UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NANOBEBE US INC.
Petitioner,

v.

MAYBORN (UK) LIMITED
MAYBORN USA, INC.
MAYBORN GROUP LIMITED
Patent Owner.

IPR2023-00465
Patent No. 11,207,244

PETITIONER'S MOTION TO SUBMIT SUPPLEMENTAL INFORMATION PURSUANT TO 37 C.F.R. § 42.123(a)

Mail Stop PATENT BOARD
Patent Trial and Appeal Board
United States Patent and Trademark Office
PO Box 1450
Alexandria, Virginia 22313-1450

Submitted Electronically

Pursuant to 37 C.F.R § 42.123(a) and under authorization from the Board, Petitioner hereby moves to submit supplemental information. Petitioner inadvertently omitted an analysis of claim 23 from Ground 1 of the Petition and from Mr. Silver's declaration. Petitioner therefore seeks to submit the following supplemental information: (a) a replacement declaration from Mr. Silver containing the omitted analysis regarding Claim 23 under the *Ishimaru* reference in Ground 1 (added material shown with highlighting in Appendix A); and (b) a Corrected Petition to include a summary of, and updated citations to, Mr. Silver's analysis (added material shown with highlighting in Appendix B).

I. STATEMENT OF FACTS

On January 13, 2023, Petitioner filed a petition for *inter partes* review ("Petition") of Claims 21-24, 26, and 27 of the '244 Patent (the "Challenged Claims"). Along with its Petition, Petitioner submitted a declaration from its expert, Mr. Brian H. Silver, which is cited in the Petition (Ex. 1005). However, Exhibit 1005 and the Petition, which tracks Mr. Silver's analysis, inadvertently omitted Mr. Silver's analysis of Claim 23 with respect to the *Ishimaru* reference (Ex. 1008) in Ground 1.

On June 16, 2023, the Board instituted IPR of the Challenged Claims. *See* Paper 10 at 2. Petitioner requested authorization to file the present motion in an email to the Board sent July 17, 2023. *See* Ex. 3001. The Board granted authorization during a July 25, 2023 conference call. *See* Paper 14 at 2.

II. LEGAL STANDARD

The Board's rules permit a party to file a motion to submit supplemental information provided that: (1) the request for authorization to file the motion is made within one month of the date the trial is instituted; and (2) the supplemental information is relevant to a claim for which trial has been instituted. 37 C.F.R. §§ 42.123(a)(1)-(a)(2).

III. ARGUMENT

A. Petitioner's Request Was Timely and the Supplemental Information is Relevant as Required by § 42.123(a)

The two requirements of § 42.123(a) are met. First, Petitioner requested authorization to file a motion to submit supplemental information on Monday, July 17, 2023 (*see* Ex. 3001) which satisfies the deadline of requesting authorization "within one month" of the June 16, 2023 trial institution date. *See* 37 C.F.R. § 42.123(a)(1).

The second requirement, relevancy to a claim at issue in the trial, is also satisfied. *See* 37 C.F.R. § 42.123(a)(2). "Relevant" in the context of § 42.123(a) means that "the supplemental information may be useful in determining the patentability or unpatentability of the challenged claims." *Ingenico Inc. v. Ioengine,* LLC, IPR2019-00416, Paper 31 at 4 (P.T.A.B. Sept. 5, 2019). Here, Petitioner's Supplemental Information is relevant to the unpatentability of instituted Claim 23. *See* Paper 11 at 38 (instituting *inter partes* review for ***claims 21-24***, 26, and 27 of the '244 patent on both the grounds asserted in the Petition). The proposed

supplemental information entails Mr. Silver's inadvertently omitted analysis of Claim 23 and a summary thereof in the petition, as shown in Appendix A and Appendix B. The supplemental information provides Mr. Silver's previously held opinion that Claim 23—a claim for which trial has been instituted (*see* Paper 11 at 38)—is disclosed or rendered obvious by *Ishimaru* in Ground 1. *See* Ex. 1005 at ¶506 ("***As I previously explained with regard to Ground 1 of the '244 Patent***, this limitation [in Claim 23] is disclosed or rendered obvious by *Ishimaru*." (emphasis added)). The supplemental information is thus narrowly tailored to address solely this issue. *See* Appendix A (showing the addition of five new paragraphs to the Silver declaration); Appendix B (showing the addition of a three-paragraph summary of Mr. Silver's analysis). Accordingly, all the supplemental information is relevant to a claim for which the trial has been instituted and should be considered.

Petitioner therefore submits that the proposed supplemental information is proper under § 42.223(a)(1) and should be entered into the record.

B. Petitioner Is Not Taking A "Wait and See" Approach

Petitioner did not take a "wait and see" approach and is not using the proposed supplemental information to bolster deficiencies identified by PO or the Board. *See Ooma, Inc. v. Deer Green Wireless LLC*, IPR2017-01541, Paper 14 at 3-4 (P.T.A.B. Jan. 23, 2018). Rather, the original filings contain clear indications that Mr. Silver's analysis of Claim 23 with respect to *Ishimaru* in Ground 1 was intended to be included at the time the Petition was filed: (a) Exhibit 1005 identifies Claim 23 in

connection with Ground 1 (Section XIII.C) in the Table of Contents—although Section XIII.C of Exhibit 1005 does not currently discuss Claim 23 (*see* Ex. 1005 at iii (showing a broken link for Claim 23 under Ground 1)); (b) Exhibit 1005 cites to Section XIII.C in its analysis of Claim 23 in Ground 2, stating that Mr. Silver "previously explained with regard to Ground 1 of the '244 Patent [that Claim 23] is disclosed or rendered obvious by *Ishimaru*" (*see* Ex. 1005 at ¶506); and (c) the original Petition's discussion of Claim 23 in the context of Ground 2 expressly states that the claim was supposed to be included in the analysis of Ground 1. *See* Paper 1 at 59 ("[Claim 23] is disclosed or rendered obvious by Ishimaru" citing "*supra*" to the Petition's analysis of Ground 1). Each of these examples show that both the declaration and Petition were intended to include an analysis of Claim 23 in Ground 1, and demonstrate that Petitioner was ***not*** seeking to "wait and see" regarding this issue, but rather simply inadvertently omitted this analysis.

Indeed, both the claim and the *Ishimaru* reference discussed in the supplemental information are already at issue in this proceeding. Petitioner is not seeking to introduce a wholly new prior art reference, nor is it adding a new claim to this proceeding. In sum, the supplemental information seeks to provide only clarifying arguments regarding the unpatentability of Claim 23 that Petitioner attempted to present in both its original Petition and original declaration. *See, e.g.*, Ex. 1005 at ¶506.

C. Patent Owner Would Not Be Prejudiced

PO would not be prejudiced by the submission of the proposed supplemental information for several reasons. First, the supplemental information does not change the substance of PO's underlying arguments. PO did not make arguments directed to this issue in its POPR. *See* Paper 6. Rather, the POPR sought denial of institution on the basis of the "domed shape" limitation for all grounds and on the basis of Petitioner's motivation to combine analysis—PO did not reference Claim 23. Second, given the limited scope of Mr. Silver's proposed supplement (only five paragraphs of added testimony), PO would have ample time to respond to the supplemental information in its response should it choose to do so. The deadline for PO to file its response is September 8, 2023—over five weeks away. *See* Paper 12 at 11. Finally, PO has not yet requested a deposition of Petitioner's declarant and will have an opportunity to cross-examine him with respect to the supplemental material within the replacement declaration. *See Ingenico Inc.*, IPR2019-00416, Paper 31 at 4 ("Permitting admission of the supplemental information at this time also will allow Patent Owner the opportunity to address this information in its Response, if it chooses to do so, and will ensure an efficient deposition of Petitioner's expert witness").

D. Just and Efficient Resolution of This Proceeding Would Be Fostered by Consideration of the Supplemental Information

The consideration of the supplemental information would also serve the

PTAB's expressed policy interest in securing "the just, speedy and inexpensive" resolution of this matter. *See* 37 C.F.R. §42.1(b). Because the Board instituted *inter partes* review with respect to Claim 23 and Ground 1, it is within the public interest for the Board to have Petitioner's full analysis before it during the trial. Consideration of the supplemental information would provide the Board with a more fully developed record to ensure the Board is able to resolve all issues of patentability of Claim 23 in view of *Ishimaru* in this proceeding.

Further, the entry of the supplemental information at this early phase of the instituted trial would not prevent timely completion of this proceeding. *Sanofi-Aventis U.S. LLC, Genzyme Corp., et al. v. Immunex Corp.*, IPR2017-01884, Paper 30 at 1 (P.T.A.B. April 16, 2018).

E. Patent Owner's Anticipated Arguments in Opposition Are Unavailing

At the June 25 conference regarding Petitioner's request for authorization to file this motion, PO pointed to *Redline Detection, LLC v. Star Envirotech, Inc.*, 811 F.3d 435, 445 (Fed. Cir. 2015), as supporting denial of this motion. PO's reliance on *Redline Detection* is misplaced. The petitioner in that case sought to submit a sixty-page "de novo expert report [] for the first time" containing new claim charts and new claim terms not argued in the petition, along with two additional references that the petitioner was aware of at the time of the filing of the petition. *Id.* at 449; *Redline Detection, LLC v. Star Envirotech, Inc.*, IPR2013-00106, Paper 24 at 2-4 (P.T.A.B.

Aug. 5, 2013). The Board found that the petitioner was taking a "wait-and-see" approach because the newly submitted declaration responded to points made in the Board's institution decision. *Redline Detection*, 811 F.3d at 448; IPR2013-00106, Paper 24 at 5. Here, the supplemental information is being used consistently with the purpose of the rule, that is to *supplement* analysis that was already provided in the expert's declaration and the Petition, and to provide additional detail that was clearly intended to be in the originally filed material, but which was inadvertently omitted.

Also, to the extent Patent Owner argues that Petitioner is seeking to modify the grounds, that is also incorrect. As shown above, Ground 1 was intended to address Claim 23, as the filed materials show. The supplemental information is merely correcting an inadvertent omission of the supporting analysis, not attempting to add a new ground to the proceeding. Moreover, Rule 123 itself is not limited to information relevant to the instituted grounds, but to any "claim for which the trial has been instituted." Indeed, Rule 123 even permits information that is "not relevant to a claim for which the trial has been instituted" when it would be in the interest of justice. 37 C.F.R. § 42.123(c). Thus, Petitioner's request is fully in accordance with the text and spirit of the rule.

Respectfully submitted,
BAKER BOTTS L.L.P.

Dated: August 2, 2023

/ Eliot D. Williams /
Eliot D. Williams (Reg. No. 50,822)

CERTIFICATE OF COMPLIANCE

I hereby certify that this Petitioner's Motion to Submit Supplemental Information Pursuant to 37 C.F.R. § 42.123(a) complies with the page limits provided by the Board in Paper No. 14 (July 27, 2023).

Dated: August 2, 2023

/ Eliot D. Williams /
Eliot D. Williams

CERTIFICATE OF SERVICE

In accordance with 37 C.F.R. §§42.6(e) and 42.105, the undersigned certifies that on August 2, 2023, a complete and entire copy of the **PETITIONER'S MOTION TO SUBMIT SUPPLEMENTAL INFORMATION PURSUANT TO 37 C.F.R. § 42.123(a)** was served on counsel of record as follows:

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APPENDIX A

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

In Re:	U.S. Patent 10,952,930 U.S. Patent 11,207,244	:	Attorney Docket No. 092130.0101
Inventor:	Arnold Rees et al	:	
Filed:	'930: November 24, 2014: '244: March 22, 2021		
Issued:	'930: March 23, 2021 '244: December 28, 2021	:	IPR No. Unassigned
Assignee:	Mayborn (UK) Limited.		

Title: Baby Bottle With Flexible Nipple Regions

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U.S. Patent and Trademark Office
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Submitted Electronically ~~via the Patent Review Processing System~~

DECLARATION OF BRIAN H. SILVER

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I, Brian H. Silver, declare as follows:

1. I have been retained by counsel for Nanobebe US Inc. (“Nanobebe”). to provide my opinion about the state of the art of the technology described in U.S. Pat. No. 10,952,930 (“the ’930 Patent”) and U.S. Pat. No. 11,207,244 (“the ’244 Patent”).

2. This report contains statements of my opinions formed to date and the bases and reasons for those opinions. I may offer additional opinions based on further review of materials in this case, including opinions and/or testimony of other expert witnesses. I make this declaration based upon my own personal knowledge and, if called upon to testify, would testify competently to the matters contained herein. For my efforts in connection with the preparation of this declaration I have been compensated at my standard rate for this type of consulting activity. My compensation is in no way contingent on the results of this *inter partes* review proceeding or any other proceedings relating to the above-captioned patent.

3. I have summarized in this section my educational background, career history, publications, and other relevant qualifications. In formulating my opinions, I have relied upon my training, knowledge, and experience in the relevant art.

I. Background and Qualifications

4. I have summarized in this section my educational background, career history, publications, and other relevant qualifications. In formulating my opinions,

I have relied upon my training, knowledge, and experience in the relevant art. A copy of my current curriculum vitae is provided as Appendix A, which provides a comprehensive description of my academic and employment history over the last forty-plus years.

A. Educational Background

5. In 1981, I received a Bachelor of Science degree in General Engineering, from the University of Illinois at Urbana-Champaign.

6. My curriculum vitae contains further details on my education, experience, publications, and other qualifications to render an expert option. Appendix A.

B. Career History

7. My work experience includes 27 years of employment at Medela, LLC, where I held the roles of Director of Product Development, Group Director of Innovation & Research, Vice-president of Innovation & Research, and Vice-president of Innovation Scouting. My responsibilities included creating and developing a continuous pipeline of new products, spearheading US-based research and IP portfolio strategy, identifying companies, products, services, and technologies for acquisition, partnership, integration or organizational learning.

8. During that time, I had many different responsibilities regarding infant feeding products including their design, development, and related research.

Examples of product development efforts I was involved with prior to June 29, 2004 priority date include:

- Starter SNS (Supplemental Nursing System), a vented baby bottle with teat-tubing assembly to provide additional nutrition or medications while breastfeeding per US Patent No. 5,474,193 Breastfeeding Assistance Device;
- Mini-Haberman Feeder (now named Mini-SpecialNeeds Feeder), a vented baby bottle and valved teat for premature or small for gestational age babies with facial or oral issues that have problems maintaining suction;
- SoftCup, a vented baby bottle with valved feeding soft spoon per US Patent No. 5,556,008 (Soft-Cup Feeder);
- New designs, materials, manufacturing process for clear polypropylene baby bottles;
- New designs for threaded collars;
- Design and development of baby bottle nipple associated with US Patent No. 7,712,617 Artificial Nipple published July 1, 2004 and US Patent No. 7,540,388 Artificial Feeding Nipple Tip with Variable Flow Construction published November 24, 2005;
- Detailed evaluation of competitive nipples; and

- Direct detailed observation of scores of infants feeding from baby bottle nipples and scores of infants breastfeeding for specific research and product evaluation purposes.

9. I am a named inventor on over sixty United States patents.

10. Further information regarding my education and experience is provided in my curriculum vitae.

C. Materials and Other Information Considered

11. I have considered information from various sources in forming my opinions. I have reviewed and considered each of the exhibits in the Exhibit List above in forming my opinions.

II. Understanding of the Law

12. I have applied the following legal principles provided to me by counsel in arriving at the opinions set forth in this report. I understand that in an inter partes review, invalidity must be shown by a preponderance of the evidence.

A. Legal Standard for Anticipation

13. I understand that, once the claims of a patent have been properly construed, the next step in determining anticipation of a patent claim requires a comparison of the properly construed claim language to the prior art on a limitation-by-limitation basis.

14. I understand that a prior art reference anticipates a challenged claim, and thus renders the claim invalid, if all limitations of the claim are disclosed in that prior art reference, either explicitly or inherently (i.e., necessarily present or implied), as arranged or combined in the claim.

15. I understand that a prior art reference can anticipate a claim even if it does not expressly spell out all the limitations arranged or combined as in the claim, if a person of skill in the art, reading the reference, would at once envisage the claimed arrangement or combination. A reference need not always include an express discussion of the actual combination to anticipate. Instead, a reference may still anticipate if that reference teaches every claimed limitation in a manner such that a person of ordinary skill in the art ("POSA") would 'at once envisage' the arrangement or combination of limitations as claimed.

16. I understand that a patent is anticipated if, before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it.

B. Legal Standard for Obviousness

17. I understand that even if a patent is not anticipated, it is still invalid if the differences between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person of ordinary skill in the pertinent art.

18. I understand that a person of ordinary skill in the art provides a reference point at the time of the claimed invention from which the prior art and claimed invention should be viewed. This reference point prevents a person of ordinary skill from using one's insight or hindsight in deciding whether a claim is obvious.

19. I also understand that an obviousness determination includes the consideration of various factors such as (1) the scope and content of the prior art, (2) the differences between the prior art and the challenged claims, (3) the level of ordinary skill in the pertinent art, and (4) the existence of secondary considerations, also referred to as objective considerations, of non-obviousness.

20. I am informed that objective considerations of non-obviousness may include (1) a long felt but unmet need in the prior art that was satisfied by the invention of the patent; (2) failure of others where the invention succeeds; (3) commercial success or lack of commercial success of processes covered by the patent; (4) unexpected results achieved by the invention; (5) praise of the invention by others skilled in the art; (6) taking of licenses under the patent by others; and (7) deliberate copying of the invention. I also understand that there must be a relationship or nexus between any such objective considerations and the claimed invention. I am aware of no such evidence relevant to this case. If any such evidence is introduced by the Patent Owner, I reserve the right to consider that evidence at

such time. I further understand that contemporaneous and independent invention by others is an objective consideration supporting an obviousness determination.

21. I understand that an obviousness evaluation can be based on a combination of multiple prior art references. I understand that the prior art references themselves may provide a suggestion, motivation, or reason to combine, but other times the nexus linking two or more prior art references may be the background knowledge of one of ordinary skill or simple common sense. I further understand that an obviousness analysis recognizes that market demand, rather than scientific literature, often drives innovation, and that a motivation to combine references may be supplied by the direction of the marketplace.

22. I understand that if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

23. I also understand that practical and common-sense considerations should guide a proper obviousness analysis, because familiar items may have obvious uses beyond their primary purposes. I further understand that a person of ordinary skill in the art looking to overcome a problem will often be able to fit the teachings of multiple publications together like pieces of a puzzle, although the prior art need not be like two puzzle pieces that must fit perfectly together. I understand

that obviousness analysis therefore considers the inferences and creative steps that a person of ordinary skill in the art would employ under the circumstances.

24. I understand that a particular combination may be proven obvious by showing that it was obvious to try the combination. For example, when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp because the result is likely the product not of innovation but of ordinary skill and common sense.

25. I understand that the combination of familiar elements according to known methods may be proven obvious when it does no more than yield predictable results. When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, obviousness likely bars its patentability.

26. It is also my understanding that there are additional considerations that may be used as further guidance as to when a claim is obvious, including the following:

- the claimed invention is a simple substitution of one known element for another to obtain predictable results;

- the claimed invention uses known techniques to improve similar devices or methods in the same way;
- the claimed invention applies a known technique to a known device or method that is ready for improvement to yield predictable results; and
- there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims.

27. It is further my understanding that a proper obviousness analysis focuses on what was known or obvious to a person of ordinary skill in the art, not just the patentee. Accordingly, I understand that any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.

28. I understand that a claim can be obvious in light of a single reference, without the need to combine references, if the limitations of the claim that are not found explicitly or inherently in the reference can be supplied by the common sense of one of skill in the art.

29. I understand that a person of ordinary skill would have been motivated to combine two pieces of prior art or substituted one prior art element for another if the substitution can be made with predictable results, even if the swapped-in element is different from the swapped-out element. In other words, the prior art need not be

like two puzzle pieces that must fit together perfectly. The relevant question is whether prior art techniques are interoperable with respect to one another, such that that a person of skill would view them as a design choice, or whether a person of skill could apply prior art techniques into a new combined system.

30. In sum, my understanding is that prior art teachings are properly combined where a person of ordinary skill in the art having the understanding and knowledge reflected in the prior art and motivated by the general problem facing the inventor, would have been led to make the combination of limitations recited in the claims. Under this analysis, the prior art references themselves, or any need or problem known in the field of endeavor at the time of the invention, can provide a reason for combining the limitations of multiple prior art references in the claimed manner.

31. I have been informed and understand that the obviousness analysis requires a comparison of the properly construed claim language to the prior art on a limitation-by-limitation basis.

C. Legal Standard for Claim Construction

32. I understand that a patent may include two types of claims, independent claims and dependent claims. An independent claim stands alone and includes only the limitations it recites. A dependent claim can depend from an independent claim or another dependent claim. I understand that a dependent claim includes all the

limitations that it recites in addition to all of the limitations recited in the claim or claims from which it depends.

33. I understand that the purpose of claim construction is to understand how one skilled in the art would have understood the claim terms at the time the claimed invention was made. I also understand that claim construction is a matter of law for the Patent Trial and Appeal Board to decide.

34. I understand that a claim construction analysis begins with the plain meaning or the ordinary and customary meaning of the claim term in the context of the patent in which the term is used, according to what is known as the Phillips standard for claim construction, described in the Phillips v. AWH Corp. decision. The ordinary and customary meaning is the meaning that the term would have to a person of ordinary skill in the relevant art at the time of the invention in light of what the patent teaches.

35. I understand that to determine how a person of ordinary skill would understand a claim term, one should look to those sources available that show what a person of skill in the art would have understood disputed claim language to mean. The available sources may include evidence intrinsic and extrinsic to the patent. Intrinsic evidence includes the words of the claims themselves, the remainder of the patent's specification, including materials incorporated by reference, and the prosecution history of the patent, including materials cited and statements made

during the prosecution history. The prosecution file history provides evidence of how both the Patent Office and the patentee understood the terms of the patent, particularly in light of what was known in the prior art. Further, where the specification describes a claim term broadly, arguments and amendments made during prosecution may require a narrower interpretation. I understand that claim terms must be construed in a manner consistent with the context of the intrinsic record.

36. I understand that while intrinsic evidence is of primary importance, extrinsic evidence, including expert and inventor testimony, dictionaries, and learned treatises, can also be considered. Extrinsic evidence, which is evidence external to the patent and the prosecution history, may include materials concerning relevant scientific principles, the meaning of technical terms, and the state of the art. For example, technical dictionaries may help one better understand the underlying technology and the way in which one of skill in the art would understand the claim terms. Extrinsic evidence should not be considered, however, divorced from the context of the intrinsic record. Evidence beyond the patent specification, prosecution history, and other claims in the patent should not be relied upon unless the claim language is ambiguous in light of these intrinsic sources.

37. I understand that words or terms, which may include phrases, should be given their ordinary and accepted meaning unless it appears that the inventors were

using them to mean something else. In making this determination, the claims, the patent specification, and the prosecution history are of paramount importance. Additionally, the specification and prosecution history must be consulted to confirm whether the patentee has acted as its own lexicographer (i.e., provided its own special meaning to any disputed terms), or intentionally disclaimed, disavowed, or surrendered any claim scope.

38. I understand that the claims of a patent define the scope of the rights conferred by the patent. Patentees are required to particularly point out and distinctly claim the subject matter which they regard as their invention. Because patentees are required to define precisely what they claim their inventions are, it is improper to construe claims in a manner different from the plain import of the terms used consistent with a patent's specification. Accordingly, a claim construction analysis must begin with, and remain centered on, the claim language itself. Additionally, the context in which a term is used in the challenged claim can be highly instructive. Likewise, other claims of the patent in question, both challenged and non-challenged, can inform the meaning of a claim term. For example, because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims. Differences among claims can also be a useful guide in understanding the meaning of particular claim terms.

39. I understand that a person of ordinary skill in the art is deemed to read a claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification. For this reason, the words of the claim must be interpreted in view of the entire specification. The specification is the primary basis for construing the claims and provides a safeguard such that correct constructions closely align with the specification. Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim as set forth in the patent itself.

40. I understand that it is improper to place too much emphasis on the plain or ordinary meaning of a claim term without adequate grounding of that term within the context of the specification of the challenged patent. Hence, claim terms should not be broadly construed to encompass subject matter that is not supported when the claims are read in light of the invention described in the specification.

41. I understand that the role of the specification is to describe and enable the invention. In turn, the claims cannot be of broader scope than the invention that is set forth in the specification. Care must be taken lest word-by-word definition, removed from the context of the patent, leads to an overall result that departs significantly from the patented invention.

42. I understand that in general, a term or phrase found in the introductory words of the claim, referred to as the preamble of the claim, should be construed as a limitation if it recites essential structure or steps, or is necessary to give life, meaning, and vitality to the claim. Conversely, a preamble term or phrase is not limiting where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention. In making this distinction, one should review the entire patent to gain an understanding of what the inventors claim they actually invented and intended to encompass by the claims.

43. I understand that language in the preamble may limit claim scope (i) if dependence on a preamble phrase for antecedent basis indicates a reliance on both the preamble and claim body to define the claimed invention; (ii) if reference to the preamble is necessary to understand limitations or terms in the claim body; (iii) if the preamble recites additional structure or steps that the specification identifies as important; or (iv) if the patentee relied on the preamble during prosecution to distinguish the prior art.

44. I understand that claim limitations may be stated in means-plus-function format in which a term is defined by functional language without a defined structure. In particular, I understand that a means-plus-function limitation should be interpreted to cover the recited function, and only the corresponding structure

described in the specification, and equivalents thereof. I also understand that a limitation will be presumed to be a means-plus-function limitation if (a) the claim limitation uses the phrase "means for"; (b) the "means for" is modified by functional language; and (c) the phrase "means for" is not modified by sufficient structure for achieving the specified function.

45. I understand that a structure will be considered structurally equivalent to the corresponding structure identified in the specification only if the differences between them are insubstantial. For example, a structure may be deemed to be a structural equivalent to the corresponding structure where the structure performs the same function in substantially the same way to achieve substantially the same result. I further understand that a structural equivalent must have been available at the time of the issuance of the claim.

46. I understand that an indefinite article "a" or "an" in patent parlance carries the meaning of "one or more" in open-ended claims containing the transitional phrase "comprising." I understand that, unless the claim is specific as to the number of limitations, the article "a" receives a singular interpretation only in rare circumstances when the patentee evinces a clear intent to so limit the article, and thus, under this conventional rule, the claim limitation "a," without more, requires "at least one."

III. Level of Skill of One of Ordinary Skill in the Art

47. In determining the characteristics of a hypothetical person of ordinary skill in the art ("POSA") of the '930 and '244 Patents at the time of the claimed invention, I considered various prior art techniques relating to baby bottles and nipple designs and technologies, the type of problems that such techniques gave rise to, and the rapidity with which innovations were made. I also considered the sophistication of the technologies involved, and the educational background and experience of those actively working in the field. I also considered the level of education that would be necessary to understand the '930 and '244 Patents. I also considered the prior art references discussed below that would show the level of skill in the relevant art. I came to the conclusion that the characteristics of a POSA in the field of the '930 and '244 Patents would have been a person with a Bachelor of Science Degree in mechanical engineering, industrial design, or similar technical field, and with 2 or more years of practical experience related to the design of infant feeding products or comparable industry. A person with less education but more relevant practical experience, or more relevant education but less practical experience, may also meet this standard. I was at least a person of ordinary skill in the art at the time of the alleged invention of the '930 and '244 Patents.

IV. Technology Background

48. I understand that analyzing the state of baby bottles and nipple designs and capabilities in the years prior to the earliest possible priority date of the ’930 and ’244 Patents can provide valuable insight into what people of ordinary skill in the art were aware of at the time, and in what direction the industry was heading.

49. I understand that the ’244 Patent is a continuation of ’930 Patent, and therefore is entitled to a priority date no earlier than the priority date of the ’930 Patent. I do not take a position regarding the correct priority date(s) of the ’930 and ’244 Patents. For purposes of my analysis, I assume both the ’930 and ’244 Patents are entitled to a priority date of June 29, 2004, which is the earliest priority date listed on the face of the patents. *See* Ex[1001] at (63), (30); Ex[1003] at (63), (30) (Related U.S. Application Data and Foreign Application Priority Data).

50. Prior to the June 29, 2004 priority date of the ’930 Patent, all of the technology at issue in the ’930 and ’244 Patents was broadly applied and well-known in the fields of baby bottles and nipple designs. In my opinion, no individual elements of the ’930 and ’244 Patents claims were novel at the time of the alleged invention, and there was nothing novel or inventive about the manner in which those elements were combined in the claims. Further, there were no technological barriers to combining these elements to form the claimed invention. Indeed, combining these elements would have yielded predictable results.

51. The ’930 and ’244 Patents relates to the well-known problem of designing a more natural feeding nipple that closely mimics the human breast. *See, e.g.*, Ex[1001] at Abs. Specifically, the ’930 and ’244 Patents attempt to address this problem through a “teat assembly” that includes a teat, nipple, base portion, and areola region. *Id.* at 3:57-4:10, Fig.4. Prior to the priority date of the ’930 and ’244 Patents, numerous breast-like nipples and bottle tops had been well known and commercially available for decades.

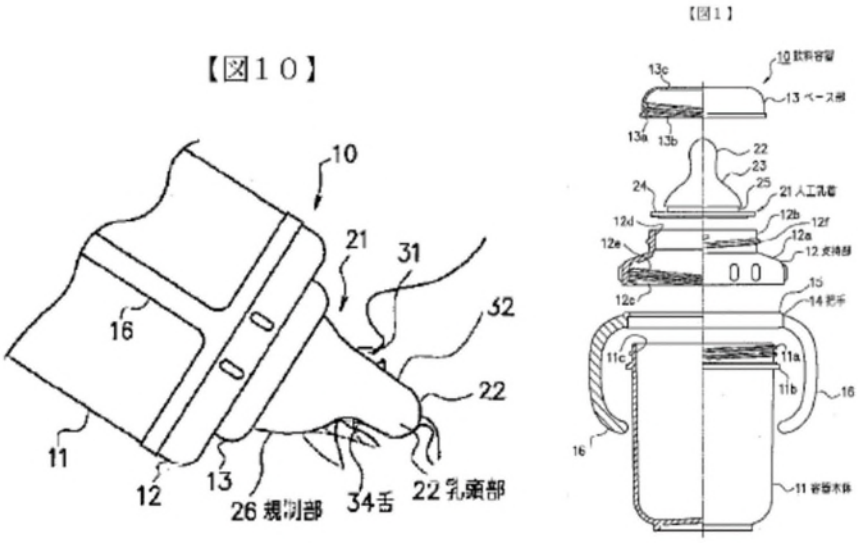
52. The ’930 and ’244 Patents further relates to the well-known problem of reducing colic due to negative pressure building up in the bottle, which may occur as the infant consumes the contents of the bottle. *Id.* at 1:47-51. Specifically, the ’930 Patent describes an air passage and lip valve portion in the teat assembly that “projects down from the flange” to allow air ingress as the contents of the bottle are consumed to allow venting between the interior of the vessel and the atmosphere. *Id.* at 5:22-27. Prior to the priority date of the ’930 and ’244 Patents, these types of valves and venting technologies in bottles and nipples had been well known and commercially available for decades.

A. Bottle and Nipple Designs.

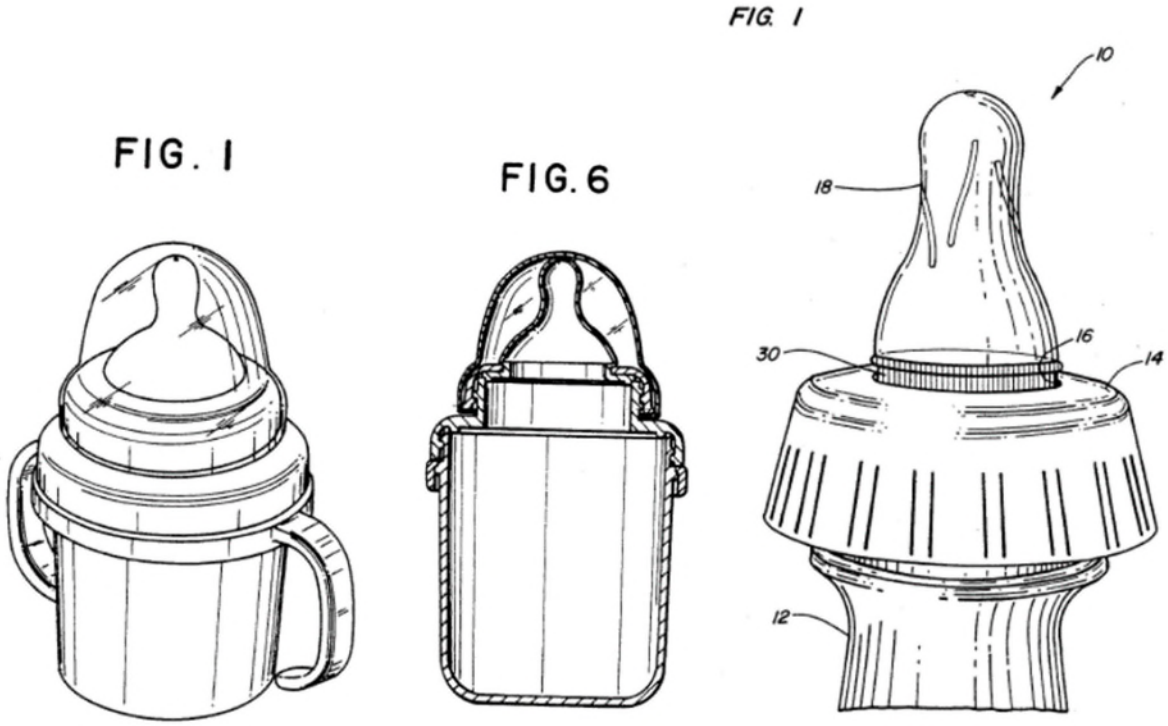
53. Early examples of bottle and nipple designs used rubber nipples that stretched over the lip of a glass bottle to attach the parts together. Over time, this connection was improved to predominantly include the use of a threaded collar to

interface with the nipple and mate the bottle and nipple together, which enhanced the security and integrity of the connection. The nipple design for mating to a threaded collar typically contained a mounting flange which was captured between the threaded collar and the top rim of the threaded neck portion of the bottle. In this configuration, the nipple was attachable and removable from the bottle. This was a very common and familiar connection in the infant feeding system market and remains so today. Examples of this evolution, including a nipple stretched over a bottle and examples of a threaded collar securing a nipple to a threaded bottle, are provided throughout the sections below.

54. The prior art shows a great variety in the sizes, shapes, features, and adornments of threaded collars used to secure the nipple to the bottle. A specific collar design choice that was well-known prior to the relevant priority date is one where the outermost surface has a sloping portion that extends outwardly and downwardly relative to said upper rim, wherein the sloping portion comprises a majority of the collar's outermost surface. Indeed, a POSA would have been familiar with such a design at the time of the earliest priority date of the '930 and '244 Patents:



See e.g., JP2000000288A at (Figs. 1, 10)

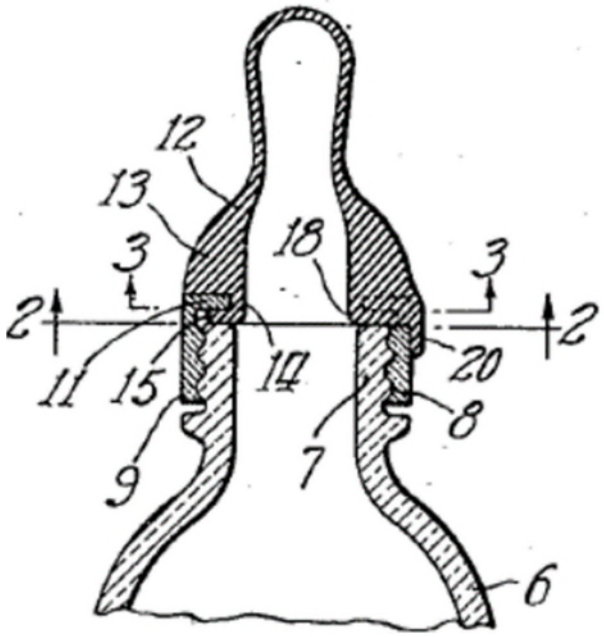


See e.g., USD315212S1 at Figs. 1-6; *see also e.g.*, USD440316S1 at Figs. 1-2, US3946888 at Fig. 1, US5542922 at Fig. 1, US5544766 at Fig. 1, US4623068 at Figs. 4, 6, US5544766 at Fig.1.

55. Early examples of bottle designs also include bottles that have a variation in internal and external circumferences. From my experience, I would expect there would be many motivations for varying these circumferences. For example, the variation could have been provided for functional purposes such as making the bottle easier to hold, making the bottle wider below the opening to hold a greater volume, making the bottle wider at the bottom so it is more stable when standing, etc. The variation in circumference could also have been a simple design choice or for specific aesthetic considerations. For example, USD440316S1 Figs. 1-2 and US3946888 Fig. 1 shown above demonstrate such a variation in bottle circumference in the prior art.

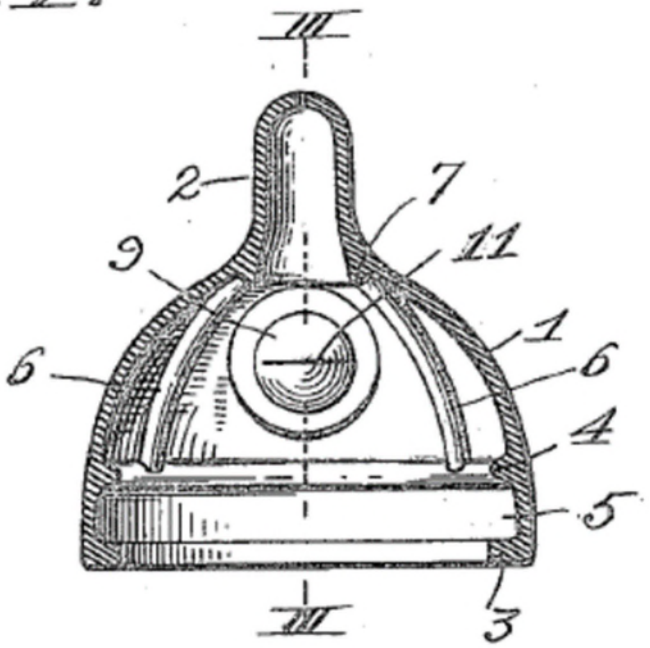
56. Prior art examples of baby bottle nipple designs also illustrate a large variety of shapes, sizes, textures, and features with many attempting to be more breast-like like in appearance, feel, and function. It was not uncommon to design a rounded, domed structure distal to the nipple portion of the teat in an attempt to emulate the shape of the breast to better imitate breast-feeding for infants. Some examples include:

Fig. 1



See US2060212 at Fig. 1.

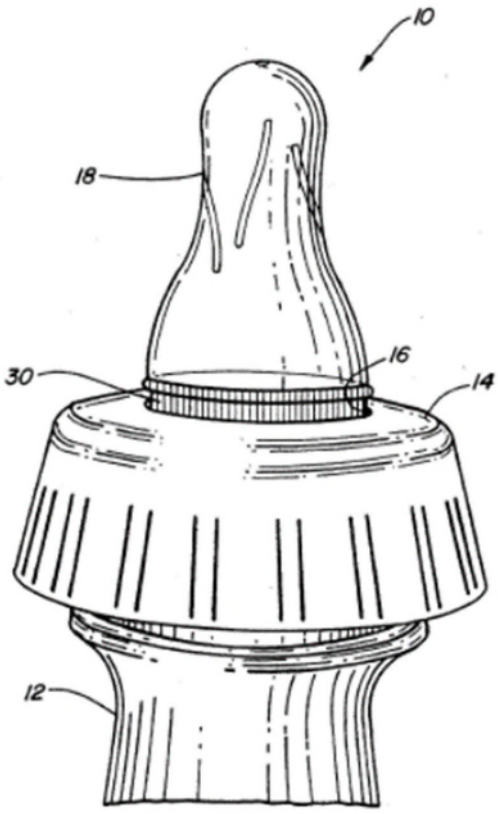
Fig. 1.



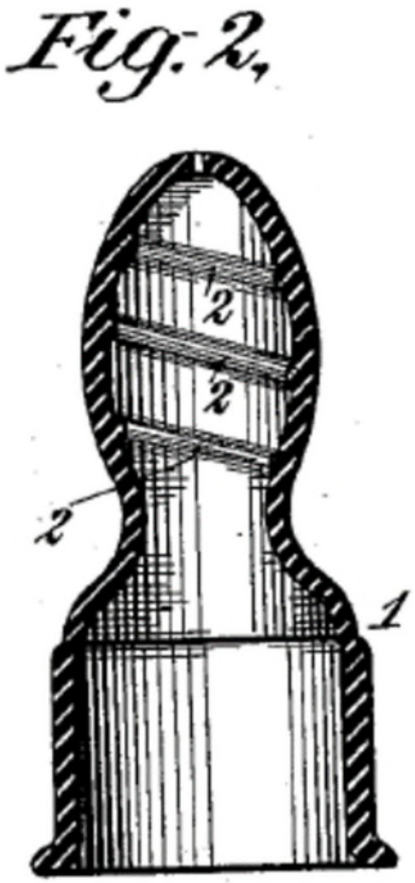
See US1146639 at Fig. 1; US2060212 at Fig. 1; US1146639 at Fig. 1; USD330938S1 at Figs. 3, 6; US5544766 at Figs. 2, 3; US4993568 at Fig. 1.

57. Support ribs were another feature incorporated into the nipple portion of some baby bottle nipples. In addition to providing support, it would have been well-known to a POSA by the priority date of the ’930 and ’244 Patents that these ribs could help maintain an open passage through the nipple when opposite side of the nipple portion were moved against each other. Support ribs were also shown distal from the nipple portion and were provided to reinforce to those areas. These support ribs created a variation in wall thickness in the areas they are located. Variation in nipple wall thickness beyond support ribs is also part of the prior art. Some examples include:

FIG. 1



See US5544766 at Fig. 1



See US589212 at Fig. 2; US3946888 at Fig. 1; US5101991 at Fig. 3; US1146639 at Fig. 1.

58. A mom's areola is the circular dark colored area of skin on her breast surrounding her nipple. The areola contains little raised bumps called Montgomery's glands that secrete a lubricating fluid. As such, the areola typically has a tactile and visually well-defined position and circumference, although it varies in size and color from mom to mom and even for an individual mom. For a good latch, the infant takes the mom's nipple, along with a good portion of areolar tissue, into its mouth and forms a seal. As there are different size areolae and different size babies, the

amount of areolar tissue remaining beyond the infant's lips will vary. Additionally, a different amount of areolar tissue may be covered by the lower lip compared to the upper lip. Some prior art baby bottle nipples have been designed to delineate their "areola" surface area, which surrounds and extends beyond the bottom of the nipple portion, via a tangible change in shape, texture, material thickness, etc. from the rest of the nipple. Some examples include:

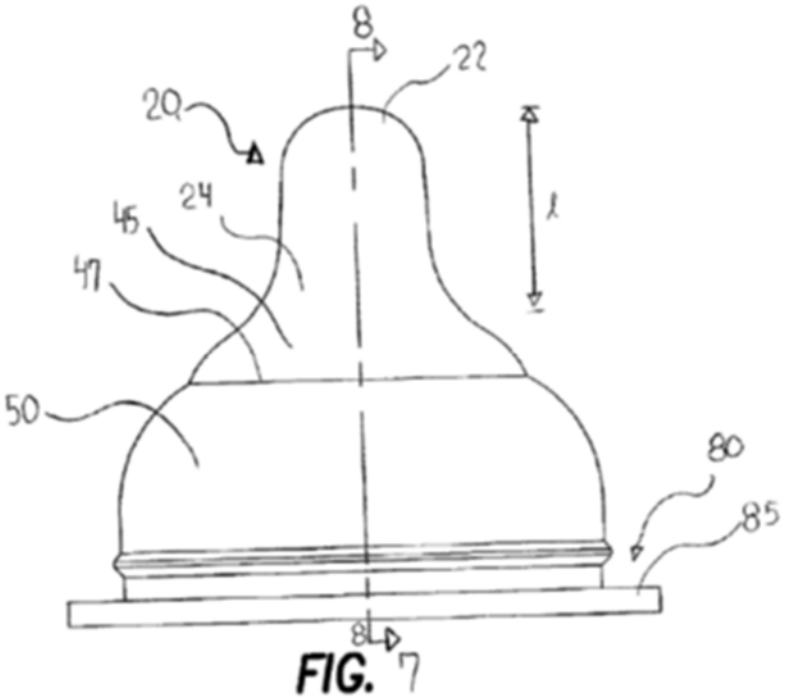
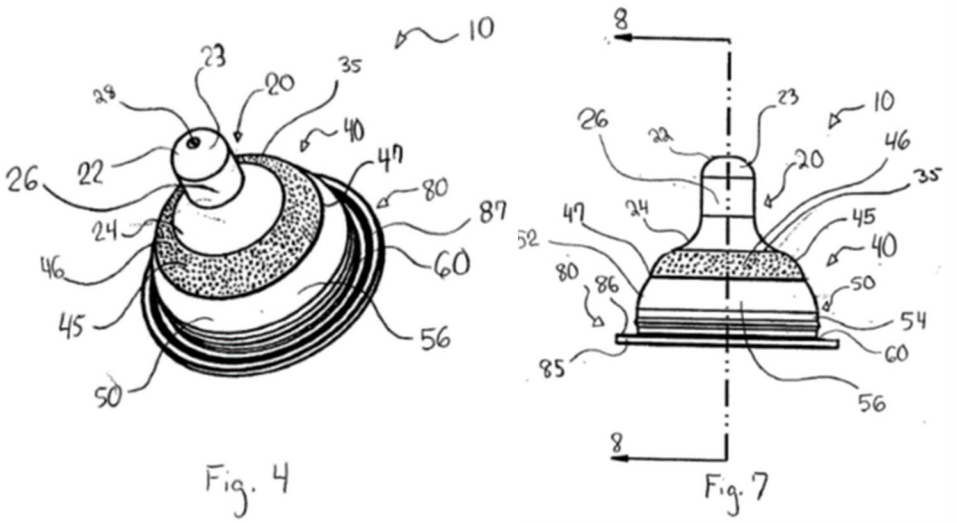


FIG. 7

See US2003/0093120 at Figs. 7, 8.



US2003/0093121 at Figs. 4, 7

59. These patent references provide illustrative examples of the areola area being defined in different yet specifically tangible and clearly delineated ways. In my opinion, similar to a mom's areola, without some clear physical delineation, there is not a clearly defined location of the bottom circumferential edge of the areola.

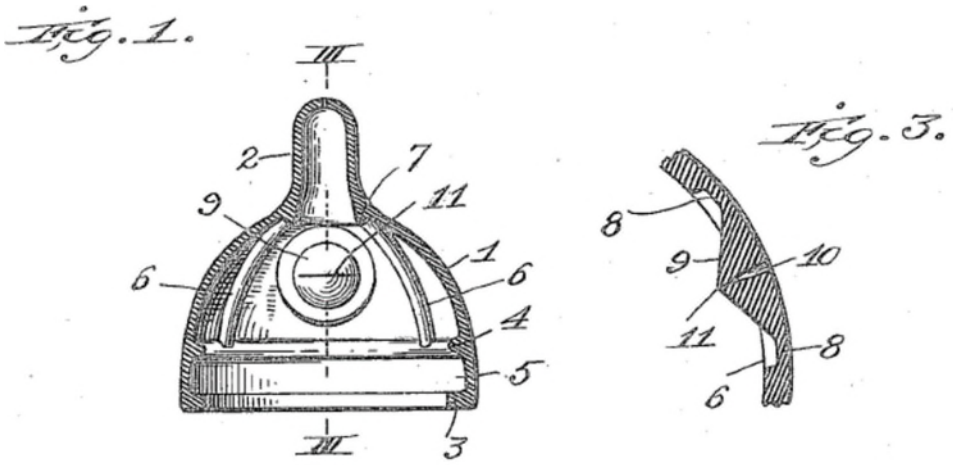
60. Baby bottle nipples utilized materials and structures that, for the most part, performed vastly different than the lactating breast during a normal breastfeed. When breastfeeding, the infant substantially elongates the mom's nipple, to about three times as long as the nipple at rest, so the tip is near the junction of the hard-soft palate. The nipple remains extended for the duration of the feed. Mom/baby dyads are typically able to achieve this positioning of the nipple even though different moms have nipples of different length and diameter. Even for an individual mom, her nipples may differ between the two sides as well as over the course of her

breastfeeding experience. On the other hand, baby bottle nipples were generally made of materials and structures that provided a given "as manufactured" size and shape and pliability. The typical nipple portion of the teat had limited stretch in actual use. Depending on the length of the nipple portion and the size and shape and pliability of the teat below the nipple portion, as well as other factors, the infant's lips would be located differently thus creating uncertainty in locating the distal end of the areola portion as well as the portion below it.

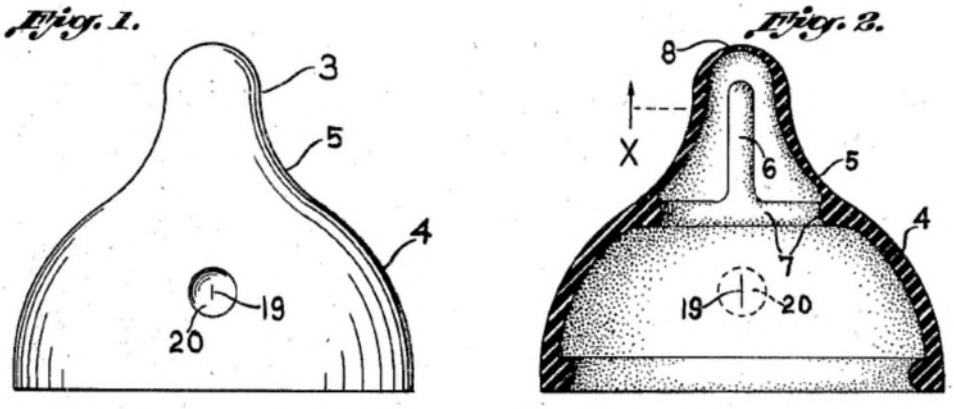
B. Pressure Equalizing Technologies

61. There is a plethora of solutions in the prior art, whether using a vent or a valved vent, to relieve negative pressure in a baby bottle feeding system. The negative pressure results from the infant applying a vacuum to the teat and removing milk. This negative pressure, if not relieved, creates several difficulties. First, it makes it more difficult for the infant to get milk or other liquid out of the bottle due to the added suction required. Second, negative pressure may result in deformation or collapsing of the nipple and restriction of fluid flow through the outlet hole(s) of the nipple. Third, it is believed that air ingress into the teat reduces the risk of colic which can otherwise occur as a result of negative pressure building up in the feeding bottle. This dynamic provided motivation for including vents in feeding systems to relieve the negative pressure. These vents were commonly small passages that connected the interior of the nipple and bottle to outside air. Early vent passages

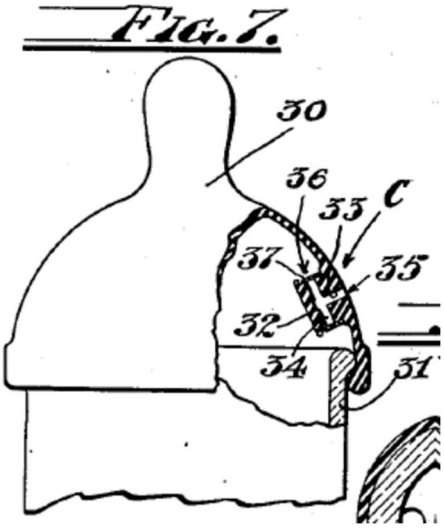
were commonly located under the threaded collar as a small egress of fluid out of the vent passage would be captured in the threaded area. Another approach to minimize potential egress of fluid through the vent was to include a one way valve with the vent so that air could enter the feeding system through the valve but liquid in the bottle is not able to flow out through the valve. The prior art illustrates that these valves could be of different design and could be in different locations, all with the objective of relieving some or all of the negative pressure created by the baby sucking on the nipple and removing milk or other liquid from the bottle. A single valved vent or multiple valved vents have been employed. An advantage of utilizing multiple valved vents is that if one or more get blocked or have a high cracking vacuum level to open the valve, one or more of the other valves can open to let the air in. Several early designs, as shown below in US1146639, US5544766, and US2321236 included a domed shaped nipple with a downward projecting valve directed radially toward the center axis of the nipple. The first two utilize slit valves. As previously discussed, as the art evolved to utilize threaded collars as the predominant approach to securing bottles and nipples, it would be obvious to substitute that type of connection.



US1146639 at Figs. 1, 3.



US5544766 at Figs., 1, 2, 8.

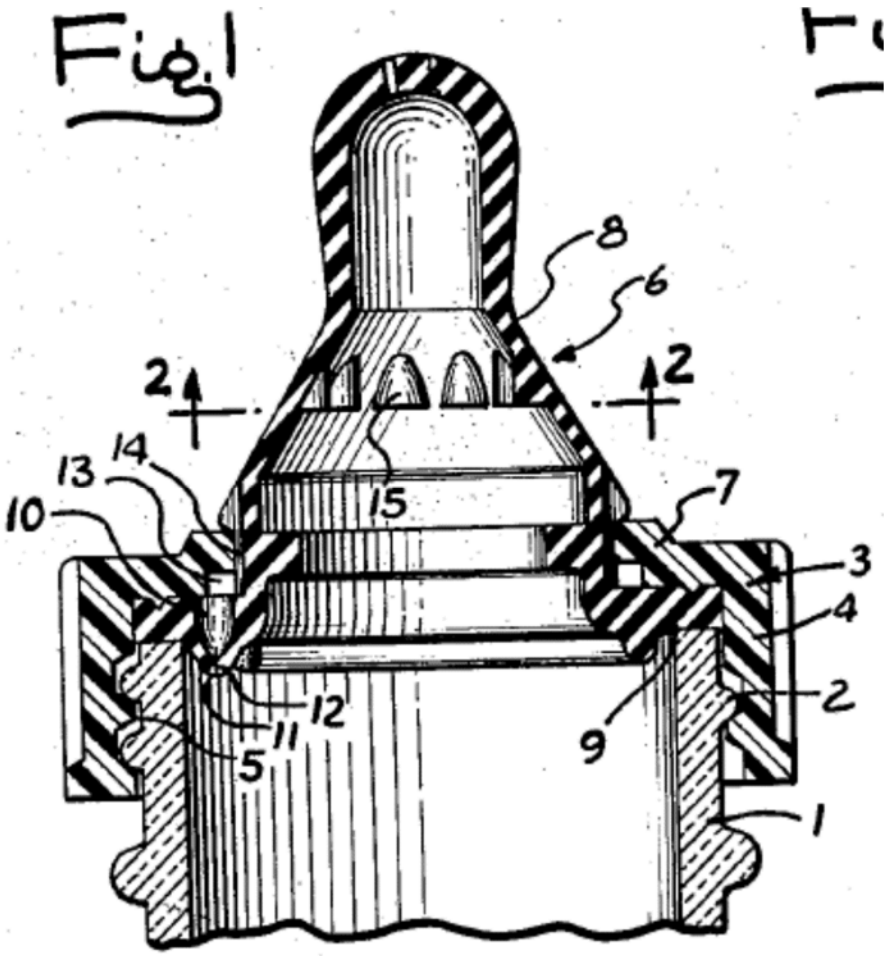


US2321236 at Fig. 7.

62. The bottle for the above patents (not shown for US1146639 and US5544766) is secured in place by the flange at the bottom of the teat. As the art evolved to utilize threaded collars as the predominant approach to securing bottles and nipples, it would be obvious to a POSA well before the priority date of the ’930 and ’244 Patents to substitute that type of connection in combination with one or more valves. See also, US726122 at Figs. 1-3.

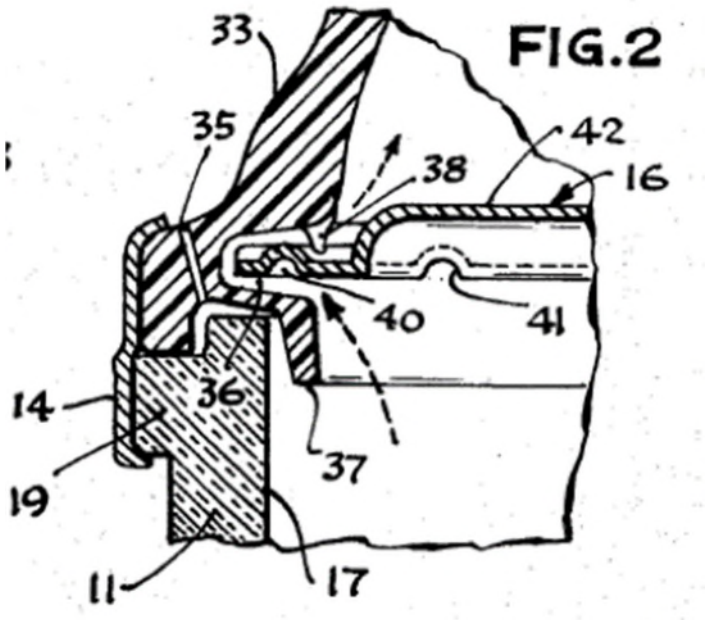
63. The use of one or multiple valves under the flange and the use of indentations near the bottom of the nipple and through flange leading into the valves was also disclosed by this time as shown in the example below. The vent passage is downwardly projecting and leads to the tip of the valve containing a slit. Air comes in through passage which is cut into the wall of the bottom of the nipple above the flange. The nipple portion of the teat has a variable wall thickness. A threaded collar,

as embodied in many of these prior art designs, captures the flange at the bottom of the nipple and secures the nipple to the threaded bottle.



See US2960088 at Fig. 1; *See* US4993568 at Fig. 1; US4623068 at Figs. 5-6.

64. Other prior art patents show valves that utilize the top of the bottle as a portion of the valve and require the two parts to work together to form the valve, such as in the example below:



US5544766 at Fig. 2

65. In summary, this review of pertinent prior art illustrates why, in my opinion, no individual elements of the ’930 and ’244 Patents claims were novel at the time of the alleged invention, and there was nothing novel or inventive about the manner in which those elements were combined in the claims. Further, there were no technological barriers to combining these elements to form the claimed invention. Indeed, and discussed further below, combining these elements would have yielded predictable results.

V. The ’930 Patent

A. Summary of the ’930 Patent

66. The ’930 Patent, titled “Baby Bottle With Flexible Nipple Region,” is directed to addressing the well-known problem of providing an aesthetically suitable and affordable, yet reliable nipple that equalizes the pressure in the bottle to prevent, for example, colic and collapse of the nipple. *See* Ex[1001] at 1:35-2:5.

67. To solve these well-known problems, the ’930 Patent discloses various symmetrical teats and vessels that comprise basic, well-known components that seek to alleviate these problems. These well-known components are described below.

68. For example, the ’930 Patent generally describes teats that comprise a teat portion, base portion, and an areola portion therebetween. *Id*. at 2:55-57, 3:59-63, 4:12-16, Figs. 1, 4. The teat also includes a flange extending “from the base of the base portion to allow fixing to a feeding bottle[.]” *Id*. at 2:57-59. The teat can optionally include various aesthetic features intended to mimic the shape and color of the human breast. *Id*. at 3:63-4:11. Teats (or nipples) comprising the general shape and features of those disclosed in the ’930 Patent were well-known at the time of the earliest priority date of the ’930 Patent. *See supra* § IV(A).

69. The ’930 Patent also discloses a flex region in the teat, “comprising three grooves or flex channels extending around an inner surface of the areola portion effectively forming circular thinned regions parallel/concentric with each

other about the axis and hence surrounding the teat portion. *Id*. at 2:64-3:1, 4:14-26. As an infant sucks on the teat, "the teat portion and areola portion flex towards and away from one another by virtue of respective collapsing and extending of the flex region around the flexed channels. *Id*. at 3:23-26. This design is intended to solve the well-known problem of relieving negative pressure in the teat: "reduced suction on the teat portion towards the base portion relaxes the flexible reduced suction whereas, as shown in in Fig. 2b, suction on the teat portion away from the base portion collapses the flexible region extending the teat portion and areola portion away from one another." *Id*. at 3:26-32. The '930 Patent also discloses a vent passage "through the elastomer material and substantially at the periphery" to allow "venting between the interior of the vessel and the atmosphere through the teat." *Id*. at 5:15-17, 5:21-32, 6:11-15. However, flex regions, vents, valves, and other techniques (not disclosed in '930 Patent) intended to reduce the negative pressure in the bottle were well-known at the time of the earliest priority date of the '930 Patent. *See supra* § IV.

70. The '930 Patent also discloses a collar, which includes "an internally threaded cylindrical portion and a downwardly domed peripheral portion surrounding it and extending from an upper end of the cylindrical portion." *Id*. at 4:54-5:3, 5:52-6:6. The screw collar is intended to provide "structural strength and a strong screw fit" to the vessel. *Id*. at 5:4-6. Collars similar to the general shape and

features of those disclosed in the ’930 Patent were well-known at the time of the earliest priority date of the ’930 Patent. *See supra* § IV.

71. The ’930 Patent does not describe any innovative or novel elements, either alone or in combination, for achieving any of the stated goals and improvements disclosed in the ’930 Patent. Instead, the ’930 Patent applies a known, routine combination of conventional components for providing an aesthetically suitable and affordable, yet reliable nipple that equalizes the pressure in the bottle to prevent, for example, colic and collapse of the nipple. For example, the ’930 Patent admits that each of the components described were individually well known prior to the priority date of the ’930 Patent. *Id*. at 1:27-2:24. As previously described, the particular combinations of these components claimed in the ’930 Patent were also either known as of the priority date or would have been obvious to a POSA at that time. *See supra* § IV.

B. Summary of the Claimed Subject Matter

72. The ’930 Patent does not claim new elements or components but claims conventional arrangements of commonplace features and elements to provide a known baby bottle nipple design. The claims recite only generic feeding bottles comprising a generic vessel, collar, and nipple.

73. The three independent claims are largely repetitive. For example, Claims 1, 13, and 14 each generally recite the same four components: (1) a feeding

vessel; (2) a collar; (3) a nipple; and (4) an air valve extending through the nipple. *Id*. at 6:61-9:7. The remaining limitations describe particular ornamental or aesthetic features of these components, and further recite a particular arrangement securing the vessel, the collar, and the nipple. *Id*.

74. The feeding bottle (with particular elements) claimed and any benefits they provide are not new and would have been obvious to, and well understood by a POSA by the early 2000s. The '930 Patent claims nothing more than a natural combination of steps known in the art.

C. '930 Patent File History

75. I have reviewed the file history for the '930 Patent. Prosecution encompassed five Non-Final Office Actions and three Final Office Actions, as well as a Pre-Appeal Brief Conference Request filed on December 26, 2018 and a subsequent Appeal Brief filed on April 12, 2019.

76. The originally filed claims in this application included seventeen total claims with three claims being independent. Independent claim 1 as originally filed recited a nipple including "a base portion having a wall thickness in a domed configuration," and "a vent passage extending through the base portion." From the onset of prosecution, the examiner and Applicant disagreed as to whether the claims required the vent passage to actually extended through the "domed configuration"

of the base portion. Ex[1002] at 621. Independent claims 9 and 13 recited similar language.

77. The First Non-Final Office Action dated May 2, 2015 rejected the independent claims as obvious in view of Morano (US Patent No.6,959,827) in further view if Uehara (US 2003/0089676).” In a Response filed September 18, 2015, Applicant did not amend the originally filed claims. Instead, Applicant argued “[c]laim 1 recites ‘a vent passage extending through the base portion.’ The base portion is defined in claim 1 as ‘having a wall thickness in a domed configuration.’ As shown on the left, vent passage 126 extends through the base portion and the base portion has a wall thickness in a domed configuration. As shown in Uehara on the right, the vent does not extend through the base portion having a domed configuration…Uehara does not disclose a vent passage extending through the base portion as a base portion is defined in claim 1.” *Id.* at 516.

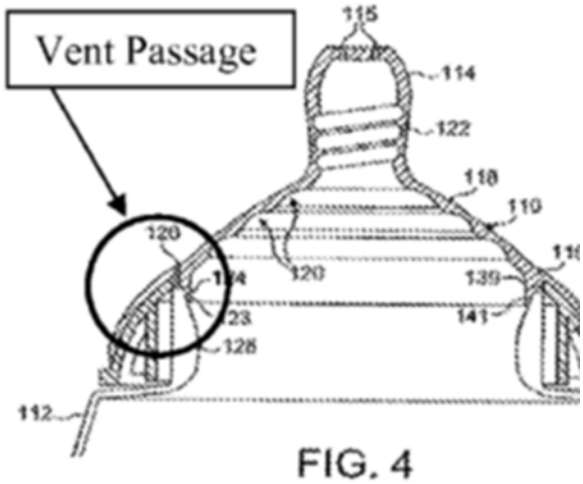
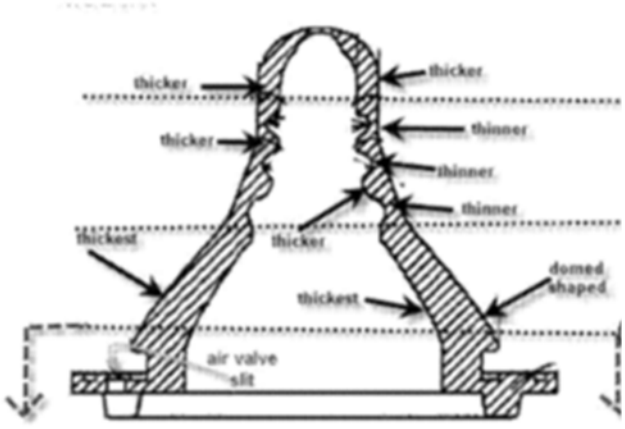


FIG. 4



78. The Examiner disagreed with this Argument. In a subsequent Final Office Action the Examiner maintained that "Uehara discloses an elastic teat portion having…a vent passage extending through the base portion" according to the figure shown above. *Id.* at 466.

79. In response, Applicant canceled all the existing independent claims and added one new independent claim 18 (which subsequently issued as claim 1) (*Id.*, at 445-445). Claim 18 was amended on April 13, 2017 to recite "at least one vent passage extending through the domed base portion" (*Id.* at 387-388). In corresponding Remarks, Applicant explained "[i]n an effort to clarify the arrangement and location of the 'vent passage' as called for by the present claims, claim 18 has been amended to require that the nipple include 'at least one vent passage' that is 'extending through the domed base portion [of the nipple].'" *Id.* at 391. On September 22, 2017, Applicant further amended claim 18 to recite "at least one vent passage extending through the domed portion of the base portion." *Id.* at 355. "[C]laim 18 has been further amended to call for 'at least one vent passage' which specifically extends 'through the domed portion of the base portion.'…and not on the flange portion" *Id.* at 360-361.

80. On March 20, 2018, Applicant added second independent claim 19 (which issued as claim 13) directed to similar features of independent claim 18, but further included "wherein an outer surface of the teat portion has a first texture and

an outer surface of the areola portion has a second texture." *Id.* at 309-310. The Examiner maintained his rejections of Claims 18 and 19 in view of Morano in further view of Uehera in further view of Ware.

81. The rejection of claims 18 and 19 were appealed, during which Applicant's arguments centered on whether the prior art disclosed a "vent passage…with a length not to extend past the collar" as recited by claim 18, and "an outer surface of the teat portion has a first texture and an outer surface of the areola portion has a second texture" as recited by claim 19. *Id.* at 259-262.

82. In the Pre-Appeal Brief Request of December 26, 2018, regarding claim 18, Applicant stated "[f]or example, Applicant's 'vent passage 126' is shown in FIG. 4…Unlike Ware, Applicant's claimed 'vent passage' has a 'length not to extend past the collar.' This keeps it out of the milk as can happen in Ware." *Id.* at 259-260. In the Appeal Brief, Applicant alleged "Morano does not teach 'a vent passage extending through the base portion, a valve portion in communication with the vent passage and projecting downwardly from the flange and Ware does not have a collar." *Id.* at 237-239. Regarding claim 19, Applicant argued that "wherein an outer surface of the teat portion has a first texture and an outer surface of the areola portion has a second texture...is not taught by the prior art…The Office Action surmises that because there are two lines on the alleged areola portion of mouth interface of Morano, the teat portion is smoother than the areola portion…but this conclusion is

without evidence and Morano lacks any such disclosure of a 'first texture' and a 'second texture.'" *Id.* at 260-261. In response, the Examiner reopened prosecution.

83. On February 10, 2020, Applicant added third independent claim 20 (which issued as claim 14). Claim 20 was identical to claim 18, except lacking the claim 18 limitation of the vessel "open top with a first diameter, and a body with a second diameter…the first diameter of the open top being less than the second diameter of the body." *Id.* at 147.

84. The examiner subsequently rejected the claims on May 5, 2020, relying on "US Patent No. 1,672,734 (Reilly, hereinafter) in view of US Patent No. 5,784,999 (Larson et al. hereinafter)." *Id.* at 94-108.

85. In response, the Applicant completely rewrote the claims. In particular, section b) of claim 20 (allowed claim 14) was amended to recite that the collar includes "an outermost surface having a sloping portion that extends outwardly and downwardly relative to said upper rim, and wherein said sloping portion comprises a majority of the collar's outermost surface." *Id.* at 75-76. Notably, section c) of claim 20 (allowed claim 14) regarding the vent passage was significantly changed. In particular, claim 20 (allowed claim 14) was amended to delete all reference to "a vent passage extending through the domed portion of the base portion with a length not to extend past the collar…, and a valve portion in communication with the vent passage and projecting downwardly from the flange" - the very claim features at

issue on Appeal (e.g., *Id.* at 237-239). This language was replaced with "a one-way air inlet valve (i) extending through said base, (ii) projecting downwardly from the base portion, (iii) having a length that does not extend past the collar's lower rim, and (iv) disposed at least partially inwardly from the collar."

86. After these amendments, the Examiner subsequently allowed the claims and a Notice of Allowance was mailed on November 16, 2020. *Id.* at 33-38.

D. '930 Patent Claims

87. The '930 Patent has 20 claims. Claims 1, 13, and 14 are independent. Claims 2-12 depend from Claim 1, Claims 15-20 depend from Claim 14. Claim 1 is illustrative and is set forth below:

(i) Claim 1

A feeding bottle comprising:

a) a vessel having an open top,

b) a collar having an upper rim and a lower rim comprising:

an internally threaded inner surface,

an outermost surface having a sloping portion that extends outwardly and downwardly relative to said upper rim, and

wherein said sloping portion comprises a majority of the collar's outermost surface,

c) a nipple having:

a teat portion having a variable wall thickness including an aperture,

a base portion having a domed configuration,

an areola portion between the teat portion and the base portion,

a flange depending from the base portion,

a one-way air inlet valve (i) extending through said base, (ii) projecting downwardly from the base portion, (iii) having a length that does not extend past the collar's lower rim, and (iv) disposed at least partially inwardly from the collar;

the flange being arranged to seal with the vessel;

d) the nipple being secured to the collar by sealingly capturing an inner edge of the collar between the base portion and the flange; and,

e) the nipple being secured to the vessel by capturing the flange of the nipple between the collar and the open top of the vessel.

VI. The ’244 Patent

A. Summary of the ’244 Patent

88. The ’244 Patent, titled “Baby Bottle With Flexible Nipple Regions,” is a continuation of the ’930 Patent. *See* Ex[1003] at 1. Accordingly, I incorporate my analysis of the summary of the ’930 Patent. *See supra* § V.A.

B. Summary of the Claimed Subject Matter

89. The ’244 Patent does not claim new elements or components but claims conventional arrangements of commonplace features and elements to provide a

known baby bottle nipple design. The claims recite only generic feeding bottles comprising a generic vessel, collar, and nipple.

90. The four independent claims are largely repetitive. For example, Claims 1, 21, 30, and 31 each generally recite the same three components: (1) a feeding vessel; (2) a collar; and (3) a nipple. *Id*. at 6:60-10:25. The nipple and collar are claimed as part of a cover assembly. *Id*. Claims 30 and 31 further recite a base portion. *Id*. The remaining limitations describe particular ornamental or aesthetic features of these components, and further recite a particular arrangement securing the vessel, the collar, and the nipple. *Id*.

91. The feeding bottle (with particular elements) claimed and any benefits they provide are not new and would have been obvious to, and well understood by a POSA by the early 2000s. The ’244 Patent claims nothing more than a natural combination of steps known in the art.

C. ’244 Patent File History

92. The ’244 Patent is a continuation of the ’930 Patent, with a substantially identical specification. *See* Ex[1003] at 1. I understand that the file history of a parent patent may be useful in interpreting subsequent continuations. Accordingly, I incorporate my analysis of the file history of the ’930 Patent. *See supra* § V.C.

93. Prosecution of the ’244 Patent further encompassed one Non-Final Office Action, and one Response including claim amendments, with a Notice of Allowance mailed thereafter. The originally filed claims were rewritten after a preliminary amendment to include 39 new claims with claims 18, 37 (issued as Claim 21), 46 and 47 being independent.

D. ’244 Patent Claims

94. The ’244 Patent has 31 claims. Claims 1, 21, 30, and 31 are independent. Claims 2-20 depend from Claim 1, and Claims 22-29 depend from Claim 21. Claim 21 is illustrative and is set forth below:

(i) Claim 21

A drinking vessel comprising:

a container comprising a varying internal circumference and an opening into the container; and

a cover assembly configured to couple to the container over the opening, the cover assembly comprising:

i. a nipple comprising a mouthpiece configured to allow liquid flow through the nipple to an aperture, a flex region configured to allow flex of the mouthpiece towards and away from a lower portion of the nipple, the mouthpiece defining a bite region, and a flange depending from the lower

portion of the nipple defining the nipple circumference furthest from the aperture; and

ii. a collar configured to removably couple to the nipple to seal over the opening of the container; and

wherein the collar and the lower portion of the nipple together define a downward domed shape that extends outwardly and downwardly from the flex region of the nipple towards a widest circumferential edge of the collar.

VII. The Challenged Claims

95. The ’930 Patent has 20 claims. I understand that Petitioner is challenging the validity of Claims 14, 16, 17, and 19 of the ’930 Patent in the Petition for *Inter Partes* Review. I have considered invalidity with respect to Claims 14, 16, 17, and 19 of the ’930 Patent.

96. The ’244 Patent has 31 claims. I understand that Petitioner is challenging the validity of Claims 21-24, 26, and 27 of the ’244 Patent in the Petition for *Inter Partes* Review. I have considered invalidity with respect to Claims 21–24, 26, and 27 of the ’244 Patent.

VIII. Claim Construction

97. For purposes of this *Inter Partes* Review, I have reviewed the parties’ proposed constructions advanced in the pending district court litigation. I previously provided opinions on the correct construction afforded certain terms in connection

with the district court litigation. Ex[1020]. My opinions expressed in this previous declaration remain unchanged.

98. I have also considered the claim language, specification, and the prosecution history, to determine the ordinary and customary meaning of the claim language as it would have been understood by a person of ordinary skill in the art at the time of the invention.

A. "a teat portion" ('930 Patent Claims 14, 15)

99. Claims 14 and 15 of the '930 Patent recite "a teat portion." *See* Ex[1001] at Claims 14, 15.

100. Claim 14, for example, recites: "a teat portion having a variable wall thickness including an aperture . . . " Ex[1001] at Claim 14 (emphasis added).

101. I understand that Petitioner construes this term to mean "the entire part projecting generally perpendicular to the mouth of the vessel, disposed above the areola portion, which extends into a baby's mouth for feeding." Ex[1018] at 12.

102. I understand that Patent Owner alleges this term to mean "part projection generally perpendicular to the mouth of the vessel and disposed above the areola portion." *Id*.

103. For purposes of this proceeding, I offer no opinion with regard to the correct construction of "a teat portion." Except where noted below, my analysis

applies to both Petitioner's and Patent Owner's proposed constructions, and under either construction the grounds render the claims anticipated/obvious.

B. "an areola portion" ('930 Patent Claims 14, 18)

104. Claims 14 and 15 of the '930 Patent recite "a teat portion." *See* Ex[1001] at Claims 14, 15.

105. Claim 14, for example, recites: "an areola portion between the teat portion and the base portion . . . " Ex[1001] at Claim 14 (emphasis added).

106. I understand that Petitioner construes this term to mean "a surface area, that includes a different characteristic and functionality than the rest of the nipple, surrounding and extending beyond the bottom of the teat portion [as construed by Petitioner]." Ex[1018] at 13.

107. I understand that Patent Owner alleges this term to mean "part extending beyond the bottom of the teat portion" *Id*.

108. For purposes of this proceeding, I offer no opinion with regard to the correct construction of "an areola portion." Except where noted below, my analysis applies to both Petitioner's and Patent Owner's proposed constructions, and under either construction the grounds render the claims anticipated/obvious.

C. "base portion" ('930 Patent Claim 14)

109. Claim 14 of the '930 Patent recites "base portion." *See* Ex[1001] at Claim 14.

110. Claim 14, for example, recites: "a base portion having a domed configuration . . . " Ex[1001] at Claim 14 (emphasis added).

111. I understand that Petitioner construes this term to mean "the lowest portion of the nipple, beginning where the nipple meets the top rim of the vessel, that is mountable to the vessel." Ex[1018] at 16.

112. I understand that Patent Owner alleges this term to mean "part below the areola portion." *Id*.

113. For purposes of this proceeding, I offer no opinion with regard to the correct construction of "base portion." Except where noted below, my analysis applies to both Petitioner's and Patent Owner's proposed constructions, and under either construction the grounds render the claims anticipated/obvious.

D. "domed configuration / a base portion having a domed configuration" ('930 Patent Claim 14)

114. Claim 14 of the '930 Patent recites "a domed configuration" and "a base portion having a domed configuration." *See* Ex[1001] at Claim 14.

115. Claim 14, for example, recites: "a base portion having a domed configuration . . . " Ex[1001] at Claim 14 (emphasis added).

116. I understand that Petitioner construes this term to mean "having a rounded shape in profile." Ex[1018] at 17.

117. I understand that Patent Owner alleges this term to mean "wide circular base with an arc-shaped cross-sectional profile." *Id.*

118. For purposes of this proceeding, I offer no opinion with regard to the correct construction of "a domed configuration / a base portion having a domed configuration." Except where noted below, my analysis applies to both Petitioner's and Patent Owner's proposed constructions, and under either construction the grounds render the claims anticipated/obvious.

E. "a teat portion having a variable wall thickness" ('930 Patent Claim 14)

119. Claim 14 of the '930 Patent recites "a teat portion having a variable wall thickness." *See* Ex[1001] at Claim 14.

120. Claim 14, for example, recites: "a teat portion having a variable wall thickness including an aperture. . . " Ex[1001] at Claim 14 (emphasis added).

121. I understand that Petitioner construes this term to mean "a teat portion having a helical groove." Ex[1018] at 19.

122. I understand that Patent Owner alleges this term should be afforded its plain and ordinary meaning. *Id.*

123. For purposes of this proceeding, I offer no opinion with regard to the correct construction of "a teat portion having a variable wall thickness." Except where noted below, my analysis applies to both Petitioner's and Patent Owner's proposed constructions, and under either construction the grounds render the claims anticipated/obvious.

F. "at least partially inwardly" ('930 Patent Claim 14)

124. Claim 14 of the '930 Patent recites "a teat portion having a variable wall thickness." *See* Ex[1001] at Claim 14.

125. Claim 14, for example, recites: "a one-way inlet valve . . . (iv) disposed at least partially inwardly from the collar . . ." Ex[1001] at Claim 14 (emphasis added).

126. I understand that Petitioner construes this term to be indefinite under 35 U.S.C. § 112(b). Ex[1018] at 20.

127. I understand that Patent Owner alleges this term should be afforded its plain and ordinary meaning. *Id.*

128. I previously provided an opinion on the correct construction afforded "at least partially inwardly" in connection with the district court litigation. Specifically, after reviewing the claim language, specification, and the prosecution history of the '930 Patent, it is my opinion that "at least partially inwardly" is indefinite under 35 U.S.C. § 112(b). Ex[1020]. My opinions expressed in this expert declaration are merely intended with respect to the validity of '930 and '244 Patents with regard to anticipation and/or obviousness. They are not intended to represent my opinion on the validity of the claims under 35 U.S.C. § 112(b), nor do they represent an admission or waiver of Petitioner's defenses in the related litigation or my opinions expressed in support thereof. *See* Ex[1018]; Ex[1020].

129. For purposes of this proceeding, I apply Patent Owner's proposed construction that this term should be afforded its plain and ordinary meaning. As noted below, under my analysis of Patent Owner's proposed construction of "at least partially inwardly" the grounds below render the claims anticipated/obvious.

G. "flex region" ('244 Patent Claim 21)

130. Claim 21 of the '244 Patent recites "flex region." *See* Ex[1003] at Claim 21.

131. Claim 21, for example, recites: "a flex region configured to allow flex of the mouthpiece towards and away from a lower portion of the nipple . . . " Ex[1003] at Claim 21 (emphasis added).

132. I understand that Petitioner construes this term to mean "a region having characteristics, e.g., groves or channels, specifically designed to enable flexing." Ex[1003] at 21.

133. I understand that Patent Owner alleges this term to mean "a region having surface characteristics that control flexing." *Id.*

134. For purposes of this proceeding, I offer no opinion with regard to the correct construction of "flex region." Except where noted below, my analysis applies to both Petitioner's and Patent Owner's proposed constructions, and under either construction the grounds render the claims anticipated/obvious.

H. "mouthpiece" ('244 Patent Claims 21, 24, 26)

135. Claims 21, 24, and 26 of the '244 Patent recites "mouthpiece." *See* Ex[1003] at Claim 21, 24, 26.

136. Claim 21, for example, recites: "a flex region configured to allow flex of the ***mouthpiece*** towards and away from a lower portion of the nipple . . . " Ex[1003] at Claim 21 (emphasis added).

137. I understand that Petitioner construes this term to mean "teat portion, i.e., the entire part projecting generally perpendicular to the mouth of the vessel, disposed above the areola portion, which extends into a baby's mouth for feeding." Ex[1018] at 24.

138. I understand that Patent Owner alleges this term to mean "part projecting generally perpendicular to the mouth of the vessel and disposed above the areola portion." *Id.*

139. For purposes of this proceeding, I offer no opinion with regard to the correct construction of "mouthpiece." Except where noted below, my analysis applies to both Petitioner's and Patent Owner's proposed constructions, and under either construction the grounds render the claims anticipated/obvious.

I. "flex of the mouthpiece towards and away from a lower portion of the nipple" ('244 Patent Claim 21)

140. Claim 21 of the '244 Patent recites "flex of the mouthpiece towards and away from a lower portion of the nipple." *See* Ex[1003] at Claim 21.

141. Claim 21, for example, recites: "a flex region configured to allow ***flex of the mouthpiece towards and away from a lower portion of the nipple*** . . . " Ex[1003] at Claim 21 (emphasis added).

142. I understand that Petitioner construes this term to mean "up and down movement of the mouthpiece relative to a lower portion of the nipple." Ex[1018] at 25.

143. I understand that Patent Owner alleges this term should be afforded its plain and ordinary meaning. *Id.*

144. For purposes of this proceeding, I offer no opinion with regard to the correct construction of "flex of the mouthpiece towards and away from a lower portion of the nipple." Except where noted below, my analysis applies to both Petitioner's and Patent Owner's proposed constructions, and under either construction the grounds render the claims anticipated/obvious.

IX. Summary of the Prior Art

145. There are many patents and publications which constitute prior art to the '930 and '244 Patents. I have reviewed and considered all of the following prior art patent and printed publications, which I believe were all publicly available or filed with the USPTO prior to June 29, 2004, the earliest priority date claimed on the face of the '930 and '244 Patents. A description of these references follows.

Meyers was cited, but not relied upon, by the USPTO during prosecution of the '244 Patent. *See* Ex[1001] at (56) (References Cited).

A. Meyers

146. U.S. Patent No. 6,032,810 ("Meyers") was filed July 17, 1997 and issued March 7, 2000. Ex[1006] at 1. *Meyers* qualifies as prior art at least because it was published more than one year prior to the earliest effective priority date of the '930 Patent. 35 U.S.C. §§ 102(a) and (b).

147. *Meyers* discloses a one-piece, integral nipple/collar unit for use in conjunction with nurser bottles. Ex[1006] at 1:39-41, 3:1-3. Nipple 6 has an upper portion 25 and base area 26 molded over collar 2. *Id.* at 3:66-4:3. Nipple 6 covers the entire exterior side 3 of collar 4. *Id.* at 4:14-16. The collar includes a fastener 5 such as conventional threads on the interior surface 4 of the collar 2. Rigid collar 2 "includes at least one interlocking portion…shaped to physically capture a portion of nipple 6 to ensure a secure interconnection between collar 2 and nipple 6." *Id.* at 3:25-32. U-shaped ring portion 20 of collar 2 assists in forming a leak resistant seal with an associated nurser bottle 10. In particular, flat lowermost surface 24 "assists in forming a leak resistant seal with an associated nurser bottle 10." *Id.* at 3:51-60. "Nipple 6 also includes a flat sealing flange 29…configured to seal against a neck portion 11 of an associated nurser bottle 11 to form a tight liquid seal." *Id.* at 4:6-10. "Vent 35 is in the form of a channel-shaped aperture extending radially outwardly

along sealing flange 29…[and] permits air to be drawn into the nurser bottle around collar threads 5." Figs. 6-12 illustrate a method of making the one-piece nipple collar 1 using overmolding. *Id.* at 1:67, 4:41-65, Claim 1.

B. *Sepehr*

148. GB Patent No. 2,250,017A ("*Sepehr*") was filed October 31, 1991 and published May 27, 1992. Ex[1007] at 1. *Sepehr* qualifies as prior art at least because it was published more than one year prior to the earliest effective priority date of the '930 Patent. 35 U.S.C. §§ 102(a) and (b).

149. *Sepehr* discloses a teat from which a child can suck liquid from a nursing bottle and an automatic "one-way air inlet valve 2." Ex[1007] at Abs., Claim 2. The valve includes "a concave elongate semi spherical shape with a slit at its dome which can be produced of silicone…in a single mould." *Id.* at 2:13-18. "[S]ince the valve operates on the principal of pressure difference between inside and outside the baby bottle it may be located at any part of the bottle. Alternatively, one or more valves may be produced as integral part(s) of the teat which…can easily be cleaned together with the teat following each use." *Id.* at 2:21-26. As the baby drinks, "vacuum is formed within the bottle resulting in the formation of a pressure difference outside the valve 2 which causes the flow of air through the slit 3 into the bottle, hence, maintains easy flow of milk…during feeding." *Id.* at 3:15-19.

C. *Ishimaru*

150. JP Patent No. P2001-299877 (Ex[1008], "*Ishimaru*") was filed on April 24, 2000 and published October 30, 2001. Ex[1008] at 1. *Ishimaru* qualifies as prior art at least because it was published more than one year prior to the priority date of the '930 Patent. 35 U.S.C. §§ 102(a) and (b).

151. *Ishimaru* discloses "an artificial nipple which is more similar to the mother's nipple…having a nipple trunk [110] and teat portion [120] protruding from this nipple trunk, and this artificial nipple 100 is constituted in a manner wherein the…teat portion 120 and/or the…nipple trunk 110 is provided with an elongate portion 122, which is more easily extensible than other portions." Ex[1008] at Abs., Fig. 1. "[T]hin walled portions 122, 122…are elongation portions with a thin wall, are formed in a groove-like pattern, for example, at seven annular locations, as sown in Fig. 1." *Id.* at ¶ 41. Thin walled portions can also be formed in "a spiral shape." *Id.* at ¶ 60. Nipple 100 is mounted on a feeding bottle containing milk, and the nipple is inserted into the mouth of the infant who sucks the milk up into the nipple 100. *Id.* at ¶ 43, Fig. 5. "In this state, the tip of the teat portion 120…is in contact with the tip of the sucking fossa 220 of the infant 200" performing a "suckling movement by peristaltic movement of the tongue." *Id.* at ¶ 44. Further, "there is a base portion 112 with a nipple side vent hole, which is a flange portion for connecting to a feeding bottle main body." *Id.* at ¶ 37.

D. *Kurkjian*

152. U.S. Patent No. 2,093,730 (Ex[1009], "*Kurkjian*") was filed on August 23, 1935 and issued September 21, 1937. Ex[1009] at 1. *Kurkjian* thus qualifies as prior art at least because it was published more than one year prior to the earliest effective priority date of the '930 Patent. 35 U.S.C. §§ 102(a) and (b).

153. *Kurkjian* discloses a "flexible nipple having a vented flexible flange" Ex[1009] at 1:10-11. The nipple comprises a "body portion constituting a neck . . . and preferably annular flange 4." *Id*. at 1:48-53. The body portion of the nipple includes "overhanging shoulder 6 adjacent the point of junction between the body portion 3 and the flange 4." *Id.* at 2:6-9. The flange includes a "single venting aperture 5 and it should be understood that the flange 4 is integral with the body portion 3 of the nipple." *Id.* "It should be understood that as a vacuum is built up in the bottle through the baby sucking upon the nipple or body portion 13 thereof, the flange 14 may flex away from the inner face of the flange 20 of the cap 17 and draw the Upper face of the flange adjacent the vent 15 away from the inner face of the flange 20 of the cap 17 and allow air to pass under the shoulder 16 and between the body portion 13 of the nipple and the edge of the aperture 18, under the under face of the flange 20 of the cap 17, and through the vent opening 15 into the bottle." *Id.* at 2:54-3:10.

E. *Atkin*

154. U.S. Patent No. 4,613,050 (Ex[1010], "*Atkin*") was filed September 27, 1984 and issued September 23, 1986. Ex[1010] at 1. *Atkin* thus qualifies as prior art at least because it was published more than one year prior to the earliest effective priority date of the '930 Patent. 35 U.S.C. §§ 102(a), (b), and (b).

155. *Atkin* discloses a nipple design to overcomes the problem of "teat collapse, especially in the case of the commonly preferred soft teat" by "arranging for [a] lip [valve] to fit with a small clearance inside the bottle neck…such that when the cap is screwed down, it acts on the teat to deform the annular flange." Ex[1010] at 1:33-35. *Atkin* discloses in Fig. 7A teat 48 screwed loosely on the bottle neck. "[T]eat flange 32 and inner depending lip 34 are undistorted, with the lip 34 spaced with small radial clearance within the next of the bottle." *Id.* at 5:55-65. Fig. 7B "shows the effect of tightening the cap/teat subassembly by screwing the cap [50] further…The annular flange 32 is deformed downwardly at its inner end region 52…, [and i]n consequence, the inner depending lip 34 is turned radially outwardly to engage and seal with the interior wall of the bottle next, as indicated at 54." *Id.* at 5:63-6:9. "The manner in which the depending lip 34 acts as a flap valve, in use of the bottle by a baby, can…be visualized from Figure 7B. External air pressure exists on the…outer side of the lip [34], in space 56, due to free passage of air past the interrupted screwthreads 16, 36 and the radial grooves 33 in the teat flange 32.

Consequently, if pressure in the bottle…fall[s] due to feed being sucked out through the teat, the lip 34 is deformed inwardly…, i.e. opening in the manner of a flap valve to let air into the bottle." *Id.* at 6:12-23.

X. '930 PATENT GROUND 1: *Meyers* in View of *Sepehr* Renders Claims 14, 16, 17, and 19 Obvious in View of the Knowledge of a Person of Ordinary Skill in the Art

156. As discussed below, *Meyers* in view of *Sepehr* discloses and renders obvious each and every claim limitation of at least Claims 14, 16, 17, and 19 of the '930 Patent. To the extent there are any differences between Claims 14, 16, 17, and 19 of the '930 Patent and the subject matter taught by *Meyers-Sepehr*, those differences would have been obvious to a POSA, and thus, *Meyers-Sepehr* still renders at least Claims 14, 16, 17, and 19 of the '930 Patent obvious in view of the knowledge of a POSA at the time of the purported invention.

157. In reaching this conclusion, I have considered the disclosures of these prior art references, the motivations to combine these references, and the knowledge of a POSA, as discussed below. In my opinion, a POSA reviewing these disclosures prior to the priority date of the patents would have been motivated to design a nipple and collar design similar to the following:

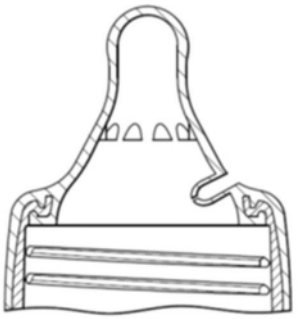


FIG. 1

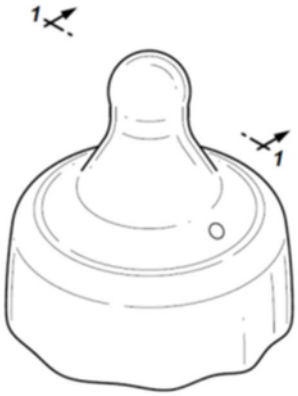


FIG. 2

158. Such a design would have been obvious to a POSA no later than the priority date of the ’930 Patent, and would render the challenged claims of the ’930 Patent obvious.

A. Motivation For Combining Meyers and *Sepehr*

159. A POSA would have considered *Meyers* and *Sepehr* in the same field of endeavor as the ’930 Patent as they all relate to nursing bottles and nipples that attach thereto. Ex[1006] at 1:1-12; Ex[1007] at 1:3-7. A POSA would be motivated to modify or combine the nipples of *Meyers* and *Sepehr* because they both teach analogous solutions for, and describe the benefits of, nipples with air vents and collars to provide a durable, hygienic design that relieves negative pressure, and permits easy cleaning. Ex[1006] at 4:22-35; Ex[1007] at Abs., 2:4-11. Moreover, each reference teaches the same solution: using a rounded nipple with particular design elements that imitate feeding from a human breast, and providing an air vent

in a location that will reliably vent the interior of the vessel to equalize the pressure between the vessel and the atmosphere. *Id*.

160. A POSA would be further motivated and find it obvious, to the extent not disclosed by *Meyers*, to modify the nipple design of *Meyers* as taught by one or more embodiments of *Sepehr* in order to further improve reliability of the nipple to equalize the pressure. Ex[1006] at 4:22-35; Ex[1007] at 1:9-16, 2:4-11, Fig. 3. Both *Meyers* and *Sepehr* identify the need to equalize the pressure in the bottle to prevent, for example, nipple collapse and colic. Ex[1006] at 4:22-35; Ex[1007] at 1:9-16, 2:4-11. *Sepehr* discloses without effective venting "a vacuum is created within the bottle often causing severe pain in the stomach." Ex[1007] at 1:9-16, 2:4-11.

161. A POSA would have been motivated to combine *Meyers* and *Sepehr* because in addition to each being directed to the same problem and using the same solution, they analogously describe nipple designs with air vents and other means for equalizing the pressure between the interior of the vessel and the atmosphere. Ex[1006] at 4:22-35; Ex[1007] at 1:9-16, 2:4-11. *Meyers* discloses that it's air vent can "assume different shapes, and be positioned at various locations." Ex[1006] at 4:34-35.

162. A POSA reviewing *Meyers* would be motivated to move the location of the vent 35 of *Meyers* from below the collar to above the collar as taught in *Sepehr* to improve *Meyers*' vent to further improve the functionality and reliability of the

nipple to equalize the pressure by improving the flow of air that can vary in the collar region due to the compressive force applied to the vent passage from connection to the bottle or due to changes to the shape or size or integrity of the vent passage caused by the bottle lip as the parts are secured together or due to changes in the material over time that would impede the reliability of the valve to relieve negative pressure in the nipple without leaking. Ex[1007] at 1:9-16, 2:4-11; Ex[1006] at 4:22-35. Specifically, a POSA reviewing *Sepehr* would be motivated to move the location of the vent above the collar as taught in *Sepehr* to improve *Meyers'* air flow. The one-way air vent communicating directly with the external environment in *Sepehr* is more effective at pulling air into the bottle, than an air vent through the flange covered by the collar pulling in air through the threads as in *Meyers*.

163. A POSA would be further motivated and find it obvious, to the extent not disclosed by *Meyers*, to modify the nipple design of *Meyers* such that the air valve is placed above the collar as taught by *Sepehr* in order to improve cleaning and maintenance of the nipple. Ex[1006] at 1:64-2:6, 5:29-34; Ex[1007] at 3:21-24, Fig. 3. Both *Meyers* and *Sepehr* teach the importance and inconvenience of cleaning and disinfecting the nipple, for example by dissembling the nipple from the collar, and the risk of contamination during this process. Ex[1006] at 1:12-28, 1:64-2:6, 5:29-34; Ex[1007] at 2:20-26, 3:21-24. A POSA reading *Meyers* in view of *Sepehr* would be motivated to locate the vent above the collar, e.g., in the nipple, such that "it can

easily be boiled and hygienically cleaned following each use." Ex[1007] at 2:20-26, 3:21-24. As disclosed by *Sepehr*, A POSA would understand moving the vent would allow for "low cost of production and can easily be cleaned together with the teat following each use." Ex[1007] at 2:20-26.

164. A POSA would have therefore understood that incorporating elements of the nipple, collar, and vessel of *Meyers* with the air valve of *Sepehr*, would provide a wide, curved nipple attachment with a multi-diameter vessel that would result in an ergonomic, easy-to clean, and aesthetically pleasing nipple and vessel. Such a combination would further improve the design and goals to provide easy cleaning, prevent nipple collapse, and provide a breast-like appearance.

165. The example combinations and modifications described represent a known, finite number of identified predictable solutions to solve the problem of designing a nipple that (1) equalizes the pressure in the bottle to prevent, for example, nipple collapse and colic, and (2) is hygienic and can be easily cleaned. Ex[1006] at 1:12-28, 1:64-2:6, 4:31-35, 5:29-34; Ex[1007] at 1:9-16, 2:4-11, 2:20-26, 3:21-24. A POSA reading *Meyers* and *Sepehr* would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. A POSA would expect that modifying *Meyers*' nipple in view of *Sepehr* would provide a more reliable and more hygienic solution to equalize the

pressure in the bottle and provides improved protection against leakage of fluid out of the bottle.

166. Moreover, a POSA would have had a reasonable expectation of success in combining these nipples because each nipple would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. Therefore, a POSA would have been motivated to combine the nipple and vessel of *Meyers* with the modifications to a nipple and vessels taught by *Sepehr*.

B. Claim 14

(i) [14.PRE]: A feeding bottle comprising:

167. To the extent the preamble is limiting, it is taught by *Meyers* or rendered obvious by the *Meyers*-*Sepehr* combination.

168. *Meyers* discloses a feeding bottle. Specifically, *Meyers* discloses a "nipple/collar" which is "specifically adapted for use with a nurser bottle." Ex[1006] at 3:1-7, Abs., 1:34-38, Fig. 14. Figure 14 reproduced here shows the nipple/collar as "an enlarged fragmentary, longitudinal cross-sectional view of the nipple/collar and an associated nurser bottle." *Id.* at 2:43-45, 3:1-7

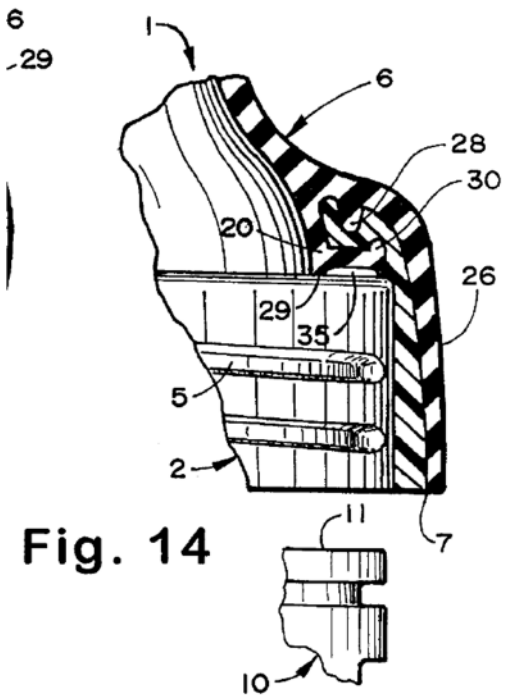


Fig. 14

Ex[1006] at Fig. 14, showing nipple/collar 1 and associated nursing bottle 10.

169. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

(ii) [14.A]: a) a vessel having an open top,

170. This limitation is taught by *Meyers* or rendered obvious by the *Meyers-Sepehr* combination.

171. *Meyers* discloses a vessel having an open top. Specifically, *Meyers* discloses a "nursing bottle" to be used with an associated "nipple/collar." Ex[1006] at 3:1-7, 3:15-18, Fig. 14. The "nursing bottle" is disclosed to be a "container" and a type of "drinking vessel," which a POSA understands to have an open top. *Id.* at 3:1-7, 3:13-22.

172. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

(iii) [14.B]: b) a collar having an upper rim and a lower rim comprising: an internally threaded inner surface,

173. This limitation is taught by *Meyers* or rendered obvious by the *Meyers-Sepehr* combination.

174. *Meyers* discloses a collar having an upper rim and a lower rim comprising an internally threaded inner surface. Specifically, *Meyers* discloses its "nipple/collar" as "include[ing] a rigid collar having an exterior surface and an interior surface." Ex[1006] at Abs., 3:24-31, 3:47, 4:29-30, Figs. 2, 3, 9, 14. *Meyers* also discloses that the "collar 2 (FIGS. 2-4) is constructed from a rigid synthetic material, and in the illustrated example, ***fastener 5 comprises conventional threads disposed on the interior surface 4 of collar 2***." *Id.* at 3:24-31 (emphasis added), 1:7-10 ("nipple that is detachably mounted on the neck of a nurser bottle by a separate, ***internally threaded collar***" (emphasis added)). *Meyers* also discloses that this "collar 2 includes ***a lower edge 15***" as well as "***an upper edge 18***." *Id.* at 3:41-45 (emphasis added). Figures 2 and 5 here show the upper edge and lower edge, respectively, as well as visually present the collar's internally threaded inner surface.

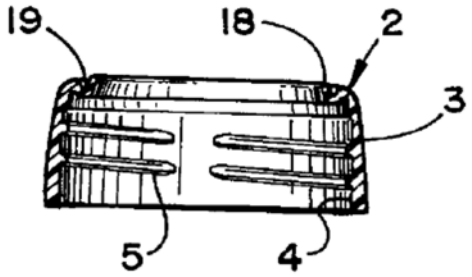


Fig. 2

Ex[1006] at Fig. 2, showing the upper edge 18 of collar 2 as well as the internally threaded inner surface (fastener 5).

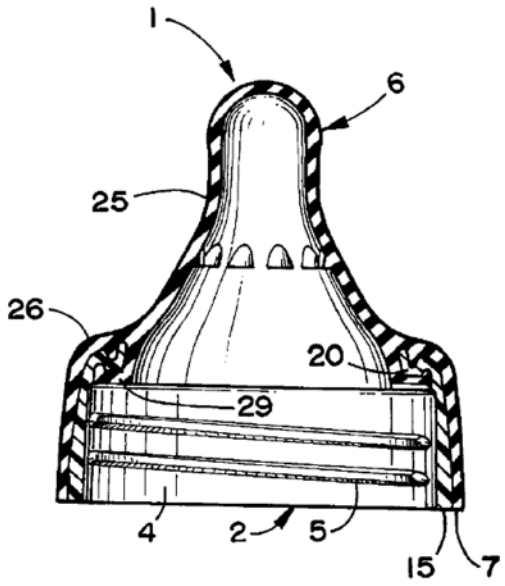


Fig. 5

175. Ex[1006] at Fig. 5, showing lower edge 15 of collar 2 as well as the internally threaded inner surface (fastener 5).

176. For at least these reasons, this claim limitation is rendered obvious by Meyers-*Sepehr*.

(iv) [14.C]: an outermost surface having a sloping portion that extends outwardly and downwardly relative to said upper rim, and wherein said sloping portion comprises a majority of the collar's outermost surface

177. This limitation is taught by *Meyers* or rendered obvious by the Meyers-*Sepehr* combination.

178. *Meyers* discloses that the collar has an outermost surface having a sloping portion that extends outwardly and downwardly relative to said upper rim, and wherein the sloping portion comprises a majority of the collar's outermost surface. Specifically, *Meyers* discloses that its "rigid collar" has "an exterior surface." Ex[1006] at Abs., 3:24-31. Figures 2, 3, 5, 6, 9, and 14 all show the collar or portions thereof wherein the external surface of the collar is sloping downwardly and outwardly. Figures 2 and 9 are shown here for example:

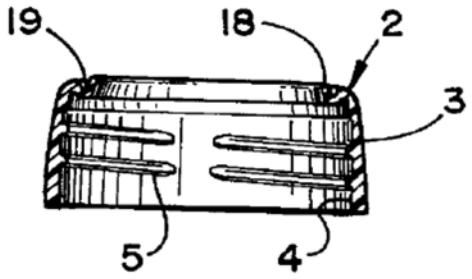


Fig. 2

Ex[1006] at Fig. 2, showing the exterior surface 3 of collar 2 and how it is sloped down and outward.

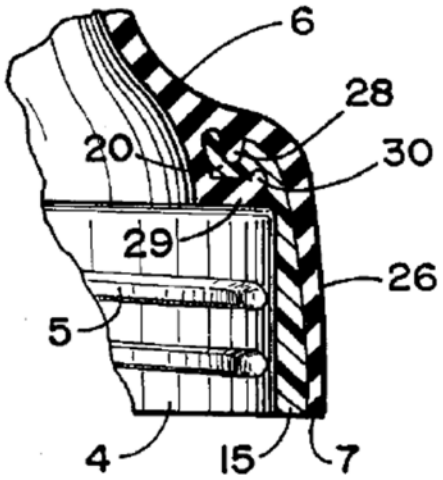


Fig. 9

Ex[1006] at Fig. 9, showing collar 4 comprised of its exterior surface shown to be sloped down and outward.

179. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

(v) [14.D]: c) a nipple having: a teat portion having a variable wall thickness including an aperture,

180. This limitation is taught by *Meyers* or *Sepehr* or rendered obvious by the *Meyers-Sepehr* combination.

181. *Meyers* discloses a nipple having a teat portion having a variable wall thickness and including an aperture. Specifically, *Meyers* discloses a "flexible nipple" which "includes a conventional shaped upper portion 25, and a uniquely shaped base area 26, which is molded over collar 2." Ex[1006] at 3:66-4:1, Figs. 1, 6.

182. A POSA would understand that the nipple described by *Meyers* has three portions corresponding to the teat, base, and areola portions of Claim 14, limitations [14.D], [14.E], and [14.F], respectively, under either Petitioner or Patent Owner's proposed construction. These portions are annotated on Figure 5 below. Specifically for [14.D], a POSA would consider that that uppermost portion of the nipple as described in *Meyers* constitutes a "teat" portion under Patent Owner's construction relating to this term. Both constructions agree that the teat portion is disposed above the areola portion and is generally perpendicularly upward relative to the mouth of the vessel, which in this case is the upper, open end of the bottle disclosed by *Meyers*. A POSA would consider that the upper portion of *Meyers*' nipple constitutes a teat portion.

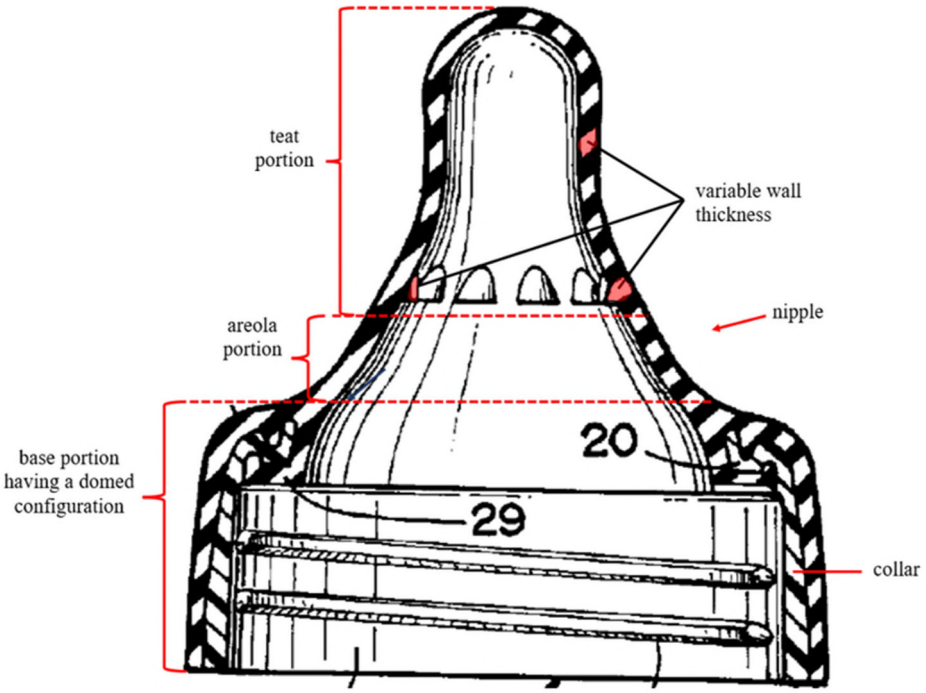


FIG. 5 of Meyers
Patent Owner's Construction

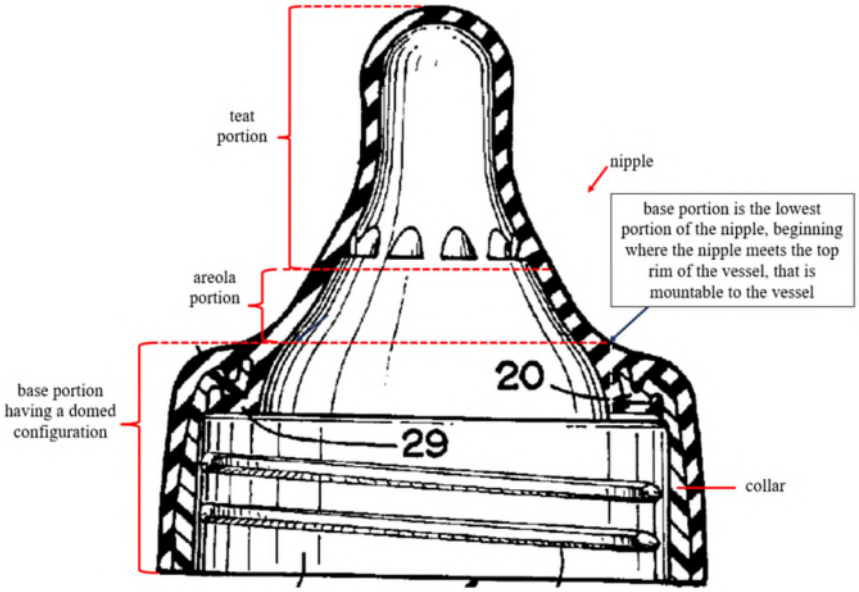


FIG. 5 of Meyers
Petitioner's Construction

Ex[1006] at Fig. 5, showing nipple 6 and annotated with the claimed teat, base, and areola portions.

183. *Meyers* further discloses that this teat portion has a variable thickness under Patent Owner's construction—that variable thickness is entitled its plain and ordinary meaning. *Meyers* discloses that its nipple may include internally raised bumps positioned, as shown on Figure 5, in a ring around the portion of the nipple that a POSA would consider to be the teat portion. *Id.* at Fig. 5. Figure 6 additionally shows a varying thickness of the nipple wall (Figure 6 is presented to illustrate a nipple mold, whereby the mold cavity 46 illustrates where the nipple mold material would form the resulting nipple. *Id.* at Fig. 6, 4:41-5:1. A POSA would understand these illustrations to indicate that the nipple has a variable wall thickness, this variable thickness present in the portion of the nipple corresponding to the teat portion. *Id.*

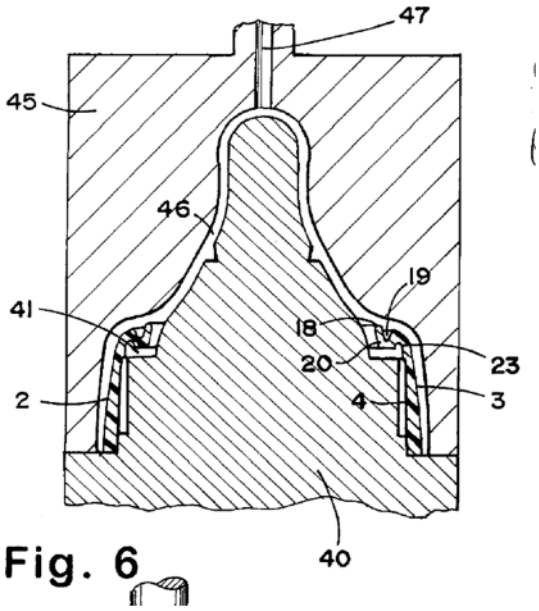


Fig. 6

184. Finally, *Meyers* discloses that the teat portion has an aperture: "At least one orifice 50 is then formed in the upper portion 25 of nipple 6" through which fluid will flow. *Id.* at 5:7-12, 1:21-27, Figs. 1, 10-13.

185. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

(vi) [14.E]: a base portion having a domed configuration,

186. This limitation is taught by *Meyers* or *Sepehr* or rendered obvious by the *Meyers-Sepehr* combination.

187. *Meyers* discloses that the nipple has a base portion having a domed configuration. Specifically, *Meyers* discloses a "flexible nipple" which "includes a conventional shaped upper portion 25, and a ***uniquely shaped base area 26***, which is molded over collar 2." Ex[1006] at 3:66-4:1 (emphasis added), Figs. 1, 6.

188. As previously explained, a POSA would understand that the nipple described by *Meyers* has three portions corresponding to the teat, base, and areola portions of Claim 14, limitations [14.D], [14.E], and [14.F], respectively. These portions are annotated on Figure 5 below. Specifically for [14.E], a POSA would consider that that lower portion of the nipple as described in *Meyers* constitutes a "base portion" under Patent Owner's construction relating to this term.

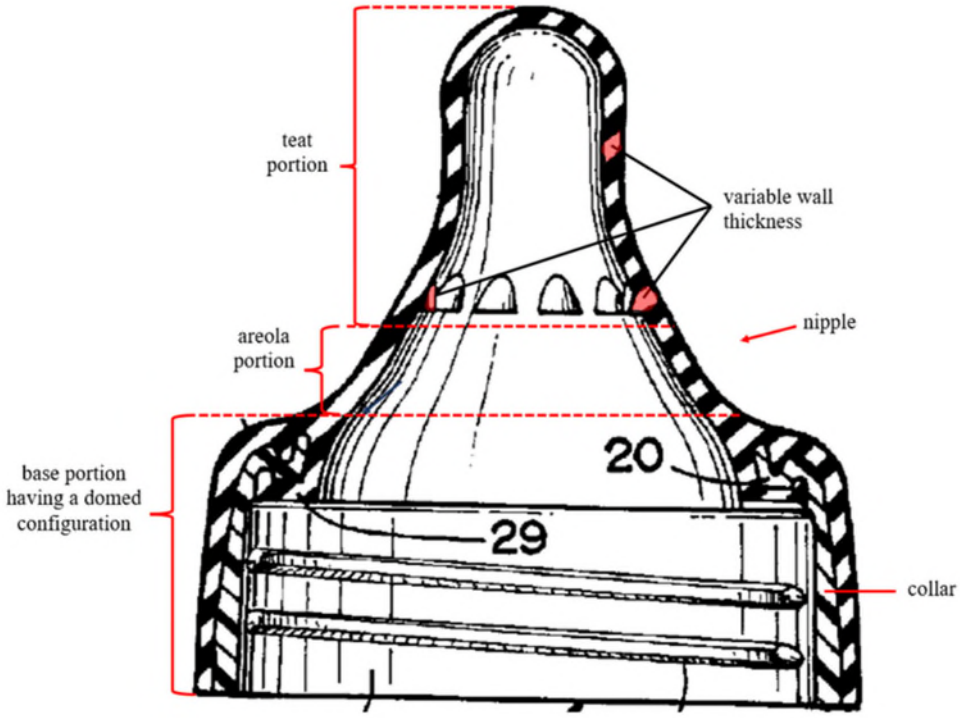


FIG. 5 of Meyers
Patent Owner's Construction

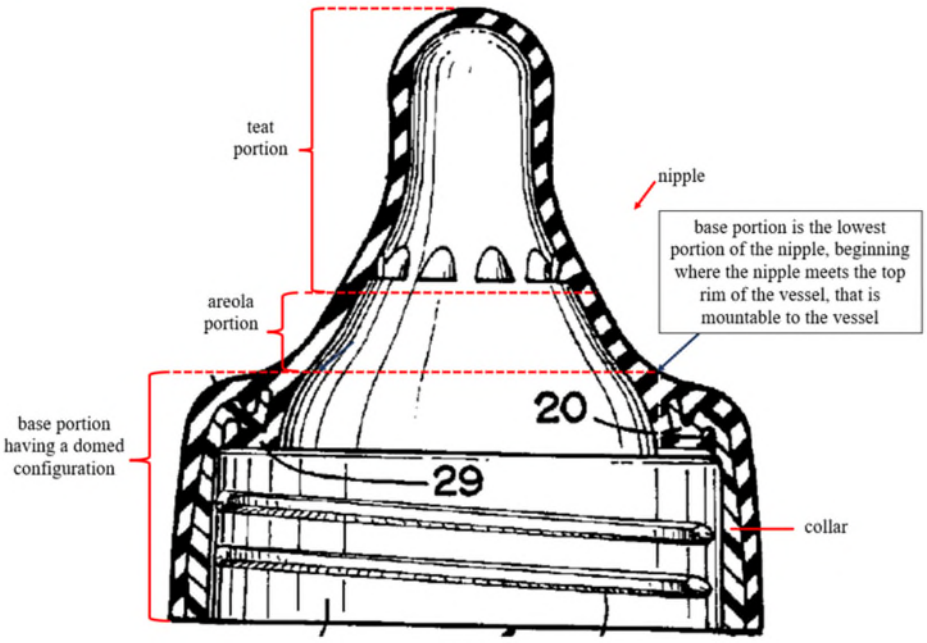


FIG. 5 of Meyers
Petitioner's Construction

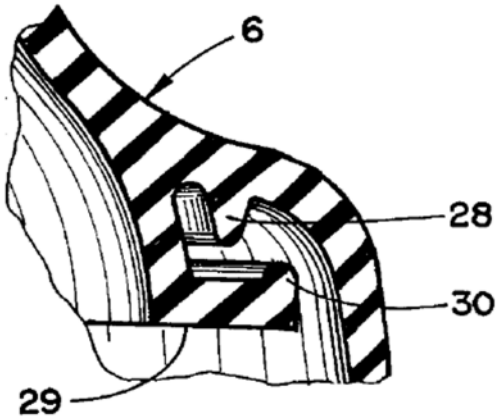


Fig. 7

3



Fig. 8

Ex[1006] at Figs. 7 and 8, showing upper and lower portions of the base area 26 of the nipple 6.

189. Both constructions agree that the base portion is the lowest portion of the nipple, whereas Petitioner's construction additionally requires that the base portion is mountable to the vessel (bottle) and begins where the nipple meets the top portion of the vessel. *See supra* § VIII.C. *Meyers* discloses that the nipple is mountable to the bottle. Ex[1006] at 1:7-10 ("nipple that is detachably mounted on the neck of a nurser bottle by a separate, internally threaded collar"), 3:66-4:13

("illustrated nipple 6 … is configured to seal against a neck portion 11 of an associated nurser bottle 10 to form a tight liquid seal therebetween." (emphasis added)). *Meyers* thus discloses that the base portion begins where the nipple meets the top portion of the vessel.

190. *Meyers* further discloses that this base portion has a domed configuration under both Petitioner's and Patent Owner's constructions of the term. Under Petitioner's construction—that the base has a rounded configuration in profile—*Meyers* shows in Figures 5, 6, and 7 above that the portion identified as what a POSA would consider the "base" portion is rounded in profile. *Id.* at Figs. 1, 5, 6, 7.

191. Under Patent Owner's construction—that the base portion is a wide circular base with an arc-shaped cross-section—*Meyers* shows that the combined "upper portion" and "lower portion" of its "base area 26" is wider than the portions of the nipple above it. *Id.* These same figures additionally show that this base portion's cross-section is arc-shaped. *Id.* Finally, as best illustrated in Figure 12, this base portion, and indeed the entire top-down view of the nipple itself, is circular in *Meyers*.

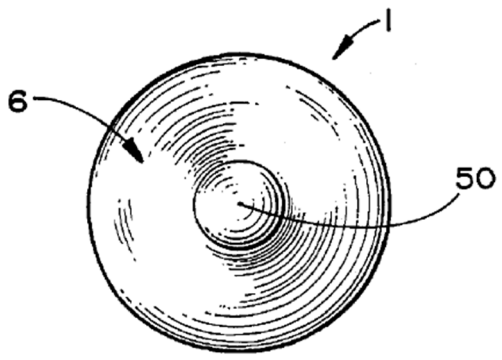


Fig. 12

Ex[1006] at Fig. 12, showing circular nipple 6, the widest our outermost portion corresponding to the base portion.

192. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

(vii) [14.F]: an areola portion between the teat portion and the base portion,

193. This limitation is taught by *Meyers* or *Sepehr* or rendered obvious by the *Meyers-Sepehr* combination.

194. *Meyers* discloses an areola portion between the teat portion and the base portion. Specifically, *Meyers* discloses a "flexible nipple" which "includes a conventional shaped upper portion 25, and a uniquely shaped base area 26, which is molded over collar 2." Ex[1006] at 3:66-4:1, Figs. 1, 6.

195. As described above, a POSA would understand that the nipple described by *Meyers* has three portions corresponding to the teat, base, and areola portions of Claim 14, limitations [14.D], [14.E], and [14.F], respectively. These

portions are illustrated on Figure 5 below. Specifically for [14.F], a POSA would consider that that middle portion of the nipple as described in *Meyers* constitutes an "areola" portion under either Petitioner or Patent Owner's constructions relating to this term.

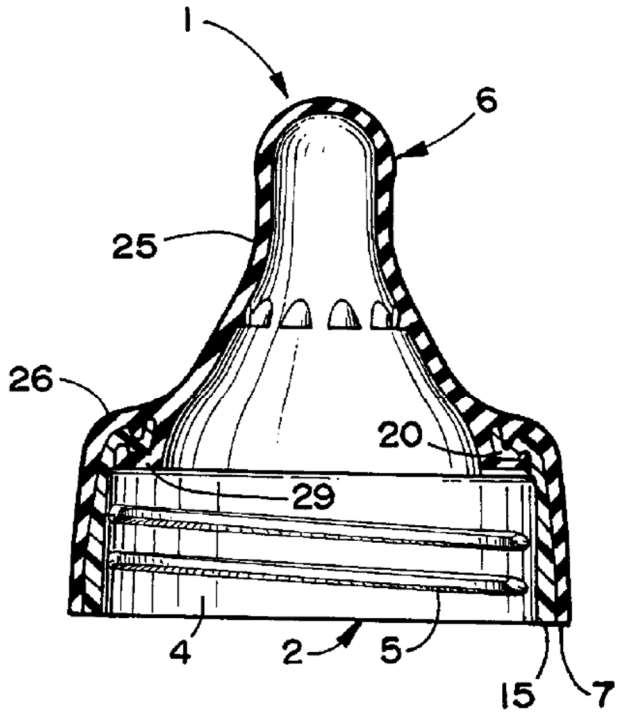


Fig. 5

196. Both constructions agree that the areola portion extends beyond the bottom of the teat portion—as shown above, a POSA would understand that *Meyers* discloses that the areola portion is disposed just below the teat portion and extends from it. Alternatively, under Petitioner's construction—that the areola portion has a different characteristic and functionality from the rest of the nipple—*Meyers* shows in, e.g., Figure 5, that the portion considered by a POSA to be the areola

portion has a different cross-sectional slope than the other two portions of the nipple. *Id.* at Figs. 1, 5, 6, 10.

197. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

(viii) [14.G]: a flange depending from the base portion,

198. This limitation is taught by *Meyers* or *Sepehr* or rendered obvious by the *Meyers-Sepehr* combination.

199. *Meyers* discloses a flange depending from the base portion of the nipple. Specifically, *Meyers* states that the "nipple 6 also includes a ***flat sealing flange 29***, which extends in a radially outward direction, overlying collar surface 24, and is configured to seal against a neck portion 11 of an associated nurser bottle 10 to form a tight liquid seal therebetween." *Id.* at 4:1-13 (emphasis added). As explained above, a POSA would understand that the nipple described by *Meyers* has three portions corresponding to the teat, base, and areola portions of Claim 14, limitations [14.D], [14.E], and [14.F], respectively. These portions are illustrated on Figure 5 below.

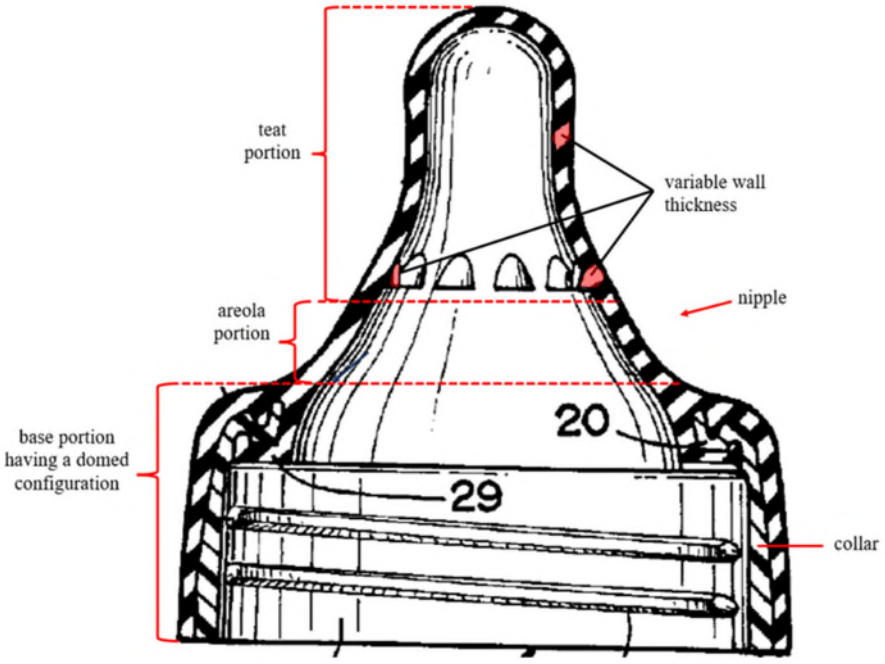


FIG. 5 of Meyers
Patent Owner's Construction

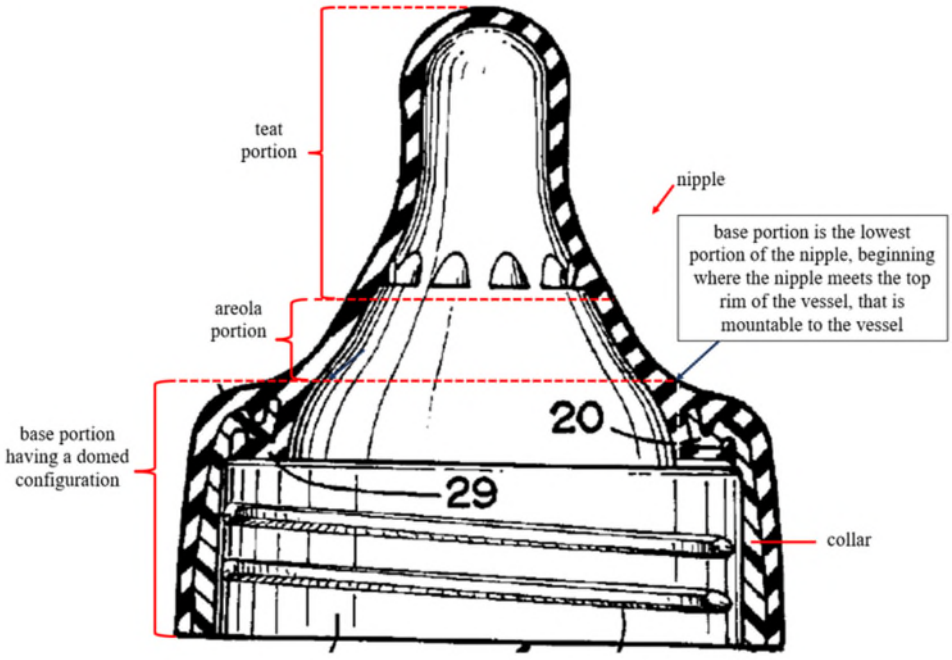


FIG. 5 of Meyers
Petitioner's Construction

200. As can be seen in the above annotated Figure 5 and additionally in Figure 7 below, flange 29 depends from what a POSA would consider to be the base portion. *Meyers* states that "The outermost portion of sealing flange 29 includes an upstanding rim or bead 30." *Id.* at 4:1-13. *Meyers* further discloses that this flange "is closely received in channel 23 of collar 2 to further physically interconnect collar 2 and nipple 6." *Id.*

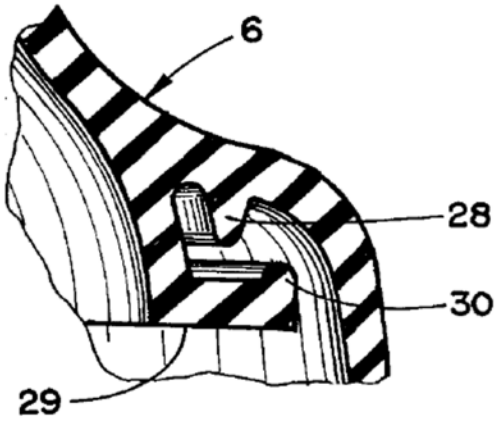


Fig. 7

Ex[1006] at Fig. 7, showing upper portion of the base area 26 of the nipple 6 with flange 29 and its bead 30.

201. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

(ix) [14.H]: a one-way air inlet valve (i) extending through said base,

202. This limitation is taught by *Meyers* or *Sepehr* or rendered obvious by the *Meyers-Sepehr* combination. As explained in §X.A above, a POSA would have

been motivated to modify *Meyers* based on the teachings of *Sepehr*, such that the one-way air valve extends through the base just outside of the collar.

203. *Meyers* discloses an air inlet. Specifically, *Meyers* discloses that its nipple/collar design, "a vent 35 may be provided on the interior of nipple/collar 1 to permit air to be sucked back into the nurser after dispensing." Ex[1006] at 4:22-29. *Meyers* further discloses that "[v]ent 35 permits ambient air to be drawn back into the nurser bottle around collar threads 5." *Id.* (emphasis added). This, along with the previous analysis as to what a POSA would consider to be the claimed "base portion" of *Meyers*' nipple (see above and annotated Figure 5), tells us that the disclosed venting aperture is disposed through the base portion of the nipple. This is consistent with what is shown in, for example, Figure 13 below—that the nipple includes a vent. *Id.* at Figs. 13, 14.

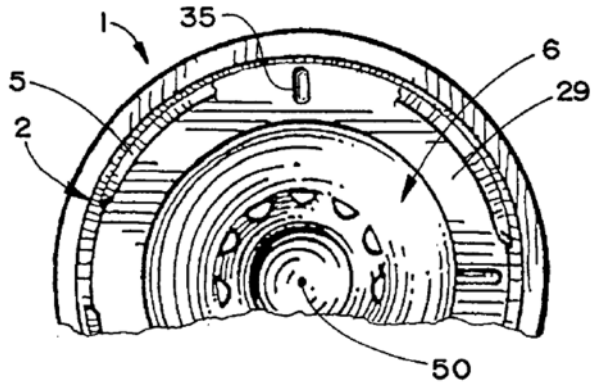


Fig. 13

Ex[1006] at Fig. 13, showing vent 35 extending through nipple 6.

204. *Meyers* discloses that this venting aperture allows air into the bottle during operation: "***[v]ent 35 permits ambient air to be drawn back into the nurser bottle*** around collar threads 5." *Id.* at 4:22-29 (emphasis added). It would be obvious to modify the teachings of *Meyers* to introduce teachings from *Sepehr* to arrive at a nipple having a one-way air inlet valve disposed through the nipple's base portion. *See supra* §X.A.

205. *Sepehr* discloses a one-way air inlet valve. Specifically, *Sepehr* discloses that its design includes a "***one-way air inlet valve*** 2 operable automatically." Ex[1007] at Abs. (emphasis added). *Sepehr* further explains: "The valve comprises a flexible membrane having an opening 3 which ***admits air into the container*** when the air pressure within the container becomes depressed relative to the external air pressure, as a result of the feeding action of the child." *Id.* at Abs. (emphasis added), 1:3-7, 2:4-11, 2:13-18, 2:32-3:6, 3:8-19 ("automatic valve 2 produced as an integral part of teat 1 which has a slit 3 across the valve 2 in order to allow the air to enter the bottle"), 3:26-4:2, 4:8-12. *Sepehr* discloses that this "valve may be integral with the teat or a separate component removable from teat or bottle," and *Sepehr* additionally shows this valve in Figure 1, located slightly above the flange of its disclosed nipple. *Id.* at Abs., Figs. 1-4. This is indicating that it is disposed, on a comparable nipple taught by *Meyers*, to be extending through the

portion of the nipple which a POSA would understand to be the claimed "base portion." *Id.* at Abs.

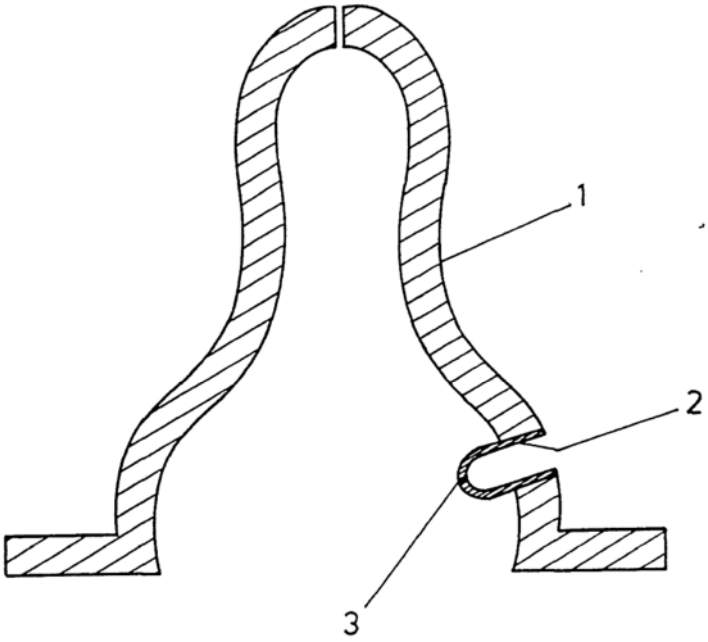


FIG. 1

Ex[1007] at Fig. 1, showing one-way air inlet valve 2 with slit 3.

206. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

(x) [14.I]: (ii) projecting downwardly from the base portion,

207. This limitation is taught by *Meyers* or *Sepehr* or rendered obvious by the *Meyers-Sepehr* combination. As explained in §X.A above, a POSA would have been motivated to modify *Meyers* based on the teachings of *Sepehr*, such that the one-way air valve projects downwardly from the base just outside of the collar.

208. *Meyers* discloses that a "[v]ent 35 is in the form of a channel-shaped aperture." Ex[1006] at 4:21-29. *Meyers* states that "[v]ent 35 permits ambient air to be drawn back into the nurser bottle." *Id.* at 4:43-35. A POSA would find it obvious, to the extent not explicitly taught by *Meyers*, to position the vent such that it projects downwardly as taught by *Sepehr*; the motivation to do this is taught simply by *Meyers* itself in disclosing that "[v]ent 35 can also assume different shapes, and be positioned at various locations." *Id.* at 4:34-35. *Sepehr* discloses that its "***one-way air inlet valve*** 2" is positioned downwardly through said base, as can be seen in, for example, *Sepehr's* Figure 1 in above. Ex[1007] at Fig. 1, Abs. As explained previously, a POSA would be motivated to incorporate the one-way air vent disclosed by *Sepehr* into the nipple taught by *Meyers*. *See supra* §X.A.

209. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

(xi) [14.J]: (iii) having a length that does not extend past the collar's lower rim, and

210. This limitation is taught by *Meyers* or *Sepehr* or rendered obvious by the *Meyers-Sepehr* combination. As explained in §X.A above, a POSA would have been motivated to modify *Meyers* based on the teachings of *Sepehr*, such that the one-way air valve has a length that does not extend past the collar's lower rim.

211. *Meyers* discloses that the air inlet has a length that does not extend past the collar's lower rim. As can be seen, for example, in Figure 14 below, the

disclosed "vent 35" is shown to have a length that does not extend past the lower rim of the collar. *Sepehr* discloses that its "***one-way air inlet valve*** 2" has a length that does not extend past the collar's lower rim, as shown in *Sepehr's* Figure 1 above. Ex[1007] at Fig. 1, Abs.

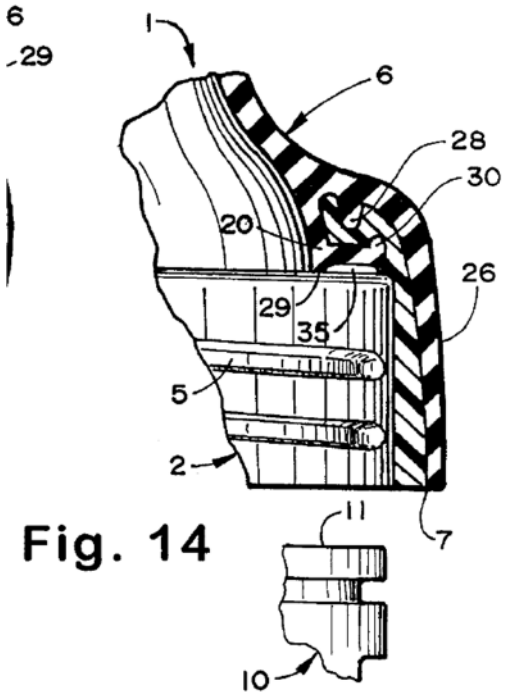


Fig. 14

Ex[1006] at Fig. 14, showing nipple/collar 1 with flange 29 and vent 35, and additionally showing the position of collar 2.

212. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

(xii) [14.K]: (iv) disposed at least partially inwardly from the collar; the flange being arranged to seal with the vessel

213. This limitation is taught by *Meyers* or *Sepehr* or rendered obvious by the *Meyers-Sepehr* combination. As explained in §X.A above, a POSA would have

been motivated to modify *Meyers* based on the teachings of *Sepehr*, such that the one-way air valve is disposed at least partially inwardly from the collar.

214. *Meyers* discloses that the inlet valve is disposed at least partially inwardly from the collar, and where the flange is arranged to seal with the vessel. As can be seen, for example, in Figure 14 below, the disclosed "vent 35" is shown to be disposed radially inwardly from the collar 2, particularly the outer portion of the collar 2. Ex[1006] at 4:21-29, Fig. 14. *Sepehr* also discloses that its "***one-way air inlet valve*** 2" is disposed at inwardly from the position of the collar, as shown in *Sepehr's* Figure 1 above. Ex[1007] at Fig. 1, Abs.

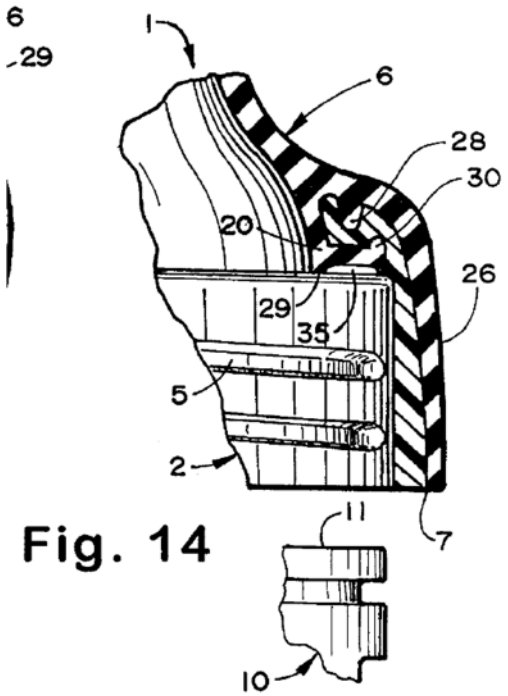


Fig. 14

Ex[1006] at Fig. 14, showing nipple/collar 1 with flange 29 and vent 35, and additionally showing the position of collar 2.

215. *Meyers* additionally discloses that the flange is arranged to seal with the vessel. *Meyers* discloses that its nipple includes a "***sealing flange 29***" that is "configured to ***seal against a neck portion 11 of an associated nurser bottle 10 to form a tight liquid seal therebetween***." Ex[1006] at 4:6-10, Fig. 14.

216. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

(xiii) [14.L]: d) the nipple being secured to the collar by sealingly capturing an inner edge of the collar between the base portion and the flange; and

217. This limitation is taught by *Meyers* or *Sepehr* or rendered obvious by the Meyers-*Sepehr* combination.

218. *Meyers* discloses that the nipple is secured to the collar by "sealingly" capturing an inner edge of the collar between the base portion and the flange. Specifically, *Meyers* discloses that its "nipple/collar" includes a "rigid collar" and "flexible nipple." Ex[1006] at Abs., 3:1-12. *Meyers* describes a secure connection between nipple and collar: "the nipple material is received into upper groove 19 and arcuate channel 23, so as to ***physically capture the nipple 6 on the collar 2*** to ensure a ***secure interconnection*** therebetween." *Id.* at 3:61-65, 5:1-6, Figs. 5, 9, 14. The "arcuate channel 23" of the collar is "formed on the collar interior side 4," and the "upper groove 19" of the collar is "provided along the upper edge 18 of collar 2." *Id.* at 3:47-65. Further, *Meyer* discloses that "[t]he outermost portion of sealing

flange 29 [of the nipple] includes an upstanding rim or bead 30 that is closely received in ***channel 23 of collar 2 to further physically interconnect collar 2 and nipple 6***." *Id.* at 3:66-4:14 (emphasis added). The interconnection described is shown, for example, in Figure 14 below:

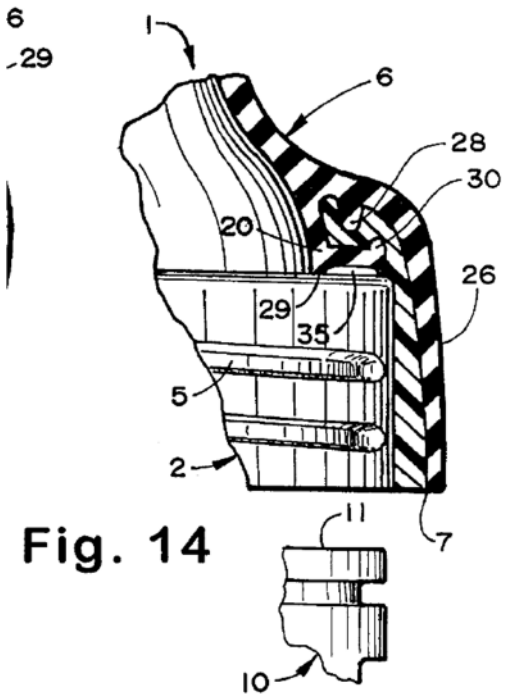


Fig. 14

Ex[1006] at Fig. 14, showing nipple/collar 1 with flange 29 and base portion 26 capturing the collar between them.

219. *Meyers*' Figures 5, 6, 7, 9, 14 and 15 also show this contact between the nipple's flange and the collar. *Id.* at Figs. 5-7, 9, 14-15. *Meyers* shows in Figure 14 above that just as its nipple has a protruding bead ("bead 30") and flange ("flange 29") clamped underneath the flange of the collar, the collar's flange is likewise secured by means of being captured between this flange 29 of the nipple and the

radially outer portion of the nipple (which includes bead 28 as numbered in Figure 14 above). *Id.*

220. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

(xiv) [14.M]: e) the nipple being secured to the vessel by capturing the flange of the nipple between the collar and the open top of the vessel.

221. This limitation is taught by *Meyers* or *Sepehr* or rendered obvious by the *Meyers-Sepehr* combination.

222. *Meyers* discloses that the nipple is secured to the vessel by capturing the flange of the nipple between the collar and the open top of the vessel. Specifically, *Meyers* discloses that its "nipple/collar" includes a "rigid collar" and "flexible nipple." Ex[1006] at Abs., 3:1-12. *Meyers* describes a secure connection between nipple and collar: "the nipple material is received into upper groove 19 and arcuate channel 23, so as to ***physically capture the nipple 6 on the collar 2*** to ensure a ***secure interconnection*** therebetween." *Id.* at 3:61-65, 5:1-6, Figs. 5, 9, 14. The "arcuate channel 23" of the collar is "formed on the collar interior side 4," and the "upper groove 19" of the collar is "provided along the upper edge 18 of collar 2." *Id.* at 3:47-65. Further, *Meyers* discloses that "[t]he outermost portion of sealing flange 29 [of the nipple] includes an upstanding rim or bead 30 that is ***closely***

received in channel 23 of collar 2 ***to further physically interconnect collar 2 and nipple 6***." *Id.* at 3:66-4:14 (emphasis added).

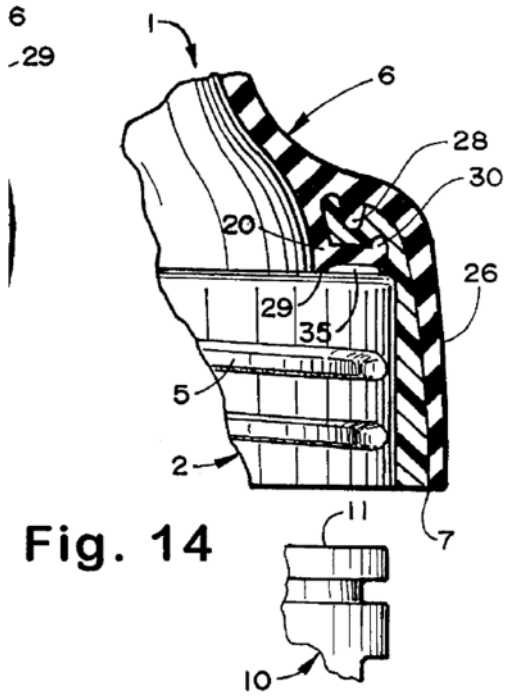


Fig. 14

Ex[1006] at Fig. 14, showing nipple/collar 1 with flange 29.

223. *Meyers* confirms that the nipple is physically sealed against the top of the bottle: "***nipple*** that is detachably ***mounted on the neck of a nurser bottle*** by a separate, internally threaded collar..." *Id.* at 1:7-10, 4:1-13 ("***nipple 6*** also includes a flat sealing flange 29, which extends in a radially outward direction, overlying collar surface 24, and ***is configured to seal against a neck portion 11 of an associated nurser bottle 10*** to form a tight liquid seal therebetween." (emphasis added)).

224. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

C. Claim 16

(i) [16]: The feeding bottle of claim 14 wherein the open top of the vessel comprises an outwardly threaded vessel neck.

225. This limitation is taught by *Meyers* or *Sepehr* or rendered obvious by the *Meyers*-*Sepehr* combination.

226. *Meyers* discloses wherein the open top of the vessel comprises an outwardly threaded vessel neck. Specifically, *Meyer*s discloses its "nipple/collar" as "include[ing] a rigid collar having an exterior surface and an interior surface." Ex[1006] at Abs., 3:24-31, 3:47, 4:29-30, Figs. 2, 3, 9, 14. *Meyers* also discloses that the "collar 2 (FIGS. 2-4) is constructed from a rigid synthetic material, and in the illustrated example, ***fastener 5 comprises conventional threads disposed on the interior surface 4 of collar 2***." *Id.* at 3:24-31 (emphasis added), 1:7-10 ("nipple that is detachably mounted on the neck of a nurser bottle by a separate, ***internally threaded collar***" (emphasis added)). A POSA would understand that in order for a collar with internal threads to fasten onto the neck of a bottle, the bottle must necessarily have *external* or *outward* threads. *Id.* at 4:51-55 ("the ***threads*** 5 of collar 2, which might interfere with the ***fastening of the same to*** an 55 associated ***nurser bottle***..." (emphasis added)); 1:52-55 (".a collar having an exterior surface and an interior surface with a ***fastening mechanism*** thereon for detachable ***connecting the nipple/collar with an associated nurser bottle***." (emphasis added)).

227. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

D. Claim 17

(i) [17]: The feeding bottle of claim 14 wherein the air inlet valve comprises a slit opening.

228. This limitation is taught by *Meyers* or *Sepehr* or rendered obvious by the *Meyers-Sepehr* combination. As explained in §X.A above, a POSA would have been motivated to modify *Meyers* based on the teachings of *Sepehr*, such that the one-way air valve has a slit opening.

229. *Meyers* discloses an air inlet opening. Specifically, *Meyers* discloses that in its nipple/collar design, its "vent 35 may be provided on the interior of nipple/collar 1 to permit air to be sucked back into the nurser after dispensing." Ex[1006] at 4:22-29. *Meyers* further discloses that "[v]ent 35 is in the form of a ***channel-shaped aperture extending radially outwardly along sealing flange 29*** from a location adjacent the interior side of the sealing flange to a location adjacent the interior side 4 of collar 2" and "[v]ent 35 permits ambient air to be drawn back into the nurser bottle around collar threads 5." *Id.* (emphasis added).

230. *Sepehr* discloses that the air inlet valve comprises a slit opening. *Sepehr* teaches a "***one-way air inlet valve*** 2 operable automatically." Ex[1007] at Abs. (emphasis added). *Sepehr* further explains: "The valve comprises a flexible membrane having an opening 3 which admits air into the container." *Id.* at Abs., 1:3-

7, 2:4-11, 2:13-18, 2:32-3:6, 3:8-19. *Sepehr* consistently describes this valve as comprising a slit opening: *Id.* at 2:13-18 ("valve … is composed of a concave elongate semi spherical shape with ***a slit*** at its dome" (emphasis added)), 3:8-14 ("automatic ***valve 2*** produced as an integral part of teat 1 which ***has a slit 3 across the valve 2*** in order to allow the air to enter the bottle" (emphasis added)), 3:14-19 ("pressure difference outside the valve 2 which causes the ***flow of air through the slit 3*** into the bottle" (emphasis added)), 3:26-32 ("valve has an air inlet slit"), 3:34-4:2, 4:8-12.

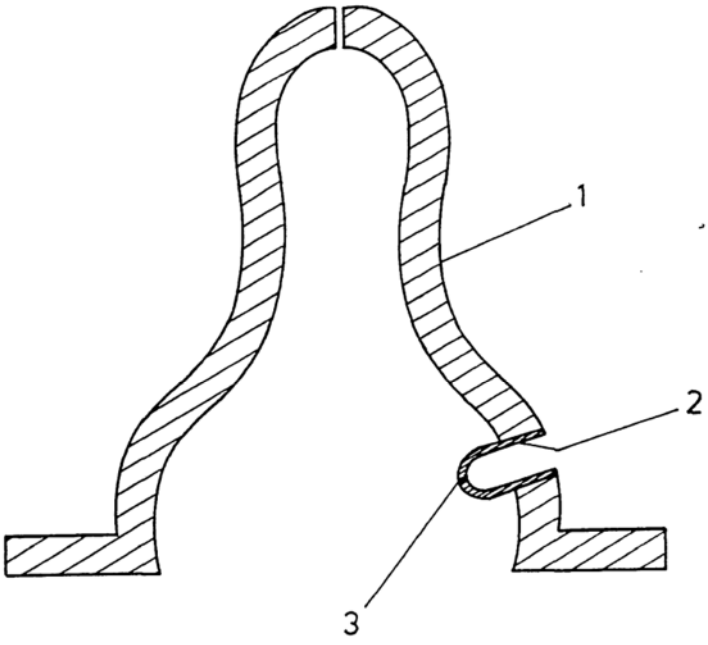


FIG. 1

Ex[1007] at Fig. 1, showing one-way air inlet valve 2 with slit 3.

231. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr*.

E. Claim 19

(i) [19]: The feeding bottle of claim 14 wherein the vessel comprises an upper body having a first internal diameter and a portion below the upper body having a second, different internal diameter.

232. This limitation is taught by *Meyers* or *Sepehr* or rendered obvious by the *Meyers*-*Sepehr* combination.

233. *Meyers* discloses the vessel having an upper and lower body with different first and second internal diameters, respectively. Specifically, *Meyers* discloses that its nursing bottle has an upper portion: "a ***neck portion 11*** of an associated nurser bottle." Ex[1006] at 4:1-13. A POSA would understand first that a bottle described as having a neck portion would also have a non-neck, lower portion. *Meyers* contemplates the use of different types of bottles, at least "conventional bottles, reusable and/or disposable nursers, and other similar drinking vessels, including children's training cups and the like" as well as "similar infant and children liquid container designs." *Id.* at 3:14-22. A POSA would understand that various types of bottles have different portions with different internal diameters, and that on many bottles, the neck portion has a smaller internal diameter than the lower portion of the same bottle. Thus, applying the disclosure of *Meyers*, it would be obvious that a bottle has two portions with two different internal diameters.

234. For at least these reasons, this claim limitation is rendered obvious by *Meyers*-*Sepehr*.

XI. '930 PATENT GROUND 2: *Meyers* in View of *Sepehr* and *Ishimaru* Renders Claims 14, 16, 17, and 19 Obvious in View of the Knowledge of a Person of Ordinary Skill in the Art

235. It is my opinion that claims 14, 16, 17, and 19 are rendered obvious by *Meyers* in View of *Sepehr* and *Ishimaru*. As discussed below, a POSA designing a nipple for use with a nursing bottle would be motivated to combine *Meyers* with *Sepehr* and *Ishimaru*.

236. In reaching this conclusion, I have considered the disclosures of these prior art references, the motivations to combine these references, and the knowledge of a POSA, as discussed below. In my opinion, a POSA reviewing these disclosures prior to the priority date of the patents would have been motivated to design a nipple and collar design similar to the following:

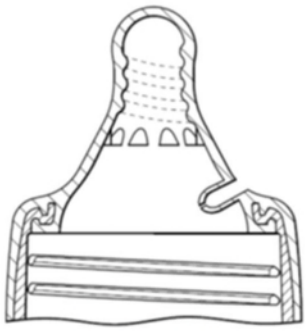


FIG. 1

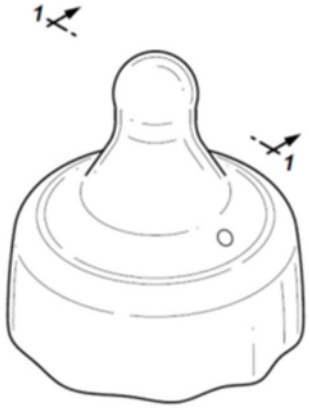


FIG. 2

237. Such a design would have been obvious to a POSA no later than the priority date of the '930 Patent, and would render the challenged claims of the '930 Patent obvious.

A. Motivation For Combining *Meyers*, *Sepehr*, and *Ishimaru*

238. A POSA would have considered *Ishimaru*, *Meyers*, and *Sepehr* in the same field of endeavor as they all relate to nursing bottles and nipples that attach thereto. Ex[1008] at ¶¶ 01-06; Ex[1006] at 1:1-12; Ex[1007] at 1:3-7. A POSA would be motivated to modify or combine the nipples of *Ishimaru*, *Meyers*, and *Sepehr* because they all teach analogous solutions for, and describe the benefits of, nipples with air vents and collars to provide a durable, hygienic design that relieves negative pressure in the nipple, and permits easy cleaning. Ex[1008] at ¶¶ 19, 48; Ex[1006] at 4:22-35; Ex[1007] at Abs., 2:4-11. Moreover, each reference teaches the same solution: using a rounded nipple with particular design elements that imitate that imitate feeding from a human breast, and providing an air vent in a location that will reliably vent the interior of the vessel to equalize the pressure between the vessel and the atmosphere. *Id*.

239. A POSA would be further motivated and find it obvious, to the extent not disclosed by *Meyers*, to modify the nipple design of *Meyers* as taught by one or more embodiments of *Ishimaru* and *Sepehr* in order to further improve reliability of the nipple to equalize the pressure. Ex[1008] at Abs., ¶¶ 07, 19, 48; Ex[1006] at 4:22-35; Ex[1007] at 1:9-16, 2:4-11, Fig. 3. All of *Ishimaru*, *Meyers*, and *Sepehr* identify the need to equalize the pressure in the bottle to prevent, for example, nipple collapse and colic. Ex[1008] at Abs., ¶¶ 07, 19, 48; Ex[1006] at 4:22-35; Ex[1007]

at 1:9-16, 2:4-11. *Ishimaru* explains the need for such a design: "Therefore, when the user, e.g. an infant, sucks on the aforesaid teat portion and/or the aforesaid nipple trunk, the artificial nipple is subjected to pressure in the lateral direction. At this time, the internal pressure in the aforesaid beverage space increases, and since the aforesaid elongation portion is formed in the aforesaid teat portion and/or the aforesaid nipple trunk, the pressure acts in the direction of elongation of the artificial nipple in the longitudinal direction, causing the aforesaid teat portion and/or the aforesaid nipple trunk to elongate. Furthermore, because the internal pressure in the aforesaid beverage space increased, the aforesaid teat portion and/or the aforesaid nipple trunk will not collapse even if pressure is applied in the lateral direction of the artificial nipple due to the suckling movement of the infant, etc." Ex[1008] at ¶ 19. *Ishimaru* discloses an artificial nipple that "is more easily extensible than other portions to form a beverage space inside the aforesaid teat portion and the aforesaid nipple trunk, and at the same time, an internal pressure adjusting means is provided in the aforesaid nipple trunk to adjust the internal pressure of this beverage space." Ex[1008] at ¶¶ 05-06. *Sepehr* discloses without effective venting "a vacuum is created within the bottle often causing severe pain in the stomach." Ex[1007] at 1:9-16, 2:4-11.

240. A POSA would have been motivated to combine *Meyers*, *Sepehr*, and *Ishimaru* because in addition to each being directed to the same problem and using

the same solution, they analogously describe nipple designs with air vents and other means for equalizing the pressure between the interior of the vessel and the atmosphere. Ex[1006] at 4:22-35; Ex[1007] at 1:9-16, 2:4-11; Ex[1008] at ¶ 04. *Meyers* discloses that it's air vent can "assume different shapes, and be positioned at various locations." Ex[1006] at 4:34-35.

241. A POSA reviewing *Meyers* would be motivated to move the location of the vent above the collar as taught in *Sepehr* to improve *Meyers*' vent to further improve the reliability of the nipple to relieve negative pressure by improving the flow of air that can vary in the collar region due to the compressive force applied to the vent passage. A POSA reviewing *Ishimaru* would be motivated to incorporate the variable thickness teat as taught in *Ishimaru* to improve *Meyers*' nipple to further improve the flow and reliability of the nipple to prevent collapse of the nipple when the pressure in the nipple changes, and reduce the risk of colic. Ex[1007] at 1:9-16, 2:4-11; Ex[1006] at 4:22-35; Ex[1008] at ¶¶ 41-42, 46, 48.

242. A POSA would be further motivated and find it obvious, to the extent not disclosed by *Meyers*, to modify the nipple design of *Meyers* such that the air valve is placed above the collar as taught by *Sepehr* in order to improvement cleaning and maintenance of the nipple and ensure the integrity or performance of the valve is not impacted by attachment of the bottle to the collar. Ex[1006] at 1:64-2:6, 5:29-34; Ex[1007] at 3:21-24, Fig. 3. All of *Meyers*, *Ishimaru*, and *Sepehr* teach

the importance and inconvenience of cleaning and disinfecting the nipple, for example by dissembling the nipple from the collar, and the risk of contamination during this process. Ex[1006] at 1:12-28, 1:64-2:6, 5:29-34; Ex[1008] at ¶ 54; Ex[1007] at 2:20-26, 3:21-24. A POSA reading *Meyers* in view of *Sepehr* and *Ishimaru* would be motivated to locate the vent above the collar, e.g., in the nipple, such that "it can easily be boiled and hygienically cleaned following each use." Ex[1007] at 2:20-26, 3:21-24. As disclosed by *Sepehr*, A POSA would understand moving the vent would allow for "low cost of production and can easily be cleaned together with the teat following each use." Ex[1007] at 2:20-26.

243. A POSA would have therefore understood that incorporating elements of the nipple, collar, and vessel of *Meyers*, *Sepehr*, and *Ishimaru* would provide a wide, curved nipple attachment with a multi-diameter vessel that would result in an ergonomic, easy-to clean, and aesthetically pleasing nipple and vessel. Such a combination would further improve the design and goals to provide easy cleaning, prevent nipple collapse, and provide a breast-like appearance.

244. The example combinations and modifications described represent a known, finite number of identified predictable solutions to solve the problem of designing a nipple that (1) equalizes the pressure in the bottle to prevent, for example, nipple collapse and colic, and (2) is hygienic and can be easily cleaned. Ex[1008] at ¶¶ 19, 48; Ex[1006] at 1:12-28, 1:64-2:6, 4:31-35, 5:29-34; Ex[1007] at

1:9-16, 2:4-11, 2:20-26, 3:21-24. A POSA reading *Meyers*, *Sepehr*, and *Ishimaru*, would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. A POSA would expect that modifying *Meyers*' nipple in view of *Ishimaru* and *Sepehr* would provide a more reliable and more hygienic solution to equalize the pressure in the bottle and provides improved protection against leakage of fluid out of the bottle.

245. Moreover, a POSA would have had a reasonable expectation of success in combining these nipples because each nipple would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. Therefore, a POSA would have been motivated to combine the nipple and vessel of *Meyers* with the nipple and vessels of *Sepehr* and *Ishimaru*.

B. Claim 14

(i) [14.PRE]: A feeding bottle comprising:

246. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.B(i). The described functionality would be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

247. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

(ii) [14.A]: a) a vessel having an open top,

248. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.B(ii). The described functionality would be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

249. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

(iii) [14.B]: b) a collar having an upper rim and a lower rim comprising: an internally threaded inner surface,

250. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.B(iii). The described functionality would be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

251. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

(iv) [14.C]: an outermost surface having a sloping portion that extends outwardly and downwardly relative to said upper rim, and wherein said sloping portion comprises a majority of the collar's outermost surface;

252. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.B(iv). The described functionality would be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

253. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

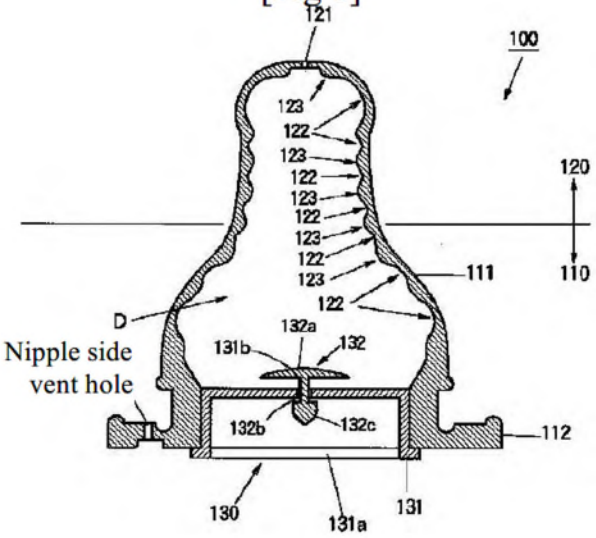
(v) [14.D]: c) a nipple having: a teat portion having a variable wall thickness including an aperture,

254. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.B(v). The described functionality would be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

255. In addition to that analysis, *Ishimaru* discloses a nipple having a teat portion with a variable wall thickness and an aperture under Petitioner's construction relating to this term. Specifically, *Ishimaru* discloses "an artificial nipple having a nipple trunk and a teat portion protruding from this nipple trunk." Ex[1008] at Abs., Figs. 1-2, 10-11. *Ishimaru* discloses that this teat portion has a wall of variable thickness under either Petitioner's or Patent Owner's constructions. Specifically, under Petitioner's construction—that the wall has a helical groove—*Ishimaru* discloses that "on the teat portion 120, … thin-walled portions 122, 122 and 122, which are elongation portions with a thin wall, are formed in ***a groove-like pattern***" and which are "formed in a manner that the ***wall thickness gradually increases*** from the thinnest portion." *Id.* at ¶¶ 41 (emphasis added), 42. *Ishimaru* further discloses that multiple thin and thick-walled portions are "forming a wave shape as shown in Fig. 1" on the inside wall of the teat portion of the nipple. *Id.* at ¶ 41, Fig. 1. Further,

the "the thin-walled portions 122 are placed at intervals" which are "predetermined" amount of spacing in millimeters. *Id.* at ¶ 42. This is shown, for example, in Figure 1 below. Alternatively, under Patent Owner's construction—that the term is afforded its plain and ordinary meaning—*Ishimaru* discloses that its teat portion is comprised of a wall of variable thickness as shown in Figure 1. Additionally, *Ishimaru* discloses that its teat portion of the nipple has an aperture: "a teat opening 121 is provided at the tip of the aforesaid teat portion 120," which is also shown for example in Figure 1. *Id.* at ¶¶ 37, 40, 52, Fig. 1.

[Fig 1]



Ex[1008] at Fig. 1, showing groove patterns forming a "wave shape" made by thin-walled portions 122 and thick-walled portions 123 in the wall of teat portion 120 of the nipple.

256. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*. *See supra* §XI.A.

(vi) [14.E]: a base portion having a domed configuration,

257. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.B(vi). The described functionality would be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

258. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

(vii) [14.F]: an areola portion between the teat portion and the base portion,

259. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.B(vii). The described functionality would be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

260. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

(viii) [14.G]: a flange depending from the base portion,

261. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.B(viii). The described functionality would be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

262. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

(ix) [14.H]: a one-way air inlet valve (i) extending through said base,

263. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.B(ix). The described functionality would be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

264. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

(x) [14.I]: (ii) projecting downwardly from the base portion,

265. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.B(x). The described functionality would be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

266. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

(xi) [14.J]: (iii) having a length that does not extend past the collar's lower rim, and

267. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.B(xi). The described functionality would

be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

268. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

(xii) [14.K]: (iv) disposed at least partially inwardly from the collar; the flange being arranged to seal with the vessel;

269. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.B(xii). The described functionality would be carried over into the Meyers-*Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

270. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

(xiii) [14.M]: e) the nipple being secured to the vessel by capturing the flange of the nipple between the collar and the open top of the vessel.

271. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.B(xiii). The described functionality would be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

272. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

C. Claim 16

(i) [16]: The feeding bottle of claim 14 wherein the open top of the vessel comprises an outwardly threaded vessel neck.

273. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.C. The described functionality would be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

274. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

D. Claim 17

(i) [17]: The feeding bottle of claim 14 wherein the air inlet valve comprises a slit opening.

275. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.D. The described functionality would be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

276. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

E. Claim 19

(i) [19]: The feeding bottle of claim 14 wherein the vessel comprises an upper body having a first internal diameter and a portion below the upper body having a second, different internal diameter.

277. As previously explained, this limitation is disclosed or rendered obvious by *Meyers-Sepehr*. *See supra* §X.E. The described functionality would be carried over into the *Meyers-Sepehr-Ishimaru* combination, as previously explained. *See supra* §XI.A.

278. For at least these reasons, this claim limitation is rendered obvious by *Meyers-Sepehr-Ishimaru*.

XII. '930 PATENT GROUND 3: *Kurkjian* in view of Sepeher and *Ishimaru* Renders Claims 14, 16, 17, and 19 of the '930 Patent Obvious in view of the Knowledge of a Person of Ordinary Skill in the Art

279. It is my opinion that claims 14, 16, 17, and 19 are rendered obvious by *Kurkjian* in combination with *Sepehr* and *Ishimaru*. As discussed below, a POSA designing an artificial nipple for nursing would be motivated to combine *Kurkjian* with *Sepehr* and *Ishimaru*.

280. In reaching this conclusion, I have considered the disclosures of these prior art references, the motivations to combine these references, and the knowledge of a POSA, as discussed below. In my opinion, a POSA reviewing these disclosures prior to the priority date of the patents would have been motivated to design a nipple and collar design similar to the following:

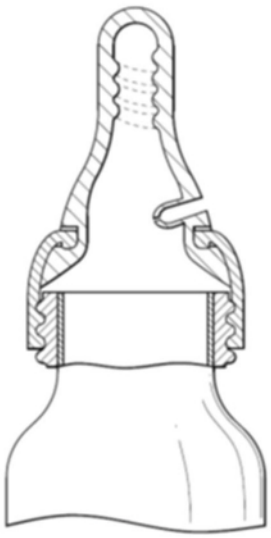


FIG. 1

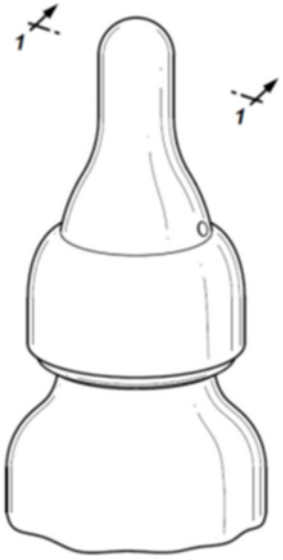


FIG. 2

281. Such a design would have been obvious to a POSA no later than the priority date of the '930 Patent, and would render the challenged claims of the '930 Patent obvious.

A. Motivation For Combining *Kurkjian*, *Sepehr*, and *Ishimaru*

282. A POSA would have considered *Ishimaru*, *Kurkjian*, and *Sepehr* in the same field of endeavor as they all relate to nursing bottles and nipples that attach thereto. Ex[1008] at ¶¶ 01-06; Ex[1009] at 1:1-8; Ex[1007] at 1:3-7. A POSA would be motivated to modify or combine the nipples of *Ishimaru*, *Kurkjian*, and *Sepehr* because they all teach analogous solutions for, and describe the benefits of, nipples with air vents and collars to provide a durable, hygienic design that relieves negative pressure in the nipple, and permits easy cleaning. Ex[1008] at ¶¶ 19, 48; Ex[1009] at 2:35-49, 2:54-3:10; Ex[1007] at Abs., 2:4-11. Moreover, each reference teaches

the same solution: using a rounded nipple with particular design elements that imitate feeding from a human breast, and providing an air vent in a location that will reliably vent the interior of the vessel to equalize the pressure between the vessel and the atmosphere. *Id.*

283. *Kurkjian* further discloses that one or more elements of its various embodiments can be combined: "It should be understood that certain detail changes in the mechanical construction, combination and arrangement of parts may be employed without departing from the spirit of the invention, so long as such changes fall within the scope of the appended claims." Ex[1009] at 3:70-4:5.

284. A POSA would be further motivated and find it obvious, to the extent not disclosed by *Kurkjian*, to modify the nipple design of *Kurkjian* as taught by one or more embodiments of *Ishimaru* and *Sepehr* in order to further improve reliability and functionality of the nipple to equalize the pressure. Ex[1008] at Abs., ¶¶ 07, 19, 48; Ex[1009] at 1:1-8, 2:35-49; Ex[1007] at 1:9-16, 2:4-11, Fig. 3. All of *Ishimaru*, *Kurkjian*, and *Sepehr* identify the need to equalize the pressure in the bottle to prevent, for example, nipple collapse and colic. Ex[1008] at Abs., ¶¶ 07, 19, 48; Ex[1009] at 1:1-8, Ex[1007] at 1:9-16, 2:4-11. *Ishimaru* explains the need for such a design: "Therefore, when the user, e.g. an infant, sucks on the aforesaid teat portion and/or the aforesaid nipple trunk, the artificial nipple is subjected to pressure in the lateral direction. At this time, the internal pressure in the aforesaid beverage space

increases, and since the aforesaid elongation portion is formed in the aforesaid teat portion and/or the aforesaid nipple trunk, the pressure acts in the direction of elongation of the artificial nipple in the longitudinal direction, causing the aforesaid teat portion and/or the aforesaid nipple trunk to elongate. Furthermore, because the internal pressure in the aforesaid beverage space increased, the aforesaid teat portion and/or the aforesaid nipple trunk will not collapse even if pressure is applied in the lateral direction of the artificial nipple due to the suckling movement of the infant, etc." Ex[1008] at ¶ 19. *Ishimaru* discloses an artificial nipple that "is more easily extensible than other portions to form a beverage space inside the aforesaid teat portion and the aforesaid nipple trunk, and at the same time, an internal pressure adjusting means is provided in the aforesaid nipple trunk to adjust the internal pressure of this beverage space." Ex[1008] at ¶¶ 05-06. *Kurkjian* describes nipple with a venting aperture "for preventing the body portion of the nipple from collapsing inwardly of the neck of the bottle when a vacuum is built up therein." Ex[1009] at 3:20-25, 1:9-15, 3:50-52, Claims 1-4. *Sepehr* discloses without effective venting "a vacuum is created within the bottle often causing severe pain in the stomach." Ex[1007] at 1:9-16, 2:4-11.

285. A POSA would have been motivated to combine *Kurkjian*, *Sepehr*, and *Ishimaru* because in addition to each being directed to the same problem and using the same solution, they analogously describe nipple designs with air vents and other

means for equalizing the pressure between the interior of the vessel and the atmosphere. Ex[1009] at 1:1-8; Ex[1007] at 1:9-16, 2:4-11; Ex[1008] at ¶ 04. Specifically, a POSA reviewing *Sepehr* would be motivated to move the location of the vent above the collar as taught in *Sepehr* to improve *Kurkjian*'s vent to further improve the reliability of the nipple to equalize the pressure by improving the flow of air trapped that can vary in the collar region due to the compressive force applied to the vent passage from connection to the bottle or due to changes to the shape or size or integrity of the vent passage caused by the bottle lip as the parts are secured together or due to changes in the material over time that would impede the reliability of the valve to relieve negative pressure in the nipple without leaking. Specifically, a POSA reviewing *Sepehr* would be motivated to move the location of the vent above the collar as taught in *Sepehr* to improve *Kurkjian's* air flow. The one-way air vent communicating directly with the external environment in *Sepehr* is more effective at pulling air into the bottle, than an air vent pulling in air through the flange covered by the collar through the threads as in Kurkjians. A POSA reviewing *Ishimaru* would be motivated to incorporate the variable thickness teat as taught in *Ishimaru* to improve *Kurkjian*'s nipple to further improve the flow and reliability of the nipple to prevent collapse of the nipple when the pressure in the nipple changes, and reduce the risk of colic. Ex[1007] at 1:9-16, 2:4-11; Ex[1009] at 3:20-25, 1:9-15, 3:50-52, Claims 1-4; Ex[1008] at ¶¶ 41-42, 46, 48.

286. A POSA would be further motivated and find it obvious, to the extent not disclosed by *Kurkjian*, to modify the nipple design of *Kurkjian* such that the air valve is placed above the collar as taught by *Sepehr* in order to improvement cleaning and maintenance of the nipple. Ex[1009] at 3:20-25, 1:9-15, 3:50-52, Figs. 1, 6-7; Ex[1007] at 3:21-24, Fig. 3. Both *Ishimaru* and *Sepehr* teach the importance and inconvenience of cleaning and disinfecting the nipple, for example by dissembling the nipple from the collar, and the risk of contamination during this process. Ex[1008] at ¶ 54; Ex[1007] at 2:20-26, 3:21-24. A POSA reading *Sepehr* in view of *Kurkjian* and *Ishimaru* would be motivated to locate the vent above the collar, e.g., in the nipple, such that "it can easily be boiled and hygienically cleaned following each use." Ex[1007] at 2:20-26, 3:21-24. As disclosed by *Sepehr*, A POSA would understand moving the vent would allow for "low cost of production and can easily be cleaned together with the teat following each use." Ex[1007] at 2:20-26.

287. A POSA reading *Kurkjian* in view of *Sepehr* and *Ishimaru* would be further motivated to combine elements of the collar taught in Kurjian with the nipple and collar disclosed in *Sepehr* and *Ishimaru*. For example, a POSA would be further motivated to incorporate elements of the retaining and securing caps of *Kurkjian* to improve upon the detachable feeding bottle mounting cap in order to design a "streamline type of connection between the bottle and the nipple." Ex[1009] at 1:16-20. A POSA would identify and recognize that certain design elements disclosed in

the retaining cap and securing cap embodiments of *Kurkjian* would improve upon the detachable feeding bottle mounting cap of *Ishimaru* and/or *Sepehr*. Ex[1009] at 2:14-27, 3:33-51, 3:55-71.

288. A POSA would have therefore understood that incorporating elements of the nipple, collar, and vessel of *Kurkjian*, *Sepehr*, and *Ishimaru* would provide a wide, curved nipple attachment with a multi-diameter vessel that would result in an ergonomic, easy-to clean, and aesthetically pleasing nipple and vessel. Such a combination would further improve the design and goals to provide easy cleaning, prevent nipple collapse, and provide a breast-like appearance.

289. The example combinations and modifications described represent a known, finite number of identified predictable solutions to solve the problem of designing a nipple that (1) equalizes the pressure in the bottle to prevent, for example, nipple collapse and colic, and (2) is hygienic and can be easily cleaned. Ex[1008] at ¶¶ 19, 48; Ex[1009] at 1:1-8; Ex[1007] at 1:9-16, 2:4-11, 2:20-26, 3:21-24. A POSA reading *Ishimaru*, *Kurkjian*, and *Sepehr* would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. A POSA would expect that modifying *Kurkjian*'s nipple in view of *Ishimaru* and *Sepehr* would provide a more reliable and more hygienic solution to equalize the pressure in the bottle and provides improved protection against leakage of fluid out of the bottle.

290. As I discussed above, *Ishimaru* further discloses the need for a nipple "that is more similar to a mother's nipple," namely a nipple that "has a shape similar to a mother's breast and nipple as shown in Fig. 1, because it is used when a mother feeds her infant with artificial milk using a feeding bottle, etc., instead of her own breast milk." Ex[1008] at ¶ 41. *Ishimaru* stresses the importance of a nipple that is breast-like to encourage bottle feeding: "there as a problem that the conventional artificial nipple 10 does not elongate the teat portion of the mother's nipple or the portion corresponding to the mammary areola, and thus do not approximate the nipple." *Id.* at ¶ 04. *Ishimaru* directly addresses this problem through "thin-walled portions 122, 122 and 122, which are elongation portions with a thin wall, are formed in a groove-like pattern, for example, at seven annular locations." *Id.* at ¶ 41. Such a configuration "provides an artificial nipple that is more similar to a mother's nipple." *Id.* at ¶ 61. "[T]he artificial nipple 100 of this embodiment elongates in the same way as the mother's nipple, thereby increasing the amount of milk spurted, and the artificial nipple 100 itself does not collapse in the same way as the mother's nipple, and its rigidity can be maintained." *Id.* at ¶ 48.

291. A POSA would have therefore understood that *Kurkjian*'s nipple and vessel could be improved by employing the techniques from *Ishimaru* to facilitate a wide, curved nipple attachment with a multi-diameter vessel that would result in an ergonomic, easy-to clean, and aesthetically pleasing nipple and vessel. Such a

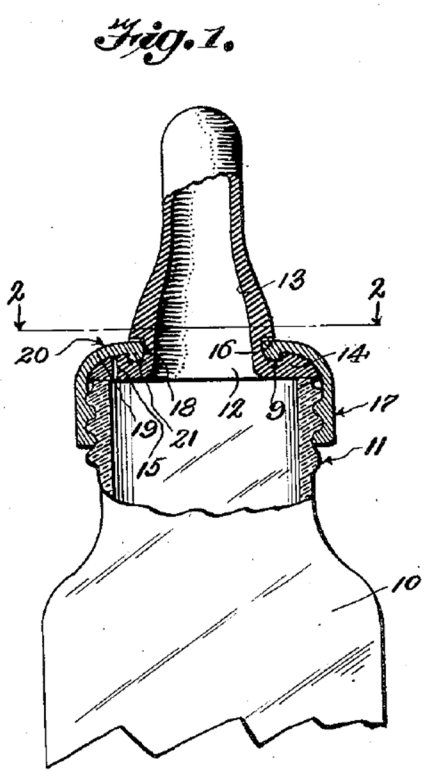
combination would further improve the design and goals of *Ishimaru* to provide easy cleaning, prevent nipple collapse, and provide a breast-like appearance. Ex[1008] at ¶¶ 51, 52.

292. Moreover, a POSA would have had a reasonable expectation of success in combining these nipples because each nipple would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. Therefore, a POSA would have been motivated to combine the nipple and vessel of *Kurkjian* with the nipple and vessels of *Sepehr* and *Ishimaru*.

B. Claim 14

(i) [14.PRE]: A feeding bottle comprising:

293. *Kurkjian* discloses a feeding bottle. For example, *Kurkjian* discloses "nursing units" having a "resilient, flared nipple." Ex[1009] at 1:1-8. *Kurkjian* further discusses this "nursing unit" and identifies, for example, a "nursing bottle" designated by "10" in Figure 1. Ex[1007] at 1:41-44, 1:25-26, Fig. 1.



Ex[1009] at Fig. 1, showing a nursing bottle.

294. *Kurkjian* displays additional views of the disclosed nursing unit in, for example, Figures 6 and 7. Ex[1009] at Figs. 6, 7. Additionally, *Kurkjian*'s Claims 1-4 describe the "nursing unit" with "nipple" and "bottle." *Id.* at Claims 1-4.

295. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XII.A.

(ii) [14.A]: a) a vessel having an open top,

296. *Kurkjian* discloses a vessel having an open top. For example, *Kurkjian* describes that the "nursing bottle" of the nursing unit is "preferably of the wide-mouth type, having threads 11 formed near its open or outer end." Ex[1009] at 1:41-44. This describes the nursing bottle as having an end which is "***open***." *Id.*

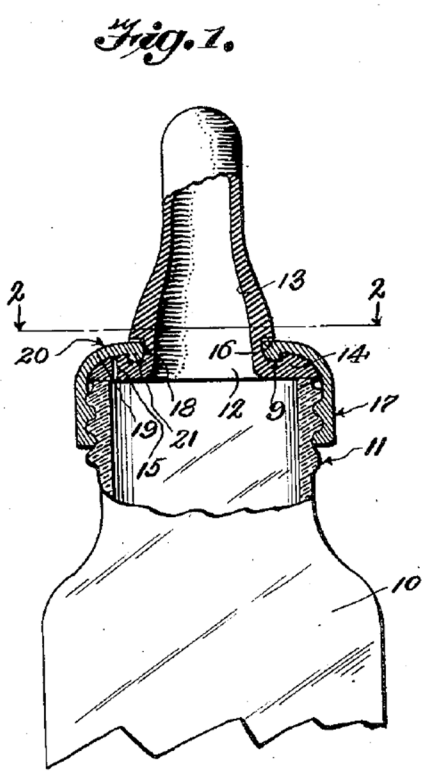
297. The open end, or top, of the nursing bottle disclosed by *Kurkjian* is shown, for example, in Figure 1 above, described as near threads 11, wherein a "flexible nipple 12" fits over the open end of the bottle. *Id.* at 1:45-49. *Kurkjian* displays additional views of the disclosed nursing bottle with open end in, for example, Figures 6 and 7. Ex[1007] at Figs. 6, 7. Additionally, *Kurkjian* reiterates in its claim set that the nursning unit comprises "a bottle having an open outer end." *Id.* at Claims 1-4.

298. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* § XII.A.

(iii) [14.B]: b) a collar having an upper rim and a lower rim comprising: an internally threaded inner surface,

299. *Kurkjian* discloses a collar having an upper rim and a lower rim comprising an internally threaded inner surface. *See, e.g.,* Ex[1009] at 2:14-35, Figs. 1, 6, 7, Claims 1-4. Specifically, *Kurkjian* describes a "retaining cap 17" which is "removably fitted over the outer or open end of the bottle" of the disclosed nursing unit. Ex[1009] at 2:14-17. The retaining cap has an upper rim and a lower rim—specifically, the cap is disclosed to include "an inwardly extending annular flange 19" which "is preferably curved upon its outer face 20 from the body portion 13 of the nipple." *Id.* As illustrated in Figure 1 below, this retaining cap includes an upper rim (the upper portion of flange 19 denoted by outer face 20 and/or bead 21 in Figure

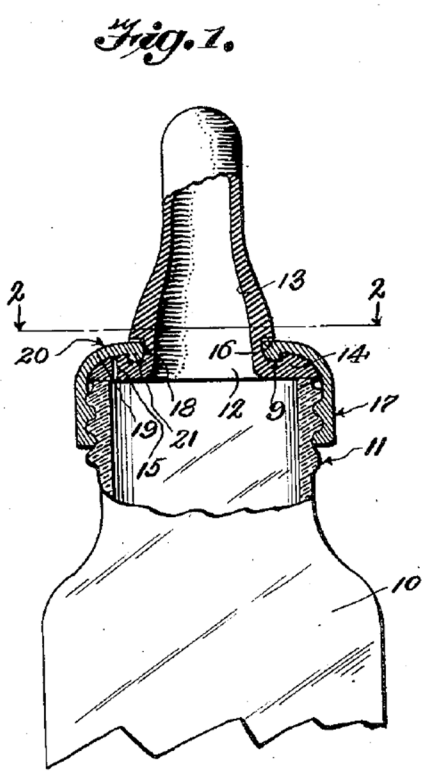
1 below) and a lower rim. Each of these two rims are shown in Figure 1 to include slopes and characteristics different from each other.



Ex[1009] at Fig. 1, showing a nursing unit comprising retaining cap 17, itself comprising flange 17 with outer face 20 and bead 21.

300. The retaining cap in *Kurkjian* is also described as having an internally threaded inner surface: "retaining cap 17 … is provided with screw-threads for interfitting with the threads 11 [of the bottle]." *Id.* at 2:14-17. *Kurkjian* shows that these threads are internal. For example, the retaining cap is described in *Kurkjian* as fitting ***over*** the open outer end of the bottle. *Id.* This is consistent with what is shown in Figure 1, in which the "threads 11" of the open, outer end of the bottle are on the external side of the bottle's top, and the "screw-threads for interfitting with

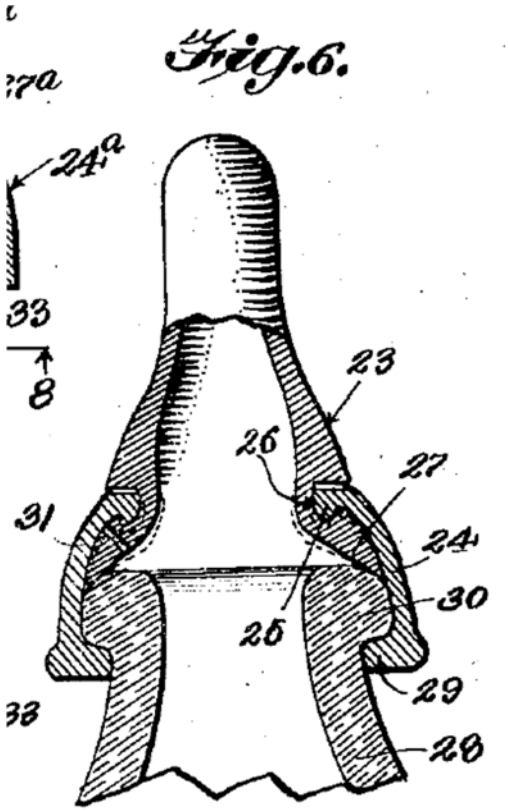
the threads 11" are thus on the internal side of the retaining cap. *Id.* at 2:14-17, Fig. 1. A closeup is also shown in Figure 3. *Id.* at 1:29-30, Fig. 3.



Ex[1009] at Fig. 1, showing a nursing unit comprising a bottle with threads 11 and a retaining cap 17 fitting over the threads.

301. *Kurkjian* describes, in a "modified form of the invention," a slight variant on the cap, described as a "securing cap" which "consists of a conical body of a thimble-like structure" and includes, as with the aforementioned cap, "an inwardly extending annular flange 29." *Id.* at 3:29-51. "The outer face of the cap 24 preferably conforms to the contour of the nipple 23 and constitutes a continuation thereof to provide a streamline type connection between the nipple and the bottle 28." *Id.* at 3:42-47. This is shown in Figure 6 below, illustrating an additional

iteration of the cap which also consists of an upper rim (upper part of cap 24 towards bead 26) and lower rim (lower part of cap 24 towards inwardly extending flange 29). As with the first cap variation, each of these upper and lower rims have characteristics and slopes different from each other.



Ex[1009] at Fig. 6, showing the cap variant 24 with annular flange 29.

302. Also, as with the previously described cap, this "securing cap" might comprise an internally threaded inner surface as claimed by the '930 Patent. *Kurkjian* says of the "securing cap": it "may be secured in any suitable or desired manner to the neck, or to the bottle 32." *Id.* at 3:57-63. A POSA would understand "any suitable" manner to include the previously taught securing method of threading, as depicted in Figures 1 and 3 and described above with respect to the first-described

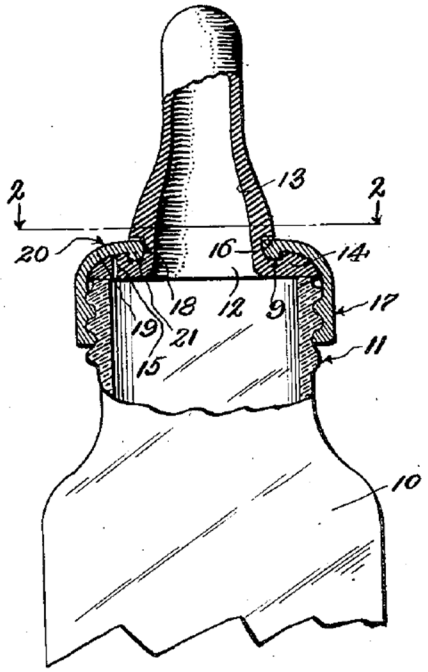
retaining cap. *Id.* A POSA would be motivated to incorporate the internal thread design of Figures 1 to the shape of the cap depicted in Figures 6 or 7.

303. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XII.A.

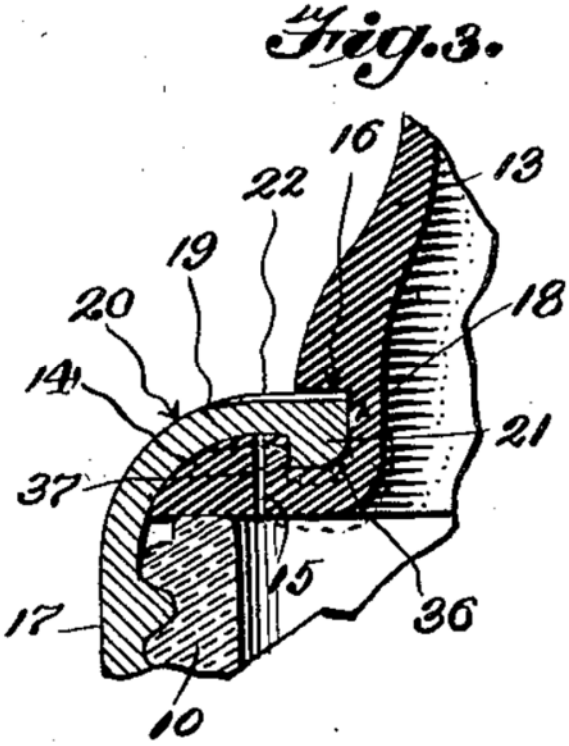
(iv) [14.C]: an outermost surface having a sloping portion that extends outwardly and downwardly relative to said upper rim, and wherein said sloping portion comprises a majority of the collar's outermost surface;

304. In addition to this analysis, *Kurkjian* discloses that the collar has an outermost surface having a sloping portion that extends outwardly and downwardly relative to said upper rim, wherein said sloping portion comprises a majority of the collar's outermost surface. Specifically, *Kurkjian* describes that its "retaining cap" (analogous to the claimed collar) "is preferably curved upon its outer face 20 from the body portion 13 of the nipple toward the outer periphery of the cap 17 to provide a convex outer face upon the outer end of the cap 17 and provide a receding outer face upon the cap away from the nose of the baby while sucking." Ex[1009] at 2:14-35, Fig. 1. As illustrated in Figure 1 below, the retaining cap's outer surface along said outer face 20 comprises a sloping portion that extends outwardly and downwardly relative to its upper rim; Figure 1 shows that this sloping portion comprises a majority of the cap's outermost surface.

Fig. 1.

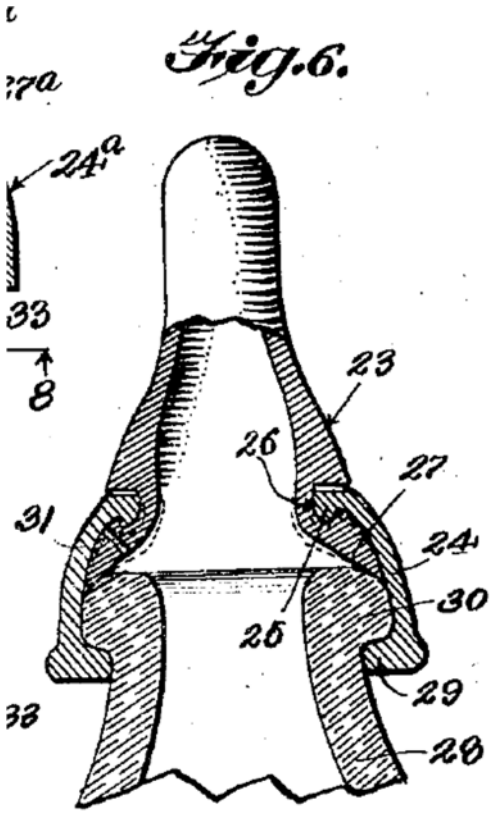


Ex[1009] at Fig. 1, showing a nursing unit comprising retaining cap 17 having sloped outer face 20.



Ex[1009] at Fig. 3, showing a portion of retaining cap 17 having flange 19 and curved outer face 20.

305. *Kurkjian* additionally describes, with respect to the described "securing cap," that the outer face "conforms to the contour of the nipple and constitutes a continuation thereof to provide a streamline type connection between the nipple 23 and the bottle 28," and accordingly is shown in Figure 6 below as having a sloping outer contour. *Id.* at 3:42-47, Fig. 6. *Kurkjian* thus describes, and confirms by Figure 6, that the securing cap's outer surface slopes out and down relative to its upper rim. *Id.*



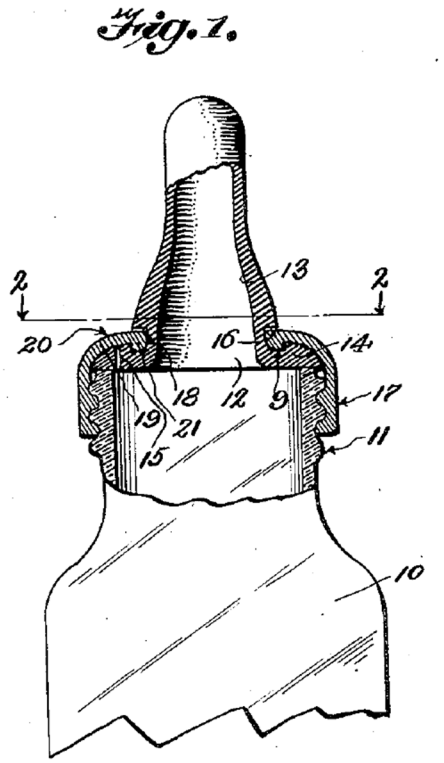
Ex[1009] at Fig. 6, showing the cap variant 24 with annular flange 29, bead 26, and a sloping outer face.

306. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* § XII.A.

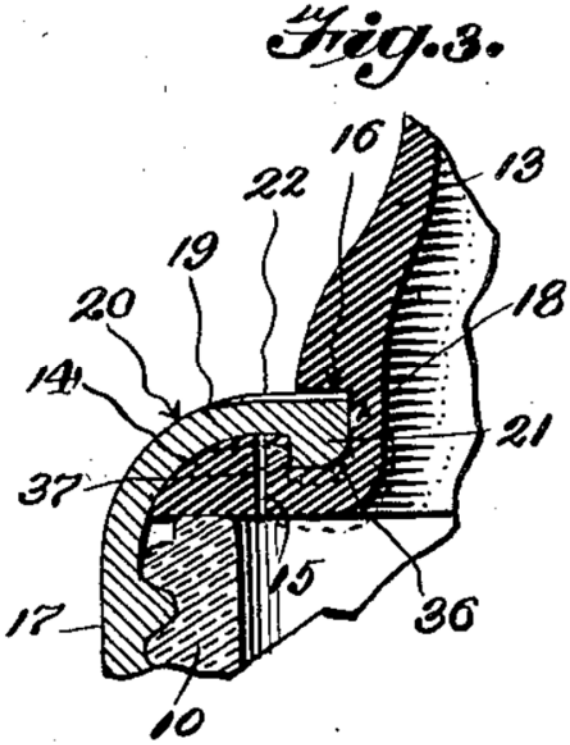
(v) [14.D]: c) a nipple having: a teat portion having a variable wall thickness including an aperture,

307. *Kurkjian* discloses a nipple having a teat portion having a variable wall thickness including an aperture. Specifically, *Kurkjian* discloses a "resilient flanged nipple" as part of its "nursing unit." Ex[1009] at 1:1-8, 1:45-49. The "flexible nipple 12" described by *Kurkjian* has "a body portion constituting a neck 13 and laterally extending and preferably annular flange 14." *Id.* at 1:45-55. This nipple is shown,

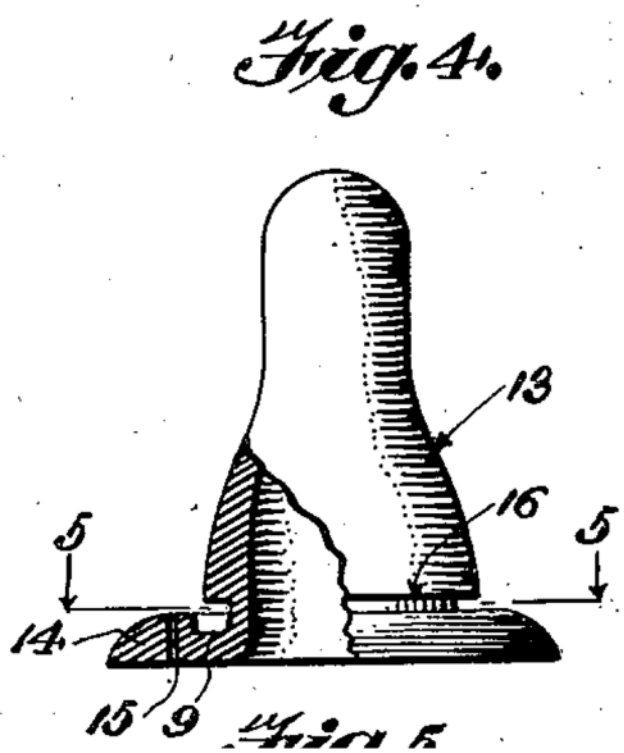
for example, in Figures 1, 3, and 4. Figures 1 and 3 show the nipple in connection with the cap, while Figure 4 shows "a side elevation of the nipple" on its own. *Id.* at 1:31-32.



Ex[1009] at Fig. 1, showing a nursing unit comprising nipple 12 having body portion including neck 13 and flange 14.



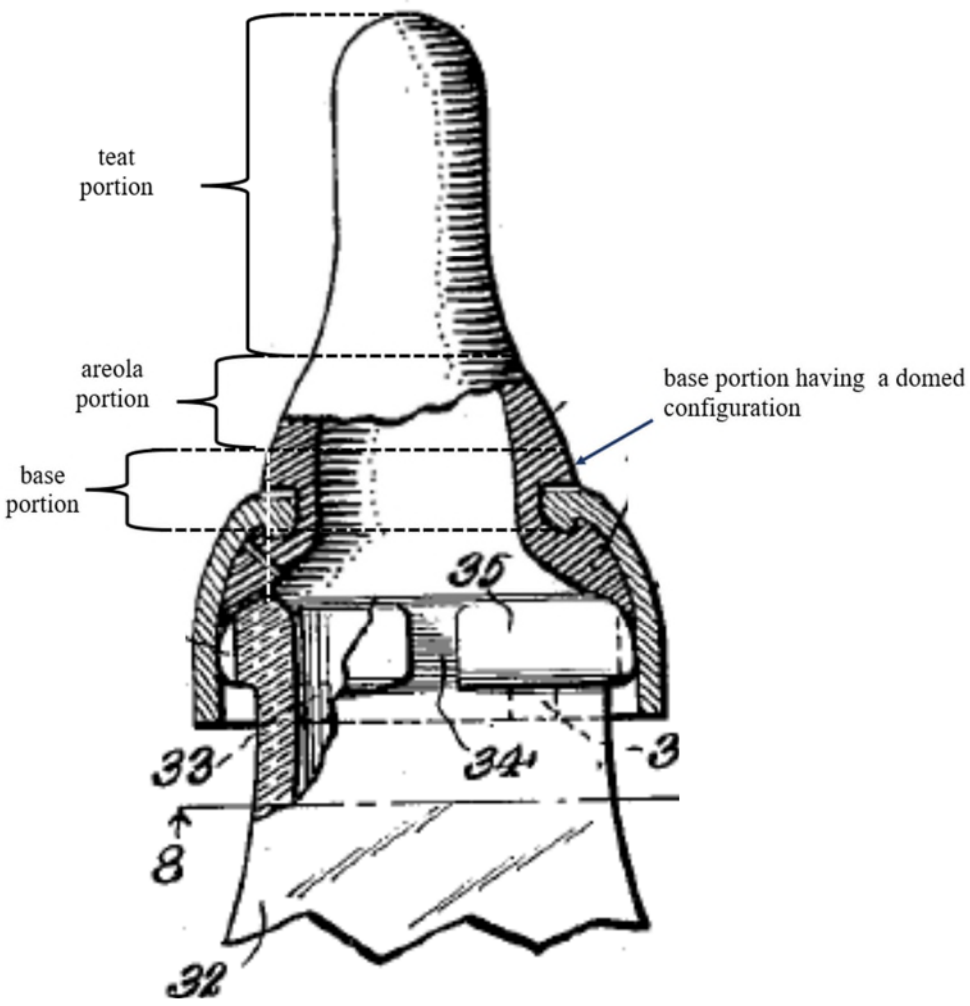
Ex[1009] at Fig. 3, showing a portion of nipple 12 having neck 13 and flange 14.



Ex[1009] at Fig. 4, showing nipple 12 with body portion, neck 13, and flange 14.

308. A POSA would understand that the nipple described by *Kurkjian* has three portions corresponding to the teat, base, and areola portions of Claim 14, limitations [14.D], [14.E], and [14.F], respectively. These portions are illustrated on Figure 7 below. Specifically for [14.D], a POSA would consider that that uppermost portion of the nipple as described in *Kurkjian* constitutes a "teat" portion under either Petitioner or Patent Owner's constructions relating to this term. Both constructions agree that the teat portion is disposed above the areola portion and is generally perpendicularly upward relative to the mouth of the vessel, which in this case is the upper, open end of the bottle disclosed by *Kurkjian*. The competing constructions do not change the analysis, which is that a POSA would consider that the upper portion of *Kurkjian*'s nipple constitutes a teat portion.

Kurkjian according to Petitioner's/PO Construction



Ex[1009] at Fig. 7, showing nipple annotated to show the locations of the teat, base, and areola portions as a POSA would understand them.

309. *Kurkjian* further discloses that this teat portion has a variable thickness. Specifically, under Patent Owner's construction—that variable thickness is entitled its plain and ordinary meaning—it can be seen in any of Figures 1, 3, 4, 6, and 7 that the portion identified as the "teat" portion is pictured as having a variable thickness. *See, e.g., id.* at Figs. 1,3, 4,6,7.

310. To the extent that *Kurkjian* does not explicitly disclose a teat portion of variable thickness under Petitioner's construction—that the wall has a helical groove—this limitation is rendered obvious by the combination of *Kurkjian* with *Sepehr* and *Ishimaru*. As explained previously, *Ishimaru* discloses a helical groove. *See supra* §XI.B(v). A POSA would have been motivated to incorporate the helical groove taught by *Ishimaru* into the teat of the nipple disclosed by *Kurkjian*. *See supra* §XII.A.

311. Finally, *Kurkjian* discloses that the teat portion of the nipple has an aperture. Although not explicitly stated in the disclosure of *Kurkjian*, a POSA would understand that in order to fulfill its purpose as a "nursing unit," the nipple contains an aperture through which a baby can consume the contents of the bottle. *See, e.g., id.* at 2:54-3:10 ("the baby sucking upon the nipple or body portion 13 thereof..."), 1:54-2:4 ("the flow of milk ***through*** the nipple..." (emphasis added)), 2:20-28. A POSA would understand that such an aperture must be present in the teat portion of the nipple, which is the uppermost portion of the nipple that would extend into the baby's mouth in order for the baby to suck upon the nipple as disclosed. *Id.*

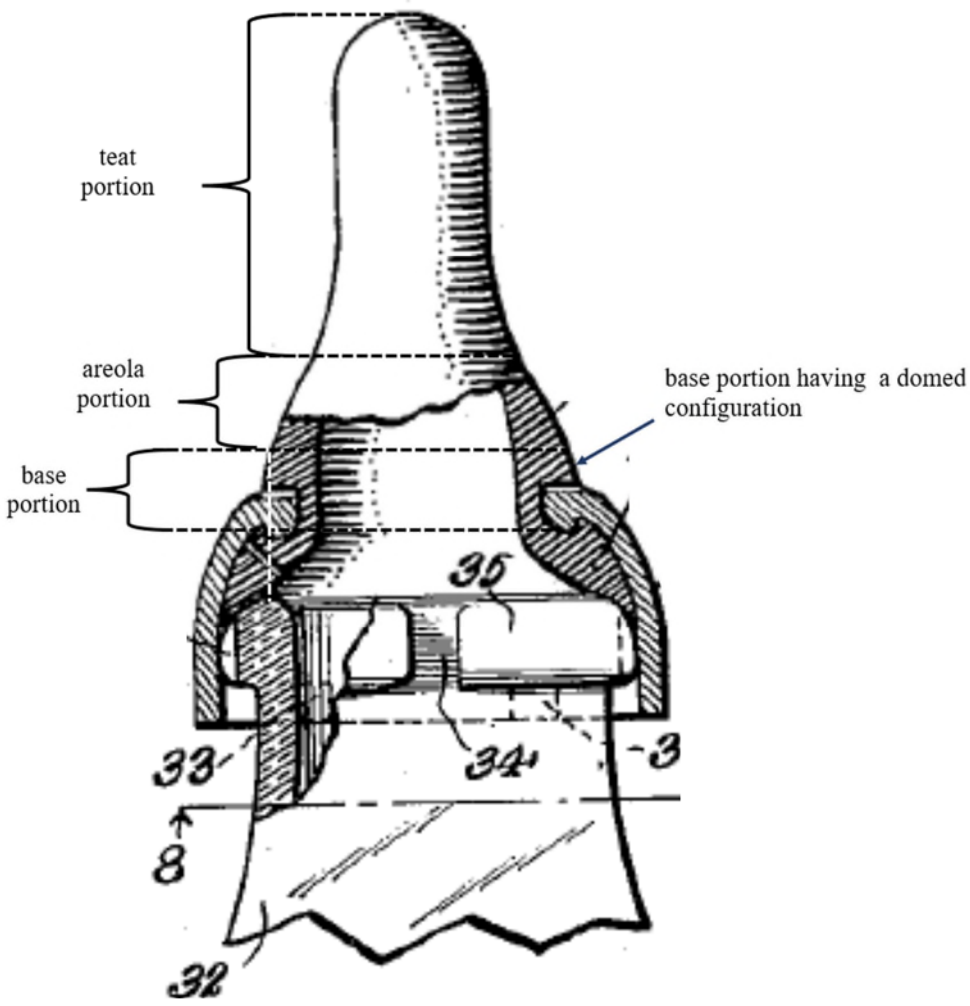
312. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XII.A.

(vi) [14.E]: a base portion having a domed configuration,

313. *Kurkjian* discloses a base portion having a domed configuration. As previously explained, *Kurkjian* discloses a "resilient flanged nipple" as part of its "nursing unit." Ex[1009] at 1:1-8, 1:45-49. The "flexible nipple 12" described by *Kurkjian* has "a body portion constituting a neck 13 and laterally extending and preferably annular flange 14." *Id.* at 1:45-55.

314. As described above, a POSA would understand that the nipple described by *Kurkjian* has three portions corresponding to the teat, base, and areola portions of Claim 14, limitations [14.D], [14.E], and [14.F], respectively. These portions are illustrated on Figure 7 below. Specifically for [14.E], a POSA would consider that that lower portion of the nipple as described in *Kurkjian* constitutes a "base" portion under either Petitioner or Patent Owner's constructions relating to this term.

Kurkjian according to Petitioner's/PO Construction

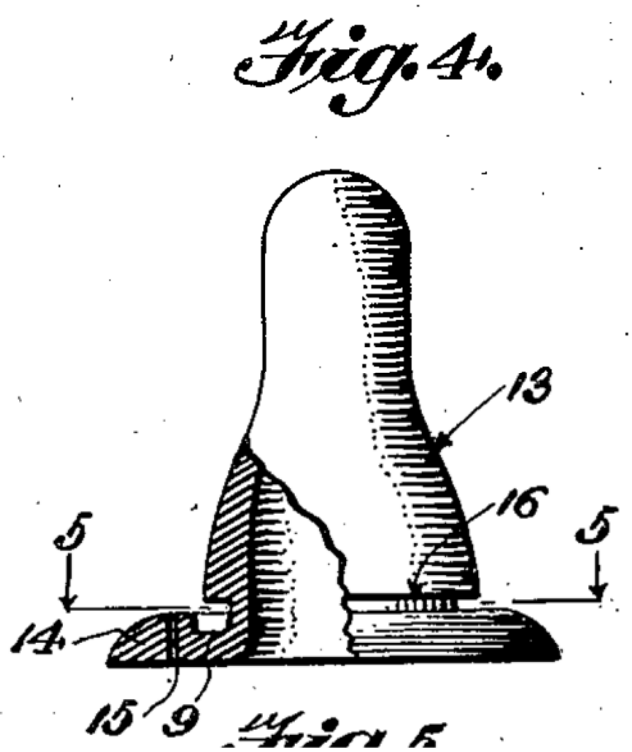


Ex[1009] at Fig. 7, showing nipple annotated to show the locations of the teat, base, and areola portions as a POSA would understand them.

315. Both constructions agree that the base portion is the lowest portion of the nipple, whereas Petitioner's construction additionally requires that the base portion is mountable to the vessel (bottle) and begins where the nipple meets the top portion of the vessel. *Kurkjian* discloses that the nipple is mountable to the bottle via the previously discussed retaining cap or securing cap. *Id.* at 2:40-48 ("The outer

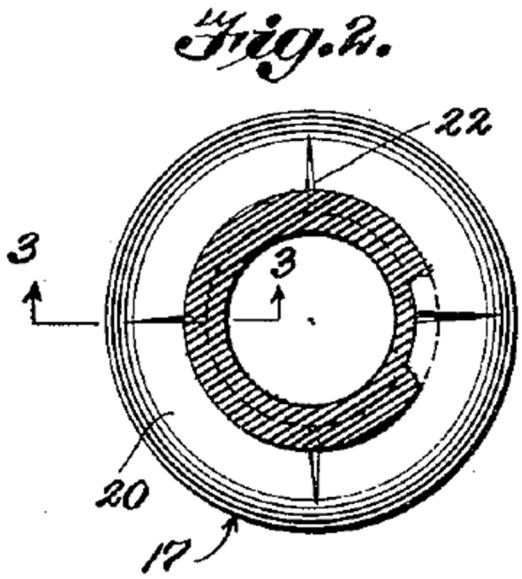
edge of the flange 14 [of the nipple] is adapted to be firmly clamped between the flange 20 of the cap 17 and the extreme outer edge of the neck of the bottle 10...”). To the extent that *Kurkjian* does not explicitly disclose a base portion mountable to the vessel and beginning where the nipple meats the top portion of the vessel, this limitation is rendered obvious by the combination of *Kurkjian* with *Sepehr* and *Ishimaru*.

316. *Kurkjian* further discloses that this base portion has a domed configuration under both Petitioner’s and Patent Owner’s constructions of the term. Under Petitioner’s construction—that the base has a rounded configuration in profile—*Kurkjian* discloses that the flange area of the nipple is “laterally extending” and is “preferably annular,” meaning ring-shaped, or rounded. *Id.* at 1:45-55. A rounded nature of the disclosed flange is also shown in, for example, Figures 1, 3, 4.



Ex[1009] at Fig. 4, showing nipple 12 in profile with body portion, neck 13, and rounded flange 14.

317. Alternatively, under Patent Owner's construction—that the base portion is a wide circular base with an arc-shaped cross-section—*Kurkjian* discloses that the flange area of the nipple is "laterally extending," and as shown in Figure 4 above, this base portion is wider than the two portions above it. *Id.* at 1:45-55. This same figure additionally shows that this base portion's cross-section is arc-shaped. *Id.* at Fig. 4, 6, 7. Finally, as best illustrated in Figure 2, this base portion is circular.



Ex[1009] at Fig. 2, showing circular configuration of nipple (shaded inner portion).

318. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XII.A.

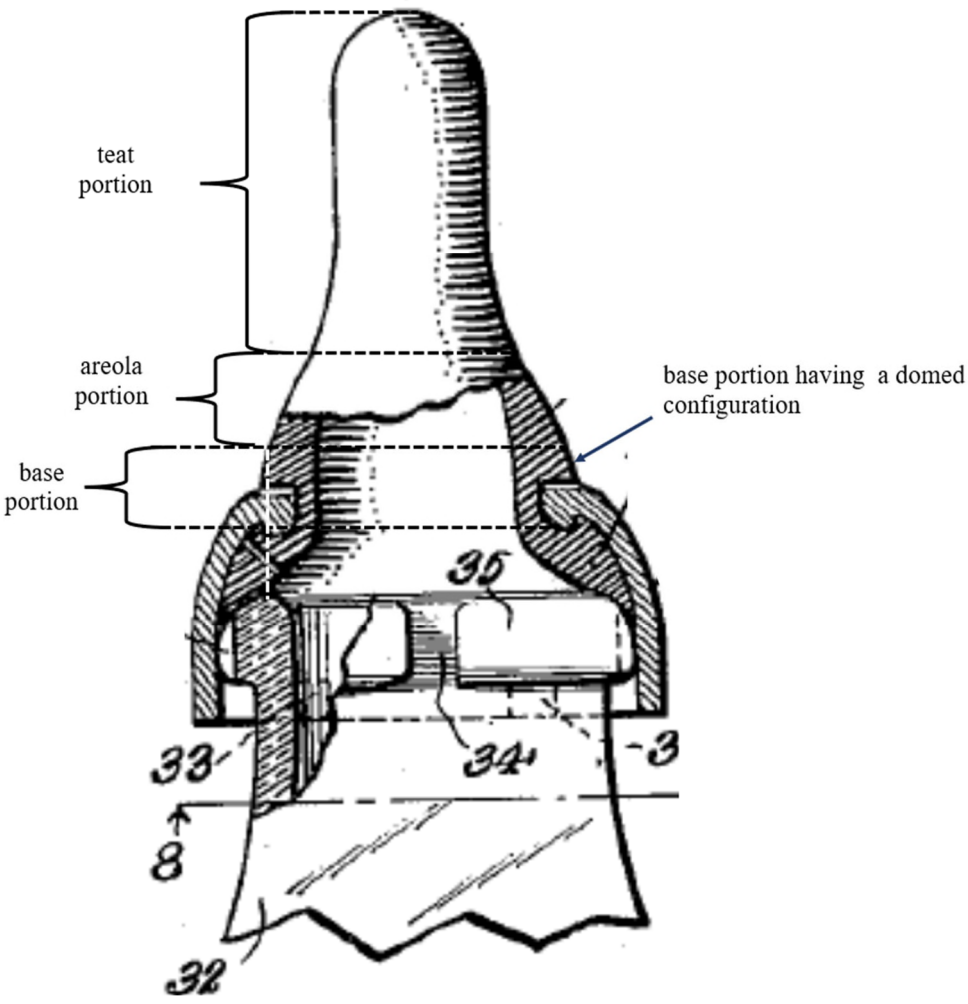
(vii) [14.F]: an areola portion between the teat portion and the base portion,

319. *Kurkjian* discloses that the nipple has an areola portion between the teat portion and the base portion. As previously explained, *Kurkjian* discloses a "resilient flanged nipple" as part of its "nursing unit." Ex[1009] at 1:1-8, 1:45-49. The "flexible nipple 12" described by *Kurkjian* has "a body portion constituting a neck 13 and laterally extending and preferably annular flange 14." *Id.* at 1:45-55.

320. As described above, a POSA would understand that the nipple described by *Kurkjian* has three portions corresponding to the teat, base, and areola portions of Claim 14, limitations [14.D], [14.E], and [14.F], respectively. These

portions are illustrated on Figure 7 below. Specifically for [14.F], a POSA would consider that that middle portion of the nipple as described in *Kurkjian* constitutes an "areola" portion under either Petitioner or Patent Owner's constructions relating to this term.

Kurkjian according to Petitioner's/PO Construction



321. Both constructions agree that the areola portion extends beyond the bottom of the teat portion—as shown above, a POSA would understand that *Kurkjian* discloses that the areola portion is disposed just below the teat portion and

extends from it. Alternatively, under Petitioner's construction—that the areola portion has a different characteristic and functionality from the rest of the nipple—*Kurkjian* shows in, e.g., Figure 4, that the portion considered by a POSA to be the areola portion has a different cross-sectional slope than the other two portions of the nipple, and additionally different thicknesses. *Id.* at Figs. 1, 3-4, 6-7.

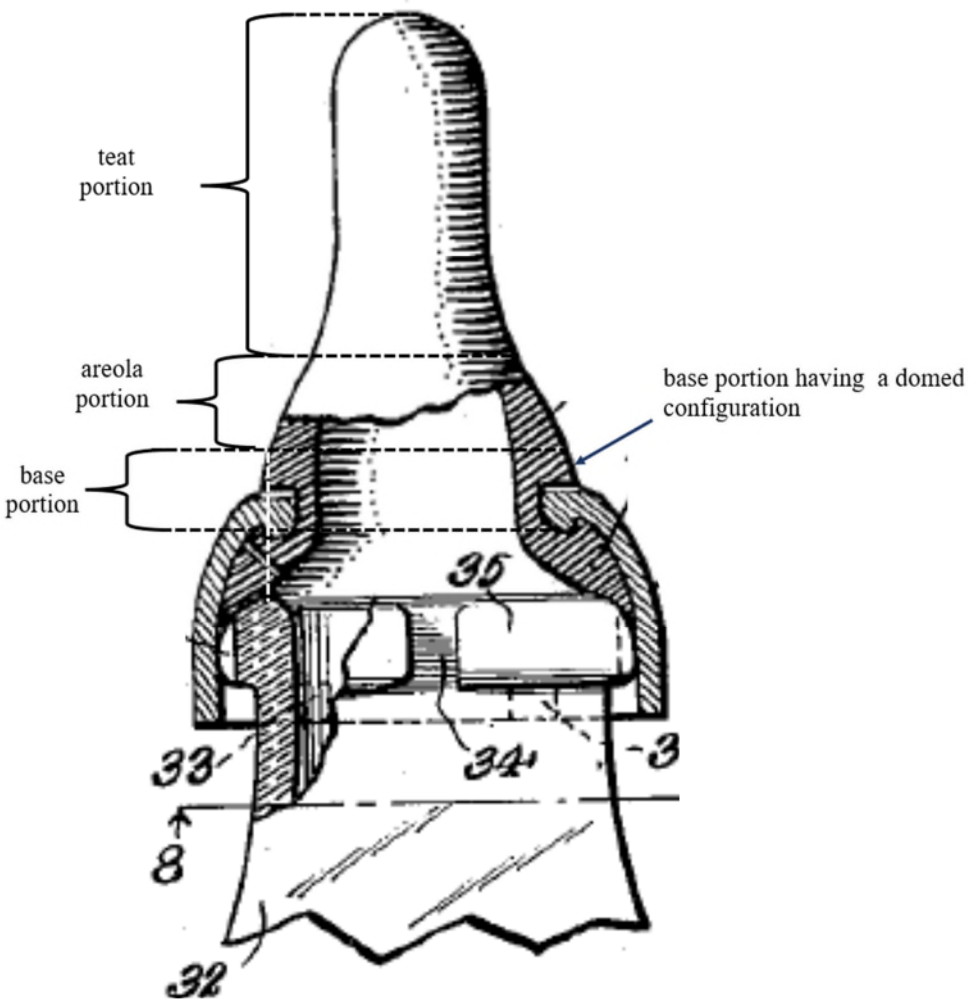
322. To the extent that *Kurkjian* does not explicitly disclose an areola portion having different characteristic and function from the rest of the nipple, this limitation is rendered obvious by the combination of *Kurkjian* with *Sepehr* and *Ishimaru*.

323. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XII.A.

(viii) [14.G]: a flange depending from the base portion,

324. *Kurkjian* discloses a flange depending from the base portion of the nipple. Specifically, *Kurkjian* states that the "flexible nipple 12" is provided with "a laterally extending and preferably annular ***flange*** 14." Ex[1009] at 1:45-55 (emphasis added), 1:9-15 ("a flexible nipple having a vented flexible ***flange***." (emphasis added)). As explained above, a POSA would understand that the nipple described by *Kurkjian* has three portions corresponding to the teat, base, and areola portions of Claim 14, limitations [14.D], [14.E], and [14.F], respectively. These portions are illustrated on Figure 7 below.

Kurkjian according to Petitioner's/PO Construction



325. As can be seen in the above annotated Figure, flange 14 depends from the base portion. *Kurkjian* states that "it should be understood that the flange 14 is integral with the body portion 13 of the nipple," teaching that it is connected to the rest of the nipple including the claimed base portion. *Id.* at 1:45-2:10. *Kurkjian* further discloses that this flange is gripped by any cap disclosed to mount the nipple to the bottle. *Id.* at 2:53-3:17, 3:33-70.

326. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XII.A.

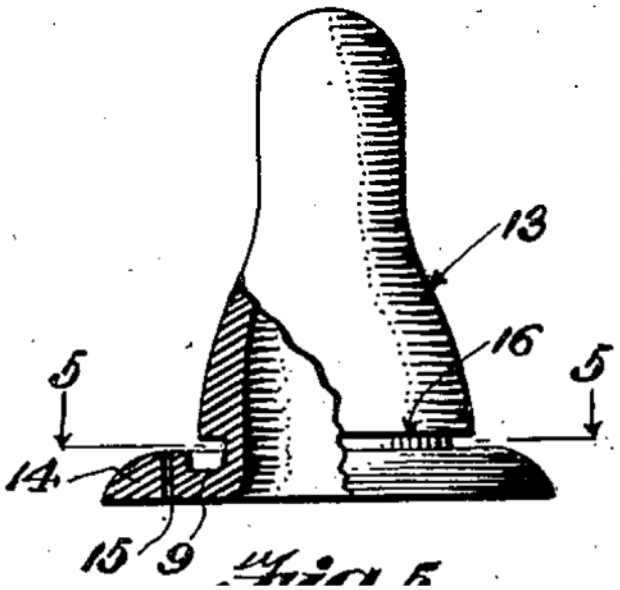
(ix) [14.H]: a one-way air inlet valve (i) extending through said base,

327. As explained in §XII.A above, a POSA would have been motivated to modify *Kurkjian* based on the teachings of *Sepehr*, such that the one-way air valve extends through the base just outside of the collar. *Kurkjian* discloses an air inlet valve. Specifically, *Kurkjian* discloses that the nursing unit has a "flexible nipple having a ***vented*** flexible flange..." Ex[1009] at 1:9-15 (emphasis added).

328. Further, *Kurkjian* discloses that this venting aperture is an air inlet valve, allowing air into the bottle during operation: "It should be understood that as a vacuum is built up in the bottle through the baby sucking upon the nipple...the flange 14 may flex [and] draw the upper face of the flange adjacent the vent 15 away from the inner face of the flange 20 of the cap 17 and ***allow air to pass*** under the shoulder 16 and between the body portion 13 of the nipple and the edge of the aperture 18, under the face of the flange 20 of the cap 17, and ***through the vent opening 15 into the bottle***." *Id.* at 3:54-2:10 (emphasis added). It would be obvious to modify the teachings of *Kurkjian* to introduce teachings from *Sepehr* to arrive at a nipple having a one-way air inlet valve disposed through the nipple's base portion. *See supra* §XII.A. *Sepehr* discloses a one-way air inlet valve located above the collar and disposed through the base portion of the nipple. Specifically, *Sepehr* discloses

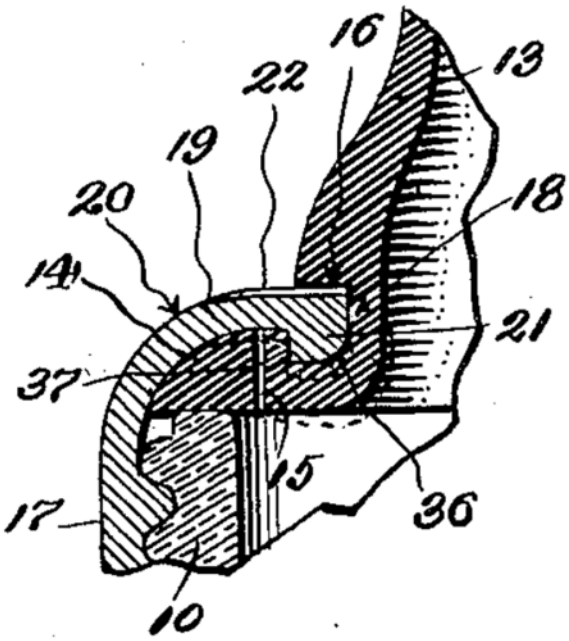
that its design includes a "***one-way air inlet valve*** 2 operable automatically." Ex[1007] at Abs. (emphasis added). *Sepehr* further explains: "The valve comprises a flexible membrane having an opening 3 which ***admits air into the container*** when the air pressure within the container becomes depressed relative to the external air pressure, as a result of the feeding action of the child." *Id.* at Abs. (emphasis added), 1:3-7, 2:4-11, 2:13-18, 2:32-3:6, 3:8-19 ("automatic valve 2 produced as an integral part of teat 1 which has a slit 3 across the valve 2 in order to allow the air to enter the bottle"), 3:26-4:2, 4:8-12. *Sepehr* discloses that this "valve may be integral with the teat or a separate component removable from teat or bottle," and *Sepehr* additionally shows this valve in Figure 1, located slightly above the flange of its disclosed nipple. *Id.* at Abs., Figs. 1-4. This is indicating that it is disposed, on a comparable nipple taught by *Kurkjian*, to be extending through the portion of the nipple which a POSA would understand to be the claimed "base portion." *Id.* at Abs.

Fig. 4.



Ex[1009] at Fig. 4, showing nipple 12 in profile with flange 14 and venting aperture 15.

Fig. 3.



Ex[1009] at Fig. 3, showing a portion of nipple 12 having flange 14 and venting aperture 15.

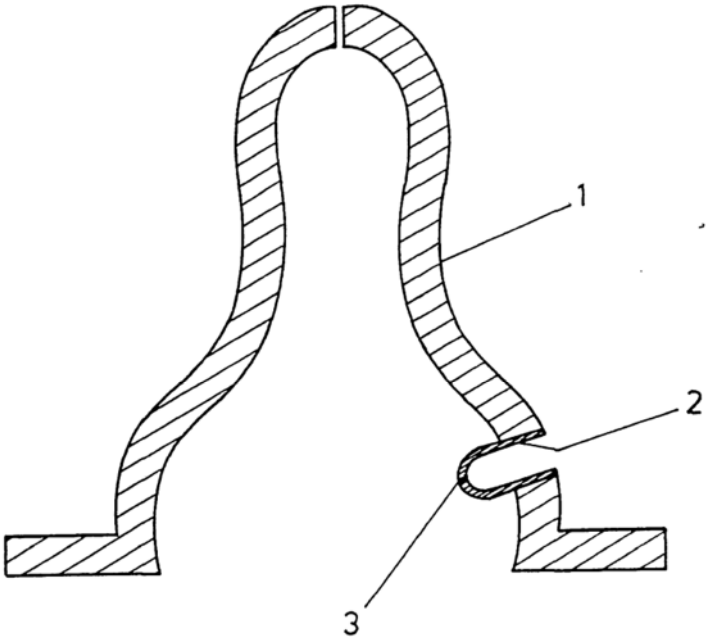


FIG. 1

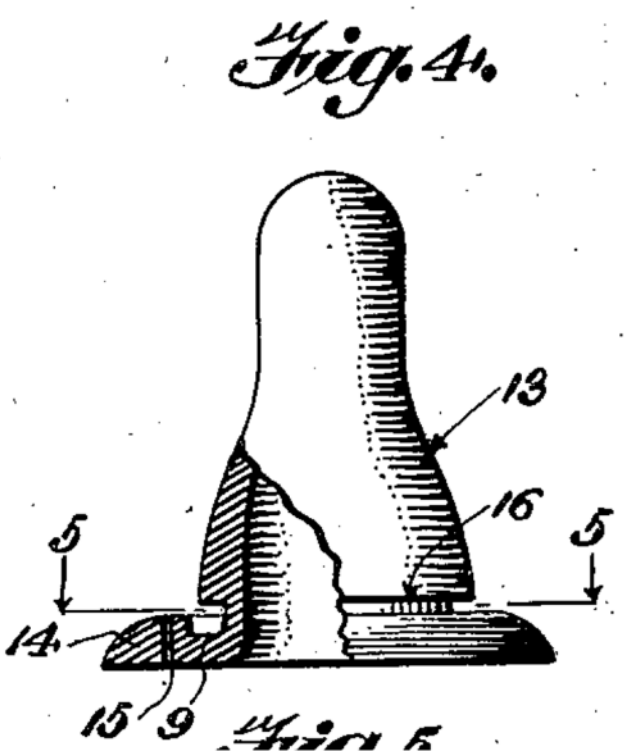
Ex[1007] at Fig. 1, showing one-way air inlet valve 2 with slit 3.

329. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XI.B(ix).

(x) [14.I]: (ii) projecting downwardly from the base portion,

330. As explained in §XII.A above, a POSA would have been motivated to modify *Kurkjian* based on the teachings of *Sepehr*, such that the one-way air valve extends through the base just outside of the collar. *Kurkjian* discloses a one-way air inlet valve extending through said base. *Kurkjian* discloses that the one-way air inlet projects downward from the base portion. As previously explained, *Kurkjian*

discloses that its "vented aperture 15" allows air into the bottle and is disposed through the base. Ex[1009] at 1:9-15, 1:45-55, Fig. 1, 3, 4. *Sepehr* discloses that its "***one-way air inlet valve*** 2" is positioned downwardly through said base, as can be seen in, for example, *Sepehr's* Figure 1 in above. Ex[1007] at Fig. 1, Abs. As explained previously, a POSA would be motivated to incorporate the one-way air vent disclosed by *Sepehr* into the nipple taught by *Kurkjian*. *See supra* §XII.A.

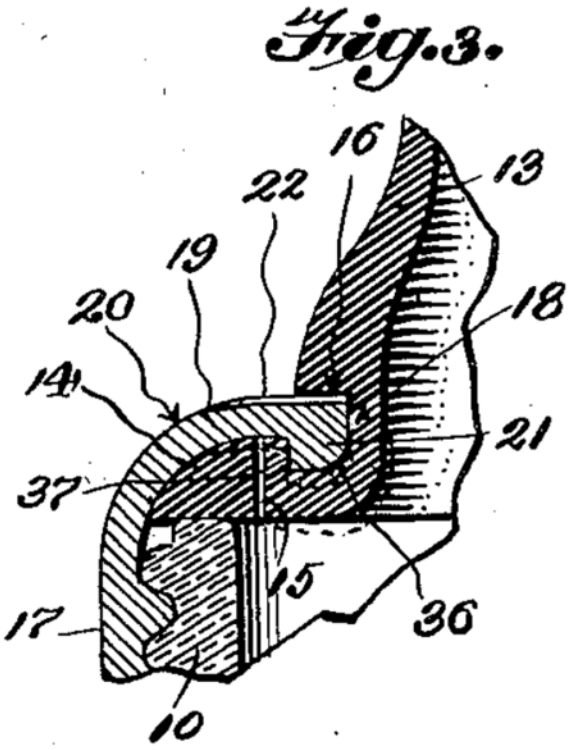


Ex[1009] at Fig. 4, showing nipple 12 in profile with flange 14 and vertical vented aperture 15.

331. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XI.B(x).

(xi) [14.J]: (iii) having a length that does not extend past the collar's lower rim, and

332. As explained in §XII.A above, a POSA would have been motivated to modify *Kurkjian* based on the teachings of *Sepehr*, such that the one-way air valve extends through the base just outside of the collar. *Kurkjian* discloses a one-way air inlet valve extending through said base. *Kurkjian* discloses that its air inlet has a length that does not extend past the collar's lower rim. Ex[1009] at 2:54-3:28. As can be seen, for example, in Figure 3 below, the disclosed "venting aperture 15" is shown to have a vertical length that does not extend past the lower rim of the disclosed cap 17 (the claimed collar). *Sepehr* discloses that its "***one-way air inlet valve*** 2" has a length that does not extend past the collar's lower rim, as shown in *Sepehr's* Figure 1 above. Ex[1007] at Fig. 1, Abs.

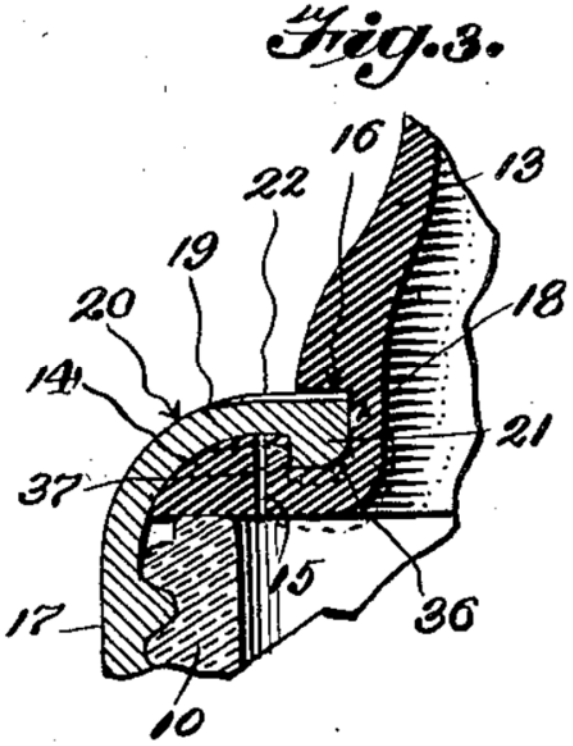


Ex[1009] at Fig. 3, showing a portion of nipple 12 having flange 14 and venting aperture 15.

333. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XI.B(xi).

(xii) [14.K]: (iv) disposed at least partially inwardly from the collar; the flange being arranged to seal with the vessel;

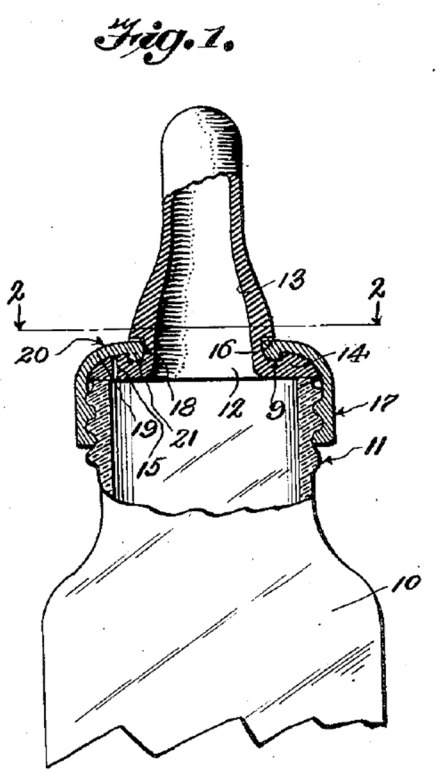
334. As explained in §XII.A above, a POSA would have been motivated to modify *Kurkjian* based on the teachings of *Sepehr*, such that the one-way air valve extends through the base just outside of the collar. *Kurkjian* discloses a one-way air inlet valve extending through said base. *Kurkjian* discloses that the air inlet is disposed at least partially inwardly from the collar. As can be seen, for example, in Figure 3 below, *Kurkjian*'s disclosed "venting aperture 15" is disposed partially inwardly (towards the center of the bottle) from the disclosed cap 17 (claimed collar). In Figure 3, the collar 17 is shown arcing up and around the nipple's flange 14 and around the flange's aperture 15.



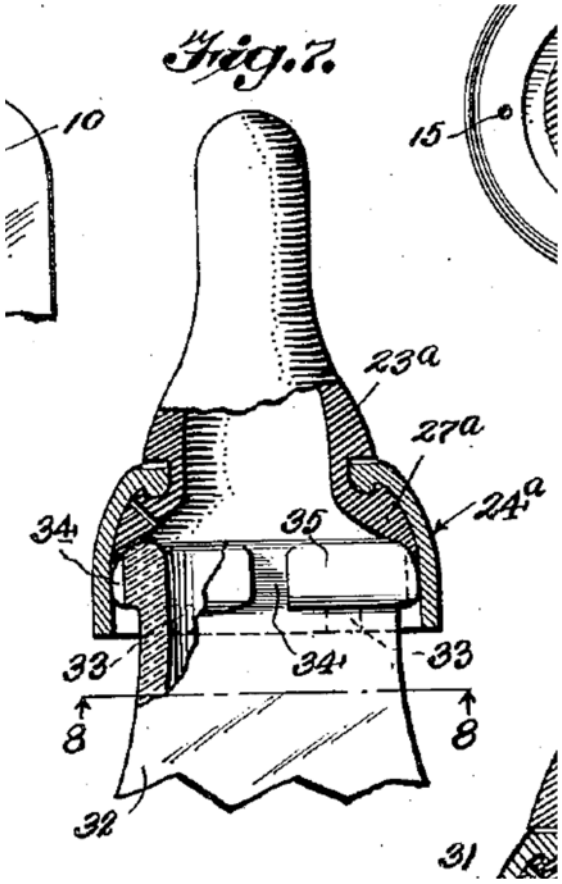
Ex[1009] at Fig. 3, showing a portion of nipple 12 having flange 14 and venting aperture 15, and additionally showing a portion of collar 17.

335. *Kurkjian* further discloses that the flange is being arranged to seal with the vessel. Specifically, *Kurkjian* discloses that its disclosed flange is "retained upon the neck of a bottle my beans of a retaining cap." *Id.* at 1:9-15. *Kurkjian* describes that the flange seals with the bottle (claimed vessel) and is held in place by the cap: "The outer edge of the ***flange 14 is adapted to be firmly clamped*** between the flange 20 of the cap 17 and the extreme outer edge of the neck of the bottle 10." *Id.* at 2:40-48 (emphasis added), 2:53-3:28. This is shown, for example, in Figure 1 below. *Kurkjian*'s other disclosed types of caps are similarly designed to produce the same connection between the flange of the nipple and the bottle: with respect to the visual

provided by Figure 7, "the flange 27a of the nipple 23a will be ***clamped*** between the upper edge of the cap 24 and the upper edge of the bottle neck 32." *Id.* at 3:52-71. It will be understood to a POSA that the description of the flange in either design being "clamped" / "clamped firmly" constitutes the flange being sealed to the bottle.



Ex[1009] at Fig. 1, showing a nursing unit comprising nipple 12 having body portion including flange 14 which is sealed against the top of bottle 10.



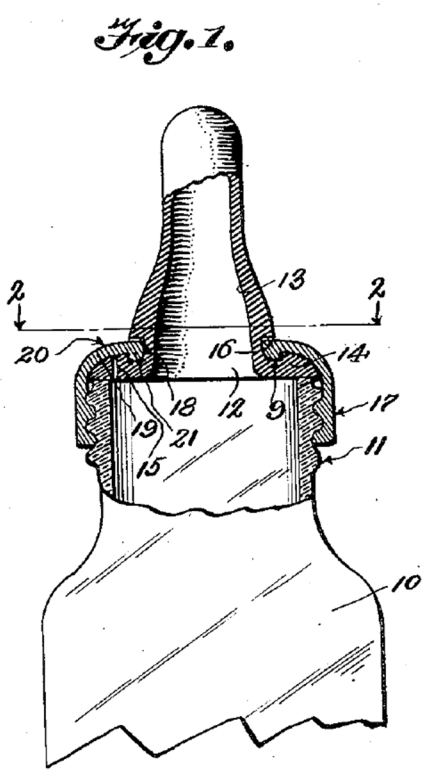
Ex[1009] at Fig. 7, showing nursing unit with nipple 23a having flange 27a, which is clamped between cap 24 and bottle neck 32.

336. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XI.B(xii).

(xiii) [14.L]: d) the nipple being secured to the collar by sealingly capturing an inner edge of the collar between the base portion and the flange; and,

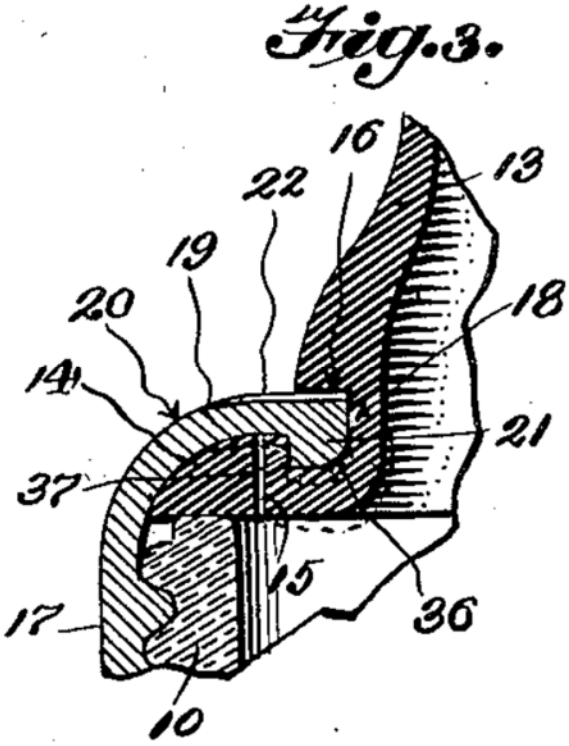
337. *Kurkjian* discloses that the nipple is secured to the collar by "sealingly" capturing an inner edge of the collar between the base portion and the flange. Specifically, *Kurkjian* discloses that its "nursing unit" having a "nipple" which is comprised of a body portion, a neck, and flange. Ex[1009] at 1:45-2:10, Figs. 1, 3.

Kurkjian also discloses that its "nursing unit" has a "cap," such as a "retaining cap 17" which by which the nipple is "retained upon the neck of a bottle by means of a retaining cap." *Id.* at 1:9-15. This text indicates that the nipple and cap are secured together by physical contact, which is further confirmed by disclosure that "[t]he outer edge of the flange 14 [of the nipple] is adapted to be ***firmly clamped between the flange 20 of the cap 17*** and the extreme outer edge of the neck of the bottle 10." *Id.* at 2:40-48 (emphasis added). Figures 1, 3, 6, and 7 also show this contact between the nipple's flange and the cap. *Id.* at Figs. 1, 3, 6-7. Figure 1 is reproduced below.

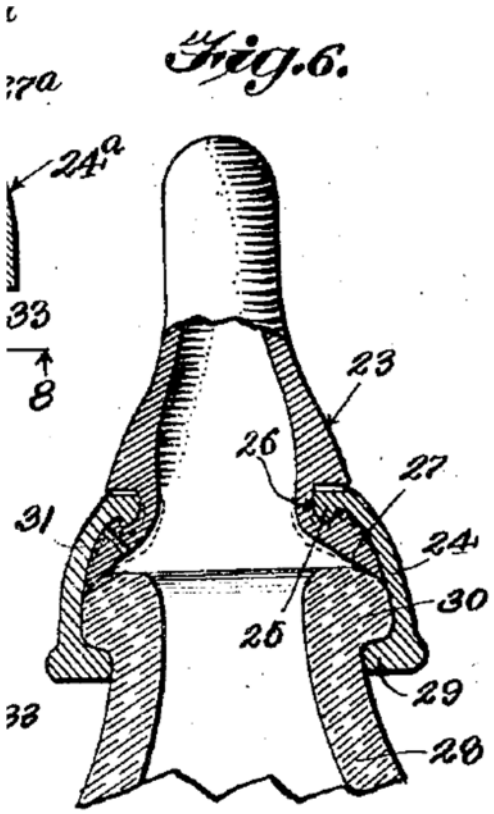


Ex[1009] at Fig. 1, showing a nursing unit comprising nipple 12 having body portion including flange 14 which is sealed against bottle 10 and cap 17.

338. As is further described and shown in Figure 1 above, the nipple's connection with the cap is characterized by the capture of what *Kurkjian* calls "bead 21" which is "adapted to fit within the channel 9 of the flange 14 directly under the shoulder 16 of the body portion 13 of the nipple." *Id.* at 2:11-48. As shown in closer detail in Figure 3 below, *Kurkjian*'s bead 21 is an inner edge of the cap 17 (claimed collar) and is secured between the nipple's shoulder 16 and flange 14. *Kurkjian*'s other disclosed types of caps are similarly designed to produce the same connection between the nipple and the cap *(id.* at Figs. 6, 7)*:* with respect to the visual provided by Figure 6, the "cap 24 is provided with ***a bead 25*** adjacent the central aperture 26 through which the nipple 23 extends, ***the bead portion gripping the flange 27 of the nipple 23 in a manner similar to that described with respect to Figure 1***." *Id.* at 3:29-51 (emphasis added). This bead 25 of the cap variant is thus secured, as with the cap in Figure 1, between the nipple's flange and its shoulder 15 (not numbered in Figure 6). As previously explained, *Kurkjian*'s nipple comprises three portions including a base portion—it will be understood to a POSA that the aforementioned "base portion" includes said "shoulder 15" of the nipple, as shown in the annotated Figure 7 in previous sections, and thus *Kurkjian* discloses that the cap's "bead" (which forms the inner edge of the claimed collar) is captured between the "base portion" of the nipple and the "flange" of the nipple. *Id.*



Ex[1009] at Fig. 3, showing a portion of nipple 12 having flange 14 and shoulder 16, and additionally showing a portion of collar 17 having bead 21 which is fitted between flange 14 and shoulder 16.



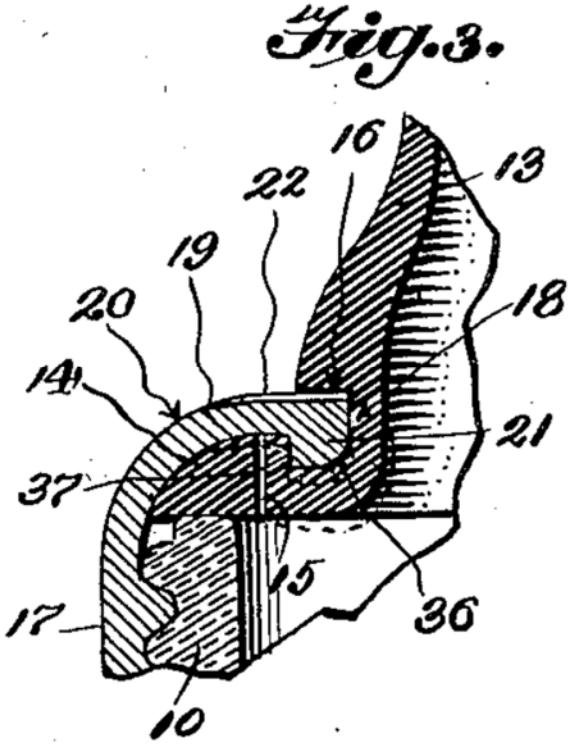
Ex[1009] at Fig. 6, showing nursing unit with nipple 23 having flange 27 and a shoulder (not numbered here), and additionally showing a cap variant 24 with bead 25 which is clamped between flange 27 and the shoulder of nipple 23.

339. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XI.B(xiii).

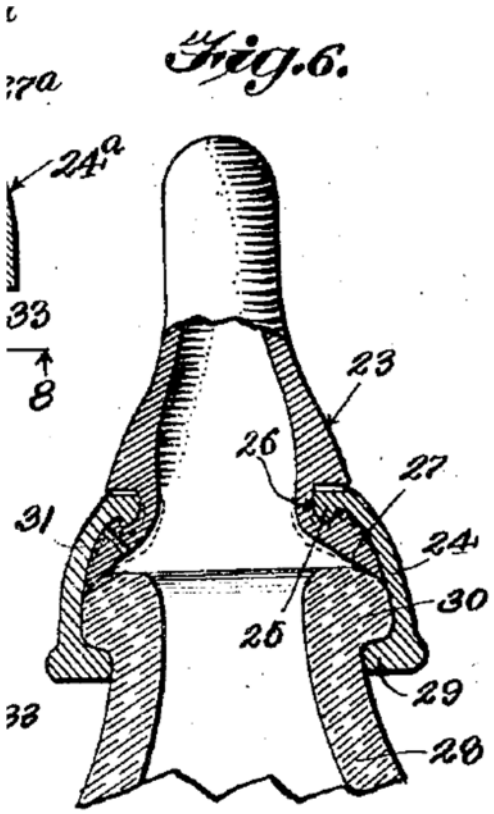
(xiv) [14.M]: e) the nipple being secured to the vessel by capturing the flange of the nipple between the collar and the open top of the vessel.

340. *Kurkjian* discloses that the nipple is secured to the vessel by capturing the flange of the nipple between the collar and the open top of the vessel. As previously explained, *Kurkjian* discloses that its "nursing unit" has a "nipple" which is comprised of a body portion including neck and flange. Ex[1009] at 1:45-2:10,

Figs. 1, 3. *Kurkjian* also discloses that its "nursing unit" has a "cap," such as a "retaining cap 17" which by which the nipple is "retained upon the neck of a bottle by means of a retaining cap." *Id.* at 1:9-15. This text indicates that the nipple and the neck of the bottle are secured together by physical contact, which is further confirmed by disclosure that "[t]he outer edge of ***the flange 14 [of the nipple] is adapted to be firmly clamped*** between the flange 20 of the cap 17 and the ***extreme outer edge of the neck of the bottle 10***." *Id.* at 2:40-48 (emphasis added). *Kurkjian* explains here that just as its cap has a protruding bead clamped between the flange and shoulder of the nipple (as explained in the previous section), the nipple's flange is likewise secured to the bottle by means of being captured between this protruding bead of the cap and the top of the bottle. *Id.* at 2:40-48. Figures 1, 3, 6, and 7 also show this contact between the nipple's flange and the bottle and that the nipple's flange is captured between the cap and bottle. *Id.* at Figs. 1, 3, 6-7.



Ex[1009] at Fig. 3, showing a portion of nipple 12 having flange 14, which is captured between bead 21 of collar 17 and bottle 10.



Ex[1009] at Fig. 6, showing nursing unit with nipple 23 having flange 27, which is clamped between bead 25 of cap variant 24 and bead 30 of the bottle.

341. Additionally, *Kurkjian* confirms multiple times that this flange is connected to the open top of the bottle (claimed vessel): "the nipple [is] secured to ***the mouth*** of a bottle," "a vented flexible flange is removably retained upon the neck of a bottle," "flexible nipple 12 is adapted to fit over the ***open outer end*** of the bottle." *Id.* at 1:1-8 (emphasis added), 1:9-15, 1:45-49 (emphasis added), 2:40-48.

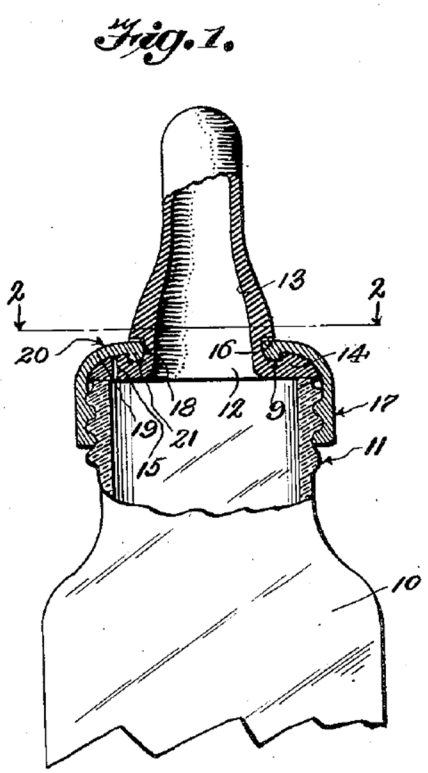
342. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XI.B(xiv).

C. Claim 16

(i) [16]: The feeding bottle of claim 14 wherein the open top of

the vessel comprises an outwardly threaded vessel neck.

343. *Kurkjian* discloses that the open top of the vessel comprises an outwardly threaded vessel neck. Specifically, *Kurkjian* describes that the "nursing bottle" of the nursing unit is "preferably of the wide-mouth type, having ***threads 11*** formed near its open or outer end." Ex[1009] at 1:41-44. This end of the bottle is described as it's "neck." *Id.* at 1:11-15 ("nipple having a vented flexible flange is removably retained upon the ***neck*** of the bottle..." (emphasis added)). *Kurkjian* shows that these threads are outwardly. For example, the retaining cap is described in *Kurkjian* as fitting ***over*** the open outer end of the bottle. *Id.* This is consistent with what is shown in Figure 1, in which the "threads 11" of the open, outer end of the bottle are on the external, outwardly side of the bottle's top, and the "screw-threads for interfitting with the threads 11" are on the internal side of the retaining cap. *Id.* at 2:14-17, Fig. 1. A closeup is also shown in Figure 3. *Id.* at 1:29-30, Fig. 3.



Ex[1009] at Fig. 1, showing a nursing unit comprising a bottle with threads 11 and a retaining cap 17 fitting over the threads.

344. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XI.C.

D. Claim 17

(i) [17]: The feeding bottle of claim 14 wherein the air inlet valve comprises a slit opening.

345. As explained in §XII.A above, a POSA would have been motivated to modify *Kurkjian* based on the teachings of *Sepehr*, such that the one-way air valve extends through the base just outside of the collar. *Kurkjian* discloses an air inlet valve. Specifically, *Kurkjian* discloses that the nursing unit has a "flexible nipple having a ***vented*** flexible flange..." Ex[1009] at 1:9-15 (emphasis added). *Kurkjian*

further discloses that this nipple "is provided with a body portion constituting a neck 13 and a laterally extending and preferably annular flange 14. This flange 14 is preferably provided with a single ***venting aperture 15*** and it should be understood that the flange 14 is integral with the body portion 13 of the nipple, the body portion and flange being formed of flexible material." *Id.* at 1:45-55 (emphasis added).

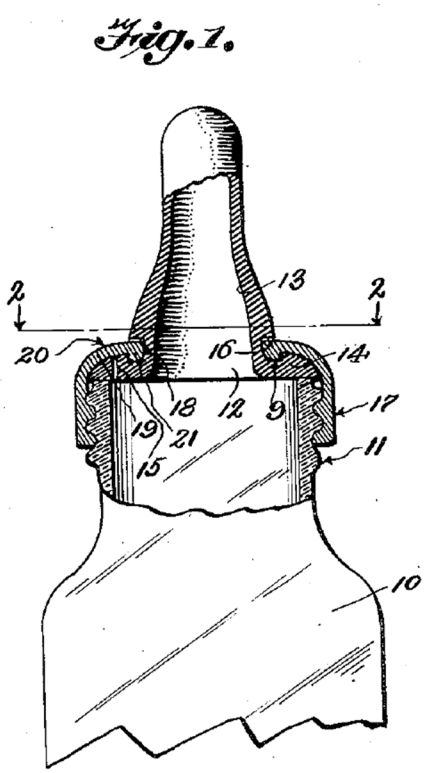
346. To the extent that *Kurkjian* does not explicitly disclose that the vented aperture (claimed air inlet valve) comprises a slit opening, this limitation is rendered obvious by the combination of *Kurkjian* with *Sepehr* and *Ishimaru*. *See supra* §XII.A. *Sepehr* discloses that the air inlet valve comprises a slit opening. *Sepehr* teaches a "***one-way air inlet valve*** 2 operable automatically." Ex[1007] at Abs. (emphasis added). *Sepehr* further explains: "The valve comprises a flexible membrane having an opening 3 which admits air into the container." *Id.* at Abs., 1:3-7, 2:4-11, 2:13-18, 2:32-3:6, 3:8-19. *Sepehr* consistently describes this valve as comprising a slit opening: *Id.* at 2:13-18 ("valve … is composed of a concave elongate semi spherical shape with ***a slit*** at its dome" (emphasis added)), 3:8-14 ("automatic ***valve 2*** produced as an integral part of teat 1 which ***has a slit 3 across the valve 2*** in order to allow the air to enter the bottle" (emphasis added)), 3:14-19 ("pressure difference outside the valve 2 which causes the ***flow of air through the slit 3*** into the bottle" (emphasis added)), 3:26-32 ("valve has an air inlet slit"), 3:34-4:2, 4:8-12.

347. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XI.D.

E. Claim 19

(i) [19]: The feeding bottle of claim 14 wherein the vessel comprises an upper body having a first internal diameter and a portion below the upper body having a second, different internal diameter.

348. *Kurkjian* discloses that the vessel comprises an upper body and lower body having different first and second internal diameters, respectively. Specifically, *Kurkjian* discloses that its "nursing unit" comprises a "bottle." Ex[1009] at 1:1-8. This "bottle 10" comprises a "neck" and is "preferably of the wide-mouth type." *Id.* at 1:41-43. As can be confirmed by at least Figure 1, the "neck" portion of *Kurkjian*'s bottle 10, which is the claimed upper portion of the bottle, is characterized by having an internal diameter smaller than the internal diameter of the main, lower portion of the bottle, as a POSA would expect of a bottle described as having a "neck." *Id.* at 1:41-43, Fig. 1. Figure 1 is shown below showing the two different internal diameters of *Kurkjian*'s bottle (claimed vessel).



Ex[1009] at Fig. 1, showing a nursing unit comprising a bottle 10 having a neck with threads 11.

349. To the extent that *Kurkjian* does not explicitly disclose that its bottle has an upper and lower portions with different internal diameters, this limitation is rendered obvious by the combination of *Kurkjian* with *Sepehr* and *Ishimaru*.

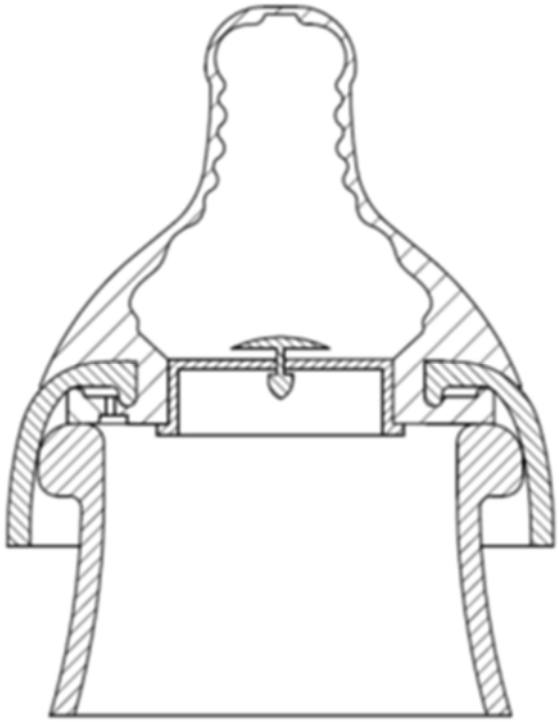
350. For at least these reasons, this claim limitation is rendered obvious by *Kurkjian-Sepehr-Ishimaru*. *See supra* §XI.E.

XIII. '244 PATENT GROUND 1: *Ishimaru* Renders Claims 21, 23, 24, 26, and 27 Obvious in View of *Kurkjian in* View of the Knowledge of a Person of Ordinary Skill in the Art

351. As discussed below, *Ishimaru* in view of *Kurkjian* discloses and renders obvious each and every claim limitation of at least Claims 21, 23, 24, 26, and 27 of

the ’244 Patent. To the extent there are any differences between Claims 21, 23, 24, 26, and 27 of the ’244 Patent and the subject matter taught by *Ishimaru-Kurkjian*, those differences would have been obvious to a POSA, and thus, *Ishimaru-Kurkjian* still renders at least Claims 21, 23, 24, 26, and 27 of the ’244 Patent obvious in view of the knowledge of a POSA at the time of the purported invention.

352. In reaching this conclusion, I have considered the disclosures of these prior art references, the motivations to combine these references, and the knowledge of a POSA, as discussed below. In my opinion, a POSA reviewing these disclosures prior to the priority date of the patents would have been motivated to design a nipple and collar design similar to the following:



353. Such a design would have been obvious to a POSA no later than the priority date of the ’244 Patent, and would render the challenged claims of the ’244 Patent obvious.

A. Motivation For Combining *Ishimaru* and *Kurkjian*

354. A person of ordinary skill in the art would have been motivated to combine the nipple and vessel designs of *Ishimaru* with the nipple and vessel designs of *Kurkjian* as modified in Ground 2 because (1) *Ishimaru* stresses the importance and need for providing a realistic, human-like nipple, and (2) both references suggest the need for a nipple that equalizes pressures between the nipple and the atmosphere as a child consumes its contents. Moreover, each reference teaches the same solution: using a rounded nipple with particular design elements that imitate feeding from a human breast, and providing an air vent in a location that will reliably vent the interior of the vessel to equalize the pressure between the vessel and the atmosphere. Each of the functionalities described in Ground 1 would be carried over into the *Ishimaru-Kurkjian* combination.

355. Both *Ishimaru* and *Kurkjian* are directed to an improvement to a nipple design directed to improving venting and equalizing pressure between the interior of the vessel and the atmosphere. *Ishimaru* explains the need for such a design: “Therefore, when the user, e.g. an infant, sucks on the aforesaid teat portion and/or the aforesaid nipple trunk, the artificial nipple is subjected to pressure in the lateral

direction. At this time, the internal pressure in the aforesaid beverage space increases, and since the aforesaid elongation portion is formed in the aforesaid teat portion and/or the aforesaid nipple trunk, the pressure acts in the direction of elongation of the artificial nipple in the longitudinal direction, causing the aforesaid teat portion and/or the aforesaid nipple trunk to elongate. Furthermore, because the internal pressure in the aforesaid beverage space increased, the aforesaid teat portion and/or the aforesaid nipple trunk will not collapse even if pressure is applied in the lateral direction of the artificial nipple due to the suckling movement of the infant, etc." Ex[1008] at ¶ 19. *Ishimaru* discloses an artificial nipple that "is more easily extensible than other portions to form a beverage space inside the aforesaid teat portion and the aforesaid nipple trunk, and at the same time, an internal pressure adjusting means is provided in the aforesaid nipple trunk to adjust the internal pressure of this beverage space." Ex[1008] at ¶¶ 05-06. *Kurkjian* describes nipple with a venting aperture "for preventing the body portion of the nipple from collapsing inwardly of the neck of the bottle when a vacuum is built up therein." Ex[1009] at 3:20-25, 1:9-15, 3:50-52, Claims 1-4. Both *Ishimaru* and *Kurkjian* discuss the advantages of such nipple designs and further emphasize the drawbacks and consequences of being unable to vent the interior of the nipple with the atmosphere, which include for example nipple collapse. *See* Ex[1008] at ¶¶ 06-07; Ex[1009] at 3:20-25, 1:9-15, Claims 1-4. A POSA would have been motivated to

combine *Kurkjian* with *Ishimaru* because in addition to each being directed to the same problem and using the same solution, they analogously describe nipple designs with air vents and other means for equalizing the pressure between the interior of the vessel and the atmosphere.

356. As I discussed above, *Ishimaru* further discloses the need for a nipple "that is more similar to a mother's nipple," namely a nipple that "has a shape similar to a mother's breast and nipple as shown in Fig. 1, because it is used when a mother feeds her infant with artificial milk using a feeding bottle, etc., instead of her own breast milk." Ex[1008] at ¶ 41. *Ishimaru* stresses the importance of a nipple that is breast-like to encourage bottle feeding: "there as a problem that the conventional artificial nipple 10 does not elongate the teat portion of the mother's nipple or the portion corresponding to the mammary areola, and thus do not approximate the nipple." *Id.* at ¶ 04. *Ishimaru* directly addresses this problem through "thin-walled portions 122, 122 and 122, which are elongation portions with a thin wall, are formed in a groove-like pattern, for example, at seven annular locations." *Id.* at ¶ 41. Such a configuration "provides an artificial nipple that is more similar to a mother's nipple." *Id.* at ¶ 61. "[T]he artificial nipple 100 of this embodiment elongates in the same way as the mother's nipple, thereby increasing the amount of milk spurted, and the artificial nipple 100 itself does not collapse in the same way as the mother's nipple, and its rigidity can be maintained." Ex[1008] at ¶ 48.

357. *Kurkjian* also discloses a similar nipple with other design elements that are similar to a human breast. *Kurkjian* discloses several elements that a POSA would recognize would improve the breast-like appearance of *Ishimaru*. First, *Kurkjian* discloses a securing cap that forms a downwardly domed shape with the nipple of *Kurkjian* that a POSA would recognize more closely simulates the rounded appearance of a human breast. Ex[1009] at 2:14-27, 3:33-51, 3:55-71, Figs. 1, 6-7. Specifically, *Kurkjian* teaches "The outer face of the cap 24 preferably conforms to the contour of the nipple 23 and constitutes a continuation thereof to provide a streamline type connection between the nipple 23 and the bottle 28." *Id.* Secondly, a POSA would be motivated to incorporate the vessel disclosed in *Kurkjian* with varying diameters to improve the nipple and vessel design. *Id.* at Figs. 1, 6-7. A vessel with multiple diameters would optimize vessel volume, user ergonomics, and aesthetic appearance, while also facilitating attachment of a wider, more breast-like nipple though a wide vessel mouth.

358. A POSA reading *Ishimaru* in view of *Kurkjian* would be further motivated to combine elements of the collar taught in Kurjian with the nipple and collar disclosed in *Ishimaru*. While *Ishimaru* discloses a detachable feeding bottle mounting cap to connect the nipple to the vessel (Ex[1008] at ¶ 54), a POSA would be further motivated to incorporate elements of the retaining and securing caps of *Kurkjian* to improve upon the detachable feeding bottle mounting cap in order to

design a "streamline type of connection between the bottle and the nipple." Ex[1009] at 1:16-20. A POSA would identify and recognize that certain design elements disclosed in the retaining cap and securing cap embodiments of *Kurkjian* would improve upon the detachable feeding bottle mounting cap of *Ishimaru*. *See id.* at 2:14-27, 3:33-51, 3:55-71.

359. A POSA would have therefore understood that *Ishimaru*'s nipple and vessel could be improved by employing the techniques from *Kurkjian* to facilitate a wide, curved nipple attachment with a multi-diameter vessel that would result in an ergonomic, easy-to clean, and aesthetically pleasing nipple and vessel. Such a combination would further improve the design and goals of *Ishimaru* to provide easy cleaning, prevent nipple collapse, and provide a breast-like appearance. Ex[1008] at ¶¶ 51, 52.

360. Furthermore, a POSA would have been motivated, when reading *Ishimaru* and *Kurkjian*, to combine and substitute the familiar elements described using known methods to yield predictable results. Moreover, a POSA would have had a reasonable expectation of success in combining the nipple and vessel taught by *Ishimaru* and the nipple and vessel taught in *Kurkjian*, because both would be working as described in their respective references and the references themselves demonstrate that a POSA would have been able to combine the features of the systems and would have expected success in doing so. For example, a POSA would

have expected modifying *Ishimaru*'s nipple in view of *Kurkjian* to provide an aesthetically suitable solution to the need to equalize pressure within the bottle. Therefore, a POSA would have been motivated to combine the nipple and vessel of *Ishimaru* with the nipple and vessel of *Kurkjian*.

B. Claim 21

(i) [21.PRE]: A drinking vessel comprising:

361. To the extent the preamble is limiting, this limitation is disclosed or rendered obvious by *Ishimaru*. *Ishimaru* discloses: "Conventional artificial nipples are mounted to feeding bottles, for example, and are used for infants, etc. to drink milk or other liquids contained in the feeding bottles." Ex[1008] at ¶¶ 01-04. *Ishimaru* further discloses a feeding bottle as illustrated in Figures 1-2: "Thus, the check valve 130 directs the beverage, e.g., milk, from the feeding bottle main body, which is provided in the downward direction in Figs. 1 and 2." *Id.* at ¶¶ 39-40, 43.

362. To the extent the preamble is limiting, this limitation is disclosed or rendered obvious by *Kurkjian*. *Kurkjian* is directed to "a resilient flanged nipple which is so constructed as to permit the nipple to be secured to the mouth of a bottle by means of a retaining cap, and permit the entrance of air into the interior of the bottle, and also prevent the nipple from collapsing inwardly of the retaining cap." Ex[1009] at 1:3-9, Claims 1-4. *Kurkjian* depicts a nipple connected to a bottle in several drawings: "By referring to the drawing, it will be seen that 10 designates the

nursing bottle which is preferably of the wide-mouth type, having threads formed near its open or outer end." *Id.* at 1:41-45, Figs. 1, 3, 6-7. *Kurkjian* further discloses that "A flexible nipple 12 is adapted to fit over the open outer end of the bottle 10." *Id.* at 1:46-47.

363. As described above, a POSA would implement elements of *Kurkjian*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. *See supra* §XIII.A. A POSA would recognize, as *Kurkjian* discloses, including a bottle with multiple diameters would, for example, be more resistant to tipping, be better for hand holding (ergonomics), and be better suited to couple with a wider, realistic, breast-like nipple. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Kurkjian*.

364. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Kurkjian*.

(ii) [21.A]: a container comprising a varying internal circumference and an opening into the container; and

365. This limitation is disclosed or rendered obvious by *Kurkjian*. For example, multiple figures of *Kurkjian* that disclose a container with a varying internal circumference. *See* Ex[1010] at Figs. 1, 3, 6, 7:

Fig. 1.

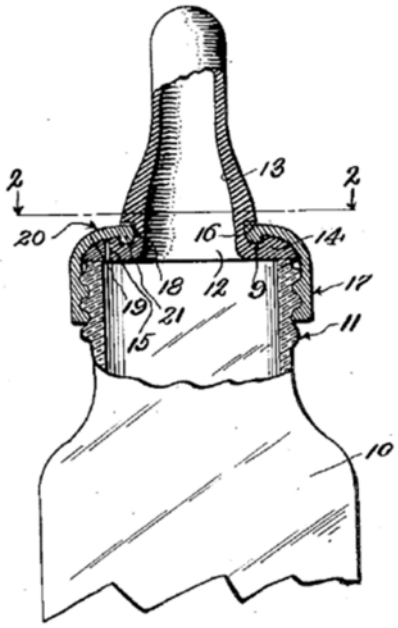
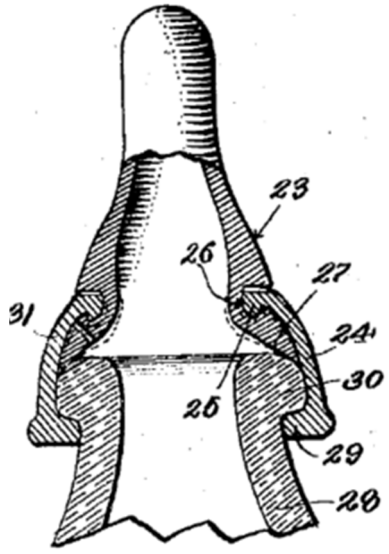
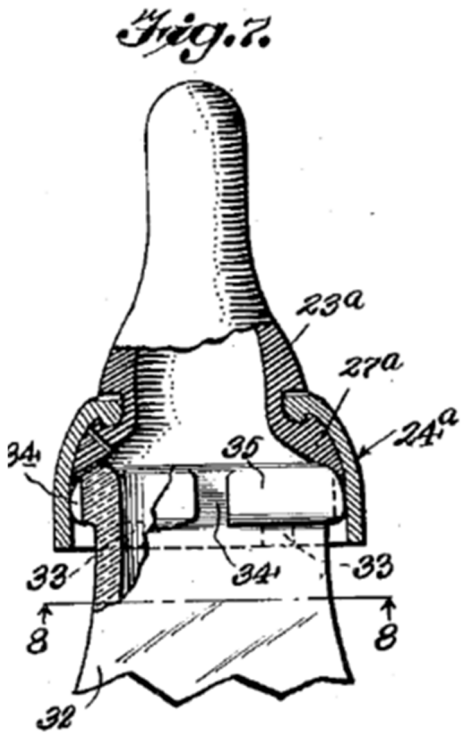


Fig. 6.





366. As illustrated in these Figures, the bottles in *Kurkjian* include both an upper diameter (e.g., near the mouth of the vessel), and a wider, lower diameter (e.g., near the bottom of the vessel). *Id.*

367. *Kurkjian* further teaches "a resilient flanged nipple to be secured to the mouth of a bottle by means of a retaining cap, and permit the entrance of air into the interior of the bottle, and also prevent the nipple from collapsing inwardly of the retaining cap." Ex[1009] at 1:1-10, Claims 1-4.

368. As described above, a POSA would implement elements of *Kurkjian*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. *See supra* §XIII.A. A POSA

would recognize, as *Kurkjian* discloses, including a bottle with multiple diameters would, for example, be more resistant to tipping, be better for hand holding (ergonomics), and be better suited to couple with a wider, realistic, breast-like nipple. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Kurkjian*.

369. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Kurkjian*.

(iii) [21.B]: a cover assembly configured to couple to the container over the opening, the cover assembly comprising:

370. This limitation is disclosed or rendered obvious by *Ishimaru*. For example, *Ishimaru* discloses that the nipple may be connected to the vessel using a mounting cap: "in this embodiment, the lid portion 420 is bonded to the base portion 112 with a silicone adhesive, but it is not limited to this form, and it can also be fixed using a ***detachable feeding bottle mounting cap (not shown in the figure)***, which is used when mounting the artificial nipple 200 to the feeding bottle. In this case, it is a configuration that the lid portion 420 and the base portion can be separated by removing the cap, which allows for easy cleaning, etc." Ex[1008] at ¶ 54 (emphasis added).

371. In addition to that analysis, this limitation is disclosed or rendered obvious by *Kurkjian*. *Kurkjian* discloses a nipple and a collar which comprise the cover assembly to couple to the container over the opening. For example, Figures

1, 6, and 7 illustrate a cover over the mouth of the bottle that includes a teat (e.g., a nipple, as described in *Kurkjian*) and a collar (e.g., a retaining cap, as described in *Kurkjian*):

Fig. 1.

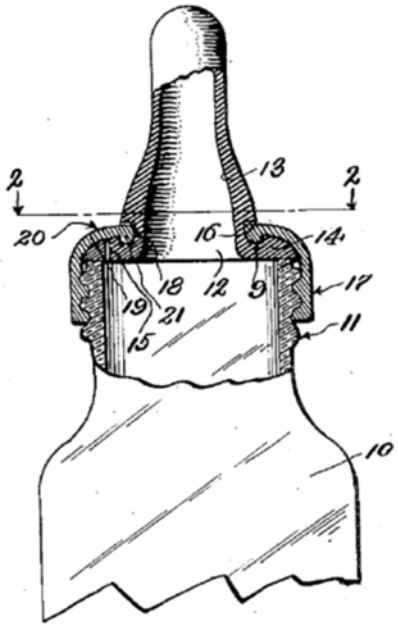
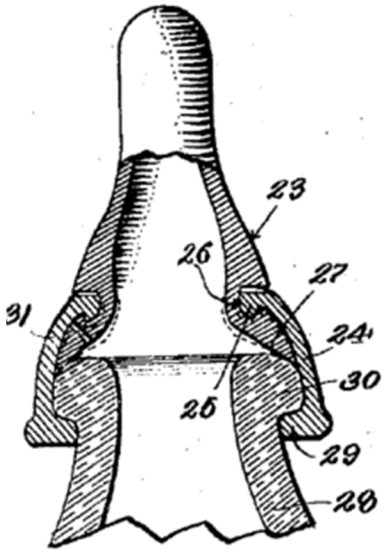


Fig. 6.



372. *Kurkjian* further discloses "A retaining cap 17 is removably fitted over the outer or open end of the bottle 10, as shown in Figure 1, and is provided with screw-threads for interfitting with the threads 11. ***This cap 17 is provided with a centrally located aperture 18 through which the neck or body portion 13 of the nipple extends***." Ex[1009] at 2:14-20 (emphasis added), 2:41-44. *Kurkjian*'s claims further recites: "a cap removably fitting upon the open end of the bottle, said cap having a central aperture." *Id.* at Claims 1–3.

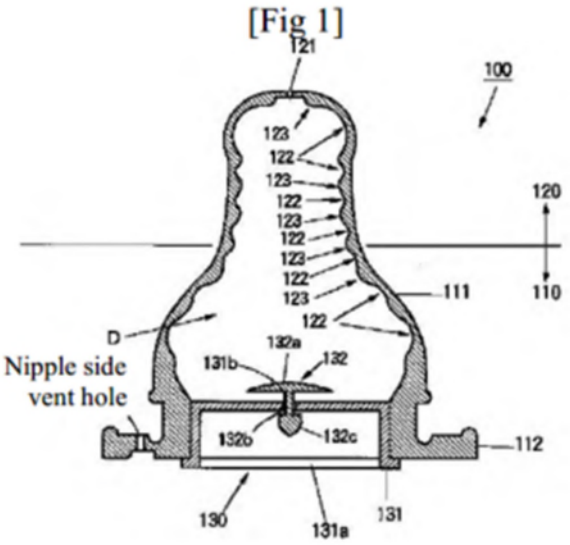
373. As described above, a POSA would implement elements of *Kurkjian*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. *See supra* §XIII.A. A POSA would recognize, as *Kurkjian* discloses, including a cover assembly, comprising a nipple and collar, to couple the container over the opening, using a nipple and collar that are removably coupled to one another would better seal over the opening of the container and would thus provide a more durable design over repeated use that reduces stress on the nipple due to repeated stretching of the nipple over the opening of the bottle. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Kurkjian*.

374. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Kurkjian*.

(iv) [21.C]: i. a nipple comprising a mouthpiece configured to allow liquid flow through the nipple to an aperture,

375. This limitation is disclosed or rendered obvious by *Ishimaru* under either Petitioner's or Patent Owner's proposed construction. I note that both Petitioner's and Patent Owner's proposed constructions of mouthpiece are similar for this limitation, both requiring: "part projecting generally perpendicular to the mouth of the vessel, disposed above the areola portion." *See* Ex[1018].

376. *Ishimaru* discloses or renders obvious this limitation under Patent Owner's construction. For example, *Ishimaru* discloses "an artificial nipple having a nipple trunk and a teat portion protruding from this nipple trunk[.]" Ex[1008] at Claims 1, 7, ¶¶ 03, 06. *Ishimaru* further discloses that in operation, "an infant[] sucks on the aforesaid teat portion and/or the aforesaid nipple trunk[.]" *Id.* at ¶¶ 07, 27, 46. Figure 1 discloses a "bowl-shaped ***nipple trunk 110*** equivalent to a mother's breast and a ***teat portion 120*** equivalent to a mother's nipple, which is connected to the nipple trunk 110." *Id.* at ¶ 37 (emphasis added), Fig. 1:

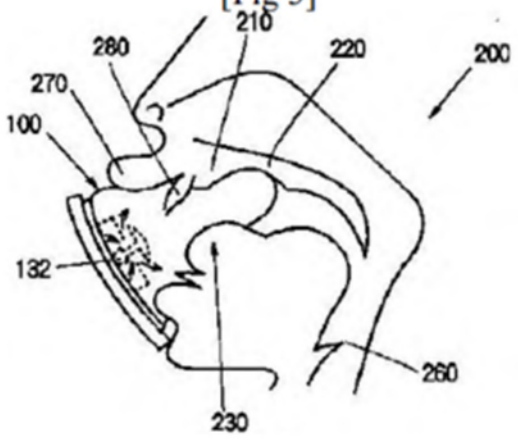


377. A POSA would understand that the nipple described by *Ishimaru* has three portions corresponding to the teat, base, and areola portions. Specifically, a POSA would consider that that middle portion of the nipple as described in *Ishimaru* constitutes an "areola" portion under either Petitioner or Patent Owner's constructions relating to this term. A POSA would further understand this teat portion to be located above the areola portion under either Petitioner's or Patent Owner's construction. A POSA would understand the teat portion of *Ishimaru*'s nipple to satisfy this limitation.

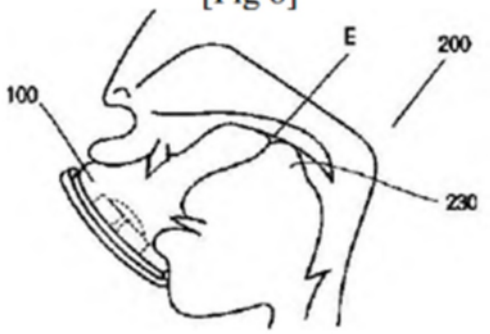
378. Under Petitioner's construction, *Ishimaru* also discloses or renders obvious this limitation. *Ishimaru* discloses a teat portion, which projects perpendicularly to the mouth of the vessel, disposed above the areola portion, and extends into the baby (or child, infant, or juvenile)'s mouth for feeding. For example,

at least Figures 5-9 and 20 of *Ishimaru* disclose at least the teat portion of the nipple extending into the baby's mouth for feeding:

[Fig 5]



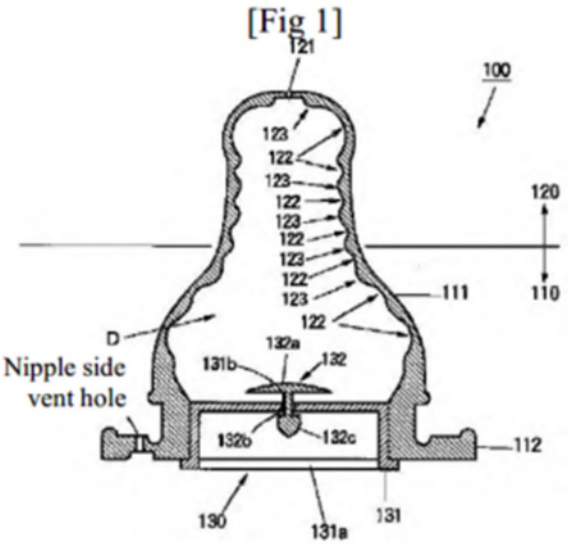
[Fig 8]



Ex[1008] at Figs. 5-9, 20.

379. *Ishimaru* further discloses that the mouthpiece is configured to allow liquid flow through the nipple to an aperture. Indeed, *Ishimaru* teaches a teat opening 121 such that "milk introduced into the space D of the artificial nipple 100 is discharged to the outside of the artificial nipple 100 ***through the teat opening 121***

of the teat portion 120, as described above, when the infant, etc. performs the suckling movement." Ex[1008] at ¶¶ 40 (emphasis added), 43, 52-53, Fig. 1:



380. In addition to that analysis, this limitation is disclosed or rendered obvious by *Kurkjian* under both Petitioner's and Patent Owner's proposed construction of "mouthpiece." As previously discussed with regard to Ground 3 of the 930 Patent, *Kurkjian* discloses a "resilient flanged nipple" as part of its "nursing unit." Ex[1009] at 1:1-8, 1:45-49. The "flexible nipple 12" described by *Kurkjian* has "a body portion constituting a neck 13 and laterally extending and preferably annular flange 14." *Id.* at 1:45-55. This nipple is shown, for example, in Figures 1, 3, and 4. Figures 1 and 3 show the nipple in connection with the cap, while Figure 4 shows "a side elevation of the nipple" on its own. *Id.* at 1:31-32.

381. A POSA would understand that the nipple described by *Kurkjian* has three portions corresponding to the teat, base, and areola portions. Specifically a

POSA would consider that that uppermost portion of the nipple as described in *Kurkjian* constitutes a "teat" portion that would satisfy the "mouthpiece" as recited in this element under either Petitioner or Patent Owner's constructions relating to this term. Both constructions agree that the mouthpiece is disposed above the areola portion and is generally perpendicular relative to the mouth of the vessel, which in this case is the upper, open end of the bottle disclosed by *Kurkjian*. The competing constructions do not change the analysis, which is that a POSA would consider that the upper portion of *Kurkjian*'s nipple constitutes a mouthpiece.

382. Under Petitioner's construction, a POSA would understand *Kurkjian* to disclose or render obvious this limitation, as a POSA would understand the mouthpiece in *Kurkjian* to "extends into a baby's mouth for feeding" under Petitioner's proposed construction.

383. *Kurkjian* further discloses or renders obvious that the mouthpiece is configured to allow liquid flow through the nipple to an aperture. Indeed, *Kurkjian* teaches that the baby sucks upon the nipple, thereby building up a vacuum. Ex[1009] at 2:54-3:10. A POSA reading *Kurkjian* would understand the mouthpiece of *Kurkjian* to comprise an aperture that would allow liquid flow through the nipple.

384. As described above, a POSA would implement elements of *Kurkjian*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a durable

design that relieves negative pressure in the nipple. *See supra* §XIII.A. A POSA would recognize, as *Kurkjian* discloses, including a mouthpiece provides a more realistic, breast-like nipple. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Kurkjian*.

385. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Kurkjian*.

(v) [21.D]: a flex region configured to allow flex of the mouthpiece towards and away from a lower portion of the nipple,

386. This limitation is disclosed or rendered obvious by *Ishimaru* under either Petitioner's or Patent Owner's proposed construction.

387. *Ishimaru* discloses or renders obvious this limitation under Patent Owner's construction of "flex region." For example, *Ishimaru* discloses that the "teat portion and/or the aforesaid nipple trunk is provided with an elongation portion, which is more easily extensible than other portions to form a beverage space inside the aforesaid teat portion and the aforesaid nipple trunk[.]" Ex[1008] at Claims 1, 7, ¶¶ 03, 06. *Ishimaru* further discloses the "elongation portion is formed by a groove," and "the area where this groove is provided ***will elongate further***." Ex[1008] at Claims 4, 13, ¶¶ 12-13, 30, 31 (emphasis added). *Ishimaru* further describes: "on the teat portion 120 and nipple trunk 110 of the artificial nipple 100 of this embodiment,

thin-walled portions 122, 122 and 122, which are elongation portions with a thin wall, ***are formed in a groove-like pattern,*** for example, at seven annular locations, as shown in Fig. 1." Ex[1008] at ¶ 41 (emphasis added).

388. *Ishimaru* discloses or renders obvious this limitation under Patent Owner's and Petitioner's construction of "flex of the mouthpiece towards and away from a lower portion of the nipple." For example, *Ishimaru* discloses: "the pressure acts in the direction of elongation of the artificial nipple in the longitudinal direction, causing the aforesaid teat portion and/or the aforesaid nipple trunk to elongate." Ex[1008] at ¶¶ 07, 10, 11, 19, 25, 27. "[S]ince the thin-walled portions 122 are placed at 7 locations across the teat portion 120 and the nipple trunk 110, the peristaltic movement of the tongue 230 of the infant 200 described above will cause these seven thin-walled portions 122 to elongate, and the teat portion 120 and nipple trunk 110 will also be elongated in the mouth of the infant 200. At this time, since several thin-walled portions 122 are provided at predetermined intervals from the teat portion 120 to the nipple trunk 110, the teat portion 120 and the nipple trunk 110 are elongated more evenly." *Id.* at ¶ 46.

389. As described above, a POSA would implement elements of *Kurkjian*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. *See supra* §XIII.A. A POSA

would recognize, as *Kurkjian* discloses, including a mouthpiece provides a more realistic, breast-like nipple. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Kurkjian*.

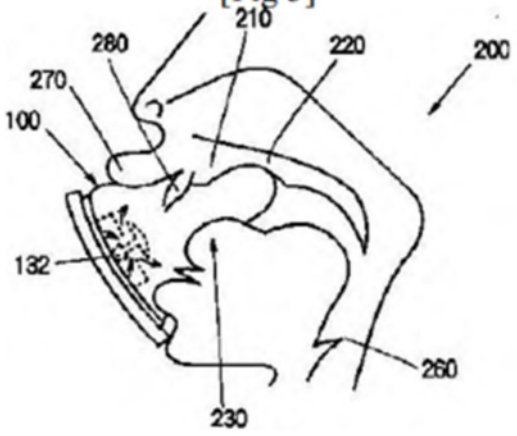
390. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Kurkjian*.

(vi) [21.E]: the mouthpiece defining a bite region,

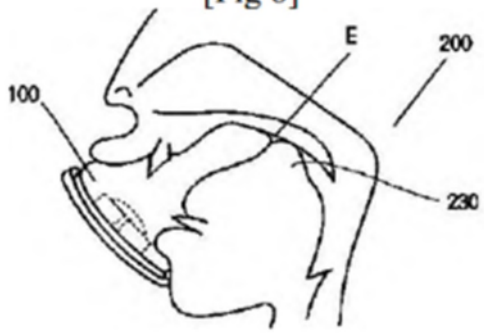
391. This limitation is disclosed or rendered obvious by *Ishimaru*. As I previously explained with regard to element [21.D], *Ishimaru* discloses a mouthpiece under either Petitioner's or Patent Owner's proposed construction. *Supra* §XIII.B(v). *Ishimaru* further discloses or renders obvious a bite region. For example, *Ishimaru* teaches that a baby's upper palate contacts a portion of the mouthpiece in the baby's mouth. "As shown in the figure, the infant 20 presses the teat portion 12 of the artificial nipple 10 against the sucking fossa 22 on its upper palate 21 by the peristaltic movement of its tongue 23. At this time, the pressure in the enclosed space B formed by the soft palate 24, tongue 23, and teat portion 12 is close to 0 (zero)." Ex[1008] at ¶¶ 03, 44, 47, Figs. 5, 8, 20. *Ishimaru* further describes the process of feeding an infant by placing this region in the infant's mouth, imitating feeding from a mother's breast. *Id.* at ¶¶ 43-44, 46. A POSA would have understood from this disclosure that nipple of *Ishimaru* constitutes a bite

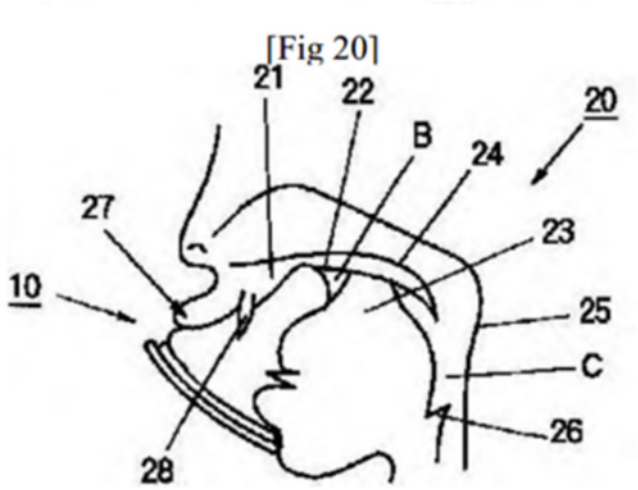
region, similar to how a baby “bites” or “latches” to a mother’s nipple during breast feeding.

[Fig 5]



[Fig 8]





392. A POSA reading *Ishimaru* would understand that the region of the mouthpiece contacting the palate would constitute a mouthpiece.

393. In addition, this limitation is disclosed or rendered obvious by *Kurkjian*. As I previously explained with regard to element [21.D], *Kurkjian* discloses a mouthpiece under either Petitioner's or Patent Owner's proposed construction. *Supra* §XIII.B(v). *Kurkjian* further discloses or renders obvious a bite region. For example, *Kurkjian* further discloses that the mouthpiece is configured to allow liquid flow through the nipple to an aperture. *Kurkjian* teaches that the baby sucks upon the nipple, thereby building up a vacuum. Ex[1009] at 2:54-3:10, Figs. 1, 6,-7.

Fig. 1.

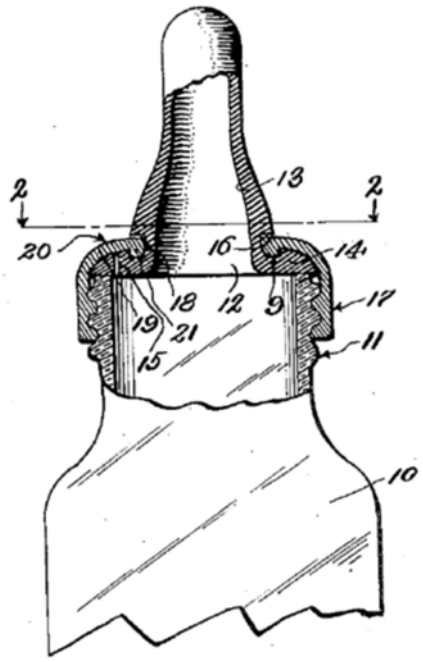
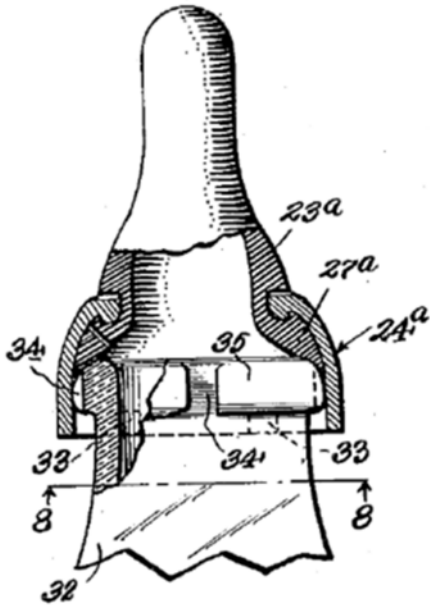

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Fig. 7.


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394. A POSA reading *Kurkjian* would understand that as the baby sucks upon the nipple, a region of the mouthpiece contacts the baby's palate and constitutes a bite region.

395. As illustrated by *Kurkjian*, a POSA would understand this nearly flat or very shallowly curved surface 24 at the end of the mouthpiece taught by *Kurkjian* to delineate a bite region within the mouthpiece.

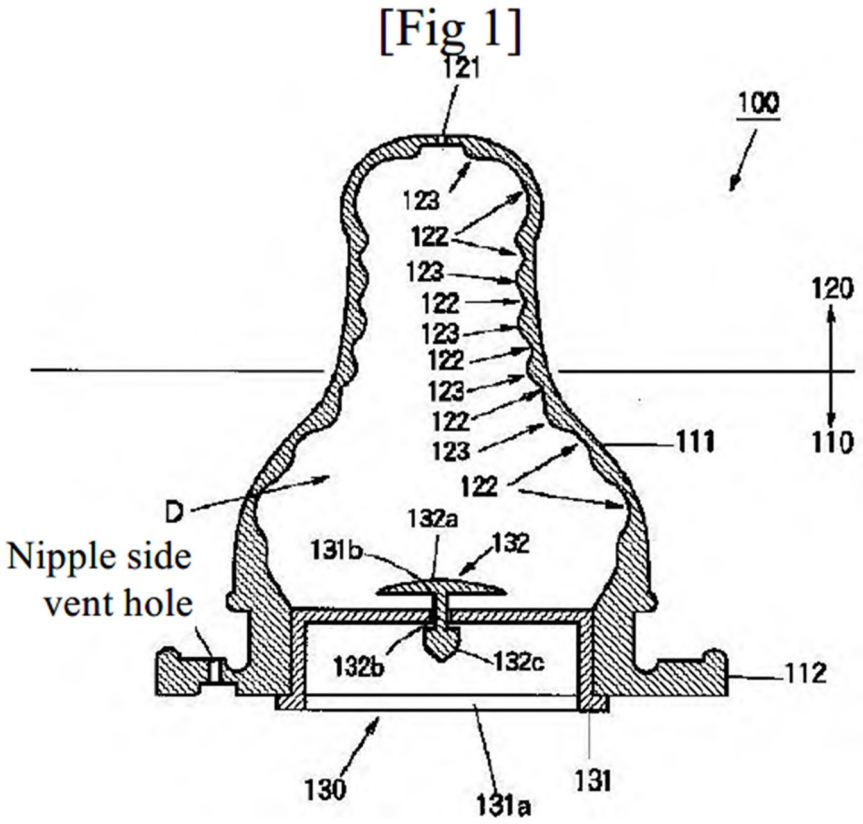
396. As described above, a POSA would implement elements of *Kurkjian*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. *See supra* §XIII.A. A POSA would recognize, as *Kurkjian* discloses, including a bite region within the mouthpiece provides a more realistic, breast-like nipple. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Kurkjian*.

397. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Kurkjian*.

(vii) [21.F]: and a flange depending from the lower portion of the nipple defining the nipple circumference furthest from the aperture; and,

398. This limitation is disclosed or rendered obvious by *Ishimaru*. Specifically, *Ishimaru* discloses "a flange portion for connecting to a feeding bottle

main body" which is depending from what *Ishimaru* refers to as the "base portion 112." Ex[1009] at ¶¶ 37, 50. *Ishimaru's* "base portion" would include the lower portion of the nipple. Figure 1 of *Ishimaru* shows this flange depends from the lower portion of the nipple and defines the circumference of the nipple at a point furthest from the teat opening 121:



399. In addition to that analysis, this limitation is disclosed or rendered obvious by *Kurkjian*. *Kurkjian* discloses a flange depending from the base portion of the nipple. Specifically, *Kurkjian* states that the "flexible nipple 12" is provided with "a laterally extending and ***preferably annular flange*** 14." Ex[1009] at 1:45-55 (emphasis added), 1:9-15 ("a flexible nipple having a ***vented flexible flange.***"

(emphasis added)). As can be seen in the below Figures, flange 14 depends from the base portion. *Kurkjian* states that "it should be understood that the flange 14 is integral with the body portion 13 of the nipple," indicating that it is connected to and depended from the rest of the body portion including the claimed lower portion. *Id.* at 1:45-2:10.

400. *Kurkjian* also teaches, as a way of assuring that the nipple stays securely over the open outer end of the bottle, that "the nipple is provided with an overhanging shoulder 16 adjacent the point of junction between the body portion 13 and the flange 14, and this shoulder 16 is spaced vertically with respect to the upper face of the flange 14." *Id*. at 1:45-2:10. *Kurkjian*'s disclosure also includes details on how " a retaining cap 17 is removably fitted over the outer or open end of the bottle 10," including a "flange 19 is preferably curved upon its outer face 20 from the body portion 13 of the nipple toward the outer periphery of the cap 17 to provide a convex outer face upon the outer end of the cap 17…," thus describing to a POSA "***the lower portion of the nipple defining the nipple circumference furthest from the aperture***." *Id*. at 2:14-53; *see also id.* at 2:53-3:17 (describing how vacuum is built up in the bottle and how air channels are used to provide an air-tight fit, all suggesting the lower portion of the nipple), 3:33-70 (describing a securing cap with "a continuation thereof to provide a streamline type connection between the nipple 23 and the bottle 28" and using "lugs 33 formed on the inner face of the cap 24 for

interfitting through the notches 34 of the flange 34…wherein the outer face of the cap 24 will merge into the contour of the outer face of the nipple 23," all suggesting the circumference of the lower portion of the nipple), 1:9-15 ("a flexible nipple having a vented flexible flange is removably retained upon the neck of a bottle by means of a retaining cap which is so constructed as to resist the spreading of the vented portion of the flange in the event of excessive pull thereon"). Furthermore, *Kurkjian*'s claims describe "said nipple having a laterally extending flange adapted to be clamped between the end of said bottle and said cap," again, teaching the circumference of the flange. *Id*. at Claims 1-4.

401. As understood by a POSA and illustrated in Figures 1, 6, and 7, the flange disclosed in *Kurkjian* depends from a lower portion of the nipple and a nipple circumference furthest from the aperture:

Fig. 1.

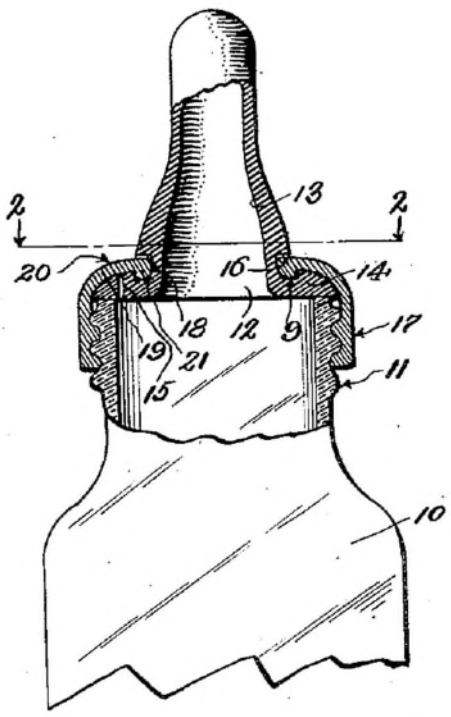
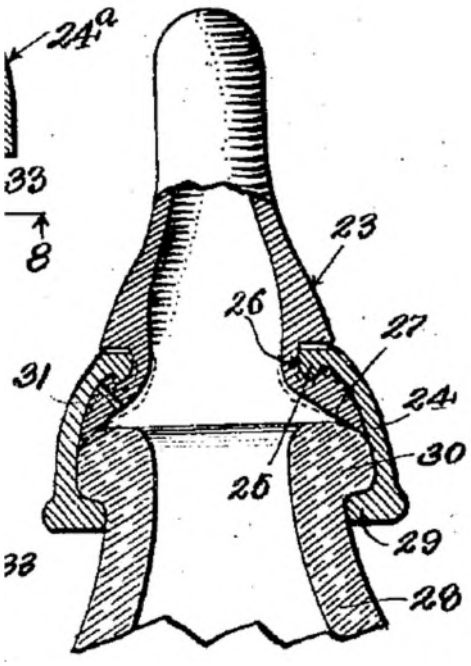

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Fig. 6.


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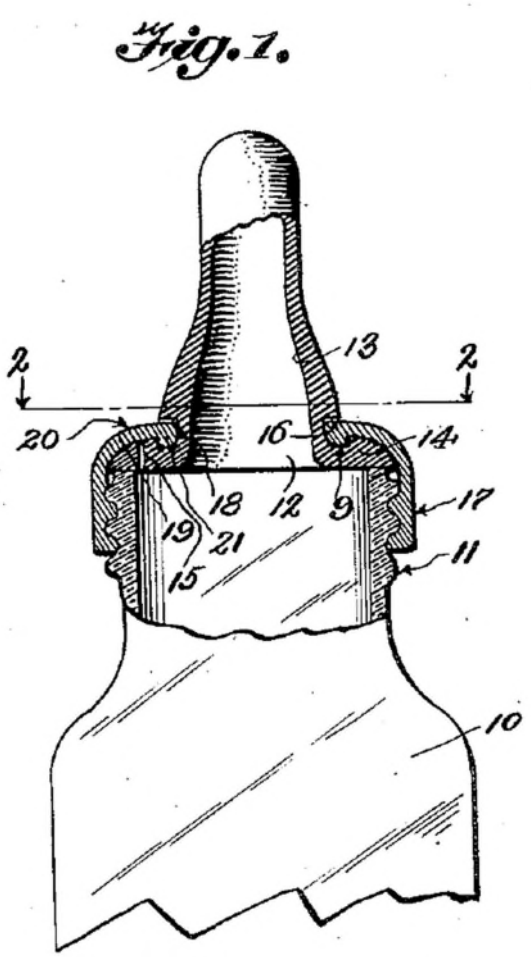
402. As described above, a POSA would implement elements of *Kurkjian*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. *See supra* §XIII.A. A POSA would recognize, as *Kurkjian* discloses, using a nipple with a flange depending form the lower portion of the nipple would provide additional stability and would better seal over the opening of the container and would thus provide a more durable design over repeated use that reduces stress on the nipple due to repeated stretching of the nipple over the opening of the bottle. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Kurkjian*.

403. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Kurkjian*.

(viii) [21.G]: ii. a collar configured to removably couple to the nipple to seal over the opening of the container; and,

404. This limitation is disclosed or rendered obvious by *Ishimaru*. Specifically, *Ishimaru* discloses "a ***detachable*** feeding bottle ***mounting cap*** (not shown in the figure), which is used when mounting the artificial nipple 200 to the feeding bottle." Ex[1008] at ¶¶ 54, 56, 58 (emphasis added), Fig. 15. A POSA would understand this detachable mounting cap as disclosed in *Ishimaru* to couple the nipple to seal over the opening of the container.

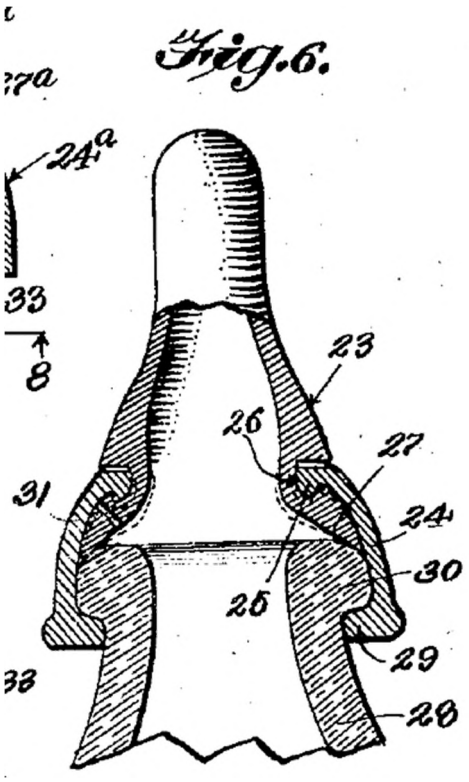
405. In addition to that analysis, This limitation is disclosed or rendered obvious by *Kurkjian*. *Kurkjian* discloses a collar that is configurable to couple to the nipple and seal over the opening of the collar. *See, e.g.*, Ex[1009] at 2:14-35, Figs. 1, 6-7, Claims 1-4. Specifically, *Kurkjian* describes a "retaining cap 17" which is "removably fitted over the outer or open end of the bottle" of the disclosed nursing unit. Ex[1009] at 2:14-17. A POSA would understand this retaining cap to represent a collar as recited in Claim 21.



406. The retaining cap in *Kurkjian* is also described as having an internally threaded inner surface: "retaining cap 17 … is provided with screw-threads for

interfitting with the threads 11 [of the bottle]." *Id*. at 2:14-17. *Kurkjian* shows that these threads are internal. For example, the retaining cap is described in *Kurkjian* as fitting over the open outer end of the bottle. *Id*. This is consistent with what is shown in Figure 1, in which the "threads 11" of the open, outer end of the bottle are on the external side of the bottle's top, and the "screw-threads for inter-fitting with the threads 11" are thus on the internal side of the retaining cap. *Id.* at 2:14-17, Fig. 1. A closeup is also shown in Figure 3. *Id.* at 1:29-30, Fig. 3. "an annular cap ***which screw fits to the bottle neck*** to attach the teat by pressing the teat flange against the rim of the bottle neck." Ex[1010] at 1:9-12 (emphasis added). A POSA would understand these screw threads to be used to seal the nipple over the opening of the container.

407. *Kurkjian* also describes, in a "modified form of the invention," a slight variant on the cap, described as a "securing cap" which "consists of a conical body of a thimble-like structure" and includes, as with the aforementioned cap, "an inwardly extending annular flange 29." *Id.* at 3:29-51. "The outer face of the cap 24 preferably conforms to the contour of the nipple 23 and constitutes a continuation thereof to ***provide a streamline type connection between the nipple and the bottle 28.***" *Id.* at 3:42-47 (emphasis added). This is shown in Figure 6 below, illustrating an additional iteration of the cap. A POSA would understand this securing cap to represent a collar as recited in Claim 21.



408. *Kurkjian* further discloses a securing cap (24), which "is provided with a bead 25 adjacent the central aperture 26 through which the nipple 23 extends" and cap 24a, which may be secured in any suitable or desired manner to the neck, or to the bottle 32." *Id*. at 3:33-70, Figs. 6-7 (reproduced below).

409. As described above, a POSA would implement elements of *Kurkjian*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. *See supra* §XIII.A. A POSA would recognize, as *Kurkjian* discloses, using a nipple and collar that are removably coupled to one another would better seal over the opening of the container and would thus provide a more durable design over repeated use that reduces stress on the

nipple due to repeated stretching of the nipple over the opening of the bottle. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Kurkjian*.

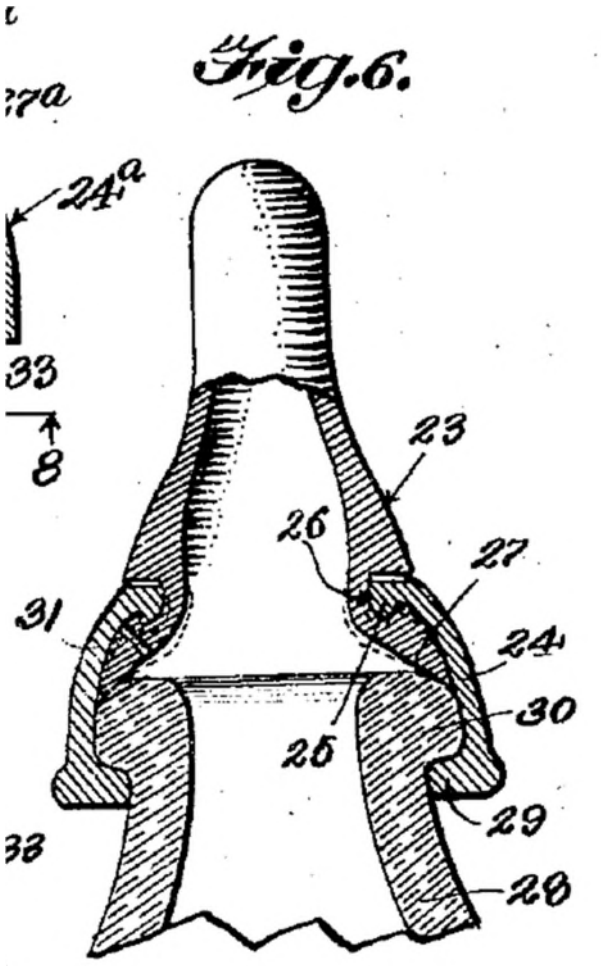
410. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Kurkjian*.

(ix) [21.H]: wherein the collar and the lower portion of the nipple together define a downward domed shape that extends outwardly and downwardly from the flex region of the nipple towards a widest circumferential edge of the collar.

411. This limitation is disclosed or rendered obvious by *Kurkjian*. Specifically, *Kurkjian* discloses that the collar and lower portion of the nipple together define a downward domed shape that extends outwardly and downwardly from the flex region of the nipple towards a widest circumferential edge of the collar. Specifically, *Kurkjian* describes that its "retaining cap" (analogous to the claimed collar) "is preferably curved upon its outer face 20 from the body portion 13 of the nipple toward the outer periphery of the cap 17 to provide a convex outer face upon the outer end of the cap 17 and provide a receding outer face upon the cap away from the nose of the baby while sucking." *Id*. at 2:14-35, Fig. 1.

412. *Kurkjian* additionally describes, with respect to the described "securing cap," that the outer face "***conforms to the contour of the nipple and constitutes a continuation thereof to provide a streamline type connection*** between the nipple 23 and the bottle 28," and accordingly is shown in Figure 6 below as having a sloping

outer contour, that together with the nipple, define a downward domed shape. *Id*. at 3:42-47, Fig. 6. *Kurkjian* thus describes, and confirms by Figure 6, that the securing cap's outer surface slopes out and down relative to its upper rim. *Id*. This securing cap moves outwardly and downwardly towards the widest circumferential edge of the collar. *Id.*



413. A POSA reading *Kurkjian* in view of *Ishimaru* would find this limitation obvious. A primary objective of *Ishimaru* is to create a nipple that is more human and breast-like. *See supra* §XIII.A. A POSA would understand this to include a wide, dome-shaped that would appear to a baby or child to imitate a human breast.

A POSA reviewing *Ishimaru* and intending to design a breast-like structure would understand that an abrupt change in slope between the nipple and collar would not optimally imitate the human breast.

414. Instead, a POSA reading *Ishimaru* in view of *Kurkjian* would be motivated to design a continuous, downward dome shape between the lower portion of the nipple and the annular cap, similar to Figure 6 of *Kurkjian*. The shape of the annular cap would thus extend outwardly and downwardly from the flex region of the nipple towards the widest edge of the collar. Such a design would further simulate the human breast, as directed in *Ishimaru*, and would have been an obvious modification no later than the priority date of the '244 Patent.

415. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Kurkjian*.

C. Claim 23

(i) [23]: The drinking vessel of claim 21, wherein the container comprises a material more rigid than the nipple material.

416. As I previously explained, Ishimaru-Kurkjian discloses or renders obvious each and every limitation of Claim 21. Supra §XIII.B. I incorporate my analysis of Claim 21 in Ground 2 of the '244 Patent analysis.

417. The limitation of claim 23 is disclosed or rendered obvious by Ishimaru. As an initial matter, rigid materials (e.g., various hard plastics, glass, etc.) were the most well-known materials used in baby bottle containers prior to the priority date

of the 244 Patent. Ishimaru discloses an artificial nipple made of silicone rubber. Ex[1008],paras 2, 52, Fig. 11. For example, a POSA reading Ishimaru would consider it obvious to form the bottle container from a material more rigid than silicone (i.e., the nipple material). At the time of the priority date of the 244 Patent, baby bottle containers formed from rigid materials were the norm and would be the most obvious container material. Doing so would provide a rigid container material that is easy to hold, resilient to damage from drops and other use, and maintains its shape, such that the container can be easily held by a baby or mother. As previously described, a POSA would have a reasonable expectation of success at least because bottles of rigid materials (e.g., hard plastics, glass, metal) coupled with nipples made of less rigid material such as rubber and silicone were well-known and in use prior to the priority date of the '244 Patent. See supra § IV.

418. This limitation is also disclosed or rendered obvious by Kurkjian. For example, Kurkjian discloses an artificial nipple made of a "flexible material" such as rubber. Ex[1009],1:50-54. Kurkjian further discloses at least one embodiment where "A flexible nipple 2 is adapted to fit over the open outer end of the bottle 10[.]" Ex[1009],1:45-46. A POSA reading Kurkjian would consider it obvious to form the container from a material more rigid than the nipple material. Indeed, a POSA would consider that to be the most obvious configuration of Kurkjian, as Kurkjian describes "the nursing bottle which is preferably of the wide-mouth type,

having threads 11 formed near its open or outer end." Ex[1009] at 1:42-44. At the time of the priority date of the 244 Patent a POSA would not have considered a non-rigid threaded bottle. Rather, a POSA would have faced extreme difficulty in attempting to provide a secure threaded connection between a rubber nipple and a bottle made from material less rigid than rubber. Further, Kurkjian discloses that the "outer edge of the flange 14 [of the nipple] is adapted to be firmly clamped between the flange 20 of the cap 17 and the extreme outer edge of the neck of the bottle 10." Ex[1009] at 2:40-44. A POSA would understand that this type of clamping mechanism between the soft rubber nipple and container bottle would suggest a resilient container material to support the firm clamping. Accordingly, in Kurkjian, a POSA would most reasonably conclude Kurkjian's container is formed from a material more rigid than rubber. Further, Kurkjian describes a situation where "vacuum is built up in the bottle through the baby sucking upon the nipple" and provides vents for "preventing the body portion of the nipple from collapsing inwardly of the neck of the bottle when a vacuum is built up therein." Ex[1009] at 3:20-25, 1:9-15, 3:50-52, Claims 1-4. A POSA would understand that this description contemplates a bottle more rigid than the nipple, else Kurkjian's concern would have been for the bottle deforming, rather than the nipple deforming. Additionally, a POSA would recognize that a rigid bottle would provide a durable material that is easy to hold, resilient to damage from drops and other uses, and

maintains its shape such that it can be easily held by a baby or other user. As previously described, a POSA would have a reasonable expectation of success at least because bottles of rigid materials (e.g., hard plastics, glass, metal) were well-known and in use in feeding vessels prior to the priority date of the 244 Patent. See supra § IV.

419. As described above, a POSA would implement elements of Kurkjian's nipple and vessel design into the nipple and vessel design of Ishimaru in order to design a realistic, human-like nipple with air vents mounted on a durable container that maintains constant pressure in the nipple. See supra §XIII.A. A POSA would recognize, as Kurkjian discloses, using a more rigid material for the vessel compared to the nipple would provide a more durable design over repeated use, would be more secure fitting, and allow the nipple to remain in place. To the extent not already disclosed, Ishimaru's nipple and vessel design is improved by incorporating these design elements as taught by Kurkjian. A POSA would also recognize this was nothing more than using the prior art technique of a bottle more rigid than a nipple, in a predictable way to achieve the predictable results described above.

420. For at least these reasons, this claim limitation is disclosed or rendered obvious by Ishimaru-Kurkjian.

~~C.~~D. Claim 24

(i) [24]: The drinking vessel of claim 21, wherein the cover assembly further comprises an air vent apart from the

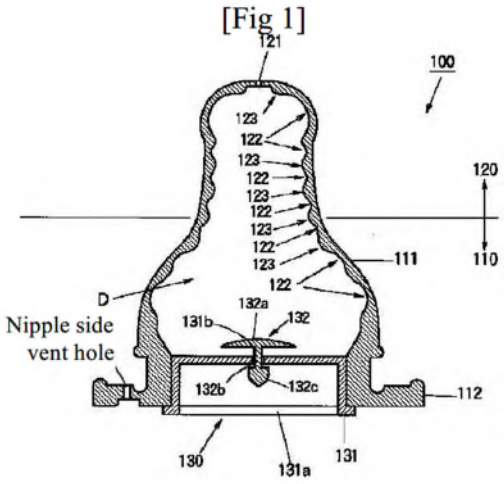
mouthpiece.

~~416.~~421. As I previously explained, *Ishimaru-Kurkjian* discloses or renders obvious each and every limitation of Claim 21. *Supra* §XIII.B. I incorporate my analysis of Claim 21 in Ground 1 of the '244 Patent analysis.

~~417.~~422. This limitation is disclosed or rendered obvious by *Ishimaru*. *Ishimaru* discloses an air vent apart from the mouthpiece. Specifically, *Ishimaru* discloses "a base portion 112 with a nipple side vent hole." Ex[1009] at ¶¶ 37 (emphasis added), 50.

~~418.~~423. *Ishimaru* also discloses that "nipple side vent holes and lid portion vent holes are provided in a manner that the pressure inside the bottle does not change from the outside air even when the contents of the feeding bottle are reduced," which a POSA would understand to mean that the vent holes allow air into the apparatus to prevent the internal pressure from changing as liquid is dispensed. *Id*. at ¶¶ 52 (emphasis added), 37, 50, 57.

~~419.~~424. Figure 1 of *Ishimaru* shows this flange with vent hole apart from the mouthpiece:



~~420.~~425. In addition to that analysis, this limitation is disclosed or rendered obvious by *Kurkjian*. *Kurkjian* teaches that the nursing unit has a "flexible nipple having a ***vented flexible flange***." Ex[1009] at 1:9-15 (emphasis added).

~~421.~~426. *Kurkjian* further discloses that this nipple "is provided with a body portion constituting a neck 13 and a laterally extending and preferably annular flange 14. This flange 14 is preferably provided with a single venting aperture 15 and it should be understood that the flange 14 is integral ***with the body portion 13 of the nipple,*** the body portion and flange being formed of flexible material." *Id.* at 1:45-55 (emphasis added).

~~422.~~427. *Kurkjian* further explains that the vent may be used to "prevent[] the body portion of the nipple from collapsing inwardly of the neck of the bottle when a vacuum is built up therein." *Id*. at 2:53-3:28.

~~423.~~428. *Kurkjian* also describes another "vent opening 31 similar to the vent opening 15 previously described." *Id.* at 3:33-70. Finally, in *Kurkijan*, the claims mention and the figures illustrate the vents as claimed in this limitation. *Id.* at Figs. 1, 3, 6-7, Claims 1-4.

~~424.~~429. This is consistent with what is shown in, for example, Figures 3 and 6 below, which illustrates an air vent apart from the mouthpiece:

Fig. 3.

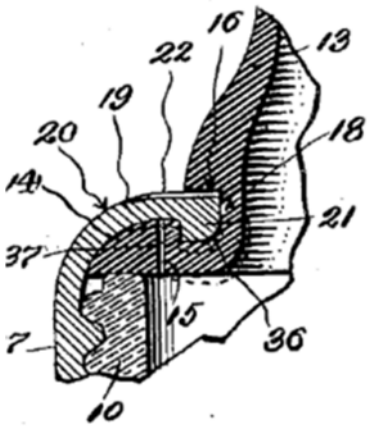
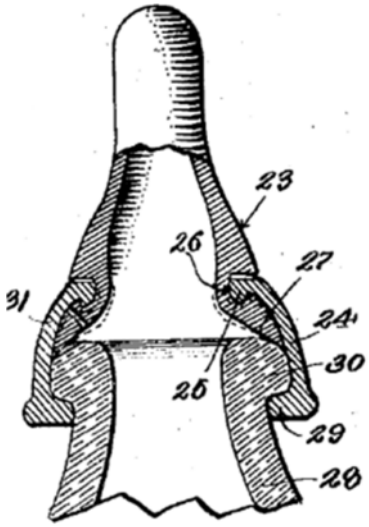


Fig. 6.



~~425.~~430. As described above, a POSA would implement elements of *Kurkjian*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. *See supra* §XIII.A.

~~426.~~431. A POSA would recognize, as *Ishimaru* and *Kurkjian* both disclose, including an air vent apart from the mouthpiece of the nipple provides a more reliable means to equalize the pressure in the vessel and the pressure in the atmosphere, and locating it outside the mouthpiece would reduce the risk of blockage or other obstructions in the air vent due to the compressive force applied to the vent passage from connection to the bottle. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Kurkjian*.

~~427.~~432. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Kurkjian*.

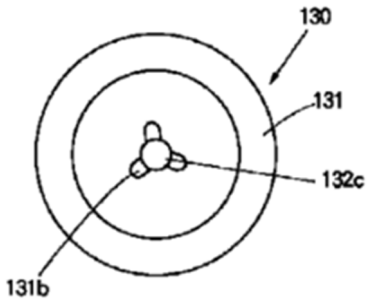
~~D.~~E. Claim 26

(i) [26]: The drinking vessel of claim 21, wherein the mouthpiece is located in the center of the nipple.

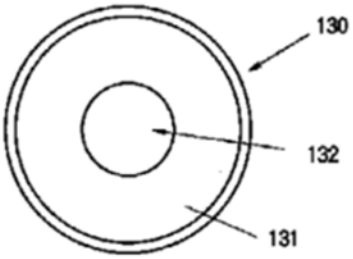
~~428.~~433. As I previously explained, Ishimaru-Kurkjian discloses or renders obvious each and every limitation of Claim 21. Supra §XIII.B. I incorporate my analysis of Claim 21 in Ground 1 of the '244 Patent analysis.

~~429.~~434. This limitation is disclosed or rendered obvious by Ishimaru under both Petitioner's and Patent Owner's proposed construction of "mouthpiece". Ishimaru further discloses that the mouthpiece is located in the center of the nipple. Ishimaru discloses a nipple with a teat opening 121 and mouthpiece such that the mouthpiece is located at the center of the nipple. Ex[1008] at ¶¶ 40, 43, 52-53. Figures 3, 4, 12, and 13 of Ishimaru shows a top-view of the nipple where the mouthpiece is located at the center of the nipple. Id. at Figs. 1, 3, 4, 12, 13:

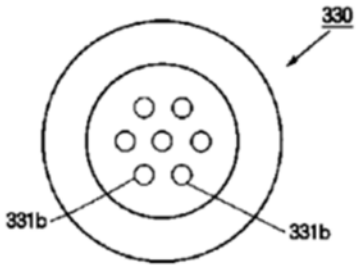
【図３】



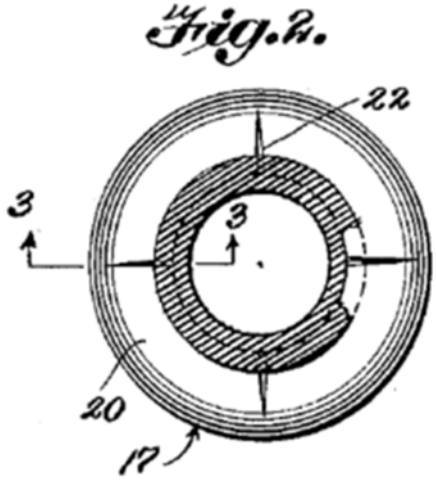
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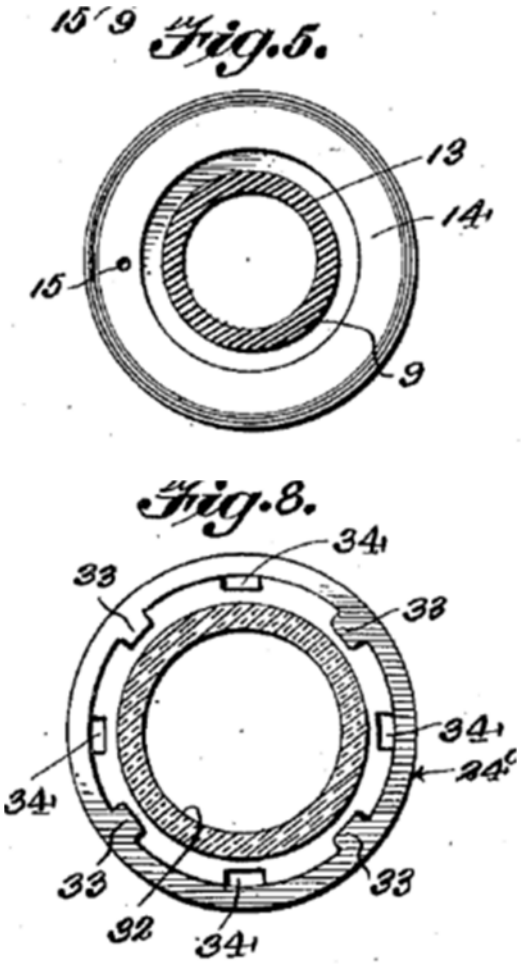


【図１２】



~~430.~~435. In addition to that analysis, this limitation is disclosed or rendered obvious by *Kurkjian* under both Petitioner's and Patent Owner's proposed construction of "mouthpiece." A POSA would understand *Kurkjian* to disclose this limitation, as *Kurkjian* teaches the mouthpieces are located at the center of the nipple. Specifically, Figures 2, 5, and 8 of *Kurkjian* illustrate a top-view of the nipples that locate the mouthpiece at the center of the nipple:





Ex[1008] at Figs. 2, 5, 8.

~~431.~~436. As described above, a POSA would implement elements of *Kurkjian*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. *See supra* §XIII.A. A POSA would recognize, as *Kurkjian* discloses, positioning the mouthpiece in the center of the nipple provides a more realistic, breast-like nipple. To the extent not

already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Kurkjian*.

~~432.~~437. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Kurkjian*.

~~E.~~F. Claim 27

(i) **[27]: The drinking vessel of claim 21, wherein the teat portion comprises a resilient material.**

~~433.~~438. As I previously explained, Ishimaru-Kurkjian discloses or renders obvious each and every limitation of Claim 21. Supra §XIII.B. I incorporate my analysis of Claim 21 in Ground 1 of the '244 Patent analysis.

~~434.~~439. This limitation is disclosed or rendered obvious by Ishimaru. For example, Ishimaru discloses an artificial nipple made of silicone rubber. Ex[1008] at ¶¶ 02, 52, Fig. 11. A POSA would consider silicone rubber to represent a resilient material. A POSA would further consider the teat to be constructed of a single material (e.g., the flange would also be constructed of silicone rubber).

~~435.~~440. This limitation is also disclosed or rendered obvious by Kurkjian. For example, Kurkjian discloses an artificial nipple made of a "flexible material" such as rubber. Ex[1009] at 1:50-54, Fig. 11. A POSA would consider rubber to represent a resilient material. A POSA would further consider the teat to be constructed of a single material (e.g., the flange would also be constructed of silicone rubber).

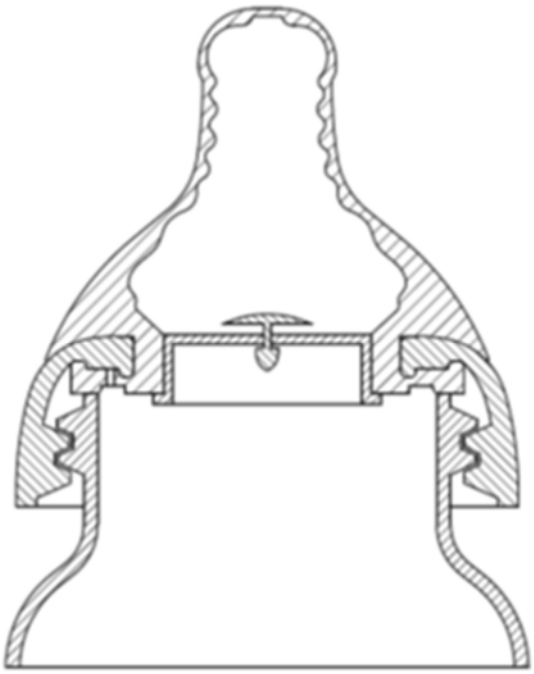
~~436.~~441. As described above, a POSA would implement elements of Kurkjian's nipple and vessel design into the nipple and vessel design of Ishimaru in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. See supra §XIII.A. A POSA would recognize, as Kurkjian discloses, a resilient material improves the durability of the nipple over repeated use. To the extent not already disclosed, Ishimaru's nipple and vessel design is improved by incorporating these design elements as taught by Kurkjian.

~~437.~~442. For at least these reasons, this claim limitation is disclosed or rendered obvious by Ishimaru-Kurkjian.

XIV. '244 PATENT GROUND 2: *Ishimaru* Renders Claims 21 – 24, 26, and 27 Obvious in View of *Atkin in* View of the Knowledge of a Person of Ordinary Skill in the Art

~~438.~~443. As discussed below, *Ishimaru* in view of *Atkin* discloses and renders obvious each and every claim limitation of at least Claims 21–24, 26, and 27 of the '244 Patent. To the extent there are any differences between Claims 21–24, 26, and 27 of the '244 Patent and the subject matter taught by *Ishimaru-Atkin*, those differences would have been obvious to a POSA, and thus, *Ishimaru-Atkin* still renders at least Claims 21–24, 26, and 27 of the '244 Patent obvious in view of the knowledge of a POSA at the time of the purported invention.

~~439.~~444. In reaching this conclusion, I have considered the disclosures of these prior art references, the motivations to combine these references, and the knowledge of a POSA, as discussed below. In my opinion, a POSA reviewing these disclosures prior to the priority date of the patents would have been motivated to design a nipple and collar design similar to the following:



~~440.~~445. Such a design would have been obvious to a POSA no later than the priority date of the '244 Patent, and would render the challenged claims of the '244 Patent obvious.

A. Motivation For Combining *Ishimaru* and *Atkin*

~~441.~~446. A person of ordinary skill in the art would have been motivated to combine the nipple and vessel designs of *Ishimaru* with the nipple and vessel

designs of *Atkin* as modified in Ground 2 because (1) *Ishimaru* stresses the importance and need for providing a realistic, human-like nipple, and (2) both references suggest the need for a nipple that equalizes pressures between the nipple and the atmosphere a child consumes its contents. Moreover, each reference teaches the same solution: using a rounded nipple with particular design elements that imitate feeding from a human breast, and providing an air vent in a location that will reliably vent the interior of the vessel to equalize the pressure between the vessel and the atmosphere. Each of the functionalities described in Ground 1 would be carried over into the *Ishimaru-Atkin* combination.

~~442.~~447. Both *Ishimaru* and *Atkin* are directed to an improvement to a nipple design directed to improving venting and equalizing pressure between the interior of the vessel and the atmosphere. *Ishimaru* explains the need for such a design: "Therefore, when the user, e.g. an infant, sucks on the aforesaid teat portion and/or the aforesaid nipple trunk, the artificial nipple is subjected to pressure in the lateral direction. At this time, the internal pressure in the aforesaid beverage space increases, and since the aforesaid elongation portion is formed in the aforesaid teat portion and/or the aforesaid nipple trunk, the pressure acts in the direction of elongation of the artificial nipple in the longitudinal direction, causing the aforesaid teat portion and/or the aforesaid nipple trunk to elongate. Furthermore, because the internal pressure in the aforesaid beverage space increased, the aforesaid teat portion

and/or the aforesaid nipple trunk will not collapse even if pressure is applied in the lateral direction of the artificial nipple due to the suckling movement of the infant, etc." Ex[1008] at ¶ 19. *Ishimaru* discloses an artificial nipple that "is more easily extensible than other portions to form a beverage space inside the aforesaid teat portion and the aforesaid nipple trunk, and at the same time, an internal pressure adjusting means is provided in the aforesaid nipple trunk to adjust the internal pressure of this beverage space." Ex[1008] at ¶¶ 05-06. *Atkin* describes nipple design that "minimises risk of teat collapse, even with the relatively large teat of this invention." Ex[1010] at 6:12-27, 3:28-33. Both *Ishimaru* and *Atkin* discuss the advantages of such nipple designs and further emphasize the drawbacks and consequences of being unable to vent the interior of the nipple with the atmosphere. *See* Ex[1008] at ¶¶ 06-07; Ex[1010] at 1:33-45, 2:28-33. A POSA would have been motivated to combine *Atkin* with *Ishimaru* because in addition to each being directed to the same problem and using the same solution, they analogously describe nipple designs with air vents and collars and other means for equalizing the pressure between the interior of the vessel and the atmosphere.

~~443.~~448. As I discussed above, *Ishimaru* further discloses the need for a nipple "that is more similar to a mother's nipple," namely a nipple that "has a shape similar to a mother's breast and nipple as shown in Fig. 1, because it is used when a mother feeds her infant with artificial milk using a feeding bottle, etc., instead of her

own breast milk." Ex[1008] at ¶ 41; *supra* Section XII.A. *Ishimaru* stresses the importance of a nipple that is breast-like to encourage bottle feeding: "there as a problem that the conventional artificial nipple 10 does not elongate the teat portion of the mother's nipple or the portion corresponding to the mammary areola, and thus do not approximate the nipple." *Id.* at ¶ 04. *Ishimaru* directly addresses this problem through "thin-walled portions 122, 122 and 122, which are elongation portions with a thin wall, are formed in a groove-like pattern, for example, at seven annular locations." *Id.* at ¶ 41. Such a configuration "provides an artificial nipple that is more similar to a mother's nipple." *Id.* at ¶ 61. "[T]he artificial nipple 100 of this embodiment elongates in the same way as the mother's nipple, thereby increasing the amount of milk spurted, and the artificial nipple 100 itself does not collapse in the same way as the mother's nipple, and its rigidity can be maintained." Ex[1008] at ¶ 48.

~~444.~~449. *Atkin* also discloses a similar nipple with other design elements that are similar to a human breast. *Atkin* discloses at least two techniques that a POSA would recognize would improve the breast-like appearance of *Ishimaru*. First, *Atkin* discloses a "wide concave profile" of a teat that a POSA would recognize more closely simulates the rounded appearance of a human breast. Ex[1010] at 3:20-26, 5:7-17, 6:42-49, Figs. 3, 4, 7A-B. Second, *Atkin* discloses a wide, varying diameter vessel: "the main portion having a capacity in the range 25 to 40 ml per cm height

and the neck portion having a mean cross sectional area not less than 0.45 of the cross sectional area of the main portion. Preferably, the main portion is substantially tubular and the neck 60 portion is cylindrical having a mean diameter not less than 0.65 of the main portion diameter." *Id*. at 2:55-61, 3:10-27, Fig. 1. A vessel with multiple diameters or internal circumferences would optimize vessel volume, user ergonomics, and aesthetic appearance, while also facilitating attachment of a wider, more breast-like nipple though a wide vessel mouth. *Atkin* further teaches that a multi-diameter, wide-vessel mouth "is less liable to being tipped over. In addition, the wider neck facilitates the insertion of food ingredients, as by means of a scoop, and is more readily cleaned internally after use." *Id*. at 3:20-23.

~~445.~~450. A POSA would have therefore understood that *Ishimaru*'s nipple and vessel could be improved by employing the techniques from *Atkin* to facilitate a wide, curved nipple attachment with a multi-diameter vessel that would result in an ergonomic, easy-to clean, and aesthetically pleasing nipple and vessel. Such a combination would further improve the design and goals of *Ishimaru* to provide easy cleaning, prevent nipple collapse (and colic), and provide a breast-like appearance. Ex[1008] at ¶¶ 51, 52. A POSA would be further motivated and find it obvious, to the extent not disclosed by *Ishimaru*, to modify the vessel design as taught by one or more embodiments disclosed in *Atkin* in order to provide a more ergonomic, durable, and aesthetically pleasing design better suited for *Ishimaru*'s nipple design.

For example, incorporating *Atkin* design with varying diameters to improve the nipple and vessel design would result in a vessel with multiple diameters that would optimize vessel volume, user ergonomics, and aesthetic appearance, while also facilitating attachment of a wider, more breast-like nipple though a wide vessel mouth. "Furthermore, a larger diameter neck enables the use of a larger teat, enabling use of the bottle by the baby more closely resembling natural feeding." Ex[1010] at 3:10-27.

~~446.~~451. Furthermore, a POSA would have been motivated, when reading *Ishimaru* and *Atkin*, to combine and substitute the familiar elements described using known methods to yield predictable results. Moreover, a POSA would have had a reasonable expectation of success in combining the nipple and vessel taught by *Ishimaru* and the nipple and vessel taught in *Atkin*, because both would be working as described in their respective references and the references themselves demonstrate that a POSA would have been able to combine the features of the systems and would have expected success in doing so. For example, a POSA would have expected modifying *Ishimaru*'s nipple in view of *Atkin* to provide a more reliable, aesthetically suitable solution to the need to equalize pressure within the bottle. Therefore, a POSA would have been motivated to combine the nipple and vessel of *Ishimaru* with the nipple and vessel of *Atkin*.

B. Claim 21

(i) [21.PRE]: A drinking vessel comprising:

~~447.~~452. As I previously explained with regard to Ground 1 of the '244 Patent, this limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* §XIII.B(i). The described functionality of *Ishimaru* would be carried over into the *Ishimaru-Atkin* combination. *See supra* §XIV.A. I incorporate my Ground 1 of the '244 Patent analysis in the *Ishimaru-Atkin* combination.

~~448.~~453. In addition to that analysis, to the extent the preamble is limiting, it is taught by *Atkin*. *Atkin* discloses a drinking vessel. For example, multiple figures of *Atkin* disclose a drinking vessel. *See* Ex[1010] at Figs. 1, 7A-7B:

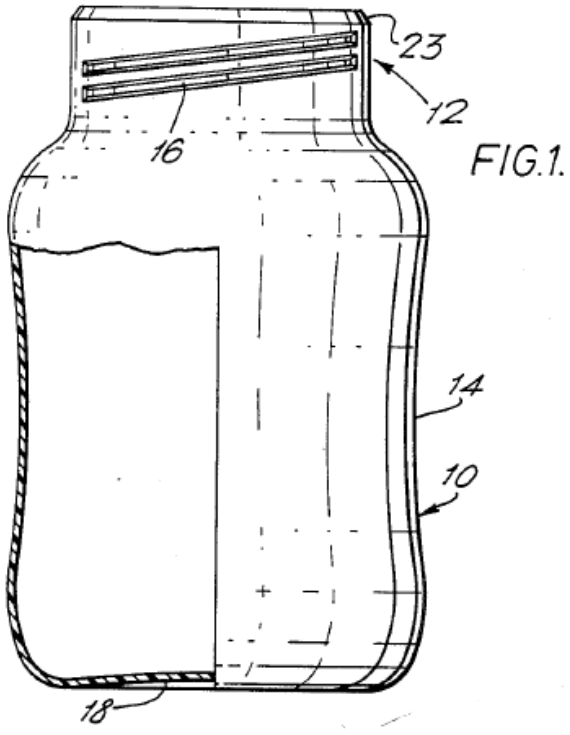
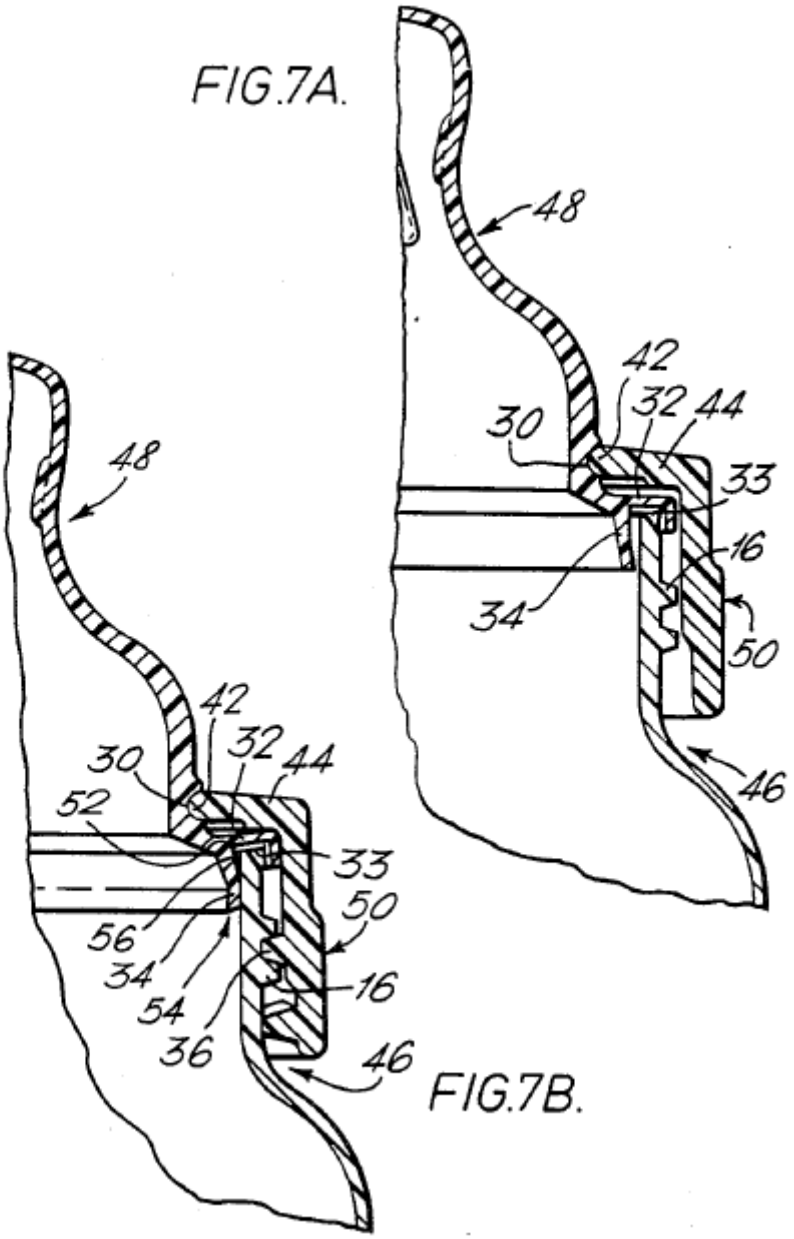


FIG.1.



~~449.~~454. *Atkin* further recites "This invention relates to a ***baby feed bottle*** and also to a ***baby feed bottle combination*** which comprises ***bottle***, teat and teat fitting cap and may also include other components such as a dormal cap." Ex[1010] at 1:1-6. *Atkin* extensively describes the dimensions and characteristics of a feed

bottle: "A typical bottle is relatively tall, having a capacity of the order of about 20 ml per cm height. This typical bottle therefore, having a neck portion above the bottle full mark of about 3 cm height will, in the case of a 250 ml full capacity bottle, stand about 15 cm high. Being of a diameter of the order of 5 cm, it thus tends to stand in a critically stable manner, and even a small disturbance is likely to knock or tip it over. This can lead to leakage of baby feed through the teat, and may create the need for re-sterilisation." Ex[1010] at 1:12-23.

~~450.~~455. *Atkin* further cites to prior art that describes a baby feed bottle. *See* Ex[1010] at 1:55-2:14. Claims 1-16 of *Atkin* further recite "A baby feed bottle combination . . ." Ex[1010] at 8:16-9:39.

~~451.~~456. As described above, a POSA would implement elements of *Atkin*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. *See supra* §XIV.A. A POSA would recognize, as *Atkin* discloses, including a bottle with multiple diameters would, for example, be more resistant to tipping, be better for hand holding (ergonomics), and be better suited to couple with a wider, realistic, breast-like nipple. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Atkin*.

~~452.~~457. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Atkin*.

(ii) [21.A]: a container comprising a varying internal circumference and an opening into the container; and

~~453.~~458. As I previously explained with regard to Ground 1 of the '244 Patent, this limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* §XIII.B(ii). The described functionality of *Ishimaru* would be carried over into the *Ishimaru-Atkin* combination. *See supra* §XIV.A. I incorporate my Ground 1 of the '244 Patent analysis in the *Ishimaru-Atkin* combination.

~~454.~~459. *Atkin* discloses or renders obvious this limitation. For example, multiple figures of *Atkin* that disclose a container with a varying internal circumference. *See* Ex[1010] at Figs. 1, 7A-7B:

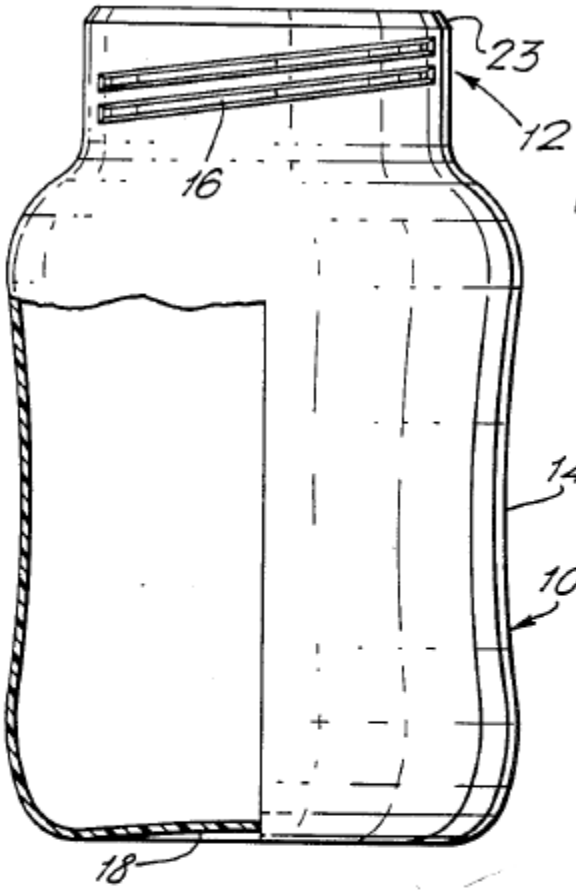
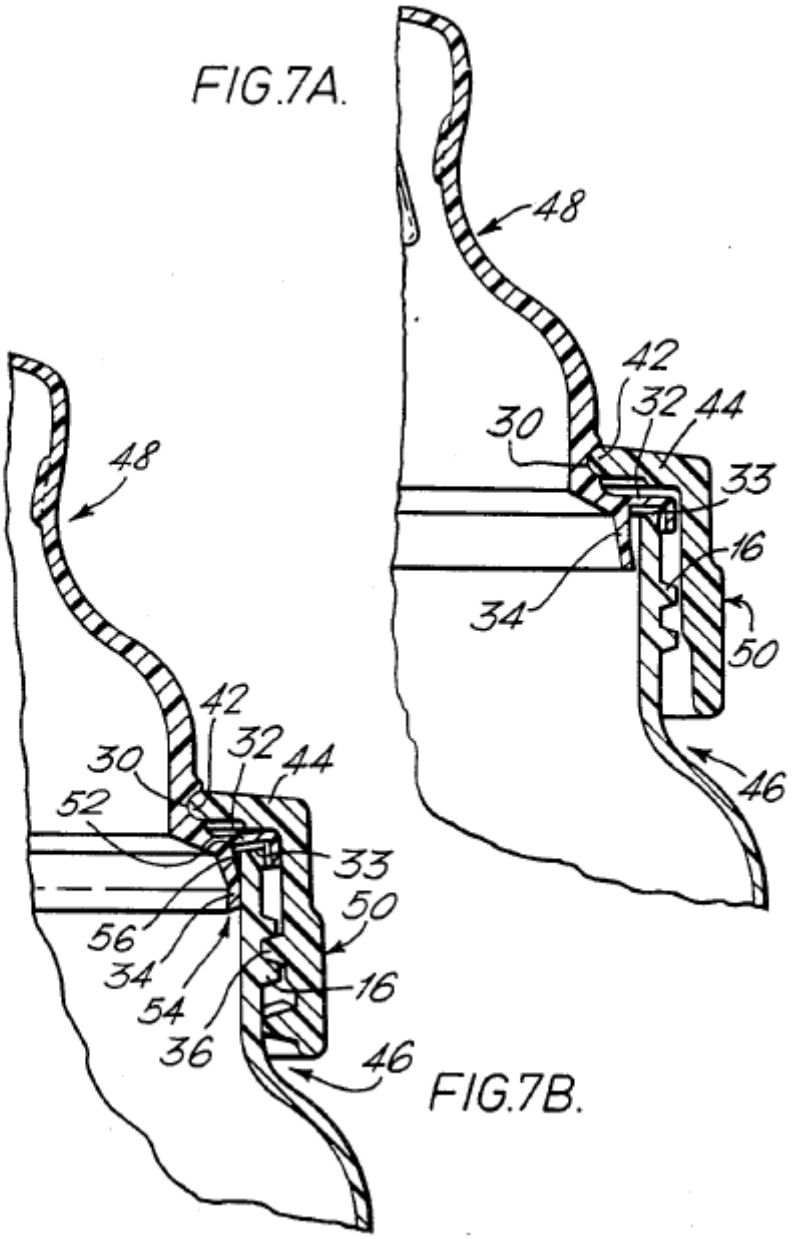


FIG.1.



~~455.~~460. For example, Figure 1 of *Atkin* discloses at least three different internal diameters: A first diameter at the bottom of the vessel; a second diameter "marginally waisted, as indicated at 14, to facilitate hand holding"; and a third diameter at neck portion 12. Ex[1010] at 4:37-41.

~~456.~~461. With regard to Figure 1, *Atkin* teaches: "The bottle is made of clear polycarbonate and provided with graduated markings indicating capacity, for example up to a full capacity just at the top of the main portion 10 where it starts to merge into the neck portion 12 of reduced diameter. The illustrated bottle, having a full capacity of 250 ml, is of a short, squat shape compared to a conventional feed bottle. Thus, the illustrated bottle has a main portion mean diameter of about 6.75 cm (7 cm maximum top and bottom to 6.5 cm at the centre of the waist) and main portion height up to the full capacity mark of about 8 cm. The neck portion diameter is about 5 cm. The total bottle height is about 12 cm. More particularly, in accordance with the invention, the capacity per cm height lies between 25 to 40 ml per cm, in fact about 31 ml per cm, and a neck portion diameter of about 0.75 times the main portion mean diameter." Ex[1010] at 4:44-63.

~~457.~~462. For example, Figure 1 of *Atkin* discloses at least three different internal diameters: A first diameter at the bottom of the vessel; a second diameter "marginally waisted, as indicated at 14, to facilitate hand holding;" and a third diameter at neck portion 12. Ex[1010] at 4:37-41, 3:10-27.

~~458.~~463. As another example, Figures 7A and 7B of *Atkin* further illustrates at least two different diameters in the bottle: A first diameter in the neck portion of the vessel; and a second diameter for the remainder of the bottle.

~~459.~~464. *Atkin* further discloses that different diameters apply to both the internal and external diameters of the bottle. *See* Ex[1010] at 2:62-3:9.

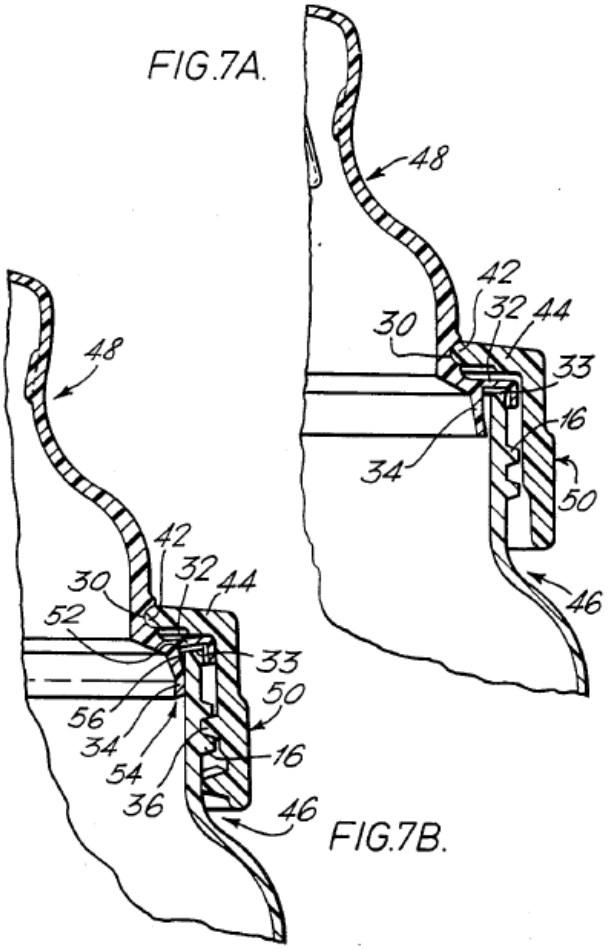
~~460.~~465. As described above, a POSA would implement elements of *Atkin*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. *See supra* §XIV.A. A POSA would recognize, as *Atkin* discloses, including a bottle with multiple diameters would, for example, be more resistant to tipping, be better for hand holding (ergonomics), and be better suited to couple with a wider, realistic, breast-like nipple. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Atkin*.

~~461.~~466. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Atkin*.

(iii) [21.B]: a cover assembly configured to couple to the container over the opening, the cover assembly comprising:

~~462.~~467. As I previously explained with regard to Ground 1 of the '244 Patent, this limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* §XIII.B(iii). The described functionality of *Ishimaru* would be carried over into the *Ishimaru-Atkin* combination. *See supra* §XIV.A. I incorporate my Ground 1 of the '244 Patent analysis in the *Ishimaru-Atkin* combination.

~~463.~~468. In addition to that analysis, this limitation is disclosed or rendered obvious by *Atkin*. *Atkin* discloses a nipple and a collar which comprise the cover assembly to couple to the container over the opening. For example, Figures 7A and 7B of *Atkin* illustrate a cover over the mouth of the bottle that includes a teat (e.g., a nipple, as described in *Atkin*) and a collar (e.g., an annular cap, as described in *Atkin*):



~~464.~~469. Specifically, *Atkin* teaches: "Figures 7A and 7B are now referred to for facilitating understanding of the manner in which the bottle, ***teat and annular cap*** cooperate with one another when the **cap** and **teat sub-assembly** so is screwed into position. In these two figures, the bottle neck is generally referenced 46, the t**eat 48 and annular cap 50**. The previously described features of these three components are referenced in accordance with the preceding description." Ex[1010] at 5:46-56.

~~465.~~470. *Atkin* further teaches that the teat and annular cap cover the mouth opening of the vessel (along with an outer cap) such that the contents of the vessel can be shaken without spilling the contents: "Yet again, shaking of the mixture in the bottle is only readily enabled by the provision and fitting of a separate cap in place of the annular cap and teat, or at least a closure disc in place of the teat, since if the bottle with a fitted teat is shaken, feed is liable to be shaken out through the teat perforations or the teat valve system. Shaking of the mixture in the bottle can also lead to blockage of the radial groove in the teat flange, which must be kept clear to avoid the problem of teat collapse." Ex[1010] at 1:45-54; *see also id* at 5:29–46.

~~466.~~471. As described above, a POSA would implement elements of *Atkin*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a

durable design that relieves negative pressure in the nipple. *See supra* §XIV.A. A POSA would recognize, as *Atkin* discloses, including a cover assembly, comprising a nipple and collar, to couple the container over the opening, using a nipple and collar that are removably coupled to one another would better seal over the opening of the container and would thus provide a more durable design over repeated use that reduces stress on the nipple due to repeated stretching of the nipple over the opening of the bottle. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Atkin*.

~~467.~~472. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Atkin*.

(iv) [21.C]: i. a nipple comprising a mouthpiece configured to allow liquid flow through the nipple to an aperture,

~~468.~~473. As I previously explained with regard to Ground 1 of the '244 Patent, this limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* §XIII.B(iv). The described functionality of *Ishimaru* would be carried over into the *Ishimaru-Atkin* combination. *See supra* §XIV.A. I incorporate my Ground 1 of the '244 Patent analysis in the *Ishimaru-Atkin* combination.

~~469.~~474. In addition to that analysis, this limitation is disclosed or rendered obvious by *Atkin* under both Petitioner's and Patent Owner's proposed construction of "mouthpiece." *Atkin* discloses: a nipple comprising a mouthpiece configured to allow liquid to flow through the nipple. For example, *Atkin* teaches

that "The ***teat has*** a nearly flat or very shallowly curved surface 24 at the end of the ***mouthpiece 26***; the teat perforations are formed in this end surface. Below the mouthpiece the teat widens out to a pair of spaced external ribs 28 which define an annular groove 30 between them, immediately above an annular flange 32. The flange 32 has an inner depending annular lip 34, and an outer axially shorter, shaped depending is bead or lip 35." Ex[1010] at 5:6-16 (emphasis added). At least Figs. 4A, 7A and 7B illustrate this limitation:

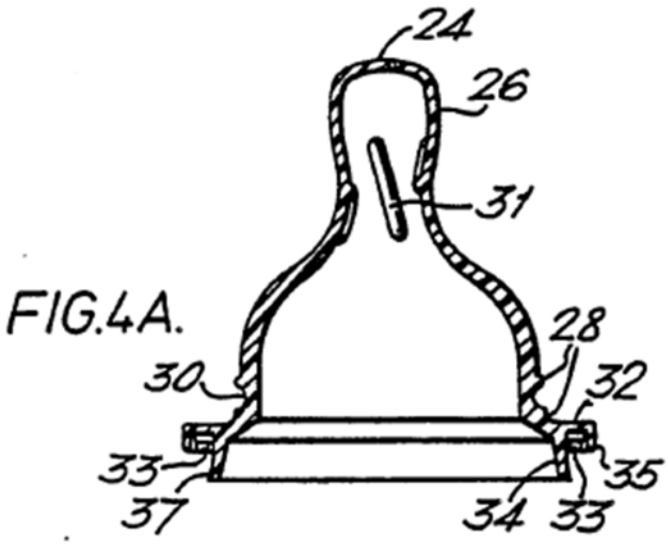
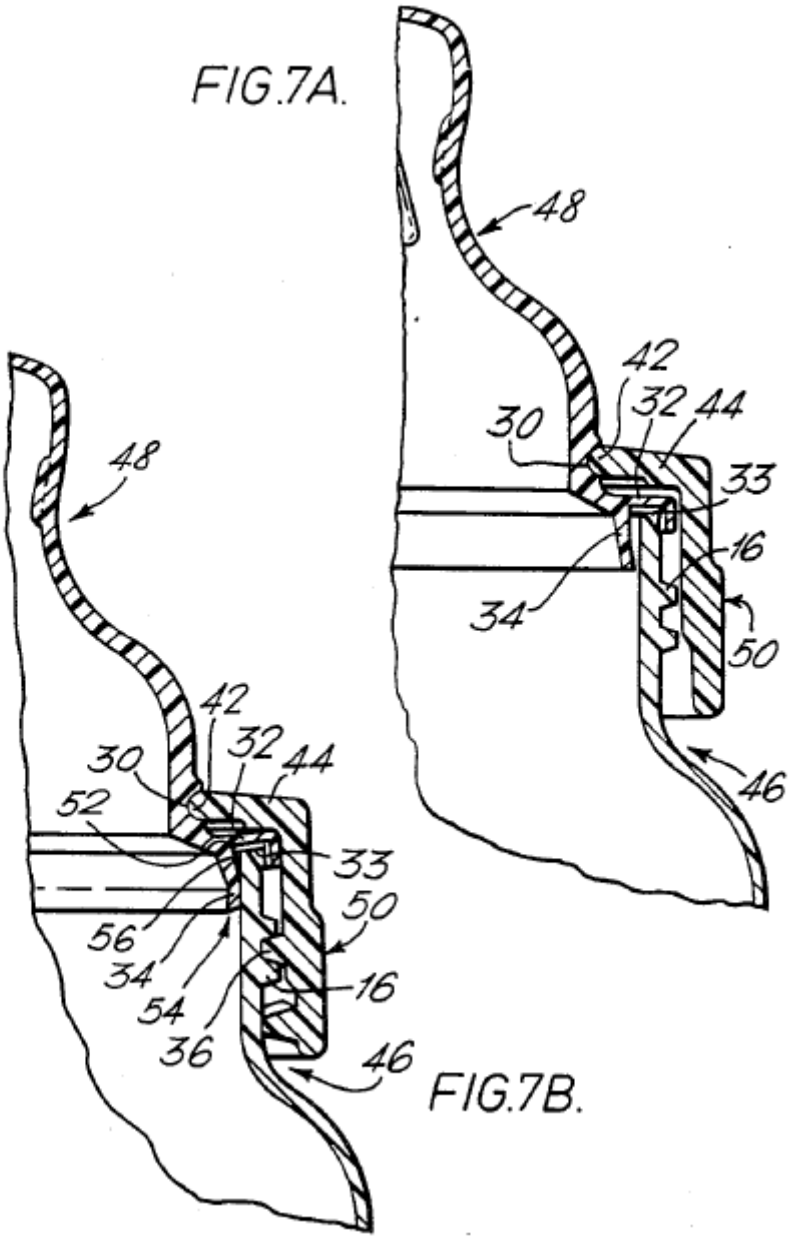


FIG.4A.



~~470.~~475. As illustrated in Figs. 7A and 7B, a POSA would understand *Atkin* to disclose this limitation under either Petitioner or Patent Owner's proposed construction of mouthpiece, as the mouthpiece in *Atkin* projects generally perpendicular to the mouth of the vessel and is disposed above the areola portion

(under both parties' proposed constructions), and this mouthpiece "extends into a baby's mouth for feeding" under Petitioner's proposed construction.

~~471.~~476. *Atkin* further discloses that the mouthpiece is configured to allow liquid flow through the nipple to an aperture. Indeed, one of the goals of *Atkin* is to "avoid collapse of the teat mouthpiece ***when feed is sucked out of the bottle***[.]" Ex[1010] at 8:5-12 (emphasis added), 3:28-33, Claim 1.

~~472.~~477. *Atkin* further discloses a trainer spout with "an upstanding eccentric spout 68 having small apertures 70 in its end through which baby feed can be taken by a baby with a sucking and/or drinking technique." Ex[1010] at 7:39-42.

~~473.~~478. As described above, a POSA would implement elements of *Atkin*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. *See supra* §XIV.A. A POSA would recognize, as *Atkin* discloses, including a mouthpiece provides a more realistic, breast-like nipple. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Atkin*.

~~474.~~479. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Atkin*.

(v) [21.D]: a flex region configured to allow flex of the mouthpiece towards and away from a lower portion of the nipple,

~~475.~~480. As I previously explained with regard to Ground 1 of the '244 Patent, this limitation is disclosed or rendered obvious by Ishimaru. See supra §XIII.B(v). The described functionality of Ishimaru would be carried over into the Ishimaru-Atkin combination. See supra §XIV.A. I incorporate my Ground 1 of the '244 Patent analysis in the Ishimaru-Atkin combination.

~~476.~~481. For at least these reasons, this claim limitation is disclosed or rendered obvious by Ishimaru-Atkin.

(vi) [21.E]: the mouthpiece defining a bite region,

~~477.~~482. As I previously explained with regard to Ground 1 of the '244 Patent, this limitation is disclosed or rendered obvious by Ishimaru. See supra §XIII.B(vi). The described functionality of Ishimaru would be carried over into the Ishimaru-Atkin combination. See supra §XIV.A. I incorporate my Ground 1 of the '244 Patent analysis in the Ishimaru-Atkin combination.

~~478.~~483. In addition to that analysis, this limitation is disclosed or rendered obvious by Atkin under both Petitioner's and Patent Owner's proposed construction of "mouthpiece". I previously explained with regard to limitation 21[D] that Atkin discloses or renders obvious mouthpiece. See supra §XIII.B(v). I incorporate my analysis of limitation 21[D] herein.

~~479.~~484. For example, Atkin teaches that "The teat has a nearly flat or very shallowly curved surface 24 at the end of the mouthpiece 26." Ex[1010] at 5:6-16 (emphasis added). At least Figs. 4, 7A and 7B illustrate this limitation:

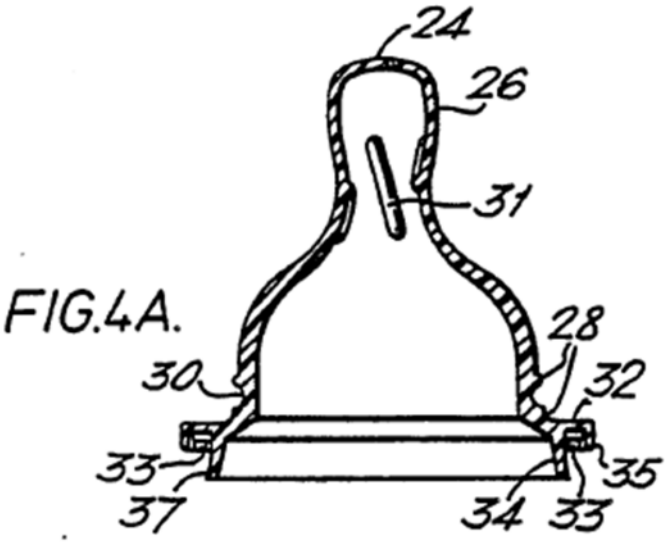
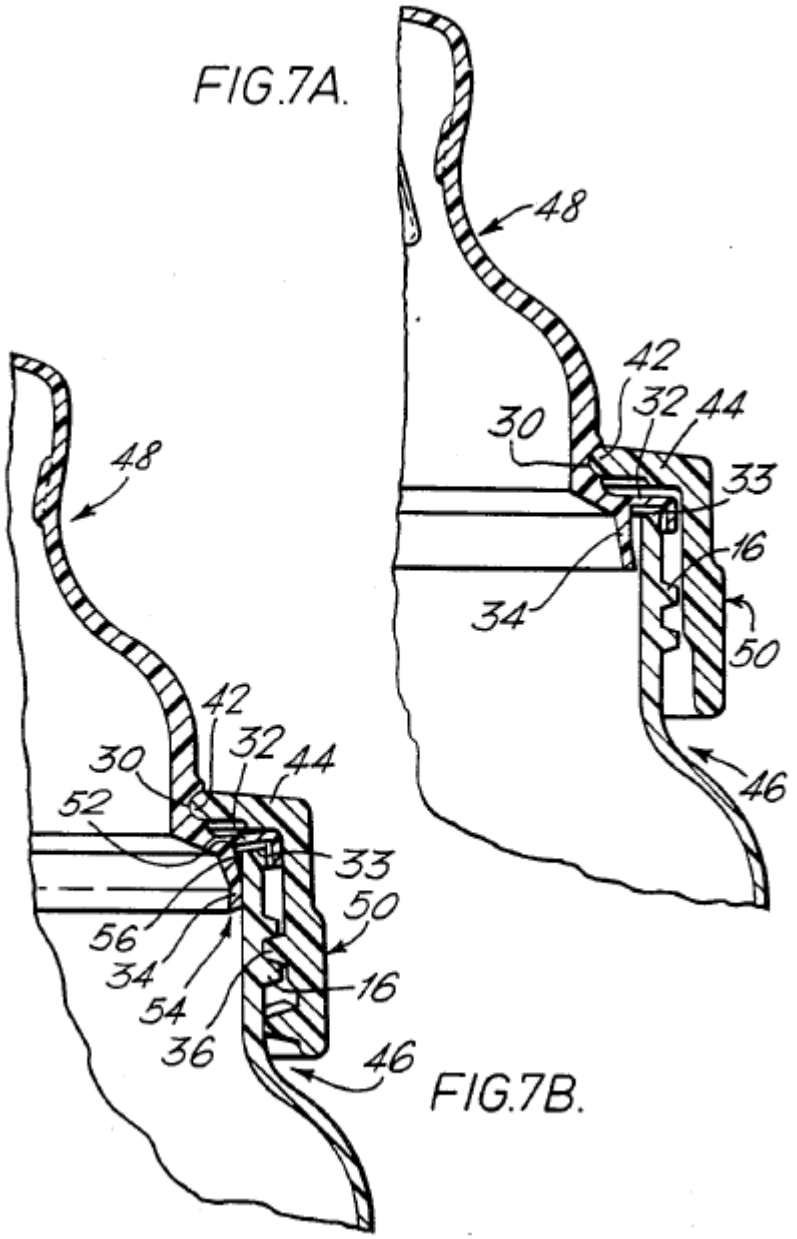


FIG.4A.



~~480.~~485. As illustrated by Atkin, a POSA would understand this nearly flat or very shallowly curved surface 24 at the end of the mouthpiece taught by Atkin to delineate a bite region within the mouthpiece.

~~481.~~486. Atkin further discloses that the mouthpiece is configured to allow liquid flow through the nipple to an aperture. Indeed, one of the goals of Atkin is to

"avoid collapse of the teat mouthpiece when feed is sucked out of the bottle[.]" Ex[1010] at 8:5-12 (emphasis added); 3:28-33, Claim 1). A POSA reading Atkin would understand that a baby or child may be inclined to bite the mouthpiece when sucking the contents out of the bottle via the mouthpiece. A POSA would further intend that the baby or child bite on the flat or very shallowly curved surface as this would provide an ergonomic, delineated area with which to bite.

~~482.~~487. As described above, a POSA would implement elements of Atkin's nipple and vessel design into the nipple and vessel design of Ishimaru in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. See supra §XIV.A.. A POSA would recognize, as Atkin discloses, including a bite region within the mouthpiece provides a more realistic, breast-like nipple. To the extent not already disclosed, Ishimaru's nipple and vessel design is improved by incorporating these design elements as taught by Atkin.

~~483.~~488. For at least these reasons, this claim limitation is disclosed or rendered obvious by Ishimaru-Atkin.

(vii) [21.F]: and a flange depending from the lower portion of the nipple defining the nipple circumference furthest from the aperture; and,

~~484.~~489. As I previously explained with regard to Ground 1 of the '244 Patent, this limitation is disclosed or rendered obvious by Ishimaru. See supra

§XIII.B(vii). The described functionality of Ishimaru would be carried over into the Ishimaru-Atkin combination. See supra §XIV.A. I incorporate my Ground 1 of the '244 Patent analysis in the Ishimaru-Atkin combination.

~~485.~~490. In addition to that analysis, this limitation is taught by Atkin. Atkin discloses an "arrangement being such that when the cap is screwed down, it acts on the teat to deform the annular flange thereof so that the said 20 lip is turned outwardly to engage the interior surface of the bottle neck to provide a normally closed flap valve." Ex[1010] at 2:17-22; 3:44-65. As further illustrated in Figures 3 and 4 of Atkin, the flange in Atkin depends from the lower portion of the nipple: "The flange 32 has an inner depending annular lip 34, and an outer axially shorter, shaped depending is bead or lip 35. The reference 31 denotes inclined inwardly directed stiffening ribs formed in the side wall of the mouthpiece of the teat." Ex[1010] at 5:13-18, Fig. 3-4; see also id. at Figs. 7-8.

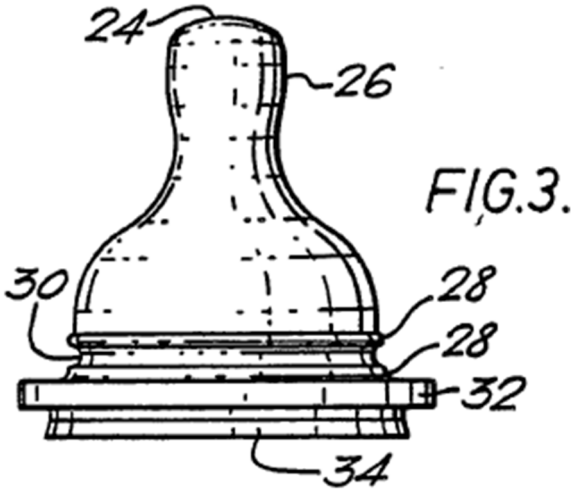


FIG.3.

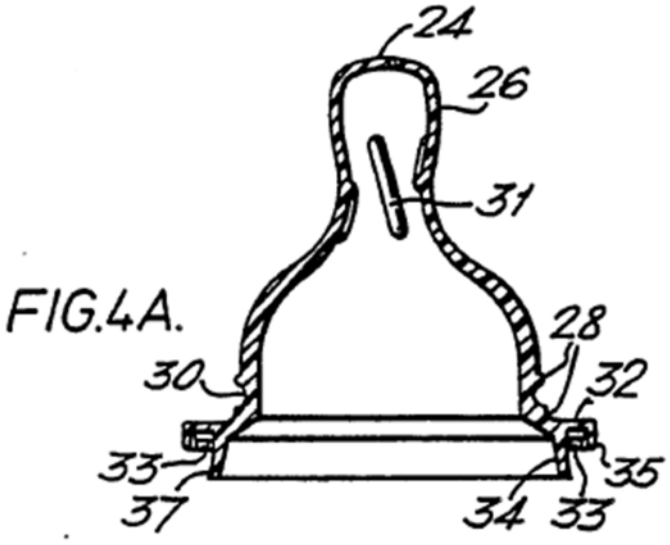
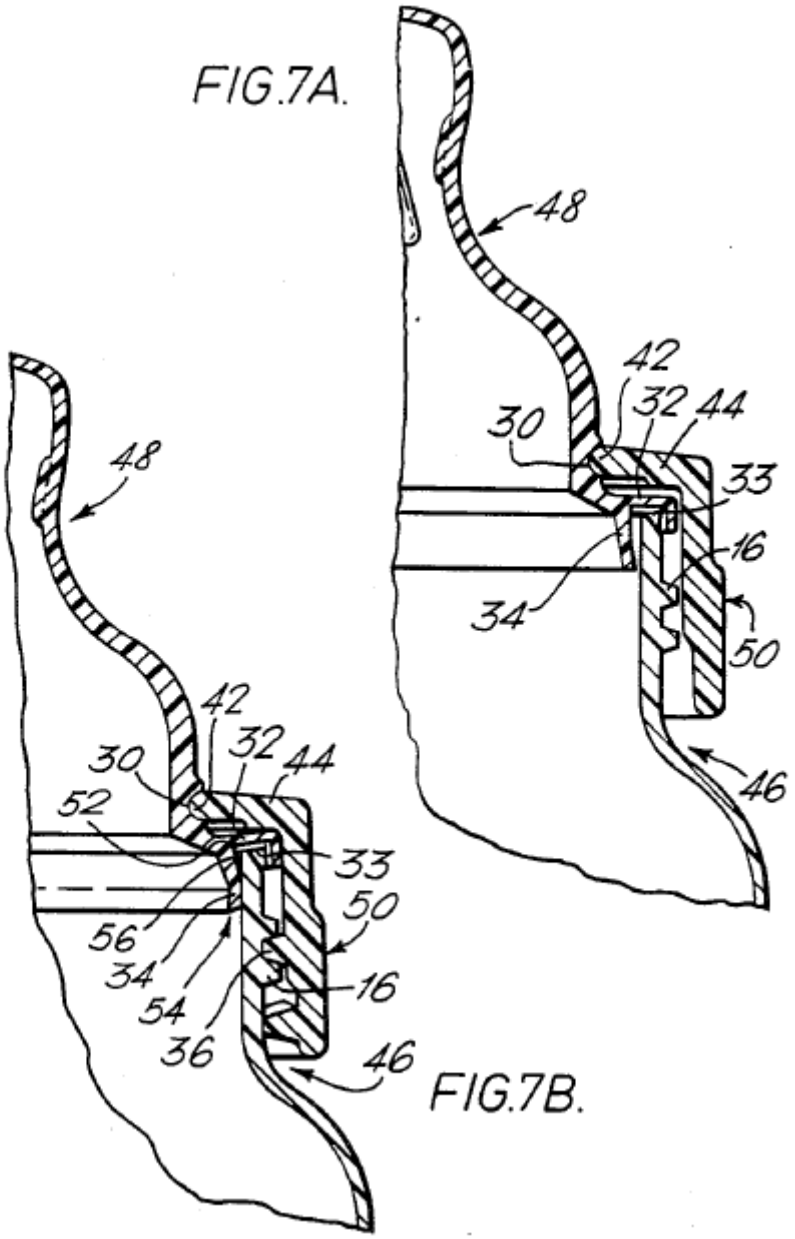


FIG.4A.

~~486.~~491. As illustrated in Figure 3, the flange 32 (which includes depending annular lip 34 ("The flange 32 has an inner depending annular lip 34", Ex[1010] at 5:13-18)) extends from the lower portion of the nipple and defines the circumference of the nipple furthest from the aperture. Atkin teaches "The flange is dimensioned to seat on the rim 20 of the bottle neck, with the inner lip 34 extending 20 into the interior of the bottle neck with small clearances from the interior surface of the latter." Ex[1010] at 5:19-23.

~~487.~~492. Atkin further discloses or renders obvious this limitation with respect to Figures 7A and 7B, and the accompanying descriptions. See Ex[1010] at Figs. 7A, 7B; 5:56-6:27.



~~488.~~493. As described above, a POSA would implement elements of Atkin's nipple and vessel design into the nipple and vessel design of Ishimaru in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. See supra §XIV.A. A POSA would recognize, as Atkin discloses, using a nipple with a flange depending

form the lower portion of the nipple would provide additional stability and would better seal over the opening of the container and would thus provide a more durable design over repeated use that reduces stress on the nipple due to repeated stretching of the nipple over the opening of the bottle. To the extent not already disclosed, Ishimaru's nipple and vessel design is improved by incorporating these design elements as taught by Atkin.

~~489.~~494. For at least these reasons, this claim limitation is disclosed or rendered obvious by Ishimaru-Atkin.

(viii) [21.G]: ii. a collar configured to removably couple to the nipple to seal over the opening of the container; and,

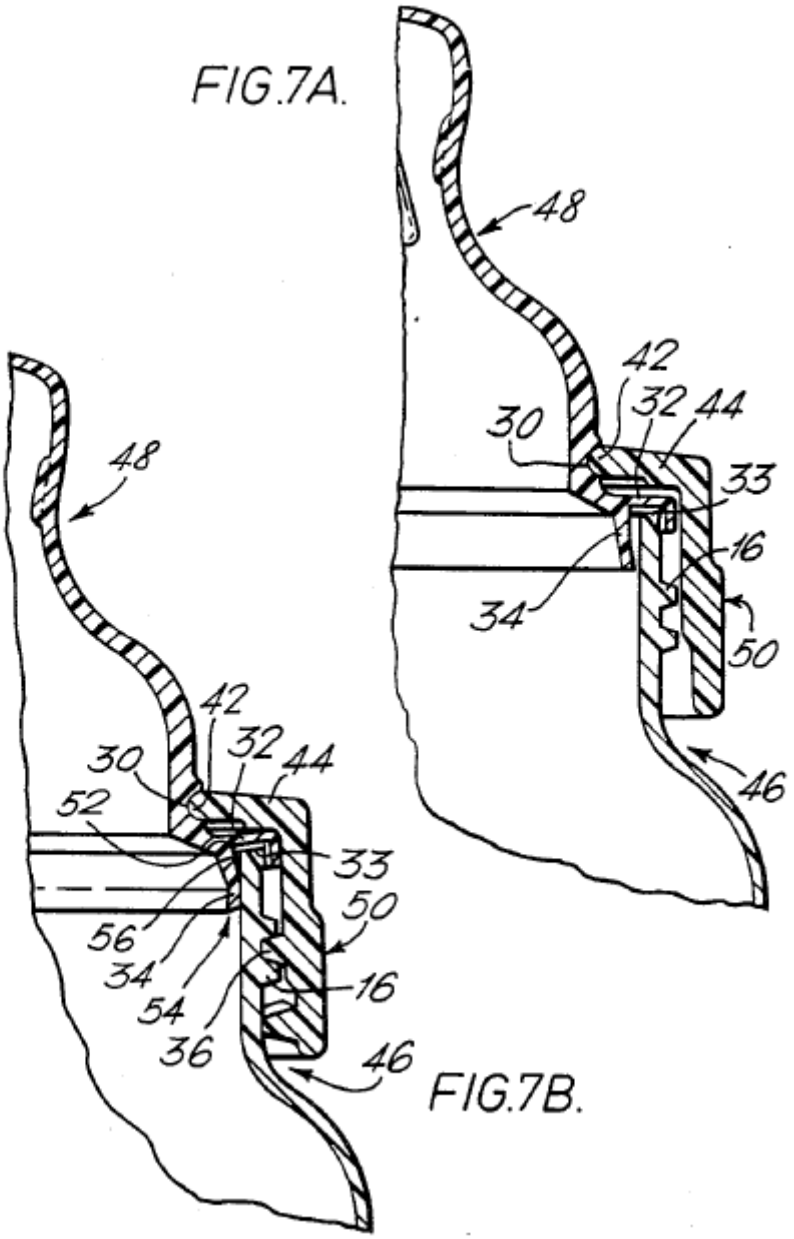
~~490.~~495. As I previously explained with regard to Ground 1 of the '244 Patent, this limitation is disclosed or rendered obvious by Ishimaru. See supra §XIII.B(viii). The described functionality of Ishimaru would be carried over into the Ishimaru-Atkin combination. See supra §XIV.A. I incorporate my Ground 1 of the '244 Patent analysis in the Ishimaru-Atkin combination.

~~491.~~496. In addition to that analysis, this limitation is disclosed or rendered obvious by Atkin. Atkin discloses "an annular cap which screw fits to the bottle neck to attach the teat by pressing the teat flange against the rim of the bottle neck." Ex[1010] at 1:9-12 (emphasis added).

~~492.~~497. Atkin further teaches that this annular cap is removably coupled to the nipple: "In practice, however, the teat is attached to the annular cap of Figures

5 and 6 before being fitted to the bottle. The annular cap has an internal interrupted screwthread 36 for screwing to the externally threaded bottle neck, and externally the cap is shouldered at 38, being provided with an enlargement 40 on the wider diameter portion below the shoulder. The enlargement 40 facilitates the screwing and unscrewing of the cap. The cap, in addition to its internally threaded cylindrical wall, has an annular end wall 42 of 40 which the interior peripheral rim 44 is dimensioned to fit into the external annular groove 30 on the teat. The teat and annular cap can thus be press fitted together, so that the cap then locates the teat and the two can be fitted as a subassembly to the bottle." Ex[1010] at 5:29-46 (emphasis added).

~~493.~~498. Figures 7A and 7B further illustrate that the teat and annular cap in Atkin are removably coupled to one another to seal the opening over the container. Ex[1010] at 5:47-52; Figs.7A-7B.



~~494.~~499. A POSA reading *Atkin* would further understand that, although the annular cap and teat are coupled to one another, they are distinct, separate components (e.g., they are removeable from one another). For example, the teat and collar are described separately, and illustrated as separate, distinct components from

one another. Ex[1010] at 5:2-46, Figs. 3-4 (showing teat); Figs. 5-6 (showing annular cap)

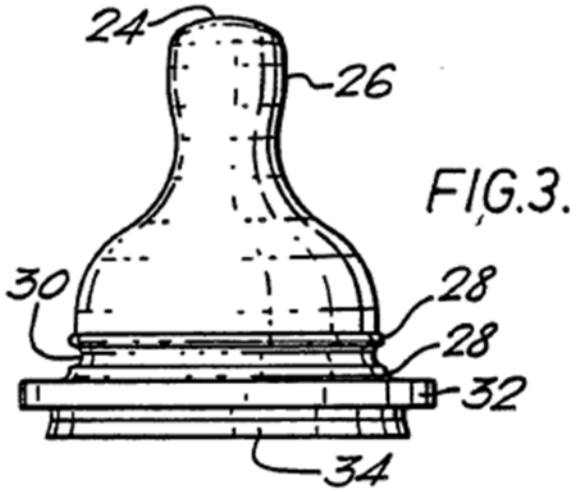


FIG.3.

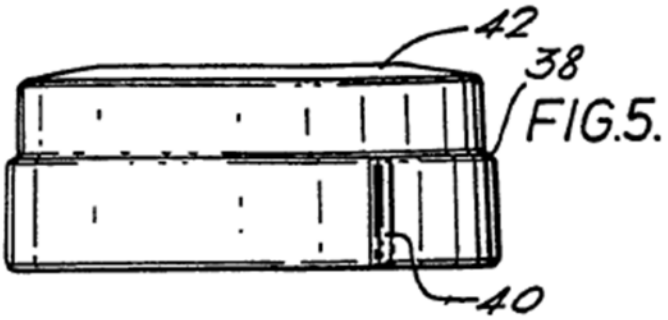


FIG.5.

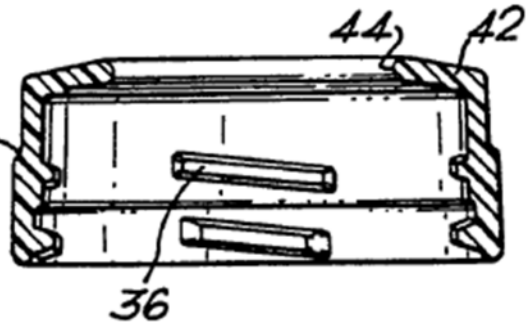


FIG.6.

~~495.~~500. As described above, a POSA would implement elements of *Atkin*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in

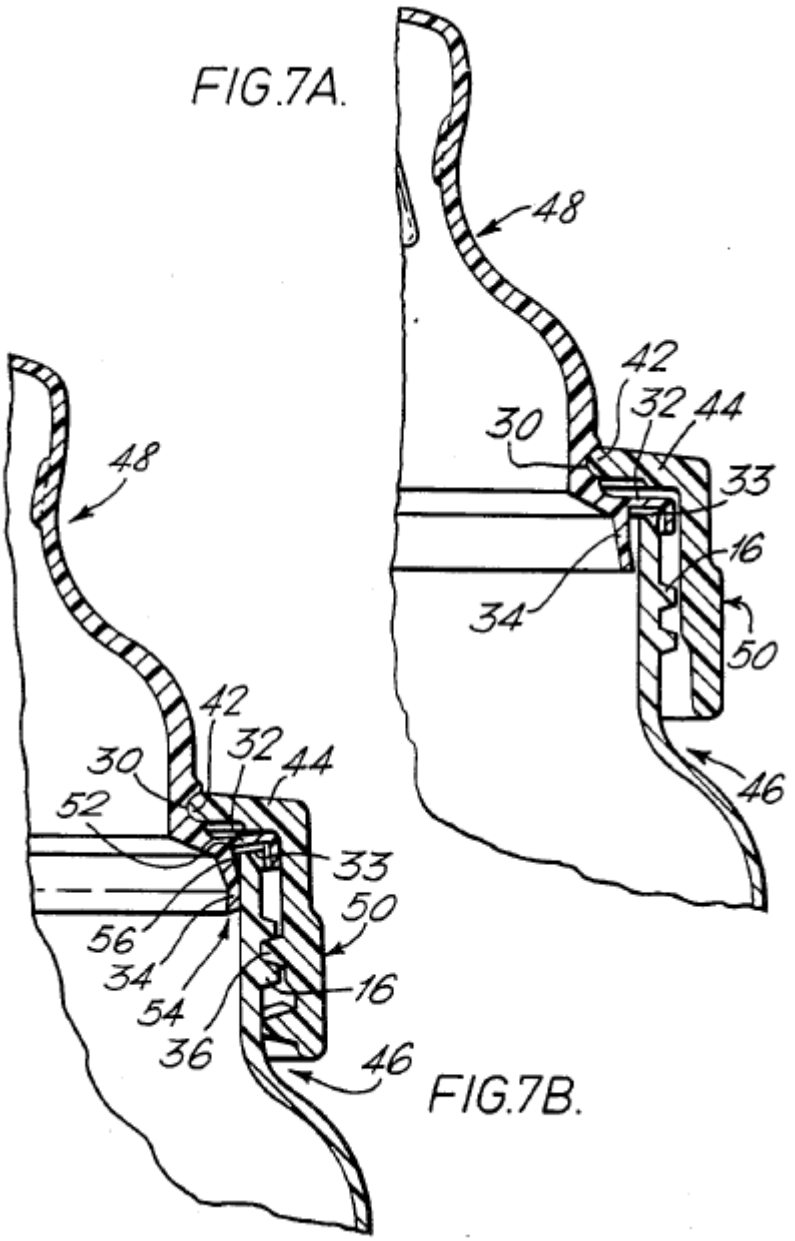
order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. *See supra* §XIV.A. A POSA would recognize, as *Atkin* discloses, using a nipple and collar that are removably coupled to one another would better seal over the opening of the container and would thus provide a more durable design over repeated use that reduces stress on the nipple due to repeated stretching of the nipple over the opening of the bottle. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Atkin*.

~~496.~~501. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Atkin*.

(ix) [21.H]: wherein the collar and the lower portion of the nipple together define a downward domed shape that extends outwardly and downwardly from the flex region of the nipple towards a widest circumferential edge of the collar.

~~497.~~502. A POSA reading *Atkin* in view of *Ishimaru* would find this limitation obvious. A primary objective of *Ishimaru* is to create a nipple that is more human and breast-like. *See supra* §XIV.A. A POSA would understand this to include a wide, dome-shaped that would appear to a baby or child to imitate a human breast. A POSA reviewing *Atkin* and intending to design a breast-like structure would understand that an abrupt change in slope between the nipple and collar, and a nearly vertical collar as disclosed in *Atkin* would not optimally imitate the human breast.

Figures 7A and 7B further illustrate slope between the lower portion of the teat and the annular cap. Ex[1010] at 5:47-52, Figs.7A-7B.



~~498.~~503. Instead, a POSA reading *Ishimaru* in view of *Atkin* would be motivated to design a continuous, downward dome shape between the lower portion

of the nipple and the annular cap. The shape of the annular cap would thus extend outwardly and downwardly from the flex region of the nipple towards the widest edge of the collar—particularly where the collar is wide to allow the nipple/cap combination to accommodate a "particularly wide mouthed" bottle, as disclosed by *Atkin*. Ex[1010] at Abs. Such a design would further simulate the human breast, as directed in *Ishimaru*, and would have been an obvious modification no later than the priority date of the '244 Patent.

~~499.~~504. A POSA reading *Ishimaru* in view of *Atkin* would be motivated to make these modifications, and have a reasonable expectation of success in doing so, at least because *Ishimaru* and *Atkin* in the same field of endeavor as they both relate to nursing bottles and nipples that attach thereto. Ex[1010] at 1:1-12; Ex[1008] at ¶¶ 01-06. A POSA would be further motivated to modify or combine the nipples of *Ishimaru* and *Atkin* because they all teach analogous solutions for, and describe the benefits of, realistic, human-like nipples with air vents and collars to provide a durable design that relieves negative pressure in the nipple. Ex[1010] at 3:16-23, 3:28-33, 6:12-27; Ex[1008] at ¶¶ 05, 19, 48, 61.

~~500.~~505. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Atkin*.

C. Claim 22

(i) [22]: The drinking vessel of claim 21, wherein the container is a trainer cup.

~~501.~~506. As I previously explained, Ishimaru-Atkin discloses or renders obvious each and every limitation of Claim 21. See supra §XIV.B(i). I incorporate my analysis of Claim 21 in Ground 2 of the '244 Patent analysis.

~~502.~~507. Atkin discloses or renders obvious this limitation. Specifically, Atkins discloses embodiments that include a cup trainer. Ex[1010] at 4:24-35. Atkin further teaches that "the annular cap may, of course, be screwed on to the bottle without a fitted teat. Figures 10 and 11 show a trainer spout which can be push fitted over the screwed on annular cap, when the teat is omitted." Id. at 5:31-54, Figs. 9-10. A POSA would be motivated to combine the trainer cup embodiments of Atkin with nipple embodiments of Atkin, at least because the trainer cup would provide a large, stable vessel (such as might allow a toddler might learn how to hold a vessel while maintaining the benefits of the nipple design) that is less susceptible to being tipped over, while providing a realistic, human breast-like appearance to the nipple, as taught in Ishimaru in view of Atkin. See Ex[1008] at ¶ 05; Ex[1010] at 3:10-27; See supra §XIV.A.

~~503.~~508. As described above, a POSA would implement elements of Atkin's nipple and vessel design into the nipple and vessel design of Ishimaru in order to design a realistic, human-like nipple with air vents and collars to provide a

durable design that relieves negative pressure in the nipple. See supra §XIV.A. A POSA would be motivated to combine and substitute these familiar elements, namely a bottle for a trainer cup, according to known methods to yield predictable results. To the extent not already disclosed, Ishimaru's nipple and vessel design is improved by incorporating these design elements as taught by Atkin.

~~504.~~509. For at least these reasons, this claim is disclosed or rendered obvious by Ishimaru-Atkin.

D. Claim 23

(i) [23]: The drinking vessel of claim 21, wherein the container comprises a material more rigid than the nipple material.

~~505.~~510. As I previously explained, Ishimaru-Atkin discloses or renders obvious each and every limitation of Claim 21. See supra §XIV.B. I incorporate my analysis of Claim 21 in Ground 2 of the '244 Patent analysis.

~~506.~~511. As I previously explained with regard to Ground 1 of the '244 Patent, this limitation is disclosed or rendered obvious by Ishimaru. See supra §XIII.C. The described functionality of Ishimaru would be carried over into the Ishimaru-Atkin combination. See supra §XIV.A. I incorporate my Ground 1 of the '244 Patent analysis in the Ishimaru-Atkin combination.

~~507.~~512. In addition to that analysis, this limitation is disclosed or rendered obvious by Atkin. For example, Atkin discloses that the bottle is made of clear polycarbonate. Ex[1010] at 4:44-46, 6:35-40. Atkin further discloses that "the

user of silicone rubber as the teat material is preferred." Ex[1010] at 6:34-41; 8:10-12; Claims 8, 18. A POSA would consider polycarbonate to constitute a more rigid material than silicone rubber.

~~508.~~513. As described above, a POSA would implement elements of Atkin's nipple and vessel design into the nipple and vessel design of Ishimaru in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. See supra §XIV.A. A POSA would recognize, as Atkin discloses, using a more rigid material for the vessel compared to the nipple would provide a more durable design over repeated use. To the extent not already disclosed, Ishimaru's nipple and vessel design is improved by incorporating these design elements as taught by Atkin.

~~509.~~514. For at least these reasons, this claim limitation is disclosed or rendered obvious by Ishimaru-Atkin.

E. Claim 24

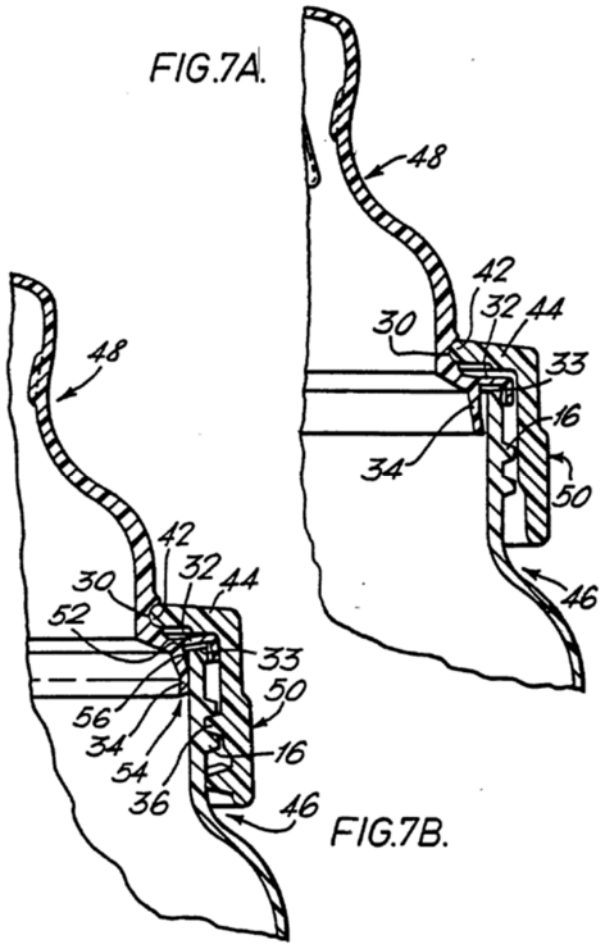
(i) [24]: The drinking vessel of claim 21, wherein the cover assembly further comprises an air vent apart from the mouthpiece.

~~510.~~515. As I previously explained, Ishimaru-Atkin discloses or renders obvious each and every limitation of Claim 21. See supra §XIV.B. I incorporate my analysis of Claim 21 in Ground 2 of the '244 Patent analysis.

~~511.~~516. As I previously explained with regard to Ground 1 of the '244 Patent, this limitation is disclosed or rendered obvious by Ishimaru. See supra §XIII.D. The described functionality of Ishimaru would be carried over into the Ishimaru-Atkin combination. See supra §XIV.A. I incorporate my Ground 1 of the '244 Patent analysis in the Ishimaru-Atkin combination.

~~512.~~517. In addition to that analysis, this limitation is disclosed or rendered obvious by Atkin, under either Petitioner or Patent Owner's proposed construction of "mouthpiece." Atkin teaches a lip that acts as a flap valve in the neck of the bottle. Ex[1010] at 1:35-41, 2:23-28, 5:52-65, Fig. 7B. Specifically, Atkin states: "in order to assist passage of air past the flap valve into the bottle interior, the teat flange may be provided with at least one groove located to 45 bridge the rim of the bottle neck when seated thereon. Preferably, there are two of said grooves located diametrically opposite each other and the bottle neck and the cap cooperate through interrupted screwthreads in order to facilitate so access of air to the or each of said recesses in the teat flange." Id. at 2:42-51, 4:1-8. Further, "Consequently, if pressure in the bottle tends to fall due to feed being sucked out through the teat, the lip 34 is deformed inwardly away from the inside of the bottle neck wall, i.e. opening in the manner of a flap valve to let air into the bottle." Id. at 6:13-32 (emphasis added) Claims 5, 7, 23, Fig. 6B.

~~513.~~518. Furthermore, Atkin's teaches using a "flap valve which is normally closed but is opened responsively to an air pressure reduction within the bottle, as when baby feed is sucked out through the teat." Id. at 2:39-44; see also id. at 5:52-65 (describing how, when the pressure in the teat falls during feeding, "the lip 34 is deformed inwardly away from the inside of the bottle neck wall, i.e. opening in the manner of a flap valve to let air into the bottle," Figs. 7A-7B (reproduced below). Figure 7B further illustrates an air valve that is not located in the mouthpiece of the nipple:



~~514.~~519. As described above, a POSA would implement elements of Atkin's nipple and vessel design into the nipple and vessel design of Ishimaru in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. See supra §XIV.A. A POSA would recognize, as Atkin discloses, including an air valve apart from the mouthpiece of the nipple provides a more reliable means to equalize the pressure in the vessel and the pressure in the atmosphere, and locating it outside the mouthpiece would reduce the risk of blockage or other obstructions in the air vent due to the compressive force applied to the vent passage from connection to the bottle. To the extent not already disclosed, Ishimaru's nipple and vessel design is improved by incorporating these design elements as taught by Atkin.

~~515.~~520. For at least these reasons, this claim limitation is disclosed or rendered obvious by Ishimaru-Atkin.

F. Claim 26

(i) [26]: The drinking vessel of claim 21, wherein the mouthpiece is located in the center of the nipple.

~~516.~~521. As I previously explained, Ishimaru-Atkin discloses or renders obvious each and every limitation of Claim 21. See supra §XIV.B. I incorporate my analysis of Claim 21 in Ground 2 of the '244 Patent analysis.

~~517.~~522. As I previously explained with regard to Ground 1 of the '244 Patent, this limitation is disclosed or rendered obvious by Ishimaru. See supra

§XIII.E. The described functionality of Ishimaru would be carried over into the Ishimaru-Atkin combination. See supra §XIV.A. I incorporate my Ground 1 of the '244 Patent analysis in the Ishimaru-Atkin combination.

~~518.~~523. In addition to that analysis, this limitation is disclosed or rendered obvious by Atkin. Atkin teaches that "The teat has a nearly flat or very shallowly curved surface 24 at the end of the mouthpiece 26. Ex[1010] at 5:6-16 (emphasis added). At least Figs. 4A, 7A and 7B illustrate this limitation:

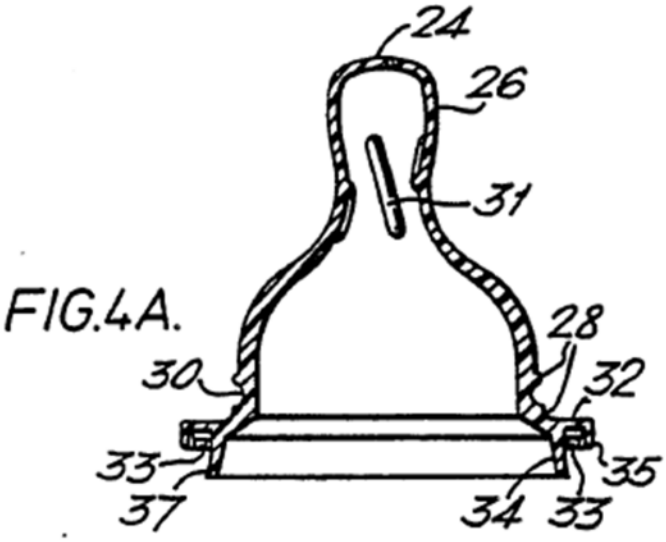
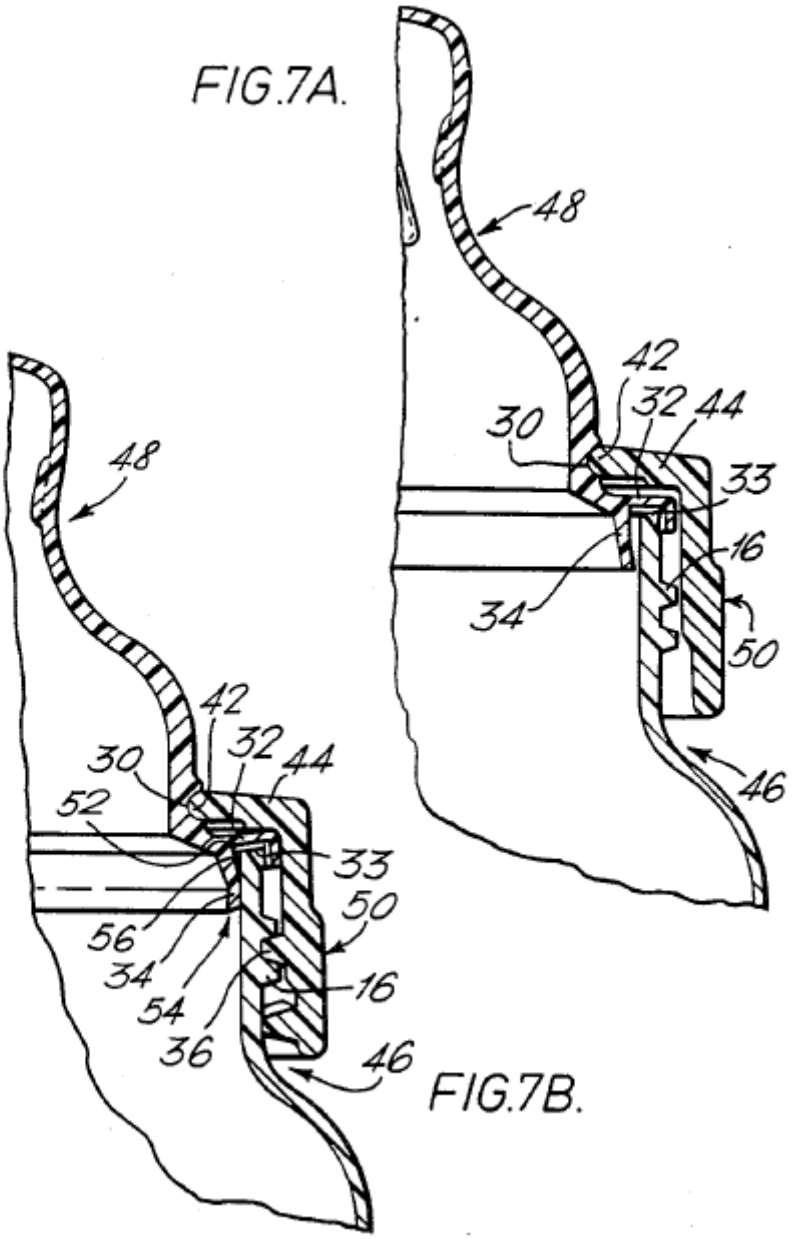


FIG.4A.



~~519.~~524. *Atkin* further discloses that the mouthpiece is configured to allow liquid flow through the nipple to an aperture. Indeed, one of the goals of *Atkin* is to "avoid collapse of the teat mouthpiece ***when feed is sucked out of the bottle***[.]" Ex[1010] at 8:5-12 (emphasis added), 3:28-33, Claim 1, 2:14-22, 6:12-27, Figs. 7A-

7B. A POSA reading *Atkin* would understand that the mouthpiece of the nipples disclosed in at least Figs. 4A, 7A, and 7B would be located in the center of the nipple.

~~520.~~525. As described above, a POSA would implement elements of *Atkin*'s nipple and vessel design into the nipple and vessel design of *Ishimaru* in order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. *See supra* §XIV.A. A POSA would recognize, as *Atkin* discloses, positioning the mouthpiece in the center of the nipple provides a more realistic, breast-like nipple. To the extent not already disclosed, *Ishimaru*'s nipple and vessel design is improved by incorporating these design elements as taught by *Atkin*.

~~521.~~526. For at least these reasons, this claim limitation is disclosed or rendered obvious by *Ishimaru-Atkin*.

G. Claim 27

(i) [27]: The drinking vessel of claim 21, wherein the teat portion comprises a resilient material.

~~522.~~527. As I previously explained, Ishimaru-Atkin discloses or renders obvious each and every limitation of Claim 21. See supra §XIV.B(i). I incorporate my analysis of Claim 21 in Ground 2 of the '244 Patent analysis.

~~523.~~528. As I previously explained with regard to Ground 1 of the '244 Patent, this limitation is disclosed or rendered obvious by Ishimaru. See supra §XIII.F; Ex[1018] at 16. The described functionality of Ishimaru would be carried

over into the Ishimaru-Atkin combination. See supra §XIV.A. I incorporate my Ground 1 of the '244 Patent analysis in the Ishimaru-Atkin combination.

~~524.~~529. In addition to that analysis, this limitation is disclosed or rendered obvious by Atkin. For example, Atkin discloses that "the user of silicone rubber as the teat material is preferred." Ex[1010] at 6:34-41, 8:10-12, Claims 8, 18. Claim 1 of Atkin further discloses "the teat having a dependent annular lip (34) thereon which is sufficiently resilient to deform inwardly away from the interior surface of the bottle neck and open responsively to a pressure reduction in 25 the bottle when baby feed is sucked through the teat[.]" Ex[1010] at Claim 1. A POSA would consider silicone rubber to represent a resilient material. A POSA would further consider the teat to be constructed of a single material (e.g., the flange would also be constructed of silicone rubber).

~~525.~~530. Atkin further discloses: "The use of silicone rubber as the teat material is preferred in the context of the above-described flap valve arrangement, because whereas a teat of conventional rubber tends to "grow" as it ages, a silicon rubber teat has a much reduced tendency to do so with the result that its critical shaping and dimensioning is retained throughout the life of the teat." Ex[1010] at 6:34-41.

~~526.~~531. As described above, a POSA would implement elements of Atkin's nipple and vessel design into the nipple and vessel design of Ishimaru in

order to design a realistic, human-like nipple with air vents and collars to provide a durable design that relieves negative pressure in the nipple. See supra §XIV.A. A POSA would recognize, as Atkin discloses, a resilient material improves the durability of the nipple over repeated use. To the extent not already disclosed, Ishimaru's nipple and vessel design is improved by incorporating these design elements as taught by Atkin.

~~527.~~532. For at least these reasons, this claim limitation is disclosed or rendered obvious by Ishimaru-Atkin.

XIV. Reservation of Rights

~~528.~~533. My opinions are based upon the information that I have considered to date. I am unaware of any evidence of objective indicia with respect to the '930 and '244 Patents that would render any of the challenged claims non-obvious. I reserve the right, however, to supplement my opinions in the future to respond to any arguments raised by the owner of the '930 and '244 Patents, and to take into account new information that becomes available to me.

I hereby declare that all statements made herein of my own knowledge are true and all statements made based on information and belief are believed to be true. Further, these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code. I declare under penalty of perjury that the foregoing is true and correct.

Executed on ~~January 12~~July 28, 2023.

/ DocuSigned by: Brian Silver 1D7596AC644E48E /

Brian Silver

APPENDIX B

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NANOBEBE US INC.
Petitioner

v.

MAYBORN (UK) LIMITED
MAYBORN USA, INC.
MAYBORN GROUP LIMITED
Patent Owner

IPR
U.S. Patent No. 11,207,244

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 11,207,244

Submitted Electronically ~~via the Patent Review Processing System~~

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EXHIBIT LIST

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1001	U.S. Patent No. 10,952,930 to Rees et al. (the "'930 Patent")
1002	Prosecution File History for the '930 Patent
1003	U.S. Patent No. 11,207,244 to Rees et al. (the "'244 Patent")
1004	Prosecution File History for the '244 Patent
1005	Declaration of Mr. Brian Silver
1006	U.S. Patent No. 6,032,810 ("*Meyers*")
1007	G.B. Patent No. 2,250,017 ("*Sepehr*")
1008	English Translation of J.P. Patent No. 2001-299877 ("*Ishimaru*"), Original Japanese publication of *Ishimaru*, and Affidavit of Harumi Morota
1009	U.S. Patent No. 2,093,730 ("*Kurkjian*")
1010	E.P. Patent Pub. No. 0,151,862 ("*Atkin*")
1011	Complaint in *Nanobebe US Inc. v. Mayborn (UK) Limited et al.*, Case No. 1:21-cv-08444-GHW, Dkt. 01 (S.D.N.Y.) ("Complaint")
1012	Answer and Counterclaims in *Nanobebe US Inc. v. Mayborn (UK) Limited et al.*, Case No. 1:21-cv-08444-GHW, Dkt. 25 (S.D.N.Y.) ("Counterclaims")
1013	Complaint in *Mayborn (UK) Limited et al. v. Comotomo Inc. et al.*, Case No. 1:22-cv-00694-PGG, Dkt. 06 (S.D.N.Y.) ("Comotomo Complaint")
1014	Petition for Inter Partes Review of U.S. Patent No. 10,952,930, filed by *Comotomo Inc. et al.*, IPR2022-01325 (PTAB) (Comotomo '930 Petition)
1015	Petition for Inter Partes Review of U.S. Patent No. 11,207,244, filed by *Comotomo Inc. et al.*, IPR2022-01326 (PTAB) (Comotomo '244 Petition)
1016	Scheduling Order in *Nanobebe US Inc. v. Mayborn (UK) Limited et al.*, Case No. 1:21-cv-08444-GHW, Dkt. 22 (S.D.N.Y.) ("Scheduling Order")

1017	Mayborn's Claim Construction Brief in *Nanobebe US Inc. V. Maybron (UK) Limited et al.*, Case No. 1:21-cv-08444-GHW, Dkt. 48 (S.D.N.Y.)
1018	Nanobebe's Claim Construction Response in *Nanobebe US Inc. v. Mayborn (UK) Limited et al.*, Case No. 1:21-cv-08444-GHW, Dkt. 62 (S.D.N.Y.)
1019	Mayborn's Claim Construction Reply in *Nanobebe US Inc. v. Mayborn (UK) Limited et al.*, Case No. 1:21-cv-08444-GHW, Dkt. 63 (S.D.N.Y.)
1020	Declaration of Brian Silver for Claim Construction in *Nanobebe US Inc. v. Mayborn (UK) Limited et al.*, Case No. 1:21-cv-08444-GHW, Dkt. 62 Ex[0029] (S.D.N.Y.)
1021	Lauren A. Watt & Graham C. Phero, *Success of Motions to Stay Rising, But Why?*, PTAB YEAR IN REVIEW 2019, pp. 25-27
1022	Memo Endorsement to Adjourn Markman Hearing in *Nanobebe US Inc. v. Mayborn (UK) Limited et al.*, Case No. 1:21-cv-08444-GHW, Dkt. 61 (S.D.N.Y.)

Nanobebe US Inc. ("Petitioner") petitions for *inter partes* review of Claims 21-24, 26, and 27 of USPN 11,207,244 ("the '244 Patent"), assigned to Mayborn (UK) Limited, Inc. ("Patent Owner" or "PO").

I. MANDATORY NOTICES

A. Real Party-in-Interest

Nanobebe US Inc. is the Petitioner and is a real party-in-interest, and is a subsidiary of Nutrits Ltd., which is also a real party-in-interest.

B. Related Matters under 37 C.F.R. § 42.8(b)(2)

Petitioner is aware of the following related matters:

- *Nanobebe US Inc. v. Mayborn (UK) Limited et al.*, Case No. 1:21-cv-08444-GHW (S.D.N.Y.). Petitioner has filed a declaratory judgment of noninfringement against Patent Owner; Patent Owner has counterclaimed asserting infringement of the '244 Patent and related U.S. Patent No. 10,952,930 ("the '930 Patent") against Petitioner (the "District Court Litigation"). Exs.[1011],[1012](Complaint and Counterclaims).
- *Mayborn (UK) Limited et al. v. Comotomo Inc. et al.*, Case No. 1:22-cv-00694-PGG (S.D.N.Y.). Patent Owner has asserted infringement of the '930 and '244 Patents against Comotomo Inc. (the "Comotomo Litigation"). Ex[1013](Comotomo Complaint).

- *Comotomo Inc. et al. v. Mayborn (UK) Limited et al.*, IPR2022-01325 (PTAB), and IPR2022-01326 (PTAB). Comotomo Inc. filed concurrent petitions for *inter partes* review of the '930 and '244 Patents. (the "Comotomo Petitions"). Exs.[1014],[1015](Comtomo '930 and '244 Petitions).
- Petitioner filed a petition for *inter partes* review of the '930 Patent, concurrent with this petition.

C. Lead and Backup Counsel under 37 C.F.R. § 42.8(b)(3)

Petitioner provides the following designation of counsel.

LEAD COUNSEL	BACK-UP COUNSEL
Eliot D. Williams (Reg. No. 50,822) Baker Botts L.L.P. 700 K Street, N.W. Washington, D.C., 20001-5692 Tel: 202-639-1334 Eliot.Williams@BakerBotts.com	Matthew A. Engel (Reg. No. 79,196) Baker Botts L.L.P. 30 Rockefeller Plaza New York, NY 10112-4498 Tel: 212-408-2500 Matthew.Engel@BakerBotts.com Brianna L. Potter (Reg. No. 76,748) 1001 Page Mill Road Building One, Suite 200 Palo Alto, CA 94304-1007 Tel: 650-739-7500 Brianna.Potter@BakerBotts.com

D. Service Information under 37 C.F.R. § 42.8(b)(4)

A copy of this entire Petition, including all Exhibits and a Power of Attorney, is being served by Priority Mail Express or by means at least as fast and reliable as

Priority Mail Express, costs prepaid, to the address of the attorney or agent of record for Patent Owner in the district court proceedings regarding the '244 Patent: John S. Goetz, Fish & Richardson P.C., 7 Times Square, 20th Floor, New York, NY 10036; Matthew A. Colvin, Aaron P. Pirouznia, Fish & Richardson P.C., 1717 Main Street, Suite 5000, Dallas, TX 75201, and to the address of the attorney or agent of record at the USPTO: Fish & Richardson P.C., P.O. Box 1022, Minneapolis, MN 55440-1022.

Petitioner consents to service at lead counsel's address provided above and consents to e-mail service, provided it is made to all the following e-mail addresses: eliot.williams@bakerbotts.com, matthew.engel@bakerbotts.com, and brianna.potter@bakerbotts.com. A Power of Attorney is filed concurrently herewith under 37 C.F.R. § 42.10(b).

II. CLAIM LISTING

CLAIM 21

21[PRE]	A drinking vessel comprising:
21[A]	a container comprising a varying internal circumference and an opening into the container; and,
21[B]	a cover assembly configured to couple to the container over the opening, the cover assembly comprising:
21[C]	i. a nipple comprising a mouthpiece configured to allow liquid flow through the nipple to an aperture,
21[D]	a flex region configured to allow flex of the mouthpiece towards and away from a lower portion of the nipple, the mouthpiece defining a bite region,

21[E]	and a flange depending from the lower portion of the nipple defining the nipple circumference furthest from the aperture; and
21[F]	ii. a collar configured to removably couple to the nipple to seal over the opening of the container; and
21[G]	wherein the collar and the lower portion of the nipple together define a downward domed shape that extends outwardly and downwardly from the flex region of the nipple towards a widest circumferential edge of the collar.

CLAIM 22

22	The drinking vessel of claim 21, wherein the container is a trainer cup.

CLAIM 23

23	The drinking vessel of claim 21, wherein the container comprises a material more rigid than the nipple material.

CLAIM 24

24	The drinking vessel of claim 21, wherein the cover assembly further comprises an air vent apart from the mouthpiece.

CLAIM 26

26	The drinking vessel of claim 21, wherein the mouthpiece is located in the center of the nipple.

CLAIM 27

27	The drinking vessel of claim 21, wherein the teat portion comprises a resilient material.

III. REQUIREMENTS UNDER 37 C.F.R. § 42.104

A. Grounds for Standing

Petitioner certifies that the '244 Patent is eligible for *inter partes* review and that Petitioner is not barred or otherwise estopped.

B. Prior Art

Ex[1008] – JP Patent No. P2001-299877 ("*Ishimaru*") was published October 30, 2001. *Ishimaru* is prior art under § 102(a) and § 102(b).

Ex[1009] – U.S. Patent No. 2,093,730 ("*Kurkjian*") was issued September 21, 1937. *Kurkjian* is prior art under § 102(a) and § 102(b).

Ex[1010] – E.P. Patent No. 151,862 ("*Atkin*") was issued September 23, 1986. *Atkin* is prior art under § 102(a) and § 102(b).

C. Identification of Challenge

Petitioner requests *inter partes* review of Claims 21-24, 26, and 27 of the '244 Patent under the following grounds.

Ground	Claims	Basis for Challenge
1	21, 23, 24, 26, 27	*Ishimaru* in view of *Kurkjian* render the claims obvious under § 103
2	21-24, 26, 27	*Ishimaru* in view of *Atkin* render the claims obvious under § 103

Submitted with this Petition is a declaration of Mr. Brian Silver, a qualified technical expert. Ex[1005],¶¶1–10.

D. Discretionary Denial Under 325(d) Is Not Appropriate

Denial under § 325(d) and *Advanced Bionics* is not appropriate given that the particular combinations of references cited by Petitioner were not presented during examination of the'244 Patent and no similar references to those used as primary references in the combinations that were presented were evaluated during prosecution. Thus both different arguments and different art were presented to the Office. *See Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469 (PTAB Feb. 13, 2020) (Paper 6) (precedential).

The PTAB has chosen not to grant discretionary denial, even where a reference was cited in an IDS, when the record is insufficiently developed as to whether the reference was "previously presented to the Office," as is the case here. *Sony Interactive Entertainment LLC v. Bot M8, LLC*, Case No. IPR2020-00726 (PTAB Oct. 6, 2020) (Paper 13). Here, while two of the references cited by Petitioner were listed in an IDS (*Ishimaru* and *Atkin*), one of which was discussed as a secondary reference in an Office Action to discuss a dependent claim (*Atkin*), *Kurkjian* was not, and neither the combination of *Ishimaru-Atkin* nor a similar combination was evaluated. Moreover, Atkin was not used by the Examiner to reject any claims identical or similar to the one presented in this petition.

Furthermore, factors (c) and (f) of the *Becton Dickinson* factors, in particular, point against discretionary denial here since the references relied on by Petitioner

were mostly listed in a lengthy IDS, demonstrating that the art was not a basis for rejection or otherwise substantively evaluated during prosecution. Supporting that position are the additional evidence and facts presented here in the Petition in the form of an expert report explaining these references, warranting reconsideration of the prior art. *Becton, Dickinson & Co. v. B. Braun Melsungen AG,* IPR2017-01586 (PTAB Dec. 15, 2017) (Paper 8); s*ee also, e.g.*, *Advanced Energy Industries v. Reno Technologies*, IPR2021-01397 (PTAB Feb. 16, 2022) (Paper 7), p. 7 ("the Examiner's consideration of both references appears limited to initialing an IDS"); *Lyft, Inc. v. RideShare Displays, Inc.*, IPR2021-01602 (PTAB April 11, 2022) (Paper 7), pp. 14-15 (stating factor (c) weighs against discretionary denial where the reference was not used as a basis for rejection during prosecution); *Samsung Electronics Co., Ltd. et al. v. Power2B, Inc*., IPR2021-01190 (PTAB Jan. 6, 2022) (Paper 11), p. 19 ("As for factor (c), the extent to which the asserted art was evaluated during examination, we agree with Petitioner that the record is silent as to any evaluation by the Examiner of Gettemy, short of acknowledgement in an IDS submitted…"); *Advanced Energy Industries Inc. v. Reno Technologies Inc*., IPR2021-01397 (PTAB Feb. 16, 2022) (Paper 7), pp. 8-9 (stating that an expert's "testimony is also not so limited that it has no evidentiary value…").

E. Discretionary Denial Under *Fintiv* Is Not Appropriate

The six factors in considering denial under § 314 strongly favor institution. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (Mar. 20, 2020). The district court case is in early stages, the parties recently completed Claim Construction briefing but no hearing has occurred and no order has issued, and no post-claim construction scheduling order has been entered. Exs.[1017]-[1020](Parties' Claim Construction Briefing).

1. A stay is likely

If an IPR is instituted, a stay of the co-pending litigation is highly likely. The stay motion grant rate in S.D.N.Y is as high as 88%. Ex[1021]. Petitioner intends to seek stay upon filing of the Petition, and if pre-institution stay is not granted, will seek stay upon institution. This factor weighs against discretionary denial.

2. Proximity of the Court's trial date to final written decision

The district court's scheduling order has not set a trial date. Ex[1016]. The expected date for a FWD in this case is July 2024. Other factors will contribute to an extended schedule at the district court. The Markman Hearing is scheduled for February 22, 2023. Ex[1022]. This factor weighs against discretionary denial. *Sand Revolution II, LLC v. Continental Intermodal Grp.—Trucking LLC*, IPR2020-01393, Paper 24 (June 16, 2020).

3. Investment in the parallel proceeding

The co-pending litigation is in its early stages, and the investment in it has been minimal. Patent Owner has answered the declaratory judgment complaint (Ex[1012]), however only limited discovery has occurred. The district court has not issued any substantive orders. The Markman hearing scheduled for February 22, 2023.[1] Ex[1022]. A trial date has not yet been set. Ex[1016]. This factor weighs against discretionary denial.

4. Overlap between issues

The issues will be narrowed in the co-pending litigation due to the estoppel provisions of 35 U.S.C. § 315(e)(2). In the event the District Court sets a scheduling order before institution of this proceeding that would plausibly result in trial occurring before the Board's Final Written Decision, Petitioner will consider filing a stipulation in the District Court to avoid potential overlap between the two proceedings. Petitioner will keep the Board appraised of any developments in this regard via mandatory notices.

[1] Petitioner has advanced theories in the parallel district court proceeding that certain claims of the '930 and '244 Patents are invalid under 35 U.S.C. § 112(b). The arguments expressed herein are expressed with respect to the validity of '930 and '244 Patents with regard to anticipation and/or obviousness, and do not represent an admission or waiver of Petitioner's defenses with regard to 35 U.S.C. § 112(b).

5. Party status

Petitioner is the Declaratory Judgment Plaintiff/Counterclaim Defendant in the litigation. Ex[1012](Counterclaims). This factor is neutral.

6. Other circumstances

The merits of Petitioner's arguments are strong; this factor weighs against discretionary denial.

IV. OVERVIEW OF THE '244 PATENT

A. Description of the '244 Patent

The '244 Patent describes a feeding bottle with flexible region(s) to "provide a more natural feeding by closely mimicking the human breast." Ex[1001],Abs. A "teat 10" includes a "teat portion 12," "base potion 14" and "areola portion 16" therebetween. "Flange 18" extends from the base portion "to allow fixing to a feeding bottle." *Id.*,2:57-60, Fig.1. The base portion may include a one-way air-inlet valve (not shown). *Id.*,2:64. The areola portion 16 includes "flex region 20" comprising grooves around an inner surface of the areola portion which allows flexing of the teat 10. The teat portion 12 is designed to "allow additional flexing of the teat portion relative to the teat as a whole." *Id.*,3:14-17.

The ’244 Patent describes the suckling process, in particular “the infant’s lips 54 contacting the areola portion 16 generally at the flex region 20. As a result, as the infant sucks on the teat, the teat portion [12] and areola portion [16] flex towards and away from one another by virtue of respective collapsing and extending of the flex region [20] around the flexed channels 22.” *Id.*,3:20-34. The back and forth

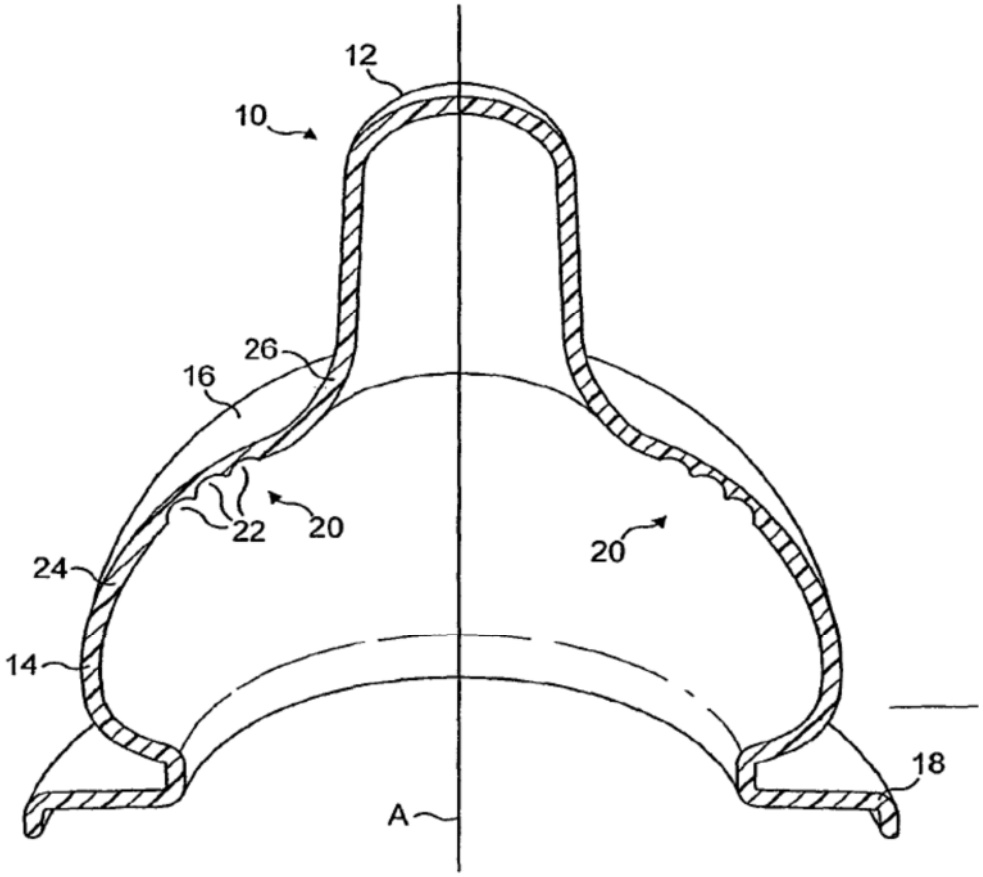


FIG. 1

flexure of teat portion 12 mimics skin movement and stretching. *Id.*,3:35-37.

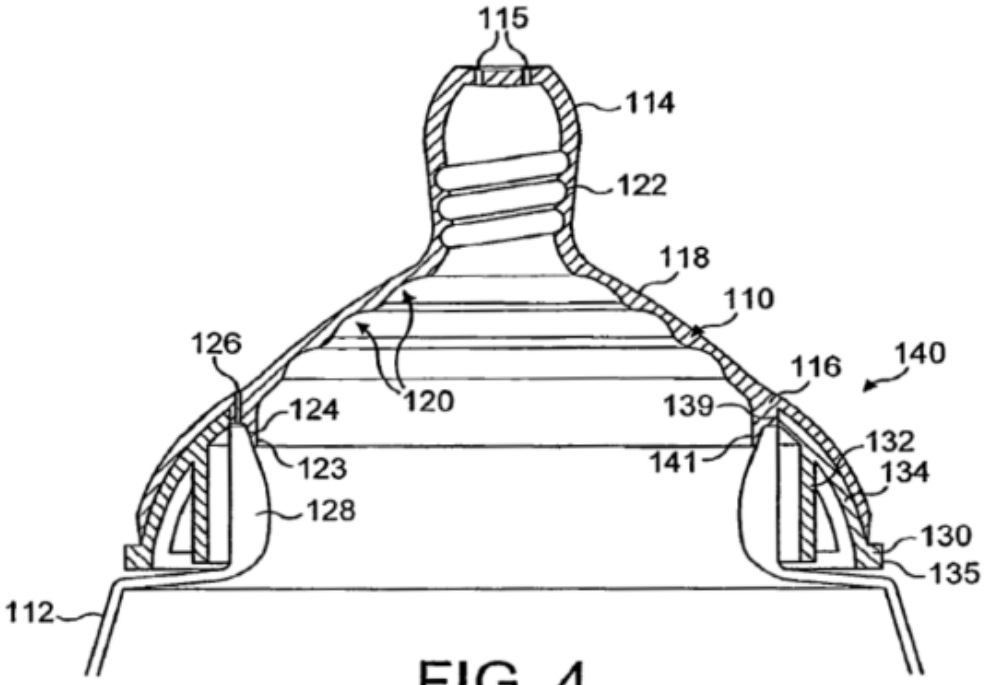


FIG. 4

The ’244 Patent further describes a “teat assembly 140” includes a “teat 110” having a “teat portion 114” forming a “nipple,” “a base portion 116” and “an areola region 118” therebetween. *Id.*,3:57-4:10, FIG.4. “The shape of the teat is also similar to the human breast, the base portion 116 being shaped like a breast and having a wide, domed configuration.” *Id.*,4:1-3. The teat 110 is integrally formed with a screw collar 130, *Id.*,4:54-58, wherein the collar “includes an internally threaded cylindrical portion…to connect to the vessel 112.” *Id.*,4:54-5:3.

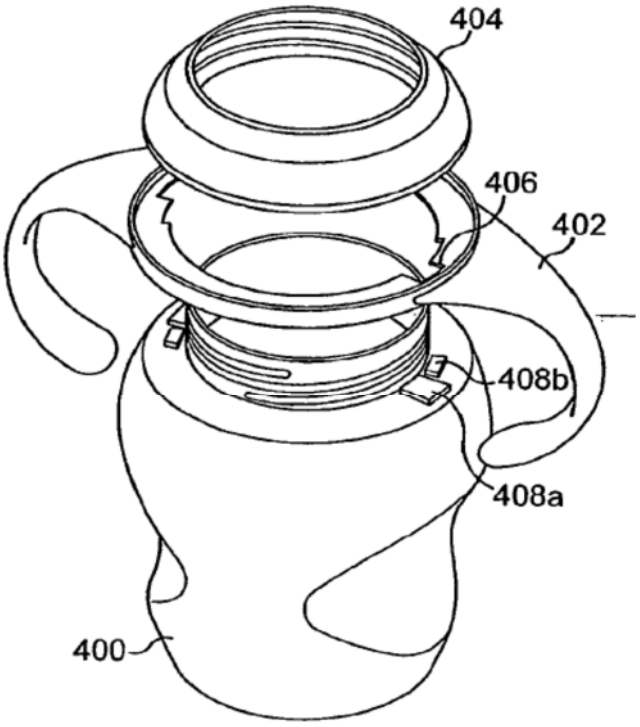


FIG. 7a

A "downward cylindrical flange 141" forms an elastomer sealing ring against the "inner face of the vessel neck 128." *Id.*,5:12-15, FIG. 4. Teat 110 further includes "discontinuous flap or lip valve portion 123" that "projects down from the flange 141" and "vent passage 126" through the teat to allow air ingress and "reduce[] the risk of colic which can otherwise occur as a result of negative pressure building up in the feeding bottle. *Id.*,1:47-51; 5:15-32, FIG. 4. "[W]hen an infant sucks on the teat, reducing pressure within the vessel, the lip valve 123 will flex away from the neck 128 of the vessel 112. In the region of the vent 126 in the teat 110, this allows

venting between the interior of the vessel and atmosphere through the teat." *Id.*, 5:22-27.

In FIGs. 7a-7b, the '244 Patent shows "a vessel 400 [which] receives a handle portion 402 and a teat screw collar 404, corresponding to the screw collar 130 described above but with the elastomer teat 10 removed for the purposes of clarity." *Id.*, 5:39-43.

The '244 Patent concedes that "teats have been designed to mimic the human breast" which allows stretching of the nipple when an infant sucks on the teat. *Id.*, 1:26-46. The '244 Patent also concedes that valved feeding bottles are known in the art, including "slit valves," "an inner annular resilient flange at its base," and "a downwardly dependent cylindrical flange at its base which seals against the inner top face of a vessel neck[.]" *Id.*,1:47-2:5.

B. Relevant File History

Prosecution of the '244 Patent encompassed one Non-Final Office Action, and one Response including claim amendments, with a Notice of Allowance mailed thereafter. The originally filed claims were rewritten after a preliminary amendment to include 39 new claims with claims 18, 37 (issued as Claim 21), 46 and 47 being independent.

C. Priority Date

The ’244 Patent was filed on March 22, 2021. Ex[1001],(22). The ’244 Patent claims priority to the application for U.S. Patent No. 10,952,930, filed on November 24, 2014, which is a continuation of U.S. Patent No. 8,910,810, filed on Feb. 2, 2012, which is a continuation of the application for U.S. Patent No. 8,181,800, filed on June 29, 2005. *Id.*,(63). The ’244 Patent also claims priority to the GB application No. 2004/14560, which was filed on June 29, 2004. *Id.*,(30). Patent Owner has not asserted a priority date for the ’244 Patent. Petitioner does not take a position regarding the priority date of the ’244 Patent for purposes of this petition—because Petitioner relies entirely on prior art that pre-dates June 29, 2004.

V. LEVEL OF ORDINARY SKILL IN THE ART

As of June 29, 2004, a person of ordinary skill in the art (“POSA”) would have a B.S. in Mechanical or Industrial Engineering; Materials Science, Product Design, or equivalent field, with 3-5 years of academic or industry experience with fluid dynamics, or a comparable industry. Ex[1005],¶47. Additional education could compensate for less practical experience and vice versa. *Id.*

VI. CLAIM CONSTRUCTION

Words in a claim are given their ordinary and customary meaning, which is the meaning understood by a POSA at the time of the alleged invention after reading the entire patent. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005);

83 Fed. Reg. No. 197, 51341. (Oct. 11, 2018); 37 C.F.R. 42.100(b). At the district court, the parties recently completed Claim Construction briefing. The parties' disputed terms are noted below. Except where specified, for purposes of this proceeding, whether the terms of the '244 Patent are afforded Patent Owner's or Petitioner's construction, the grounds render the claims obvious.

A. "flex region" (Claim 21)

Petitioner construes this term to mean "a region having characteristics, e.g., grooves or channels, specifically designed to enable flexing." Ex[1018],21. Patent Owner alleges this term to mean "a region having surface characteristics that control flexing." *Id.*

B. "mouthpiece" (Claims 21, 24, 26)

Petitioner construes this term to mean "teat portion, i.e., the entire part projecting generally perpendicular to the mouth of the vessel, disposed above the areola portion, which extends into a baby's mouth for feeding." Ex[1018],24. Patent Owner alleges this term to mean "part projecting generally perpendicular to the mouth of the vessel and disposed above the areola portion." *Id.*

C. "flex of the mouthpiece towards and away from a lower portion of the nipple" (Claim 21)

Petitioner construes this term to mean "up and down movement of the mouthpiece relative to a lower portion of the nipple." Ex[1018],25. Patent Owner alleges this term should be afforded its plain meaning. *Id.*

VII. SUMMARY OF THE PRIOR ART

A. *Ishimaru* (Ex[1008])

Ishimaru discloses "an artificial nipple which is more similar to the mother's nipple…having a nipple trunk [110] and teat portion [120] protruding from this nipple trunk,…wherein the…teat portion 120 and/or the…nipple trunk 110 is provided with an elongate portion 122, which is more easily extensible than other portions." Ex[1008],Abstract, Fig. 1. "[T]hin walled portions 122, 122 and 122, which are elongation portions with a thin wall, are formed in a groove-like pattern… [wherein] each of the thin-walled portion 122 is formed in a manner that the wall thickness gradually increases from the thinnest portion…and the inner surface 123 of the artificial nipple becomes smooth, forming a wave shape as shown in Fig. 1." *Id.*,[0041]. Thin walled portions can also be formed in "a spiral shape." *Id.*,[0060]. Nipple 100 is mounted on a feeding bottle containing milk, and the nipple is inserted into the mouth of the infant who sucks the milk up into the nipple 100. *Id.*,[0043], Fig. 5. "In this state, the tip of the teat portion 120…is in contact with the tip of the

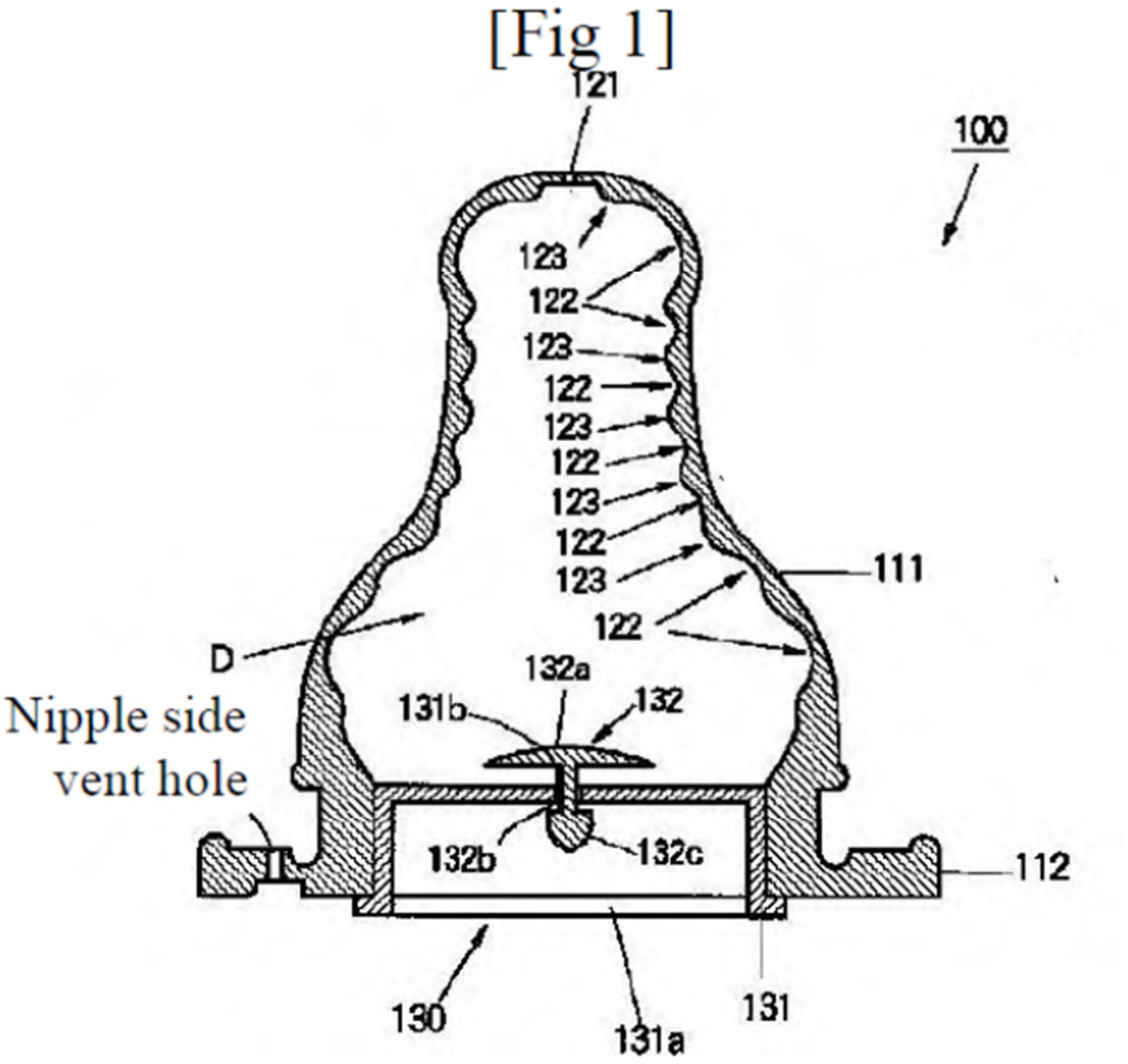


FIG. 1 of Ishimaru

sucking fossa 220 of the infant 200" performing a "suckling movement by peristaltic movement of the tongue." *Id.*,[0044]. Further, "there is a base portion 112 with a nipple side vent hole, which is a flange portion for connecting to a feeding bottle main body." *Id.*,[0037].

B. *Kurkjian* (Ex[1009])

Kurkjian discloses a "flexible nipple having a vented flexible flange" Ex[1009],1:10-11. The nipple comprises a "body portion constituting a neck 13 . . . and preferably annular flange 14." Id.,1:48-53. The body portion of the nipple includes "overhanging shoulder 16 adjacent the point of junction between the body portion 13 and the flange 14." *Id.*,2:6-9. The flange includes a "single venting aperture 15 and it should be understood that the flange 14 is integral with the body portion 13 of the nipple." *Id.* "It should be understood that as a vacuum is built up in the bottle through the baby sucking upon the nipple or body portion 13 thereof, the flange 14 may flex away from the inner face of the flange 20 of the cap 17 and draw the upper face of the flange adjacent the vent 15 away from the inner face of the flange 20 of the cap 17 and allow air to pass under the shoulder 16 and between the body portion 13 of the nipple and the edge of the aperture 18, under the under face of the flange 20 of the cap 17, and through the vent opening 15 into the bottle." *Id.*,2:54-3:10.

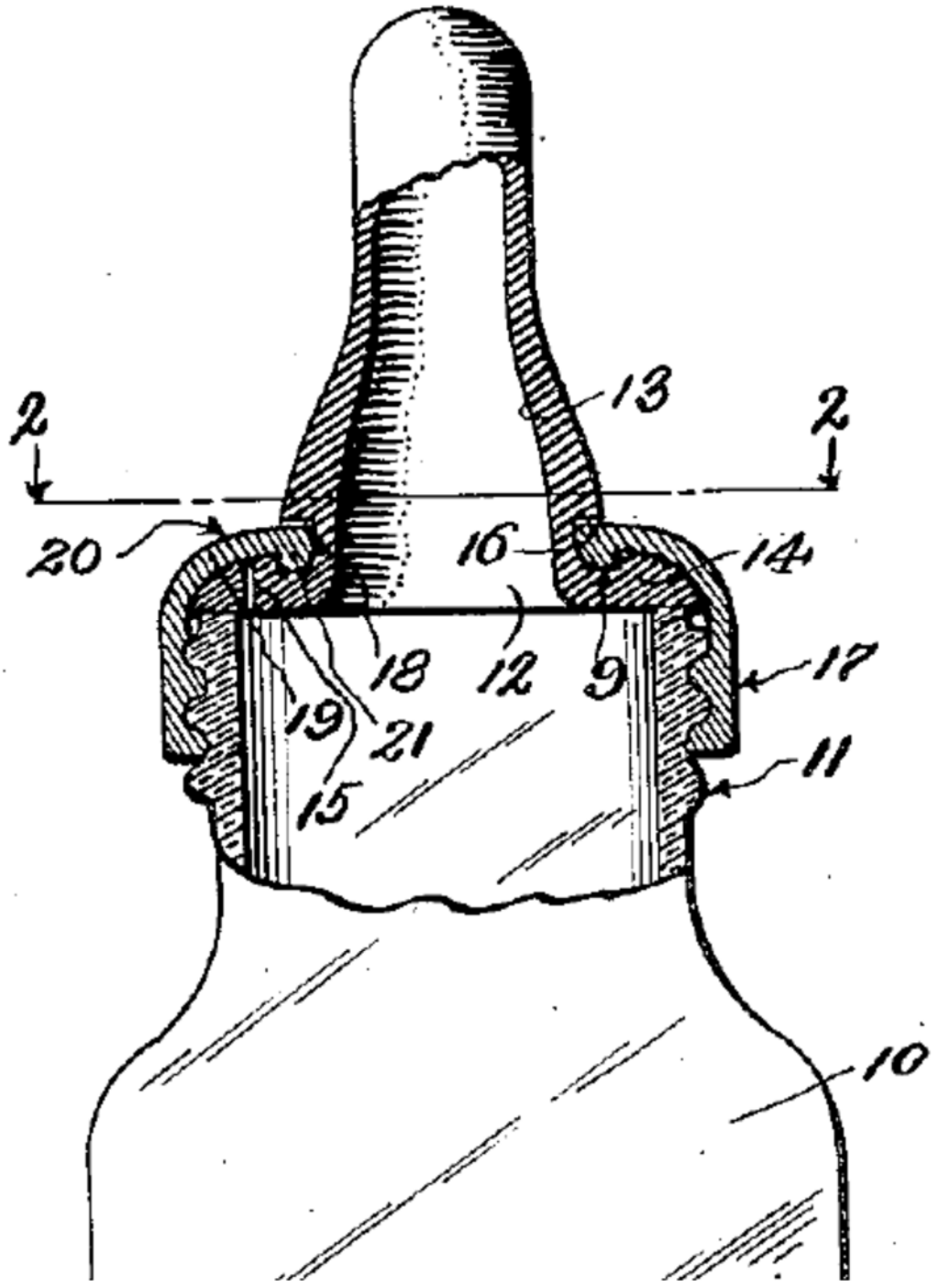


FIG. 1 of Kurkjian

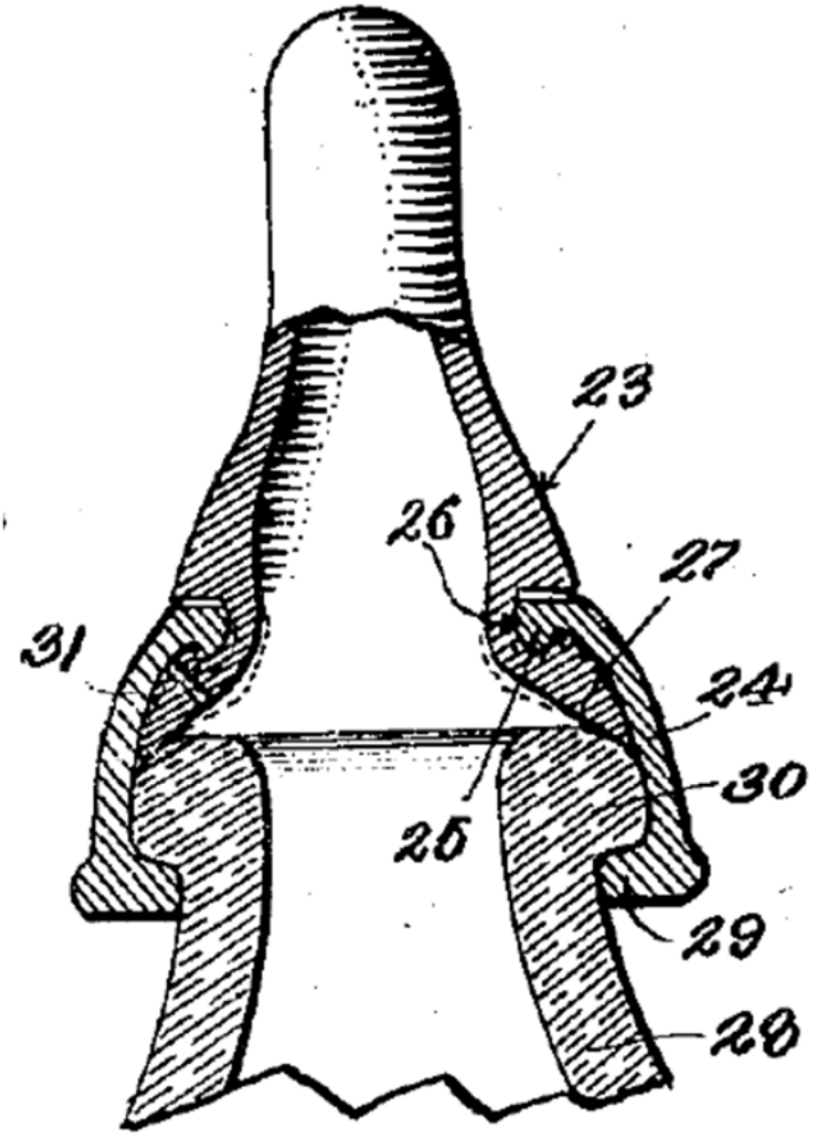


FIG. 6 of Kurkjian

In a modification shown in FIG. 6, the "outer face of the cap 24 preferably conforms to the contour of the nipple 23 and constitutes a continuation thereof to provide a streamline type connection between the nipple 23 and the bottle 28." *Id.*,3:42-47.

C. *Atkin* (Ex[1010])

Atkin discloses a nipple design to overcomes the problem of "teat collapse, especially in the case of the commonly preferred soft teat" by "arranging for [a] lip [valve] to fit with a small clearance inside the bottle neck…such that when the cap is screwed down, it acts on the teat to deform the annular flange." Ex[1010],1:33-35. *Atkin* discloses in Fig. 7A teat 48 screwed loosely on the bottle neck. "[T]eat flange 32 and inner depending lip 34 are undistorted, with the lip 34 spaced with small radial clearance within the next of the bottle." *Id.*,5:55-65. Fig. 7B "shows the effect of tightening the cap/teat subassembly by screwing the cap [50] further…The annular flange 32 is deformed downwardly at its inner end region 52…, [and i]n consequence, the inner depending lip 34 is turned radially outwardly to engage and seal with the interior wall of the bottle next, as indicated at 54." *Id.*,5:63-6:9. "The manner in which the depending lip 34 acts as a flap valve, in use of the bottle by a baby, can…be visualized from Figure 7B. External air pressure exists on the…outer side of the lip [34], in space 56, due to free passage of air past the interrupted screwthreads 16, 36 and the radial grooves 33 in the teat flange 32. Consequently, if pressure in the bottle…fall[s] due to feed being sucked out through the teat, the lip 34 is deformed inwardly…, i.e. opening in the manner of a flap valve to let air into the bottle." *Id.*,6:12-23.

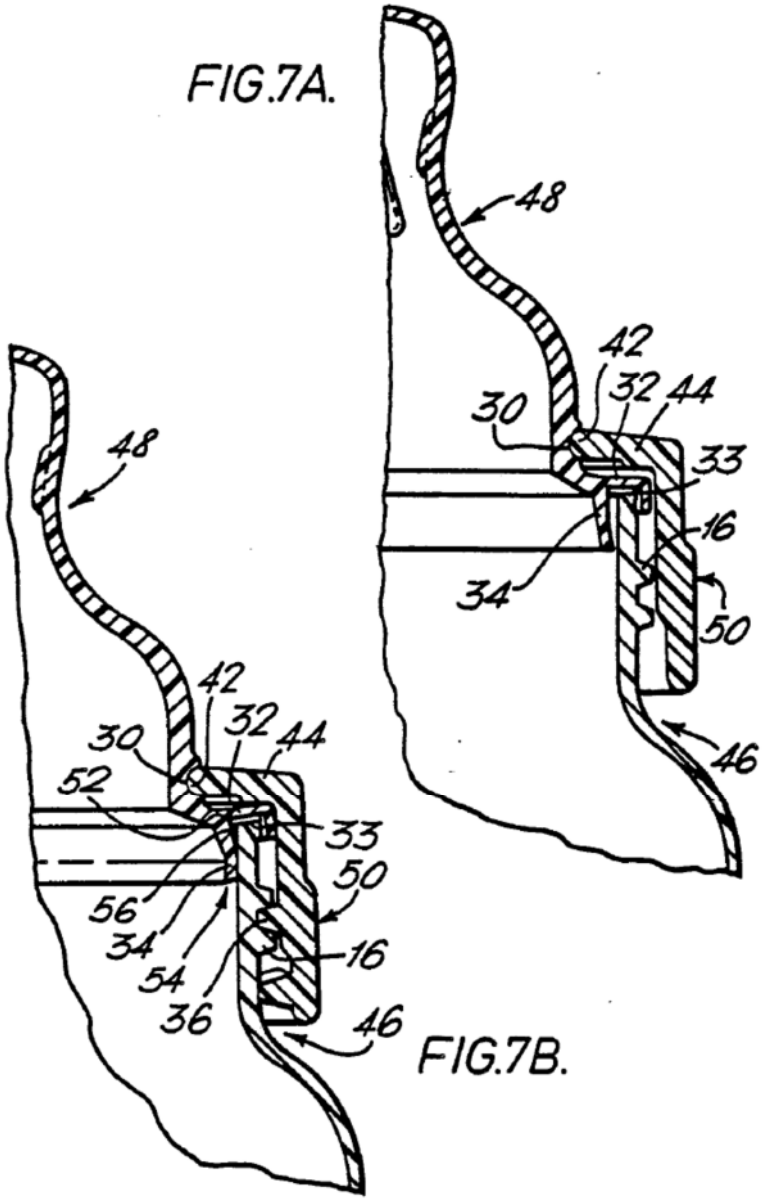


FIG.7A.

FIG.7B.

VIII. ASSERTED GROUNDS OF INVALIDITY

A. Ground 1: *Ishimaru* in view of *Kurkjian* Renders Claims 21, 23, 24, and 26-27 Obvious

Ishimaru in view of *Kurkjian* discloses or renders obvious Claims 21, 23, 24, and 26-27 of the '244 Patent.

1. Motivations to Combine

A POSA would have considered *Ishimaru* and *Kurkjian* in the same field of endeavor as they all relate to nursing bottles and nipples that attach thereto. Ex[1005],¶¶355-361; Ex[1009]1:1-8; Ex[1008],[0001]-[0006]. A POSA would be motivated to modify or combine the nipples of *Ishimaru* with one more of the nipple embodiments of *Kurkjian* because they all teach analogous solutions for, and describe the benefits of, realistic, human-like nipples with air vents and collars to provide a durable design that relieves negative pressure in the nipple. Ex[1005],¶¶355-356; Ex[1009],2:35-49,2:54-3:10; Ex[1008],[0005],[0019],[0048], [0061]. *Kurkjian* further discloses that one or more elements of its various embodiments can be combined: "It should be understood that certain detail changes in the mechanical construction, combination and arrangement of parts may be employed without departing from the spirit of the invention, so long as such changes fall within the scope of the appended claims." Ex[1009],3:70-4:5.

A POSA reading *Ishimaru* would recognize a nipple and vessel design more similar to that of a mother's nipple, including a nipple trunk and teat portion, which includes an elongate portion comprising thin walls that are more easily extensible. Ex[1008],Abstract, Fig. 1. These thin-walled portions can also be formed in "a spiral shape." *Id.*,[0060]. Further, "there is a base portion 112 with a nipple side vent hole, which is a flange portion for connecting to a feeding bottle main body." *Id.*,[0037].

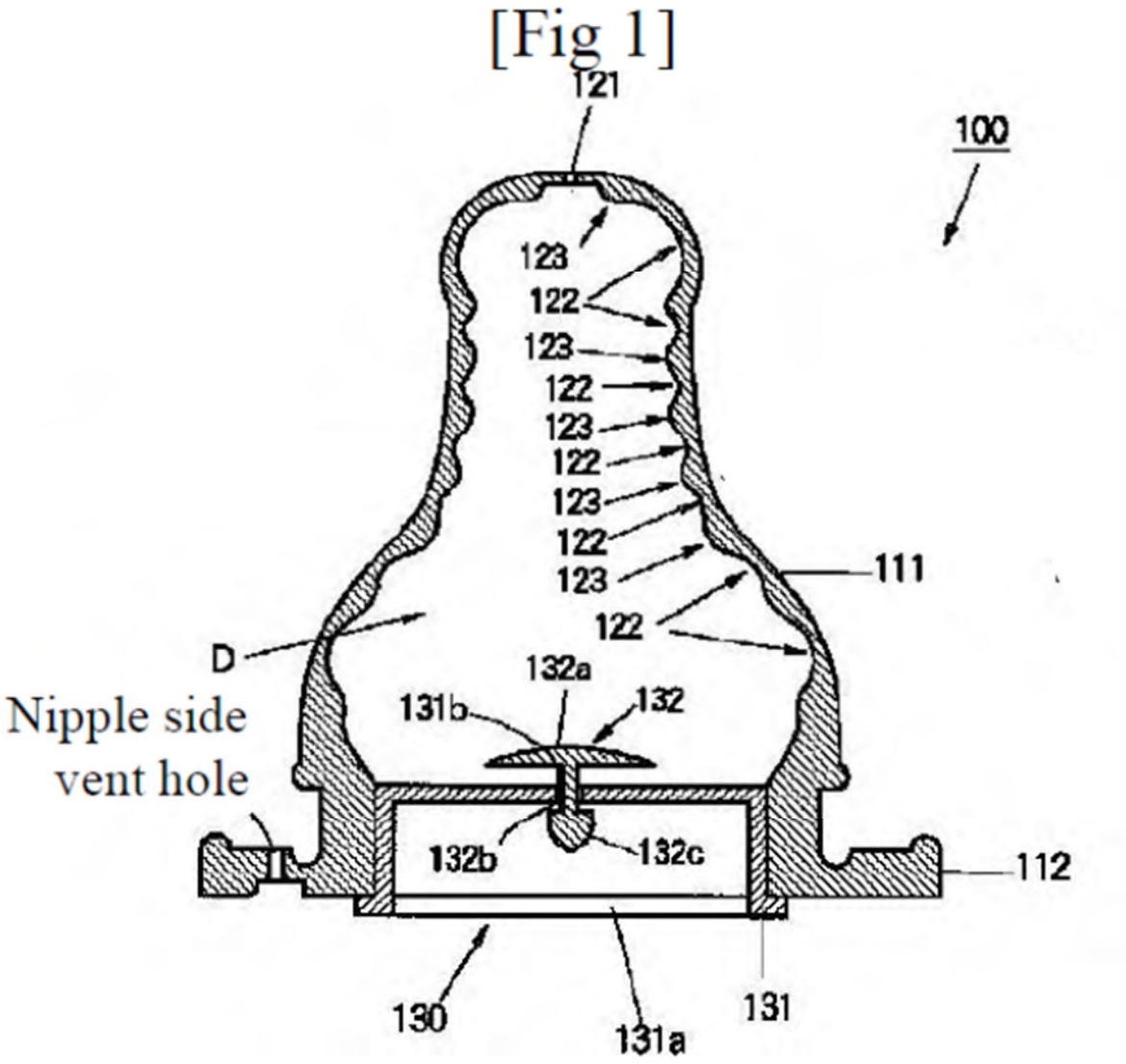


FIG. 1 of Ishimaru

A POSA reading *Kurkjian* would recognize a nipple with a body portion, neck, and annular flange. Ex[1009],1:48-53. The flange includes a "single venting aperture 15 and it should be understood that the flange 14 is integral with the body portion 13 of the nipple." *Id.* *Kurkjian* also discloses a securing and retraining cap that connects the nipple to the vessel of Kurkjian. The "outer face of the cap 24

preferably conforms to the contour of the nipple 23 and constitutes a continuation thereof to provide a streamline type connection between the nipple 23 and the bottle 28."

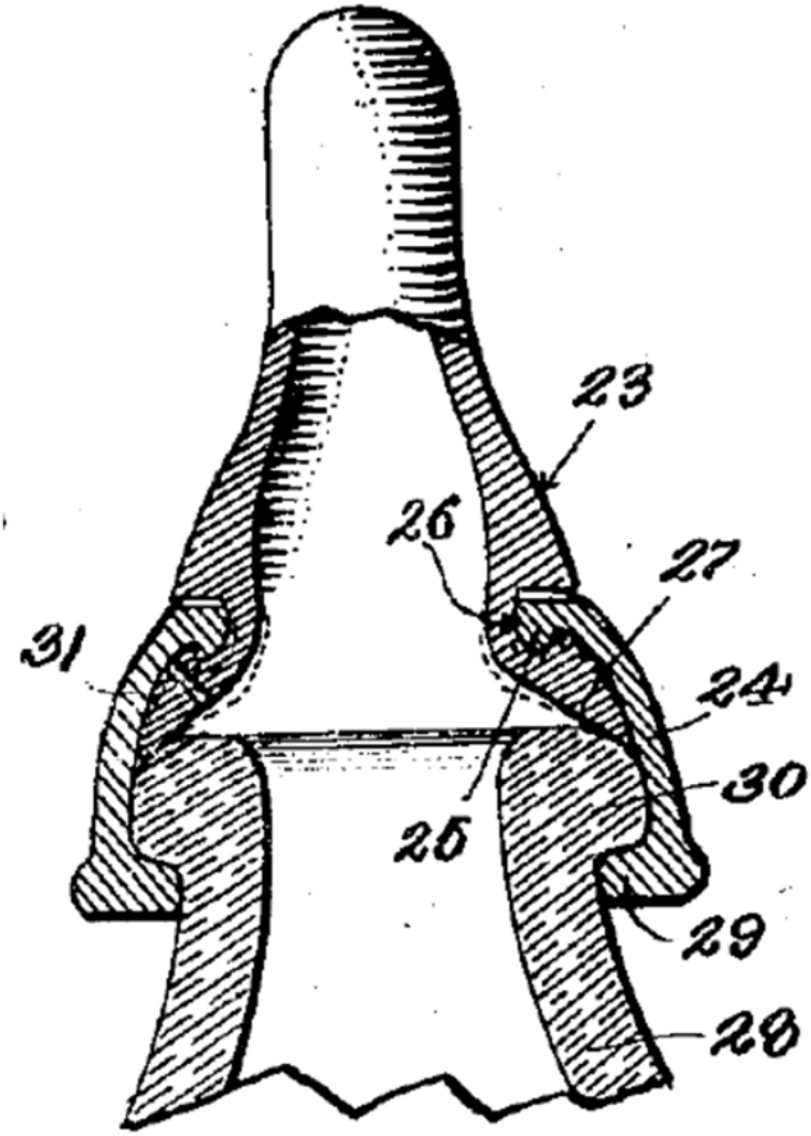


FIG. 6 of Kurkjian

A POSA would have considered *Ishimaru* and *Kurkjian* in the same field of endeavor as they all relate to nursing bottles and nipples that attach thereto. Ex[1005],¶¶355-361; Ex[1009]1:1:1-8; Ex[1008] at[0001]-[0006]. A POSA would be motivated to modify or combine the nipples of *Ishimaru* with one more of the nipple embodiments of *Kurkjian* because they all teach analogous solutions for, and describe the benefits of, realistic, human-like nipples with air vents and collars to provide a durable design that relieves negative pressure in the nipple. Ex[1005],¶¶356-359; Ex[1009],2:35-49, 2:54-3:10; Ex[1008], [0005], [0019], [0048], [0061]. *Kurkjian* further discloses that one or more elements of its various embodiments can be combined: "It should be understood that certain detail changes in the mechanical construction, combination and arrangement of parts may be employed without departing from the spirit of the invention, so long as such changes fall within the scope of the appended claims." Ex[1009],3:70-4:5.

A POSA would be further motivated and find it obvious, to the extent not disclosed by *Ishimaru*, to modify the nipple design of *Ishimaru* as taught by one or more embodiments of *Kurkjian* in order to provide a more realistic, breast-like nipple. Ex[1003],¶285; Ex[1008],[0004], [0005], [0041], [0061]. Indeed, *Ishimaru* stresses the importance of this to encourage bottle feeding. Ex[1005],¶357; Ex[1008],[0041]. "By the way, the artificial nipple 10 is mounted to a feeding bottle containing milk, etc., and is given to the infant in place of the mother's breast milk,

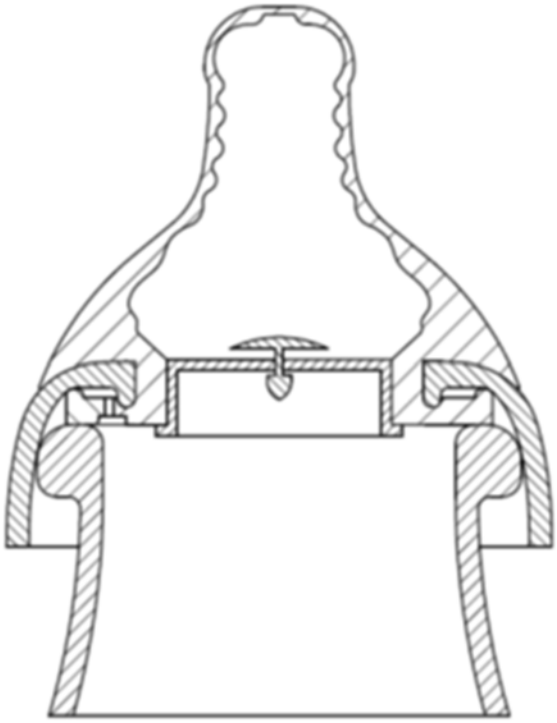
so it is desirable that the artificial nipple 10 should be as similar to the mother's nipple as possible." Ex[1008],[0005]. "Such an artificial nipple 100 has a shape similar to a mother's breast and nipple as shown in Fig. 1, because it is used when a mother feeds her infant with artificial milk using a feeding bottle, etc., instead of her own breast milk." Ex[1008],[0040]. A POSA reviewing *Kurkjian* would be motivated to incorporate the domed collar in *Kurkjian* in order to modify the shape of the collar in *Ishimaru* (or mounting cap, as disclosed in *Ishimaru* (Ex[1008],[0054])) to provide a downward doming shape that further improves the aesthetics of the nipple to provide a realistic, breast-like shape. Ex[1005],¶385.

A POSA would be further motivated and find it obvious, to the extent not disclosed by *Ishimaru*, to modify the vessel design as taught by one or more embodiments disclosed in *Kurkjian* in order to provide a more ergonomic and aesthetically pleasing design better suited for *Ishimaru's* nipple design. Ex[1005],¶358 For example, incorporating *Kurkjian*'s design with varying diameters to improve the nipple and vessel design would result in a vessel with multiple diameters that would optimize vessel volume, user ergonomics, and aesthetic appearance, while also facilitating attachment of a wider, more breast-like nipple though a wide vessel mouth. Ex[1005],¶358.

The example combinations and modifications described represent a known, finite number of identified predictable solutions to solve the problem of designing a

realistic, breast-like nipple that simultaneously equalizes the pressure in the bottle to prevent, for example, nipple collapse and colic. Ex[1009],1:1-8; Ex[1008],[0005],[0007],[0019],[0048].[0061]. A POSA reading *Ishimaru* and *Kurkjian* would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. Ex[1005],¶¶361. A POSA would expect that modifying *Ishimaru's* nipple in view of *Kurkjian* would provide an aesthetically suitable solution to equalize pressure in the bottle. Ex[1003],¶¶361. Moreover, a POSA would have had a reasonable expectation of success in combining these nipple and vessel design because each would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. *Id.*

After considering the disclosures of both *Ishimaru* and *Kurkjian*, a POSA at the time of the priority date of the '244 Patent would have combined one or more of these features for the reasons stated above and would have been motivated to design a nipple and collar similar to the following:



Ex[1005],¶353. Indeed, this design is largely the breast-like nipple of *Ishimaru* with its stated advantages secured to an ergonomic vessel of *Kurkjian* with its associated teachings regarding collar shape for attaching a nipple to the ergonomic vessel, with its stated advantages, working as expected.

2. Claim 21

(a) **21[PRE]: A drinking vessel comprising:**

Ishimaru discloses or renders obvious this limitation. Ex[1005],¶¶362-365. *Ishimaru* discloses "[a] ***drinking vessel***." *See* Ex[1008],[0001]-[0003]. *Ishimaru* describes "[a]n artificial nipple" "mounted to a feeding bottle." *Id*.,[0002]. *Ishimaru* teaches, using the feeding bottle, "insert[ing] the artificial nipple 100 into the infant's mouth to feed milk to the infant." *Id*.,¶[0043], Fig. 9.

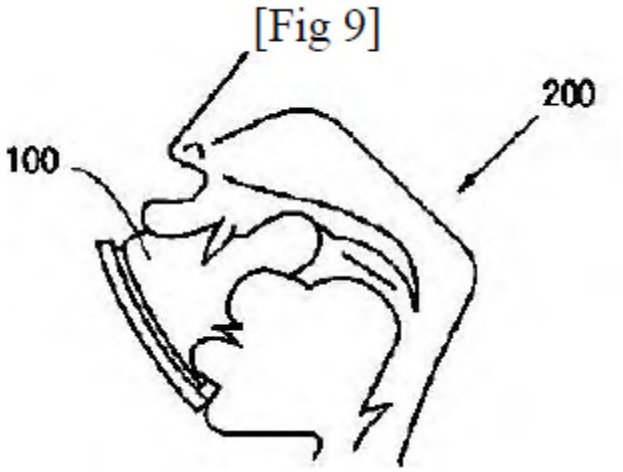


FIG. 9 of Ishimaru

(b) **21[A]: a container comprising a varying internal circumference and an opening into the container; and,**

Ishimaru does not explicitly disclose "***a container comprising a varying internal circumference and an opening into the container***," but it would have been obvious to a POSA to modify the vessel disclosed in *Ishimaru* to include multiple internal circumferences. Such a modification is taught at least by *Kurkjian*'s Fig. 1 and teachings of "a resilient flanged nipple to be secured to the mouth of a bottle by means of a retaining cap, and permit the entrance of air into the interior of the bottle, and also prevent the nipple from collapsing inwardly of the retaining cap." Ex[1005],¶368; Ex[1009],1:1-10. In fact, *Kurkjian*'s claims describe a bottle with "an open outer end" and the figures illustrate both an upper diameter (e.g., near the mouth of the vessel), and a wider, lower diameter (e.g., near the bottom of the

vessel). *Id*. at Claims 1-4, Figs. 1, 6-7 (reproduced above). *See also* annotated Fig. 1 of *Kurkjian* reproduced above.

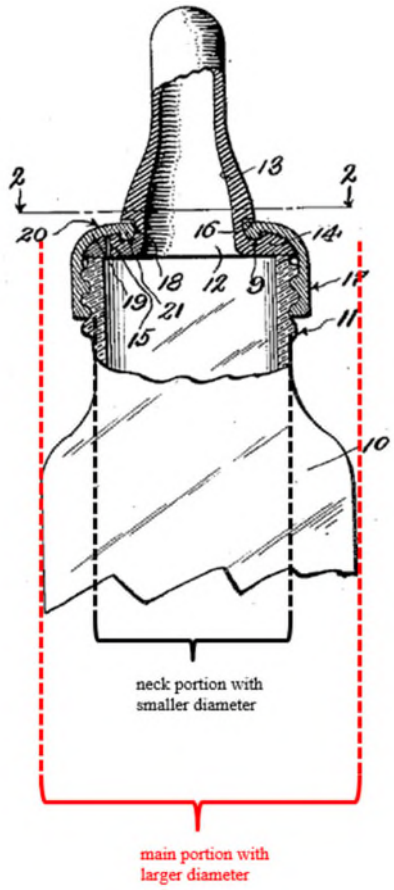


FIG. 1 of Kurkjian (annotated)

A POSA would have been further motivated to implement these elements of *Kurkjian*'s nipple and vessel design into Ishimaru's design— achieving a bottle with multiple diameters that would be more resistant to tipping, be better for hand holding (ergonomics), and be better suited to couple to *Ishimaru's* wider, realistic, breast-like nipple. *Supra* §VIII.A.1; Ex[1005],¶369. A POSA reading *Ishimaru* and *Kurkjian* would be motivated to combine and substitute these familiar elements

according to known methods to yield predictable results. *Supra* §VIII.A.1; Ex[1005],¶361. Moreover, a POSA would have had a reasonable expectation of success in combining these designs because each nipple and vessel would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. *Id.*

(c) **21[B]: a cover assembly configured to couple to the container over the opening, the cover assembly comprising:**

Ishimaru discloses or renders obvious this limitation. Ex[1005],¶¶371-375. *Ishimaru* discloses a cover assembly, i.e., a collar and nipple 100. Ex[1008],[0043],[0054]. *Ishimaru* teaches "the artificial nipple 100 is mounted on a feeding bottle containing, for example, milk." *Id.*,[0043]. "[O]n the lower side of the nipple trunk 110, there is a base portion 112 with a nipple vent hole, which is a flange portion for connecting to a feeding bottle main body, for example, not shown in the figure." *Id.*,[0037]. Ishimaru further discloses a "detachable feeding bottle mounting cap" . . . "which is used when mounting the artificial nipple 200 to the feeding bottle. In this case, it is a configuration that the lid portion 420 and the base portion can be separated by removing the cap, which allows for easy cleaning, etc." *Id.*,[0054].

(d) **21[C]: i. a nipple comprising a mouthpiece configured to allow liquid flow through the nipple to an aperture,**

Ishimaru discloses or renders obvious this limitation under both Petitioner and Patent Owner's proposed constructions. Ex[1005],¶¶376-386. Under Petitioner's construction of "mouthpiece," *Ishimaru* discloses a "teat portion, i.e., the entire part projecting generally perpendicular to the mouth of the vessel, disposed above the areola portion, which extends into a baby's mouth for feeding." Ex[1015],24. "[T]he tip of the teat portion 120 of artificial nipple 100 is in contact with the tip of the sucking fossa 220 of the infant 200, and the tongue 230 of the infant 200 pushes the artificial nipple upward…[accordingly] when the infant 200 drinks milk through the artificial nipple, he/she performs the suckling movement by peristaltic movement of the tongue, as shown in Fig. 6 to Fig. 7." Ex[1008],[0044]. Figures 5-9 and 20 of *Ishimaru* disclose at least the teat portion of the nipple extending into the baby's mouth for feeding. Ex[1008],Figs.5-9, 20. *Ishimaru*'s Fig. 5 is reproduced below.

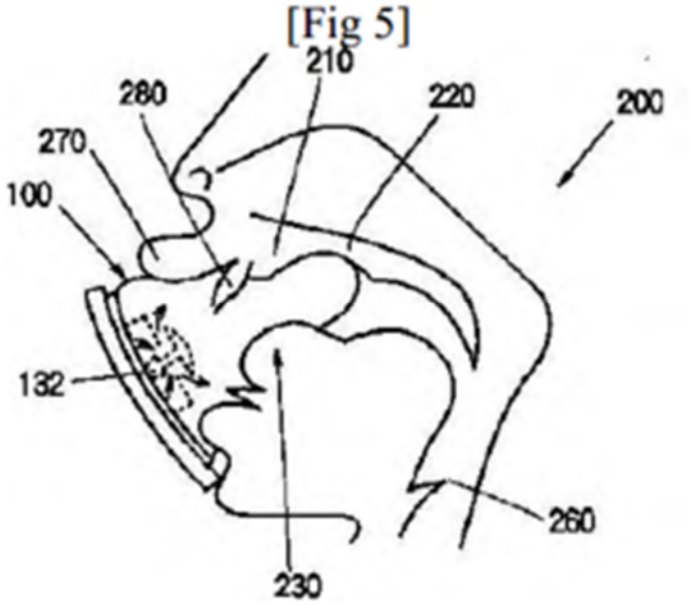


FIG. 5 of Ishimaru

Ishimaru's cover assembly further includes an artificial nipple 10 with an "opening 121," out of which opening milk may spurt and "be led in the direction of the epiglottis 26." Ex[1008],[0003]. Thus, it describes a mouthpiece which allows liquid, e.g., milk, to flow through the nipple to an aperture. Ex[1005],¶380.

The same *Ishimaru* disclosure also discloses this element under Patent Owner's construction, as meaning a "part projecting generally perpendicular to the mouth of the vessel and disposed above the areola portion" for the same reasons explained above. Ex[1018],24; Ex[1005],¶¶376-377.

(e) **21[D]: a flex region configured to allow flex of the mouthpiece towards and away from a lower portion of the nipple, the mouthpiece defining a bite region,**

Ishimaru discloses or renders obvious this limitation under both Petitioner and Patent Owner's proposed constructions. Ex[1005],¶¶387-391. Under Petitioner's construction of "flex of the mouthpiece towards and away from a lower portion of the nipple," *Ishimaru* discloses this limitation. Specifically, *Ishimaru* discloses that the nipple further includes a flex region, as shown by the thin-walled portions 122 and inner surfaces 123 of the nipple, which are designed to be flexible. Ex[1008],[0041], *see also* Fig. 1 (reproduced below). Additionally, *Ishimaru* teaches that "thin-walled portions 122, 122 and 122, which are elongation portions with a thin wall, ***are formed in a groove-like pattern,*** for example, at seven annular locations, as shown in Fig. 1." *Id.* For example, "the peristaltic movement of the tongue 230 of the infant 200 described above will cause these seven thin-walled portions 122 to elongate, and the teat portion 120 and nipple trunk 1120 will also be elongated in the mouth of the infant 200." *Id.*,[0046]. This elongation of the thin-walled portions 122 constitutes a flex of the mouthpiece towards and away from a lower portion of the nipple. Ex[1005],¶¶388-389.

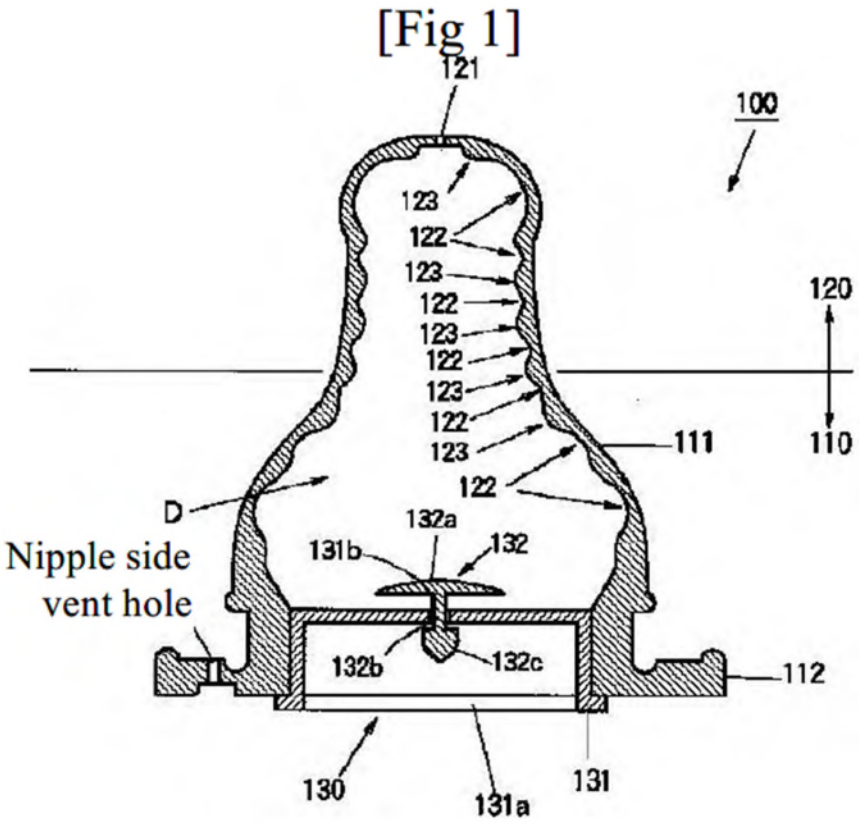


FIG. 1 of Ishimaru (annotated)

The same *Ishimaru* disclosure also discloses this element under Patent Owner's construction, as having its plain meaning, for the reasons explained above.

(f) **21[E]: the mouthpiece defining a bite region**

Ishimaru discloses or renders obvious this limitation. Ex[1005],¶¶392-398. *Ishimaru* teaches "the infant 20 presses the teat portion 12 of the artificial nipple 10 against the sucking fossa 22 on its upper palate 21 by the peristaltic movement of its tongue 23." Ex[1008],[0003],[0044],[0047]; Figs 5, 8, 20. *Ishimaru* further depicts an infant "biting" a region of the mouthpiece with its upper palate:

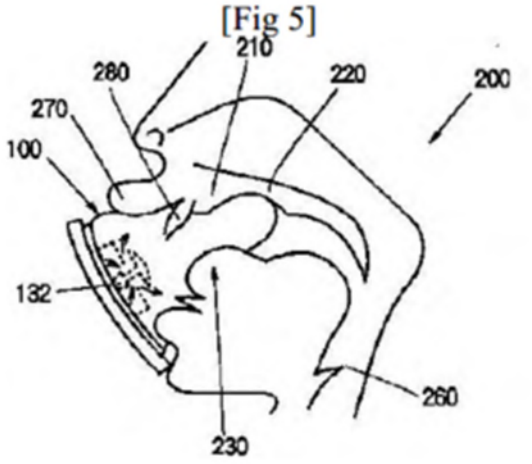


FIG. 5 of Ishimaru

Id., Fig. 5.

A POSA would have understood this region of the mouthpiece that is contacted by the infant to constitute a bite region. Ex[1005],393-396. A POSA would have further understood this from *Ishimaru*'s description of the process of feeding an infant by placing this region in the infant's mouth, and imitating feeding from a mother's breast. ¶¶[0043]-[0044], [0046]; Ex[1005],¶392.

(g) **21[F]: and a flange depending from the lower portion of the nipple defining the nipple circumference furthest from the aperture; and**

Ishimaru discloses or renders obvious this limitation. Ex[1005],¶¶399-404. Ishimaru discloses "a flange portion for connecting to a feeding bottle main body" which is part of the "base portion 112." Ex[1008],[0037],[0050]. The base portion would include the lower portion of the nipple. As illustrated in annotated Fig. 1

below, base portion 112 at the lower portion of the nipple furthest from the hole at the tip, which defines the nipple circumference. Ex[1008],Fig.1; Ex[1005],¶399.

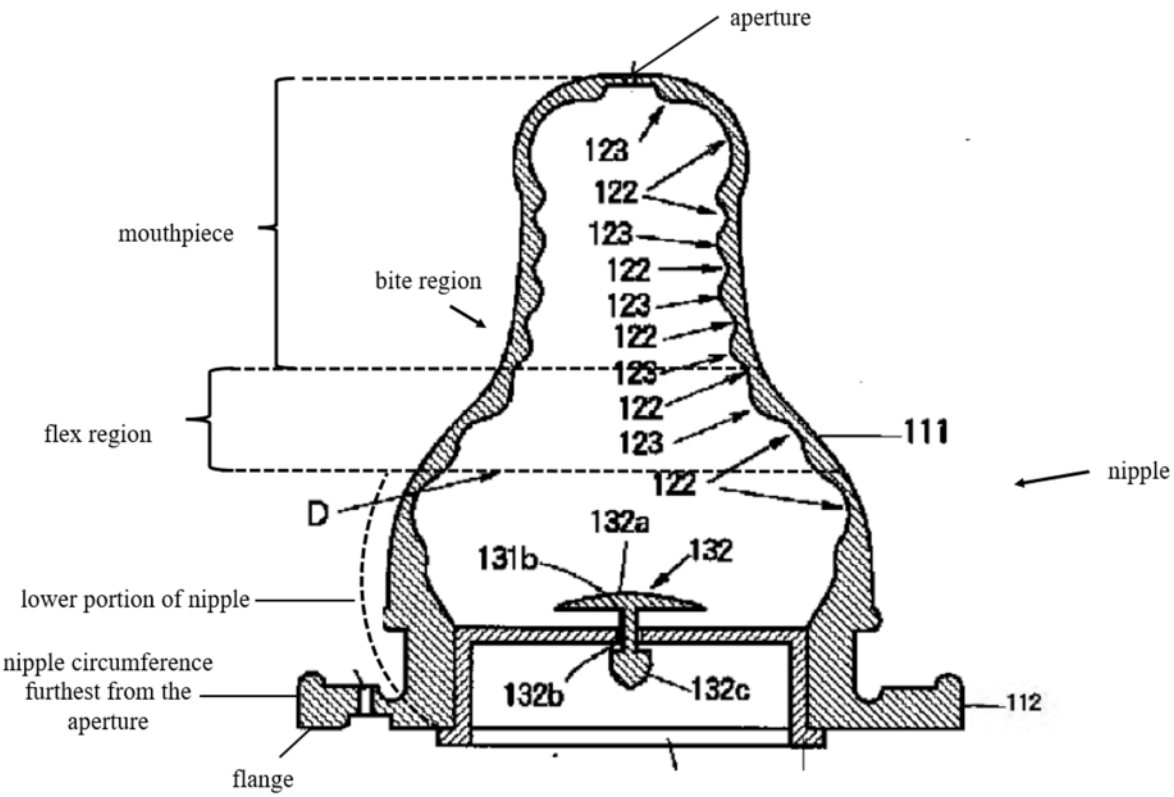


FIG. 1 of Ishimaru (annotated)

(h) **21[G]: ii. a collar configured to removably couple to the nipple to seal over the opening of the container; and**

Ishimaru discloses or renders obvious this limitation. Ex[1005],¶¶405-411. *Ishimaru* teaches the cover assembly including a mounting cap creating a seal over the opening of the container, which is used to fix the lid portion 420 with the base portion 112 "using a detachable feeding bottle mounting cap (not shown in the figure), which is used when mounting the artificial nipple 200 to the feeding bottle,"

which allows for easy separation and cleaning. Ex[1008],[0054], *see also id*.,[0058] (describing the same). When modified in accordance with the combination as discussed above, the collar would continue to serve this function.

(i) **21[H]: wherein the collar and the lower portion of the nipple together define a downward domed shape that extends outwardly and downwardly from the flex region of the nipple towards a widest circumferential edge of the collar.**

Ishimaru does not explicitly disclose this limitation, but it would have been obvious to a POSA to modify the nipple and detachable feeding bottle mounting cap disclosed in *Ishimaru* to together define a downward domed shape that extends outwardly and downwardly from the flex region of the nipple towards a widest circumferential edge of the collar. Ex[1005],¶¶412-416. A POSA would understand that such an obvious modification would further advance *Ishimaru*'s goal of designing a nipple similar to a human breast (e.g., one with a general domed shape). *Supra* §VIII.A.1; Ex[1005],¶415. Such a modification is explicitly taught by *Kurkjian* - *Kurjian* describes its "securing cap" as having an outer face that "***conforms to the contour of the nipple and constitutes a continuation thereof to provide a streamline type connection*** between the nipple 23 and the bottle 28," and accordingly is shown in Figure 6 below as having a sloping outer contour, that together with the nipple, define a downward domed shape. *Id.* at 3:42-47, Fig. 6. Fig. 6 illustrates to a POSA the collar and lower portion of the nipple in a downward

domed shape. Ex[1009] at Fig. 6 (reproduced above); Ex[1005],¶413. A POSA would further have understood that this extension is towards the edge of the collar that has the widest circumference. Ex[1005],415.

A POSA would have been further motivated to implement these elements of *Kurkjian*'s nipple and vessel design into the nipple and vessel design of *Ishimaru*'s design—in order to design "an artificial nipple 100 has a shape similar to a mother's breast and nipple." *See supra* §VIII.A.1; Ex[1005],¶444; Ex[1008],[0040]; *see also id.*,[0005] ("By the way, the artificial nipple 10 is mounted to a feeding bottle containing milk, etc., and is given to the infant in place of the mother's breast milk, so it is desirable that the artificial nipple 10 should be as similar to the mother's nipple as possible.") *Supra* §VIII.A.1. Such a design would represent a more domed, smoothly curved shape that more closely resembles a mother's breast. *Id.* A POSA reading *Ishimaru* and *Kurkjian* would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. *Supra* §VIII.A.1; Ex[1005],¶361. Moreover, a POSA would have had a reasonable expectation of success in combining these designs because each nipple and vessel would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. *Id.*

3. Claim 23

(a) **The drinking vessel of claim 21, wherein the container comprises a material more rigid than the nipple material.**

Ishimaru discloses the nipple being made of silicone. Ex[1008] at [0002]. While not explicitly disclosed, a POSA would have understood it to be obvious for the material of *Ishimaru's* container to be more rigid than silicone, e.g., to allow for holding of the bottle and flexing of the nipple. Ex[1005],¶417.

Similarly, *Kurkjian* discloses a flexible nipple being fitted over the opening of a bottle. Ex[1009] at 1:45-49. Additionally, a POSITA would recognize that *Kurkjian*'s discussion of techniques to prevent the "nipple from collapsing inwardly" contemplate a bottle more rigid than the nipple because otherwise the concern would have been the bottle deforming, rather than the nipple. Ex[1005],¶418. Similarly, a nursing bottle "having threads," and having a nipple "firmly clamped" between the collar and bottle implicate a rigid bottle container. Ex[1005],¶418.

A POSA would have found it obvious for the material of the bottle to be more rigid than that of the nipple, e.g., to allow for secure fitting and for the nipple to remain in place. Ex[1005],¶419.

4. Claim 24

(a) **The drinking vessel of claim 21, wherein the cover assembly further comprises an air vent apart from the mouthpiece.**

Ishimaru discloses the cover assembly having "***an air vent apart from the mouthpiece***," as illustrated by the "nipple side vent hole" at the base of the nipple trunk, which vent hole is separate from the teat opening 121. Ex[1008],[0037]; Ex[1005],¶¶~~422~~ 427-432.

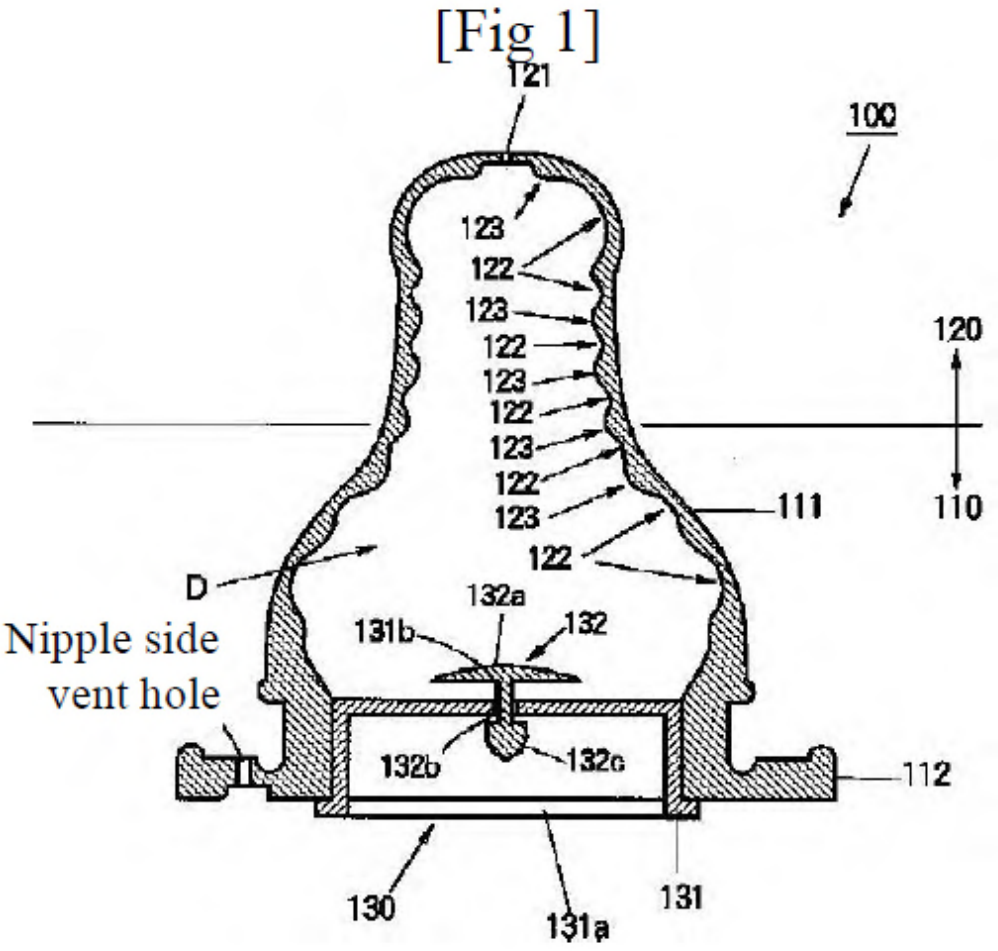


FIG. 1 of Ishimaru (annotated)

5. Claim 26

(a) **The drinking vessel of claim 21, wherein the mouthpiece is located in the center of the nipple.**

Ishimaru discloses the mouthpiece being located in the center of the nipple, e.g., as illustrated in Figs., 3, 4, 12, and 13. Ex[1008],Figs.1,3,4,13; Ex[1005],¶¶~~428-432~~433-437.

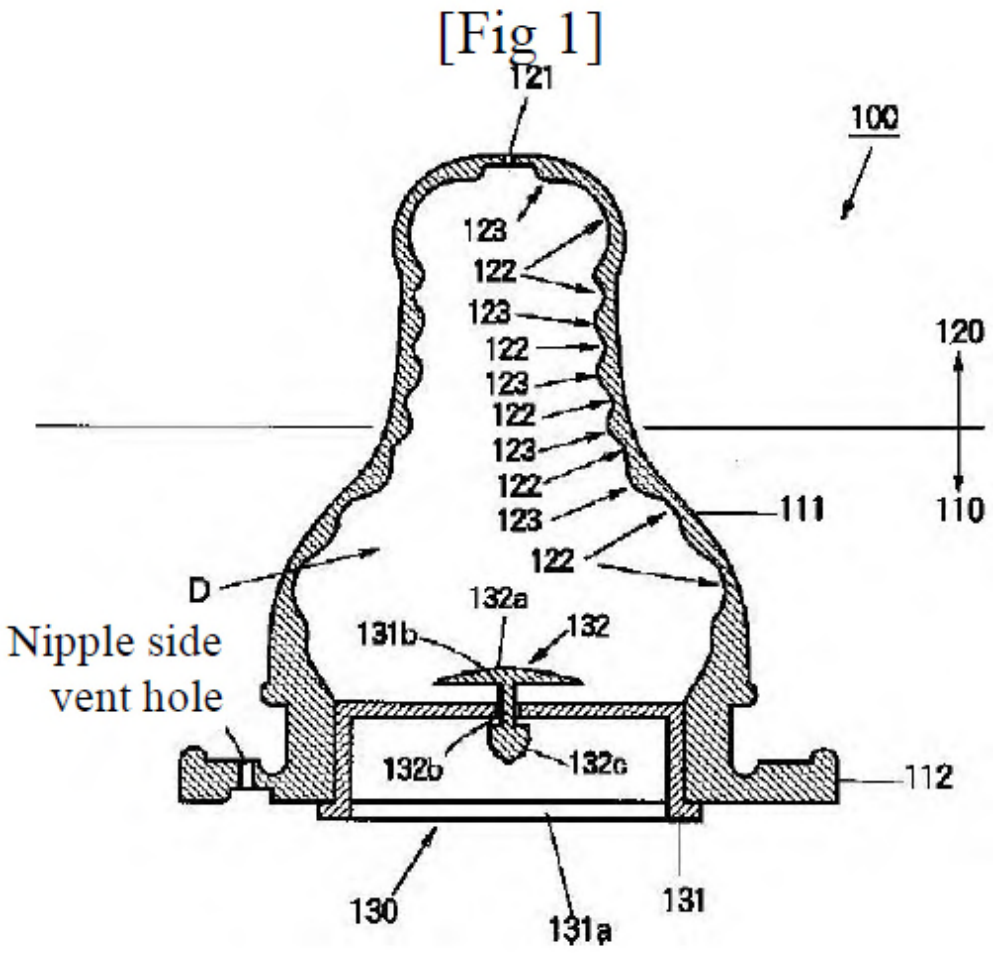
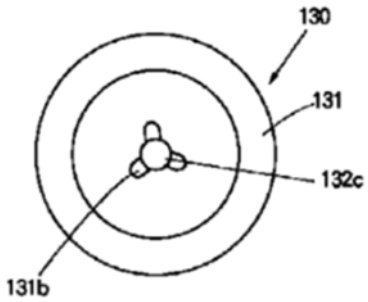
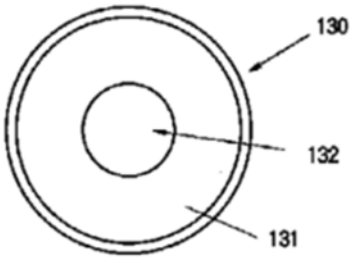


FIG. 1 of Ishimaru (annotated)

【図３】



【図４】



FIGS. 3, 4 of Ishimaru

~~5~~6. Claim 27

(a) **The drinking vessel of claim 21, wherein the teat portion comprises a resilient material.**

Ishimaru discloses the teat portion being a resilient material where it explains that "the artificial nipple 10 is made of silicone rubber." Ex[1008],[0002]. Ex[1005],¶¶~~433-437~~438-442. *Kurkjian* discloses an artificial nipple made of a "flexible material" such as rubber. Ex[1009],1:50-54. POSA would consider silicone rubber to represent a resilient material. Ex[1005],¶~~434.~~439.

B. Ground 2: *Ishimaru* in view of *Atkin* renders Claims 21-24 and 26-27 Obvious

Ishimaru in view of *Kurkjian* discloses or renders obvious Claims 21, 23-24, and 26-27 of the '244 Patent. The Ground 1 analysis of *Ishimaru* is incorporated in the *Ishimaru-Atkin* combination.

1. Motivations to Combine

A POSA would have considered *Ishimaru* and *Atkin* in the same field of endeavor as they all relate to nursing bottles and nipples that attach thereto. Ex[1005],¶¶~~441-~~446-451; Ex[1010],1:1-12; Ex[1008],[0001]-[0006]. A POSA would be motivated to modify or combine the nipples of *Ishimaru* and *Atkin* because they all teach analogous solutions for, and describe the benefits of, realistic, human-like nipples with air vents and collars to provide a durable design that relieves negative pressure in the nipple. Ex[1005],¶¶~~441-442~~446-447; Ex[1010], 3:16-23,3:28-33, 6:12-27; Ex[1008],[0005],[0019],[0048],[0061].

A POSA reading *Ishimaru* would recognize a nipple design more similar to that of a mother's nipple, including a nipple trunk and teat portion, which includes an elongate portion comprising thin walls that are more easily extensible. Ex[1005],¶~~442~~447; Ex[1008],Abstract, Fig. 1. These thin-walled portions can also be formed in "a spiral shape." *Id*.,[0060]. Further, "there is a base portion 112 with a nipple side vent hole, which is a flange portion for connecting to a feed-ing bottle main body." *Id*.,[0037].

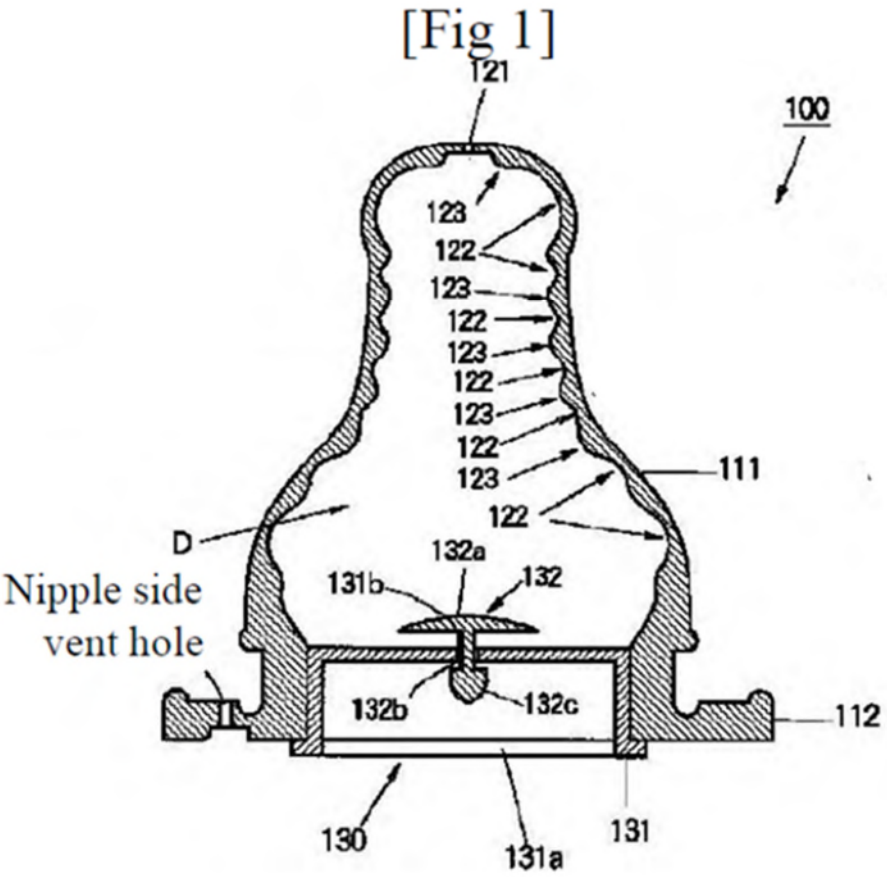
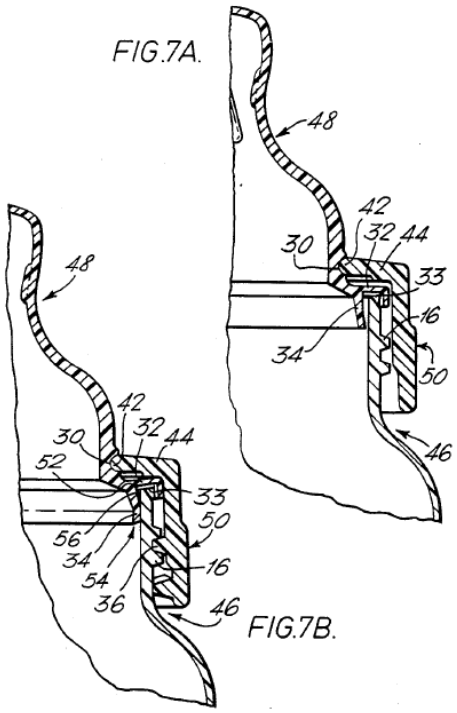


FIG. 1 of Ishimaru (annotated)

A POSA reading *Atkin* would recognize a nipple design to overcomes the problem of "teat collapse, especially in the case of the commonly preferred soft teat" by "arranging for [a] lip [valve] to fit with a small clearance inside the bottle neck…such that when the cap is screwed down, it acts on the teat to deform the annular flange." Ex[1005],¶156; Ex[1010],1:33-35. *Atkin* further discloses an annular cap for securing the nipple to the vessel: "The annular cap has an internal interrupted screwthread 36 for screwing to the externally threaded bottle neck, and externally the cap is shouldered at 38, being provided with an enlargement 40 on the

wider diameter portion below the shoulder. The enlargement 40 facilitates the screwing and unscrewing of the cap." Ex[1010],5:32-61; Fig. 5-7.



FIGS. 7A, 7B of Atkin

A POSA reading *Atkin* would further recognize that *Atkin* teaches a vessel with multiple internal circumferences: "the preferred bottle has a capacity in the range 30 to 35 ml per cm height, the neck having a mean diameter of not less than 0.725 of the main portion diameter. The preferred dimensions are a mean diameter of not less than 6 cm for the main cylindrical portion and a neck portion diameter of not less than 4.25 cm. It will thus be appreciated that a bottle having these dimensions for a corresponding total capacity, is shorter and squatter than known bottles. It therefore sits more stably when stood on its base, and is less liable to being

tipped over. In addition, the wider neck facilitates the insertion of food ingredients, as by means of a scoop, and is more readily cleaned internally after use. Furthermore, a larger diameter neck enables the use of a larger teat, enabling use of the bottle by the baby more closely resembling natural feeding." Ex[1010],3:10-27; Ex[1005],¶¶~~444~~449.

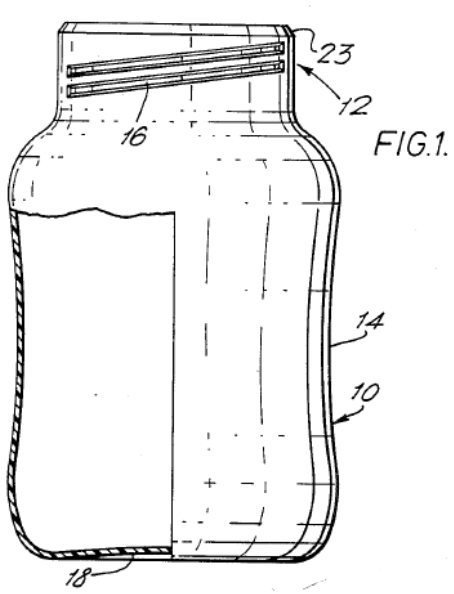


FIG. 1 of Atkin

A POSA would be further motivated and find it obvious, to the extent not disclosed by *Ishimaru*, to modify the nipple design of *Ishimaru* as taught by *Atkin* in order to provide a more realistic, breast-like nipple. Ex[1005],¶¶~~444-445~~449-450; Ex[1008],[0004],[0005],[0041],[0061]. Indeed, *Ishimaru* stresses the importance of this to encourage bottle feeding. Ex[1005],¶~~443~~448; Ex[1008],[0005]. "By the way, the artificial nipple 10 is mounted to a feeding bottle containing milk, etc., and is

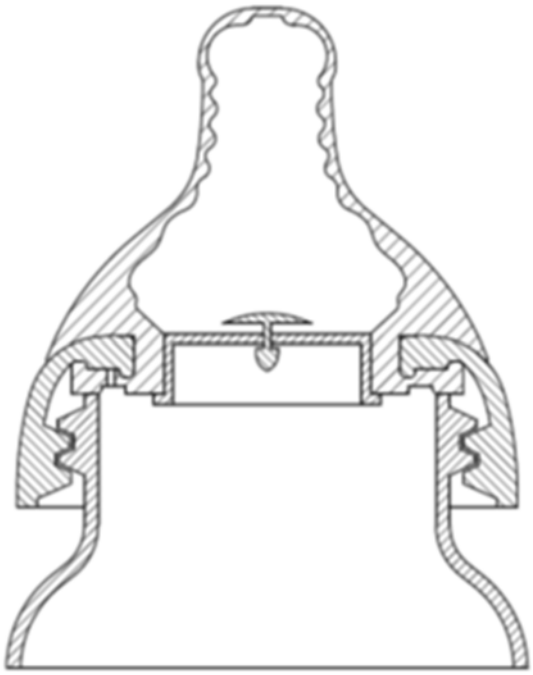
given to the infant in place of the mother's breast milk, so it is desirable that the artificial nipple 10 should be as similar to the mother's nipple as possible." Ex[1008],[0005]. "Such an artificial nipple 100 has a shape similar to a mother's breast and nipple as shown in Fig. 1, because it is used when a mother feeds her infant with artificial milk using a feeding bottle, etc., instead of her own breast milk." Ex[1008],[0040]. A POSA reviewing *Atkin* would be motivated to incorporate the domed collar in *Atkin* in order to modify the shape of the collar in *Ishimaru* (or mounting cap, as disclosed in *Ishimaru* ([0054])) to provide a downward doming shape that further improves the aesthetics of the nipple to provide a realistic, breast-like shape, as taught by *Ishimaru*. *See* Ex[1005],¶¶~~443-444~~448-449.

A POSA would be further motivated and find it obvious, to the extent not disclosed by *Ishimaru*, to modify the vessel design as taught by one or more embodiments disclosed in *Atkin* in order to provide a more ergonomic, durable, and aesthetically pleasing design better suited for *Ishimaru*'s nipple design. Ex[1005],¶~~445~~450. For example, incorporating *Atkin* design with varying diameters to improve the nipple and vessel design would result in a vessel with multiple diameters that would optimize vessel volume, user ergonomics, and aesthetic appearance, while also facilitating attachment of a wider, more breast-like nipple though a wide vessel mouth: "Furthermore, a larger diameter neck enables the use

of a larger teat, enabling use of the bottle by the baby more closely resembling natural feeding." Ex[1010],3:10-27; Ex[1005],¶~~445~~450.

The example combinations and modifications described represent a known, finite number of identified predictable solutions to solve the problem of designing a realistic, breast-like nipple that simultaneously equalizes the pressure in the bottle to prevent, for example, nipple collapse and colic. Ex[1005],¶~~445~~450; Ex[1010], 1:24-45,3:16-23,3:28-33; Ex[1008],[0005],[0007],[0019],[0048],[0061]. A POSA reading *Ishimaru* and *Atkin* would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. Ex[1005],¶~~446~~451. A POSA would expect that modifying *Ishimaru's* nipple in view of *Atkin* would provide a more reliable, aesthetically suitable solution to equalize pressure in the bottle. Ex[1005],¶~~446~~451. Moreover, a POSA would have had a reasonable expectation of success in combining these designs because each nipple and vessel would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. *Id.*

After considering the disclosures of both *Ishimaru* and *Atkin*, a POSA at the time of the priority date of the '244 Patent would have combined one or more of these features for the reasons stated above and would have been motivated to design a nipple and collar similar to the following:



Ex[1005],¶~~439~~444. Indeed, this design is largely the breast-like nipple of *Ishimaru* with its stated advantages secured to an ergonomic vessel of *Atkin* with its associated teachings regarding collar shape for attaching a nipple to the ergonomic vessel, with its stated advantages, working as expected.

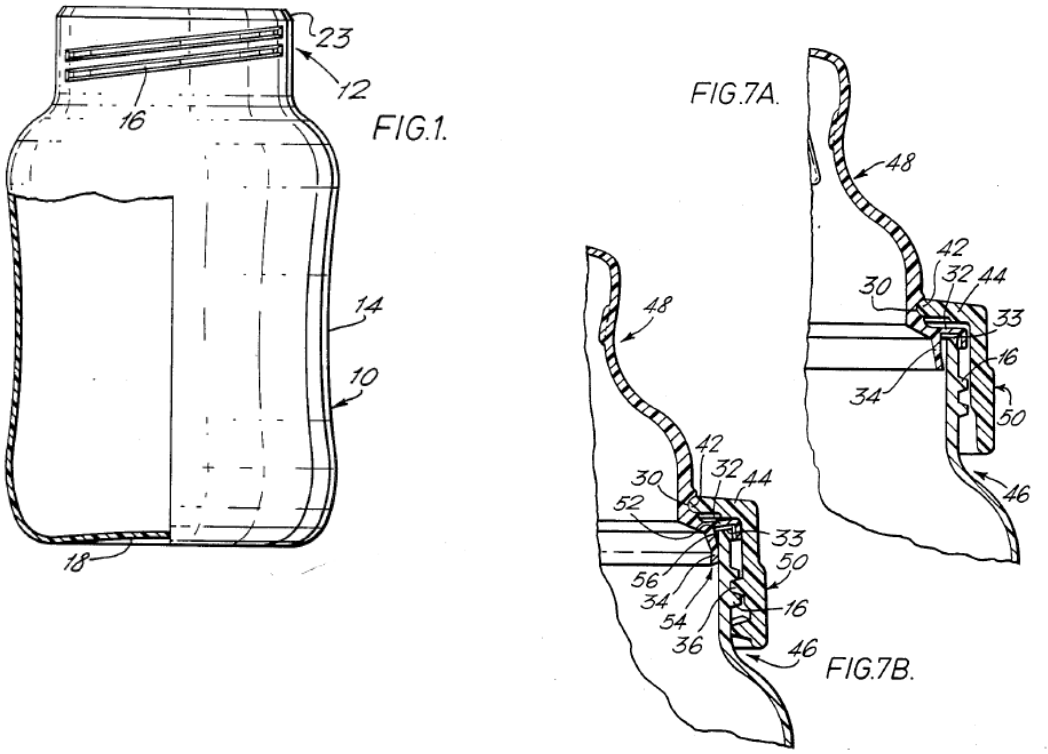
2. Claim 21

(a) **21[Pre]**

This limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* VIII.A.2.(a). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005],¶¶~~447~~ 452-457.

(b) **21[A]: a container comprising a varying internal circumference and an opening into the container; and,**

Ishimaru does not explicitly disclose "***a container comprising a varying internal circumference and an opening into the container***," but it would have been obvious to a POSA to modify the vessel disclosed in *Ishimaru* to include multiple internal circumferences. Ex[1005],¶¶~~453-461~~458-466. Such a modification is taught by *Atkin* in light of *Atkin's* Figs., 1, 7A, 7B, and teachings of a bottle with "a main portion 10 and a neck portion 12. *Id.*, Both portions are generally cylindrical, but the main 40 portion is marginally waisted, as indicated at 14, to facilitate hand holding." Ex[1010],4:38-41. Specifically, *Atkin* describes its bottle as having "a main portion mean diameter of about 6.75 cm (7 cm maximum top and bottom to 6.5 cm at the centre of the waist) and main portion height to the full capacity mark of about 8 cm." *Id*.,4:50-57; s*ee* Ex[1010],Figs. 1, 7a-7b (reproduced below), 1:12-23; 2:52-62; 1:55-66 (describing a baby bottle having a main portion and a neck portion with different cross-sectional areas), 4:44-63; *Supra* §VIII.B.1; Ex[1005],¶¶~~444-445~~449-450.



FIGS. 1, 7A, 7B of Atkin

A POSA would have been further motivated to implement these elements of *Atkin*'s nipple and vessel design into *Ishimaru*'s ~~-~~design—achieving a bottle with multiple diameters that would be more resistant to tipping, be better for hand holding (ergonomics), and be better suited to couple to *Ishimaru's* wider, realistic, breast-like nipple. *Supra* §VIII.B.1; Ex[1005],¶¶~~444-445~~449-4450. A POSA reading *Ishimaru* and *Kurkjian* would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. *Id*.,¶446. Moreover, a POSA would have had a reasonable expectation of success in combining these designs because each nipple and vessel would work as in their

respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. *Id.*

(c) **21[B]: a cover assembly configured to couple to the container over the opening, the cover assembly comprising:**

This limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* VIII.A.2.(c). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005],¶¶~~463-~~468-473.

(d) **21[C]: i. a nipple comprising a mouthpiece configured to allow liquid flow through the nipple to an aperture,**

This limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* VIII.A.2.(d). The *Ishimaru-Atkin* combination further renders the element obvious, under either the Petitioner or the Patent Owner's construction of "mouthpiece." Ex[1005],¶¶~~469-475~~474-480.

(e) **21[D]: a flex region configured to allow flex of the mouthpiece towards and away from a lower portion of the nipple, the mouthpiece defining a bite region,**

This limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* VIII.A.2.(e). The *Ishimaru-Atkin* combination further renders the element obvious, under either the Petitioner or the Patent Owner's construction of "mouthpiece." Ex[1005],¶¶~~476-477~~481-482.

(f) **21[E]: the mouthpiece defining a bite region,**

This limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* VIII.A.2.(f). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005],¶¶~~478-484~~483-489.

(g) **21[F]: and a flange depending from the lower portion of the nipple defining the nipple circumference furthest from the aperture; and**

This limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* VIII.A.2.(g). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005],¶¶~~485-~~490-495.

(h) **21[G]: ii. a collar configured to removably couple to the nipple to seal over the opening of the container; and**

This limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* VIII.A.2.(h). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005],¶¶~~491-497~~496-502.

(i) **21[H]: wherein the collar and the lower portion of the nipple together define a downward domed shape that extends outwardly and downwardly from the flex region of the nipple towards a widest circumferential edge of the collar.**

Ishimaru does not explicitly disclose this limitation, but it would have been obvious to a POSA to modify the nipple and detachable feeding bottle mounting cap disclosed in Ishimaru to together define a downward domed shape that extends outwardly and downwardly from the flex region of the nipple towards a widest circumferential edge of the collar. Ex[1005],¶¶~~498-501~~503-506. A POSA would

understand that such an obvious modification would further advance *Ishimaru*'s goal of designing a nipple similar to a human breast (e.g., one with a general domed shape). Ex[1005],¶¶~~498-499~~503-504. Such a modification is taught by *Atkin*: *Atkin* teaches: "The preferred bottle has a capacity in the range 30 to 35 ml per cm height, ***the neck having a mean diameter of not less than 0.725 of the main portion diameter.*** The preferred dimensions are a mean diameter of not less than 6 cm for the main cylindrical portion and a neck portion diameter of not less than 4.25 cm. It will thus be appreciated that a bottle having these dimensions for a corresponding total capacity, is shorter and squatter than known bottles. It therefore sits more stably when stood on its base, and is less liable to being tipped over. In addition, the wider neck facilitates the insertion of food ingredients, as by means of a scoop, and is more readily cleaned internally after use. Furthermore, a larger diameter neck ***enables the use of a larger teat, enabling use of the bottle by the baby more closely resembling natural feeding***. Ex[1010],3:10-27 (emphasis added). This downward dome shape would move towards the edge of the collar that has the widest circumference, and a POSA would be motivated to design this collar with this shape in order to create a nipple and collar that more closely resemble a human breast. Ex[1005],¶~~499~~504.

A POSA would have been further motivated to implement these elements of *Atkin*'s nipple and vessel design into the nipple and vessel design of *Ishimaru*'s design— in order to design "an artificial nipple 100 has a shape similar to a mother's

breast and nipple." Ex[1008],[0040]; *see also id.*,[0005] ("By the way, the artificial nipple 10 is mounted to a feeding bottle containing milk, etc., and is given to the infant in place of the mother's breast milk, so it is desirable that the artificial nipple 10 should be as similar to the mother's nipple as possible"); Ex[1010],3:10-27 ("a larger diameter neck ***enables the use of a larger teat, enabling use of the bottle by the baby more closely resembling natural feeding***."); *Supra* §VIII.B.1; Ex[1005],¶~~443-445~~448-450. Such a design would represent a more domed, smoothly curved shape that more closely resembles a mother's breast. A POSA reading *Ishimaru* and *Kurkjian* would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. *Supra* §VIII.B.1; Ex[1005],¶~~446~~451. Moreover, a POSA would have had a reasonable expectation of success in combining these designs because each nipple and vessel would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. *Id.*

3. Claim 22

(a) **The drinking vessel of claim 21, wherein the container is a trainer cup.**

Ishimaru does not explicitly disclose this limitation, but it would have been obvious to a POSA to modify the vessel in *Ishimaru* to comprise a trainer cup. Ex[1005],¶¶~~502-505~~507-510. A POSA would understand that using *Ishimaru*'s

nipple on different vessels would represent an obvious modification that would have additional commercial value and applicability to additional markets besides baby bottles. For example, a POSA would be motivated to provide a realistic, breast-like nipple on a vessel that an infant or toddler could hold. Such a design would allow a toddler to learn how to hold their vessel while still obtaining the benefits of the nipple described herein. *Supra* §VIII.B.1; Ex[1005],¶¶~~502-503~~507-508. Such a modification is taught by *Atkin*: "trainer spout has a rim portion 66 at its open end which is stopped against the shoulder 38 on the annular cap when the trainer is push fitted into position. It also has an upstanding eccentric spout 68 having small apertures 70 in its end through which baby feed can be taken by a baby with a sucking and/or drinking technique. Ex[1010],7:36-42. Specifically, a POSA would have understood *Atkin*'s "cup trainer" to teach a trainer cup. *See* Ex[1005],¶~~502~~507; [1010] at 4:24, Fig. 10 (reproduced below).

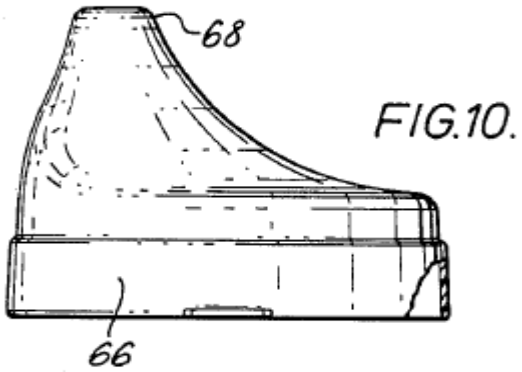


FIG. 10 of Atkin

A POSA would have been further motivated to implement these elements of *Atkin*'s nipple and vessel design into the nipple and vessel design of *Ishimaru*'s design— in order to apply "an artificial nipple 100 has a shape similar to a mother's breast and nipple" to a wide variety of vessels, including bottles, trainer cups, sippy cups, or other similar applications. Ex[1008],[0040]; Ex[1010],3:10-27 ("a larger diameter neck ***enables the use of a larger teat, enabling use of the bottle by the baby more closely resembling natural feeding***."); *Supra* §VIII.B.5; Ex[1005],¶~~502~~507. A POSA reading *Ishimaru* and *Atkin* would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. *Supra* §VIII.B.1; Ex[1005],¶~~446~~451, Moreover, a POSA would have had a reasonable expectation of success in combining these designs because each nipple and vessel would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. *Id.*

4. Claim 23

(a) **The drinking vessel of claim 21, wherein the container comprises a material more rigid than the nipple material.**

This limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* VIII.A.3(a). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005],¶¶~~506-510~~511-515.

5. Claim 24

(a) **The drinking vessel of claim 21, wherein the cover assembly further comprises an air vent apart from the mouthpiece.**

This limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* VIII.A.4(a). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005],¶¶~~510~~ 515-520.

6. Claim 26

(a) **The drinking vessel of claim 21, wherein the mouthpiece is located in the center of the nipple.**

This limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* VIII.A.5(a). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005],¶¶~~516~~ 521-526.

7. Claim 27

(a) **The drinking vessel of claim 21, wherein the teat portion comprises a resilient material.**

This limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* VIII.A.6(a)[27]. The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005],¶¶~~522~~ 527-532.

IX. SECONDARY CONSIDERATIONS

Patent Owner has not identified any evidence of secondary considerations of non-obviousness tied to the claimed invention of the ’244 Patent. Accordingly, there is no objective evidence of non-obviousness that might warrant a finding that claims

21-24, 26, and 27 are patentable. Ex[1005],¶~~493~~498. Furthermore, even if Patent Owner were able to establish any secondary considerations and a proper nexus, any such secondary considerations would be insufficient to overcome the strong case of obviousness presented here. *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).

X. CONCLUSION

Petitioner respectfully request institution of *inter partes* review and cancelation of claims 21-24, 26, and 27 of the ’244 Patent as unpatentable.

Respectfully,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105, the undersigned certifies that on the 13 day of January 2023, the foregoing was provided via Priority Mail Express or by means at least as fast and reliable as Priority Mail Express, postage prepaid, to the Patent Owner and its known representatives by serving the correspondence address of record for the U.S. Patent No. 11,207,244 holder and the patent holder's counsel:

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Date: January 13, 2023

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITATION, TYPEFACE REQUIREMENTS, AND TYPE STYLE REQUIREMENTS

1. This Petition complies with the type-volume limitation of 14,000 words, comprising ~~8,902~~9,090 words, excluding the parts exempted by 37 C.F.R. § 42.24(a).

2. This Petition complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word 2016 in 14-point Times New Roman.

Respectfully submitted,

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