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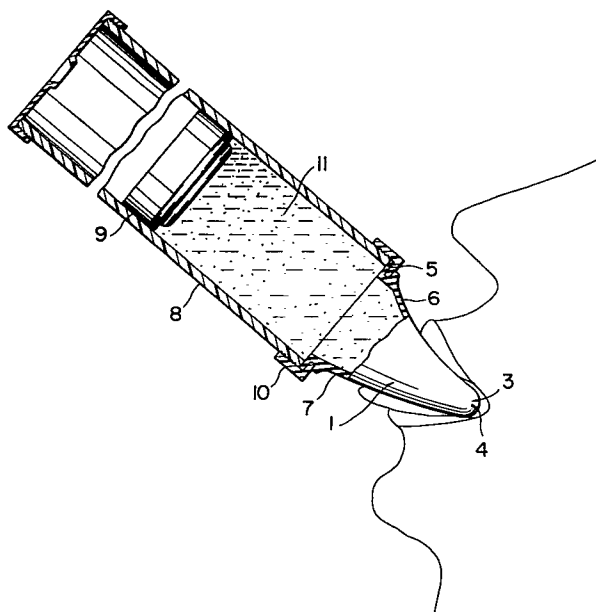
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Squeezing mouth-piece for a nursing bottle.

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A squeezing or sucking mouthpiece for a nursing bottle (8), particularly for an invalid taking liquid food (11), comprises a generally thumb-shaped hollow body (1), having an open end and a substantially crescent cross-section, an annular base contiguous to the open end of the body (1), and a cruciform slit (4) provided on the top (3) of the body (1).



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Squeezing mouthpiece for a nursing bottle

This invention relates to a squeezing or sucking mouthpiece for a nursing bottle, particularly such a mouthpiece for an invalid taking liquid food.

A widely known sucking mouthpiece or cap for a nursing or feeding bottle comprises a bowl-shaped body of soft, elastic rubber which has a hollow nipple protruding outwardly from the center of its bottom and provided with a cruciform slit at its top. This mouthpiece can, however, feed the contents of the bottle only when the nipple held in the mouth is continuously sucked with a strong force. It is, therefore, not suitable for use by an invalid of poor physical strength in drinking liquid food.

It is, therefore, a primary object of this invention to provide a sucking or squeezing mouthpiece for a nursing bottle which enables an invalid to take liquid food easily.

According to this invention, there is provided a squeezing mouthpiece of soft elastic rubber for a feeding bottle, which comprises a generally thumb-shaped hollow body having an open end and a substantially crescent cross-section, an annular base contiguous to the open end of the body, and a cruciform slit provided at the top of the body. Thus, when the mouthpiece of this invention is connected to a feeding bottle for an invalid taking liquid food, he holds its body in his mouth and squeezes it to narrow the interior of the body to force liquid food out of the body into his mouth through its cruciform slit. Due to its crescent cross-sectional configuration, the body of the mouthpiece fits the mouth very snugly if its chordal portion is held against the upper lip and its arcuate portion against the lower lip. The chordal and arcuate portions can be easily brought closer to each other to narrow and substantially close the gap therebetween, so that the user of the mouthpiece can easily squeeze its body to force out liquid food therefrom into his mouth when he tries to close his lips.

Other objects and advantages of the present invention will become apparent from the following description taken in conjunction with the accompanying drawings.

Description will now be made of a preferred embodiment of this invention with reference to the drawings, in which:

Figure 1 is a side elevational view of the squeezing mouthpiece embodying this invention;

Figure 2 is a top plan view of the mouthpiece shown in Figure 1;

Figure 3 is a longitudinal sectional view taken along the line III-III of Figure 2;

Figure 4 is a longitudinal sectional view taken along the line IV-IV of Figure 2;

Figure 5 is a cross-sectional view taken along the line V-V of Figure 1;

Figure 6 is a side elevational view partly in section of the mouthpiece of this invention actually in use; and

Figure 7 is a cross-sectional view of the mouthpiece body squeezed in the mouth of the user.

The squeezing mouthpiece of this invention is formed from soft, elastic rubber, such as silicone rubber, and comprises a generally thumb-shaped hollow body 1 having a substantially crescent cross-section. The body 1 is open at one end and has an annular base 2 which is contiguous to its open end. The body 1 has a top 3 which defines a substantially semi-circular hollow configuration, and which is provided with a cruciform slit 4 in its center. The base 2 is formed with an annular mounting flange 5.

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The body 1 defines a chordal portion 6 and an arcuate portion 7. Preferably, the chordal portion 6 has a smaller wall thickness (e.g., 1.0 to 1.2 mm) to facilitate elastic deformation, while the arcuate portion 7 has a greater wall thickness (e.g., 2.0 to 2.5 mm) which provided a higher elastic restoring force, as shown in Figure 5.

The mouthpiece constructed as hereinabove described is used as shown in Figure 6 by way of example, in which it is connected to a cylindrical bottle 8 having a piston 9 slidably fitted therein. The bottle 8 is open at both ends, and the flange 5 is retained on one end of the bottle 8 by a connecting member 10 to thereby mount the mouthpiece on the bottle 8. The bottle 8 which is filled with a charge of liquid food 11 for an invalid is inclined at an appropriate angle and the body 1 of the mouthpiece is inserted into the mouth of the invalid with its chordal portion 6 held against his upper lip. The invalid holds the body 1 by applying his upper lip or upper front teeth against the chordal portion 6, and his tongue, lower lip or lower front teeth against its arcuate portion 7; and squeezes it toward its top 3, whereby the body 1 is compressed or flattened to force out liquid food 11 through the cruciform 4 into the invalid's mouth.

When the invalid ceases to hold the body 1 in his mouth after each squeezing operation, the body 1 immediately restore its original hollow crescent cross-sectional shape by virtue of its elastic restoring force, whereby the piston 9 is drawn toward the mouthpiece to thereby force out liquid food from the bottle 8 into the body 1 restoring its original shape. The arcuate portion 7 has a sufficiently thick wall thickness to provide a strong restoring force to facilitate the recovery of the hollow crescent cross-sectional configuration. If the body 1 fails to provide a sufficiently great elastic restoring force to allow for any sliding movement of the piston 9, and remains compressed, the top 3 of the body 1 is held in the mouth and sucked gently through the cruciform slit 4 to move the piston 9 toward the mouthpiece. No such auxiliary sucking operation is considered to impart any appreciable load even on an invalid.

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C L A I M S

1. A squeezing mouthpiece of soft elastic rubber for a feeding bottle, comprising a generally thumb-shaped hollow body having an open end and a substantially crescent cross-section, an annular base contiguous to said open end of said body, and a cruciform slit provided on the other end or top of said body.

2. The mouthpiece as claimed in claim 1, wherein said crescent cross-section of said body includes a chordal portion having a small wall thickness to facilitate its elastic deformation, and an arcuate portion having a greater wall thickness than said chordal portion, hence a greater elastic restoring force.

3. The mouthpiece as claimed in claim 1, wherein said annular base is provided with a mounting flange.

FIG. 1

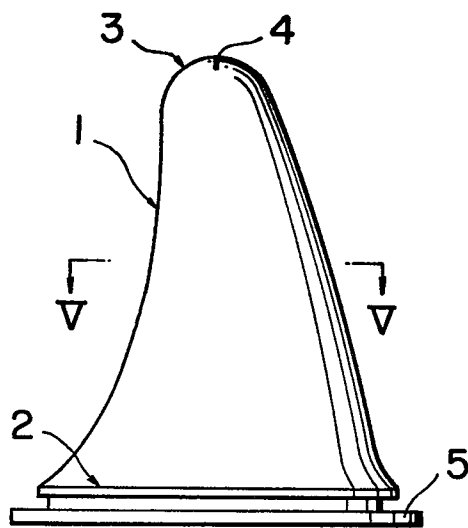


FIG. 2

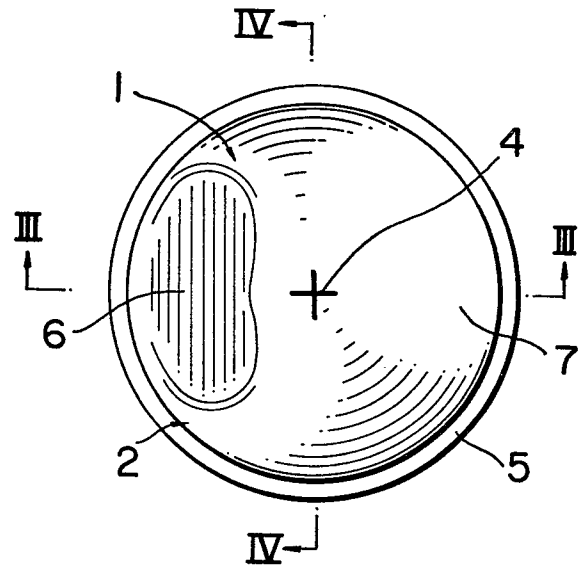


FIG. 3

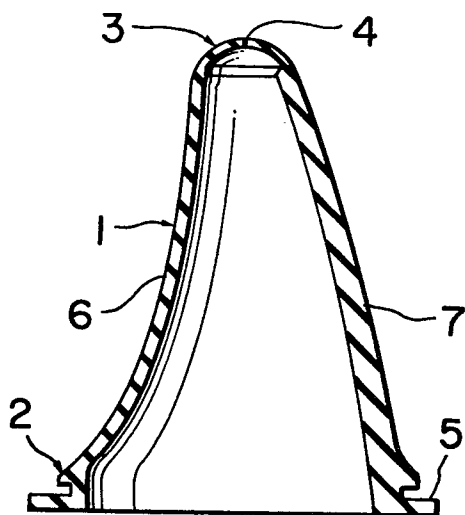


FIG. 4

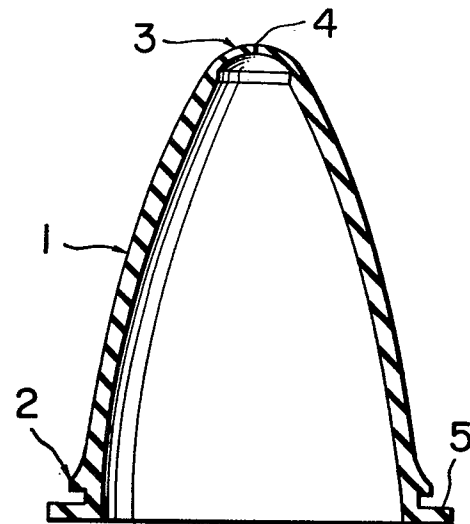


FIG.5

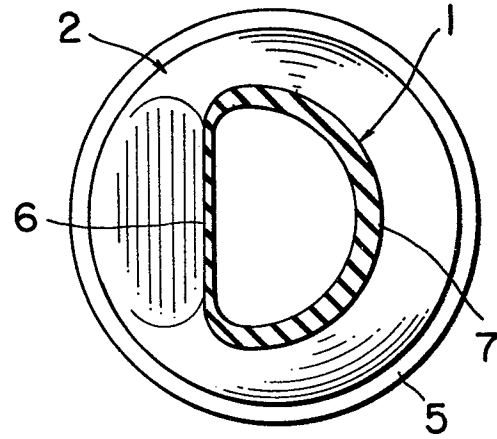


FIG.6

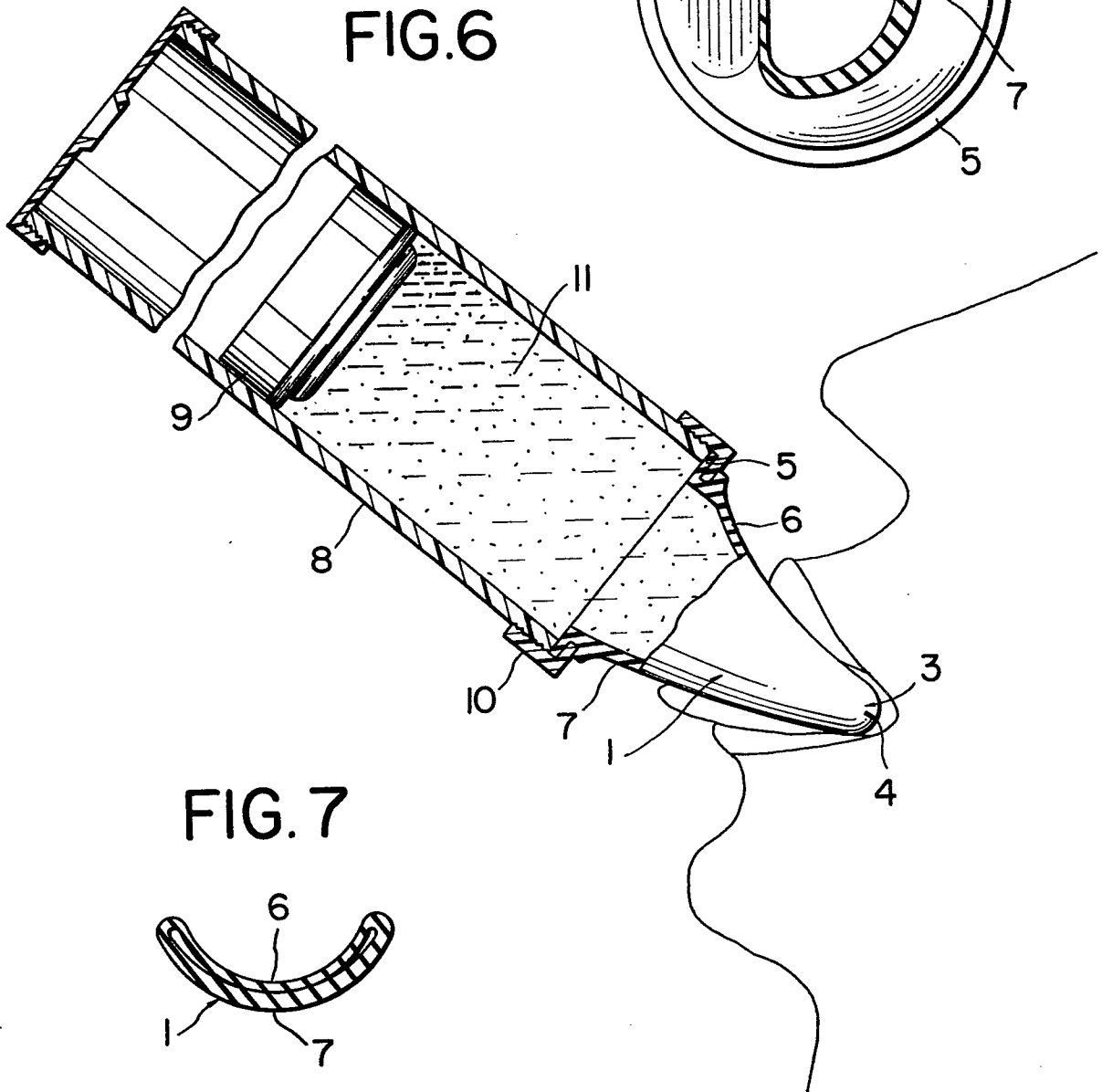
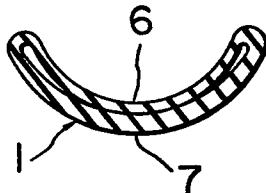


FIG.7





DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl.3)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	<u>CH - A5 - 602 103</u> (ARCO AG) * claim 5; column 2, lines 12 to 23; fig. 3, position 8 *	1	A 61 J 11/00
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	<u>US - A - 4 053 648</u> (SCHMID et al.) * column 6, lines 8 to 16; fig. 10, position 23e *	1,3	
	--		
	<u>DE - B - 1 516 507</u> (STRAUB) * claim 3; fig. 2,5, positions 12, 18,19,13,24 * & <u>US - A - 3 082 770</u>	1-3	TECHNICAL FIELDS SEARCHED (Int.Cl.3) A 61 J 9/00 A 61 J 11/00
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	<u>US - A - 3 651 973</u> (YAMAUCHI) * column 2, lines 34 to 38; fig. 2, positions 5a,6 *	1,3	
	--		
	<u>DE - C - 202 584</u> (HEHMSOTH) * lines 36 to 47; fig. 3, position c *	1	CATEGORY OF CITED DOCUMENTS X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons
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	<u>US - A - 2 816 548</u> (TUPPER) * whole document *		
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	.../...		
☒ The present search report has been drawn up for all claims			&: member of the same patent family, corresponding document
Place of search Berlin		Date of completion of the search 10-06-1980	Examiner DROPMANN



DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl.3)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	<u>DE - A - 1 955 765</u> (GUMMIWARENFABRIK CARL PLAAT) * whole document * --		
A	<u>DE - U1 - 7 916 554</u> (MAPA GMBH GUMMI- UND PLASTIKWERKE) * fig. 1, position 2 * --		
A	<u>DE - A1 - 2 355 545</u> (ALPHA-BEBE SANTE) * whole document * --	2	TECHNICAL FIELDS SEARCHED (Int. Cl.3)