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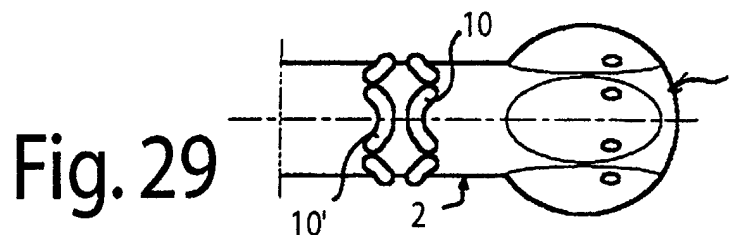
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(54) **Teat or dummy**

(57) The invention concerns a teat or a dummy, comprising an element of flexible material meant to be positioned in the oral cavity and having an enlarged head (1,1') and a lengthened element (2) of junction to a terminal coupling (3,3') to a foodstuff container and/or an element of screen or shield of a dummy (4). According to the invention, the enlarged head (1,1') and/or the lengthened element (2) of coupling of the head to the terminal coupling (3,3') to the container or the screen or

shield (4) and/or said terminal (3,3') or screen or shield (4) presents such a shape that the natural behaviour of the nipple and the breast is stimulated during suction at least with reference to the stimulation action and the consequent correct use of one or more organs and/or facial muscles, the lips and/or the tongue similarly to the stimulation and the consequent correct use of at least one or more said organs and muscled during the natural suction.



Description

[0001] The invention concerns a teat or dummy, comprising a flexible material element to be positioned within the oral cavity and having an enlarged head and a lengthened element for the connection with a terminal for coupling with a foodstuff container and/or to a screen element.

[0002] The invention is based on the knowledge that a new-born is anthropologically programmed to eat, his/her tongue is anthropologically conditioned to come out, to grip the mother nipple and to push it back within the mouth against the hard palate, forcing the food from the mother breast so that it is possible that there is survivor as well as a proper growing and development of the baby.

[0003] Everything in the new-born works harmoniously but involuntarily. Actions of the muscles must be synergic if it is wished the survival; first of all the baby tongue snaps outside and pulls the nipple within the mouth against the hard palate, at the same time lips grip the nipple, pushing against the mother breast, so as to increase the inner pressure, while the nipple lengthens of 30 - 50% to adopt to the palate, with the tongue under the same nipple, thus the baby adjusts the flow entering within his/her body. All the sucking is intraoral and three are the important factors: length of the nipple, flow through the same and flexibility of its tissue.

[0004] The action, that the child causes on the mother's breast, is an important development factor; in fact, the "milking" effect, which is present in the natural feeding (breast-feeding), obliges the child and his muscles to work under/in pressure and traction/stretch as to the mother's breast itself.

[0005] The bolus, made of milk or food, acts on the lingual position and we expect that the devices, used by the child during the several hours of his day, work alternatively and combined with these functions. The muscular functions, trained during the breast-feeding, represent the origin of a correct muscular-skeleton development. The conjunction of movements, performed during the feeding, sets in motion all the face's muscles and it is well known that the muscles act on the child as a great development's factor.

[0006] In the pressure on the mother's breast are involved the lip orbicular, the buccinator, the external pterygoid and all the mandible elevator muscles, while in the following traction of the mother's teat come into play the tongue, the concerned muscles and the hyoidal ones.

[0007] Being involved some neck's muscles, it has not to be ruled out that the keeping of these two movements, as to form the suction, does not prevent the following postural problems due to an incorrect function from the first years of life.

[0008] During the first months and until the sixth year in the child exists a structural difference, which would be foolish to not duly consider. In fact, at birth the neu-

rocranium has a relationship with the splanchnocranium (third medium lower of the face) of 3:1. At the sixth year the neurocranium is at 90% of its total maturation, namely with respect to its adult shape and structure it has only an augmentative margin of the remaining 10%. At a behavioural level, instead, it is evident a development that changes from the "oral" phase to the apparently hypoplastic one. In other words, the child thanks to his mouth "feels, sees, feeds and interacts". For exemplifying, we can state that the child has a computer, which is going to organise and expand as to its shape and capacity with the interaction of the external stimulus that come from the five senses, among which obviously the mouth, especially in the first months of life.

[0009] As above stated, in the natural feeding the child is able to control three fundamental factors, as to say the teat's length, the flow inside it and its tissue's flexibility; at the moment, the same does not happen in the artificial feeding, where the dummy's hardness does not allow it, and especially its base does not resemble either the mother's breast shape, or its function.

[0010] At times, the flow is too fast and the child does not control it, due to the dummy's hardness; in this way, the child loses the three above mentioned factors and his muscles do not longer have the memory and the advantages. This will precisely affect the development's way of the face's muscles. In the natural feeding, the child instead is able to control the teat's length, the flow's speed and its length thanks to the skin resilience.

[0011] Often, the child has a suffocating sensation, both with the food and the dummy's use; the child brain, as defence, resorts to his tongue, this one places behind the teat, pushing towards it with its back, causing the so called "lingual push", which is the origin of many malocclusion or misalignments.

[0012] A good system to correctly stimulate the development should have, besides a proper teat, some "trainers", which could help the child in the development, stimulating the above mentioned natural muscular functions.

[0013] Even the speech development, and consequently the interpersonal relationships, are connected with a correct development of the lingual function.

[0014] As already stated, many of the above mentioned assertions count also for the dummies, with even, as aggravating, the use's time and the shape, that often bother, instead of being a positive help for the child development.

[0015] Object of the present invention is that of realising teats and/or dummies having the active stimulator function according to the proper natural mode of the muscles involved in the suction functionality, not dispersing the growing forces of the oro-facial musculature, but concentrating and guiding the same forces.

[0016] The invention reaches the above mentioned objects by a teat or dummy of the kind described in the introductive portion, wherein the enlarged head and/or lengthened element connecting the head with the termi-

nal coupling with the container or screen and/or said terminal or screen having such shape or structure so that it is stimulated the natural behaviour of the nipple an of the mother breast during the suction at least with reference to the stimulation action, and of the consequent proper use or exercise of one or more facial organs and/or muscles, of the lips, and/or of the tongue, as well as the stimulation and the consequent proper use and/or exercise of the at least one or more of said organs or muscles during the squeezing of the natural breast.

[0017] Advantageously, the shape of the teat or dummy is such to stimulate the proper use or exercise of the organs or muscles involved in the squeezing of the natural breast of at least two, three or all the organs or muscles involved in said action.

[0018] According to a first embodiment, the enlarged head has stimulation means for the proper positioning and use of the tongue and of the muscle associated to the same tongue or involved in nursing phase.

[0019] One embodiment provides that said stimulation means are comprised of a cavity on the enlarged head on its side destined to come in touch with the tongue.

[0020] Said cavity can be realised by a recess in the enlarged head or by an arcuate shape of the enlarged head.

[0021] According to a feature, the enlarged head has at least two axial projections on the lingual side, making reference to the axis on the lengthened element connecting said head and the container or screen, said projections defining an intermediate cavity, preferably with rounded peripheral wall or spindle shaped.

[0022] The two projections are shaped as sphere sectors or as ovoidal, or elliptical or spindle shaped element

[0023] The two projections are preferably comprised of elastic material, so that during the compression of the enlarged head between the tongue and the palate, they are laterally pull apart defining a cavity having the proper dimensions to stimulate the tongue.

[0024] In this case, the enlarged head has a shape defined by a spherical, ovoidal, elliptical, or like envelope surface, however they are possible also enlarged heads having the side faced toward the palate flattened, even if always more or less arcuated.

[0025] The enlarged head can have a coaxial or substantially coaxial disposition with respect to the lengthened element for the connection of the head with the terminal coupling a teat with a container or to the screen of a dummy, or the axis of the head can be also parallel with respect to the axis of said lengthened connection element.

[0026] In a further embodiment, the enlarged head can be sloped with respect to the lengthened element, so that the axis of the same has a pre-established angle with respect to the axis of the connection lengthened element, according to a direction perpendicular to the occlusal plane of the oral cavity, making reference to the proper position of the teat or dummy.

[0027] Said angle is preferably included between 15° and 30°.

[0028] Still another embodiment provides an enlarged head that is substantially flattened perpendicularly to the occlusal plane of the oral cavity.

[0029] Making reference to said embodiment, the enlarged head provides a junction portion, enlarging in a limited measure with respect to the lengthened element in such a way to a chalice shaped first part, connecting with the terminal part of said substantially flattened head.

[0030] Further, in this case, the enlarged head provides a cavity on the side destined to be faced toward the tongue.

[0031] The cavity of the enlarged head can be also realised by an arcuate shape transverse with respect to the longitudinal axis of the connection lengthened element of the flattened enlarged head.

[0032] It is also possible to provide a combination comprising the presence of a cavity and of an arcuate shape of the flattened head.

[0033] According to a further characteristic, at least the side of the flattened enlarged head faced toward the tongue is sloped with respect to the occlusal plane of the oral cavity, and in such a way that the flattened head is tapered toward the free end opposed to the connection lengthened element.

[0034] Further, said surface faced toward the tongue and provided with the cavity and/or the arcuate shape provides a curved development also in the direction of the free end of the same enlarged head, thus creating, in a lateral view, a spout shape tapered toward the free end of the same enlarged head.

[0035] The side opposite with respect to the side faced toward the tongue is rounded with a curvature that can be more or less marked.

[0036] The above mentioned flattened enlarged head can be oriented in such a way that its axis is parallel and/or coincident, or substantially coincident with the axis of the connection lengthened element.

[0037] As for the enlarged head according to the first executive element, also the flattened enlarged head can be oriented with its axis oriented sloped in the direction of the palate with respect to the axis of the connection lengthened element.

[0038] In this case, the inclination of the side faced toward the tongue with respect to the occlusal plane is determined or only by the inclination of said side with respect to the medial plane of the enlarged head parallel with respect to the occlusal plane of the oral cavity, or only by the inclination of the whole enlarged head, or by a combination of both the inclinations.

[0039] Advantageously, at least the inclination of the side of the enlarged head faced toward the tongue has an inclination included between about 15° and 30° with respect to the occlusal plane and in the direction of the palate.

[0040] The lengthened connection element and the

enlarged head are obviously internally hollow within the teat and they can be hollow or full within the dummy.

[0041] As an alternative or as a combination, it is possible to provide elements for the stimulation of the lips for the proper positioning of the connection lengthened element between the enlarged head and the terminal for the coupling with the foodstuff container and/or with the screen.

[0042] Said means can be corrugations of the outer surface of said lengthened element, projections, enlargements, knurlings having every shape and number, or combination of other means.

[0043] It is possible to provide radial enlargements of the lengthened element, having the shape of rounded enlargements or spindle shaped, or having the shape of sphere sectors.

[0044] As an alternative or as a combination, it is possible to provide one or more annular enlargements realising also a bellow shaped outer element.

[0045] As an alternative or as a combination, it is possible to provide surface structures having knurlings or projection arrays, shaped as small footstalks distributed on at least a portion of the lengthened connection element.

[0046] Said means for the proper stimulation and/or positioning of the lips are provided in the contact zone between the lips and the lengthened element, and are distributed in a corresponding way according to suitable arrangements, substantially on annular intermediate zones, referring to the axial extension of the connection lengthened element.

[0047] An advantageous embodiment of said stimulation means provides small ribs, eyelashes, or anatomical swellings, for the dynamic stimulation of the labial pressure with a dynamic proprioceptive contact, on the connection element in the contact zone with one or both the lips.

[0048] Said small ribs are provided in every number on the contact fascia between the lips and the lengthened element. Said small ribs can provide a uniform or variable radial extension each other and within the extension of a small rib. The above is also valid for the small ribs width and length. Said small ribs can further be provided in such a way to intersect each other.

[0049] A preferred embodiment, that gives the best stimulation effects, provides at least a pair of small ribs or eyelashes, prevalingly oriented in a transverse direction on the lengthened element, and provided on the contact zone between the lengthened element with at least one of the lips, or with both lips, said small ribs or eyelashes being provided in such a way to create a "X" oriented in a diametrical direction of the lengthened element.

[0050] Particularly, the "X" is created by small ribs having an arcuated opposed development, and that in the central or intermediate zone are tangent each other.

[0051] Further, the small ribs have a bigger thickness at their ends and a reduced thickness in the central

zone, in such a way that the peak of the same has a basin shape, in an elevation lateral view. Also the width of the small ribs is bigger at their ends than in the intermediate zone.

[0052] The above embodiment is such to create the best dynamic stimulation of the labial pressure with dynamic proprioceptive contact, since optimally stimulates the receptors during the motion.

[0053] As an alternative or as a combination of the above mentioned features, the connection element and/or the head element are realised in such a way to be lengthening by the suction force.

[0054] Means allowing said elastic lengthening can be comprised of a suitable calibration of the intrinsic elasticity of the material, for example reducing the thickness of the material in the connection zone of the lengthened element or in the junction zone of the same with the terminal for coupling with a container, for the teat, or in the coupling zone with the screen, for the dummy.

[0055] As an alternative or as a combination, said elastic lengthening means can be comprised of redundant material collection zones, such as radial enlargements having a spherical, oval, tapering or like shape, or configurations of the lengthened element as a bellow.

[0056] It is to be noted that the means allowing the lengthening and provided on the connection lengthened element can comprise at the same time stimulation and/or signalling means for the proper positioning of the lips.

[0057] Still in combination or in alternative, the terminal for coupling with the container and/or screen have a elastically element, faced toward the lips, yieldable and deformable by a compression action of the lips against said side.

[0058] According to an embodiment, the same teat, in the junction zone of the lengthened element with the coupling terminal with a container or the dummy, in the junction zone of the lengthened element with the screen can have, on said terminal element and on said screen, an elastic soft material cushion simulating the elastic yielding behaviour of the breast in the zone surrounding the nipple.

[0059] In case of a teat, the terminal for coupling with the container is suitably radially enlarged and provides a little cap or dome shape with a junction zone with the connection lengthened element, and forming a support zone for the lips, having a slightly arched development.

[0060] In case of dummy, said development is already provided on the screen.

[0061] The elastic soft material cushion can be comprised with a soft material full layer, that, in the teat, can be comprised of the material of the terminal for coupling with the same container, or with a soft material layer reported and fixed to the relevant zone of said teat terminal, while in the dummy, said cushion is comprised of a soft material layer fixed on the screen, on the side faced toward the enlarged head.

[0062] As alternative, the soft material cushion can be comprised as a internally hollow cove or bladder, com-

prised of a closed covered element.

[0063] Said cavity can be empty or filled with a different soft material.

[0064] Still according to an alternative embodiment, it is provided that said cushion is comprised of an elastic soft wall mounted spaced apart from a support wall.

[0065] In case of the dummy, the support wall is comprised of the screen, while in case of a teat, said support wall can be comprised of the wall of the coupling terminal of the teat or of a support wall coupled with the elastic soft wall.

[0066] It is possible provide said cushion as a removable and replaceable separated element, coupling with teats and/or dummies of different kind.

[0067] In case of dummies, usually provided with screens, both the full embodiment and the full or empty hollow embodiment, both the embodiment comprising a wall spaced apart from a support wall can be comprised of a soft material coating element provided with removable coupling means for the screen.

[0068] In this case, it is advantageous providing removable coupling elements for the cushion with the screen. Particularly, said means can be peripheral coupling means with the screen peripheral edge, such as a peripheral edge of the cushion such as an continuous annular or discontinuous groove for engagement of the peripheral edge of the screen.

[0069] Position maintenance is ensured by an elastic coupling of said peripheral groove with the soft coating obtained for example exploiting the elastic properties of said coating, particularly providing a development of the peripheral groove with peripheral dimensions slightly minor than the peripheral dimensions of the screen.

[0070] Furthermore, it is advantageous providing a central coupling hole on the connection lengthened element.

[0071] Said hole can provide dimensions slightly minor than the lengthened element and engaging on the same by elastic forcing, thanks to the intrinsic elasticity both of the coating and of the enlarged head and of the connection lengthened element.

[0072] As to particularly the teat, it is possible providing an analogous structure comprising also a support rigid wall, being the rigid wall and the associated soft element elastically engaged forcing the lengthened element thanks to a central hole provided in the same.

[0073] Further, the rigid wall can have a wall zone about the hole, shaped in such a way to create a resting surface to the zone of the terminal of the teat that generally radially enlarges with respect to the connection lengthened element.

[0074] Both for the dummy and for the teat, projections can be provided on the connection lengthened element, determining the proper mounting position of the soft coating and/or of the soft coating and rigid screen combination.

[0075] Materials by which said elements are realised can be the normal materials presently employed for

teats or dummies, such as rubber, caoutchouc, silicon, etc.

[0076] The invention provides further features described in the dependent claims.

[0077] The present invention will be now described, for illustrative but not limitative purposes, according to its preferred embodiments, with particular reference to the figures of the enclosed drawings, wherein:

Figures 1A, 1B, 2A, 2B show the same lateral views of a first embodiment of an enlarged head and of a connecting lengthened element for a teat or a dummy with means of labial stimulation and/or means of extension of the lengthened element of different kind.

Figures 3 and 4 show a section of the enlarged head with the connecting lengthened element according to an axial transversal plane, the two figures showing different lengthened and/or labial stimulation elements.

Figure 5 is a transversal section of an enlarged head of the embodiment according to the previous figures in a not stimulated condition.

Figure 6 is a frontal view of the enlarged head according to figure 5, in a not stimulated condition.

Figure 7 is a view on the enlarged head according to Figure 6, during the compression of the enlarged head between the tongue and the palate with the suction.

Figures 8 and 9 show a view in perspective of a teat with a lengthened element and an enlarged head, respectively according to Figures 4 and 3.

Figures 10 and 11 show an axial section of a teat according to Figures 8 and 9, with respectively one of the two versions of the lengthened element according to Figures 1A or 1B.

Figures 12 to 14 show different views in perspective of a dummy in which the lengthened element and the enlarged head are realised according to Figure 4.

Figures 15 and 16 show a teat according to the invention along with a soft material screen for the mother's breast simulation.

Figure 17 shows a plane view on the lingual side of a second embodiment of enlarged head according to the invention.

Figure 18 is an axial view on the end of said head according to Figure 17.

Figure 19 is plane view of the palate side of the enlarged head according to Figures 17 and 18.

Figure 20 is a transversal section view of the enlarged head according to the preceding Figures 17 to 19.

Figures 21 to 23 show a teat similar to the one according to Figures 8 to 11, combined with an enlarged head according to Figures 17 to 20 and respectively in combination with different means of labial stimulation and/or extension of connecting

lengthened element.

Figures 24 and 25 show a teat according to Figure 21 in combination with a labial contact screen, elastically yielding, respectively in an exploded and mounted condition.

Figure 26 shows an axial section of a dummy with an enlarged head according to Figures 17 to 20 and in which the screen is elastically yielding under labial stimulus.

Figure 27 shows an axial section similar to the one of Figure 26 of a dummy according to Figure 26 with a screen embodiment similar to the one of Figures 24 and 25.

Figures 28 to 33 show, in a lateral view, several embodiments of stimulation means that consist in expecting on the connecting element in the contact zone with one or both the lips small robs, eyelashes or anatomical swellings for the dynamic stimulation of the labial pressure with a dynamic proprioceptive contact.

Figure 34 shows a transversal section view in the zone of said stimulation means, according to the example of Figures 28 to 33.

[0078] The figures show different embodiments of a teat and a dummy according to the invention.

[0079] A teat generally comprises an enlarged head 1 meant for being placed in the oral cavity, a lengthened element 2 which connects the enlarged head 1 with a terminal coupling 3 with a foodstuff container.

[0080] A dummy instead generally presents an enlarged head 1, a lengthened element 2 and a terminal coupling 3' with a screen or shield 4.

[0081] Therefore, both the teat and the dummy present common elements, as to say the enlarged head 1 and the lengthened element 2 and they differ in the terminal coupling, which is meant for coupling several elements that depend on the use and the specific function of the teat or of the dummy themselves.

[0082] From the physiologic point of view, both the devices, teat and dummy, have similar functions, as to say the breast simulation, but they have different aims, namely the feeding and a soothing action, or however not feeding, in particular also the use of the organs and/or muscles involved in nursing phase.

[0083] According to a first embodiment, the teat or dummy presents an enlarged head, defined by a rounded envelope zone, as for instance spherical, ovoidal, elliptical or as a cherry and, more or less regular and symmetrical at rotation, that enlarged head 1 being made of several projections or knurlings 101 and hollows 201.

[0084] The projections or knurlings present an axial lengthened shape and are conformed in axial section passing through the plane of maximum radial extension, so that to be restricted or extended on the section of the corresponding envelope shape.

[0085] The projections or knurlings 101 can be contemplated in whatever number and with whatever relat-

ed angular positions. However, the preferred and showed embodiment presents four radial projections 101 with couples of projections 101 diametrically opposed, lined up on two crossed diameters, in particular substantially perpendicular.

[0086] As showed in Figures 5 to 7 this shape, along with the elastic material like rubber or similar gives to the enlarged head particular functions. In fact, also being at rest, namely being not stimulated by the suction, the enlarged head presents two cavities on the side toward the palate and on the side towards the tongue.

[0087] Being used, namely being compressed between the tongue and the palate, the enlarged head is deformed as showed in Figure 7. The couples of contiguous projections 101, opposed to the perpendicular plane with respect to the occlusal plane of the oral cavity, are get closer, while the projections 101 on the same lingual or palatine side of the enlarged head 1 are moved away or opened wide, making wider projections 201.

[0088] Since said projections are generated by the compression between the tongue and the palate, it is obtained by these organs a controlled deformation of the enlarged head 1. The projections 201, both on the lingual and the palatine side, are therefore deformed with respect to their shape and their extension or deepness, in an anatomical way by part or organ to which they adhere.

[0089] With reference to the projections' functions, they have been already described in the introduction to the specification and they substantially consist in stimulating in a scientifically way both the tongue and the palate, so as to obtain an use of said organs and related muscles in the oral cavity, which would be as similar as possible to the one of the natural feeding.

[0090] Has to be noted that Figure 7 shows, in a schematic way, the deformation of the enlarged head and that it can not necessarily happen symmetrically to the median axial plane parallel to the occlusal plane of the oral cavity, but also with respect to the perpendicular median plane.

[0091] It is possible to create asymmetrical deformations in an aiming way, for instance adjusting in different way the elasticity of the material that makes the enlarged head. In particular, it can happen for example also by varying only the wall thickness in different sectors of the enlarged head.

[0092] It is possible to contemplate asymmetry between sectors, already present at rest of the enlarged head, as for examples projections 101 and/or hollows 201 of different radial dimensions and/or circumferential and/or axial. In that way, it is possible to obtain both four projections and/or four hollows, completely different, and shapes with limited symmetry, as for instance a symmetry only relevant to the plane of axial section, as that median axial plane perpendicular to the occlusal one, and/or that occlusal and/or further whatever diametric plane, as for instance also the diametric plane, that divides a couple of projections, diametric opposite

in two identical or different halves. These asymmetrical shapes or with a limited symmetry of the enlarged head 1, thanks to a specific shape of the projections 101 and/or of the hollows 201, allow to realise teats or dummies with a corrective function on the oral cavity. The shape can be completely personalised or meant to the correction of typical behaviours and substantially identical to a great number of patients, so that it is possible to use standard corrective shapes, valid for all the patients that have the same pathology or dysfunction.

[0093] It is possible to contemplate also alternative shapes to the above described one and in which are present only projections 101 and the associated intermediate hollow 201 on the lingual side or on the palate side of the enlarged head, or on one of the two sectors defined on the median axial plane perpendicular to the occlusal one.

[0094] In this case, the part without projections and hollows can be flattening, substantially flat or more or less rounded, or can follow the shape of the spherical, elliptical, oval or similar plane of envelope or a whatever rounded shape.

[0095] In all the above mentioned cases, the sector of the enlarged head 1 without projections 101 and hollows 201 can present one or more palatine hollows, that can be peripherally closed, namely surrounded by continuous lateral limitation walls or opened in one or more whatever points or zones.

[0096] In a further embodiment, any single projection 101 can be realised in following segments separated by transversal hollows, that can extend to the bottom wall of the axial hollows 201 or it can end at a higher level.

[0097] Due to a further feature, the teat or the dummy, according to the invention, contemplate a lengthened element 2, that presents in at least an intermediate zone, if not for all its length, labial stimulation means. These means have also the function of indicating the correct mouthpiece position of the teat or dummy.

[0098] These means can be of different kind, according to the various requirements, the eventual physical features and the reaction of the subject to the stimulus.

[0099] A first embodiment provides that the lengthened element 2 has a swelling 102 in the middle zone. The swelling, as showed in Figure 1A and 1B, can present different dimensions, it can be spherical or elliptic, spindle-shaped or rounded.

[0100] The swelling 102 can be full, as in Figure 11, or it can be a real annular radial widening of the lengthened element 2, that is tubular.

[0101] Alternatively, in the middle zone, or for all its length, the lengthened element 2 presents a wrinkling 202, that can be full or made with a specific deformation of the tubular wall of the lengthened element, as a folding or like.

[0102] The wrinkling shape can be whatever, but particularly it is preferred duly rounded.

[0103] A further embodiment of the labial stimulation means is showed with several realisation examples in

Figures 28 to 34. In this case, it is a particular shape as eyelashes or small ribs oriented in a transverse direction external to the lengthened element 2 and that are indicated with the reference number 10. Said eyelashes or small ribs can be full, as showed in the figures, or hollowed and can also consist by an external deformation, due to a corresponding internal of the lengthened element 2. The ribs 10 are advantageously placed in the contact zone between the lips and the lengthened element and they have an oblong shape transversal oriented to the lengthened element axis. The ribs shape, that can be rounded, arched, straight, as broken line, as a V or as a trapezium, is such to dynamically stimulate the labial pressure with a dynamic proprioceptive contact.

[0104] This action is particularly stimulated by the showed features, in which two ribs 10 and 10' with opposed arched course form a "X". The ribs 10 and 10' can be slightly separated, or secant or tangent. The "X" shape can be obtained with two straight small ribs, that intersect and they are oriented in a diametrical direction of the lengthened element 2, everyone opposed to the other.

[0105] The ribs 10 and 10' can present wrinklins both in axial and radial direction along their length. Figure 34 shows an embodiment in which the radial thickness diminishes in the middle zone, the radial external crest 110 being made of a symmetric hollow. The variation of the thickness, both in radial and in axial direction, can be symmetrical and asymmetrical.

[0106] It is possible to contemplate several small ribs on the circumference of the lengthened element and/or on the axial length also, as showed in Figures 29 to 34. Moreover, it is possible to contemplate crowns of small ribs 10 and 10', substantially continuous or discontinuous. Alternatively, as showed in Figures 29 to 32, the two ribs 10 and 10' in the contact zone with the labial central portion can be disposed with the intrados faces faced one another.

[0107] The different shapes and variations of axial and/or radial thickness, as well as the asymmetries of distribution and axial and/or radial thickness of the ribs can be calibrated so that to differentiate the dynamic stimulus all along the extension of the contact zone of the lips and more stimulate specific zones compared to the others of said contact zones, correcting in a targeted way eventual anomalous uses or postural conditions.

[0108] The embodiment according to Figures 28 to 34 has to be intended in whatever combination or sub-combination, with one or more features of the other embodiments of Figures 1 to 27, when obviously compatible with them.

[0109] Alternatively to these embodiments of labial stimulation means, the lengthened element, on a part or all its external zone, can be provided for small projections, as peduncles or bristles 302. Further to peduncles or bristles shape, these labial stimulation means can be made of rounded thickenings, as little domes or rounded projections.

[0110] As showed in Figure 3, the peduncles or bristles 302 can covered all the external zone of one or more projections 102 or wrinklins 202. According to one or more previous examples, these stimulation means can be combined each others. Particularly, at least part of the lengthened element 2 can present a typology of labial stimulation means and at least another part can present another part of labial stimulation means. Alternative or combined, one of the two typologies or one or more typologies of labial stimulation means can superimposed and/or been expected in different zones of the lengthened element 2.

[0111] With reference to said labial stimulation means, and particularly to projections 102 and wrinklins 202, these can have a further function of means that allow an elastic lengthening under suction. Both the projection 102 and the wrinkling 202 have to function of a folding elastically lengthening under traction force.

[0112] Alternatively to what above said, it is possible to obtain the same effect of elastic lengthening providing for a lengthened element or at least part of it made of an intrinsically elastic material with axial direction and, therefore, easier to lengthened under suction, compared with the other parts of the teat or the dummy.

[0113] Obviously, this feature can be contemplated combined with the folding 202 or the projection 102 above described.

[0114] According to another embodiment, that can be contemplated separated or along with the previously described means so that to allow the elastic lengthening of the lengthened element 2, an element like a folding, or however with analogous functions can be contemplated in the contact zone between the lengthened element 2 and the terminal coupling 3 of the teat to a container or of a dummy to a screen 4.

[0115] In this case, the end of the lengthened element 2 is joined to the terminal 3 with an annular loop 402 axially oriented. In that way, the end of the lengthened element 2 enters in a established measure, on the terminal coupling 3 and on the radial external peripheral border, parallel to the lengthened element 2, and it joins to the terminal coupling 3. Therefore, the loop represents a accumulation of material, that under suction allows a certain lengthening of the lengthened element 2. This feature is showed in Figure 8 to 11, with reference to a teat; however, it is also evident that the same can be applied to a dummy, as in Figures 12 to 14.

[0116] With particular reference to Figures 8 to 11, these show different embodiments of teats, in which is contemplated the enlarged head according to Figures 1 to 7 and respectively the lengthened element 2 to labial stimulation means according to Figures 4, 3 and 1A, in the full version of the projection 102 or in that obtained with an internal deformation of the tubular wall, corresponding to the external one.

[0117] Moreover, in all the Figures 8 to 11, in the junction zone of the lengthened element and the terminal coupling 3 it is provided for an axial loop 402. These

showed combinations are not to be interpreted as limitative, but are possible whatever combinations or sub-combinations of features of the enlarged head and/or of the lengthened element and/or of labial stimulation means, described with reference to the previous examples of Figures 1 to 7 and 28 to 34.

[0118] With reference to the teat embodiment, the enlarged head is obviously provided for supplying holes 5. These holes are contemplated in the zone of the enlarged head 1 with oriented axis substantially in axial direction of the teat, or however in parallel direction to the suction one.

[0119] Along with or as alternative to the frontal holes 5, the enlarged head can present one or more holes 5' in one of the hollows 201, made by the single projections 101, in the bottom wall of the same and/or in the lateral zones made by the rising sides of the projections 101.

[0120] It is possible to provide whatever shape of supply from the holes 5 and 5' and whatever number of the same holes.

[0121] The holes can be symmetrically distributed with respect to the projections 101, or in asymmetric and/or casual way.

[0122] The terminal coupling 3 of the teat can present a whatever shape, widening in a more or less spherical way with respect to the lengthened element 2. In the showed example the terminal coupling has a little spherical dome.

[0123] With reference to Figures 12 to 13, a dummy, according to this first embodiment, presents a lengthened element similar to the dummy's one and an enlarged head 1 as the previous described one. The terminal coupling 3' to the dummy's screen 4 is made of an annular peripheral flange 502 on the side of the lengthened element 2 opposite to the enlarged head 1. The annular peripheral flange 502 is meant for a place in the screen 4. In particular, from the screen 4 a little pivot with enlarged head starts and it is meat for entering in a corresponding joint hole 602 with an elastic deformation of the terminal coupling 3'.

[0124] It has to be noted that, with reference to the terminal coupling 3', it is also possible to contemplate an annular axial loop of junction between the lengthened element and said terminal.

[0125] Figures 17 to 20, and with respectively a teat, Figures 21 to 25 and a dummy, Figures 26 and 27, show a second embodiment with enlarged head according to the invention.

[0126] In this example, the enlarged head derives from a chalice shape, axial on the lengthened element 2 and of which it is contemplated only a segment, according to a section plane substantially transversal and inclined from the lingual side to the palatine one directing to the free end of the enlarged head 1.

[0127] Said section zone is not made of a simple plane, but of a curve, that forms in the lingual side, a hollow opened to the lingual side and to the head end.

[0128] In particular, the section plane of the chalice shape is eccentric and it leaves a symmetric part in the join zone of the lengthened element 2.

[0129] From the lateral view, the enlarged head 1 presents a spout or mouth shape.

[0130] The zone on the lingual side and/or eventually all the enlarged head are inclined in such a way that said zone on the lingual side of the enlarged head 1 presents an inclination between 15 and 30°.

[0131] According to a further feature, the hollow on the lingual side is made of both a hollow and a U deformation of the enlarged head with a section view, as in Figure 19.

[0132] Moreover, as in the showed Figures, alternatively or in combination, the palatine side of the enlarged head 2 presents a further superior hollow 201', that in the example of the Figures 17 to 27, is showed of inferior dimensions to the ones of the lingual hollow, but that can be of comparable or greater dimensions with respect to the hollow on the lingual side.

[0133] In detail, this embodiment, in the joint zone to the lengthened element, provides for an initial widening on all the circumference and that can be symmetric or asymmetric, with particular reference to the palatine and lingual side. On the first one, namely on the one facing the palate, said initial widening 401 extends with substantially the same curvature ray till an apex on the free end of the head 1'. Instead, on the lingual side, the widening 501 extends with an inverted curvature, which decline to said apex on the head end, giving a spout shape from a lateral point of view. On the lingual side, in that way a projection is formed, which defines the hollow 201 in axial or front - posterior sense of the oral cavity. As already said, the curved space, degrading towards the apex, presents an inclined orientation, with respect to the occlusal plane with an angle between 15 and 30° preferably.

[0134] In an alternative embodiment, the enlarged head 1' is made of an annular element with rounded borders, that are bigger with respect to the middle zone than the lingual side and that, on the palatine side, present depressions making hollows 201 and 201'. In this case, as in the previous example, the enlarged head presents a flattened shape, perpendicular to the occlusal plane. In plan, said head can presents whatever circular, ovoidal or as a heart shape, or other shapes or stylised objects obviously compatible with its physiologic functions in the inventive area.

[0135] When the shape in plan is circular, the enlarged and rounded border has a substantially toroidal shape. Moreover, said enlarged head according to this embodiment can be curved also to the transversal direction to the axis of the lengthened element 2 or front - posterior of the oral cavity.

[0136] Also in this case, the thickness of the enlarged border of the enlarged head can be constant for all the extension of the same or it can reduce to the apex of the free end with different courses.

[0137] Particularly, the lingual side can present an inclination with respect to the occlusal plane between 15 and 30°. According to the shape of constant or tapered thickness, said inclination can be obtained with the inclination of the sole enlarged head and/or combination of the enlarged head and its lingual side.

[0138] As showed in the enclosed drawings, the enlarged head according to this embodiment can be contemplated with one or whatever labial stimulation means according to the previous embodiment of the Figures 1 to 16 and 28 to 34 and with one or more combination, depending on the aimed effects.

[0139] Similarly, with or without said labial stimulation means, the enlarged head according to the embodiment of Figures 17 to 27 can present one or more means that allow a lengthening of the lengthened element 2 under suction, namely substantially in front - posterior direction of the oral cavity. As in the previous example said means can be provided for combined or not combined.

[0140] A possible embodiment of the enlarged head for the dummy and the teat, according to this invention, can contemplate a combination of two described embodiments, being the enlarged head according to the Figures 17 to 27 realised in a similar way to what described for the sector oriented to the tongue, while for the sector oriented to the palate, the enlarged head can present a construction as that of Figures 1 to 16. It is possible also an embodiment that contemplate an inverted conformation, being the enlarged head realised for the sector or side towards the tongue as the head 1 showed with reference to Figures 1 to 16, while the sector towards the palate is realised according to the embodiment of Figures 17 to 27. It is the same also for the supply holes disposition, that for the embodiment according to Figures 17 to 25 will be described in the following.

[0141] Always as the previous embodiment, the embodiment according to Figures 17 to 27 and the above mentioned embodiment can be used both for the realisation of teats, as in Figures 21 to 25, and for the dummies, as in Figures 26 to 27.

[0142] In the use of an enlarged head, according to Figures 17 to 20, for the teat, of which Figures 21 to 25 are a no limitative example, is evident that the head itself can be provided for holes.

[0143] In this case, besides supply holes 5 in a front - posterior direction to the oral cavity, that are contemplated on the apex of the enlarged head, as in Figure 18, the invention provides for one or more supply holes 5', corresponding to the lateral walls restricting the inferior hollow 201.

[0144] Contrary to the embodiment of Figures 1 to 16, the enlarged head according to Figures 17 to 27 and the eventual described versions, present a previously flattened shape in a perpendicular direction to the occlusal plane, as in Figures 18 and 19. Though this flattened shape of the enlarged head is described along with lengthened elements in section, substantially rounded,

as well as with screen or terminal coupling 3 to substantially rotating symmetric containers, also these elements can present transversal sections not perfectly rounded and flatted, eventually in a similar way to the enlarged head 1 and 1', or in a different way, depending on the flattening direction.

[0145] It has however to be noted that the eventual features compatible with any described embodiment and referred only to the description to one of the embodiments can be contemplated for any embodiment, with the same combination as for the other compatible features or alone or combined with further different features.

[0146] With reference to a further feature of the invention, that is contemplated and described along with different embodiments in particular in Figures 12 to 16 and 24 to 27, the dummy or teat according to the invention can contemplate separately or along with all or part of the further previously described features stimulation means of elastic pliability of the breast around the nipple.

[0147] With reference to the teat, in particular to the teat of the described embodiments, that presents a substantially spherical dome, with an enlargement of quite wide dimensions in the joint zone of the lengthened element and that the quite wide curvature ray create an incorporated screen in the teat itself, the pliability effect can be reached by said zone 103 with the terminal coupling 3 to the container.

[0148] It can be obtained with an appropriate calibration of the intrinsic elasticity of the material of the terminal coupling 3 in the zone 103, that surrounds the lengthened element 2, as for example with a diversification of the thickness of the wall in the zone 103, or similarly with a realisation for the dummy as the one showed in Figure 26, with an elastic cushion. In this case, the cushion 7 is made of a covering of soft and pliable material, corresponding to the natural breast, which is applied on the screen wall 4 towards the enlarged head 1, 1'.

[0149] Said cushion 7 can be full, as showed in Figure 26, or hollowed and closed on all the sides, as an annular bladder or a central pierced disc.

[0150] Alternatively, the cushion 7 can be made of several layers of material with different features and functions. In particular, an external rubber or latex layer can be a protection or covering of one or more internal layers, that give the necessary elasticity features.

[0151] Also the disk bladder can be internally empty or full of gas, liquid or solid materials, that give the wanted elasticity, while the external covering is the container with protection function and eventually also a contribution to the elasticity.

[0152] The cushion 7 can be made of a piece, fixed to the shield 4 or the teat zone 103, or it can be made of a separated piece, which is fixed on the dummy shield 4 or on the zone of the teat terminal coupling 3, for example by a welding or any other chemical or physical adhesion or combination of said conditions.

[0153] Alternatively, the cushion 7 is removable and interchangeable. In this case, the same presents a central piercing 107 thanks to which it is inserted on the lengthened element 2. The central piercing can give a certain fixing force, thanks to a proper diameter dimension with respect to the diameter of the lengthened element with the elasticity deformability of the cushion 7 and the lengthened element 2. The diameter of the piercing 107 is for example slightly minor than the external diameter of the lengthened element and, thanks to the elastic dilatation of the cushion and/or to the elastic compressibility of the enlarged head and of the lengthened element, it can overcome the head and can be coupled with said lengthened element with an elastic shrinkage.

[0154] It is clearly possible to provide for even further choices in which the coupling means with joint or elastic shrinkage are contemplated also on the contact sides of the cushion 7 and the shield 4 or the zone 103 of the terminal coupling 4.

[0155] A possible option for example can consist in a frame of rigid material, coupled in a fixed or removable way, as instance with a joint on the peripheral border of the cushion 7 and that presents complementary joint means with joint seats, contemplated in coinciding points of the shield 4 or of the zone 103 of the terminal coupling 4 of the teat. An example can be represented of hollows a projection or extensions with enlarged head that, thanks to their intrinsic elasticity, can be snapped with elastic shrinkage.

[0156] Alternatively, a rigid ring of coupling with the peripheral rigid frame of the cushion 7 can be contemplated also at the periphery of the shield or the terminal coupling 4 of the teat, being the rigid annular ring and the annular frame provided for complementary means of removable fixing of whatever kind.

[0157] A further choice can contemplate at the periphery of the cushion 7 an annular extension of elastic material, which creates an annular continuous or discontinuous engagement groove on the peripheral border of the shield 4. In this case, it is advantageous that the dimensions of said annular extension are slightly inferior than the ones of the shield 4, so that to generate an elastic force of said annular groove, which holds elastically the use condition thanks to the generation of an elastic force of radial return towards the central axis of the shield.

[0158] This realisation is also applicable to the terminal coupling 3 of the teat, contemplating for instance along the periphery of the zone 103 of said zone an annular continuous or discontinuous thickening as an annular tooth or similar, destined for engaging in the annular radial extension, that forms the annular groove of the cushion 7 and that radial superimposes the same.

[0159] The above described embodiments can easily derived from the particular embodiment of the cushion, as in Figures 12 to 16, 24, 25 and 27.

[0160] In this case, with particular reference to Fig-

ures 12, 13, 14 and 27, the cushion is made of a membrane as a little cap 8 with a central hole 108 and that, on the periphery, presents a rounded border 208, radial folding on the internal, with respect to the central axis of the little cap 8. Said folding border 208 forms a peripheral groove, in which the peripheral border of the shield 4 of the dummy engages.

[0161] The cap is meant to remain separated from the facing side of the shield 4 and the requested elasticity for the elastic deformation, which simulates the pliability of the breast, is given by the features of deformability and elasticity of the material of the cap itself.

[0162] The central hole 108 can coupling for elastic shrinkage with the lengthened element 2. Alternatively or in combination, the lengthened element 2 can present radial supporting shoulders of the hole zone separated from the shield 4, namely radial separation shoulders, that avoid the sliding of the soft cap towards the shield 4, during the push of the lips towards it.

[0163] Particularly, said separation shoulders can be made of the terminal coupling 3' of the lengthened element 2 to the shield 4 of the dummy, that present an annular radial continuous or discontinuous thickening to the end of the lengthened element or in an established position in the terminal part of the same opposed to the enlarged head 1, 1'.

[0164] Similarly to the previous example the cavity formed between the shield 4 and the cap 8 can be empty or completely or partially full of other soft material to calibrate in a more precise way the elastic pliability in axial sense of the cap 8 with a pressure towards the shield.

[0165] This realisation can be applied also for the teat, as in Figure 15, 16 and 24, 25, with reference to the two embodiments of enlarged head.

[0166] In this case the cushion 7 comprises both an analogous rigid part as the shield 4 and a cap 8. These walls can be realised similarly to what described with reference to the dummy of Figures 12 to 14 and 27. The union of rigid wall of shield 9 and cap 8 with several versions above described presents a coincident central hole 109 and 108 for the engagement on the lengthened element of the side of the enlarged head 1, 1'. The diameter of the holes 109 and 108 can be chosen slightly minor than the one of the lengthened element, guaranteeing a precise and steady removable position on the lengthened element 2 with elastic shrinkage.

[0167] Similarly to what described for the dummy it is possible to contemplate separator shoulders between two wall 9 and 8, that can be combined both to the lengthened element 2 and one of the two walls in the surrounding zone of the hole 108 and/or 109. In this case the rigid wall 9 or the cap 8 or both said walls present coaxial bushings to the hole 108 and/or 109 of separation.

[0168] The not described bushings can only lean against the facing side of the rigid wall 9 or of the cap 8, according to the fact that the separator bushing is combined with the cap 8 or the wall 9, or the side of

head, free of the separator bushing, presents removable snap means with complementary means, contemplated on the rigid wall 9 or the cap 8 in a coincident axial position.

[0169] These means can be of any kind and, for example, can be made of head axial pivots slightly enlarged or less, that engage for elastic shrinkage in associated holes a projection or less of the wall 9 or the cap 8. Alternatively, the bushing head border can present an join axial continuous or discontinuous extension and of annular shape with enlarged head co-operating wall with annular axial continuous or discontinuous groove with section a projection.

[0170] Alternatively to the above said it is possible to contemplate that the wall 9 and the cap 8 present at least a part of the separator bushing, being said bushings provided for removable axial coupling means.

[0171] Another variant is represented by the fact of steadily fixing, with a welding or chemical/physical adhesion, the separator bushing to the co-operating wall 9 and/or cap 8.

[0172] In this case, however, the elements 8 and 9 are no longer coupled and it is not possible to contemplate their substitution or their eventual close washing of the internal cavity.

[0173] It is also possible to contemplate an annular radial shoulders of engagement for the shield wall 9 on the side towards the terminal coupling 3 of the teat. This engagement shoulder of position can be a shoulder contemplated both on the lengthened element and the terminal coupling. An advantageous shape consists in using the zone 103 of the terminal coupling as an engagement position. In this case, the side of the shield wall 9 facing the terminal coupling 4 can be shaped as to complement the contact zone with the zone 103 or part of it of the terminal coupling 3 of the teat.

[0174] Similarly to the embodiments of the cushion 7, also this one can contemplate the cavity between the cap 8 and the shield wall 9 full of material. Moreover, instead of the cap 8, to the shield wall 9 can be associated a cushion 7, according to what above previously described or one or more variants of the same.

[0175] The cushion 7 or the element made of part of the shield 9 and the cap 8, or the cap 8 with the dummy, can be steadily mounted on the teat or the dummy, or they can represent separated devices, that can be used with whatever shape of teat or dummy also of traditional and known kind, or however different from the described embodiments in the present description.

[0176] With reference to a further feature, it has to be noted that the cushion 7 and the shield wall 9, combined with the cap 8, or the union of the cap 8 with the shield 4 of the dummy present passing peripheral holes. These ones are already known for the shield of the dummy, but with the cushion 7 and the shield wall 8, or with the shield of the dummy 4 and the cap 8, can have the function of air escape holes, which contribute to a calibration of the elastic behaviour of the cushion and/or the cap 8.

[0177] Moreover, it has to be noted that, combined with lengthening of the lengthened element 2 it is possible to contemplate that the cushion 7 or the union of shield 4, 9 and cap, is disposed according two different possibilities. In a shape the cushion or at least the cap 8 and eventually also the shield wall 9 are disposed under the means or at least part of the combination of said means, that allow a lengthening of the lengthened element 2 under the suction, with reference to the direction of lengthening.

[0178] In that case, the lengthening of the lengthened element does not cause the shifting of the cushion 7 or of one or both the elements of the cap 8 and the shield wall 9 or it causes a partial or limited shifting with respect to the lengthening.

[0179] Instead, the second possibility provides that the cushion 7 and/or the cap 8 and/or the shield wall 9 are placed over the means or part of them, which allow the lengthening of the lengthened element and, therefore, said elements are shifted according to the function of the lengthening of the lengthened element under the suction.

[0180] According to the exercise, that the patient has to do, it is possible to choose one or another realisation.

[0181] Obviously, the cushion 7, the cap 8 for the dummy or the element made of the shield wall 9 and the cap 8 can be contemplated in whatever combination or under combination with one or more described features for the dummy or the teat according to the present invention.

[0182] From the description of the embodiments are evident the advantages of the present invention.

[0183] The single features of use or solicitation, aimed to the different active organs and/or muscles during the feeding, give evident advantages, even only in the separated and isolated application of any single feature. These advantages synergetically multiply with the foresight of combinations of at least part of the features, if not all the described ones, as the shape of the enlarged head, the labial stimulators, the means of lengthening of the lengthened element and the cushion or similar means, that stimulate the elasticity of the breast.

[0184] Moreover, the devices of the dummy or the teat, according to the present invention, can be modified easily for the realisation of corrective devices of functional pathologies of the oral cavity or other organs, as malocclusions or something else, due to the use of traditional dummy or teat or real pathologies that are not due to behavioural causes.

[0185] The present invention has been described for illustrative but not limitative purposes, according to its preferred embodiments, but it is to be understood that modifications and/or changes can be introduced by those skilled in the art without departing from the relevant scope as defined in the enclosed claims.

Claims

1. Teat or dummy, comprising an element of flexible material, meant to be placed in the oral cavity and having an enlarged head (1,1') and a lengthened element (2) of junction to a terminal coupling (3,3') to a foodstuff container and/or to a screen or shield element of a dummy (4), **characterised in that** the enlarged head (1,1') and/or the lengthened element (2) of junction of the head to the terminal coupling (3,3') to the container or to the screen or shield (4) and/or said terminal (3,3') or the screen or shield (4) themselves present a shape or construction, such that the natural behaviour of the nipple and the breast is stimulated during the suction, at least with reference to the action of stimulation and the consequent correct use of one or more organs and/or facial, lips and/or tongue muscles, similarly to the stimulation and the consequent correct use of at least one or more said organs or muscles during the natural breast suction.
2. Teat or dummy, according to claim 1, **characterised in that** the shape of the teat or the dummy is such that it stimulates the correct use of the organs or muscles involved in the natural breast suction of at least two, three or all the organs or muscles involved in said action.
3. Teat or dummy according to claims 1 or 2, **characterised in that** the enlarged head (1,1') presents stimulation means of the correct position and use of the tongue and its muscles involved in the feeding.
4. Teat or dummy according to claim 3, **characterised in that** said stimulation means are made of a hollow (201) on the enlarged head (1,1') on its side meant to be in contact with the tongue or to face the same.
5. Teat or dummy according to one or more claims 3 or 4, **characterised in that** said hollow (201) on the lingual side is made of a recess of the enlarged head (1,1') or an arc of the enlarged head (1,1') or a combination of hollow (201) and arc of the enlarged head (1,1').
6. Teat or dummy according to one or more preceding claims 3 to 5, **characterised in that** the hollow (201, 201') in the enlarged head can be formed by an arc in transversal direction to the longitudinal axis of the lengthened element (2).
7. Teat or dummy according to one or more preceding claims 3 to 6, **characterised in that** the enlarged head (1,1') presents on the lingual side at least two axial projections (101), with reference to the axis of the lengthened element (2) of junction between said

head (1,1') and the terminal coupling (3,3') to the container or the screen (4), said projections (101), preferably with the peripheral rounded wall or spindle-shaped, defining a middle hollow (201).

8. Teat or dummy according to one or more claims 3 to 7, **characterised in that** the two projections (101) are realised as spherical section or ovoidal, elliptic or fusiform element sector.

9. Teat or dummy according to one or more claims 3 to 8, **characterised in that** the two projections (101) are preferably of elastic material and such that under pressure of the enlarged head (1) between the tongue and the palate, they are laterally divaricated, defining a hollow (201) with correct dimensions for the tongue stimulation.

10. Teat or dummy according to one or more preceding claims 3 to 9, **characterised in that** the enlarged head (1) presents a shape defined by a spherical, ovoidal, elliptical or like engagement zone.

11. Teat or dummy according to one or more preceding claims 3 to 10, **characterised in that** the enlarged head (1') is substantially perpendicularly flattened to the occlusal plane of the oral cavity.

12. Teat or dummy according to one or more preceding claims 3 to 11, **characterised in that** the enlarged head presents a side facing the flattened palate even more or less arched.

13. Teat or dummy according to one or more preceding claims 3 to 12, **characterised in that** the enlarged head (1,1') presents a coaxial position or substantially coaxial to the lengthened element (2) of junction to the same of the terminal coupling (3,3') of a teat to a container or to a screen or shield (4) of a dummy or the axis of the enlarged head (1) can also be only parallel and eccentric with respect to the axis of the same lengthened element of junction (2).

14. Teat or dummy according to one or more preceding claims 3 to 13, **characterised in that** the enlarged head (1') and/or its side facing the tongue and/or both presents an inclination with respect to the lengthened element (2), such that its axis presents a fixed angle with respect to the axis of the lengthened element of junction (2).

15. Teat or dummy, according to claim 14, **characterised in that** the inclination angle of the enlarged head (1') and/or its side facing the tongue, with respect to the lengthened element (2) and/or the occlusal plane, is preferably comprised between 15° and 30°, being said enlarged head or said side oriented towards the palate from the junction zone of

the lengthened element (2) towards the free end of the enlarged head itself (1').

16. Teat or dummy according to one or more preceding claims 3 to 15, **characterised in that** the enlarged head (1') presents a junction zone (401, 501) to the lengthened element (2), that enlarges in a limited measure to the lengthened element (2) so that to form a first part chalice shaped, that joins to the terminal part of the head (1') substantially flattened.

17. Teat or dummy according to one or more preceding claims 3 to 16, **characterised in that** at least the side of the enlarged head (1'), which is facing towards the tongue, is oriented in an inclined direction, or converging towards the side of the enlarged head (1') towards the palate and in such a way that the flattened head (1') taper towards the free opposite end to the lengthened element (2) of junction.

18. Teat or dummy according to one or more preceding claims 3 to 17, **characterised in that** said place, facing the tongue and having the hollow and/or the arc (201), presents a curved course also in direction of the free end of the enlarged head itself (1'), causing from the lateral view, a spout shape, which tapers towards the free end of the enlarged head itself (1').

19. Teat or dummy according to one or more preceding claims 3 to 18, **characterised in that** the opposite side to the one facing the tongue is rounded with a curvature which can be more or less marked.

20. Teat or dummy according to one or more claims 3 to 19, **characterised in that** the hollow (201) on the side of the enlarged head (1,1') facing the tongue is opened both on the place towards the tongue and on the side of the free end of the enlarged head (1,1').

21. Teat or dummy according to one or more claims 1 to 2, **characterised in that** elements (102,202,302) are contemplated of stimulus of the lips for the correct position of the same on the lengthened element (2) of junction between the enlarged head (1,1') and the terminal coupling (3,3') to the container of food-stuff container and/or to the screen or shield (4).

22. Teat or dummy according claim 21, **characterised in that** the labial stimulation means and/or a correct position of the lips are made of wrinklins (202) of the external place of said lengthened element and/or projections and/or knurlings of whatever shape or number and/or combinations of said means.

23. Teat or dummy according to claims 21 or 22, **characterised in that** some radial widenings (102) are

contemplated of the lengthened element (2) as rounded, spindle shaped or spherical widenings.

24. Teat or dummy according to one or more claims 21 to 23, **characterised in that**, as an alternative or as a combination, one or more annular widenings (202) are contemplated which form also an external element as a folding.

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25. Teat or dummy according to one or more preceding claims 21 to 24, **characterised in that**, as an alternative or as a combination, superficial structures are contemplated with knurlings or projections as little peduncles (302) on at least part of the lengthened element (2) of junction.

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26. Teat or dummy according to one or more preceding claims 21 to 25, **characterised in that** the stimulus means and/or the correct position of the lips are contemplated on the contact zone of the lips with the lengthened element (2) and are distributed in a corresponding way according to the suitable drawings, substantially on the annular middle zones, with reference to the axial extension of the lengthened element (2) of junction.

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27. Teat or dummy according to one or more preceding claims 21 to 26, **characterised in that** the stimulation means on the junction element in the contact zone with one or both the lips are made of little ribs, eyelashes or anatomical swellings, shaped in such a way that they exercise the dynamical stimulation of the labial pressure with dynamical proprioceptive contact.

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28. Teat or dummy according to claim 27, **characterised in that** the ribs present a radial extension, constant or changeable between them and with the extension of a rib itself.

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29. Teat or dummy according to claim 27 or 28, **characterised in that** the ribs present lengthenings and extensions different and/or changeable in a rib itself.

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30. Teat or dummy according to one or more claim 27 to 29, **characterised in that** the ribs are placed in such a way that intersect themselves.

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31. Teat or dummy according to one or more claims 27 to 30, **characterised in that** it contemplates at least a couple of ribs or eyelashes with a prevalent transversal inclination on the lengthened element and that are placed on the contact zone of the lengthened element with at least one lip or both, that ribs or eyelashes being placed or shaped in such a way that they form a "X" oriented in a diametrical direction of the lengthened element.

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32. Teat or dummy according to one or more preceding claims 27 to 31, **characterised in that** said "X" is formed by ribs with arched opposed course, that are tangent in the central zone.

33. Teat or dummy according to one or more claims 27 to 32, **characterised in that** said ribs are of major thickness on the ends and minor in the middle zone, so that their edge is hollowed from lateral sight in elevation.

34. Teat or dummy according to one or more claims 27 to 33, **characterised in that** for their width the ribs present a major width on the ends than on the middle zone.

35. Teat or dummy according to one or more preceding claims 21 to 34, **characterised in that** it presents one or more features according to one or more claims 1 to 20.

36. Teat or dummy according to claims 1 or 2, **characterised in that** the lengthened element (2) of junction and/or the head can be realised lengthening due to suction.

37. Teat or dummy according to claim 36, **characterised in that** the means that allow said elastic lengthening are made at least partially or only by a suitable calibration of the intrinsic elasticity of the material, for example with thinning of the thickness of the material in the zone of the lengthened element (2) of junction or in the junction zone of the same to the terminal coupling (3,3') to the container for the teat or in the coupling zone of the screen or shield (4) for the dummy.

38. Teat or dummy according to claim 36, **characterised in that** the elastic lengthening means are made of zones of redundant material accumulation (102,202), as radial widenings with spherical, ovoidal, tapering or like shapes or conformations of the lengthened element as a folding, contemplated alone or in combination.

39. Teat or dummy according to one or more claims 36 to 38, **characterised in that** the means that allow the lengthening (102,202) and that are contemplated on the lengthened element of junction represent also stimulation means and/or signal of correct position of the lips.

40. Teat or dummy according to claim 36 or one or more preceding claims 37 to 39, **characterised in that** the means that allow the lengthening of the lengthened element (2) of junction are contemplated in the junction zone of the lengthened element (2) to the terminal coupling (3,3') to a container or the screen

or the shield (4) of the dummy.

41. Teat or dummy according to claim 40, **characterised in that** said lengthening means are made of an annular axial bight of junction of the lengthened element (2) to said terminal coupling (3,3').

42. Teat or dummy according to one or more claims 36 to 41, **characterised in that** it presents the features of one or more preceding claims 1 to 20 and/or the features of one or more preceding claims 21 to 35.

43. Teat or dummy according to the claims 1 to 2, **characterised in that**, as a combination or as an alternative, the terminal coupling (3,3') to the container and/or the screen or shield (4) of the dummy presents towards the lips a side (7,8) elastically pliable and changeable under a lips compression towards said side.

44. Teat or dummy according to claim 43, **characterised in that** said teat, in the junction zone of the lengthened element (2) to the terminal coupling (3) to a container, or the dummy, in the junction zone (3') of the lengthened element (2) to the screen or the shield (4), present, on said terminal (3, 103) and on said screen or shield (4) a cushion (7) of soft elastic material that simulates the elastic pliability of the breast around the nipple.

45. Teat according to claims 43 or 44, **characterised in that** the terminal coupling (3) to the container is duly radially enlarged and it presents a cap shape or dome with a junction zone of the lengthened element (2) of junction and that forms a support place (103) of the lips with a slightly arched course, being the cushion (7) applied on said support place (103) or associated to the same or represented by the same place.

46. Teat or dummy according to one or more claims 43 to 45, **characterised in that** the cushion (7) of soft elastic material is made of at least a full layer of reported or secured soft material, or fixed in a removable or steady way to the notable zone (103), of said terminal (3) of the teat, or to the screen or shield (4) of the dummy.

47. Teat or dummy according to claim 46, **characterised in that** the cushion (7) presents two or more layers.

48. Teat or dummy according to one or more preceding claims 43 to 47, **characterised in that** the cushion (7) is realised as a cove or bladder internally hollowed, being made of an element as a closed shell.

49. Teat or dummy according to claim 48, **character-**

ised in that the cavity can be empty, or full of gas or of different soft material or a combination of materials.

50. Teat or dummy according to one or more claims 43 to 49, **characterised in that** the cushion 7 is made of an elastic soft material as a cap, which is placed distant from the support wall (4,9).

51. Teat or dummy according to claim 50, **characterised in that** in the case of a dummy, the support wall is made of a screen or a shield (4), while in the case of a teat said support wall (9) can be made of a wall (103) of the terminal coupling (3) of the teat or of a support wall (9) coupled with the elastic soft wall (8).

52. Teat or dummy according to one or preceding claims 43 to 51, **characterised in that** the cushion (7) is applicable with means of removable fixing to the teat, in particular to the terminal coupling (3) and to the dummy, in particular to the screen or the shield (4).

53. Teat or dummy according to one or more preceding claims 43 to 52, **characterised in that** the cushion (7) and the terminal coupling (3) of the teat or the screen or shield (4) of the dummy present complementary means of removable coupling with joint.

54. Teat or dummy according to claim 53, **characterised in that** the cushion (7) presents an annular peripheral buttonhole, continuous or discontinuous and of elastic engagement of a projection or an annular continuous or discontinuous tooth, contemplated on the terminal coupling (3) of the teat or on the screen or shield (4) of the dummy or made of the peripheral border of said screen or shield (4) of the dummy or vice versa.

55. Teat or dummy according one or more preceding claims 43 to 54, **characterised in that** the cushion (7) presents a central hole of passing or engagement of the lengthened element (2).

56. Teat or dummy according to claim 55, **characterised in that** the central hole of the cushion (7) is of such a dimension that the dimension of the lengthened element and the elasticity of the cushion in enlargement of the hole and of the lengthened element (2) create a mutual engagement of the cushion (7) and the lengthened element (2) with elastic shrinkage.

57. Teat or dummy according to one or more preceding claims 45 to 56, **characterised in that** the lengthened element and/or the terminal coupling present positioning means as positioning engagements of

the cushion (7).

58. Teat or dummy according to one or more preceding claims 43 to 57, **characterised in that** the cushion (7) is made of a rigid wall of shield (9) and of a wall axially detached from the preceding one of pliable elastic material (8), said two walls are coupled in a removable or steady way.

59. Teat or dummy according to claim 58, **characterised in that** the rigid shield wall (9) is a detached wall or made of the screen or shield of the dummy.

60. Teat or dummy according to one or more preceding claims 57 to 59, **characterised in that** between the rigid support wall (9) and the elastic wall (8) as a cap are contemplated spacer elements.

61. Teat or dummy according to one or more claims 56 to 60, **characterised in that** the spacer elements are contemplated in the surrounding zone of the co-incident holes (109, 108) of passing or engagement on the lengthened element (2).

62. Teat or dummy according to one or more claims 56 to 61, **characterised in that** the support wall or shield (9) and the elastically pliable wall (8) are coupled in a steady or removable way with mutual joints along the peripheral border (208) and along the peripheral zone of the central hole (108, 109).

63. Teat or dummy according to one or more preceding claims 56 to 62, **characterised in that** the cushion is made of a removable element, applicable to the teat or the dummy.

64. Teat or dummy according to one or more preceding claims 47 to 63, **characterised in that** it presents features of one or more preceding claims 1 to 20 and/or features of one or more preceding claims 21 to 35 and/or features of one or more preceding claims 36 to 46.

65. Teat or dummy according to the claims 1 to 2, **characterised in that** it presents stimulation means of the palate, that are contemplated on the enlarged head (1,1').

66. Teat or dummy according to claim 65, **characterised in that** said stimulation means of the palate are made of at least a hollow (201,201') with a slightly suction effect on the side of the enlarged and rounded head towards the palate.

67. Teat or dummy according to claims 65 to 66, **characterised in that** the hollow on the side of the enlarged head (1) is realised with at least two projections (101) as a spherical sector or as a sector of

an ovoidal, elliptic or fusiform element.

68. Teat or dummy according to claim 67, **characterised in that** the two projections (101) are preferably of elastic material and, under compression of the enlarged head between the tongue and the palate, they are laterally divaricated, defining a hollow with correct dimension for the stimulation of the tongue.

69. Teat or dummy according to one or more claims 65 to 68, **characterised in that** it presents the features of one or more claims 1 to 20 and/or one or more claims 21 to 35 and/or one or more claims 36 to 42 and/or one or more claims 43 to 64.

70. Teat according to one or more preceding claims **characterised in that** the enlarged head presents at least one or more supply holes (5), that correspond to the ends of the head, or on the apex of the enlarged head (1,1') itself.

71. Teat according to one or more preceding claims, **characterised in that** the enlarged head (1,1') presents one or more supply holes (5') in the lingual hollow/s and/or corresponding to the lateral walls of the projections (101), contemplated on the enlarged head (1,1').

72. Teat according to one or more preceding claims, **characterised in that** the supply holes (5,5') are oriented all or partially with their axes in transversal direction to the occlusal plane of the oral cavity and/or all or partially with their axes parallel or substantially parallel to the occlusal plane.

73. Teat according to claims 71 or 72, **characterised in that** the holes present all or partially axes parallel or substantially parallel oriented to the axis of lengthened element of junction, or to the suction direction and/or antero-posterior to the oral cavity and/or all or partially transversally oriented to the axis of the lengthened element of junction, or to the suction direction, or to the antero-posterior axis of the oral cavity.

74. Teat or dummy according to one or more preceding claims, **characterised in that** it comprises an enlarged head (1) having a shape as a spherical and/or ovoidal element made of at least two couples of projections (101) diametrically opposing, being at least the two couples of projections (101) diametrically opposing on line with the diametrical planes with different angular position and that cross themselves defining the middle hollowed projections (201).

75. Teat or dummy according to claim 74, **characterised in that** the enlarged head (1) presents three

or more couples of projections (101) diametrically opposing.

76. Teat or dummy according to claims 74 or 75, **characterised in that** it presents two couples of projections diametrically opposing, being said couples placed as a cross and being said couples of projections oriented according to a diagonal of a quadrangle or a rectangle or any other polygon having at least a side parallel to the occlusal plane of the oral cavity. 5 10
77. Teat or dummy according to one or more preceding claims 74 to 75, **characterised in that** the enlarged head (1) presents a rotational symmetry with reference to its axis parallel or oriented in antero-posterior direction of the oral cavity. 15
78. Teat or dummy according to one or more preceding claims 74 to 76, **characterised in that** the enlarged head (1) presents only a symmetric shape relevant to the occlusal or perpendicular plane of the same. 20
79. Teat or dummy according to one or more preceding claims 74 to 76, **characterised in that** the enlarged head (1) presents a non-symmetrical shape. 25
80. Teat according to one or more preceding claims 74 to 79, **characterised in that** it presents supply apertures as holes, passing carvings, slits or like (5,5'), placed only or at least partially on the apex of the enlarged head (1) and/or only or at least on some hollows and partially in the bottom walls of said hollows (201) and/or on the lateral delimitation walls of said hollows (201). 30 35
81. Teat according to claim 80, **characterised in that** the holes (5,5') present axes oriented in direction of the axis antero-posterior of the oral cavity, or of suction or parallel to the axis of the lengthened element (2) and/or oriented axes transversal to one of said directions. 40
82. Teat or dummy according to one or more preceding claims 69 to 81, **characterised in that** the material, of which the head of the teat or the dummy is made, is relatively pliable or like, so that during the suction the compression of the enlarged head (1) between the palate and the tongue does a flattening action, moving closer the single projections and moving them away for the flattening in the contact zone between the tongue and/or the palate, creating an inferior hollow of positioning (201) and stimulation of the tongue and a superior hollow (201') with suction action and/or stimulation of the palate. 45 50
83. Teat or dummy according to one or more claims 1 to 73, **characterised in that** the enlarged head (1') presents an asymmetrical shape with reference to

the occlusal plane of the oral cavity, being said enlarged head provided for a recess (201) on the lingual side for the correct position of the tongue, being said recess opened both on the end of the head and on the lingual side.

84. Teat or dummy according to claim 83, **characterised in that** the enlarged head (1') presents a spout or chalice shape, in which the inferior part has been removed according to an arched and inclined separation plane, which starts in the junction zone to the lengthened element (2) of junction, on the lingual side towards the palatine side in direction of the free end, leaving said separation plane at least an initial part symmetrical, which enlarges as a chalice (401,501) and being the separation plane in such a way that the enlarged head (1') has a shape of a flattened element in transversal direction to the occlusal plane.
85. Teat or dummy according to claims 82 to 84, **characterised in that** the enlarged head (1') is inclined with respect to the occlusal plane in direction of the palate to the junction end of the lengthened element (2) to the free end of the same and such that the axis of the enlarged head and/or the side facing the tongue or a tangent or secant plane to the same form an angle between 15 and 30° with respect to the lengthened element (2) of junction or to the occlusal plane.
86. Teat or dummy according to one or more claims 83 to 84, **characterised in that** the enlarged head (1') presents a recess or a hollow (201') also on the side facing the palate.
87. Teat or dummy according to one or more preceding claims 83 to 86, **characterised in that** the enlarged head (1') presents a transversal section and at least on the side facing the tongue an arched shape with the internal side facing the tongue and the external side facing the palate.
88. Teat according to one or more preceding claims 73 to 87, **characterised in that** it presents supply openings as holes, passing carvings, slits or like (5,5') placed, only or at least partially, on the apex of the enlarged head (1') and/or, only or at least partially, in the zone of a hollow and partially in the bottom wall of said hollow (201) and/or in the lateral walls of delimitation of said hollow (201).
89. Teat according to claim 88, **characterised in that** the holes (5,5') present oriented axes in direction of the antero-posterior axis of the oral cavity, or of suction or parallel to the axis of the lengthened element (2) and/or oriented axes transversal to one of said directions. 55

90. Teat according to claims 88 or 89, **characterised in that** it presents at least an axial hole (5) on the apex of the free end of the enlarged head (1') at least a hole (5') in the middle zone of the end of the bottom side of the hollow (201) facing the tongue, corresponding to the end of the enlarged head (1'). 5
91. Teat according to one or more claims 88 to 90, **characterised in that** it presents at least a supply hole (5') on the hollow (201) facing the tongue, on at least a lateral delimitation wall of said hollow (201), said wall being parallel to the axis antero-posterior of the oral cavity. 10
92. Teat or dummy according to one or more preceding claims 1 to 91, **characterised in that** the enlarged head (1,1'), the lengthened element (2) of junction and the terminal coupling (3,3') to the container or to the screen or shield (4) or at least its flexible part (7,8) can be realised of an element or separated elements, that can be subsequently assembled as an attachment, being said attachment fixable or removable in whatever way, preferably with coupling as joint and eventually combined with the intrinsic elasticity of the material. 15 20 25

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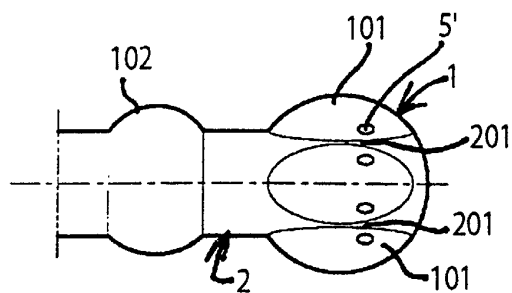


Fig. 1A

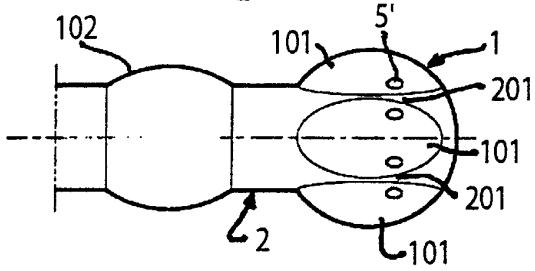


Fig. 1B

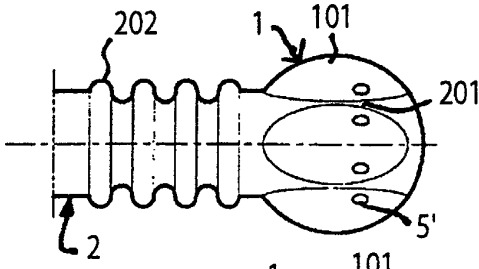


Fig. 2A

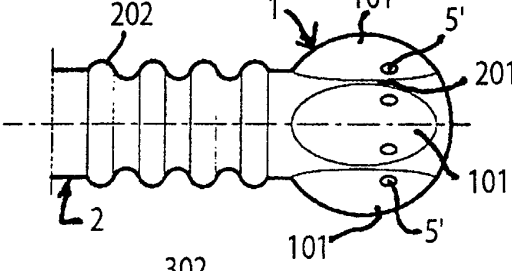


Fig. 2B

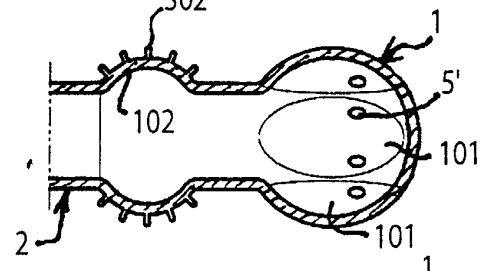


Fig. 3

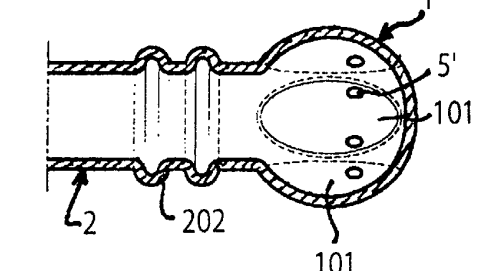


Fig. 4

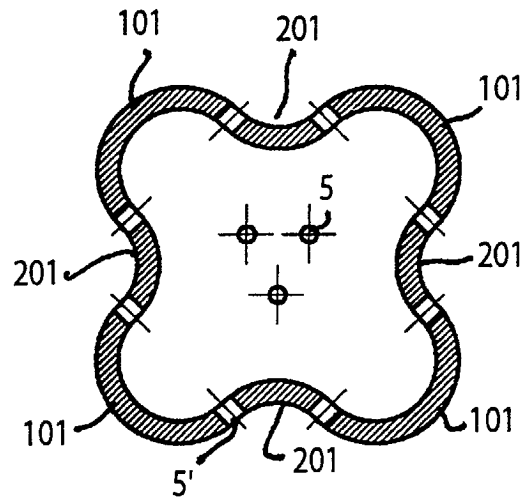


Fig. 5

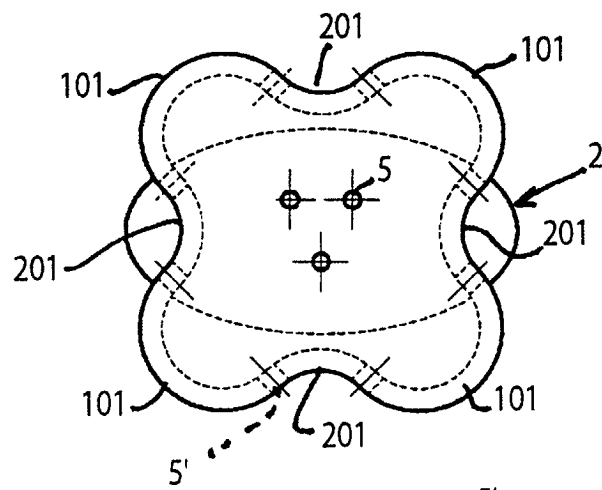


Fig. 6

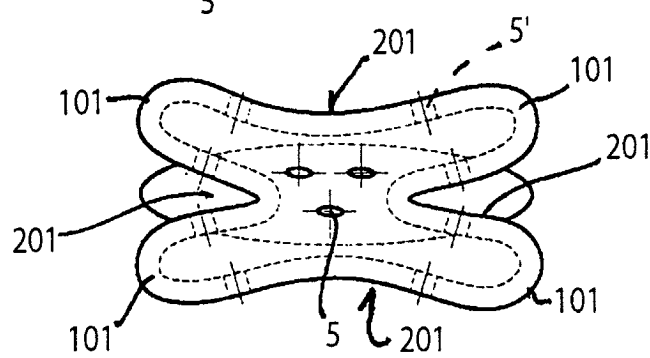


Fig. 7

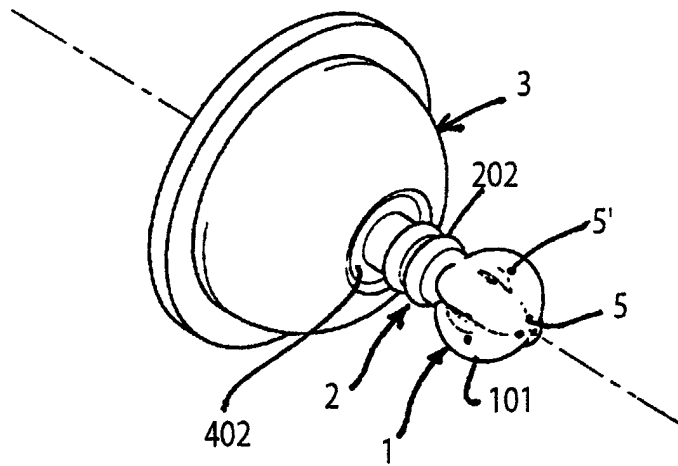


Fig. 8

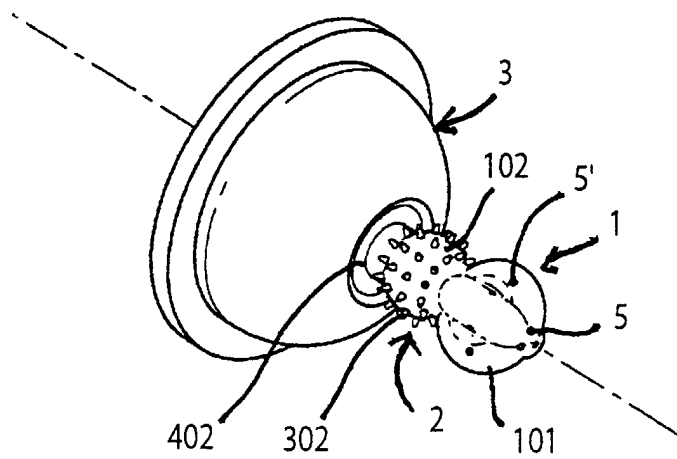


Fig. 9

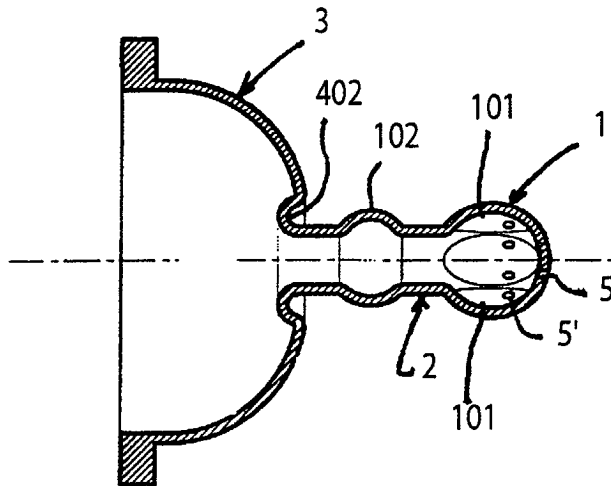


Fig. 10

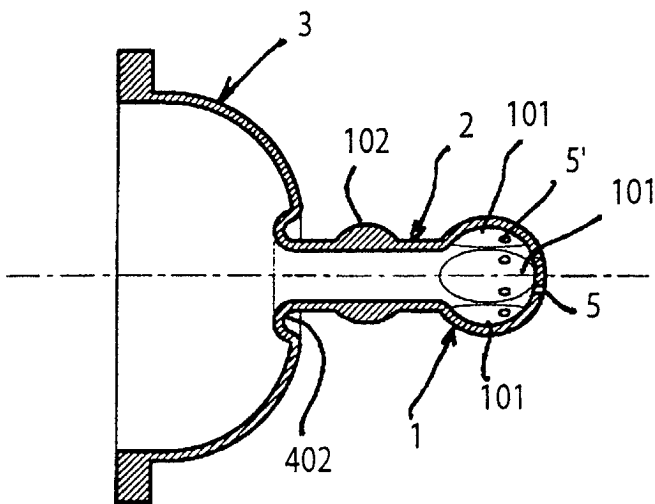


Fig. 11

Fig. 12

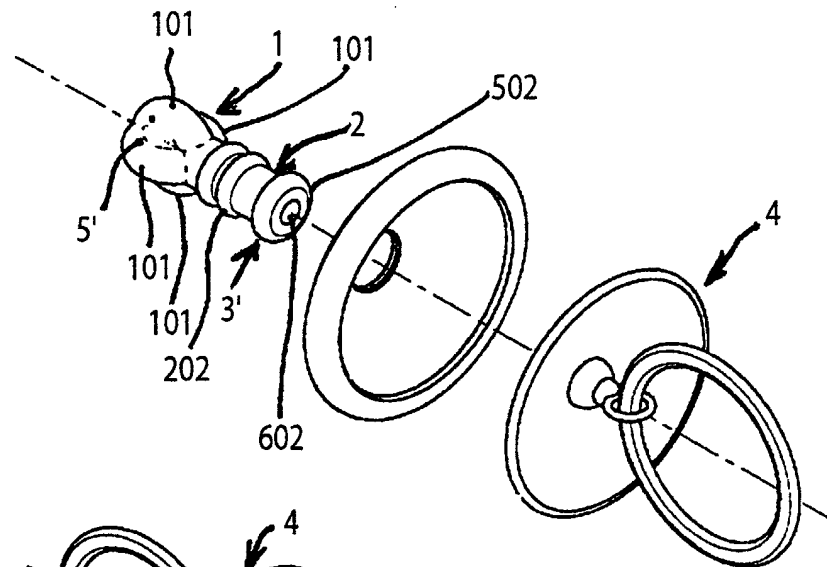


Fig. 13

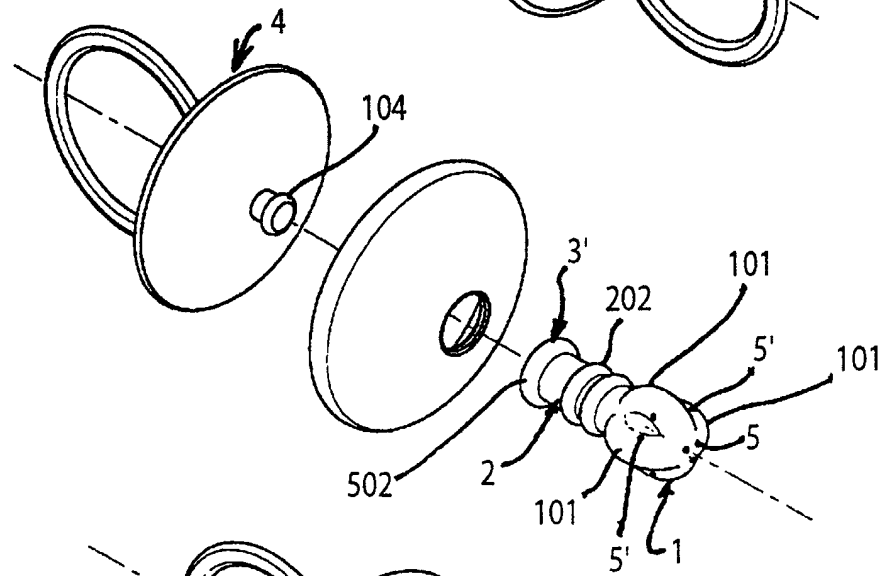
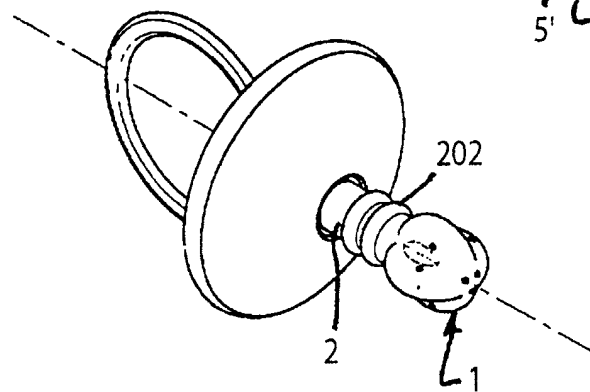


Fig. 14



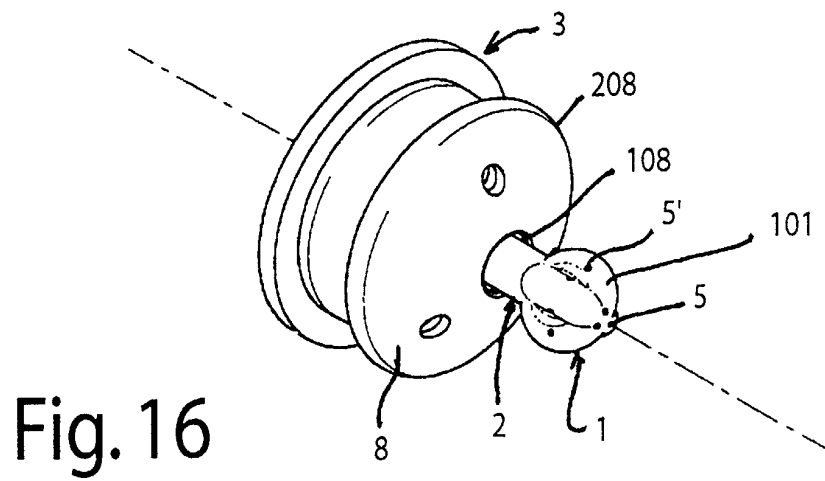
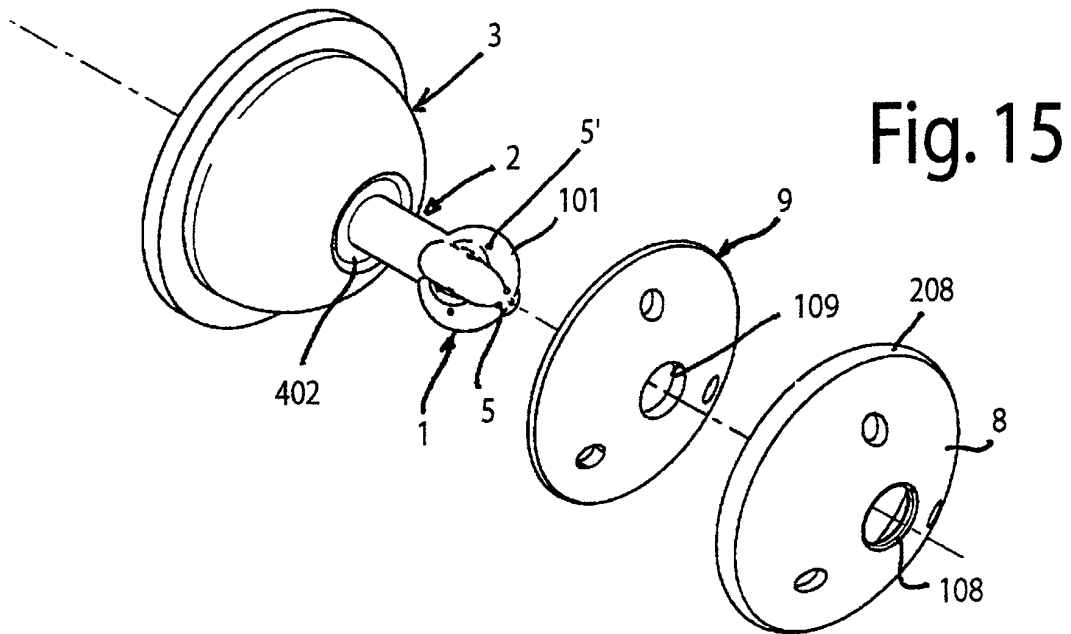


Fig. 17

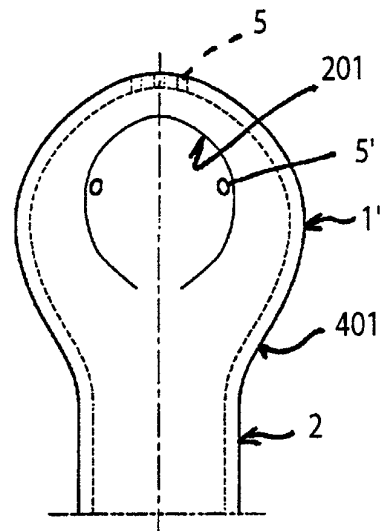


Fig. 18

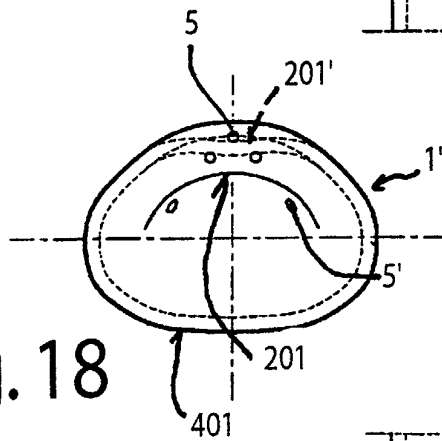


Fig. 19

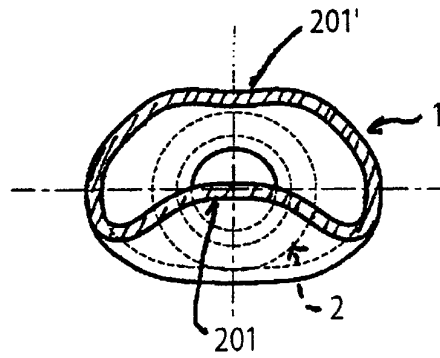
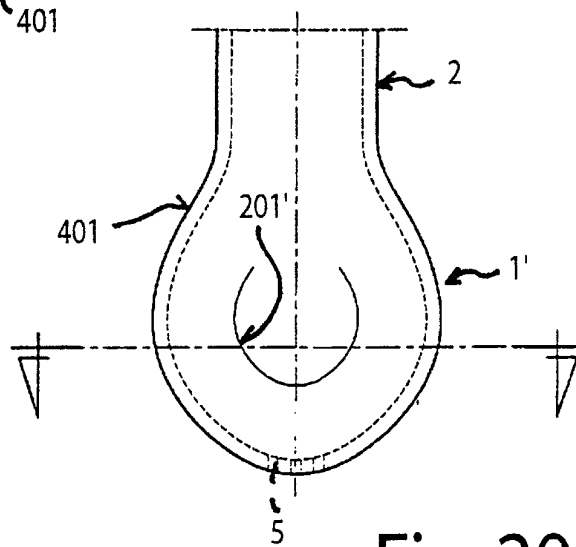


Fig. 20



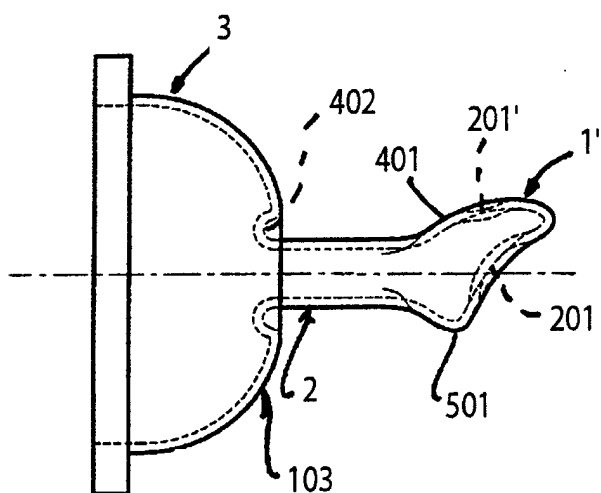


Fig. 21

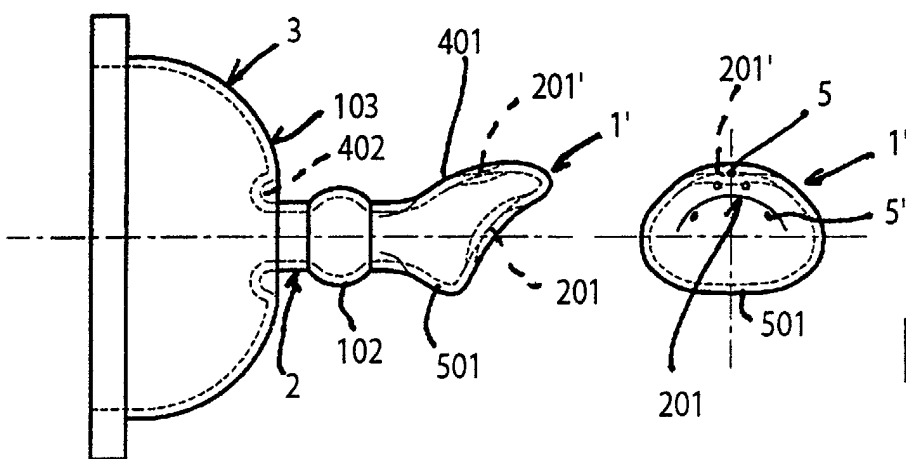


Fig. 22

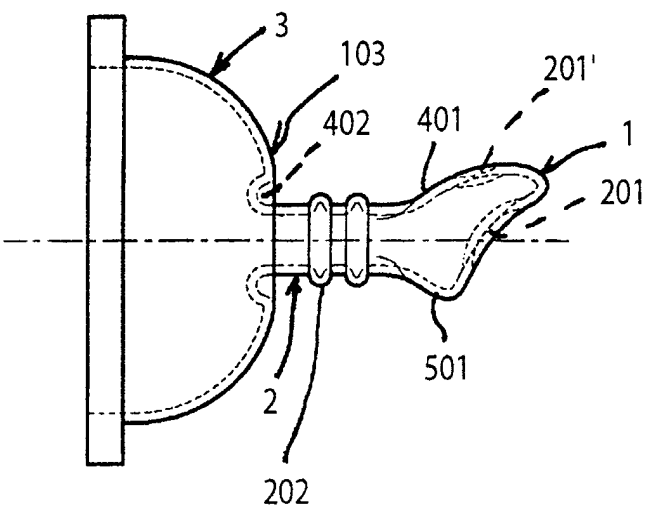


Fig. 23

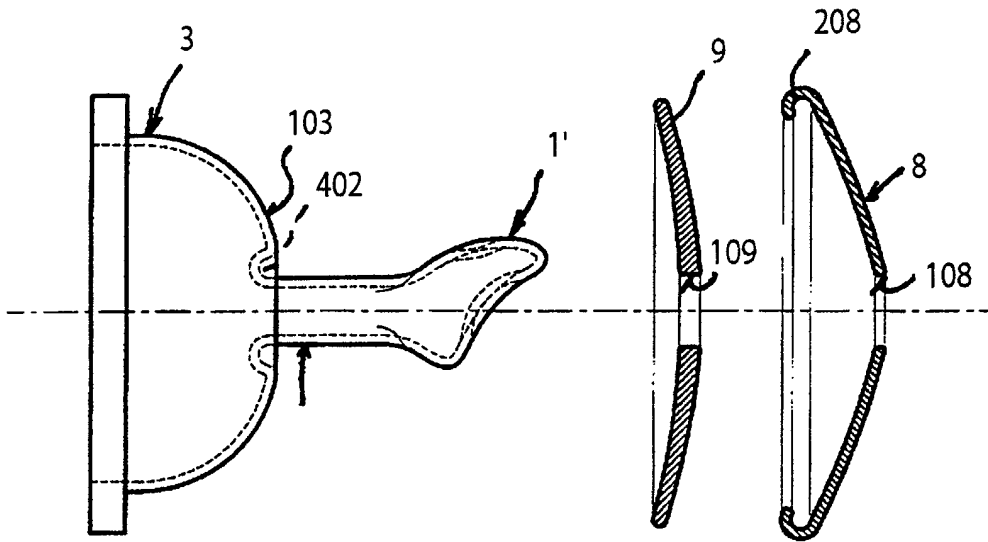


Fig. 24

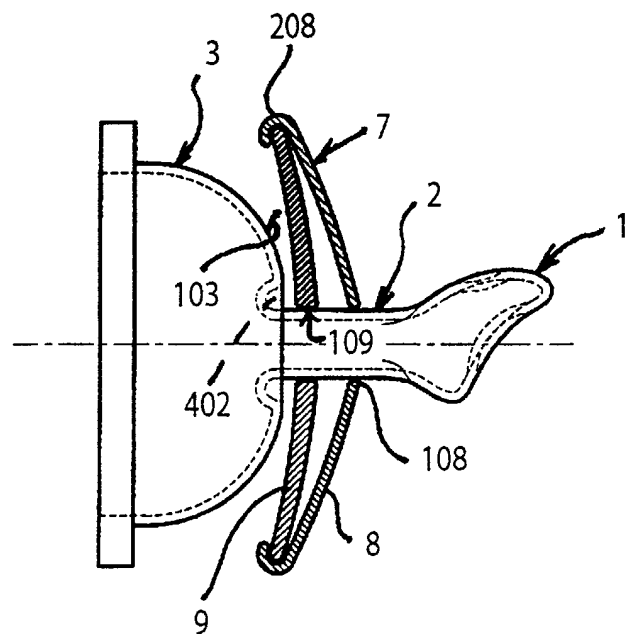


Fig. 25

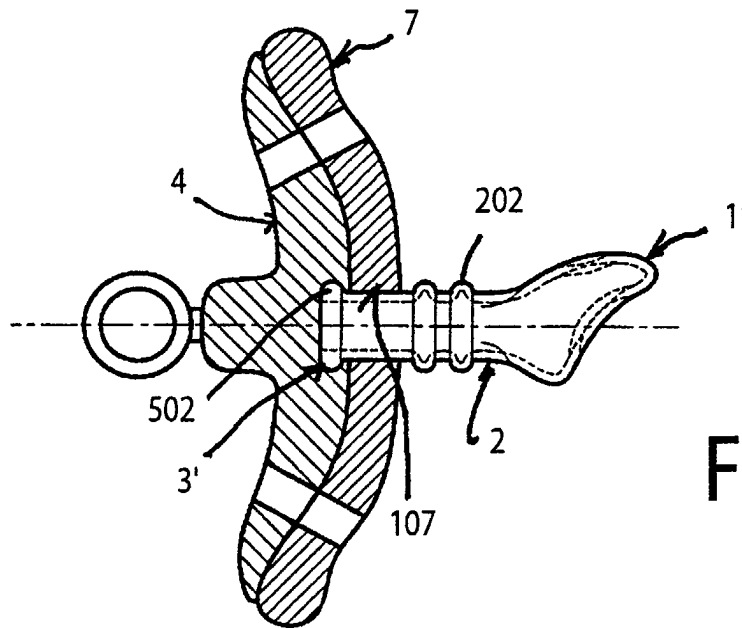


Fig. 26

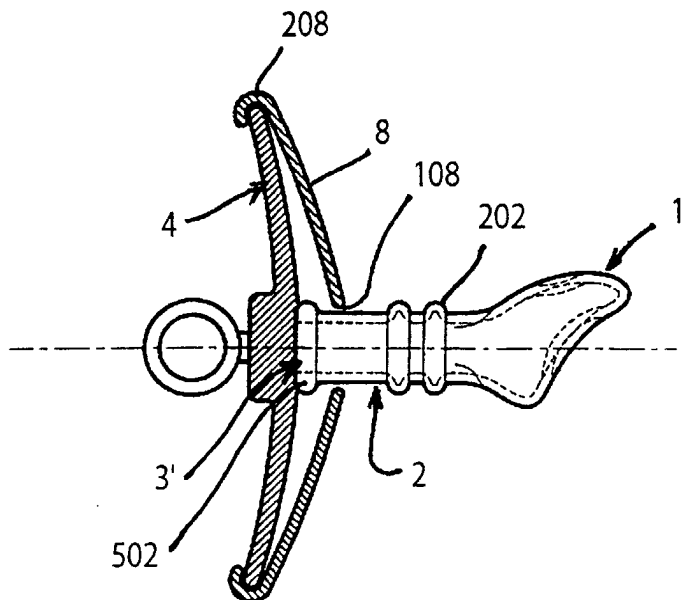


Fig. 27

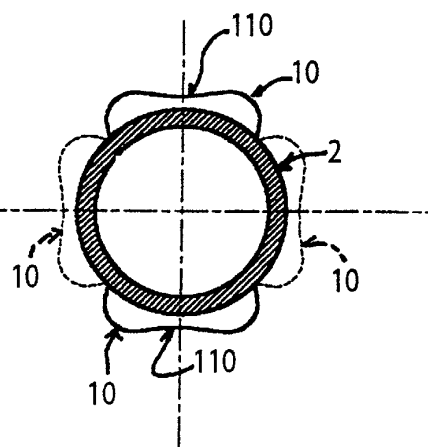
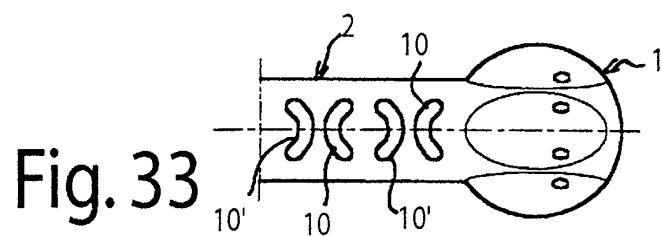
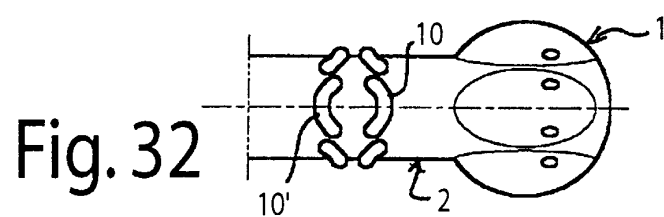
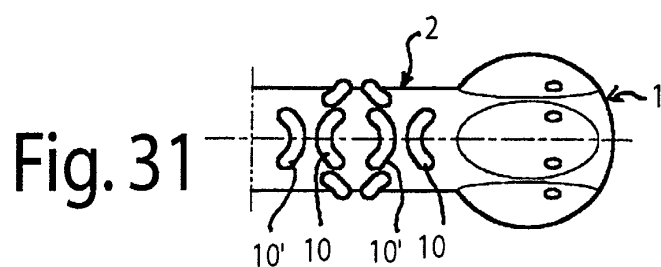
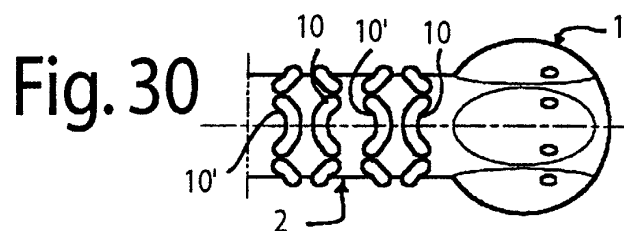
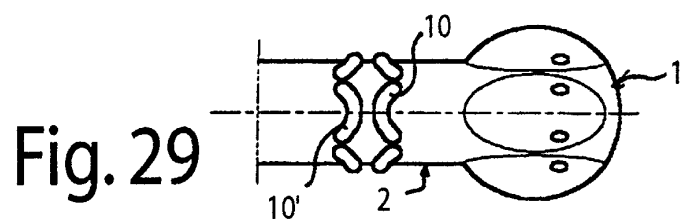
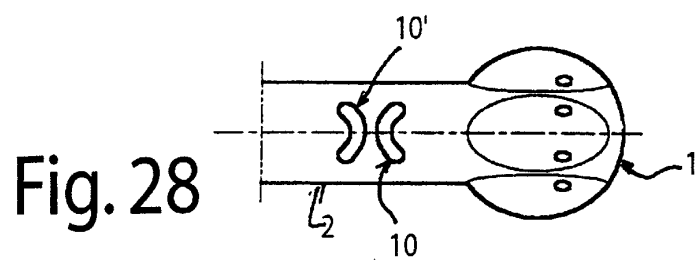


Fig. 34