



(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
29.12.2010 Bulletin 2010/52

(51) Int Cl.:
A61J 17/00 (2006.01)

(21) Application number: **08722393.9**

(86) International application number:
PCT/JP2008/054999

(22) Date of filing: **18.03.2008**

(87) International publication number:
WO 2009/116138 (24.09.2009 Gazette 2009/39)

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA MK RS

(72) Inventor: **SHIMIZU, Nao**
Saitama-shi
Saitama 336-0017 (JP)

(74) Representative: **Liesegang, Eva et al**
Forrester & Boehmert
Pettenkoferstrasse 20-22
80336 München (DE)

(71) Applicant: **Combi Corporation**
Tokyo 111-0041 (JP)

(54) **BABY PACIFIER**

(57) A pacifier 10 includes a hollow nipple portion 20, and a base portion 30 for holding the nipple portion. An opening 35 is formed in the base portion on the side opposite to the nipple portion holding side. The opening is

formed at a position facing the hollow interior of the nipple portion and communicates with the hollow interior. The interior of the nipple portion can be easily cleaned by utilizing the opening.

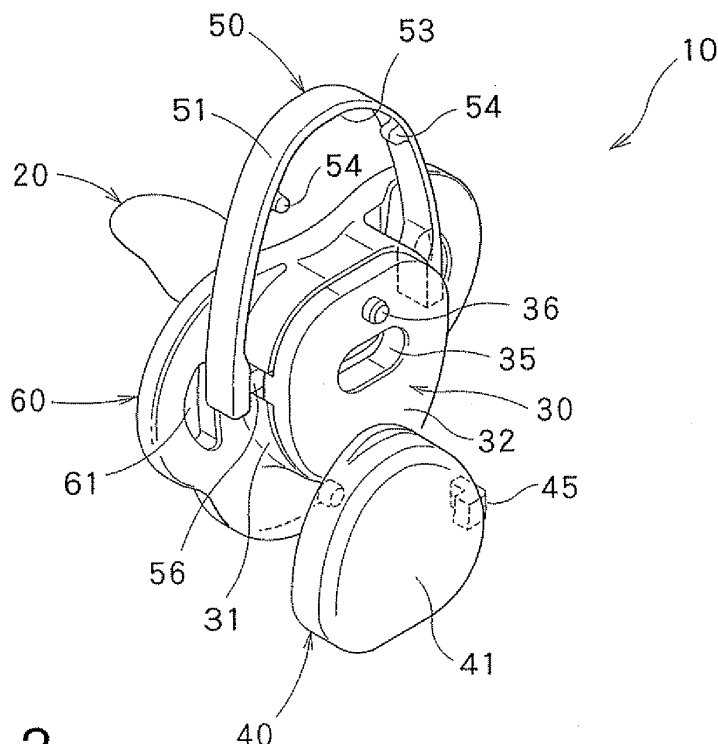


FIG. 2

Description

TECHNICAL FIELD

[0001] The present invention relates to a pacifier having a nipple portion, and more particularly to a pacifier having a nipple portion whose interior can be easily cleaned.

[0002] The present invention also relates to a pacifier having a nipple portion and a handle, and more particularly to a pacifier having a handle which is easy to grasp and which, when a user puts it in the mouth, can be prevented from reaching deep into the mouth.

[0003] The present invention also relates to a pacifier having a nipple portion and a turnable handle, and more particularly to a pacifier which can prevent the handle from making contact with a user's face when the nipple portion is in the user's mouth.

[0004] The present invention also relates to a pacifier having a nipple portion and a turnable handle, and more particularly to a pacifier having a turnable handle whose turning movement is unlikely to be impeded upon handling of the pacifier.

BACKGROUND ART

[0005] Pacifiers have long been known as an infant care device used for an infant to suck on. A pacifier includes a nipple portion that imitates a mother's nipple, and a base portion for holding the nipple portion, as disclosed e.g. in Japanese Patent Laid-Open Publication No. 2001-276185. The nipple portion has a hollow structure so that the nipple portion easily deforms elastically when an infant sucks on said nipple portion. The hollow interior of the nipple portion communicates with the outside through air holes (reference numeral 16 in the JP 2001-276185 publication) formed in the base portion. The air holes have a small diameter to prevent a liquid, foreign matter, etc. from flowing into the interior of the nipple portion.

[0006] The pacifier generally also includes a plate-like flange portion extending outwardly from the base portion, and a handle (grip portion) held by the base portion. The flange portion is provided to prevent an infant, sucking on the nipple portion, from swallowing the whole pacifier. The handle is provided in order that the pacifier can be stably held.

[0007] The handle is generally disposed on the opposite side of the flange portion from the nipple portion. The handle is preferably configured to be easy to grasp when an infant puts into the mouth the entire pacifier beyond the flange portion from the nipple portion side, so that the pacifier in the mouth can be drawn out quickly and securely. Typically, the handle is designed to project a certain length from the base portion and to be turnable with respect to the base portion.

[0008] Such conventional pacifiers, however, have some problems.

[0009] The first problem is that the interior of the nipple portion can hardly be kept clean. As described above, the air holes, communicating with the interior of the nipple portion, have a small diameter to prevent a liquid, foreign matter, etc. from flowing into the interior of the nipple portion. However, no matter how small the diameter of the air holes is, the air holes cannot completely prevent the intrusion of dust, a liquid, etc. into the interior of the nipple portion. In conventional practice, dust, a liquid, etc. that has entered the interior of the nipple portion is removed from the interior of the nipple portion by squeezing the nipple portion. This method is not only cumbersome and time consuming, but also is incapable of completely removing the dust, liquid, etc. from the interior of the nipple portion. A pacifier, which is used in an infant's mouth, needs to be kept clean. Dust, a liquid, etc., remaining in the interior of the nipple portion, may cause undue fear to a caregiver of an infant.

[0010] Japanese Patent Laid-Open Publication No. 2003-210554 discloses a pacifier having a nipple portion which is separable from the other parts. This pacifier enables easy and careful cleaning of the nipple portion separated from the other parts. Such a separable pacifier, however, has the problem that an infant can accidentally swallow a separated part (so-called small part). This is a serious problem that must be avoided generally in all devices for infants.

[0011] The second problem with the conventional pacifiers is that when an infant accidentally puts a pacifier in the mouth from the handle side, the handle, considerably projecting from the base portion, may reach deep into the mouth. As described above, the handle preferably projects considerably from the base portion in order to prepare for a case an infant puts into the mouth the entire pacifier beyond the flange portion from the nipple portion side. This is because the projecting handle, which is easy to grasp, enables the pacifier to be drawn out of the mouth quickly and securely. On the other hand, when an infant puts the pacifier into the mouth from the handle side, the projecting handle can even hit the throat. Thus, the challenge is to simultaneously achieve easy grasping of a handle and prevention of the handle reaching deep into an infant's throat.

[0012] The third problem with the conventional pacifiers is that when the nipple portion is in an infant's mouth, the turnable handle can make contact with the infant's face. As shown in FIG. 3 of the above-cited JP 2001-276185 publication, the handle (reference numeral 23 in the JP 2001-276185 publication) in the normal use situation lies in a position where the handle is blocked by the flange portion from the face of an infant. As shown in the Figure, the flange portion is not provided or, if provided, only slightly projects from the base portion on its infant's head side in use of the pacifier by an infant. This is because if the flange portion projects considerably on the infant's head side, the flange portion may come into contact with an infant's nose. On the other hand, it is possible that during the use of the pacifier by an infant,

the handle may accidentally turn with respect to the base portion toward the infant's head side beyond the flange portion. In this case, there is a fear that the handle might come into contact with the face, e.g. the nose, of the infant, causing harm to the infant.

[0013] The fourth problem is that the turning movement of the handle can be restrained by a string-like member attached to the handle. A string-like member, e.g. a pacifier holder used to prevent falling of the pacifier to the ground, missing of the pacifier, etc., is often attached to the turnable handle. The string-like member is slidable on the handle e.g. formed in a U shape. It is often the case, therefore, that the string-like member moves to one end of the U-shaped handle and gets stuck between the end of the handle and the base portion. In this case, the string-like member can undesirably restrain the turning movement of the handle or can bias or turn the handle in an unintended direction.

DISCLOSURE OF THE INVENTION

[0014] The present invention aims to solve the above problems with the conventional pacifiers. It is therefore an object of the present invention to provide a pacifier having a nipple portion whose interior can be easily cleaned. It is another object of the present invention to provide a pacifier having a handle which is easy to grasp and which, when a user puts it in the mouth, can be prevented from reaching deep into the mouth. It is yet another object of the present invention to provide a pacifier having a nipple portion and a turnable handle, which can prevent the handle from making contact with a user's face when the nipple portion is in the user's mouth. It is yet another object of the present invention to provide a pacifier having a turnable handle whose turning movement is unlikely to be impeded upon handling of the pacifier.

[0015] A first pacifier according to the present invention comprises: a hollow nipple portion; and a base portion for holding the nipple portion, the base portion having an opening on the side opposite to the nipple portion holding side, wherein the opening is formed in a position facing the hollow interior of the nipple portion and communicates with the hollow interior. According to the first pacifier of the present invention, the interior of the nipple portion can be cleaned easily.

[0016] The first pacifier according to the present invention may further comprise lid held by the base portion movably between a closed position where the lid closes the opening of the base portion and an open position where the lid opens the opening of the base portion.

[0017] The first pacifier according to the present invention may further comprise a handle turnably held by the base portion, wherein the handle may be turnable with respect to the base portion so as to be movable in a first region and a second region, and wherein when the handle lies in the first region, the handle may restrain the lid from moving from the closed position.

[0018] In such a first pacifier, the handle may be movable also in a bias region lying between the first region and the second region, and when the handle lies in the bias region, the handle may be biased toward one of the first region and the second region. In such a pacifier, a protruding portion may be provided at an end of the handle, the handle being turnably held by the base portion at the end, and when the handle turns with respect to the base portion from the first region or the second region and reaches the bias region, the protruding portion may come into contact with the base portion, whereby the handle is biased toward the first region or the second region.

[0019] In such a first pacifier, the handle is formed generally in a U shape, with both ends being turnably held by the base portion, the lid in the closed position lies between both ends of the handle in a direction of the turning axis of the handle, the lid is slidable with respect to the base portion, and when the handle lies in the first region, at least a part of the handle lies in the vicinity of at least a part of the lid in the closed position in a sliding direction of the lid. Alternatively, in such a first pacifier, the handle is formed generally in a U shape, with both ends being turnably held by the base portion, the lid in the closed position lies between both ends of the handle in a direction of the turning axis of the handle, the lid is turnable with respect to the base portion, and, when the handle lies in the first region, at least a part of the handle lies in the vicinity of at least a part of the lid in the closed position in a turning direction of the lid.

[0020] In such a first pacifier, when the pacifier is held in a user's mouth, the first region may include a position of the handle toward which the handle turns by gravity with respect to the base portion, and the second region may include a position of the handle where the handle extends from the base portion toward a side of a head of the user holding the pacifier.

[0021] Such a first pacifier may further comprise a plate-like flange portion extending outwardly from the base portion, wherein the flange portion may have at least three bulges that bulge out on the side opposite to the nipple portion holding side. In such a first pacifier according to the present invention, when the pacifier is viewed from the side opposite to the nipple portion holding side, at least one of the bulges may be disposed on one side of an imaginary line extending on a turning axis of the handle, and at least one of the bulges may be disposed on the other side of the imaginary line extending on the turning axis of the handle.

[0022] In such a first pacifier, the handle may be formed generally in a U shape, with both ends being turnably held by the base portion, and a groove portion may be formed in the handle at a position at a distance from the both ends turnably held by the base portion. In such a first pacifier according to the present invention, the groove portion may be formed between a pair of protrusions provided in the handle. Such a first pacifier according to the present invention may further comprise a string-

like member attached to the groove portion of the handle.

[0023] In the first pacifier according to the present invention, a raised portion may be provided in one of the base portion and the lid, while a recessed portion engageable with the raised portion is formed in the other one of the base portion and the lid and, and when the lid gets to the closed position, the raised portion may engage the recessed portion, whereby the lid is locked to the base portion.

[0024] The first pacifier according to the present invention may further comprise a plate-like flange portion extending outwardly from the base portion, the handle may be disposed on the opposite side of the flange portion from the nipple portion.

[0025] The first pacifier according to the present invention may further comprise a plate-like flange portion extending outwardly from the base portion, the flange portion may have at least three bulges that bulge out on the side opposite to the nipple portion holding side. In such a first pacifier according to the present invention, when the pacifier is viewed from the side opposite to the nipple portion holding side, at least one of the bulges may be disposed on one side of an imaginary line extending on a turning axis of the handle, and at least one of the bulges may be disposed on the other side of the imaginary line extending on the turning axis of the handle.

[0026] In the first pacifier according to the present invention, the handle may be formed generally in a U shape, with both ends being turnably held by the base portion, and a groove portion may be formed in the handle at a position at a distance from the both ends turnably held by the base portion. In such a first pacifier according to the present invention, the groove may be formed between a pair of protrusions provided in the handle. Such a first pacifier according to the present invention may further comprise a string-like member attached to the groove portion of the handle.

[0027] In the first pacifier according to the present invention, the handle may be formed generally in a U shape, and both ends of the U-shaped handle may be turnably held by the base portion.

[0028] A second pacifier according to the present invention comprises: a nipple portion; a base portion for holding the nipple portion; a plate-like flange portion extending outwardly from the base portion; and a handle held by the base portion and disposed on the opposite side of the flange portion from the nipple portion, wherein the flange portion has at least three bulges that bulge out on the side opposite to the nipple portion holding side. The second pacifier according to the present invention enables easy grasping of the handle and, in addition, enables the handle to hardly reach deep into a user's mouth when the handle is put in the mouth.

[0029] In the second pacifier according to the present invention, the handle may be turnably held by the base portion, and when the pacifier is viewed from the side opposite to the nipple portion holding side, at least one of the bulges may be disposed on one side of an imagi-

nary line extending on a turning axis of the handle, and at least one of the bulges may be disposed on the other side of the imaginary line extending on the turning axis of the handle.

[0030] A third pacifier according to the present invention comprises: a nipple portion; a base portion for holding the nipple portion; and a handle turnably held by the base portion, wherein the handle is turnable with respect to the base portion so as to be movable in a first region, a second region and a bias region between the first region and the second region, and wherein when the handle lies in the bias region, the handle is biased toward one of the first region and the second region. The third pacifier according to the present invention enables the handle to hardly make contact with a user's face when the nipple portion is in the user's mouth.

[0031] In the third pacifier according to the present invention, when the pacifier is held in a user's mouth, the first region may include a position of the handle toward which the handle turns by gravity with respect to the base portion, and the second region may include a position of the handle where the handle extends from the base portion toward a side of a head of the user holding the pacifier.

[0032] In the third pacifier according to the present invention, a protruding portion may be provided at an end of the handle, the handle being turnably held by the base portion at the end, and when the handle turns with respect to the base portion and reaches the bias region, the protruding portion may come into contact with the base portion, whereby the handle is biased toward the first region or the second region.

[0033] The third pacifier according to the present invention may further comprise a plate-like flange portion extending outwardly from the base portion, the handle may be disposed on the opposite side of the flange portion from the nipple portion.

[0034] A fourth pacifier according to the present invention comprises: a nipple portion; a base portion for holding the nipple portion; and a handle turnably held at its both ends by the base portion, wherein a groove portion is formed in the handle at a position at a distance from the both ends. According to the fourth pacifier of the present invention, the turning movement of the handle is unlikely to be impeded upon handling of the pacifier.

[0035] In the fourth pacifier according to the present invention, the groove may be formed between a pair of protrusions provided in the handle.

[0036] The fourth pacifier according to the present invention may further comprise a string-like member attached to the groove portion of the handle.

BRIEF DESCRIPTION OF THE DRAWINGS

[0037]

FIG. 1 is a perspective view showing an embodiment of a pacifier according to the present invention, illus-

trating the pacifier when a lid is in a closed position; FIG. 2 is a perspective view showing the pacifier of FIG. 1, illustrating the pacifier when the lid is in an open position;

FIG. 3 is a diagram showing the pacifier of FIG. 1 from its side opposite to the nipple portion holding side;

FIG. 4 is a diagram showing the pacifier of FIG. 1 from above;

FIG. 5 is a diagram showing the pacifier of FIG. 1 from the side;

FIG. 6 is a cross-sectional diagram taken along the line VI-VI of FIG. 3;

FIG. 7 is a cross-sectional diagram taken along the line VII-VII of FIG. 3;

FIG. 8 is a diagram showing a handle, to be incorporated into the pacifier of FIG. 1, together with a string-shaped member;

FIG. 9 is a cross-sectional diagram taken along the line IX-IX of FIG. 8;

FIG. 10 is a cross-sectional diagram taken along the line X-X of FIG. 3, illustrating the action of the pacifier; FIG. 11 is a diagram corresponding to FIG. 10, illustrating the pacifier with the handle being turned from the position shown in FIG. 10;

FIG. 12 is a diagram corresponding to FIGS. 10 and 11, illustrating the pacifier with the handle being further turned from the position shown in FIG. 11;

FIG. 13 is a perspective view corresponding to FIG. 1, showing a variation of the pacifier; and

FIG. 14 is a perspective view corresponding to FIG. 2, showing the pacifier of FIG. 13.

MODE FOR CARRYING OUT THE INVENTION

[0038] Preferred embodiments of the present invention will now be described with reference to the drawings.

[0039] FIGS. 1 through 14 are diagrams illustrating a pacifier (dummy) according to an embodiment of the present invention. FIGS. 1 and 2 are perspective views showing the pacifier; FIG. 3 is a diagram (back view) showing the pacifier from its side opposite to the nipple portion holding side; FIG. 4 is a top view showing the pacifier from above; FIG. 5 is a side view showing the pacifier from the side; FIG. 6 is a cross-sectional diagram taken along the line VI-VI of FIG. 3; and FIG. 7 is a cross-sectional diagram taken along the line VII-VII of FIG. 3.

[0040] As shown in FIGS. 1 through 7, the pacifier 10 includes a nipple portion 20 that imitates a mother's nipple, a base portion 30 for holding the nipple portion, and a lid 40 held by the base portion 30. As shown in FIG. 6, the nipple portion 20 projects from the base portion 30 on its one side. The lid 40 is held on the side (the other side) of the base portion 30 opposite to the nipple portion holding side (the one side). As shown in FIGS. 4 through 6, the nipple portion 20 and the lid 40 are disposed oppositely on opposite sides of the base portion 30 in the projection direction La of the nipple portion 20.

[0041] The pacifier 10 also includes a plate-like flange portion 60 extending outwardly from the base portion 30, and a handle 50 held by the base portion 30 so as to be turnable relative to the base portion 30. The handle 50 is disposed on the opposite side of the flange portion 60 from the nipple portion 20, i.e., on the opposite side (the above-described other side) of the flange portion 60 from the nipple portion 20 in the projection direction La of the nipple portion 20.

[0042] The respective components of the pacifier 10 will now be described in detail. In the following description, terms such as "upward", "downward", "lateral", "vertical direction (up and down direction)" and "lateral direction" refer to those with respect to the pacifier as held in a user's (infant's) mouth with the projection direction La of the nipple portion 20 approximately in a horizontal direction, unless otherwise specified. Thus, the term "vertical direction (up and down direction)" refers to the vertical direction (up and down direction) in FIG. 3. Similarly, terms such as "upward" and "lateral direction" refer to those in FIG. 3.

[0043] The nipple portion 20 will be described first. The nipple portion 20 is comprised of a hollow artificial nipple member 25. As shown in FIGS. 6 and 7, the artificial nipple member 25 includes the hollow nipple portion 20, and a skirt portion 26 continuous with the nipple portion 20. The skirt portion 26 broadens toward the end and is open at the end. The hollow interior of the nipple portion 20 is reachable (accessible) through the skirt portion 26 from the outside. The artificial nipple member 25 may be formed of an elastically deformable material. For example, transparent silicon rubber can be used as a material for the artificial nipple member 25.

[0044] The base portion 30 will now be described. As shown in FIGS. 6 and 7, the base portion 30, having a generally plate-like shape, is comprised of a first base member 31 and a second base member 32 which is fit into the first base member 31. Part of the first base member 31 constitutes a flange portion 60. As shown in FIGS. 6 and 7, the first base member 31 is in annular contact with the exterior surface of the skirt portion 26 of the artificial nipple member 25, while the second base member 32 is in annular contact with the interior surface of the skirt portion 26 of the artificial nipple member 25. The skirt portion 26 of the artificial nipple member 25 is thus held between the first base member 31 and the second base member 32. The base portion 30 thus holds the nipple portion 20 such that the nipple portion 20 projects from the one side of the base portion 30.

[0045] As shown in FIGS. 6 and 7, the portion 33 of the second base member 32 which is inserted in the skirt portion 26 has a tubular shape. The tubular portion 33 extends in the longitudinal direction (coincident with the projection direction La) of the nipple portion 20. One end of the tubular portion 32 opens into the hollow interior of the nipple portion 20, while the other end of the tubular portion 33 opens to the outside. An opening 35, facing the hollow interior of the nipple portion 20 in the projection

direction (longitudinal direction) La of the nipple portion 20, is thus formed on the other side of the base portion 30. The opening 30 communicates with the hollow interior of the nipple portion 20. That is to say, the interior of the nipple portion 20 communicates with the outside through the opening 35.

[0046] The lid (cover) 40 will now be described. As shown in FIGS. 6 and 7, the lid 40 includes a generally plate-shaped lid portion 41 extending approximately parallel to the base portion 30, and a shaft portion 44 formed integrally with the lid portion 41. As shown in FIG. 6, the shaft portion 44 of the lid 40 is turnably (rotatably) held by the first base member 31 and the second base member 32. As shown in FIG. 6, the turning axis Lb is approximately parallel to the projection direction La of the nipple portion 20. Further, as shown in FIG. 6, the diameter of the shaft portion 44 is larger at the front end (distal end) so as to prevent the shaft portion 44 from escaping from between the first base member 31 and the second base member 32, thereby preventing the lid 40 from falling out of the base portion 30. By turning the shaft portion 44 around the turning axis Lb, the lid portion 41 can be moved (slid) between a position where the lid portion 41 overlaps the base portion 30 on the above-described other side (the opposite side of the base portion 30 from the nipple portion 20) in the projection direction La, as shown in FIG. 1, and a position where the lid portion 41 is displaced from the base portion 30 in a direction perpendicular to the turning axis Lb, e.g. as shown in FIG. 2. The lid 40 is thus movable relative to the base portion 30 between the closed position (see FIG. 1) where the lid 40 closes the opening 35 of the base portion 30 and the open position (see e.g. FIG. 2) where the lid 40 opens the opening 35 of the base portion 30.

[0047] As shown in FIGS. 3 to 5, the lid 40 further includes a restraint protrusion 45 protruding laterally from the lid portion 41. The restraint protrusion 45 extends from a position lateral to the lid portion 41 toward a side of the base portion 30 (base portion side). In particular, as shown in FIG. 5, the restraint protrusion 45 extends from the position lateral to the lid portion 41 to a position lateral to the first base member 31 constituting the base portion 30, passing across the side of the second base member 32 constituting the base portion 30. Because the restraint protrusion 45 comes into contact with the base portion 30 from the side so as to restrain the turning movement of the lid 40, the turning movement of the lid 40 from the closed position is possible only in a turning direction Da in which the restraint protrusion 45 lies anteriorly, as shown in FIG. 3.

[0048] A raised portion 36 is provided in one of the base portion 30 and the lid 40, while a recessed portion 42 engageable with the raised portion 36 is formed in the other one of the base portion 30 and the lid 40. In the embodiment illustrated in the Figures, the raised portion 36, projecting on the above-described other side in the projection direction La of the nipple portion 20 (which is parallel to the turning axis Lb of the lid 40 in this embod-

iment), is provided in the second member 32 as a portion of the base portion 30 (see FIG. 2). On the other hand, the recessed portion 42 capable of housing the raised portion 36 is formed in the lid portion 41 of the lid 40. As shown in FIG. 6, when the lid 40 is in the closed position, the raised portion 36 and the recessed portion 42 are disposed at positions where they face each other and where the raised portion 36 enters the recessed portion 42, whereby the lid 40 is locked to the base portion 30.

[0049] The flange portion (shield portion) 60 will now be described. As described above, the flange portion 60 extends outwardly from the base portion 30. In this embodiment the flange portion 60 is formed integrally with the first base member 31 as a portion of the base portion 30. The flange portion 60 is provided to prevent a user from swallowing the pacifier 10 deep into the throat. Two through-holes 61 are formed in the flange portion 60. Should a user put the flange portion 60 of the pacifier 10 in the mouth, breathing is possible through the holes 61.

[0050] As shown in FIGS. 1 and 3, the flange portion 60 does not so much project upwardly from the base portion 30. When the nipple portion 20 of the pacifier 10 is in a user's mouth, the upper side of the base portion 30 faces the user's nose. Therefore, in order to prevent the flange portion 60, projecting upwardly from the base portion 30, from hitting a user's nose or impeding breathing of the user through the nose, the flange portion 60 is designed not to project so much upwardly from the base portion 30.

[0051] As shown in FIGS. 3 through 5, the flange portion 60 has at least three bulges 62, 62, 63 locally bulging out on the side opposite to the nipple portion holding side, i.e. on the above-described other side in the projection direction La of the nipple portion 20. In the embodiment illustrated in the Figures, the flange portion 60 has three bulges: a lower bulge 63 and a pair of upper bulges 62, 62. As shown in FIG. 3, when the pacifier 10 is viewed from the side opposite to the nipple portion holding side, i.e. from the above-described other side toward the above-described one side in the projection direction La of the nipple portion 20, the pair of upper bulges 62, 62 are positioned above an imaginary line extending on the below-described turning axis Lc of the handle 50. When the pacifier 10 is viewed from the side opposite to the nipple portion holding side, the lower bulge 63 is positioned below the imaginary line extending on the turning axis Lc of the handle 50. The pair of upper bulges 62, 62 are positioned symmetrically with respect to a laterally central line.

[0052] The handle (handle part, handle member) 50 will now be described. As shown in FIGS. 8 and 9, the handle 50 includes a generally U-shaped body portion 51, and shaft portions 56 extending inwardly from both ends of the U-shaped body portion 51. The body portion 51 is comprised of a long plate-like bending material which bends into an arch shape with an axis parallel to the plate face as a center. FIG. 8 is a front view of the handle 50 to be incorporated into the pacifier of FIG. 1;

and FIG. 9 is a cross-sectional view taken along the line IX-IX of FIG. 8.

[0053] As shown in FIG. 7, the shaft portions 56 of the handle 50 are positioned in the spaces formed between the first base member 31 and the second base member 32, and turnably (rotatably) held by the base portion 30 comprised of the first base member 31 and the second base member 32. As shown in FIGS. 7 and 8, the shaft portions 56 are positioned such that their axes lie on the same line, and the handle 50 is turnable (pivotable, swingable) with respect to the base portion 30 around the axes (axis) of the shaft portions 56 as a turning axis Lc. As shown in FIGS. 3 to 5, the turning axis Lc extends laterally and is approximately perpendicular to the projection direction La of the nipple portion 20 and the turning axis Lb of the lid 40. As described above and as shown in the Figures, the handle 50 and the nipple portion 20 are positioned on the opposite sides with respect to the flange portion 60. Accordingly, as shown in FIG. 5, the handle 50 turns such that the handle 50 projects from the base portion 30 on the side opposite to the nipple portion holding side, i.e. on the above-described other side in the projection direction La of the nipple portion 20.

[0054] As shown in FIGS. 1, 3 and 4, the lid 40 in the closed position lies between both ends of the body portion 51 of the handle 50 in the direction of the turning axis Lc of the handle 50. As shown in FIGS. 4 and 5, the shaft portions 56 of the handle 50 are held by the base portion 30 such that the one shaft portion 56 lies adjacent to the restraint protrusion 45 of the lid 40 in the closed position. When the handle 50 turns with respect to the base portion 30, the body portion 51 of the handle 50 passes across a position adjacent to the restraint protrusion 45 of the lid 40.

[0055] As shown in FIG. 8, each shaft portion 56 has a front end portion (distal end portion) 57 having a larger diameter than that of the other portion of the shaft portion 56. As shown in FIG. 7, the front end portions 57 interfere with the first base member 31 and the second base member 32 so as to prevent the shaft portions 56 of the handle 50 from escaping from the base portion 30, thereby preventing the handle 50 from falling out of the base portion 30. Further, as shown in FIGS. 9 through 12, each shaft portion 56 of the handle 50 has a protruding portion 58 protruding from the peripheral surface of the front end portion 57.

[0056] When the handle 50 turns around the turning axis Lc with respect to the base portion 30, the protruding portions 58 make contact with a part of the base portion 30 in a certain turning region, as shown in FIGS. 10 through 12. In that region, the protruding portions 58 function as a cam and press on that part of the base portion 30 which functions as a cam follower, thereby causing that part to deform elastically. Thus, when the handle 50 lies in a bias region A3 where the protruding portions 58 are in contact with the base portion 30, the handle 50 is biased toward one of two turning regions lying outside the bias region A3, i.e. a first region A1 and a second

region A2, lying continuously with and on both sides of the bias region A3. More specifically, as shown in FIG. 11, there exists a dead point boundary line Ld in the bias region A3; when the longitudinal line Le of the handle 50, extending from the turning axis Lc in the side view, lies on the first region A1 side relative to the dead point boundary line Ld in the bias region A3, the handle 50 is biased such that the handle 50 is turned toward the first region A1. On the contrary, when the longitudinal line Le of the handle 50 lies on the second region A2 side relative to the dead point boundary line Ld in the bias region A3, the handle 50 is biased such that the handle 50 is turned toward the second region A2.

[0057] In the embodiment illustrate in the Figures, when the handle 50 lies in the bias region A3, the protruding portions 58, provided at both ends of the handle 50, are each in contact with a press portion 38, configured to easily deform elastically, of the base portion 30. The press portion 38 can be constructed e.g. as a cantilever. Such a construction enables smooth turning of the handle 50 with respect to the base portion 30. Furthermore, the construction can stably produce a handle 50-biasing force utilizing the engagement between the protruding portions 58 of the handle 50 and the press portions 38 of the base portion 30.

[0058] The handle 50 can thus move in the first region A1, the bias region A3 and the second region A2 as the handle 50 turns with respect to the base portion 30. As described above, the handle 50 is positioned on the opposite side of the flange portion 60 from the nipple portion 20. The handle 50 is movable within the range defined by its interference with the flange portion (shield portion) 60, i.e. the approximately 180° range around the projection direction La of the nipple portion 20 on the side opposite to the nipple portion holding side. When the nipple portion 20 of the pacifier 10 is in a user's mouth, the first region A1, constituting the turning movement range, includes the position of the handle 50 toward which the handle 50 turns by gravity with respect to the base portion 30, i.e. the position where the longitudinal line Le of the handle 50 extends downwardly from the turning axis Lc (see FIG. 10). On the other hand, when the nipple portion 20 of the pacifier 10 is in a user's mouth, the second region A2 includes the position of the handle 50 where the handle 50 extends from the base portion 30 toward a side of the head of the user, i.e. the position where the longitudinal line Le of the handle 50 extends upwardly from the turning axis Lc (see FIG. 12).

[0059] As shown in FIGS. 9 and 12, the protruding portions 58 provided at the ends of the handle 50 each have an engagement surface 59 which makes plane contact with the press portion 38 of the base portion 30 when the handle 50 lies in the second region A2. Therefore, the second region A2 of the handle 50 movement range should necessarily be narrow as shown in FIGS. 5 and 11. The plane contact between the protruding portion 58 of the handle 50 and the press portion 38 of the base portion 30 enables stable positioning of the handle 50

with respect to the base portion 30 regardless of the holding state of the pacifier 10, that is to say, regardless of which portion of the pacifier 10 lies at the top in a vertical direction.

[0060] As shown in FIGS. 3 and 5, the turning axis Lc of the handle 50 lies adjacent to the restraint protrusion 45 of the lid 40 in the closed position and nearer to the above-described one side along the turning axis Lb of the lid 40 (in the projection direction La of the nipple portion 20). Therefore, when the body portion 51 of the handle 50 extends toward the above-described other side along the turning axis Lb of the lid 40 (in the projection direction La of the nipple portion 20), the one end of the body portion 51 of the handle 50 lies near and almost adjacent to the restraint protrusion 45 of the lid 40 in the closed position. Thus, when the longitudinal line Le of the handle 50 extends from the turning axis Lc of the handle 50 toward the above-described other side in the projection direction La of the nipple portion 20, due to interference between the restraint protrusion 45 of the lid 40 and the body portion 51 of the handle 50, the lid 40 is restrained from moving from the closed position to the open position in the direction in which the restraint protrusion 45 lies anteriorly.

[0061] In the embodiment illustrated in the Figures, the movement of the lid 40 from the closed position to the open position is restrained also when the longitudinal line Le of the handle 50 extends generally downwardly in the vertical direction. More specifically, as shown in FIGS. 4 and 5, the body portion 51 of the handle 50 is coupled to the shaft portions 56 of the handle 50 such that the body portion 51 is decentered with respect to the turning axis Lc of the handle 50 to the above-described other side along the turning axis Lb of the lid 40 (in the projection direction La of the nipple portion 20) when the longitudinal line Le of the handle 50 extends generally downwardly in the vertical direction. Thus, when the longitudinal line Le of the handle 50 extends generally downwardly in the vertical direction, the center of the body portion 51 of the handle 50 along the turning axis Lb of the lid 40 is displaced from the turning axis Lc of the handle 50 to the above-described other side along the turning axis Lb of the lid 40 (downward in FIG. 4 and to the right side in FIG. 5). When the longitudinal line Le of the handle 50 extends generally downwardly in the vertical direction, the body portion 51 of the handle 50 projects from the shaft portions 56 of the handle 50 to the above-described other side along the turning axis Lb of the lid 40. Thus, the body portion 51 of the handle 50, extending downwardly from the turning axis Lc, lies near and almost adjacent to the restraint protrusion 45 of the lid 40 in the closed position in the turning direction of the lid 40. The movement of the lid 40 from the closed position to the open position is thus restrained also when the longitudinal line Le of the handle 50 extends generally downwardly in the vertical direction.

[0062] Thus, when the handle 50 lies in the first region A1, at least a part of the handle 50 always lies near and

almost adjacent to at least a part (restraint protrusion 45) of the lid 40 in the closed position in the direction of sliding of the lid 40 with respect to the base portion 30. Therefore, when the handle 50 lies in the first region A1, the lid 40 is restrained from moving from the closed position.

[0063] On the other hand, as described above, the second region A2 is a narrow range in which the handle 50 extends upwardly from the turning axis Lc. As shown in FIG. 2 and also shown by the dashed-double dotted line in FIG. 5, when the longitudinal line Le of the handle 50 extends generally upwardly in the vertical direction, the center of the body portion 51 of the handle 50 along the turning axis Lb of the lid 40 is displaced from the turning axis Lc of the handle 50 to the above-described one side along the turning axis Lb of the lid 40 (to the left side in FIG. 5). When the longitudinal line Le of the handle 50 extends generally upwardly in the vertical direction, the body portion 51 of the handle 50 projects from the shaft portions 56 of the handle 50 to the above-described one side along the turning axis Lb of the lid 40, and does not project to the above-described other side. Accordingly, when the handle 50 lies in the second region A2, the handle 50 does not interfere with the lid 40 moving from the closed position. Thus, when the handle 50 lies in the second region A2, the movement of the lid 40 from the closed position is not restrained.

[0064] As well illustrated in FIG. 8, a groove portion 53 is formed in the body portion 51 of the handle 50 at a position at a distance from the both ends turnably held by the base portion 30. In the embodiment illustrated, the groove portion 53 is formed between a pair of protrusions 54 provided in the body portion 51 of the handle 50. As shown in FIG. 8, a string-like member 70 can be attached to the groove portion 53. The string-like member 70 is, for example, a pacifier holder used for preventing falling of the pacifier 10 to the ground, missing of the pacifier 10, etc.

[0065] The above-described base portion 30, lid 40, handle 50 and flange portion 60 may be formed of a resin.

[0066] The action of the pacifier 10 having the above construction will now be described.

[0067] As described above, the pacifier 10 is provided with the projectable handle 50 on the side opposite to the nipple portion holding side. The handle 50 enables stable grasping of the pacifier 10 without grasping the nipple portion 20 which is to be put in a user's mouth and must therefore be kept clean. The handle 50 is disposed on the opposite side of the flange portion 60 from the nipple portion 20. The handle 50 is required to be easy to grasp when a user puts in the mouth the entire pacifier 10 beyond the flange portion 60 from the nipple portion holding side, so that the pacifier 10 in the mouth can be drawn out quickly and securely by holding the handle 50 with fingers. Therefore, the handle 50 is typically designed to project a certain length from the base portion 30 and to be turnable with respect to the base portion 30. On the other hand, when a user accidentally puts the pacifier 10 in the mouth from the handle 50 side, the

projecting handle 50 can reach deep into the user's mouth and can even hit the throat.

[0068] In view of this, the flange portion 60 according to this embodiment has at least three bulges 62, 62, 63 bulging out on the side opposite to the nipple portion holding side, as described above. According to the pacifier 10 of this embodiment, when a user (e.g. an infant) accidentally puts the pacifier 10 in the mouth from the handle 50 side, the at least three bulges 62, 62, 63 can define a plane which make contact with the mouth of the user (infant). The bulges are provided on the side opposite to the nipple portion holding side, i.e. on the side where the handle 50 is provided. The bulges can therefore shorten the length of that portion of the handle 50 which will be put in a user's mouth upon the incorrect use of the pacifier 10, thereby effectively preventing damage to the mouth caused by the pacifier 10.

[0069] On the other hand, the projection length of the handle 50 from the base portion 30 is maintained. Therefore, when a user accidentally puts in the mouth the entire pacifier 10 beyond the flange portion 60 from the nipple portion holding side, the handle 50 having a sufficient projection length can be held easily with fingers. This makes it possible to quickly and securely draw the pacifier 10 out of the user's mouth upon the incorrect use of the pacifier 10.

[0070] In the pacifier 10 of this embodiment, the thickness of the flange portion 60 as a whole is maintained. Therefore, there is no increase in the cost of the material used for the pacifier 10.

[0071] Especially in this embodiment, when the pacifier 10 is viewed from the side opposite to the nipple portion holding side, at least one of the bulges 62, 63 is disposed on both sides of an imaginary line extending on the turning axis Lc of the handle 50. According to such pacifier 10, a small number of bulges 62, 63 can define an imaginary plane which is to make contact with the mouth of a user when the user accidentally puts the pacifier 10 in the mouth from the handle 50 side. This enables maintaining the simple construction of the pacifier 10.

[0072] The pacifier 10 includes the flange portion 60 extending outwardly from the base portion 30. However, the flange portion 60 is generally not provided or, if provided, only slightly projects from the base portion 30 on its user's head side in use of the pacifier 10 by a user (e.g. an infant). This is because if the flange portion 60 projects considerably on the user's head side, the flange portion 60 may come into contact with the user's nose. On the other hand, if the handle 50 accidentally turns with respect to the base portion 30 toward a user's head without being blocked by the flange portion 60, there is a fear that the handle 50 might come into contact with, or even hit the nose of the user.

[0073] In view of this, according to the pacifier 10 of this embodiment, the handle 50 is restrained from turning with respect to the base portion 30 from the first region A1 to the second region A2 or from the second region A2 to the first region A1 across the bias region A3 unless

an intentional external force is applied to the handle 50. This enables stably keeping the handle 50 in one of the first region A1 and the second region A2. Thus, it becomes possible to restrict the turning range of the handle 50 to the particular region upon the use of the pacifier 10 by a user, thereby preventing the handle 50 from extending toward the user's head. This can effectively prevent contact of the handle 50 with the user's nose.

[0074] Especially in this embodiment, when the pacifier 10 is held in a user's mouth, the first region A1 includes the position of the handle 50 toward which the handle 50 turns by gravity with respect to the base portion 30. On the other hand, when the pacifier 10 is held in a user's mouth, the second region A2 includes the position of the handle 50 where the handle 50 extends from the base portion 30 toward the head side of the user. According to such pacifier 10, when the nipple portion 20 of the pacifier 10 is in a user's mouth, the handle 50 can be stably kept in the first region A1. This can effectively prevent the handle 50 from unintentionally turning from the first region A1 to the second region A2 from extending, and thus toward the user's head.

[0075] Further, in this embodiment the protruding portion 58 is provided in at least one of the shaft portions 56 of the handle 50. When the handle 50 turns with respect to the base portion 30 from the first region A1 or the second region A2 and reaches the bias region A3, the protruding portion 58 comes into contact with the base portion 30, whereby the handle 50 is biased toward the first region A1 or the second region A2. According to such pacifier 10, the bias region A3 including a dead point can be created by the simple construction. The first region A1 and the second region A2 will then be provided on both sides of the bias region A3.

[0076] The nipple portion 20 of the pacifier 10 has a hollow structure. In a conventional pacifier, dust, a liquid, etc. that has entered the interior of the nipple portion cannot be completely removed from the nipple portion. A nipple portion, which is to be used in the mouth of a user (e.g. an infant), must be kept clean. Dust, a liquid, etc., remaining in the interior of a nipple portion, will cause undue fear to a caregiver (e.g. a parent) of a user (e.g. an infant).

[0077] The pacifier 10 of this embodiment has the opening 35 formed on the side of the base portion 30 opposite to the nipple portion holding side. The opening 35 is disposed in a position facing the hollow interior of the nipple portion 20 and communicates with the hollow interior. According to such pacifier 10, by using the opening 35 as a cleaning opening for cleaning the interior of the nipple portion 20, it becomes possible to easily clean the interior of the nipple portion 20 and keep the nipple portion 20 in a clean condition. Especially in the case where the opening 35 faces the hollow interior of the nipple portion 20 in the direction La of projection of the nipple portion 20 from the base portion 30, dirt adhering to the interior surface of the nipple portion 20 can be easily scraped away e.g. with a cotton swab (cotton bud, cotton

applicator) which has been inserted through the opening 35 into the interior of the nipple portion 20. The pacifier 10 can thus be kept in a very clean condition, which is hygienically preferable and can provide a feeling of safety for a caregiver (e.g. a parent) of a user (e.g. an infant) of the pacifier 10.

[0078] Especially in this embodiment, the pacifier 10 is provided with the lid 40 held by the base portion 30 so as to be movable between the closed position (see FIG. 1) where the lid 40 closes the opening 35 of the base portion 30 and the open position (see FIG. 2) where the lid 40 opens the opening 35 of the base portion 30. According to such pacifier 10, the interior of the nipple portion 20 can be cleaned easily and carefully as described above by positioning the lid 40 in the open position. On the other hand, a liquid, dust, etc. can be prevented from entering the interior of the nipple portion 20 by positioning the lid 40 in the closed position except when cleaning the pacifier 10.

[0079] If the lid 40 unintentionally moves from the closed position, it is highly possible that a liquid, dust, etc. will enter the interior of the nipple portion 20 through the opening 35. Further, because the lid 40 will then project from the base portion 30, the lid 40 can make contact with or even hit the user. In this embodiment, the lid 40 is restrained from moving from the closed position when the handle 50, which is moveable in the first region A1 and in the second region A2, lies in the first region A1. According to such pacifier 10, by positioning the handle 50 in the first region A1, the lid 40 can be prevented from unintentionally moving from the closed position. That is to say, the lid 40 can be retained in the closed position by positioning the handle 50 in the first region A1. The pacifier 10 thus makes it possible to prevent the lid 40 from unintentionally moving with respect to the base portion 30 and projecting from the base portion 30.

[0080] In this embodiment, when the handle 50 lies in the bias region A3 between the first region A1 and the second region A2, the handle 50 is biased toward the first region A1 or the second region A2. According to such pacifier 10, the handle 50 can be effectively prevented from turning with respect to the base portion 30 from the first region A1 to the second region A2 or from the second region A2 to the first region A1 across the bias region A3 unless an intentional external force is applied to the handle 50. This makes it possible to stably keep the handle 50 in the first region A1, thereby effectively restraining the movement of the lid 40 from the closed position.

[0081] As described above, in this embodiment the protruding portion 58 is provided in at least one of the shaft portions 56 of the handle 50. When the handle 50 turns with respect to the base portion 30 from the first region A1 or the second region A2 and reaches the bias region A3, the protruding portion 58 comes into contact with the base portion 30, whereby the handle 50 is biased toward the first region A1 or the second region A2. According to such pacifier 10, the bias region A3 including a dead point can be created by the simple construction.

The first region A1 and the second region A2 will then be provided on both sides of the bias region A3.

[0082] In this embodiment the lid 40 in the closed position lies between both ends of the handle 50 in the direction of the turning axis Lc of the handle 50. The lid 40 slides on the base portion 30 as the lid 40 turns with respect to the base portion 30. When the handle 50 lies in the first region A1, at least a part of the handle 50 always lies in the vicinity of at least a part of the lid 40 in the closed position in the direction of sliding of the lid 40 with respect to the base portion 30. According to such pacifier 10, the mechanism for restraining the turning movement of the lid 40 utilizing the handle 50 can be established by the simple construction.

[0083] In this embodiment, when the pacifier 10 is held in a user's mouth, the first region A1 includes the position of the handle 50 toward which the handle 50 turns by gravity with respect to the base portion 30. On the other hand, when the pacifier 10 is held in a user's mouth, the second region A2 includes the position of the handle 50 where the handle 50 extends from the base portion 30 toward the head of the user. According to such pacifier 10, when the nipple portion 20 of the pacifier 10 is in a user's mouth, the handle 50 can be stably kept in the first region A1. This can effectively restrain the movement of the lid 40 from the closed position.

[0084] In this embodiment the raised portion 36 is provided in one of the base portion 30 and the lid 40, while the recessed portion 42 engageable with the raised portion 36 is formed in the other one of the base portion 30 and the lid 40. When the lid 40 gets to the closed position, the raised portion 36 engages the recessed portion 42, whereby the lid 40 is locked to the base portion 30. According to such pacifier 10, the lid 40 can be prevented from unintentionally moving from the closed position and retained in the closed position. This, combined with the above-described construction to restrain the turning movement of the lid 40 utilizing the handle 50, can securely retain the lid 40 in the closed position.

[0085] A string-like member 70, e.g. a pacifier holder used to prevent falling of the pacifier to the ground, missing of the pacifier, etc., is often attached to the turnable handle 50 of the pacifier 10. The string-like member 70 is likely to slide on the handle 50 and move to one end of the handle 50 turnably held by the base portion 30. After reaching one end of the handle 50, the string-like member 70 can undesirably restrain the turning movement of the handle 50 or can turn the handle 50 in an unintended direction.

[0086] In view of this, according to this embodiment, the groove portion 53 is formed in the handle 50 at a position at a distance from the ends turnably held by the base portion 30. When the string-like member 70 is attached to the groove portion 53, the movement of the string-like member 70 on the handle 50 can be restricted within the groove portion 53. This can effectively prevent the problem that the string-like member 70 moves to one of the ends of the handle 50 rotatably held by the base

portion 30 upon handling of the pacifier 10, such as use or cleaning of the pacifier 10, and impedes the turning movement of the handle 50.

[0087] Especially in this embodiment, the groove portion 53 is formed between the pair of protrusions 54 provided in the handle 50. According to such pacifier 10, the groove portion 53 can be created by the simple construction.

[0088] Various modifications may be made to the above-described embodiment. Exemplary modifications or variations will now be described.

[0089] In the above-described embodiment the lid 40 in the closed position lies between both ends of the handle 50 in the direction of the turning axis Lc of the handle 50 and the lid 40 is slidable on the base portion 30. However, not limited to this, this may be modified, for example, as shown in FIGS. 13 and 14. In the embodiment shown in FIGS. 13 and 14, the lid 40a in the closed position lies between both ends of the handle 50 in the direction of the turning axis Lc of the handle 50. The lid 40a is turnable (pivotable) with respect to the base portion 30 around an axis Lf which is approximately parallel to the turning axis Lc of the handle 50. The lid portion 41a of the lid 40 is thick in its side portions in the lateral direction. Accordingly, as shown in FIG. 13, when the handle 50 lies in the first region A1, at least a part of the handle 50 always lies in the vicinity of at least a part (the thick side portions of the lid portion 41a) of the lid 40a in the closed position in the turning direction of the lid 40a. This can restrain the lid 40a from moving from the closed position when the handle 50 lies in the first region A1. Further, because the lid portion 41a is thinner centrally in the lateral direction, a space sufficient to hold the handle 50 with fingers can be formed between the lid 40a and the handle 50 projecting on the above-described other side in the projection direction La of the nipple portion 20.

[0090] The embodiment shown in FIGS. 13 and 14 is the same as the above-described embodiment except for the construction of the lid. In FIGS. 13 and 14, the same reference numerals are used for the same components as in the above-described embodiment, and a duplicate description thereof is omitted.

[0091] In the above-described embodiment, the groove portion 53 is formed between the pair of protrusions 54 provided in the handle 50. However, not limited to this, it is possible to form a groove, for example, by making the thickness of a portion of the body portion 51 of the handle 50 smaller than that of the other portion.

[0092] Further, in the above-described embodiment, the bulges 62, 63 are formed by making the flange portion 60 thicker locally. However, not limited to this, it is possible to make the thickness of the entire flange portion 60 approximately constant by forming recesses in the flange portion 60 on the nipple portion holding side at positions corresponding to the bulges 62, 63.

Claims

1. A pacifier comprising:

a hollow nipple portion; and
a base portion for holding the nipple portion, the base portion having an opening on the side opposite to the nipple portion holding side, wherein the opening is formed in a position facing a hollow interior of the nipple portion and communicates with the hollow interior.

2. The pacifier according to claim 1 further comprising a lid held by the base portion movably between a closed position where the lid closes the opening of the base portion and an open position where the lid opens the opening of the base portion.

3. The pacifier according to claim 2 further comprising a handle turnably held by the base portion, wherein the handle is turnable with respect to the base portion so as to be movable in a first region and a second region, and wherein when the handle lies in the first region, the handle restrains the lid from moving from the closed position.

4. The pacifier according to claim 3, wherein the handle is movable also in a bias region lying between the first region and the second region, and wherein when the handle lies in the bias region, the handle is biased toward one of the first region and the second region.

5. The pacifier according to claim 4, wherein a protruding portion is provided at an end of the handle, the handle being turnably held by the base portion at the end, and wherein when the handle turns with respect to the base portion from the first region or the second region and reaches the bias region, the protruding portion comes into contact with the base portion, whereby the handle is biased toward the first region or the second region.

6. The pacifier according to claim 3, wherein the handle is formed generally in a U shape, with both ends being turnably held by the base portion, wherein the lid in the closed position lies between both ends of the handle in a direction of the turning axis of the handle, wherein the lid is slidable with respect to the base portion, and wherein when the handle lies in the first region, at least a part of the handle lies in the vicinity of at least a part of the lid in the closed position in a sliding

direction of the lid.

7. The pacifier according to claim 3,
wherein the handle is formed generally in a U shape,
with both ends being turnably held by the base portion,
wherein the lid in the closed position lies between
both ends of the handle in a direction of the turning
axis of the handle,
wherein the lid is turnable with respect to the base
portion, and,
wherein when the handle lies in the first region, at
least a part of the handle lies in the vicinity of at least
a part of the lid in the closed position in a turning
direction of the lid. 5
8. The pacifier according to claim 3,
wherein when the pacifier is held in a user's mouth,
the first region includes a position of the handle to-
ward which the handle turns by gravity with respect
to the base portion, and the second region includes
a position of the handle where the handle extends
from the base portion toward a side of a head of the
user holding the pacifier. 10
9. The pacifier according to claim 2,
wherein a raised portion is provided in one of the
base portion and the lid, while a recessed portion
engageable with the raised portion is formed in the
other one of the base portion and the lid and, and
wherein when the lid gets to the closed position, the
raised portion engages the recessed portion, where-
by the lid is locked to the base portion. 15
10. The pacifier according to claim 3 further comprising
a plate-like flange portion extending outwardly from
the base portion,
wherein the handle is disposed on the opposite side
of the flange portion from the nipple portion. 20
11. The pacifier according to claim 3 further comprising
a plate-like flange portion extending outwardly from
the base portion,
wherein the flange portion has at least three bulges
that bulge out on the side opposite to the nipple por-
tion holding side. 25
12. The pacifier according to claim 11,
wherein when the pacifier is viewed from the side
opposite to the nipple portion holding side, at least
one of the bulges is disposed on one side of an im-
aginary line extending on a turning axis of the handle,
and at least one of the bulges is disposed on the
other side of the imaginary line extending on the turn-
ing axis of the handle. 30
13. The pacifier according to claim 3,
wherein the handle is formed generally in a U shape,
with both ends being turnably held by the base por-
tion, and
wherein a groove portion is formed in the handle at
a position at a distance from the both ends turnably
held by the base portion. 35

with both ends being turnably held by the base por-
tion, and
wherein a groove portion is formed in the handle at
a position at a distance from the both ends turnably
held by the base portion. 40

14. The pacifier according to claim 13,
wherein the groove portion is formed between a pair
of protrusions provided in the handle. 45
15. The pacifier according to claim 13 further comprising
a string-like member attached to the groove portion
of the handle. 50
16. The pacifier according to claim 13,
wherein the handle is formed generally in a U shape,
and both ends of the U-shaped handle are turnably
held by the base portion. 55
17. A pacifier comprising:
a nipple portion;
a base portion for holding the nipple portion;
a plate-like flange portion extending outwardly
from the base portion; and
a handle held by the base portion and disposed
on the opposite side of the flange portion from
the nipple portion,
wherein the flange portion has at least three
bulges that bulge out on the side opposite to the
nipple portion holding side. 60
18. The pacifier according to claim 17,
wherein the handle is turnably held by the base por-
tion, and
wherein when the pacifier is viewed from the side
opposite to the nipple portion holding side, at least
one of the bulges is disposed on one side of an im-
aginary line extending on a turning axis of the handle,
and at least one of the bulges is disposed on the
other side of the imaginary line extending on the turn-
ing axis of the handle. 65
19. A pacifier comprising:
a nipple portion;
a base portion for holding the nipple portion; and
a handle turnably held by the base portion,
wherein the handle is turnable with respect to
the base portion so as to be movable in a first
region, a second region and a bias region be-
tween the first region and the second region, and
wherein when the handle lies in the bias region,
the handle is biased toward one of the first region
and the second region. 70
20. The pacifier according to claim 19,
wherein when the pacifier is held in a user's mouth,

the first region includes a position of the handle toward which the handle turns by gravity with respect to the base portion, and the second region includes a position of the handle where the handle extends from the base portion toward a side of a head of the user holding the pacifier. 5

21. The pacifier according to claim 19, wherein a protruding portion is provided at an end of the handle, the handle being turnably held by the base portion at the end, and 10
wherein when the handle turns with respect to the base portion and reaches the bias region, the protruding portion comes into contact with the base portion, whereby the handle is biased toward the first region or the second region. 15

22. The pacifier according to claim 19 further comprising a plate-like flange portion extending outwardly from the base portion, 20
wherein the handle is disposed on the opposite side of the flange portion from the nipple portion.

23. A pacifier comprising: 25
a nipple portion;
a base portion for hooding the nipple portion;
and
a handle turnably held at its both ends by the base portion, 30
wherein a groove portion is formed in the handle at a position at a distance from the both ends.

24. The pacifier according to claim 23, wherein the groove portion is formed between a pair of protrusions provided in the handle. 35

25. The pacifier according to claim 23 further comprising a string-like member attached to the groove portion of the handle. 40

45

50

55

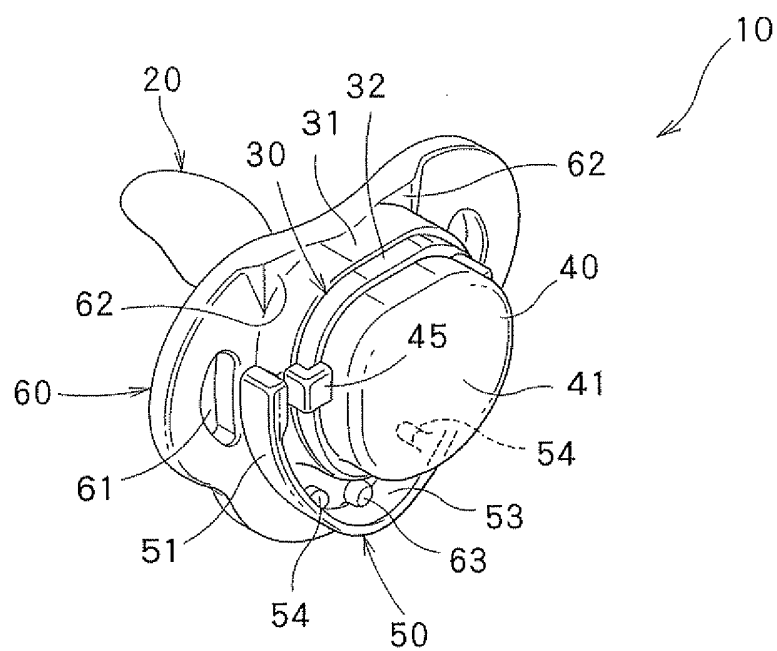


FIG. 1

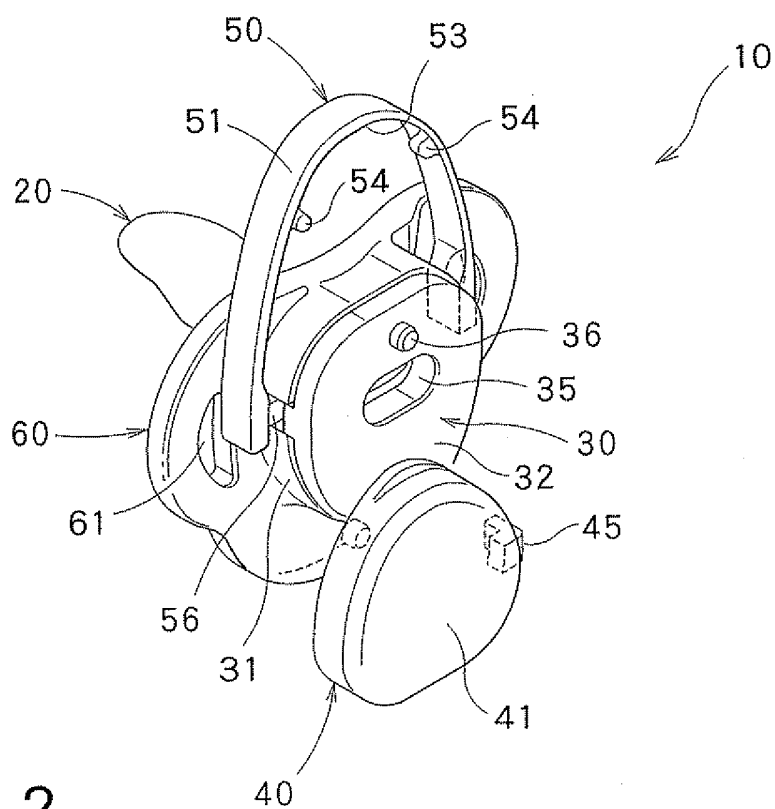
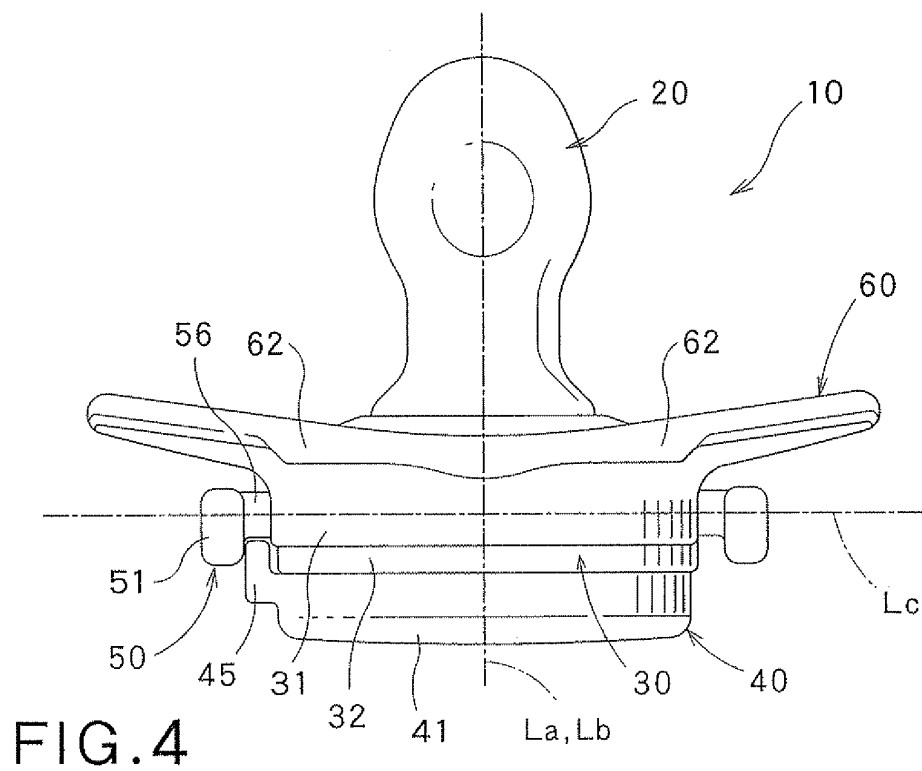
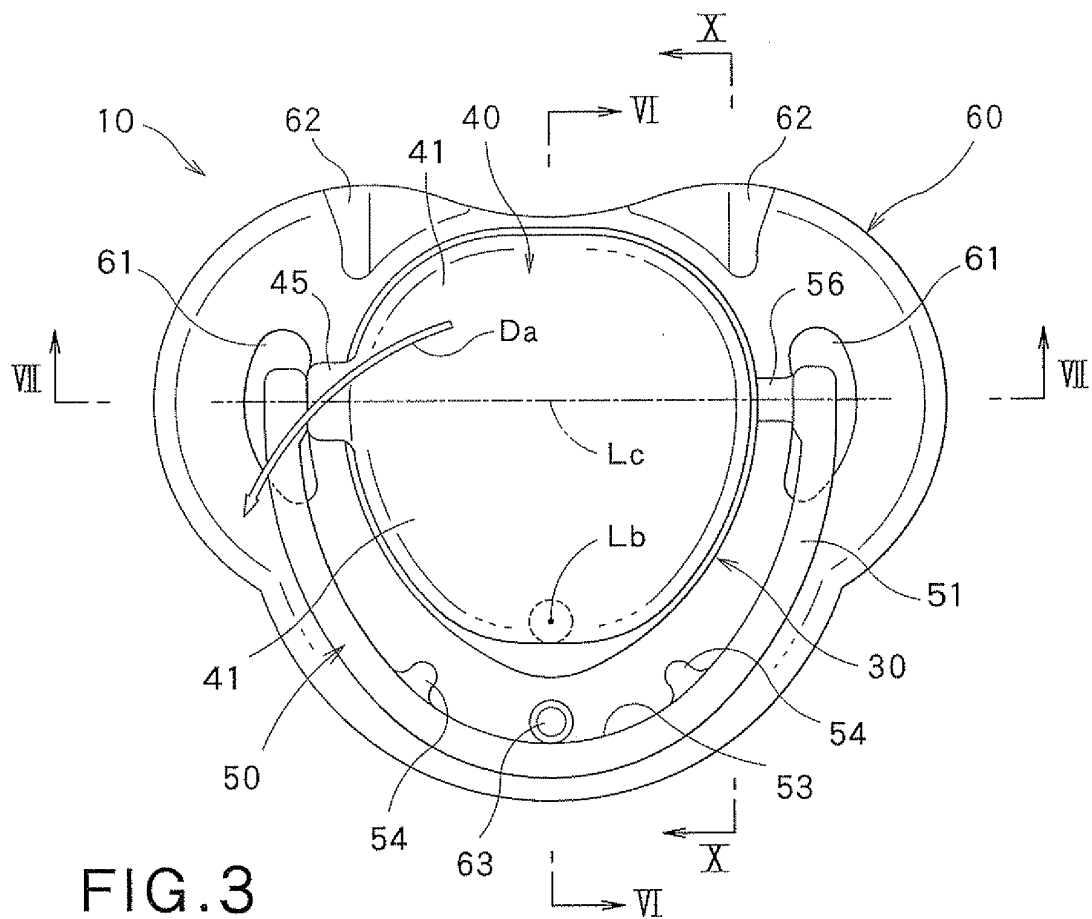


FIG. 2



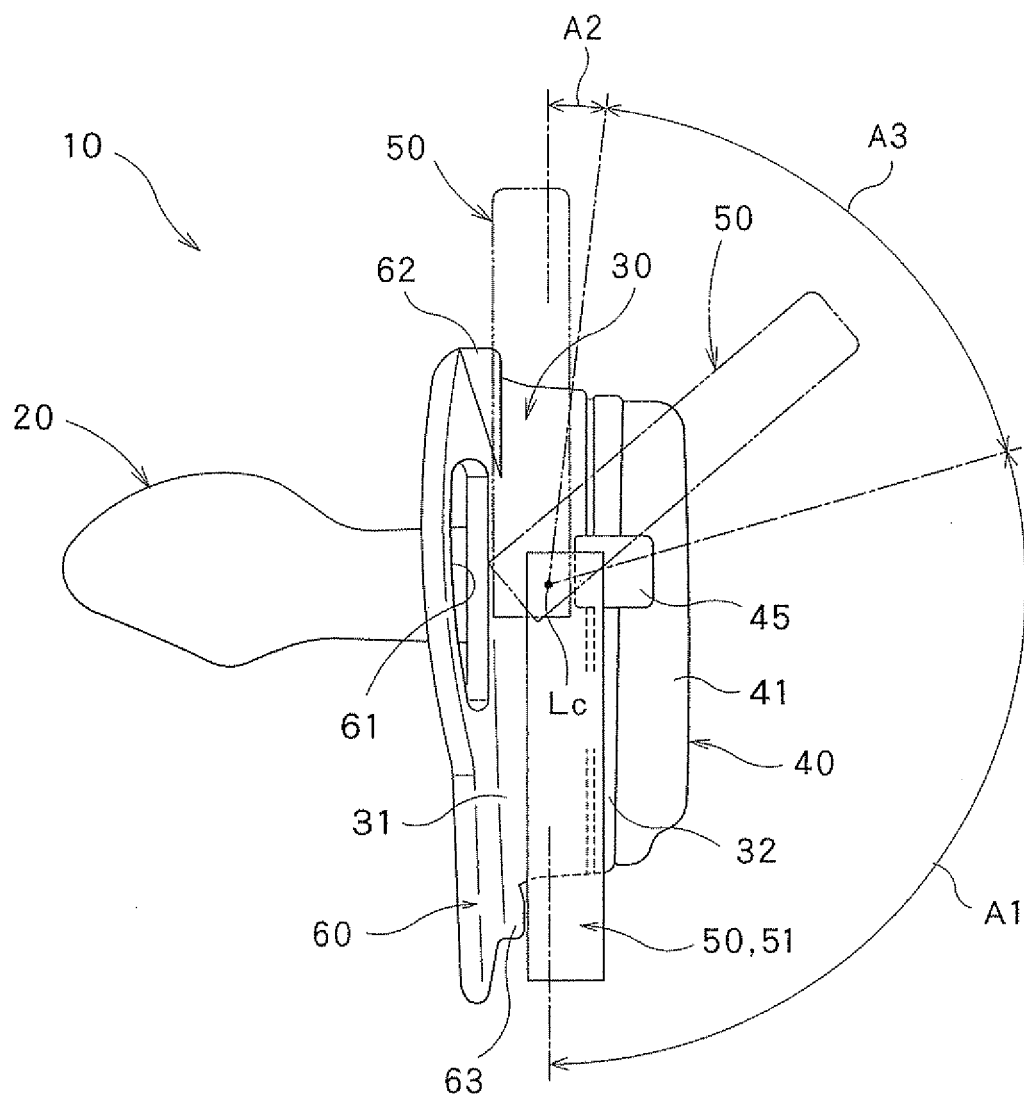
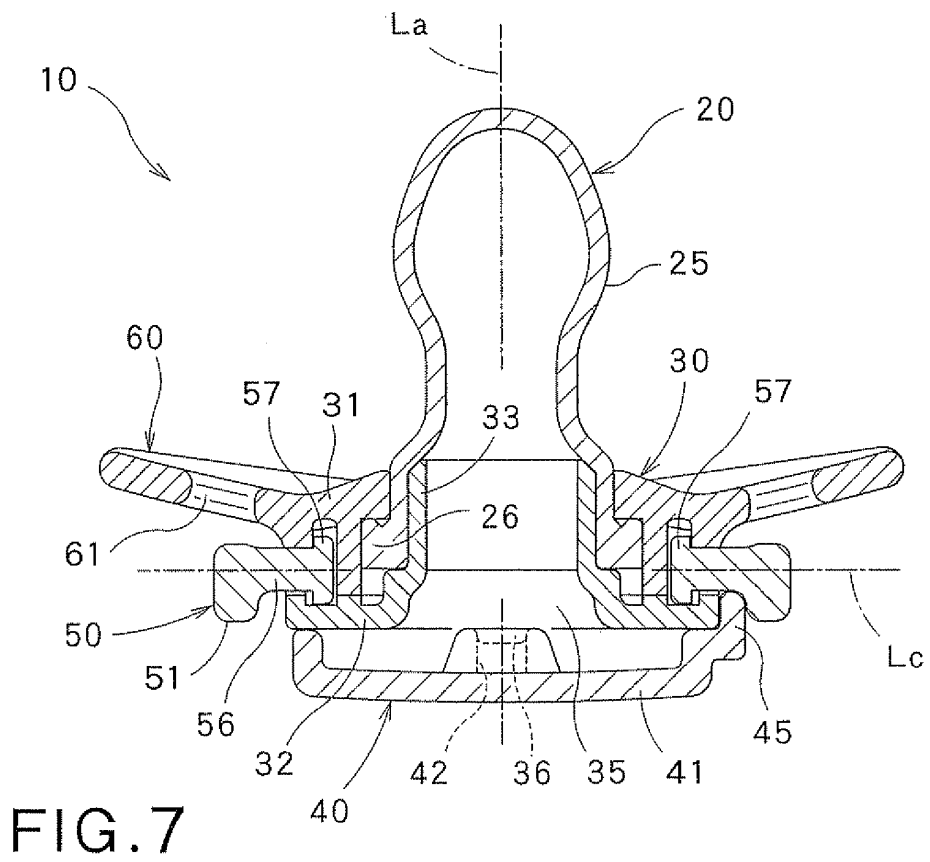
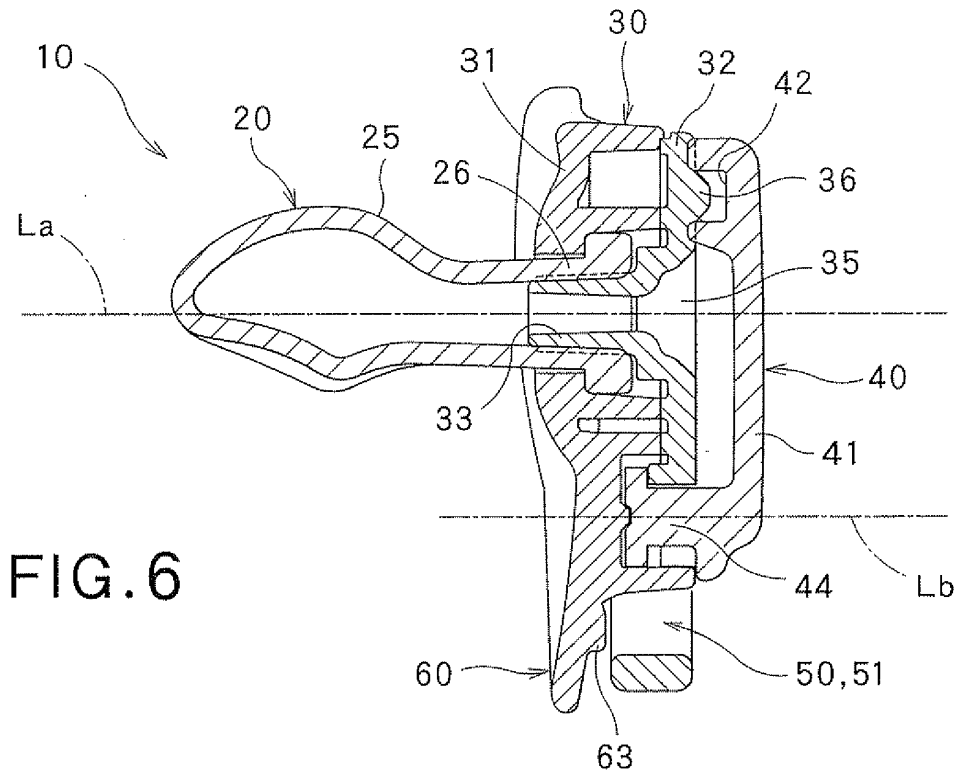
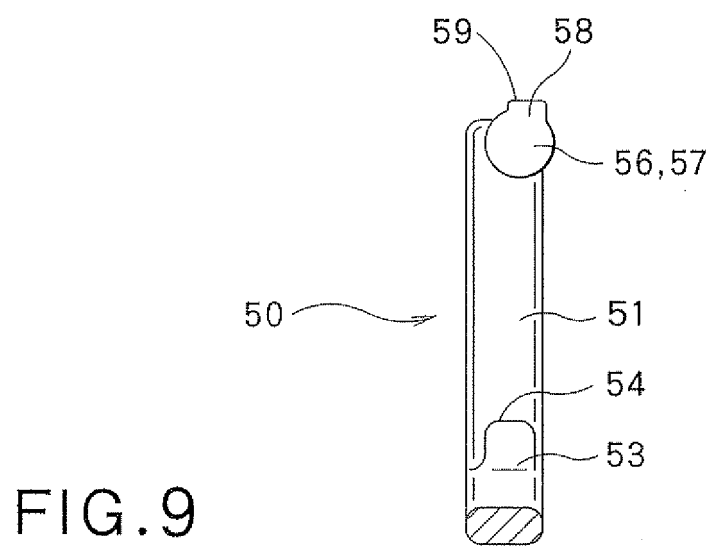
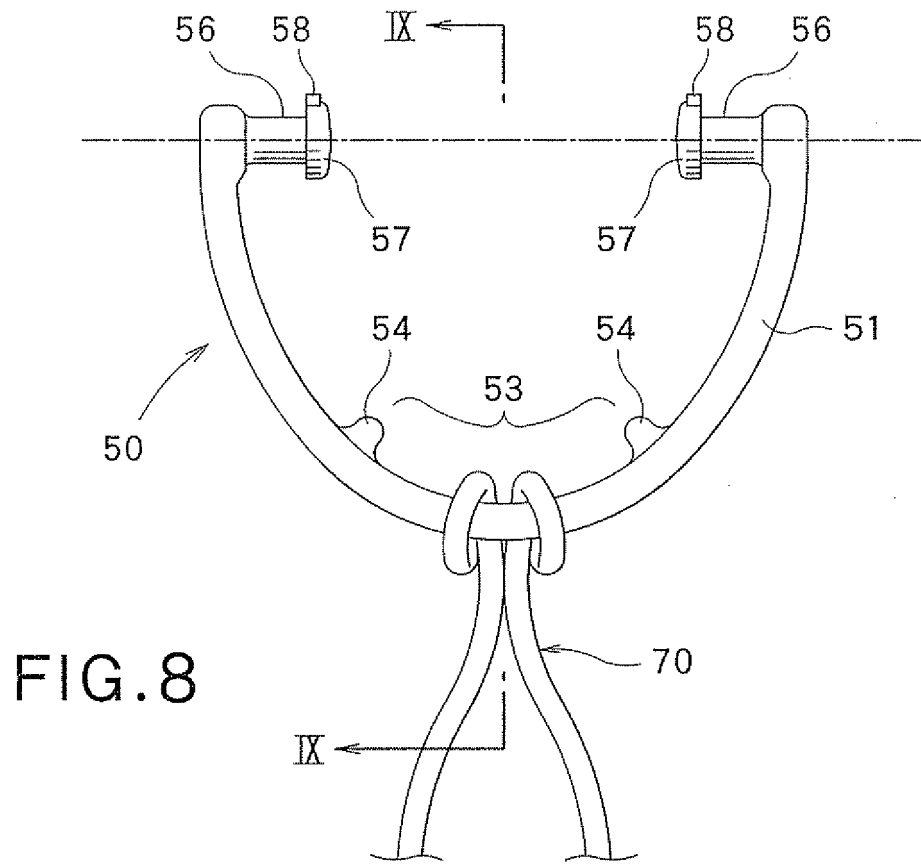
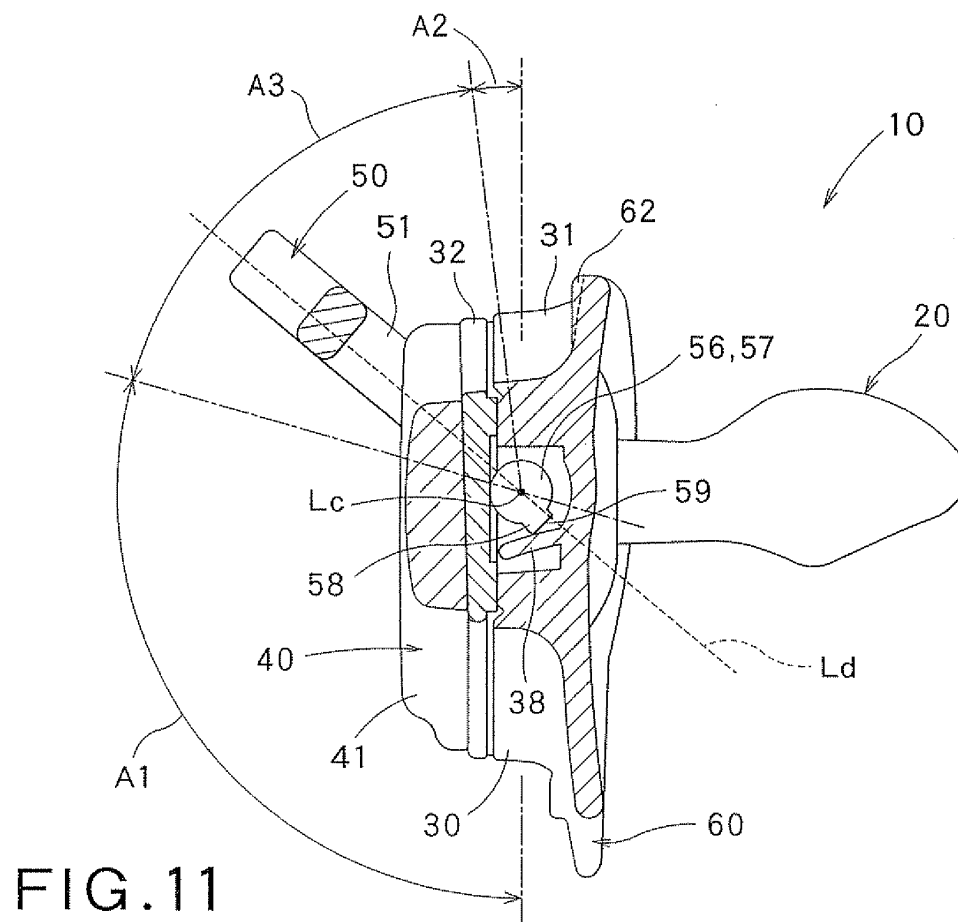
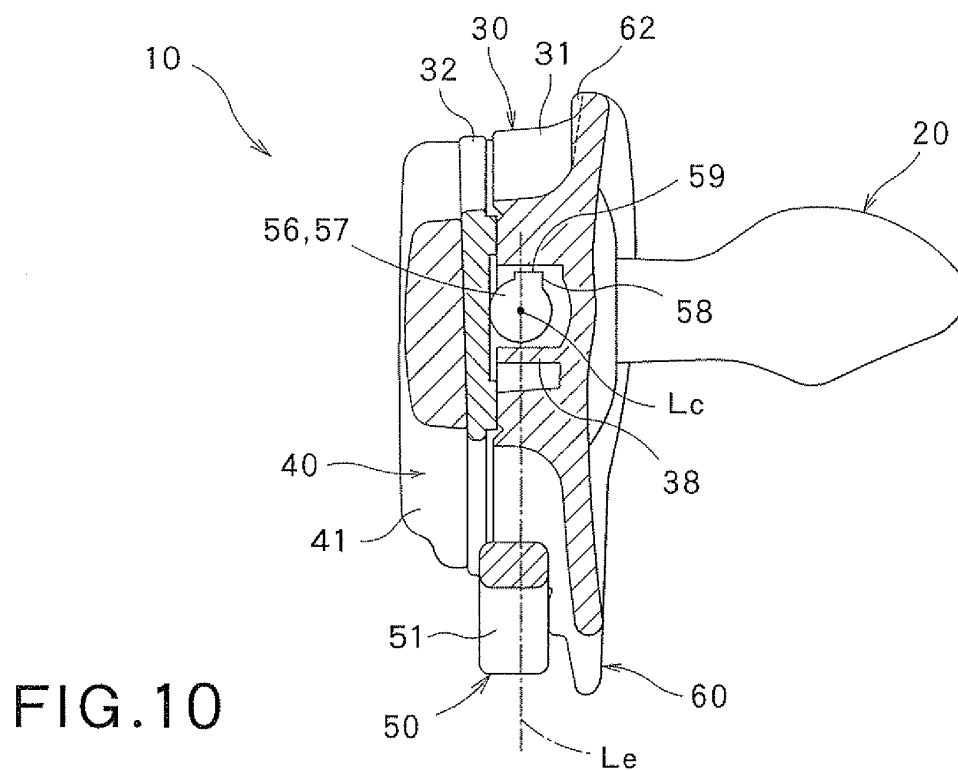


FIG. 5







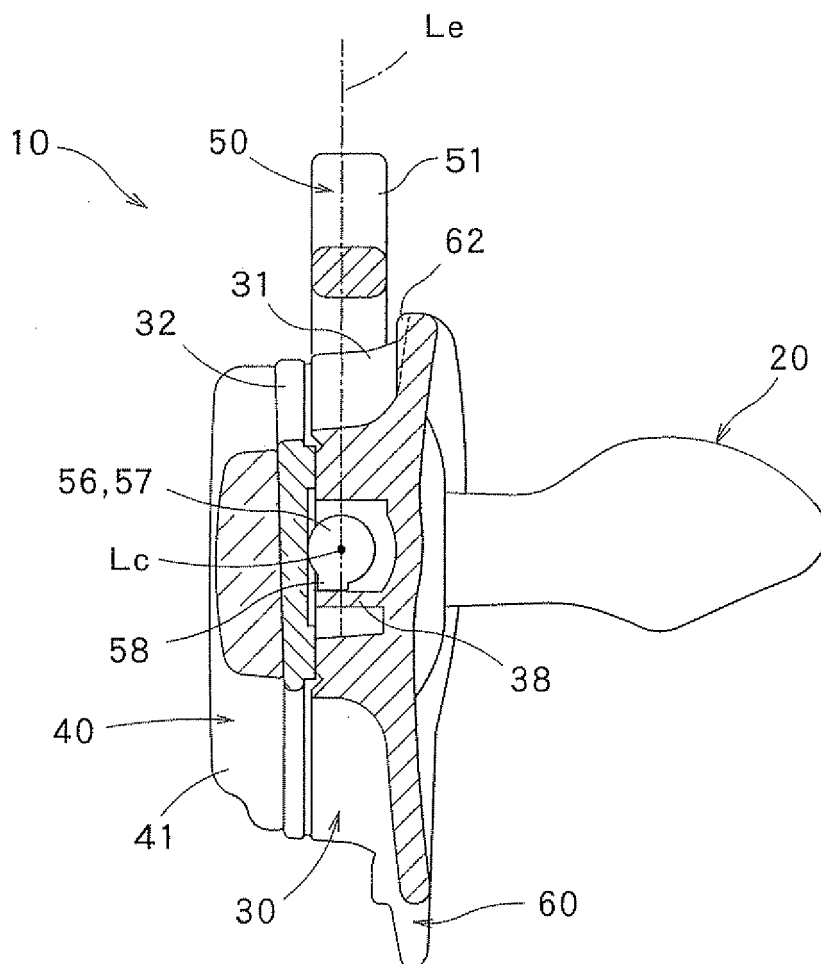


FIG.12

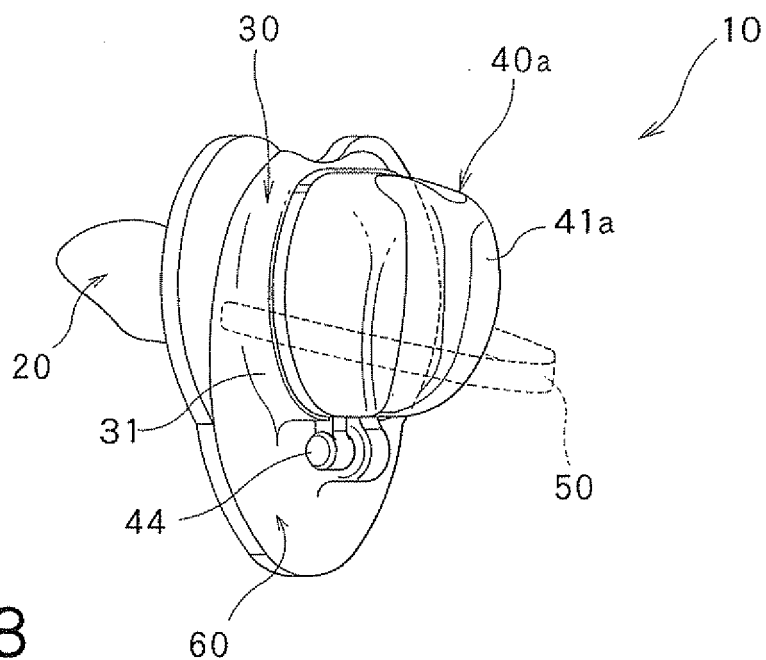


FIG.13

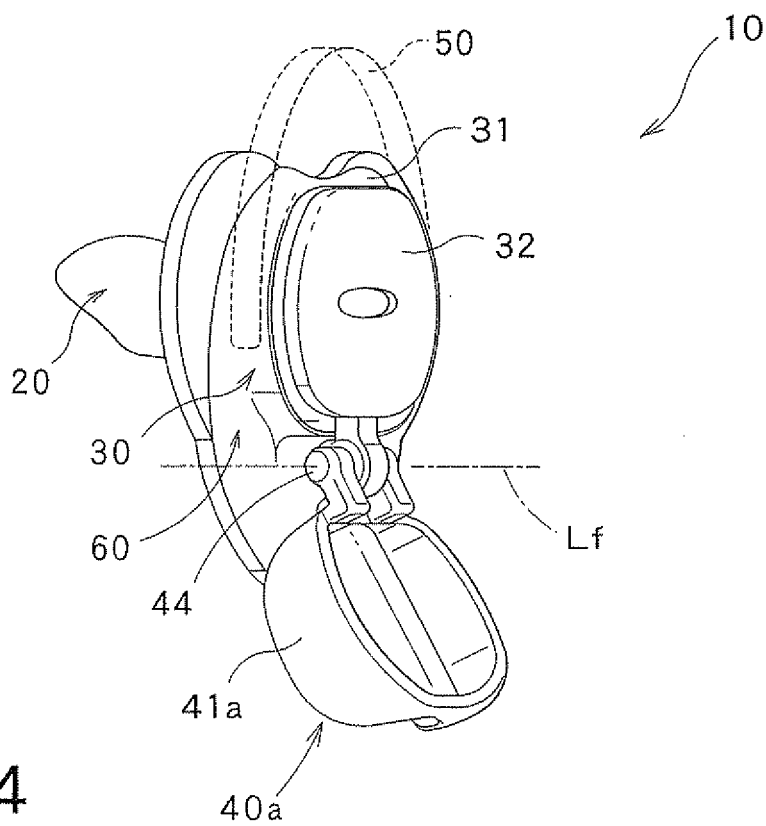


FIG.14

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2008/054999

A. CLASSIFICATION OF SUBJECT MATTER

A61J17/00 (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)

A61J17/00

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

Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2008

Kokai Jitsuyo Shinan Koho 1971-2008 Toroku Jitsuyo Shinan Koho 1994-2008

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.
X A	JP 2003-284762 A (Koshin Baby Co., Ltd.), 07 October, 2003 (07.10.03), Par. Nos. [0053] to [0063]; Figs. 5 to 6 (Family: none)	1-3 4, 5, 19-22

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

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"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
11 July, 2008 (11.07.08)Date of mailing of the international search report
22 July, 2008 (22.07.08)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2008/054999

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
(See extra sheet.)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
Claims 1 to 5 and 19 to 22.

Remark on Protest
the

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (2)) (April 2007)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2008/054999

Continuation of Box No.III of continuation of first sheet (2)

Since claim 2 depends on claim 1, the matter common to these claims resides in the matter as set forth in claim 1. However, this matter has been well known as disclosed in document JP 2003-284762 A and, therefore, cannot be considered as making a contribution over prior art. Thus, it cannot be regarded as a special technical feature in the meaning within the second sentence of PCT Rule 13.2.

Since claims 3 and 9 depends on claim 2, the matter common to these claims resides in the matter as set forth in claim 2. However, this matter has been well known as disclosed in the above-described document and, therefore, cannot be considered as making a contribution over prior art. Thus, it cannot be regarded as a special technical feature in the meaning within the second sentence of PCT Rule 13.2.

Since claims 4, 6, 7, 8, 10, 11 and 13 depends on claim 3, the matter common to these claims resides in the matter as set forth in claim 3. However, this matter has been well known as disclosed in the above-described document and, therefore, cannot be considered as making a contribution over prior art. Thus, it cannot be regarded as a special technical feature in the meaning within the second sentence of PCT Rule 13.2.

The matter as set forth in claims 6 and 10 has been well known as disclosed in the above-described document and, therefore, cannot be considered as making a contribution over prior art. Thus, it cannot be regarded as a special technical feature in the meaning within the second sentence of PCT Rule 13.2.

There is no common matter seemingly being a special technical feature other than the matter common to claims 4, 5 and 19 to 22, the matter as set forth in claim 7, the matter common to claim 8, the matter common to claims 11, 12, 17 and 18 and the matter common to claims 13 to 16 and 23 to 25.

Thus, no technical relationship as set forth in PCT Rule 13.2 can be found out among the following invention groups. Accordingly, these invention groups do not comply with the requirement of unity of invention.

- | | |
|-----------------------------|----------------------------------|
| 1. Claim 1 | 7. Claim 8 |
| 2. Claim 2 | 8. Claim 9 |
| 3. Claim 3 | 9. Claim 10 |
| 4. Claims 4, 5 and 19 to 22 | 10. Claims 11, 12, 17 and 18 |
| 5. Claim 6 | 11. Claims 13 to 16 and 23 to 25 |
| 6. Claim 7 | |

(Continued to the next sheet.)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2008/054999

Concerning the inventions according to claims 2 and 3, there is no need to make a further search in examining the invention according to claim 1 that is the main invention. Thus, it is recognized that claims of the present international application have eight invention groups as follows.

- | | |
|-------------------------------|---------------------------------|
| 1. Claims 1 to 5 and 19 to 22 | 5. Claim 9 |
| 2. Claim 6 | 6. Claim 10 |
| 3. Claim 7 | 7. Claims 11, 12, 17 and 18 |
| 4. Claim 8 | 8. Claims 13 to 16 and 23 to 25 |

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- JP 2001276185 A [0005] [0012]
- JP 2003210554 A [0010]