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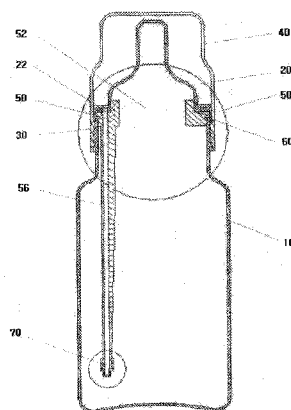
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(54) Title: FUNCTIONAL FEEDING BOTTLE



(57) Abstract: As to the present invention, when being settled the feeding bottle body (10), the nipple (20) and nipple (20) in the feeding bottle body (10), it sets up the air inflow apparatus as to the cap (30) in which the hole for the nipple (20) is opened and the feeding bottle' consisting of the lid (40) put on above cap (30) between the feeding bottle body (10) inlet part and nipple (20). The air inflow apparatus forms the air inducing cavity (22) on the lower cover part which is the horizontality region of a nipple. The milk effusion hole (52) is formed in the central part and the air inlet groove (54) combines and sets up the blocking plate (50) formed in the surface into the circularity in the milk effusion hole surrounding. It forms the vertical air communications pipe (56) connected with the air inlet' groove (54) on the lower part of the blocking plate (50) and the external air coming in through the air inducing cavity (22) passes the air inlet groove (54) and it is flowed in after the vertical air communications pipe (56) in the feeding bottle to the feeding bottle inside. In that way an infant is facilitated, an infant can inhale the milk. The milk does not flow out from the feeding bottle although it does not inhale the milk. It can comprise the valve body (70) according to moreover, a need. That is, it is the invention about the, convenient nursing bottle to do not have the concern in which the manufacture and assembly are facilitated and breaking down and use.



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【DESCRIPTION】**【Invention Title】**

FUNCTIONAL FEEDING BOTTLE

【Technical Field】

5 The present invention relates to a functional feeding bottle.

【Background Art】

Generally, the feeding bottle conveniently supplies the milk or the dried milk powder with a suckling and the
10 infant needing the little while than a place. Therefore, it is comprised of the cap in which the teat portion is combined on the top of a container. After separating a cap, it puts in the dried milk powder or the breast milk inside a container and it provides this for the baby.

15 **【Disclosure】**

【Technical Problem】

As to the conventional feeding bottle, when the air inflow apparatus was not installed and an infant inhaled the milk, it had difficulties or by inhaling the air
20 itself with the milk in order to easily breathe the vomiting phenomenon arose.

It had the concern in which the milk flowed out outside although the concern had the apparatus for flowing.

【Technical Solution】

25 Therefore, when the present invention resolves problems and an infant inhales the milk of the feeding bottle, the external air is flowed in with the air inflow apparatus inside the feeding bottle. In that way an infant is facilitated, an infant can inhale the milk.

30 Although it does not inhale the milk with conversely giving moreover, the feeding bottle, the milk does not flow out from the feeding bottle and it is hygienic. It tries to provide the convenient feeding bottle to the structure of the air inflow apparatus be simple and it
35 does not have the concern in which the manufacture and assembly are facilitated and breaking down and use.

【Advantageous Effects】

The present invention has the effect that the external air is flowed in with the air inflow apparatus inside the feeding bottle when an infant inhales the milk of the feeding bottle. In that way an infant is facilitated, the milk can be inhaled. The milk does not flow out from the feeding bottle although the milk is not inhaled with conversely giving moreover, the feeding bottle and it is hygienic. And it has the effect that it is convenient to do not have the concern in which the structure of the air inflow apparatus is simple and in which the manufacture and assembly are facilitated and breaking down and use.

【Description of Drawings】

Figure 1 is a cross-sectional view of the feeding bottle of the present invention

Figure 2 is A part details of fig. 1

*10Figure 3 is B part details of fig. 1

Figure 4 is a disassembled perspective view of a nipple and air inflow apparatus

Figure 5 is a plane view, the front view, and the bottom view of the valve in the upper part

【Best Mode】

The present invention relates to the functional feeding bottle, and as to the gist, when being settled the feeding bottle body (10), the nipple (20) and nipple (20) in the feeding bottle body (10), it sets up the air inflow apparatus as to the cap (30) in which the hole for the nipple (20) is opened and the feeding bottle consisting of the lid (40) put on above cap (30) between the feeding bottle body (10) inlet part and nipple (20). The air inflow apparatus forms the air inducing cavity (22) on the lower cover part which is the horizontality region of the nipple (20). The milk effusion hole (52) is formed in the central part and the air inlet groove (54) combines and sets up the blocking plate (50) formed in the surface into the circularity in the milk effusion hole surrounding. It is the functional feeding bottle

which forms the vertical air communications pipe (56) connected with the air inlet groove (54) on the lower part of the blocking plate (50) and in which the external air coming in through the air inducing cavity (22) passes the air inlet groove (54) and which is flowed in after the air flowing tube (56) in the feeding bottle to the feeding bottle inside.

The lower part of the said blocking plate (50) has the stepped projection and the seal ring (60) is embedded on a ledge, as not to let it leak when the single panel (50) is mounted to the feeding bottle body (10). The screw part is formed in the outer circumference of the feeding bottle top end portion and it thus corresponds and the screw part is formed in the inner circumference of the cap (30). The blocking plate (50) and vertical air communications pipe (56) are in one set, and the material of the vertical air communications pipe (56) is comprised of PP.

And the valve body (70) is formed on the end tip of the vertical air communications pipe (56). The valve body (70) the cut valve plate (72) is formed in the side of the body of a cylindrical or a bottom into a plurality of cross hairs or the linear type connected in the vertical air communications pipe (56). It is gone to the outside of the valve body (70) through the valve plate (72) of the valve body (70) and the external air coming in through the air inducing cavity (22) of the nipple (20) is flowed in by the feeding bottle.

And in the circumference of the vertical air communications pipe (56), the concave part is formed and it stays inside with the top of the valve body (70). A projection is formed and a projection unites with the mutual elastic or the screw part is formed on the vertical air communications pipe (56) and valve body (70) everyone and the vertical air communications pipe (56) and valve body (70) are mutually screwed.

And of the milk effusion hole (52) protrusion of the circularity the diameter of the milk effusion hole (52)

of the present invention is 20~30mm; the air inducing cavity (22) is the oval pore a height the depth of 10~20mm, the air inlet groove (54) and amplitude is the respective 6~12mm.

- 5 Two measure, and a width are the width 5~10mm and the length is combined at the lower part of the air inlet groove (54) of the circularity of 15~30mm, of the blocking plate (50).

- The diameter of the opening of the vertical air
10 communications pipe (56) is 4~8mm. The length of the vertical air communications pipe (56) makes with 7~11cm. The air inlet groove of the circularity the pipe size is reduced to the lower part. The vertical air
15 communications pipe (56) can be prepared to have slow slope toward the air inlet groove (54).

The present invention will be described in details by attached figures as followings.

- Figure 1 is a cross-sectional view of the feeding bottle
20 of the present invention. Fig. 2 is A part details of fig. 1. Figure 3 is B part details of fig. 1. Figure 4 is a disassembled perspective view of a nipple and air inflow apparatus. Figure 5 is a plane view, the front view, and the bottom view of the upper part,
25 successively, a valve.

As to the present invention, since the external air is inhaled inside the feeding bottle when an infant inhales the milk an infant strengthens the milk suction.

- The gist is the functional feeding bottle with the
30 feeding bottle body (10) and nipple (20) and the cap (30) in which the hole for the nipple (20) is opened; is settled in the feeding bottle body (10) and the lid incurred on above cap (30).

- The functional feeding bottle comprises the air inflow
35 apparatus among the feeding bottle body (10) inlet part as to the feeding bottle, consisting of a decimeter and nipple (20); the milk effusion hole, and the air inflow apparatus form the air inducing cavity (22) on the lower

cover part which is the horizontality region of a nipple.

The blocking plate which is formed in this central part and in which the air inlet groove (54) is formed in the milk effusion hole (52) surrounding into the circularity in the surface. The vertical air communications pipe (56) is set up in the lower part of the blocking plate (50). The functional feeding bottle can adhere to the body.

10 The right which the milk effusion hole (52) forms so that the milk in the feeding bottle flow after the blocking plate (50) in the nipple (20).

The nipple the air inlet groove (54) can be formed with the circularity into an annular in the blocking plate (50) surface.

The external air flowed in through the air inducing cavity (22) rotates according to the air inlet groove (54) and it forms on the lower part of the blocking plate (50).

20 It is passed to the vertical air communications pipe (56) which becomes and it begins to the feeding bottle lower part.

And a difference the bottom of the blocking plate (50) the stepped projection shows and the seal ring (60) is embedded on a ledge,

when mounting the single panel (50) to the feeding bottle body (10), the milk does not flow out and the confidentiality is guaranteed.

30 Inside, it has to have a confidentiality so that the blocking plate (50) the milk only flow toward a nipple through the milk effusion hole (52) similarly the milk comes.

*37It becomes. therefore, the seal ring the stepped projection is formed on the blocking plate (50) for that while interposing the seal ring (60) in this interval after installation is set up.

The seal ring (60) uses the material in which the material has the elasticity which is harmless in the silicon or the human body including the soft rubber etc. It has the elasticity and it is not easily broken away
5 from the stepped projection of the blocking plate (50) but the concave-convex region is formed for the more strong bind on the ledge of the blocking plate (50) and it thus corresponds and the concave-convex region is formed inside the seal ring (60) and it adamantly unites
10 not to be broken away from.

This the milk penuriously does not flow out from the feeding bottle.

The height of the milk effusion hole (52) protrusion of the circularity is 10~20mm, a ball it respects and the
15 diameter of the milk effusion hole (52) is 20~30mm.

A width and depth of the air inducing cavity (54) is at 6~12mm, the oval pore a depth and amplitude of the base oil oral fossa (54) are the respective 6~12mm.

The length the diameter of the opening of the vertical
20 air communications pipe (56) combined at the lower part of the air inlet groove (54) of the circularity of 15~30mm, the blocking plate (50) is 4~8mm. The length of the air flowing tube (56) comprises about 7~11cm.

There is a possibility that the milk flows out from the
25 feeding bottle when it is greater than the value if it is less than the minimum value in which the diameter of the opening of the hole diameter of the air inducing cavity (22) and vertical air communications pipe (56), the length of the vertical air communications pipe (56),
30 the amplitude of the air inlet groove (54) etc. because the air is not well flowed in.

Therefore, the smooth flow of the air can be achieved by the numeric value range which is chosen in the present invention is most suitable according to an experiment
35 It is the pipe size the size without the concern in which the milk in the feeding bottle is flowed out in an outside.

Of course, in the size of the feeding bottle according to a need such value standardizes the average feeding

bottle selling in on the market and still it can be controlled.

The principles is the hole diameter of the air inducing cavity (22), the diameter of the opening of the vertical
5 air communications pipe (56), and the vertical air circulation. The air passage space part, formed owing to the length of the pipe (56), the amplitude of the air inlet groove (54) etc. an infant is an intake the feeding bottle the milk.

10 When it respected to do and conversely giving, it compensates that the milk in the feeding bottle provisionally, transitorily flows reversely through the air passage described in the above. It is due to protect.

15 **【Mode for Invention】**

Of course, according to a need, the valve body (70) preventing the milk reverse current can be used in the present invention.

Through the air inducing cavity (22) of a nipple the
20 valve body (70) the cut valve plate (72) is formed in the side of the body of a cylindrical or a bottom into a plurality of cross hairs or the linear type connected in the vertical air communications pipe (56).

By the feeding bottle the external air coming is gone to
25 the outside of the valve body (70) through the valve plate (72) of the valve body (70). It is characterized that it is flowed in.

As to the valve body (70), since being manufactured to the elastic material of the soft like the silicon, to
30 cut out the thin membrane.

The incision section by the sound pressure generated around the feeding bottle an infant inhales the milk is enough of the valve plate film it serves.

One crevice is found and the air is inhaled to the
35 interval. The valve plate (72) is the cross hair or the linear type or the x type.

The manufacture is possible with the etc. many shape and it forms into one or the or greater according to moreover, the number, moreover, a need.

The valve plate (72) is an infant does not inhale the milk since the valve plate (72) is the elastic material of the soft.

A nipple it has with tongue and an atmosphere is not
5 flowed in by the feeding bottle and the milk in the feeding bottle, moreover, the milk bottle is additionally concentrated on. It flows through (20) and it does not come out. And in the outer circumference of the feeding bottle body (10) top end portion, the screw
10 part is formed and it thus corresponds and it stays inside of the cap (30).

The screw part is formed in a direction and the feeding bottle top end portion and cap (30) screw up. Therefore, the feeding bottle top the screw part of above cap can
15 be tightened.

An infant if it unites with the formed screw part and it gets tightened, the floor side and blocking plate (50) of the nipple (20) are compressed, so the nipple (20) is not broken away from the feeding bottle body (10)
20 although a nipple is pulled.

And the blocking plate (50) and vertical air it becomes the blocking plate (50) and vertical air communications pipe (56) into one body

The material of the communications pipe (56) is PP, PE, PET etc. and the valve body (70), the valve plate (72) and material of the seal ring (60) are the elastic material.
25

It is the silicon, the soft rubber etc. Altogether, the material which is harmless in the human body has to be
30 used.

And in the circumference of the vertical air communications pipe (56), the concave part is formed and it stays inside with the top of the valve body (70)
A projection is formed and a projection unites with the
35 mutual elastic or the screw part is formed on the vertical air communications pipe (56) and valve body (70) everyone and the vertical air communications pipe (56) and valve body mutually screw up together with the

female screw part formed one side and the male screw part the other side.

An infant the vertical air communications pipe (56) takes the role of making enough flow of the air deep
5 within the feeding bottle inside.

In the valve body (70) in which the air is combined with the exit of the vertical air communications pipe (56) when concentrating on the feeding bottle in order to suck the breast of the feeding bottle;. so It has the
10 effect that the desirable with the sanitation phase of the oxidation by the air can be prevented.

【Industrial Applicability】

According to the present invention, the external air is flowed in with the air inflow apparatus inside the
15 feeding bottle when an infant inhales the milk of the feeding bottle. In that way an infant is facilitated, the milk can be inhaled. The milk does not flow out from the feeding bottle although the milk is not inhaled with conversely giving moreover, the feeding bottle and it is
20 hygienic. And it has the effect that it is convenient to do not have the concern in which the structure of the air inflow apparatus is simple and in which the manufacture and assembly are facilitated and breaking down and use. Thus the present invention is applicable
25 in the feeding bottle production industry.

【CLAIMS】**【Claim 1】**

The feeding bottle consisting of the cap (30) and the lid (40) put on above cap (30) that the hole for the nipple (20) is opened when being settled the feeding bottle body (10), the nipple (20) and nipple (20) in the feeding bottle body (10), wherein the air inflow apparatus the air inflow apparatus is set up between the feeding bottle body (10) inlet part and nipple (20) forms the air inducing cavity (22) on the lower cover part which is the horizontality region of a nipple; the milk effusing hole (52) is formed in the central part and the air inlet groove (54) combines and sets up the blocking plate (50) formed in the surface into the circularity in the milk effusing hole surrounding; and it forms the vertical air communications pipe (56) connected with the air inlet groove (54) on the lower part of the blocking plate (50) and the external air coming in through the air inducing cavity (22) passes the air inlet groove (54) and it is flowed in after the vertical air communications pipe (56) in the feeding bottle to the feeding bottle inside.

【Claim 2】

The functional feeding bottle of claim 1, wherein in the bottom of the blocking plate (50), the milk does not run out when the stepped projection showing and the seal ring (60) being embedded on a ledge and mounting the blocking plate (50) to the feeding bottle body (10) and a confidentiality is guaranteed; and the screw part is formed in the outer circumference of the feeding bottle body (10) top end portion and it thus corresponds and the screw part is formed in the inner circumference of the cap (30) and the feeding bottle top end portion and cap (30) screw up.

【Claim 3】

The functional feeding bottle of claim 1, wherein the blocking plate (50) and vertical air communications pipe (56) become into one body and the material of the

vertical air communications pipe (56) and blocking plate (50) is PP.

【Claim 4】

The functional feeding bottle of claim 1, wherein the
5 valve body (70) is formed on the end tip of the vertical air communications pipe (56).

【Claim 5】

The functional feeding bottle of claim 1, wherein in the
valve body (70), the cut valve plate (72) is formed in
10 the side of the body of a cylindrical or a bottom into a plurality of cross hairs or the linear type connected in the vertical air communications pipe (56); and it is gone to the outside of the valve body (70) through the valve plate (72) of the valve body (70) and the external
15 air coming in through the air inducing cavity (22) of the nipple (20) is flowed in by the feeding bottle.

【Claim 6】

The functional feeding bottle of claim 5, wherein in the
circumference of the vertical air communications pipe
20 (56), the concave part is formed and a projection is formed on the top inner circumference of the valve body (70) and the concave part unites with the mutual elastic or the screw part is formed on the vertical air communications pipe (56) and valve body (70) everyone
25 and the vertical air communications pipe (56) and valve body (70) mutually screw up.

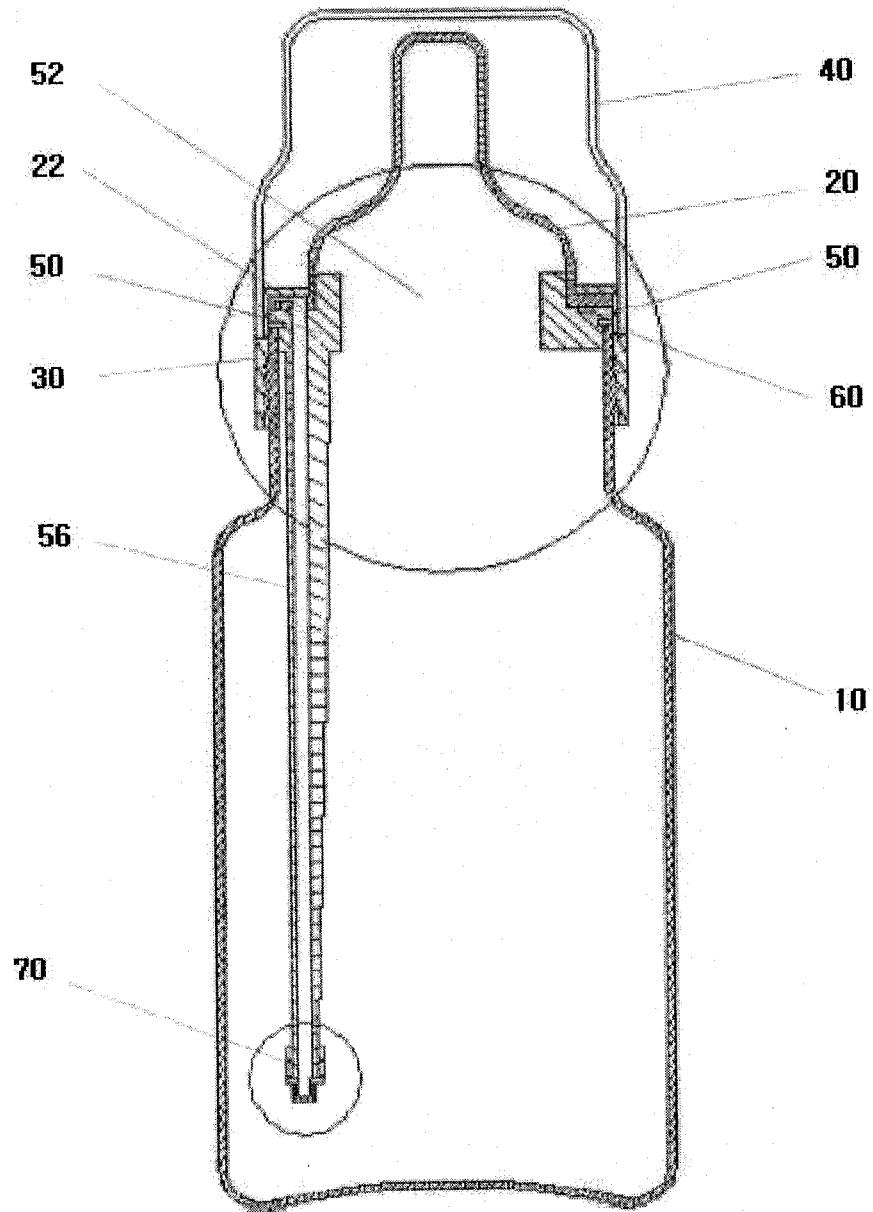
【Claim 7】

The functional feeding bottle of claim 1, wherein the
diameter of the milk effusing hole (52) is 20~30mm and
30 the height of the milk effusing hole (52) protrusion of the circularity the depth of 10~20mm, the air inlet groove (54) and amplitude is the respective 6~12mm; the air inducing cavity (20) is the oval pore; a width is the width 5~10mm and the length the diameter of the
35 opening of the vertical air communications pipe (56) combined at the lower part of the air inlet groove (54) of the circularity of 15~30mm, the blocking plate (50) is 4~8mm; and the length of the vertical air communications pipe (56) is 7~11cm.

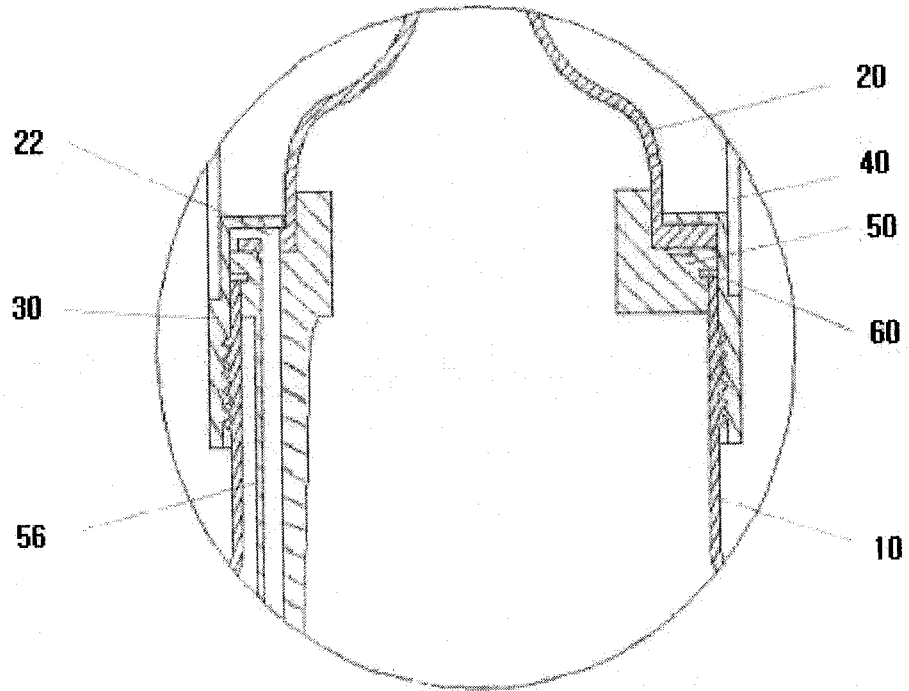
【Claim 8】

The functional feeding bottle of claim 1, wherein in the vertical air communications pipe (56), the pipe size is reduced to the lower part and the lower part is formed;
5 and the floor side of a slope the air inlet groove (54) of the circularity *** shows in the inlet side of the vertical air communications pipe (56).

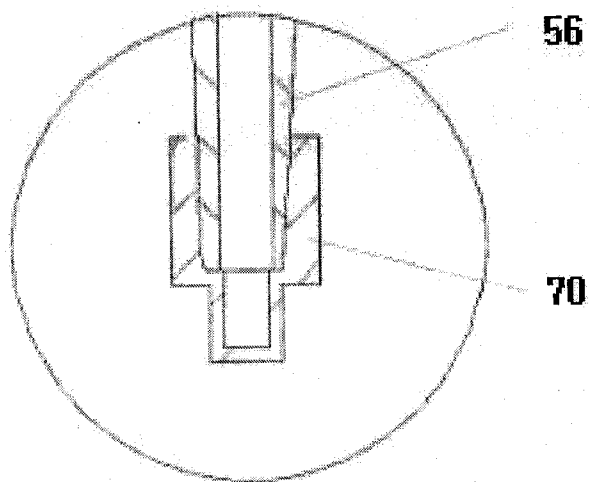
【Figure 1】



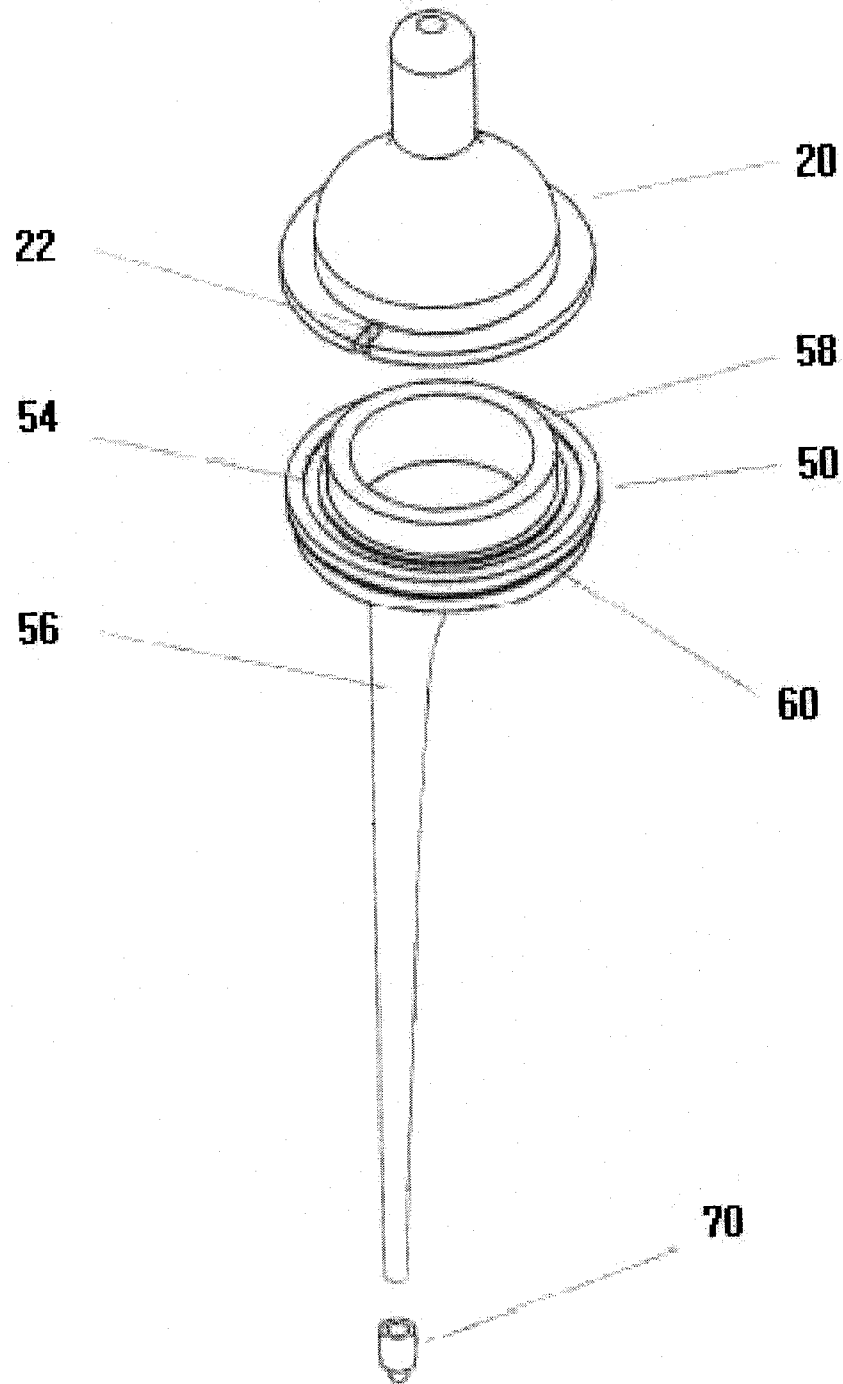
【Figure 2】



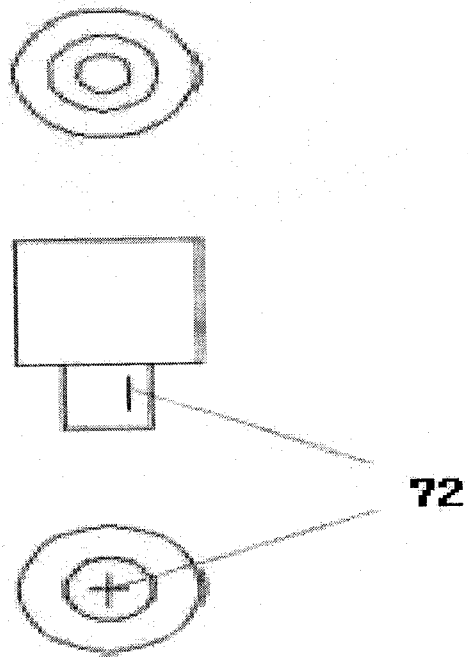
【Figure 3】



【Figure 4】



【Figure 5】



A. CLASSIFICATION OF SUBJECT MATTER*A61J 9/04(2006.01)i, A61J 9/00(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)

IPC 8: A61J 9/00, A61J 9/04

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 since 1975

Japanese Utility models and applications for Utility Models since 1975

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

eKIPASS(KIPO internal), Delphion, Pubmed (nursing bottle&air inflow apparatus& valve body)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR2019850005752U (MOON, INSEOK) 24 August 1985 See claim 1, figures 1 & 2	1-8
X	KR2020040369651Y1 (JANG, YANGHWA) 29 November 2004 See claims 1 & 2, figures 1-3	1-8
A	JP03091220U (MAZDA CO LTD) 18 September 1991 See claim 1 & figures 2-6	1-8
A	JP50078473A (MATSUMOTO, MASAKO) 26 June 1975 See claim 1 & figure 3	1-8
A	US20040060888A1 (AHN, KYO HOON) 1 April 2004 See abstract and figures 1-3	1-8

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

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Date of the actual completion of the international search

14 JUNE 2007 (14.06.2007)

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2007/001422

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR2019850005752U	24.08.1985	None	
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