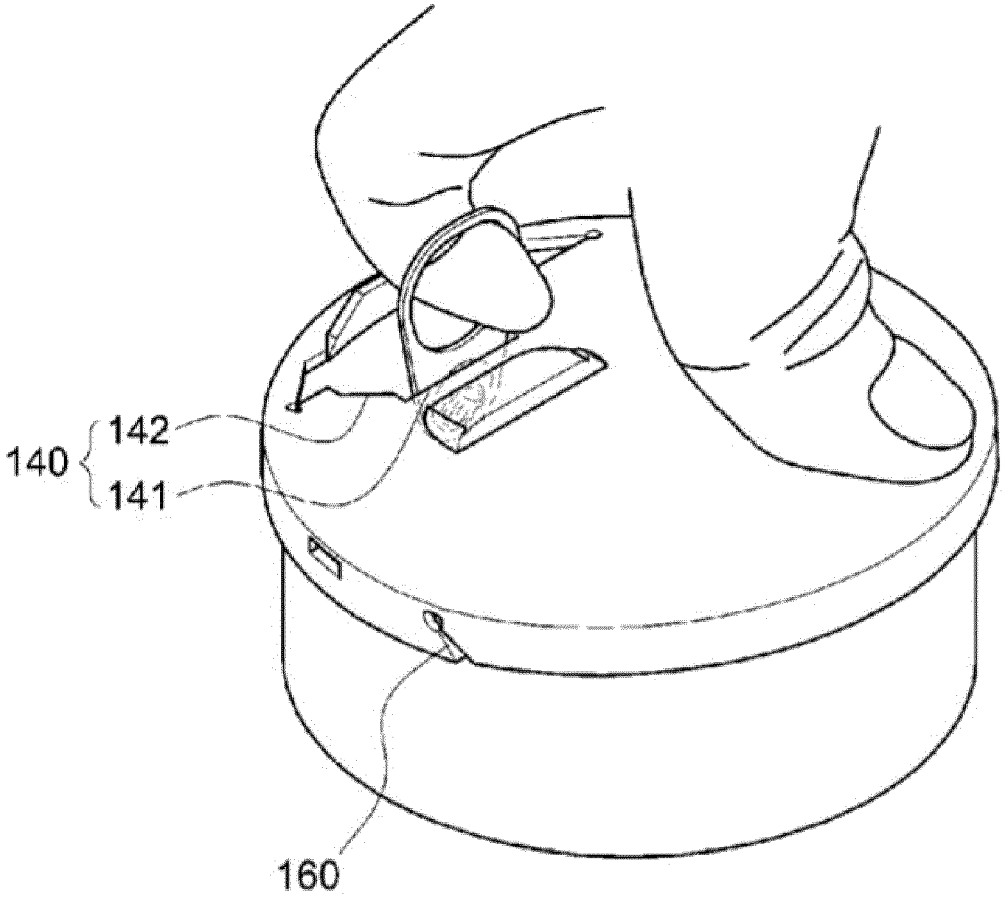
[FIG. 13]



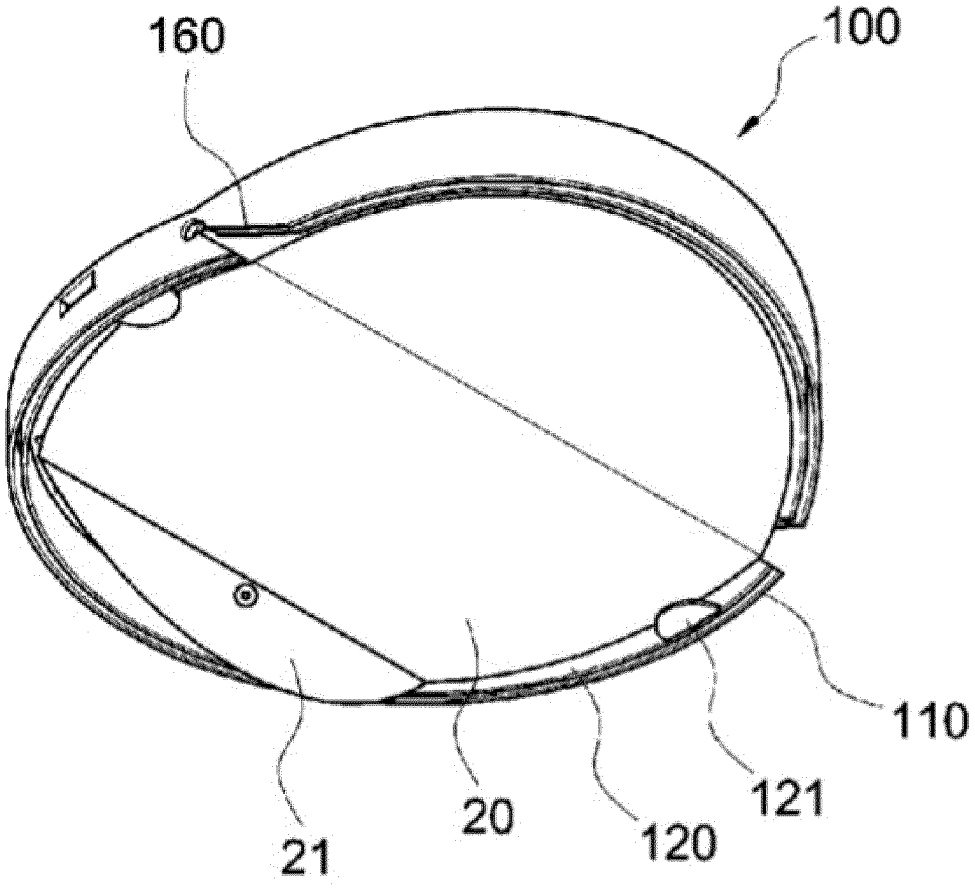
[FIG. 14]



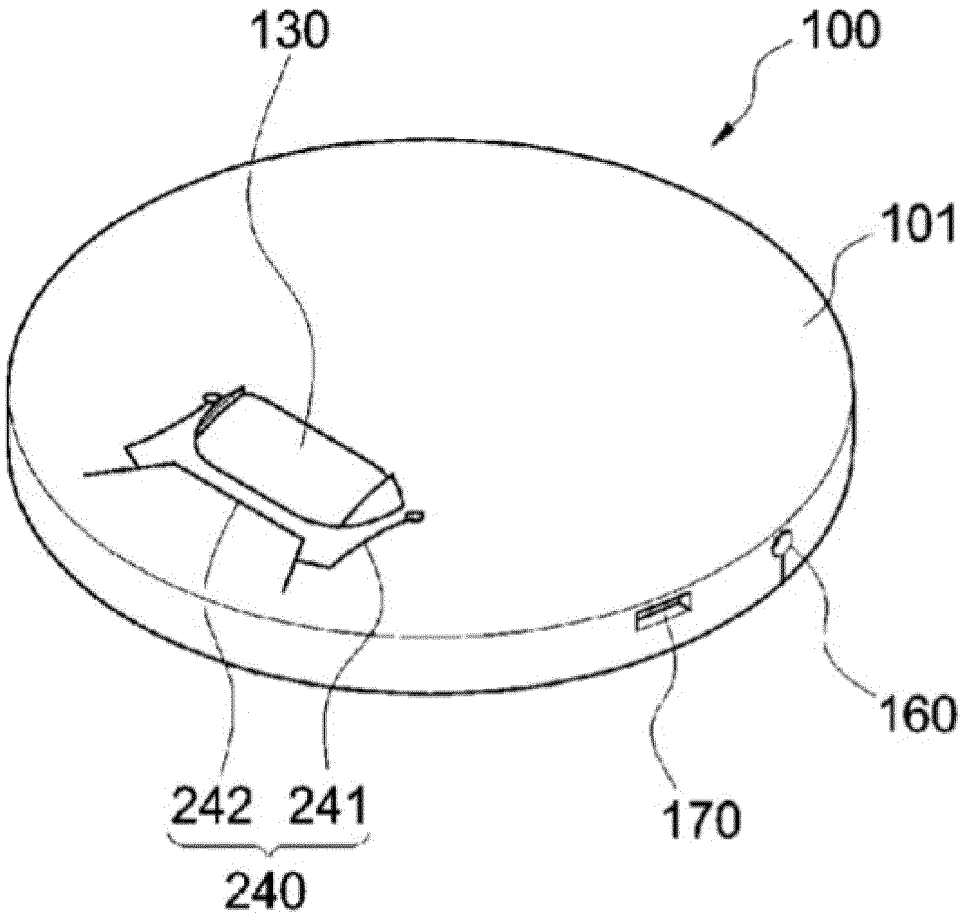
[FIG. 15]



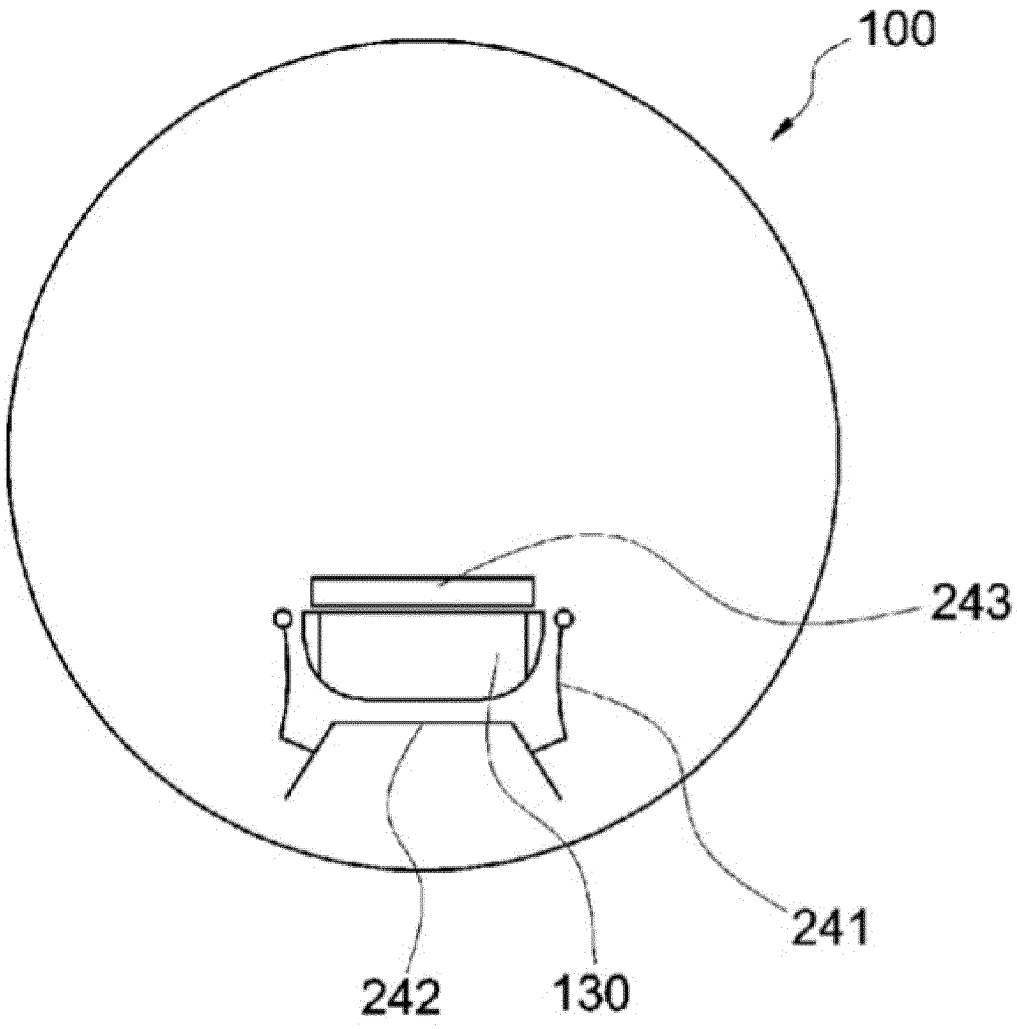
[FIG. 16]



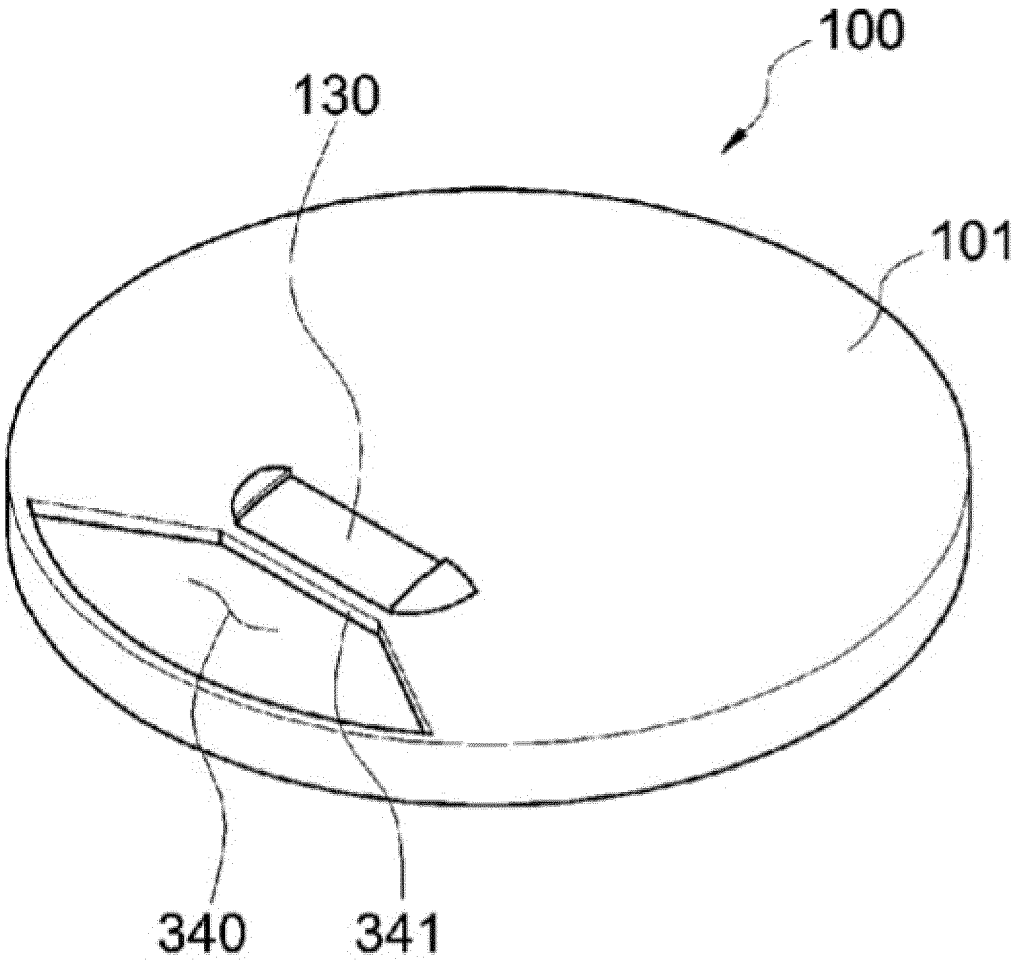
[FIG. 17]



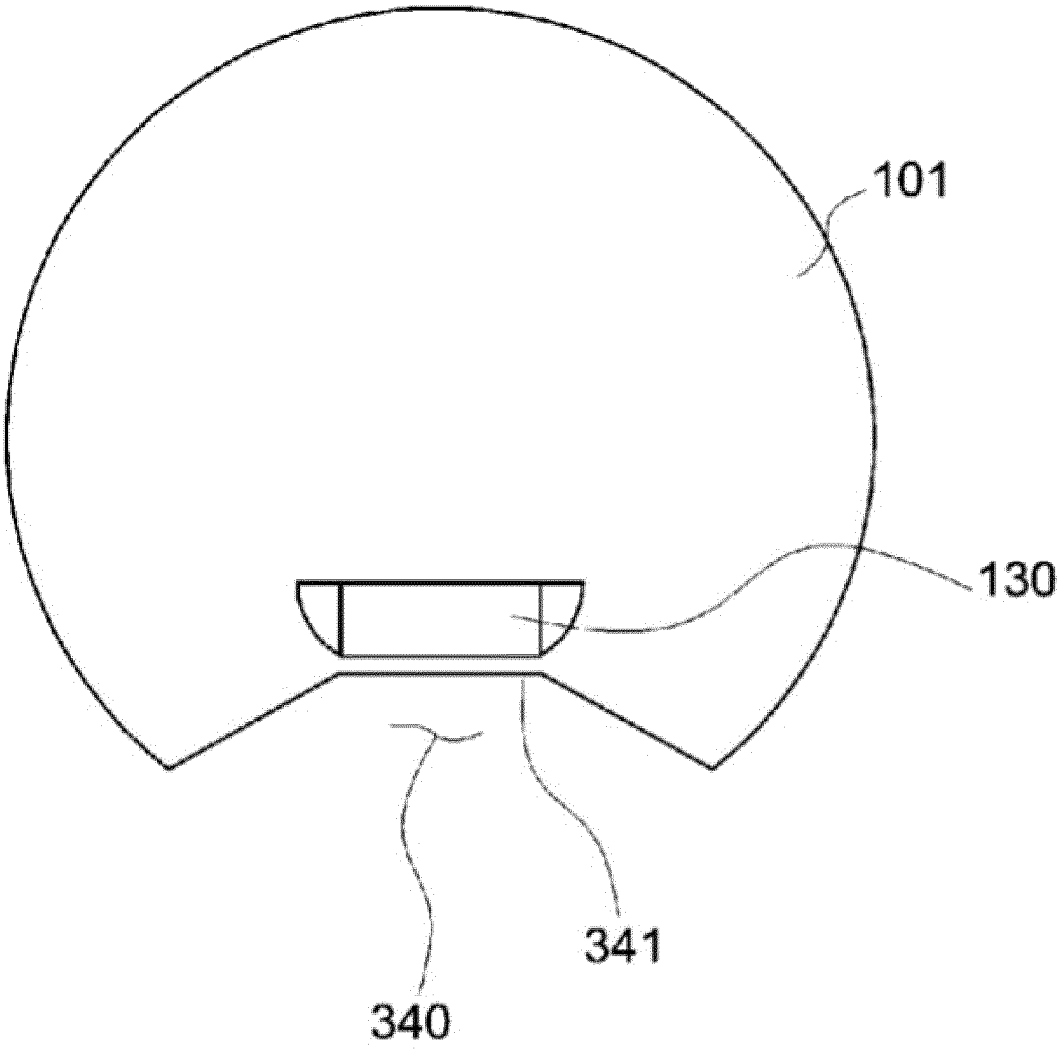
[FIG. 18]



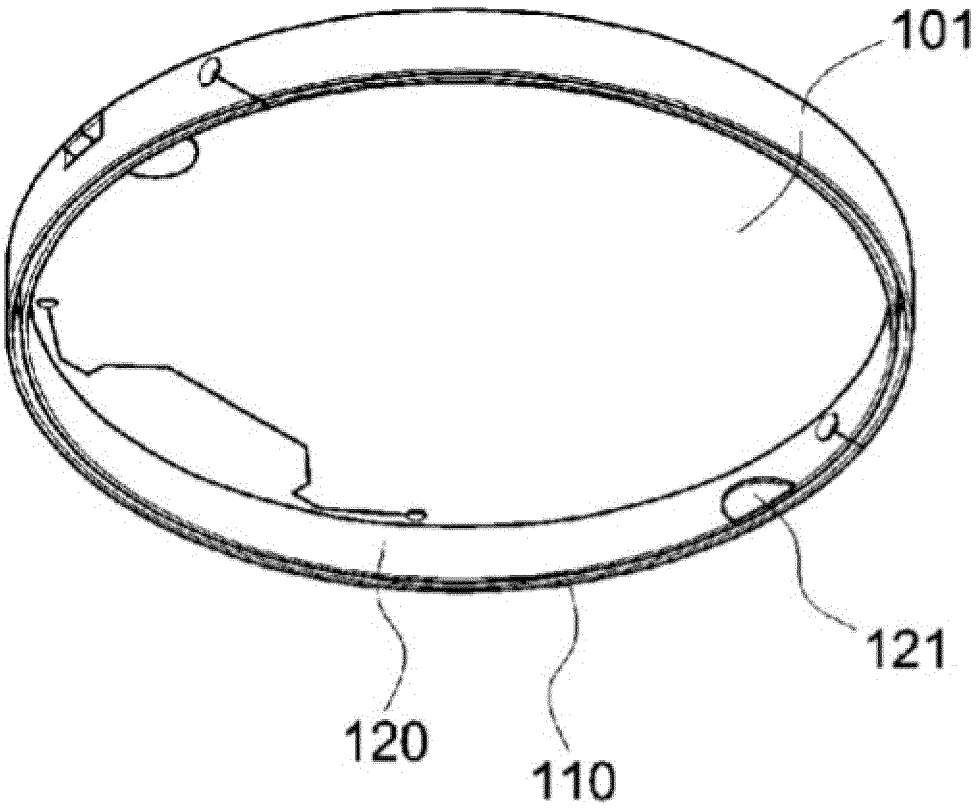
[FIG. 19]



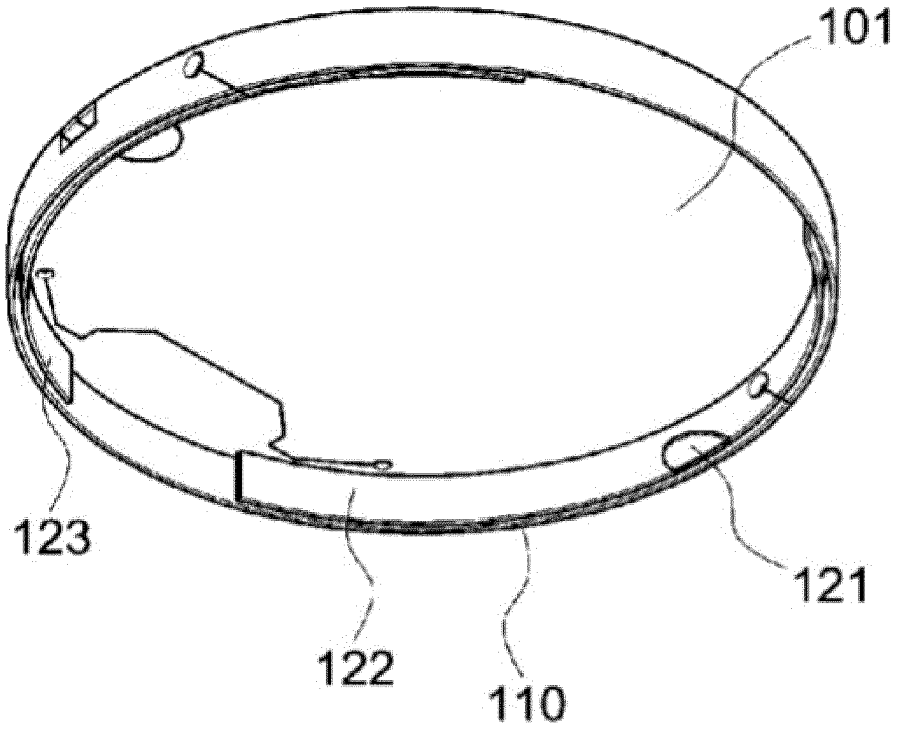
[FIG. 20]



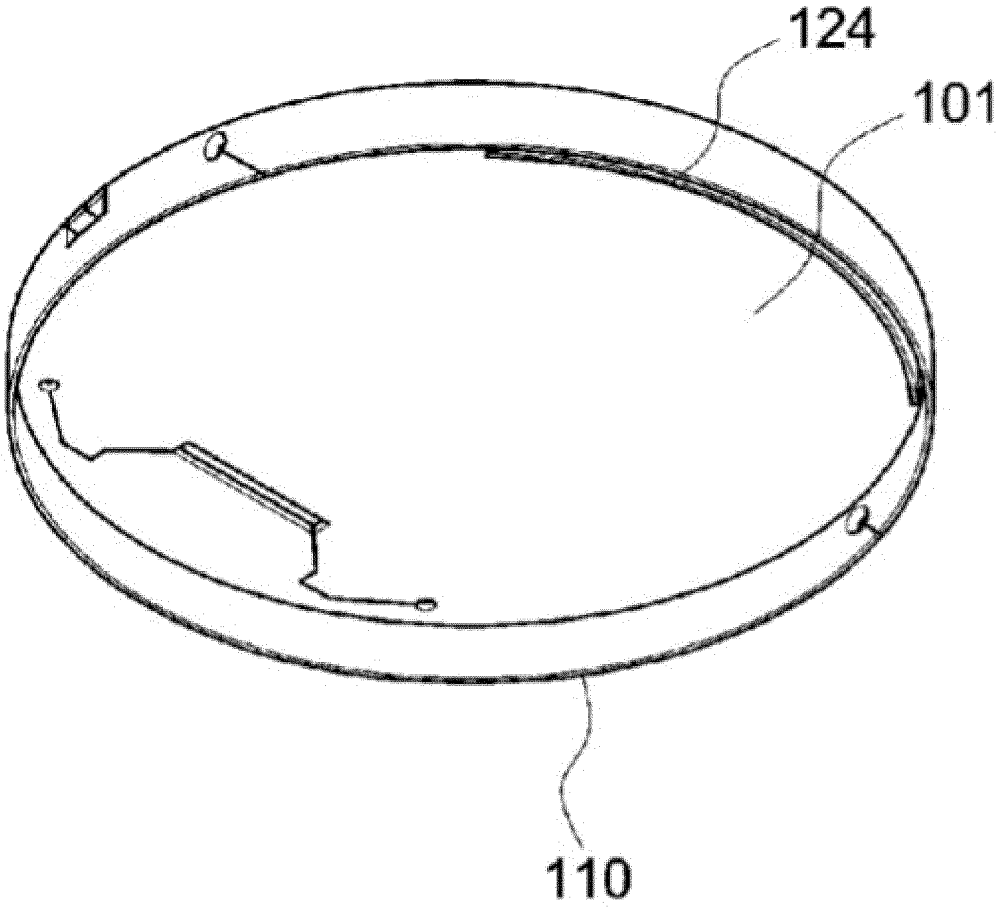
[FIG. 21]



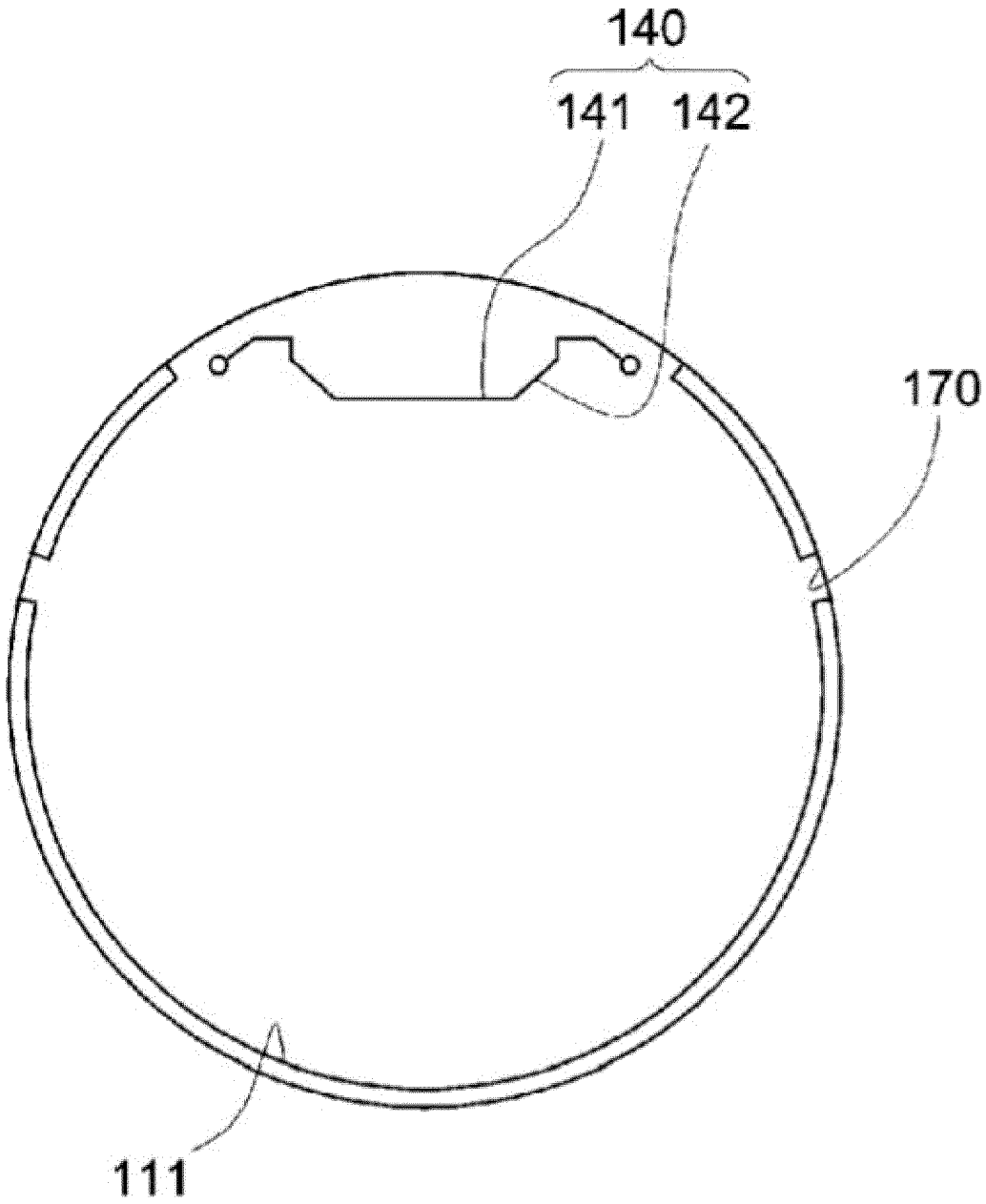
[FIG. 22]



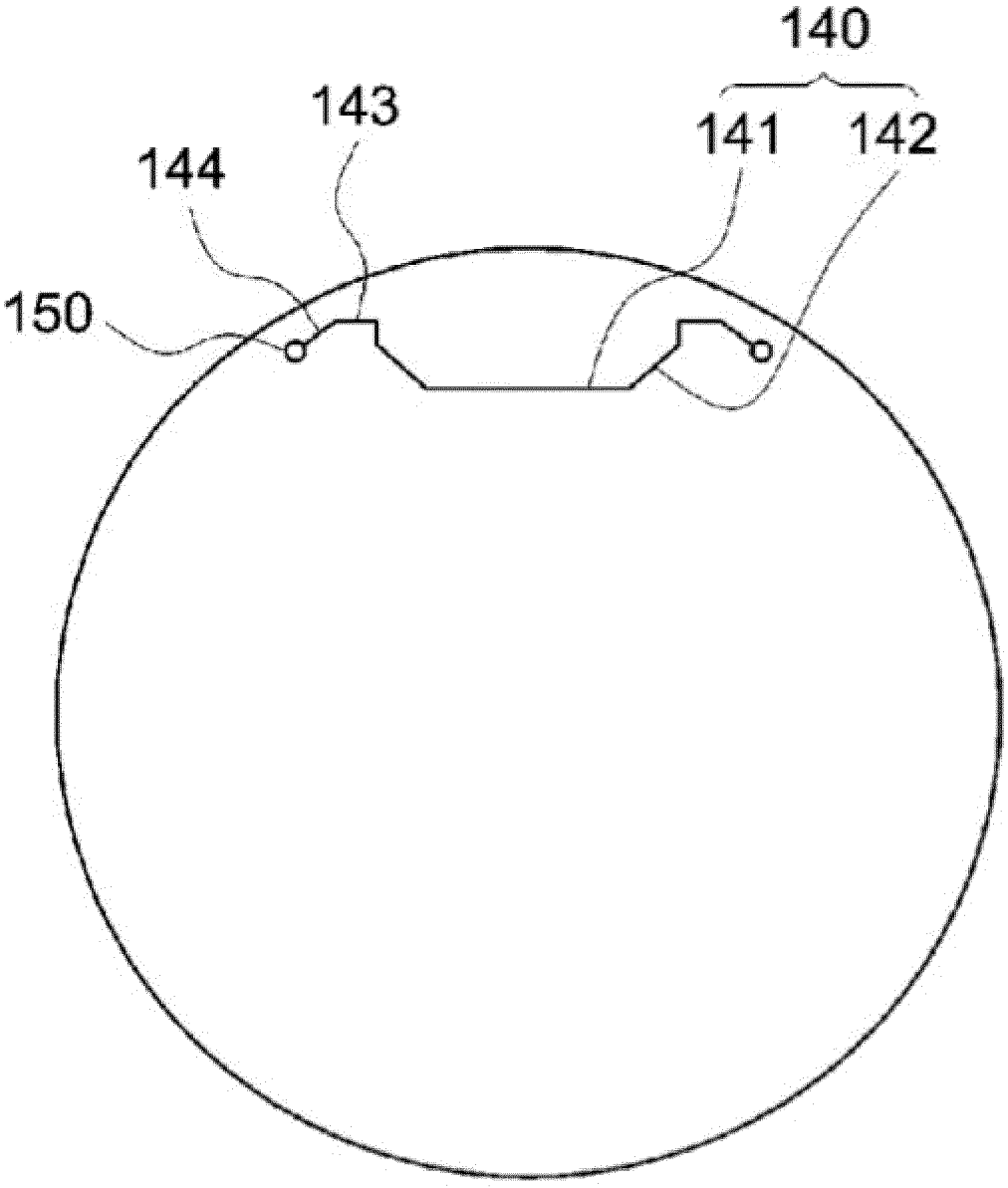
[FIG. 23]



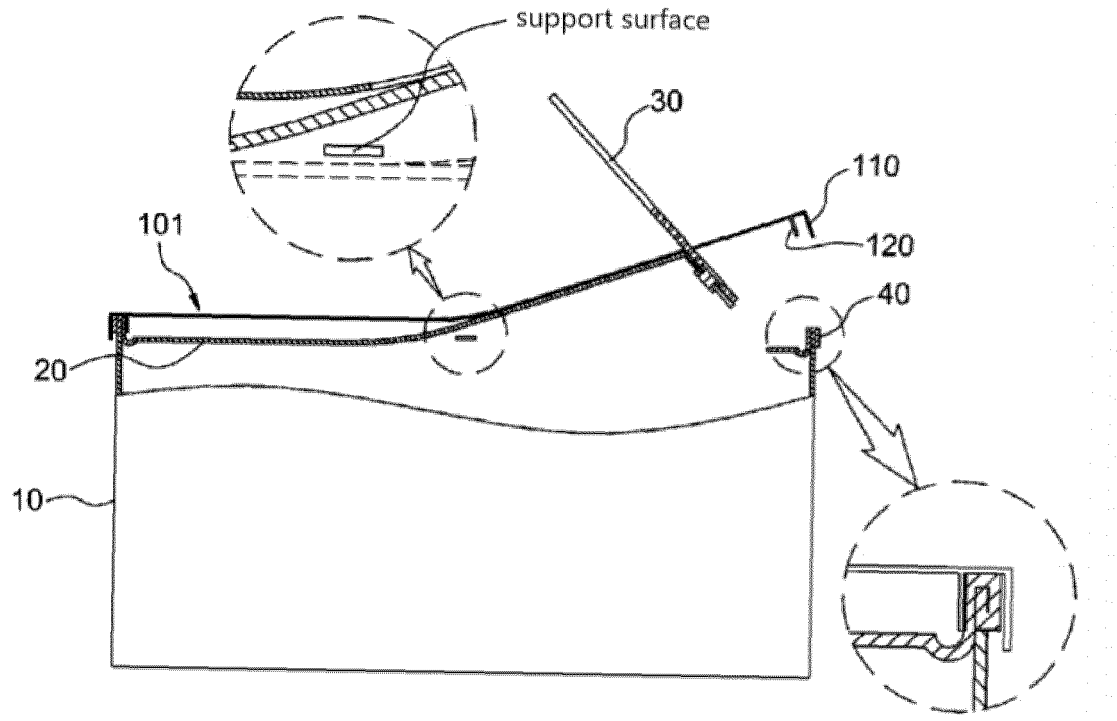
[FIG. 24]



[FIG. 25]



[FIG. 26]



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2018/009382

A. CLASSIFICATION OF SUBJECT MATTER

B65D 17/28(2006.01)i, B65D 17/00(2006.01)i

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B65D 17/28; B65D 17/00; B65D 17/34; B65D 17/44; B65D 25/20; B65D 41/62; B65D 51/20; B65D 51/24; B67B 7/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean Utility models and applications for Utility models: IPC as above
Japanese Utility models and applications for Utility models: IPC as above

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

eKOMPASS (KIPO internal) & Keywords: can, can, canned goods, can ring-pull, tab, security, protection, opening, cap, cap, cutting

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR 20-0300922 Y1 (OK, Youn Chae) 15 January 2003 See claims 1, 3 and figures 2-5.	15
A		1-14
Y	KR 20-0355583 Y1 (KWON, Min Jae) 07 July 2004 See claims 1-2 and figure 1.	15
Y	JP 2003-212264 A (DAINIPPON PRINTING CO., LTD.) 30 July 2003 See paragraph [0014] and figures 1-2.	15
A	JP 2007-137514 A (TOMINAGA, Hitoshi) 07 June 2007 See paragraph [0006] and figures 1-2.	1-15
A	JP 2004-189338 A (YUMEC: K.K.) 08 July 2004 See paragraphs [0034]-[0035], [0050] and figures 1(A)-2(C), 16(A).	1-15
A	KR 10-1056802 B1 (LEE, Sung Jun) 12 August 2011 See claims 1-2 and figures 2a-2c, 6a-6b.	1-15
A	US 6290084 B1 (LOUIE, Chun Chiu) 18 September 2001 See column 5, line 51-column 6, line 30 and figures 14-17.	1-15

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Date of the actual completion of the international search	Date of mailing of the international search report
27 NOVEMBER 2018 (27.11.2018)	27 NOVEMBER 2018 (27.11.2018)
Name and mailing address of the ISA/KR Korean Intellectual Property Office Government Complex Daejeon Building 4, 189, Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea Facsimile No. +82-42-481-8578	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/KR2018/009382

Patent document cited in search report	Publication date	Patent family member	Publication date
KR 20-0300922 Y1	15/01/2003	NONE	
KR 20-0355583 Y1	07/07/2004	NONE	
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JP 2004-189338 A	08/07/2004	NONE	
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US 6290084 B1	18/09/2001	NONE	

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- KR 101479529 B **[0007]**