

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NANOBEBE US INC.,
Petitioner,

v.

MAYBORN (UK) LIMITED,
Patent Owner

Case IPR2023-00465
Patent 11,207,244

DECLARATION OF TIMOTHY P. FLETCHER

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I, Timothy P. Fletcher, declare that:

I. INTRODUCTION AND SCOPE OF WORK

1. I have been retained by Fish & Richardson P.C. as a technical expert on behalf of Mayborn (UK) Limited (“Mayborn” or “Patent Owner”). I understand that Nanobebe US Inc. (“Nanobebe” or “Petitioner”) filed a petition for *inter partes* review (“IPR”) of claims 21-24, 26, and 27 (“the Challenged Claims”) of U.S. Patent No. 11,207,244 (“the ’244 Patent”) (EX1003).

2. I have been asked to provide my independent analysis of the ’244 Patent in light of the prior art publications cited below and my knowledge and experience in this field during the relevant time period. I have been asked to consider what a person of ordinary skill in the art at the time of the invention of the ’244 Patent (a “POSITA”; refer to ¶¶33-34) would have understood from the teachings of the ’244 Patent, including scientific and technical knowledge related to the ’244 Patent. I have also been asked to consider whether the references recited in the Petition render obvious the inventions described in the Challenged Claims of the ’244 Patent.

3. I am not an employee of Mayborn. My first employer, Stahlwood Mfg. Co., was acquired by Mayborn during my employment (July 1989 to December 1990). After that point, I worked for Mayborn’s competitors, Gerber and Evenflo. I also worked for several of Mayborn’s competitors as a consultant at Gamil Design.

4. I received no compensation for this declaration beyond my normal hourly compensation based on my time actually spent analyzing the '244 Patent, the prior art publications cited below, and the issues related thereto. I will not receive any added compensation based on the outcome of any IPR or other proceeding involving the '244 Patent.

II. QUALIFICATIONS

5. I have summarized in this section my educational background, career, publications, and other relevant qualifications. My full curriculum vitae is attached as Appendix A. I am qualified to testify to the knowledge and understanding of a POSITA during the timeframe leading up to the priority date of the '244 Patent in 2005. *See infra* Section VI (discussing the level of ordinary skill). Indeed, I have personal knowledge and experience in working directly with many such persons in the field during that timeframe. I have relied on my review and analysis of the prior art cited in the Petition, information provided to me in connection with this case, and information I have independently reviewed. *See infra* Section IV (discussing materials considered).

6. I am currently an industrial designer and president of One BusinessDesign, LLC in Pittsburgh, Pennsylvania. Industrial designers are graduates of schools of design either from a fine arts orientation or a product development orientation. I come from the product development orientation. The

Industrial Designers Society of America (“IDSA”) defines industrial design as: “the professional service of creating and developing concepts and specifications that optimize the function, value and appearance of products and systems for the mutual benefit of both user and manufacturer.” Appendix B.

7. I earned my Bachelor of Environmental Design Degree in Product Design from North Carolina State University in 1989 and my Master of Design Degree in Advanced Strategies at the Hong Kong Polytechnic University in 2008. Over the past 30 years I have worked as an industrial designer, product designer and developer, professor of industrial design courses, speaker, and consulting industrial designer. I am the named inventor on 17 design and utility patents in the United States as well as one patent in Europe and one patent in Australia.

8. I have been employed as an industrial designer and product development manager for the following consumer/commercial products companies: Stahlwood Manufacturing Co.; Gerber Products Company; DP; Evenflo Company, Inc; Elumens; DAKA Designs; and Performance Bike. I have seen both sides of the industrial design industry, both as an industrial designer working to design new products and as a product development manager working to develop products and improve the process of product development and creation. As an industrial design consultant, I have designed consumer/commercial products or new product strategies for the following firms: Gamil Design, Daedalus, and One BusinessDesign.

As a product development manager, I have sourced and inspected manufacturing plants in the United States, China and Thailand, and I have been involved in troubleshooting manufacturing issues in the development of consumer/commercial products.

9. In addition to the experience outlined above, I also have significant design experience in the creation and development of nipples and bottles for infants and toddlers.

10. At Gerber Products Company, I was involved in a research project with Dr. Arthur J Nowak of the University of Iowa Department of Pediatric Dentistry where infants were imaged through sonography to see how their physiology changed between different types of feeding methods. By conducting this research, which Gerber partially funded, I gained an understanding of infant feeding physiology that has informed and improved my design work in the area of infant feeding products.

11. Also at Gerber, I designed an easy grip bottle and a nipple system that utilized Gerber's functional nipple elements with a European look and feel. Photos of this bottle and nipples are depicted below:



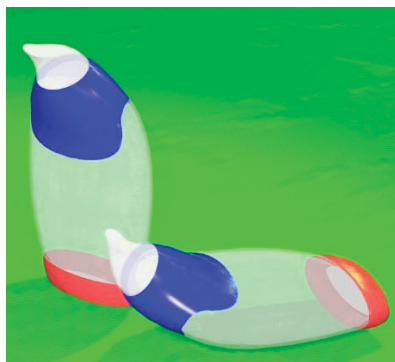
12. At Evenflo, I designed bottle concepts for the international division to give them a higher end design for the European market. Photo of these concepts are depicted below:

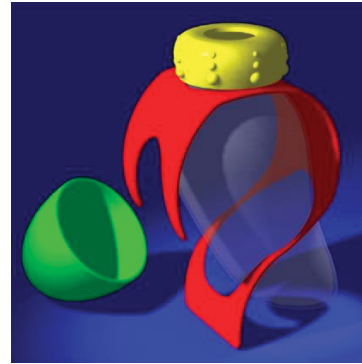
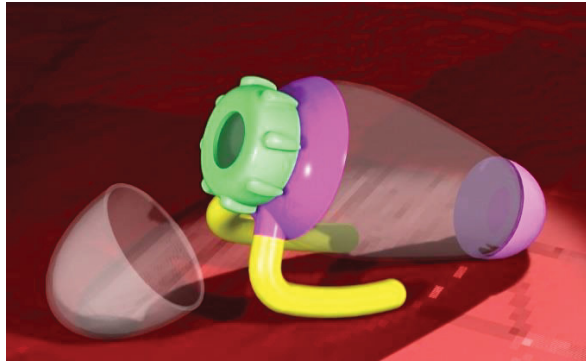


13. At Gamil Design, I designed a new and innovative nipple and bottle system that received the following utility patents: US 6,253,935 B1 and EP 1 093 785 A2. Images of the design for this nipple bottle system are depicted below:



14. Also at Gamil Design, I designed the visual appearance of several bottles, as a concept for Rex Holdings, Ltd. (Thailand). These designs were used in proposals to U.S. and European infant products brands. Several images of the concepts are depicted below:





15. In addition to all the nipple/bottles above, I have extensive experience in designing spill-proof cups for toddlers, which are also liquid feeding products that require an understanding of the changing feeding needs of infants and toddlers.

16. Beginning with my work at Evenflo in March 1996, I have worked with attorneys to prepare drawings for U.S. design patents. At Gamil Design and Elumens, I was involved in the preparation of drawings and text for multiple U.S. and World Intellectual Property Organization (“WIPO”) utility patent applications. I also have developed design patent drawings for clients.

17. I have taught industrial design courses at North Carolina State University, The Hong Kong Polytechnic University and Carnegie Mellon University. Courses include, but are not limited to, Manufacturing Materials and Processes, Professional Practice and Industrial Design Studio Courses, the latter of which included material relating to the form and preparation of design drawings.

18. I was an invited speaker for the 2017 Design in Plastics conference put on by the Society of Plastics Engineers. My presentation was titled Visual

Intellectual Property: The Value of Design Patents & Trade Dress. In the presentation, I gave a brief history of design patents and trade dress, followed by a more in-depth analysis of patent application strategies as well as an explanation of design patent and trade dress registration and litigation. In 2006, the Danish Patent and Trademark Office invited me to speak, and I provided a presentation titled IP as the Basis of Business for Innovative Companies in Asia. In this presentation, I used case studies to explain alternative methods of protecting intellectual property from copying manufacturers in China.

19. I was inducted into the IDSA Academy of Fellows in 2009. The criteria for induction are: the Board of Directors may confer, by a two-thirds majority vote, a fellowship membership to a member in good standing who has earned the special respect and affection of the membership through distinguished service to the industrial design profession.

20. Based on my experience and education, I believe that I am qualified to opine as to the knowledge and level of skill of a POSITA at the time of the '244 Patent (which I further describe below), in addition to the general state of the art during that time.

III. MODIFIED DIAGRAMS

21. Throughout my declaration, I use the term “modified” or “modified diagram.” The definition of this term includes the addition of lines in an image. An

example of addition would be taking an image from a utility patent, and adding lines to a sectional view that were left out but needed in order to fully understand said sectional view.

IV. MATERIALS CONSIDERED

22. My analyses set forth in this declaration are based on my experience as an industrial designer and my work in the field of designing infant feeding products. As part of my independent analysis for this declaration, I have considered the following: the background knowledge/technologies that were commonly known to persons of ordinary skill in this field during the time before the '244 Patent; my own knowledge and experiences gained from my work experience in the field; my experience in teaching and/or advising others in that subject; and my experience in working with others involved in the field. In addition, I have analyzed the following publications and materials:

- Petition for *Inter Partes* Review of U.S. Patent No. 11,207,244 (Case No. IPR2023-00465)
- EX1003: U.S. Patent No. 11,207,244 (“the '244 Patent”)
- EX1004: Prosecution History of the '244 Patent
- EX1005: Declaration of Mr. Brian Silver
- EX1008: English Translation of J.P. Patent No. 2001-299877 (“Ishimaru”)
- EX1009: U.S. Patent No. 2,093,730 (“Kurkjian”)
- EX1010: E.P. Patent Pub. No. 0,151,862 (“Atkin”)

- EX2008: Markman Order, *Nanobebe US Inc. v. Mayborn (UK) Limited et al.*, Case No. 1:21-cv-08444 (S.D.N.Y.)
- EX2024: U.S. Patent No. 6,161,710 (“Dieringer”)
- EX2029: Oxford Dictionary of English, Second Edition, Revised (2005) (excerpt)
- EX2031: Nipple confusion: Toward a formal definition, Marianne Neifert, MD, et al. (1995) (excerpt)
- EX2032: Declaration of Steve Parkin

V. LEGAL STANDARDS

23. I understand Petitioner argues that certain claims of the ’244 Patent are unpatentable as allegedly rendered obvious in view of combinations of references. I am not a lawyer and do not provide any legal opinions, but I have been advised that certain legal standards are to be applied by technical experts in forming opinions regarding meaning and validity of patent claims. I have applied the legal standards described below, which were provided to me by counsel for the Patent Owner.

24. It is my understanding that assessing the validity of a U.S. patent based on a prior art analysis requires two steps. First, one must construe the terms of the patent claims to understand what meaning one of ordinary skill in the art would have given the terms. Second, after the claim terms have been construed, one may then assess validity by comparing a patent claim to the “prior art.” I understand that the teaching of the prior art is viewed through the eyes of a POSITA at the time the invention was made. My analysis as to what constitutes a relevant POSITA is set

forth below. For purposes of my independent analysis at this stage, I have assumed that the references cited by the Petitioner in this proceeding are “prior art” even though some may not qualify as such under the law.

A. Obviousness

25. I understand that Petitioner contends that the challenged claims are invalid as “obvious.” My understanding is that a patent claim is invalid as obvious only if the subject matter of the claimed invention “as a whole” would have been obvious to a POSITA at the time the invention was made. To determine the differences between a prior art reference (or a proposed combination of prior art references) and the claims, the question of obviousness is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. Also, obviousness grounds cannot be sustained by mere conclusory statements. Rather, it is necessary to provide some articulated reasoning with rational underpinning to support the legal conclusion of obviousness.

26. I understand that a patent claim that comprises several elements is not proved obvious by simply showing that each of its elements was independently known in the prior art. In my evaluation of whether any claim of the ’244 Patent would have been obvious, I considered whether the Petition, or any evidence submitted in this proceeding, presented an articulated reason with a rational basis

that would have motivated a POSITA to combine the elements or concepts from the prior art in the same way as in the claimed invention.

27. It is my understanding that there is no single way to define the line between true inventiveness on one hand—which is patentable—and the application of common sense and ordinary skill to solve a problem on the other hand—which is not patentable. For instance, factors such as market forces or other design incentives may be the source of what produced a change, rather than true inventiveness.

28. I understand that the decision-maker may consider whether the change was merely the predictable result of using prior art elements according to their known functions, or whether it was the result of true inventiveness. The decision-maker may also consider whether there is some teaching or suggestion in the prior art to make the modification or combination of elements recited in the claim at issue. Also, the decision-maker may consider whether the innovation applies a known technique that had been used to improve a similar device or method in a similar way. The decision-maker may also consider whether the claimed invention would have been obvious to try, meaning that the claimed innovation was one of a relatively small number of possible approaches to the problem with a reasonable expectation of success by those skilled in the art.

29. I have been instructed by counsel that if any of these considerations are relied upon to reach a conclusion of obviousness, the law requires that the analysis

of such a consideration must be made explicit. I understand that the decision-maker must be careful not to determine obviousness using the benefit of hindsight and that many true inventions might seem obvious after the fact. I understand that the decision-maker should consider obviousness from the position of a POSITA at the time the claimed invention was made and that the decision-maker should not consider what is known today or what is learned from the teaching of the patent.

30. I understand that in order to determine whether a patent claim is obvious, one must make certain factual findings regarding the claimed invention and the prior art. Specifically, I understand that the following factors must be evaluated to determine whether a claim is obvious: the scope and content of the prior art; the difference or differences, if any, between the claim of the patent and the prior art; the level of ordinary skill in the art at the time the claimed invention was made; and, if available, the objective indicia of non-obviousness, also known as “secondary considerations.”

31. I understand that the secondary considerations include: commercial success of a product due to the merits of the claimed invention; a long felt need for the solution provided by the claimed invention; unsuccessful attempts by others to find the solution provided by the claimed invention; copying of the claimed invention by others; unexpected and superior results from the claimed invention; acceptance by others of the claimed invention as shown by praise from others in the

field or from the licensing of the claimed invention; teaching away from the conventional wisdom in the art at the time of the invention; independent invention of the claimed invention by others before or at about the same time as the named inventor thought of it; and other evidence tending to show obviousness.

32. I understand that, to establish a secondary consideration, the evidence must demonstrate a nexus between that secondary consideration and the claimed invention.

VI. PERSON OF ORDINARY SKILL IN THE ART

33. I understand that the teaching of the prior art is viewed through the eyes of a person of ordinary skill in the art (“POSITA”). My analysis is thus based on the perspective of a POSITA having this level of knowledge and skill at the relevant time of the invention.

34. I have been informed that the priority date of the ’244 Patent is no later than June 29, 2005—the earliest claimed priority date listed on the face of the ’244 Patent—and I have applied this timeframe as being the relevant time for the perspective of a POSITA. I also understand that Petitioner’s expert, Mr. Silver, articulated the level of ordinary skill as “a Bachelor of Science Degree in mechanical engineering, industrial design, or [a] similar technical field, and with 2 or more years of practical experience related to the design of infant feeding products or [a] comparable industry.” EX1005 (Silver Dec.) ¶47. I possess the level of skill that

Mr. Silver outlined and, for simplicity, I have applied that level of skill for purposes of my analysis in this proceeding. In doing so, however, I do not concede the validity of Mr. Silver's skill level articulation, and I reserve the right to articulate a different level of skill in other proceedings involving the '244 Patent.

VII. CLAIM INTERPRETATION

A. Legal Principles and Context

35. For purposes of my analysis in this IPR proceeding, I understand that the terms that appear in the claims of the '244 Patent should be interpreted according to their plain and ordinary meaning under the *Phillips* standard. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (*en banc*). In determining the ordinary and customary meaning, I understand that the words of a claim are first given the plain meaning that those words would have had to a POSITA at the time of the alleged invention. I also understand that the structure of the claims, the specification and file history also may be used to better construe a claim insofar as the plain meaning of the claims cannot be understood. Moreover, I understand that even treatises and dictionaries may be used, albeit under limited circumstances, to determine the meaning attributed by a POSITA to a claim term at the time of filing. I have followed this approach in my analysis.

36. I also understand that the words of the claims should be interpreted as they would have been interpreted by a POSITA at the time the invention was made (not today). For purposes of my analysis here, I have used June 29, 2005 as the date

of invention because it is the earliest claimed priority date listed on the face of the '244 Patent.

B. Construed Claim Terms

37. I understand the '244 Patent is at issue in a parallel proceeding at the United States District Court for the Southern District of New York (Case No. 1:22-cv-00694). I also understand the District Court issued an Order (EX2008) on April 18, 2023 construing a number of claim terms recited in the '244 Patent's independent claim 21. Patent Owner's counsel informed me that the Board has adopted and applied the District Court's claim construction analysis in this proceeding. I have reviewed the Order (EX2008) and will also apply the District Court's claim construction analysis regarding the following terms:

Claim Term	Construction
"flex region"	"a region having surface characteristics that control flexing"
"mouthpiece"	"the entire part projecting generally perpendicular to the mouth of the vessel and disposed above the areola portion"
"flex of the mouthpiece towards and away from a lower portion of the nipple"	Plain meaning
"domed shape"	"wide circular bottom with an arc-shaped cross-sectional profile"

VIII. GROUND 1: THE ISHIMARU-KURKJIAN COMBINATION

A. Ishimaru's nipple does not have a "flex region"

38. The '244 Patent's independent claim 21 recites "a flex region configured to allow flex of the mouthpiece towards and away from a lower portion

of the nipple.” EX1003 (’244 Pat.), 8:7-9. I’ve highlighted this claim language in context below:

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.

39. Ishimaru’s nipple does not have the ’244 Patent’s “flex region.” Rather, as I will explain in the subsections that follow, Ishimaru discloses a groove-like pattern that extends across the nipple, from the teat to the trunk, in an effort to make the nipple elongate “more evenly.” Ishimaru’s groove-like pattern is not confined to any particular “region” of the nipple, it does not control flexing like the ’244 Patent’s “flex region” does, and Petitioner does not explain how elongating “more evenly” would promote the flexing action claimed in the ’244 Patent—i.e., “flex of the mouthpiece towards and away from a lower portion of the nipple.”

1. The '244 Patent's "flex region" is the region that controls flexing between the "mouthpiece" and the nipple's "lower portion"

40. As I've explained, my analysis applies the District Court's construction of the claim term "flex region" as "a region having surface characteristics that control flexing." Based on my review of the Order, I understand the District Court concluded that the phrase "***controls*** flexing" was appropriate for the construction based on certain passages from the '244 Patent indicating that the claimed "flex region" improves on the prior art by ensuring that "the point of flexure is clearly defined" and "that the flexing is happening in a particular manner." EX2008 (Order) at 26 (citing EX1003 ('244 Pat.), 1:37-48, 2:15-17). I have reviewed these passages, and I agree with the District Court.

41. Regarding the particular manner in which the flex region controls flexing, I note that it is defined by the surrounding claim language in independent claim 21. The claim language says the controlled flexing involves "flex[ing] of the mouthpiece towards and away from a lower portion of the nipple." EX1003 ('244 Pat.), 8:7-10. Thus, I conclude that the '244 Patent's "flex region" is the nipple region that controls flexing between the "mouthpiece" and the "lower portion of the nipple."

2. Ishimaru’s nipple has a “groove-like pattern” extending from the teat to the trunk, which is distinct from the ’244 Patent’s “flex region”

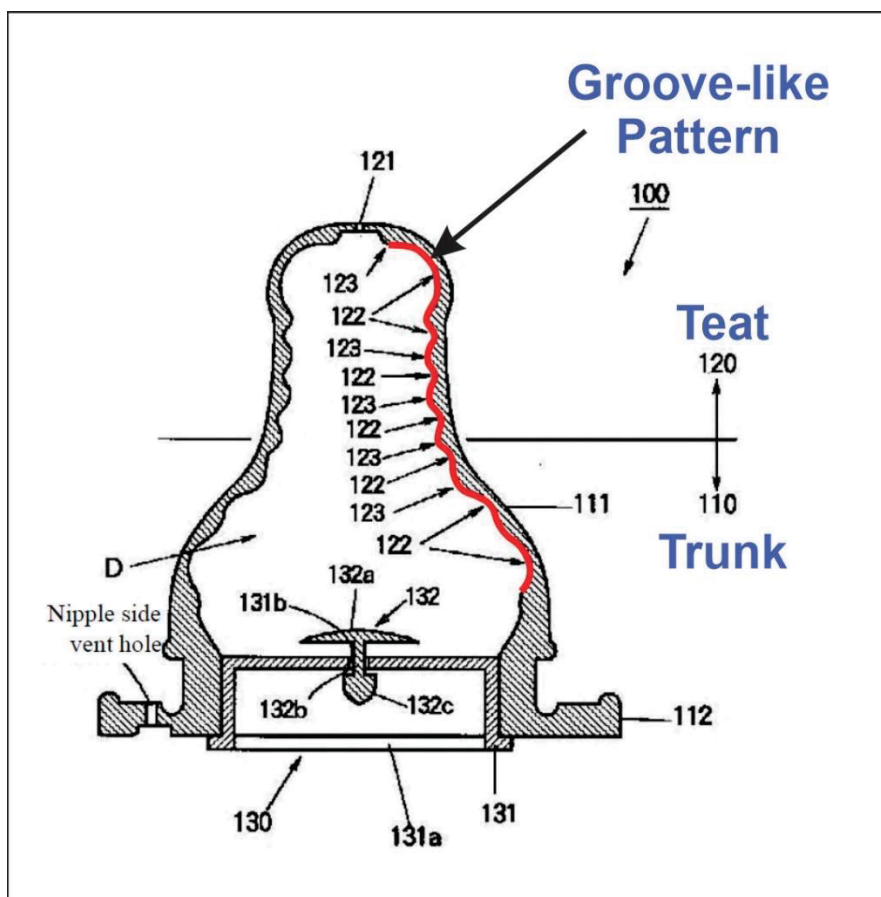
42. The Petition relies on Ishimaru alone in its analysis of the ’244 Patent’s “flex region” limitation, with no mention of Kurkjian. *See* Pet., 35-37 (discussion under the “21[D]” heading). According to the Petition, “Ishimaru discloses or renders obvious this limitation.” Pet., 36. Although this opening sentence says “discloses *or* renders obvious,” the substantive analysis makes no mention of any proposed modifications or changes to Ishimaru. The Petition relies solely on what Ishimaru discloses.

43. The Petition says “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.” Pet., 36 (citing EX1008 (Ishimaru) at [0008], [0041]). The Petition also notes that Ishimaru refers to the full collection of seven thin-walled portions as a “groove-like pattern” that causes “the teat portion 120 and nipple trunk 110 [to] be elongated in the mouth of the infant 200.” Pet., 36 (quoting EX1008 (Ishimaru) at [0041], [0046]). Mr. Silver’s analysis likewise focuses on Ishimaru’s “groove-like pattern” of thin-walled portions “at seven annular locations, as shown in Fig. 1.” EX1005 (Silver Dec.) ¶387 (quoting EX1008 (Ishimaru) at [0041]).

44. In short, Petitioner and Mr. Silver allege that Ishimaru's groove-like pattern of seven thin-walled portions constitutes the claimed "flex region." For at least the three reasons discussed below, I disagree.

45. First, a POSITA would not consider Ishimaru's groove-like pattern to constitute a "region." In Ishimaru's words, the groove-like pattern extends "***across the teat portion 120 and the nipple trunk 110,***" so that all "seven thin-walled portions 122 [can] elongate," allowing "the teat portion 120 and the nipple trunk 110 [to be] elongated ***more evenly.***" EX1008 (Ishimaru) at [0046]. Ishimaru's goal of achieving "even" elongation throughout the nipple stems from a criticism of "the conventional artificial nipple," which "does not elongate the teat portion . . . or the portion corresponding to the mammary areola." EX1008 (Ishimaru), [0004].

46. The annotated figure below demonstrates that Ishimaru's groove-like pattern extends throughout the nipple, from the teat to the trunk.



EX1008 (Ishimaru), Figure 1 (with annotations).

47. It is not hard to see why a POSITA would not view Ishimaru’s groove-like pattern as a “region.” In this context, the POSITA would understand that a “region” is a defined section or area of the nipple, and Ishimaru purposefully designed the groove-like pattern such that it is *not* confined to any particular nipple section or area. Again, Ishimaru’s groove-like pattern extends “across” the teat and trunk so that the nipple will elongate “more evenly.” EX1008 (Ishimaru) at [0046]. Ishimaru’s approach is logically divorced from the notion of a “region.”

48. The contrast between Ishimaru’s teat-to-trunk groove-like pattern and the claimed “flex region” is even more stark when viewed through the lens of the ’244 Patent. A POSITA reading the ’244 Patent would understand that the “flex region” is spatially distinct from certain other portions of the nipple. For example, independent claim 21 recites two separate regions—a “flex region” and a “bite region.” The bite region is defined by the mouthpiece, while the flex region is “configured to allow flex of the mouthpiece towards and away from a lower portion of the nipple.” The spatial distinction between the flex region and the bite region is clear from the claim language, and it is also reinforced by the ’244 Patent’s specification, which says “the flex region [is] in a non-bite area.” EX1003 (’244 Pat.), 3:56-58. Unlike the ’244 Patent’s claimed “flex region,” Ishimaru’s groove-like pattern is not spatially distinct from other regions of the nipple like the a bite region in the teat (or “mouthpiece”).

49. To summarize, a POSITA would understand that Ishimaru’s groove-like pattern does not provide the claimed “flex region” because [1] instead of being confined to any particular “region,” Ishimaru’s groove-like pattern extends throughout the nipple—i.e., “across” the teat and trunk; and [2] Ishimaru’s groove-like pattern is not spatially distinct from other regions like a bite region in the teat (or “mouthpiece”).

50. Second, Ishimaru's groove-like pattern does not control flexing to occur within any particular region because all seven of the thin-walled portions distributed across the nipple are configured to elongate. Again, Ishimaru designed the groove-like pattern this way to ensure the nipple elongates "more evenly" throughout. EX1008 (Ishimaru) at [0046]. But elongating "evenly" is not what the '244 Patent's flex region is about. Recall that the District Court settled on the "controls flexing" language in the construction based on the '244 Patent's disclosure that the "flex region" improves on the prior art by ensuring that "the point of flexure is clearly defined" and "that the flexing is happening in a particular manner." EX2008 (Order) at 26 (citing EX1003 ('244 Pat.), 1:37-48, 2:15-17). Just like that prior art, Ishimaru's groove-like pattern also leaves the point of flexure undefined because the entire nipple, from teat to trunk, is designed to flex "evenly." The purpose of the entire nipple flexing evenly in Ishimaru is effectively the opposite of the '244 patent's intent for flexing to occur in a specific place.

51. Third, Petitioner and Mr. Silver have not explained how the flexing Ishimaru describes via the groove-like pattern is consistent with the '244 Patent's claims. Rather than "allow[ing] flex of the mouthpiece towards and away from a lower portion of the nipple," as '244 Patent's claims require, Ishimaru describes "even" elongation across the entire nipple teat and trunk. It is unclear how or why a POSITA would think "even" elongation throughout the nipple would produce

flexing of the mouthpiece relative to the lower nipple portion. If a nipple elongates “evenly” throughout, such that everything flexes equivalently, a POSITA would have no reason to believe that one portion of the nipple flexes relative to another.

3. The dotted-line annotations in the Petition do not identify a “flex region” in Ishimaru’s nipple

52. As I’ve explained, the Petition provides the only substantive analysis of the “flex region” limitation for Ground 1 in a section under the heading:

(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,**

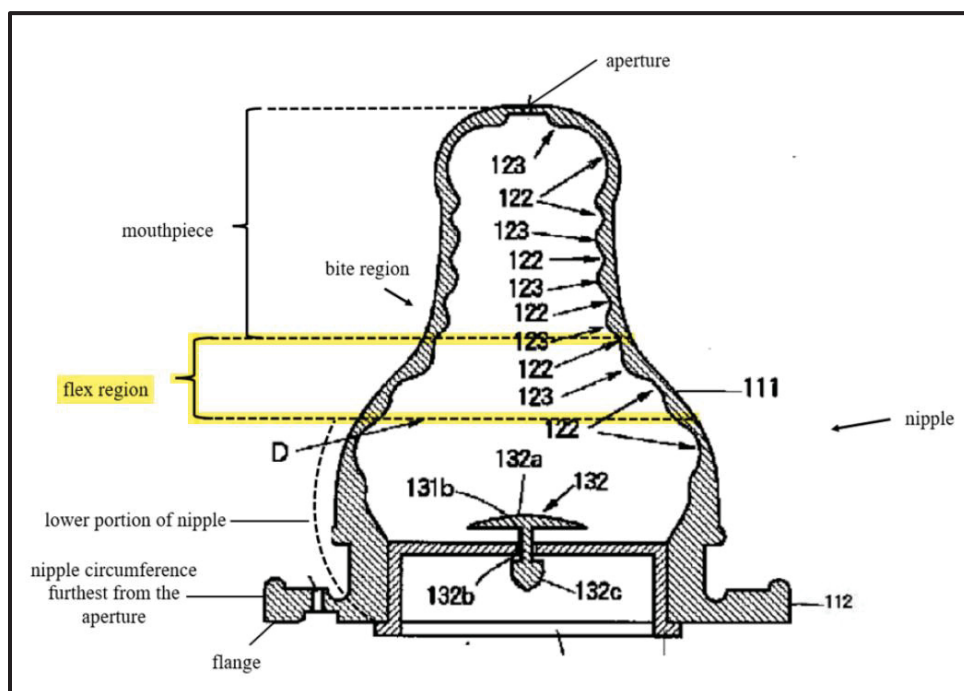
See Pet., 35-37. In that section, the Petition relies solely on Ishimaru and points specifically to the entirety of Ishimaru’s groove-like pattern of seven thin-walled portions. *See, e.g.,* Pet., 36 (“Ishimaru teaches that ‘thin-walled portions 122, 122 and 122, which are elongation portions with a thin wall, are formed in a groove-like pattern, for example, at seven annular locations, as shown in Fig. 1’”) (quoting EX1008 (Ishimaru) at [0041])).

53. The Petition, however, seems to take a different position on the “flex region” limitation in a later section under the heading:

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

See Pet., 38-39. This later section does not provide any substantive analysis of the “flex region” limitation and is, in fact, addressing a totally different limitation about the nipple “flange.” See Pet., 38-39.

54. In an annotated version of Ishimaru’s Figure 1 (reproduced below) meant to identify the flange in relationship to other aspects of the nipple, the Petition prescribes a portion of Ishimaru’s groove-like pattern as the “flex region.”



Pet., 39 (Petitioner’s annotated version of Ishimaru’s Figure 1 with yellow highlighting added to the “flex region” annotations).

55. This annotated figure includes confusing dotted-line annotations regarding the “flex region.” Unlike the Petition’s substantive analysis (*see* Pet., 35-37), which referenced *all seven* of Ishimaru’s thin-walled portions 122, i.e., the entire groove-like pattern, the dotted lines in the annotated figure seem to identify a

subset of just one and one-half thin-walled portions as the “flex region.” The Petition gives no explanation at all for why the dotted lines are drawn in these particular locations, and I do not see any reference at all to the annotated figure in Mr. Silver’s declaration.

56. A POSITA would not consider the one and one-half thin-walled portions marked in Petitioner’s annotated figure to be a “flex region.” For one, marking an alleged “flex region” by drawing a dotted line through the middle of one of Ishimaru’s thin-walled portions is dubious on its face. Partitioning Ishimaru’s groove-like pattern in this fashion appears arbitrary or, worse, done solely for the purpose of creating a strained mapping to the ’244 Patent’s claims. If anything, Petitioner’s dotted lines only accentuate the problem with Ishimaru. The dotted lines show that Ishimaru’s groove-like pattern is not limited to any particular “region” of the nipple. Rather, it extends past Petitioner’s dotted lines, into and through what Petitioner has labeled the “mouthpiece,” the “bite region,” and “the lower portion of the nipple.”

57. In any event, Ishimaru’s disclosure does not support the “flex region” mapping in Petitioner’s annotated figure. It would be clear to a POSITA that Petitioner’s identified one and one-half thin-walled portions would not control nipple flexing like the ’244 Patent’s “flex region.” There is nothing special about this truncated subset of thin-walled portions. It is no different from the remaining

five and one-half thin-walled portions across the remainder of Ishimaru's nipple. None of Ishimaru's seven thin-walled portions defines a specific point of flex, which is by design. Ishimaru wanted all of the thin-walled sections across the nipple to elongate so that the teat and trunk would "elongate more evenly." EX2008 (Ishimaru) at [0046]. It is the groove-like pattern as a whole that dictates how the nipple flexes, and as I've explained, the flexing in Ishimaru is much different than the flexing action achieved by the '244 Patent's claimed "flex region."

B. The Ishimaru-Kurkjian combination's flange does not define the "circumference furthest from the aperture," as claimed

58. The '244 Patent's independent claim 21 references "a flange depending from the lower portion of the nipple defining the nipple circumference furthest from the aperture." EX1003 ('244 Pat.), 8:10-13. I've highlighted this claim language in context below:

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.

59. The Petition relies on Ishimaru alone in its analysis of the '244 Patent's "flange" limitation, with no mention of Kurkjian. *See* Pet., 38-39 (discussion under the "21[F]" heading). According to the Petition, "Ishimaru discloses or renders obvious this limitation." Pet., 38. Although this opening sentence says "discloses *or* renders obvious," the substantive analysis makes no mention of any proposed modifications or changes to Ishimaru. The Petition relies solely on what Ishimaru discloses. This fact is significant, as I will explain below, because the Ishimaru-Kurkjian combination that the Petition relies on for the "domed shape" limitation changes the contour of Ishimaru's nipple in a manner that impacts the "flange" limitation analysis.

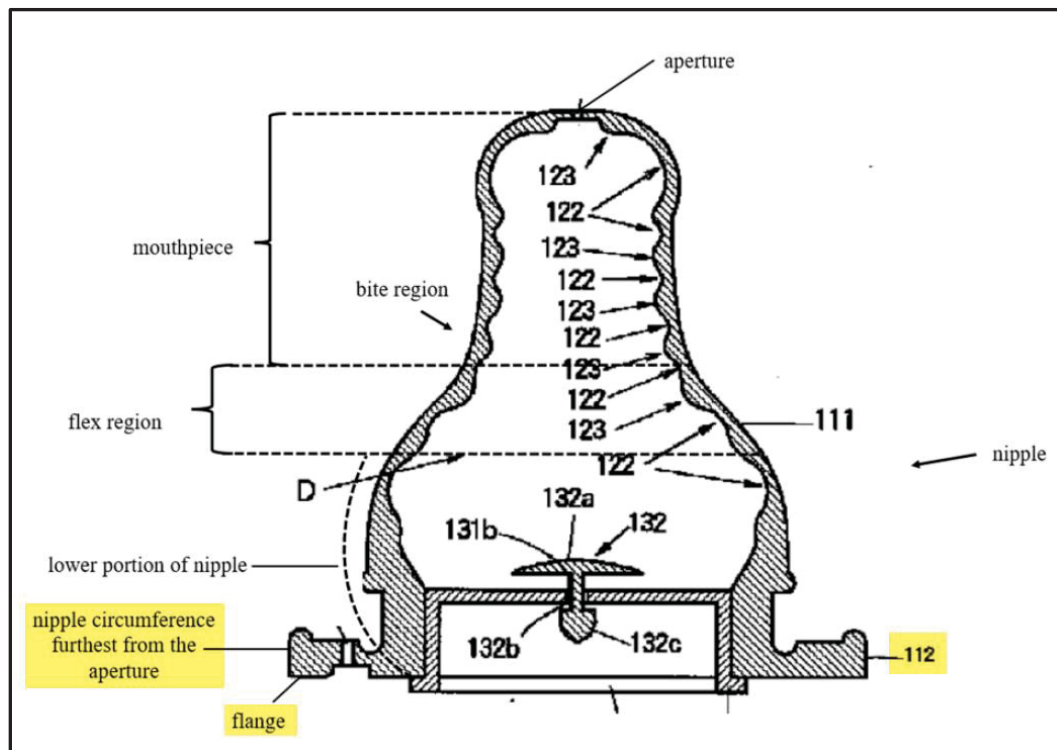
60. Beyond the opening "discloses or renders obviousness" statement, the Petition provides just three sentences of substantive analysis, which I've highlighted below:

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.

Pet., 38-39.

61. The first sentence (in red) says Ishimaru discloses a flange portion that is part of a base portion 112. The second sentence (in blue) says the base portion

112 includes the lower portion of the nipple. The third sentence (in yellow)—which is difficult to parse due to grammatical errors—seems to say that the base portion 112 is furthest from the hole at the tip of the nipple and defines a nipple circumference. The Petition provides the annotated figure below (with added highlighting) as representative of its position on the “flange” limitation.



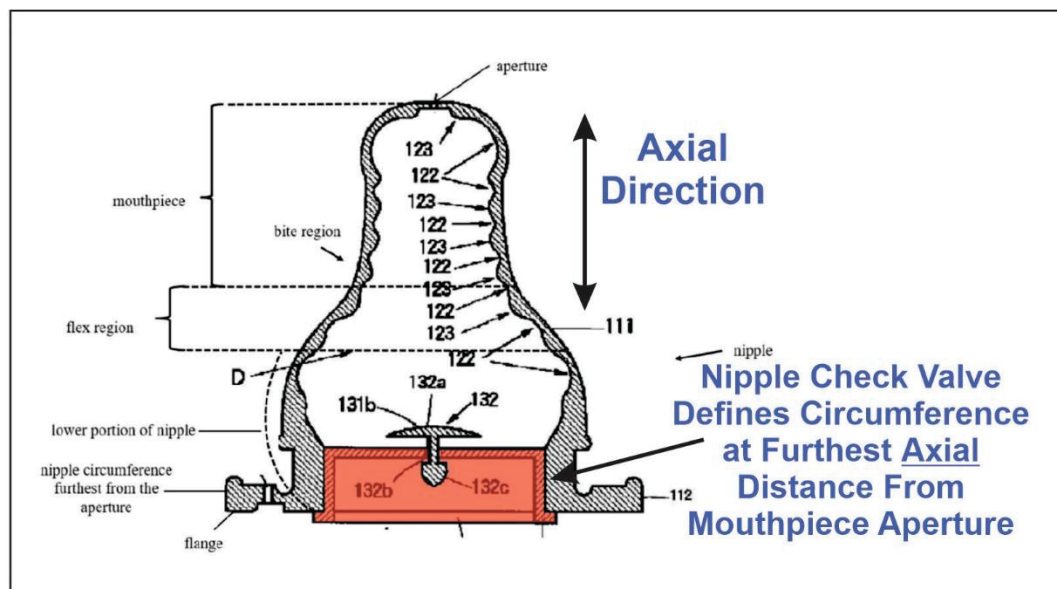
Pet., 39 (Petitioner’s annotated version of Ishimaru’s Figure 1 with yellow highlighting added to the “flange” and “nipple circumference” annotations). Mr. Silver’s declaration provides a substantially similar paragraph but without the figure annotations. *See* EX1005 (Silver Dec.) ¶398.

62. While the Petition’s terse written analysis and annotated figure identify the flange of Ishimaru’s nipple and allege that it provides the claimed “nipple

circumference furthest from the aperture,” there is no explanation of the underlying rationale for this position. Specifically, it is not clear what Petitioner and Mr. Silver think the “nipple circumference furthest from the aperture” language means and why they think Ishimaru’s Figure 1 satisfies that aspect of the “flange” limitation. The Petition and Mr. Silver’s declaration state a conclusion without articulating why that conclusion is correct. While I do not know Petitioner and Mr. Silver’s underlying rationale, it is nevertheless clear that their conclusion is wrong, no matter how the “nipple circumference furthest from the aperture [of the mouthpiece]” language is interpreted. They may interpret the language to mean the furthest *radially* from the mouthpiece aperture or the furthest *axially* from the mouthpiece aperture. Either way, Petitioner’s obviousness case fails.

63. I’ll start from the axial perspective. Even Petitioner’s annotated figure shows that the flange is not the furthest circumference from the teat (“mouthpiece”) aperture in the axial direction. That is because Ishimaru nipple includes an additional component beneath the flange and, thus, further axially from the teat aperture. This additional component (highlighted below) is a check valve 130 that seals against the lower surface of the flange. Ishimaru repeatedly refers to the check valve 130 as a component of the nipple 100, which is how a POSITA would have interpreted the design shown in Ishimaru’s figures. *See* EX1008 (Ishimaru) at [0037] (describing Figure 1’s “schematic cross-sectional view of the artificial nipple 100”

and noting that “[a] check valve 130 is provided near the base portion 112”); *see also* [0006] (“an artificial nipple having . . . an internal pressure adjusting means . . . in the aforesaid nipple trunk”), [0008] (“an artificial nipple . . . wherein the aforesaid internal pressure adjusting means is formed by a check valve”), [0061] (“[Fig. 1] It is a schematic cross-sectional view of an artificial nipple[.]”).



Pet., 39 (Petitioner’s annotated version of Ishimaru’s Figure 1 with additional annotations in red).

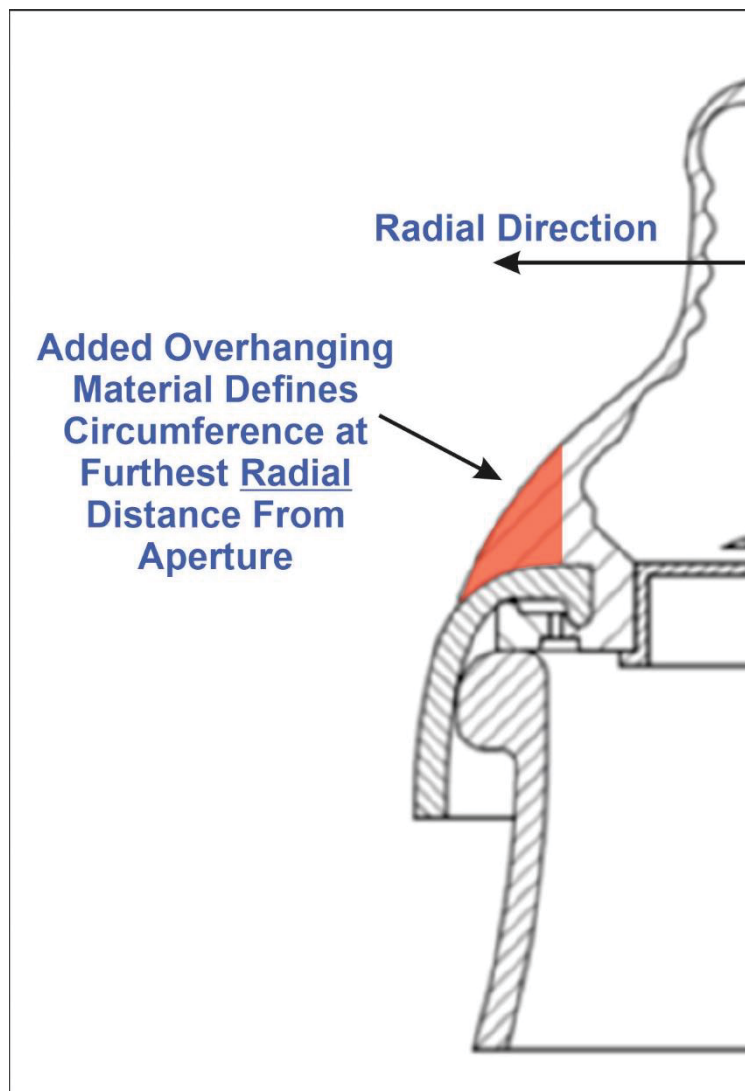
64. The purpose of Ishimaru’s check valve is to allow liquid (e.g., milk or formula) to flow from the bottle into the nipple but not from the nipple back into the bottle, which maintains the “internal pressure” of the nipple “at a constant level” during feeding. *See* EX1008 (Ishimaru) at [0038]. This pressure and flow regulating functionality requires a tight seal between the nipple and bottle, such that the opening of the check valve provides the only path for liquid flow. This is why the check

valve must seal against the lower surface of the flange, as shown in Ishimaru's Figure 1. To be clear, it is Ishimaru's check valve, not the flange, that provides the nipple circumference furthest from the aperture in the axial direction. This is true in Ishimaru's Figure 1 and also in the Ishimaru-Kurkjian combination drawing that the Petition presents. *See Pet.*, 30.

65. Because it is so clear from Ishimaru's Figure 1 that the flange is not the furthest circumference from the teat in the axial direction, one might assume that Petitioner and Mr. Silver intended to rely on the relationship between the flange and the teat in the radial direction. This makes more sense in the context of Ishimaru's Figure 1, which shows the flange as the largest nipple diameter. Given that the flange is the largest diameter and the teat is the narrowest diameter, Petitioner and Mr. Silver might reasonably assert that the flange in Ishimaru's Figure 1 is the nipple circumference that is furthest *radially* from the teat aperture.¹ But this reasoning falls through as a result of Petitioner's proposed combination of the Ishimaru and Kurkjian to address the "domed shape" limitation. To create the Ishimaru-Kurkjian

¹ While I did not need to formally construe the "nipple circumference furthest from the aperture" language to conduct my analysis, this radial interpretation is what a POSITA would have used in my opinion. The notion of a distance furthest from a particular circumference implicates the radial direction.

combination drawing in the Petition (*see* Pet., 30), Petitioner added a downwardly sloping mass of material to Ishimaru's nipple that overhangs the flange. Thus, in Petitioner's combination, as shown below, the flange is no longer the largest diameter and does not define a circumference that is furthest radially from the teat aperture. The added material defines the furthest circumference radially, not the flange.



Pet., 30 (Petitioner's combination drawing with added annotations).

66. To summarize, Petitioner and Mr. Silver each provide a terse one-paragraph analysis of the '244 Patent's "flange" limitation that fails to explain and support their conclusion that Ishimaru's Figure 1 demonstrates the "nipple circumference furthest from the aperture" feature. Even without their supporting rationale, however, I am able to discern certain fundamental flaws in their conclusion. First, the flange in Ishimaru's Figure 1 is not the furthest circumference axially from the teat aperture because there is a check valve that seals against the lower surface of the flange. Thus, the check valve, not the flange, provides the furthest nipple circumference from teat aperture in the axial direction. Second, Petitioner and Mr. Silver fail to account for their alterations of Ishimaru's nipple shape in the Ishimaru-Kurkjian combination. The combination, as depicted in the Petition (see Pet., 30), changes the shape of Ishimaru's nipple, adding a mass of material that overhangs the flange. The added mass, not the flange, provides the furthest nipple circumference from the teat aperture in the radial direction.

C. Ishimaru does not have a nipple-collar assembly defining a "domed shape," and neither does Kurkjian

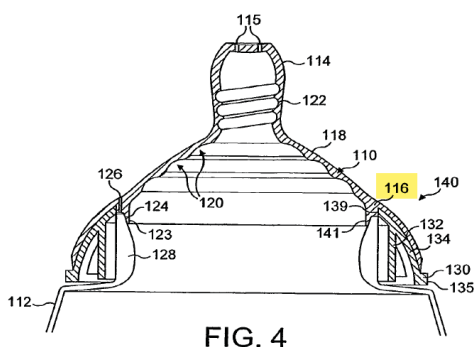
67. The '244 Patent's independent claim 21 recites, "wherein the collar and the lower portion of the nipple together define a downward domed shape." EX1003 ('244 Pat.), 8:16-20. I've highlighted this claim language in context below:

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.

68. The Petition relies on a combination of Ishimaru and Kurkjian to address the “domed shape” limitation. *See* Pet., 40-41. I will discuss the Petition’s motivation-to-combine analysis for this Ishimaru-Kurkjian combination below in Section VIII.D. But first, to provide context for that discussion, I will address the respective disclosures of Ishimaru and Kurkjian. Importantly, neither Ishimaru nor Kurkjian provides a nipple-collar assembly with a “domed shape.” As I will explain below, Ishimaru does not disclose any significant details about a collar and, besides, employs a conventional nipple shape that does not meet the adopted construction of “domed shape.” Kurkjian’s disclosure is hardly better. While Kurkjian describes a “streamlined” nipple-collar assembly, the assembly is very narrow, not shaped like “dome” in any sense of the word.

1. The word “wide” in the adopted “domed shape” construction distinguishes conventional nipple shapes

69. As I noted above, the District Court construed the claim term “domed shape” as “wide circular bottom with an arc-shaped cross-sectional profile.” Having reviewed the Order, I see that the District Court’s analysis is based primarily on the ’244 Patent’s specification², which describes the base portion 116 (or “lower portion”) of the nipple shown in Figure 4 as “being shaped like a breast and having a *wide*, domed configuration.” EX1003 (’244 Pat.), 4:3-5.



“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.*”

70. In laymen’s terms, the word “wide” means having a greater than typical lateral extent or width. EX2029, p.3 (defining “wide” as “of great or more than average width”). The ’244 Patent’s specification uses the word “wide” the same way. So, when the specification says the Figure 4 nipple base is “wide,” a POSITA

² The Court cites the ’930 Patent’s specification, which is identical to the ’244 Patent’s.

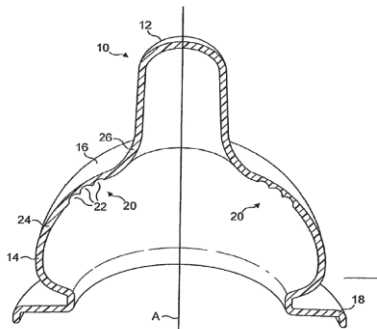
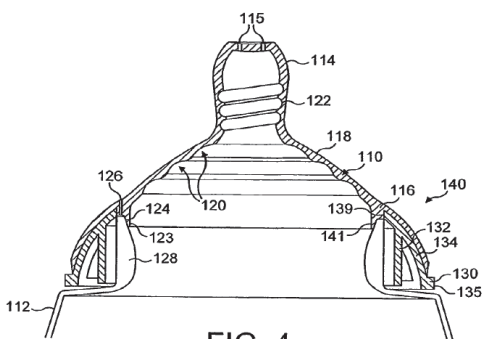
would understand that to mean the wide base has a larger diameter than a conventional baby bottle nipple³. *See* EX1003 ('244 Pat.), 4:3-5. To provide more context, the specification also says the base is “shaped like a breast,” meaning the base is “wide” in a manner that replicates the characteristic anatomical shape of a human breast more closely than an ordinary baby bottle nipple. *See* EX1003 ('244 Pat.), 4:3-5. A POSITA familiar with the landscape of pre-existing nipples (which I will discuss further below) would have appreciated that the Figure 4 embodiment matches this description and understanding of “wide.”

71. I understand that words like “wide” and “shaped like a breast” may seem vague at first blush, but they are clear to a POSITA. “Wide” does not require a specific diameter or diameter range, and “shaped like a breast” does not mean the Figure 4 nipple perfectly matches the specific contour and size of any particular human breast. These words are simply meant to convey to the POSITA that the shape of the nipple base is wider and approximates the anatomy of a typical human breast in the area presented to an infant during feeding more so than a conventional nipple. The characteristic “domed” shape of the '244 Patent is a performance-

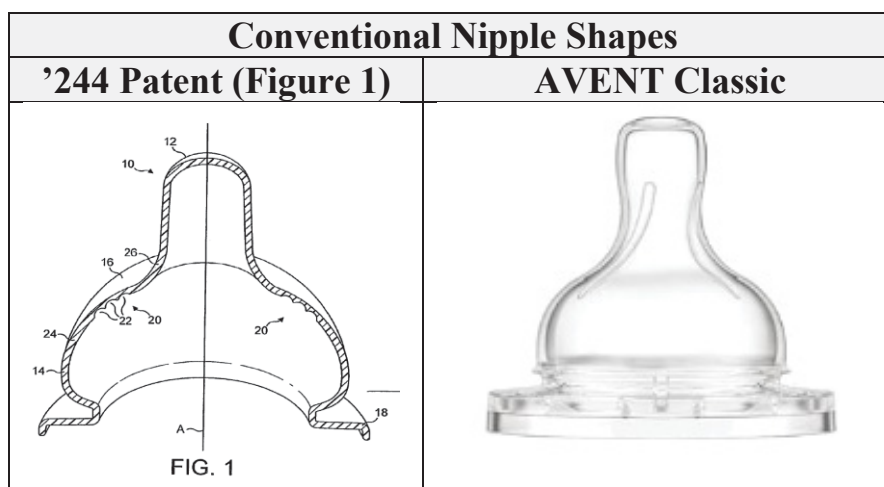
³ By “conventional baby bottle nipple,” I am referring to products which were widespread in the market at the time, such as the AVENT Classic product shown below.

enhancing feature. Given the breast-like qualities of this shape, infants are more likely to take a bottle, latch onto the artificial nipple in a manner consistent with natural breastfeeding, and successfully switch between bottle and breastfeeding. A conventional nipple that lacks this “domed” shape would not achieve the same performance benefits.

72. Just as it is significant that the '244 Patent describes Figure 4 as “wide” and “shaped like a breast,” it is equally significant that Figure 1 is *not* described as such. That makes sense from the perspective of a POSITA, who would recognize that Figure 1 depicts a nipple having a conventional shape. The POSITA would not expect the Figure 1 nipple to be described by distinctive words like “wide” or “domed” because the shape was unremarkable at the time of the '244 Patent in 2005. A POSITA would not need specific dimensions to see that Figure 4 is “wide” while Figure 1 is not. It is clear from looking at these figures that the ratio of width to height is significantly larger in Figure 4 than in Figure 1.

Conventional Nipple Shape '244 Patent (Figure 1)	Breast-Like Nipple Having a Base With a Wide, Domed Shape '244 Patent (Figure 4)
 FIG. 1	 FIG. 4

73. Indeed, the Figure 1 nipple looks quite similar to known products on the market made by major manufacturers before the '244 Patent, such as the AVENT Classic baby bottle nipple shown below.⁴ A POSITA would have understood these nipples to have a conventional shape that is distinct from the “wide” and “domed shape” shown in the '244 Patent’s Figure 4.

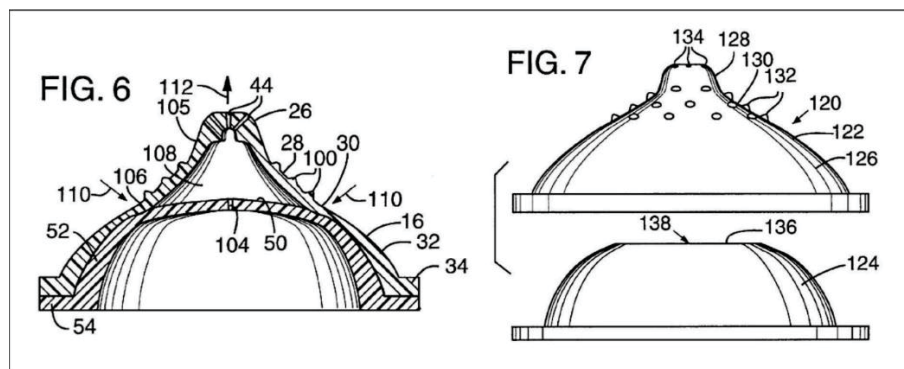


74. My explanation above regarding the POSITA’s understanding of the word “wide” in the adopted construction of “domed shape” is confirmed by additional evidence beyond the '244 Patent’s specification.

75. For example, there is a prior art reference cited on the face of the '244 Patent—i.e., U.S. Pat. No. 6,161,710 (“Natural Nipple Baby Feeding Apparatus”), which issued on December 19, 2000 to Dieringer, et al.—that talks about the superiority of a “wide” nipple design. The nipples described in the Dieringer Patent

⁴ See, e.g., https://www.philips.co.uk/c-p/SCF680_17/avent-classic-baby-bottle?utm_id=71700000104931063&origin=7_700000002399531_71700000104931063_58700008237880425_39700074819928678&gclid=CjwKCAjwp8OpBhAFEiwAG7NaEjKh9WIJwaNvaYIffigrHea-R_4Qxuz3QTm2iwHbeWHhmuJ45v_wMhoCVHkQAvD_BwE&gclsrc=aw.ds

“extend substantially across a distance larger than the diameter of a standard baby bottle” and “hav[e] a width approximately double that of the[ir] height[.]” EX2024 (Dieringer Pat.), 1:10-17. To create “wide” contour, “the shape and outer surface texture . . . is taken from a mold of an actual nursing mother’s breast,” and “*due to the wide diameter . . . an infant will recognize and be comfortable with the nipple[.]*” EX2024 (Dieringer Pat.), 5:38-50.



EX2024 (Dieringer Pat.), Figures 6-7.

76. The Dieringer Patent distinguishes its “wide” nipple design with older nipples that “do not look or feel like a natural breast” because they have “a width much narrower than a natural breast.” EX2024 (Dieringer Pat.), 2:28-41. Unlike a “wide” breast-like nipple, “once the infant is comfortable with bottle feeding [using

these older, narrower nipples] the infant will often encounter ‘nipple confusion’ upon returning to breastfeeding.”⁵ EX2024 (Dieringer Pat.), 2:28-41.

77. The Dieringer Patent supports what I explained above—a POSITA would have understood the word “wide” in the adopted “domed shape” construction to reference a nipple design that is wider, and thus more breast-like, than conventional nipple shapes. For purpose of comparison, I provide a collection of *non*-breast-like nipples below.



78. As shown, the much older nipples are quite narrow, while the more recent nipples are broader like Figure 1 of the '244 Patent. But none of these nipples has a wide base with a domed shape that resembles the anatomical shape of a human breast like the '244 Patent's Figure 4 or the nipples in the Dieringer Patent.

⁵ Nipple confusion is “an infant’s difficulty in achieving the correct oral configuration, latching technique, and suckling pattern necessary for successful breast-feeding after bottle feeding or other exposure to an artificial nipple.” EX2031 (NIPPLE CONFUSION: TOWARD A FORMAL DEFINITION), p.1.

2. Everyone agrees that Ishimaru fails to provide the “domed shape” limitation

79. There is no dispute that Ishimaru fails to provide the “domed shape” limitation. The Petition says this expressly: “Ishimaru does not explicitly disclose this [domed shape] limitation.” Pet., 40. This concession in the Petition comes as no surprise because Ishimaru clearly does not disclose an assembly where “the collar and the lower portion of the nipple *together* define a downward domed shape.”

80. In fact, Ishimaru does not provide any meaningful details at all about a collar. All Ishimaru says is that the nipple can be “fixed using a detachable feeding mounting cap (not shown in the figure), which is used when mounting the artificial nipple to the feeding bottle.” EX1008 (Ishimaru), [0054] (reference numbers omitted). Ishimaru is so narrowly focused on the nipple that it does not even bother to illustrate the collar.

81. Ishimaru also does not disclose a nipple-collar assembly with a “domed shape” because the lower portion of Ishimaru’s nipple is not “wide” in the manner of the ’244 Patent. As I have explained, Ishimaru is about providing a nipple that flexes “more evenly” throughout the nipple teat and trunk. EX1008 (Ishimaru) at [0046]; *see also* [0004]. Ishimaru set out to change the flexing/elongation pattern of the nipple, not its shape. This understanding of Ishimaru is confirmed by observing that the nipple of Ishimaru’s preferred embodiment in Figure 1 (*see id.*, [0037]) has

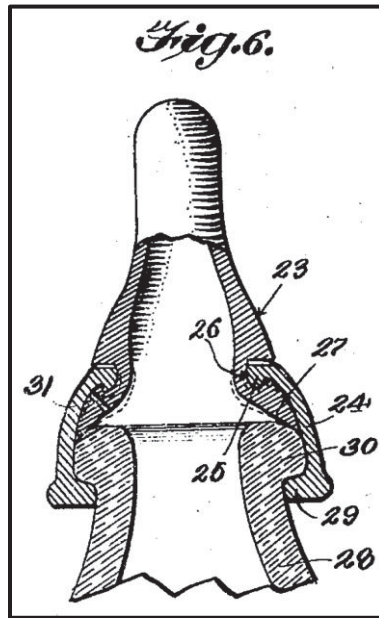
a substantially similar shape to the “conventional” nipple depicting in Ishimaru’s Figure 19 (*see id.*, [0002]).

Ishimaru's Preferred Embodiment Figure 1	Ishimaru's Conventional Nipple Figure 19
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3. Kurkjian's nipple-collar assembly cannot be “domed” because it is far narrower than conventional nipples

82. Since everyone agrees that Ishimaru does not disclose the “domed shape” limitation, it makes sense that Petitioner and Mr. Silver attempt to supplement Ishimaru with a secondary reference. This is where Kurkjian comes in. *See* Pet., 40-41 (“Such a modification is explicitly taught by Kurkjian[.]”). But Kurkjian has its own problems and also fails to disclose the “domed shape” limitation, as I will explain below.

83. The Petition says that Kurkjian's "Fig. 6 illustrates to a POSA a collar and lower portion of the nipple in a downward domed shape." Pet., 40-41. I have reproduced Figure 6 from Kurkjian below.



EX1009 (Kurkjian), Figure 6.

84. A POSITA would immediately see that Kurkjian's nipple is not "domed" in any sense of the word. The base portion of Kurkjian's nipple and the collar have the shape of a relatively narrow cone rather than a dome, which is precisely how Kurkjian describes the collar—"conical."

In Figure 6, there is shown a modified form of the invention carrying out the same principle previously described, the same type of nipple being employed and being designated in this form by numeral 23. However, a different type of securing cap is provided as indicated by the numeral 24, *which cap 24 may be formed of soft rubber and consists of a conical body of a thimble-like structure.*

EX1009 (Kurkjian), 3:29-37.

85. It is no surprise that Kurkjian's nipple-collar assembly is narrow and conical. Kurkjian is a patent filed in 1935, when this kind of narrow nipple design was a common approach. There is no disclosure in Kurkjian to suggest a departure from the standard narrow nipple shape. That was not Kurkjian's goal. While Kurkjian's objectives were directed to improving the connection between the collar ("retaining cap") and the nipple, the reference says nothing about providing a "wide" or "domed" nipple-collar assembly that is "shaped like a breast." EX1003 ('244 Pat.), 4:3-5.

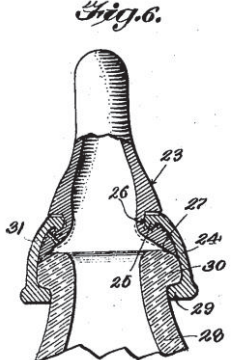
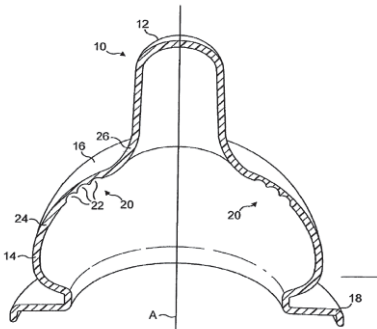
- "the production of *a resilient flanged nipple which is so constructed as to permit the nipple to be secured to the mouth of a bottle by means of a retaining cap*, and permit the entrance of air into the interior of the bottle, and also prevent the nipple from collapsing inwardly of the retaining cap"
- "the production of a nursing unit wherein *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"; and
- "the production of a nursing unit wherein *a nipple retaining cap* is constructed in a manner as to present *a streamline type of connection between the bottle and the nipple.*"

EX1009 (Kurkjian), 1:1-20.

86. While functional, narrow nipples like Kurkjian's tend to cause a detrimental condition called "nipple confusion" because they do not resemble the anatomy of a human breast. A POSITA would have known about the characteristics of narrow nipples and would have identified Kurkjian's nipple (and collar) as such.

E.g., EX2024 (Dieringer Pat.), 2:28-41 (“[O]nce the infant is comfortable with bottle feeding [using these older, narrower nipples] the infant will often encounter ‘nipple confusion’ upon returning to breastfeeding.”). Accordingly, the POSITA would not view the nipple-collar assembly shown in Kurkjian’s Figure 6 as “domed” in any sense of the word.

87. The fact that Kurkjian’s nipple-collar assembly is **not** domed becomes even more apparent when we consider that the District Court’s claim construction calls for a “**wide** circular bottom.” Kurkjian certainly does not disclose that shape. Again, Kurkjian describes its collar as “conical,” and it is clear from Kurkjian’s Figure 6 that the conical collar is exceedingly narrow. Indeed, the collar is fitted to a bottle with a very narrow neck. The bottom of Kurkjian’s nipple-collar assembly is far narrower than (A) Ishimaru’s conventional nipple shape; and (B) the conventional nipple shape depicted in the ’244 Patent’s Figure 1, neither of which is “wide” or “domed.”

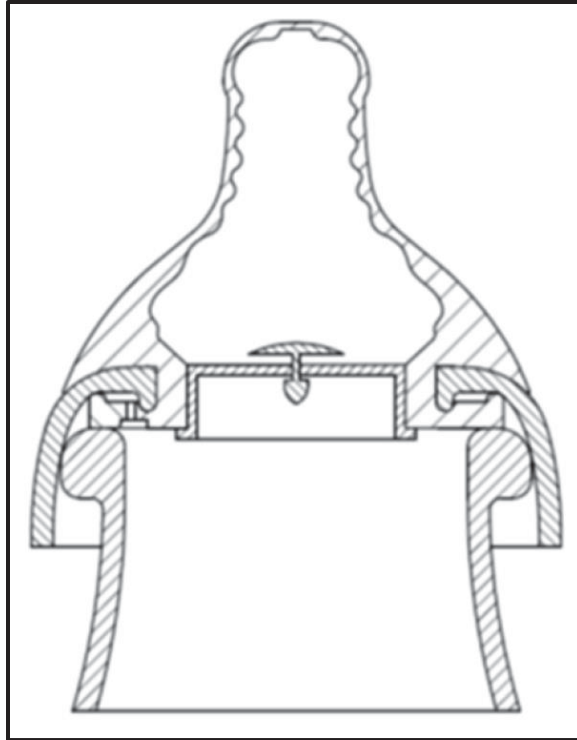
Kurkjian—Figure 6	'244 Patent—Figure 1
	 FIG. 1

88. The Petition and Mr. Silver’s declaration fail to explain why they believe Kurkjian’s nipple-collar assembly is “domed.” They simply declare it so without justification. As a result, I am unable to examine their reasoning. Regardless, as I have explained, a POSITA would not agree with Petitioner and Mr. Silver’s position based on Kurkjian’s disclosure, the POSITA’s historical knowledge of prior art nipples, and the District Court’s construction.

89. To the extent Petitioner and Mr. Silver later argue that the Kurkjian’s nipple-collar assembly is “wide” or “domed” because it is wider than the teat, I disagree with that argument. Interpreting “wide” this way—i.e., wider than any other portion of the nipple—is inconsistent with the ’244 Patent’s specification. “Wide” and “domed” have meaning in the ’244 Patent. Those words distinguish the breast-like nipple shape in Figure 4 from the conventional nipple shape in Figure 1. But they would have no meaning at all if they were applicable to any nipple-collar assembly that is wider than the teat or areola and nothing more. Virtually every 21st century nipple would be described as having a wide, domed shape in that case. The ’244 Patent’s specification says otherwise.

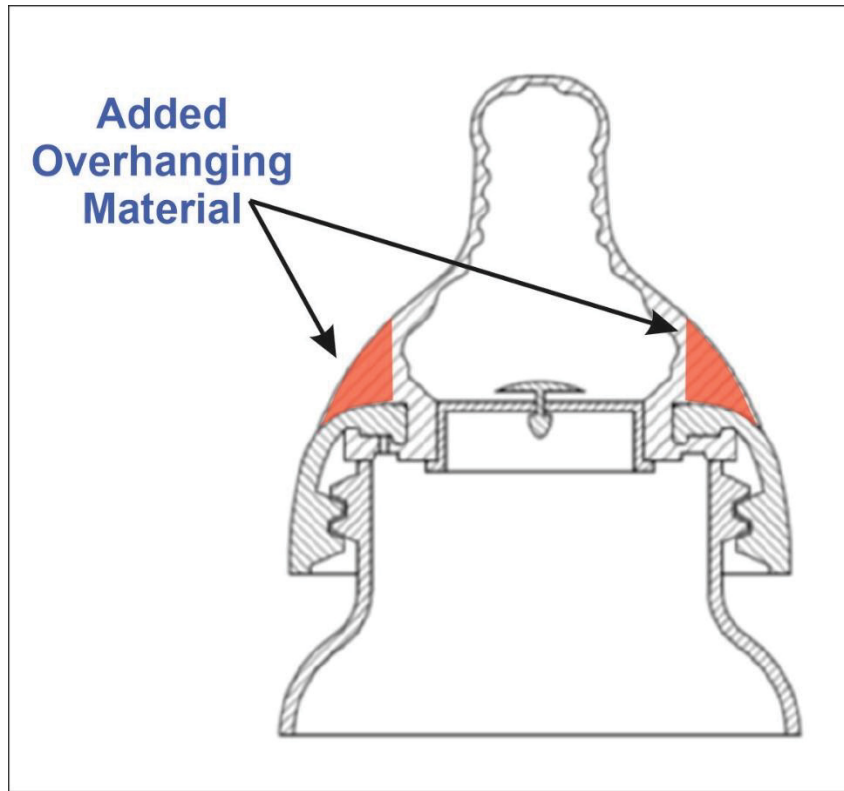
D. Petitioner’s Ishimaru-Kurkjian combination drawing is not consistent with the disclosure of either reference

90. The Petition and Mr. Silver’s declaration argue that a POSITA would have been motivated to combine Ishimaru and Kurkjian to produce the nipple-collar assembly in their combination drawing, which I reproduce below:



Pet., 30 (Ishimaru-Kurkjian combination drawing).

91. There is a problem with this combination drawing. It is not consistent with the disclosure of either Ishimaru or Kurkjian. Most notably, Petitioner and Mr. Silver have modified Ishimaru's nipple by adding a thick, downwardly sloping mass of material overhanging the flange to make the base of the nipple appear "domed." I have highlighted the added mass of nipple material below. Petitioner and Mr. Silver appear to suggest that their modification stems from teachings in Ishimaru and Kurkjian, but they are wrong.



Pet., 30 (Ishimaru-Kurkjian combination drawing with annotations)

92. Regarding Kurkjian, the Petition and Mr. Silver’s declaration emphasize the teaching of a “streamline type connection between the nipple and the bottle.” EX1009 (Kurkjian), 3:41-46 (reference numbers omitted); *see* Pet., 26, 40; EX1005 (Silver Dec.) ¶¶357-358, 412. But the “streamline” teaching from Kurkjian does not justify adding a thick mass of material to Ishimaru’s nipple. In fact, that teaching has nothing to do with the nipple. It is about the collar. Kurkjian says, “*the [collar] preferably conforms to the contour of the nipple.*” EX1009 (Kurkjian), 3:41-46 (reference numbers omitted). That means the collar shape conforms to the nipple shape—not the other way around. A POSITA looking to apply Kurkjian’s

teaching of a “streamlined type connection” would have left Ishimaru’s conventional nipple shape in place and changed the shape of the collar to match it. But that is not what Petitioner and Mr. Silver did. They radically changed the shape of Ishimaru’s nipple in a manner that neither Ishimaru nor Kukjian suggests.

93. To be clear, I am not using hyperbole when I say that Petitioner and Mr. Silver made a “radical” change to Ishimaru’s nipple. I have never seen a nipple that looks anything like Petitioner and Mr. Silver’s combination drawing. And that is for good reason—a POSITA would understand that their design would not work, as I will explain below.

94. In addition to Kurkjian’s “streamline” disclosure, the Petition and Mr. Silver’s declaration also point to Ishimaru’s teachings as supportive of their combination drawing. For example, regarding Ishimaru, Mr. Silver’s declaration says,

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.

EX1005 (Silver Dec.) ¶413.

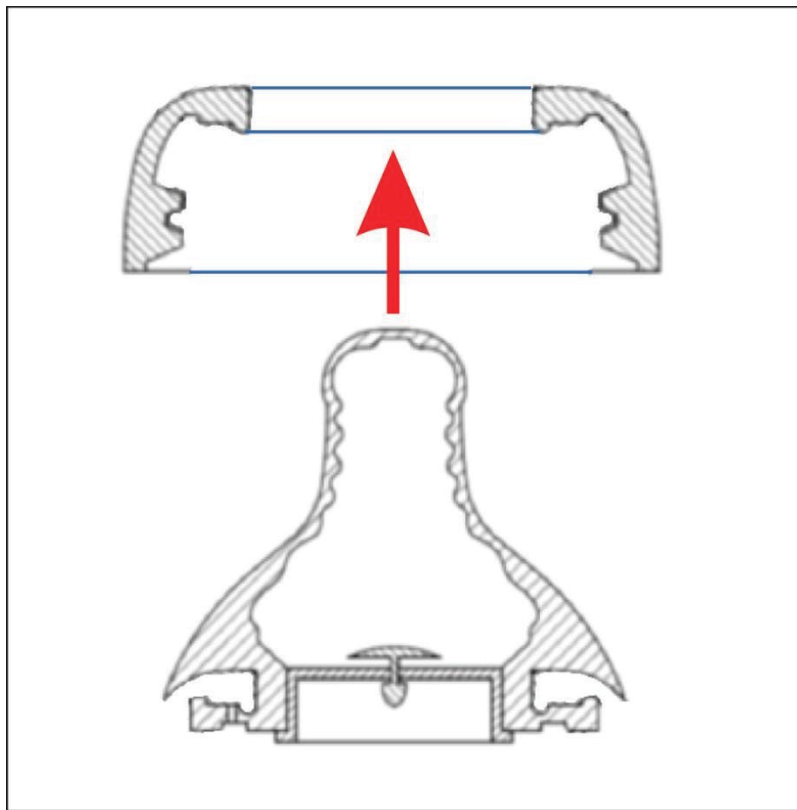
95. In the above-recited passage, Mr. Silver references Section §XIII.A of his declaration for his analysis of Ishimaru’s “primary objective . . . to create a nipple that is more human and breast-like.” There, Mr. Silver’s explains that Ishimaru’s

view of breast-like includes “a shape similar to a mother’s breast and nipple *as shown in Fig. 1*” and “elongat[ion] in the same way as the mother’s nipple” by adding “thin-walled portions . . . in a groove-like pattern.” EX1005 (Silver Dec.) ¶356 (quoting EX1008 (Ishimaru) at [0041], [0048]). These aspects of Ishimaru do not support Petitioner and Mr. Silver’s modification of Ishimaru’s nipple.

96. First, their reasoning is circular. It makes no sense to rely on Ishimaru’s nipple “as shown in Fig. 1” to support a radical modification of that same nipple shape. As I have explained, the “shape” of the nipple in Ishimaru’s Figure 1 is not materially different from the conventional nipple shape that Ishimaru shows in Figure 19. Ishimaru does not give any reason to depart from that shape, and that includes the thin-walled portions that Ishimaru touts as beneficial for achieving breast-like elongation of the nipple during feeding. A POSITA would understand that the addition of thin-walled portions on the *interior* of the Ishimaru’s nipple has no impact on the nipple’s conventional *outer* shape.

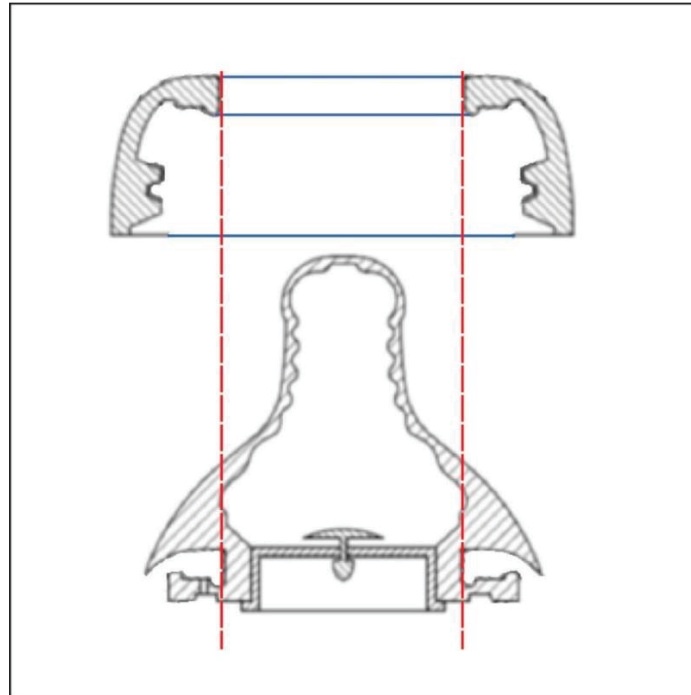
97. Not only does Petitioner and Mr. Silver’s radical modification of Ishimaru’s nipple lack support in the references, but it also would not work properly compared to conventional designs, specifically with regard to the assembly of the nipple to the collar. I will explain the fundamental problem with their design from first principles through the perspective of a POSITA.

98. In a normal nipple-collar assembly method, the nipple is oriented teat-side-up, positioned below the collar, and pushed upward through the collar's central bore. Doing so allows the upper lip of the collar to seat itself into a groove between the nipple flange and base, as shown in the Petition's Ishimaru-Kurkjian combination drawing. The modified diagram below (blue horizontal lines added to complete the sectional view) illustrates this normal assembly method using the nipple and collar shapes from the Petition's combination drawing:

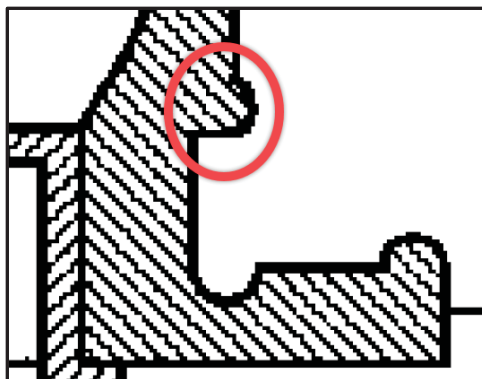


99. Because of the thick, downwardly sloping mass that Petitioner and Mr. Silver added to the nipple, a very large portion of the nipple material extends radially beyond the diameter of the collar's central bore defined by the upper lip. I have

illustrated this fact in the modified diagram below (blue horizontal lines added to complete the sectional view).

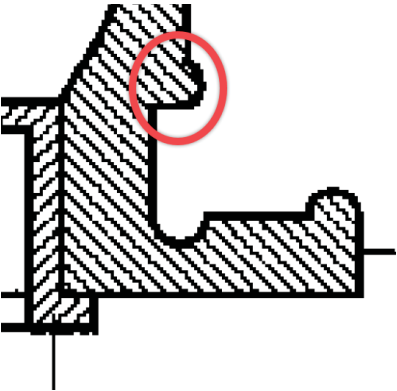
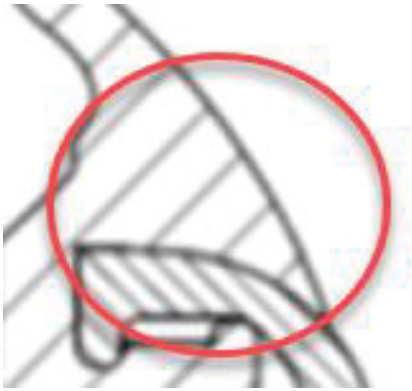


100. In a conventional nipple design, such as shown in Ishimaru's original Figure 1, a small rim of material (circled below) overhangs the flange to secure the lip of the collar. Because the rim is small, it deforms easily when the user pushes the nipple through the collar and then snaps back into place over the collar's lip.



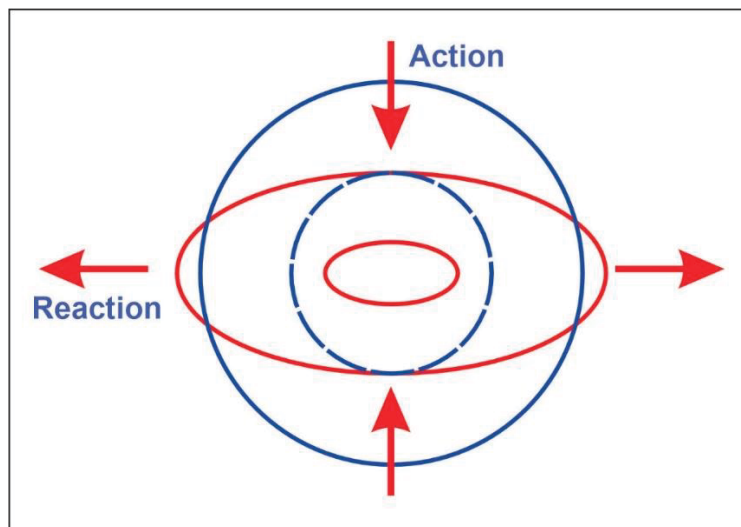
EX1008 (Ishimaru), Figure 1 (excerpted and annotated).

101. The problem with Petitioner and Mr. Silver's design is that they have expanded Ishimaru's small rim of material into a thick downwardly slopping mass overhanging the flange, as shown in the comparison below. It would be difficult (if possible at all) for the thick mass of added material to compress enough to allow the nipple to pass through the collar's bore using the normal assembly method. The added mass would need to flex inward and upward in a manner that is not practical given its thickness.

Ishimaru, Figure 1 Small Rim	Petitioner's Combination Drawing Thick Downwardly Slopping Mass
	

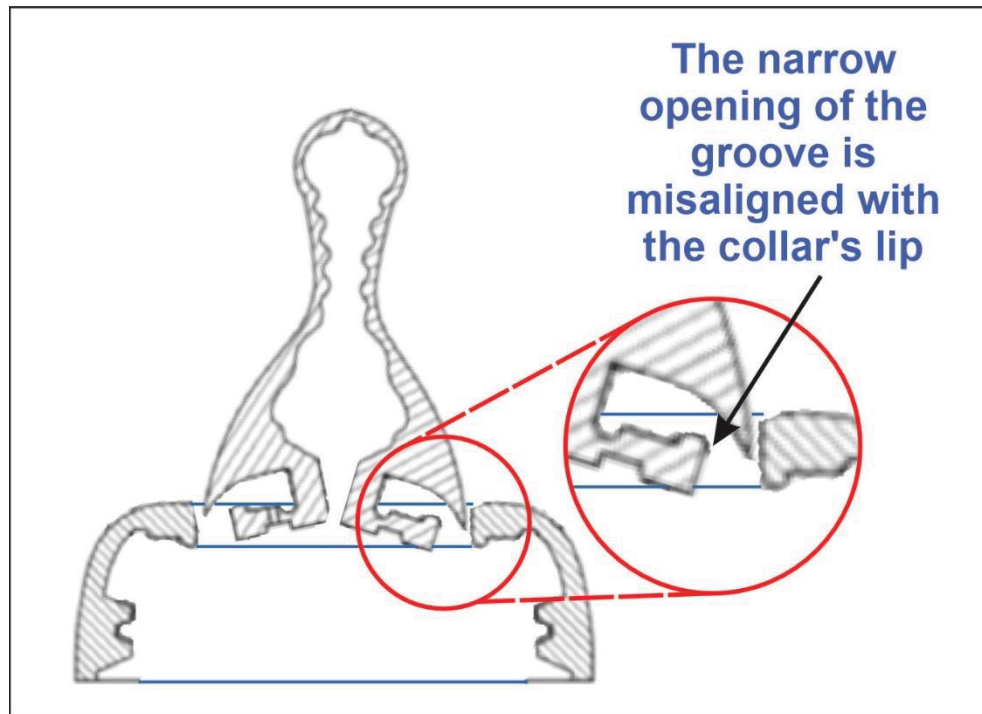
102. The inability of Petitioner's added thick mass to deform sufficiently is compounded by Ishimaru's rigid check valve assembly that further inhibits any compression towards the center vertical axis of the nipple. But even if the check valve assembly were removed (which Petitioner has not proposed), the nipple still could not be assembled to the collar in a conventional manner for two reasons.

103. The first reason, with or without Ishimaru's check valve, is that if two sides of the nipple were to be pressed together to squeeze the thick mass inward, the other sides of the nipple would expand, as an opposite reaction to the pressing action, as I have illustrated in the diagram below (Top View). In the diagram, the blue circles represent the collar (dashed line is the upper lip) and the red ovals represent the hypothetically deformed nipple. The vertical red arrows show two sides of the nipple being pressed together. The horizontal arrows show the other two sides of the nipple expanding. As you can see, the expanded sides of the nipple would not fit within the diameter of the bore defined by the collar's upper lip (dashed blue line).



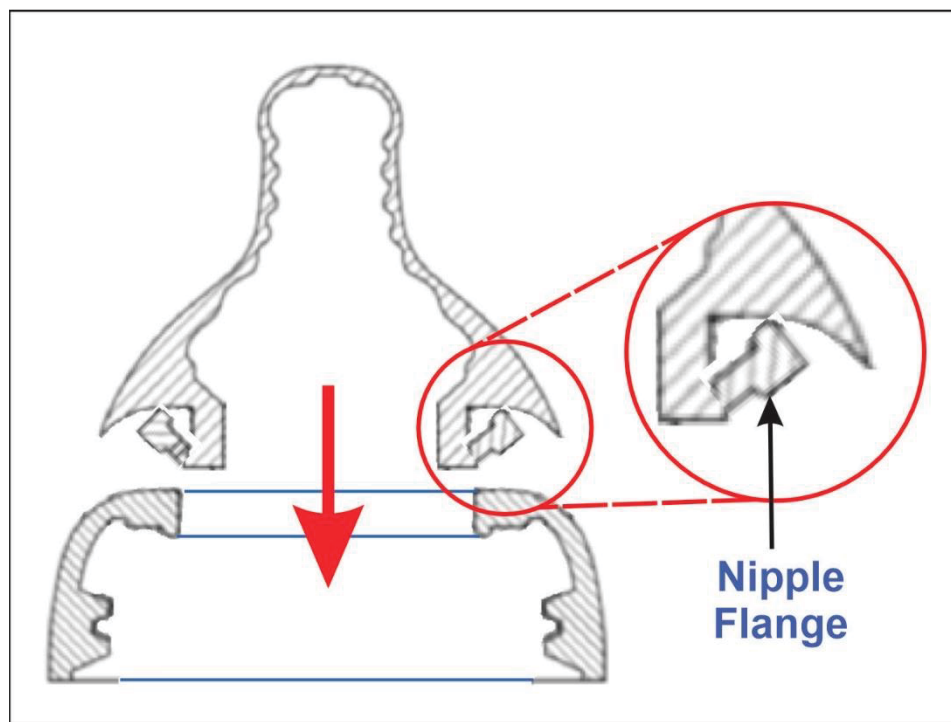
104. The second reason, with or without Ishimaru's check valve, is that even if somehow the nipple was pressed inward equally on all sides, the severe downward slope of Petitioner's added thick mass of material would inhibit the lip of the collar from entering the groove above the flange. Thanks to the thick mass, the opening to the groove is very narrow and oriented at an odd angle that does not align with the

upper lip of the collar, as demonstrated in the modified diagram below (nipple shape narrowed; blue horizontal lines added to complete the sectional view), where I have magnified the interaction between the collar and nipple.



105. For all the reasons I have explained, a conventional method of assembly would not work properly with the design shown in Petitioner and Mr. Silver's combination drawing. An abnormal assembly method—such as pushing the nipple downward through the central bore of the collar—also would not work well. First, the rigid check valve assembly would still inhibit compression towards the center vertical axis of the nipple. Second, even if the check valve assembly was removed (which Petitioner has not proposed), it would be difficult for the flange to deform enough to enter the collar because of Petitioner and Mr. Silver's added thick mass

of material. The modified diagram below (flange angle changed; blue horizontal lines added to complete the sectional view) shows how the nipple flange would run into the added mass, making it difficult for the mass to flex enough to fit into the collar. Third, it would be difficult for a user to make the nipple fit by pinching the bottom portion of the nipple inward due to the physics issue I raised before. If two sides were pinched inward, the other two sides would expand outward.



106. A POSITA would have understood this critical assembly problem and, thus, would *not* have been motivated to combine Ishimaru and Kurkjian in the manner Petitioner and Mr. Silver propose via their combination drawing.

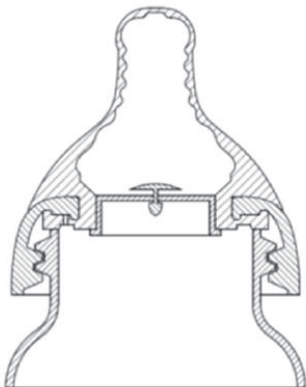
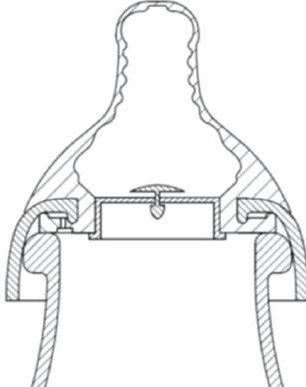
IX. GROUND 2: THE ISHIMARU-ATKIN COMBINATION

A. Ishimaru's nipple does not have a "flex region"

107. Here, in Ground 2 with the Ishimaru-Atkin combination, the Petition relies on the same Ishimaru analysis from Ground 1 with the Ishimaru-Kurjkian combination. *See Pet.*, 54. Accordingly, my analysis above regarding Ground 1 at ¶¶38-57 applies equally here in Ground 2.

B. The Ishimaru-Atkin combination's flange does not define the "circumference furthest from the aperture," as claimed

108. Here, in Ground 2 with the Ishimaru-Atkin combination, the Petition relies on the same Ishimaru analysis from Ground 1 with the Ishimaru-Kurjkian combination. *See Pet.*, 55. Additionally, the combination drawing for the Ishimaru-Atkin combination is a mirror image of the combination drawing for the Ishimaru-Kurjkian combination drawing. The only difference is that one drawing includes a threaded collar while the other does not, which does not change my analysis.

Ishimaru-Atkin Drawing Ground 2, Pet., 51	Ishimaru-Kurjkian Drawing Ground 1, Pet., 30
	

109. Accordingly, my analysis above regarding Ground 1 at ¶¶58-66 applies equally here in Ground 2.

C. Ishimaru does not have a nipple-collar assembly defining a “domed shape,” and neither does Atkin

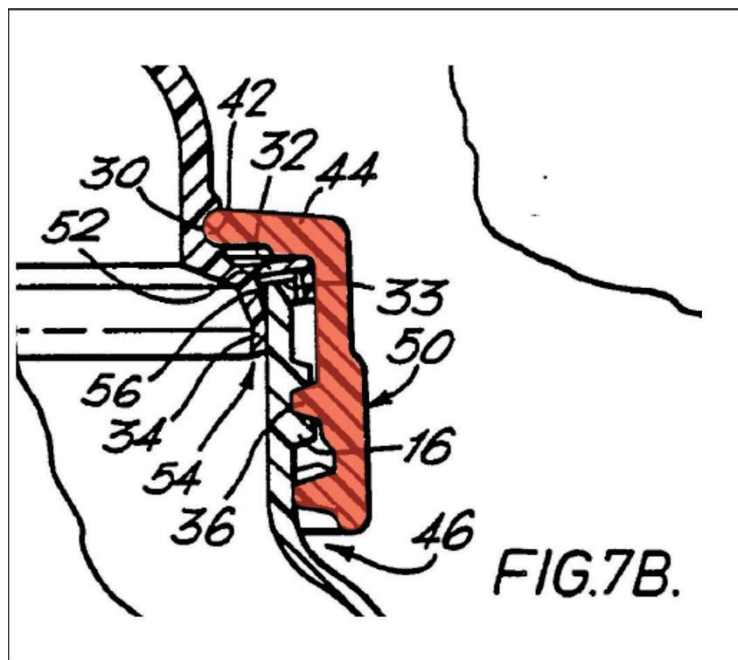
110. The '244 Patent's independent claim 21 recites, “wherein the collar and the lower portion of the nipple together define a downward domed shape.” EX1003 ('244 Pat.), 8:16-20. I addressed this “domed shape” limitation above in my analysis of Ground 1, and much of that analysis applies equally here in Ground 2, including the following points:

- The word “wide” in the adopted “domed shape” construction distinguishes conventional nipple shapes by describing a wide nipple base that resembles the anatomical shape of a human breast (*see* ¶¶69-78); and
- Ishimaru fails to provide the “domed shape” limitation because Ishimaru (A) fails to provide any meaningful details at all about the nipple collar; and (B) only describes a conventional nipple shape (*see* ¶¶79-81).

111. Just as the Petition turned to Kurkjian in Ground 1 to supplement Ishimaru on the “domed shape” limitation in Ground 1, the Petition relies on Atkin for that purpose here in Ground 2. *See* Pet., 49 (“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[.]”), 55-56 (conceding “Ishimaru does not explicitly disclose this limitation” while alleging “[s]uch a modification is taught by Atkin”). But, as with Kurkjian, Atkin fails to disclose a nipple-collar assembly with a “domed shape.”

112. The problem with Atkin is that a POSITA would understand its collar is not “domed.” As shown below in an annotated version of Atkin’s Figure 7B, the outer circumference of Atkin’s annular collar (green) is defined by a surface with a vertical cross-sectional profile. Atkin’s vertical collar certainly does *not* have the “arc-shaped cross-sectional profile” required by the “domed shape” construction.



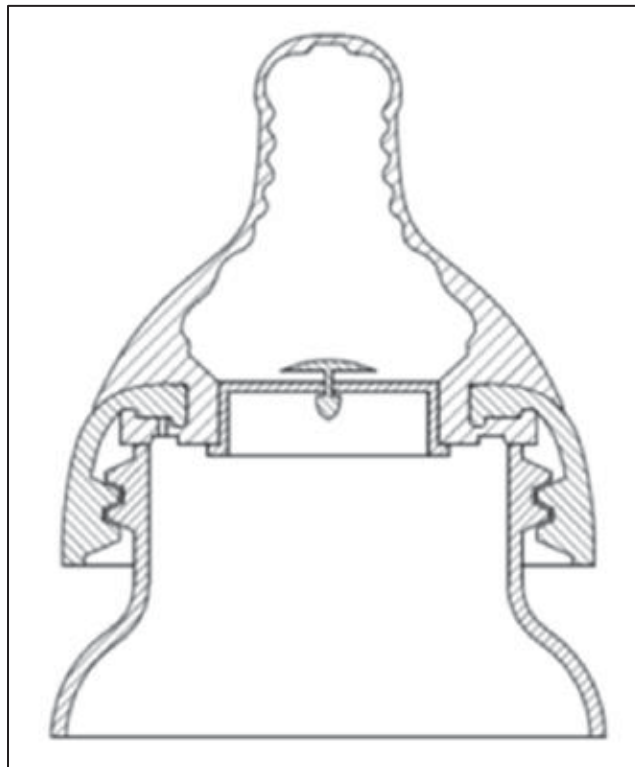
EX1010 (Atkin), Figure 7B (annotated).

113. Mr. Silver appears to agree with my assessment of Atkin. Unlike the Petition, Mr. Silver’s declaration does not characterize Atkin’s collar as “domed,”

and it acknowledges the “*abrupt change in slope* between the nipple and collar” because Atkin provides “a nearly *vertical collar*.” EX1005 (Silver Dec.) ¶497. Atkin’s vertical collar does not cooperate with the nipple and “*together*” define a “domed shape.” This observation would be apparent to a POSITA.

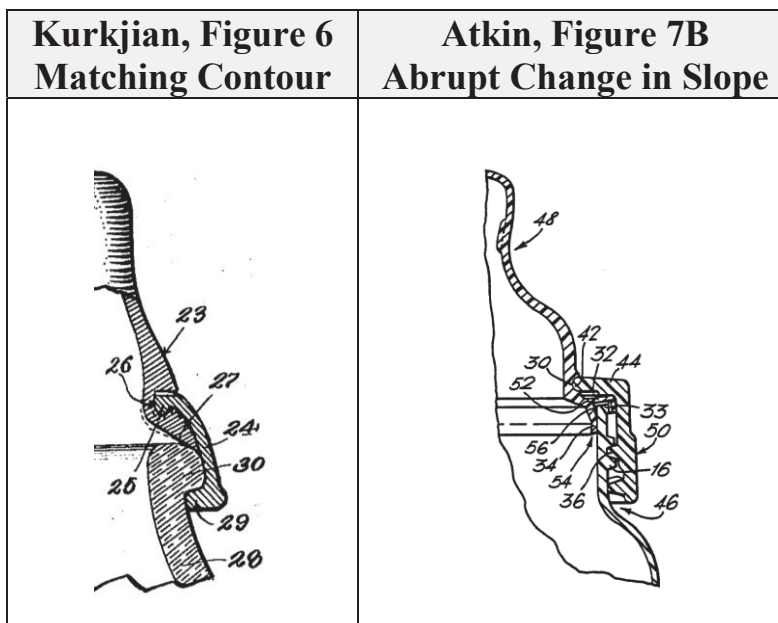
D. Petitioner’s Ishimaru-Atkin combination drawing is not consistent with the disclosure of either reference

114. The Petition and Mr. Silver’s declaration argue that a POSITA would have been motivated to combine Ishimaru and Atkin to produce the nipple-collar assembly in their combination drawing, which I reproduce below:



Pet., 51 (Ishimaru-Atkin combination drawing).

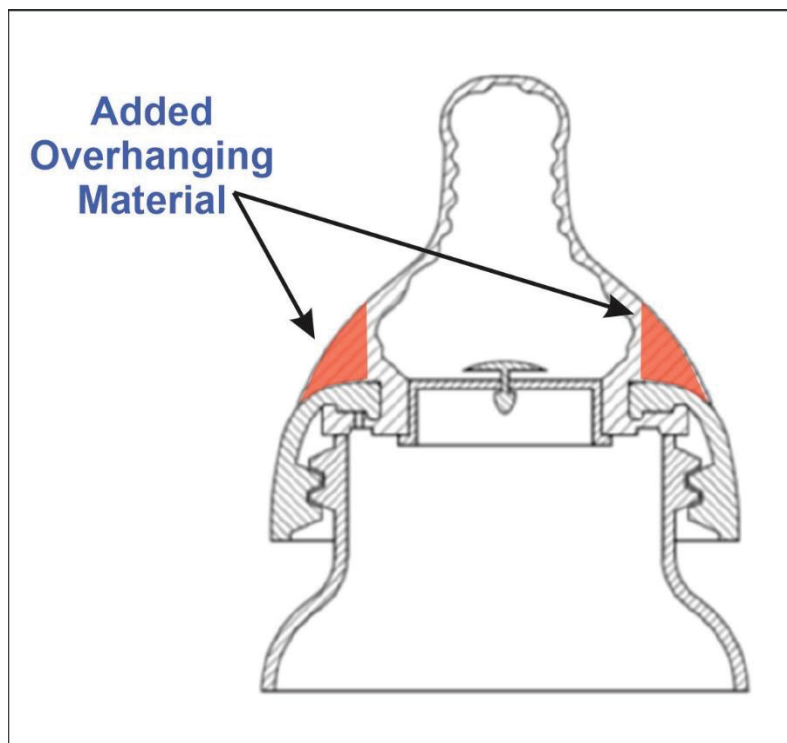
115. I find it odd that Petitioner and Mr. Silver’s Ishimaru-Atkin combination drawing looks almost exactly like their Ishimaru-Kurkjian combination drawing. There is a stark contrast between the respective shapes of the nipple-collar assemblies in Atkin and Kurkjian. Atkin’s nipple-collar assembly has a curved nipple mated to a vertical collar, with an abrupt change in slope between them. Kurkjian’s nipple-collar, by contrast, has a matching contour between the nipple and collar, both of which are very narrow. *See* comparison below. Given these glaring distinctions, I am confused as to how and why Petitioner and Mr. Silver arrived at nearly identical combination drawings. If a POSITA were to integrate the teachings of Atkin and Kurkjian with Ishimaru objectively, there would have been a natural divergence between the resulting combination drawings.



116. Regardless, because the Ishimaru-Atkin combination drawing mirrors the Ishimaru-Kurkjian combination drawing, much of my analysis from Ground 1

applies equally here in Ground 2. Accordingly, the nipple-collar design in the Ishimaru-Atkin combination drawing could not be assembled in a conventional manner for the same reasons I discussed at ¶¶97-106.

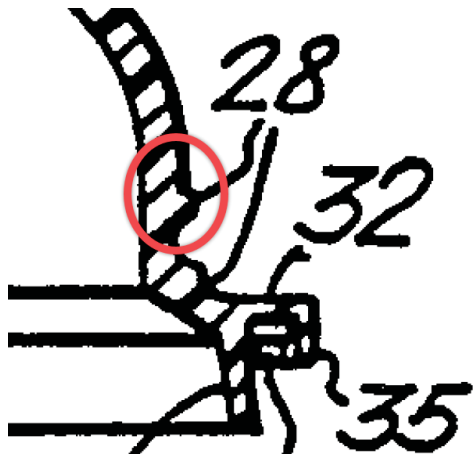
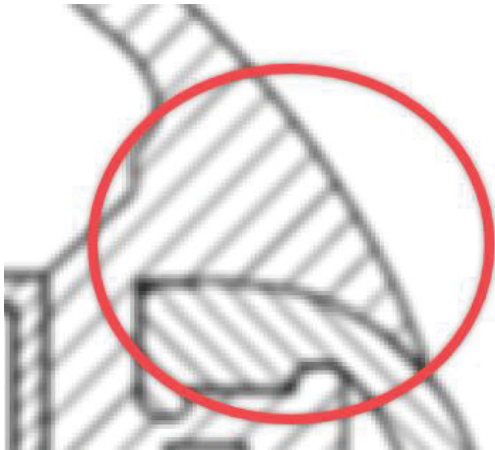
117. Additionally, just as in Ground 1 (*see* ¶¶90-96), Petitioner and Mr. Silver fail to explain and justify their radical change of Ishimaru’s nipple shape—i.e., the added thick, downwardly sloping mass of material overhanging the flange.



Pet., 51 (Ishimaru-Atkin combination drawing with annotations).

118. The Petition and Mr. Silver’s declaration point out that Atkin teaches “a larger teat, enabling use of the bottle by the baby more closely resembling natural feeding.” Pet., 56 (quoting EX1010 (Atkin), 3:10-27); EX1005 (Silver Dec.) ¶444 (“Atkin discloses a ‘wide concave profile’ of a teat[.]” (quoting EX1010 (Atkin),

3:20-26)). But making Ishimaru’s nipple “larger” or even “wide[r]” would not change its shape in the specific manner proposed by Petitioner and Mr. Silver. There is not a single aspect of Atkin’s nipple that even remotely resembles Petitioner and Mr. Silver’s added thick mass overhanging the flange. Atkin’s nipple, like most nipples, employs a small rim of material overhanging the flange. A POSITA would not have arrived at a solution featuring a thick, downwardly sloping mass of material overhanging the flange based on Atkin’s small rim.

Atkin, Figure 4A Small Rim	Petitioner’s Combination Drawing Thick Downwardly Sloping Mass
	

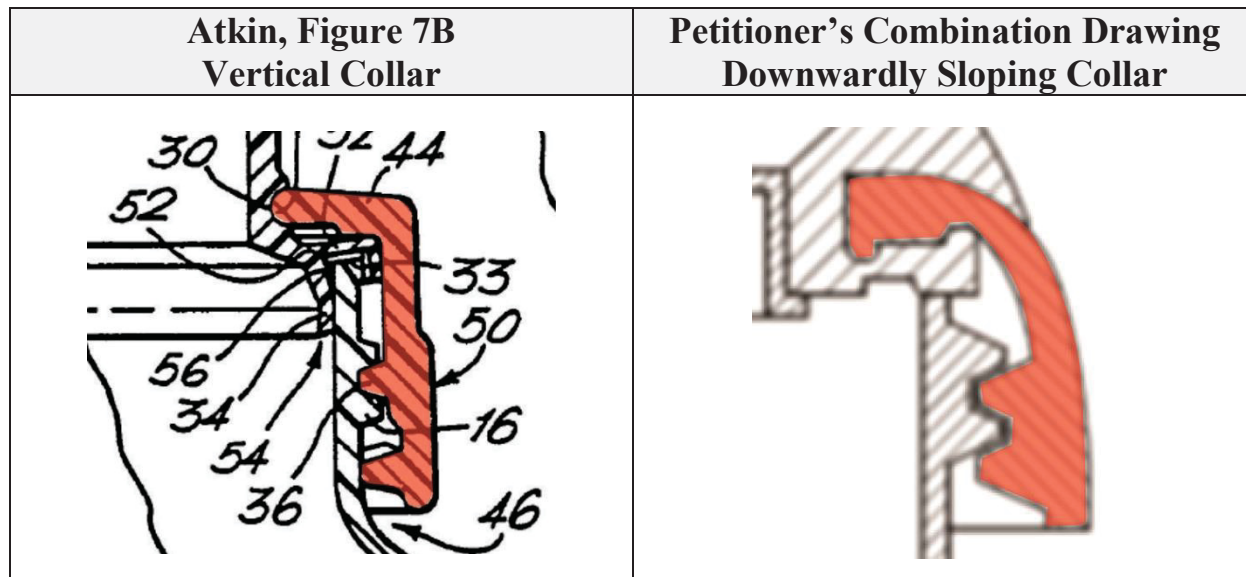
119. The Petition and Mr. Silver’s declaration also point to Ishimaru’s teachings as supportive of their combination drawing. For example, they highlight Ishimaru’s objective to create a breast-like nipple “as shown in Fig. 1,” just as they

did in Ground 1. *See* Pet., 49 (quoting EX1008 (Ishimaru) at [0040]⁶); EX1005 (Silver Dec.) ¶443 (quoting EX1008 (Ishimaru) at [0041]). Also mimicking Ground 1, they also point to Ishimaru’s teaching regarding a nipple with “thin-walled portions” that produce “elongat[ion] in the same way as the mother’s nipple.” EX1005 (Silver Dec.) ¶443 (quoting EX1008 (Ishimaru) at [0041], [0048]); *see also* Pet., 45, 48 (similar). But these aspects of Ishimaru do not support Petitioner and Mr. Silver’s modification of Ishimaru’s nipple.

120. First, their reasoning is circular. It makes no sense to rely on Ishimaru’s nipple “as shown in Fig. 1” to support a radical modification of that same nipple shape. As I have explained, the “shape” of the nipple in Ishimaru’s Figure 1 is not materially different from the conventional nipple shape that Ishimaru shows in Figure 19. Ishimaru does not give any reason to depart from that shape, and that includes the thin-walled portions that Ishimaru touts as beneficial for achieving breast-like elongation of the nipple during feeding. A POSITA would understand that the addition of thin-walled portions on the *interior* of the Ishimaru’s nipple has no impact on the nipple’s conventional *outer* shape.

⁶ There is a citation error in the Petition. The quoted language appears at [0041] of Ishimaru, not [0040].

121. The modification of Atkin’s collar in Petitioner and Mr. Silver’s combination drawing is even more severe than their radical change to Ishimaru’s nipple. The downwardly sloping collar in the combination drawing bears hardly any resemblance at all to Atkin’s vertical collar.



122. The Petition says a skilled artisan “would be motivated to incorporate *the domed collar in Atkin* in order to modify the shape of the collar in Ishimaru” for the purpose of “improv[ing] the aesthetics of the nipple to provide a realistic, breast-like shape, as taught by Ishimaru.” Pet., 49. I disagree. After all, Atkin does not disclose a “domed collar.” Atkin’s collar has a vertical cross-sectional profile rather than an arc-shaped profile, which, again, even Mr. Silver acknowledged. *See* EX1005 (Silver Dec.) ¶497 (discussing “a nearly *vertical collar*”).

123. Separately, it is not clear why Petitioner believes that “aesthetics” would have prompted a POSITA to change Atkin’s collar in the manner shown in

the combination drawing. The word “aesthetics” refers to a set of principles concerned with the appreciation of beauty or taste. Aesthetics are abstract and subjective by nature—e.g., that which is visually pleasing to one person may prove abhorrent to another. Design aesthetics are often analyzed by obtaining user ratings, feedback, emotions, and attitudes using surveys, focus groups, reviews and the like. The Petition does not provide any evidence at all to support its “aesthetics” theory. Notably, Mr. Silver’s declaration does not bolster the Petition’s appeal to aesthetics as a justification for modifying Atkin’s collar. While Mr. Silver mentions “aesthetics” a handful of times, those instances are discussing changes to the nipple and/or bottle, not the collar. *See* EX1005, ¶444 (explaining that “[a] *vessel* with multiple diameters . . . would optimize . . . aesthetic appearance”), ¶445 (“A POSA would have therefore understood that Ishimaru’s *nipple and vessel* could be improved by employing the technique from Atkin . . . [which] would result in an . . . aesthetically pleasing nipple and vessel.”), (discussing a “modif[ication to] 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”), ¶446 (alleging that “modifying Ishimaru’s *nipple* in view of Atkin to provide a more reliable, aesthetically suitable solution”).

124. I note that Mr. Silver’s declaration presents a rationale for modifying Atkin’s collar that does not appear anywhere in the Petition. According to Mr. Silver,

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.

EX1005 (Silver Dec.) ¶498.

125. I disagree with Mr. Silver’s rationale for multiple reasons. First, and as I have discussed, Ishimaru does not disclose any meaningful details about a collar. Ishimaru’s disclosure is about achieving a particular type of elongation pattern, one that Ishimaru says mimics a human breast. A POSITA would not see Ishimaru’s teachings about a nipple—breast-like or not—as a motivation to change Atkin’s vertical collar. Second, Mr. Silver has not provided any supporting evidence at all to support his suggestion that a POSITA would have sought a “continuous, downward dome shape between the lower portion of the nipple and the annular cap.” Neither Ishimaru nor Atkin teach or even hint at such a configuration for the nipple-collar assembly. In fact, I have not seen any document on the record in this proceeding—besides the ’244 Patent—that discloses a domed nipple-collar assembly. I believe it is inappropriate for Mr. Silver to suggest that a POSITA would have known to pursue that which only the ’244 Patent teaches. My understanding is

that a POSITA's knowledge is limited to the prior art and does not include the patent in question.

X. INDUSTRY PRAISE EVIDENCE SUPPORTS PATENTABILITY

A. Legal Principles and Context

126. I understand that determining whether an invention is obvious from the prior art can require more than simply analyzing the differences between the prior art and the claimed invention: I have been instructed that the Supreme Court has held one may also evaluate “objective indicia” also known as “secondary considerations” relating to non-obviousness.

127. For example, I understand objective factors may show that an invention was not obvious from the prior art. I have been instructed that at least one appeals court decision has noted that these factors “are often the most probative and determinative of the ultimate conclusion of obviousness or nonobviousness.”

128. I understand these objective indicia can include evidence, when present in a case, regarding industry praise for a patent-practicing product. I understand that evidence of industry praise need not take any particular form. What matters is that the evidence shows a recognition in the industry of the patented invention's significance and value. Exemplary sources of industry praise include (but are not limited to) statements made and/or awards given by industry publications, journals, organizations, trade associations, commentators, and competitors.

129. I understand that the evidence of industry praise must have “nexus” to the patented invention. In this context, “nexus” means the industry praise is derived from products that practice the invention, and that the invention is the impetus behind the industry praise.

B. Patent Owner Mayborn’s Closer to Nature Baby Bottle Is a Patent-Practicing Product

130. I have obtained and analyzed multiple product samples of Mayborn’s Closer to Nature Baby Bottle (“the CTN Product”) marketed under the brand name Tommee Tippee. As I will explain below, I have determined through my analysis that the CTN Product satisfies each and every limitation of the ’244 Patent’s independent claim 21. In other words, the CTN Product is a patent-practicing product.

131. To analyze the CTN Product, I have obtained multiple product samples. The samples I have obtained include the original base product, which has a plastic bottle, the silicone bottle variation, and the glass bottle variation. The nipple-collar assembly is materially the same in all three samples.⁷ I understand that the nipple-collar assembly of the CTN Product has not changed materially since its introduction to the market in 2006. *See* EX2032 (Parkin Dec.) ¶14. I have analyzed the three

⁷ In other words, my claim element analysis below applies to all three samples.

variations myself to confirm this. Accordingly, my analysis below applies across the 17-year history of the CTN Product, including the base product (plastic bottle) and the silicone/glass bottle variations.⁸

1. [21.PRE]: A drinking vessel comprising:

132. The CTN product includes a “drinking vessel,” as claimed.

133. The CTN Product features three main components—a nipple, a bottle, and collar. When assembled, as pictured below, these components form a “drinking vessel” for containing and dispensing liquid (e.g., milk or formula) to an infant. The bottle contains the liquid; the nipple dispenses the liquid; and the collar secures the nipple to the bottle.

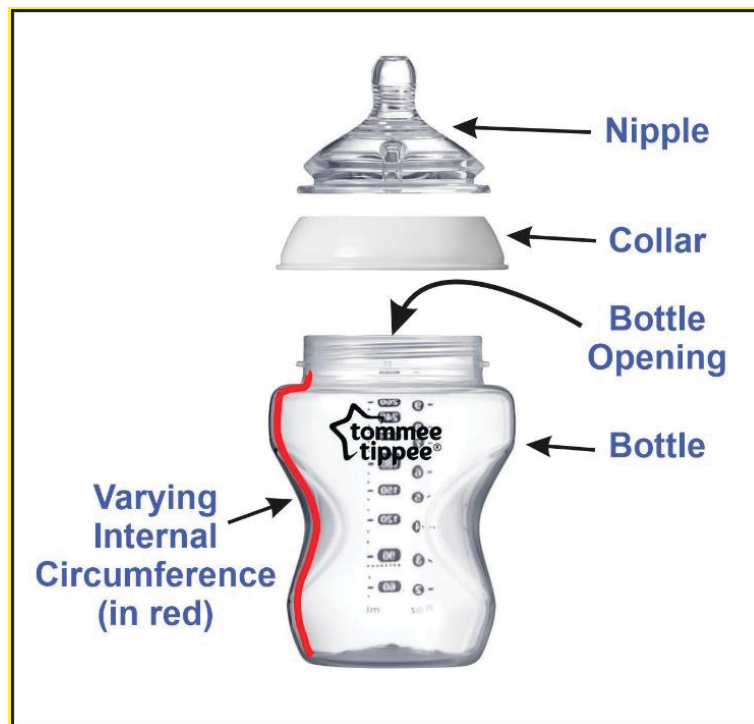


⁸ My analysis does not apply to the Advanced Anti-Colic variation.

2. **[21.A]: a container comprising a varying internal circumference and an opening into the container; and**

134. The CTN Product includes “a container comprising a varying internal circumference and an opening into the container,” as claimed.

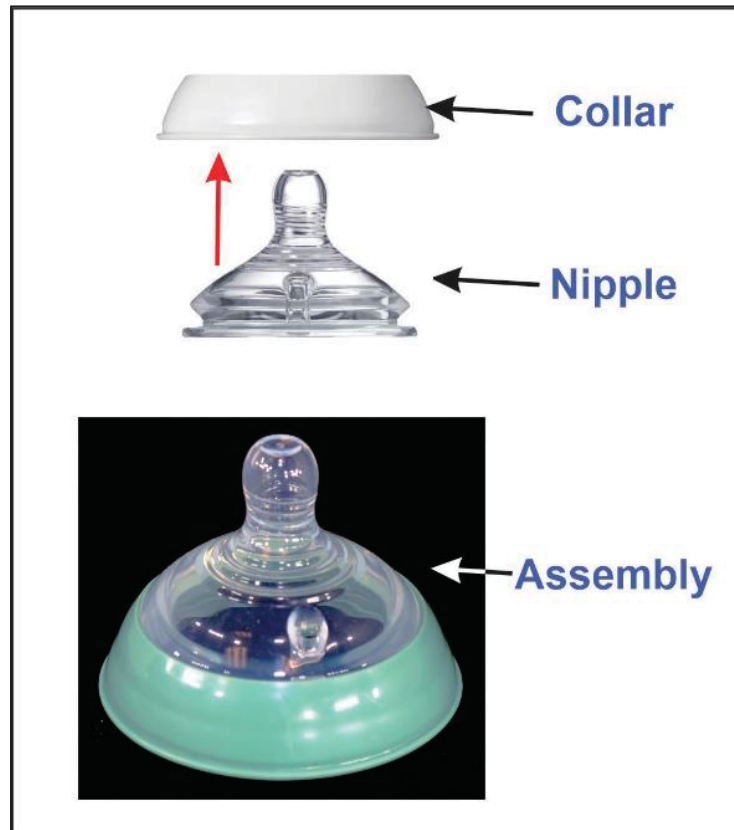
135. As I noted above, one of the three main components of the CTN Product is a bottle that contains the drinking liquid. The bottle is a “container.” As demonstrated in the annotated picture below, the bottle (“container”) has a “varying internal circumference” and an “opening.”



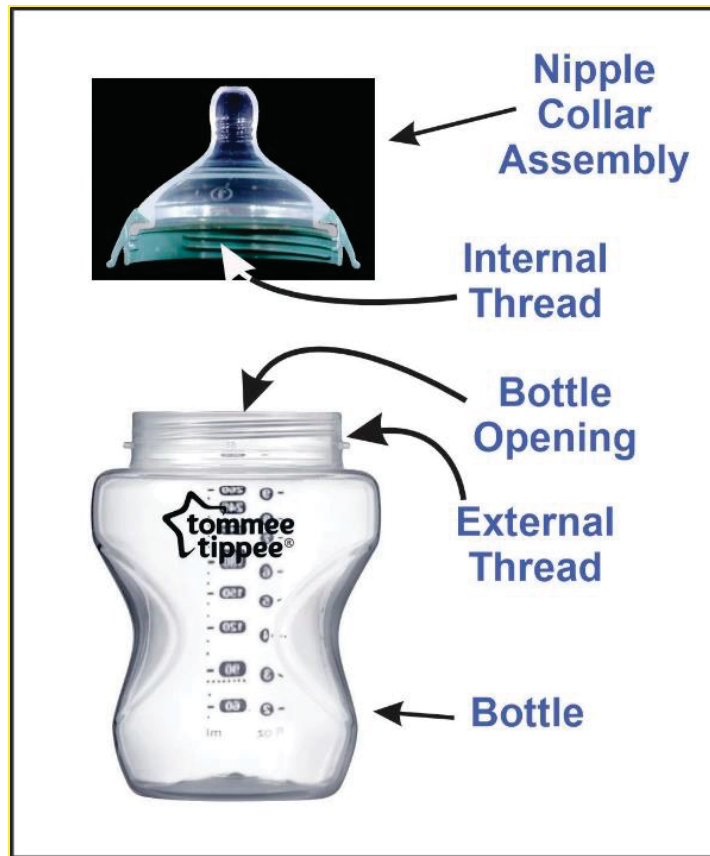
3. **[21.B]: a cover assembly configured to couple to the container over the opening, the cover assembly comprising:**

136. The CTN Product includes “a cover assembly configured to couple to the container over the opening,” as claimed.

137. As I noted above, two of the three main components of the CTN Product are a nipple and a collar. The nipple and collar form an “assembly” when the nipple is pulled through the central bore of the annular collar, with the upper lip of the collar seated in a groove of the nipple.



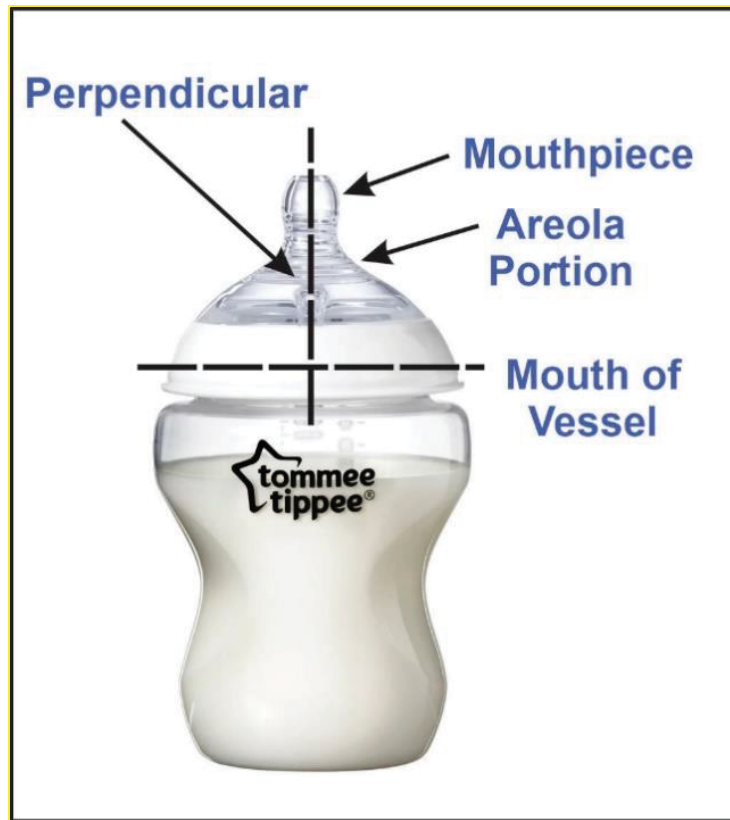
138. To install the nipple-collar assembly on the bottle, the user places the assembly over the opening of the bottle to engage the internal threads of the collar and with the mating external threads on the bottle’s neck. With the threads engaged, the user screws the collar down on the bottle, clamping the flange of the nipple between the collar and the rim of the bottle to seal the opening. Thus, the nipple-collar assembly is “configured to couple to the container over the opening.”



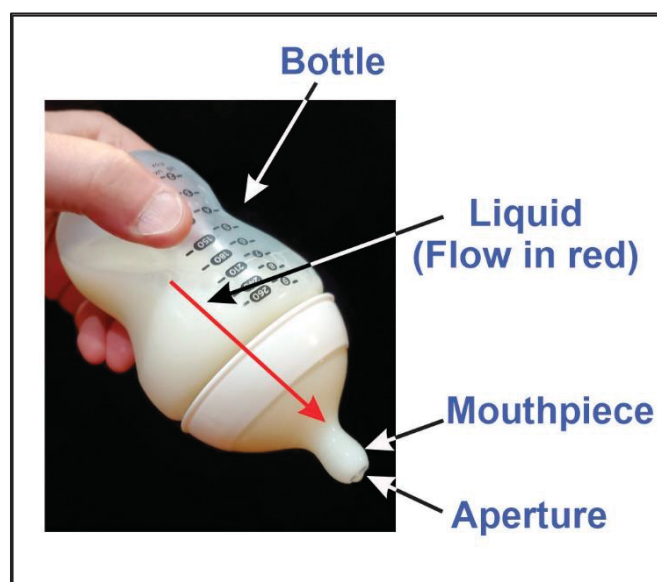
4. [21.C]: i. a nipple comprising a mouthpiece configured to allow liquid flow through the nipple to an aperture,

139. The CTN Product includes “a nipple comprising a mouthpiece configured to allow liquid flow through the nipple to an aperture,” as claimed.

140. As I noted above, one of the three main components of the CTN Product is the nipple. As shown in the annotated picture below, the nipple includes a “mouthpiece”—i.e., “the entire part projecting generally perpendicular to the mouth of the vessel and disposed above the areola portion,” as construed by the District Court.



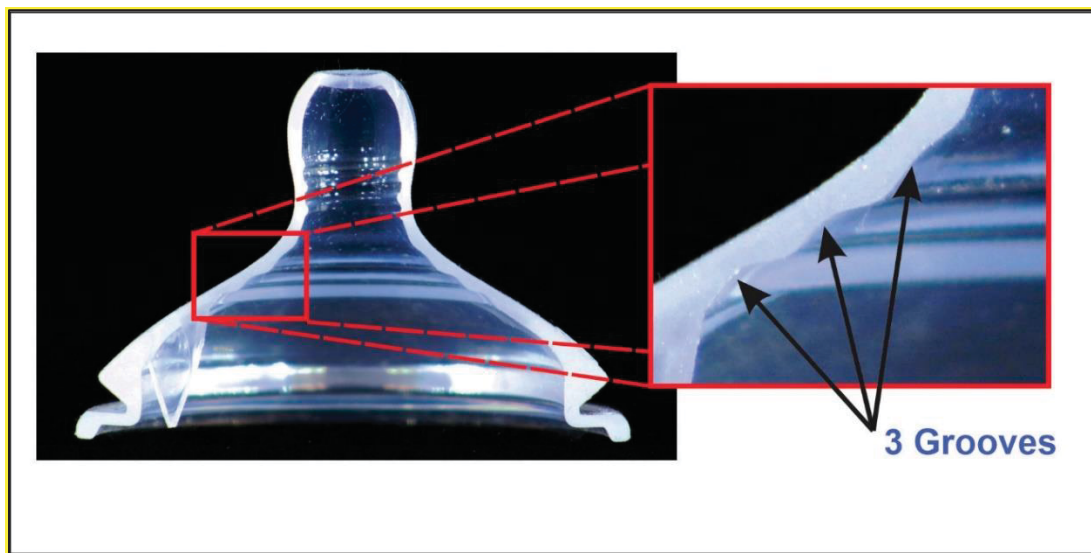
141. The “mouthpiece” receives liquid from the bottle and “allow[s the] liquid [to] flow through the nipple to an aperture,” where it is dispensed to the infant. The annotated picture below shows the mouthpiece filled with liquid from the bottle.



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

142. The CTN Product includes “a flex region configured to allow flex of the mouthpiece towards and away from a lower portion of the nipple,” as claimed.

143. As shown in the annotated picture below, the nipple of the CTN Product includes “a flex region” comprising a series of three grooves.



144. As required by the District Court’s construction, the grooves of the CTN Product’s “flex region” provide “a region having surface characteristics that control flexing.” First, the grooves are located in a discrete “region”—i.e., within the areola between the mouthpiece and the lower portion of the nipple. Second, the grooves constitute one of the “surface characteristics” expressly identified in the ’244 Patent’s preferred embodiments. *See* EX1003 (’244 Pat.), 2:66-3:3 (“The areola portion 16 [of the nipple shown in Figure 1] includes a flex region 20

comprising *three grooves or flex channels 22. . .*”), 4:16-19 (“The areola portion 118 [of the nipple shown in Figure 4] further includes undulating grooves 120 forming, in cross-section, a wavy profile on the inner surface of the areola portion 118 and extending circumferentially.”). Consistent with the ’244 Patent’s description of Figure 4, the CTN Product’s grooves “form[], in cross-section, a wavy profile on the inner surface of the areola portion.” EX1003 (’244 Pat.), 4:16-19. Fourth, the CTN Product’s grooves “control flexing” in terms of where the flexing occurs—i.e., within the areola where the grooves are located—and how flexing occurs (which I will describe further below).

145. Regarding the controlled flexing action, the grooves of the CTN Product’s “flex region” are “configured to allow flex of the mouthpiece towards and away from a lower portion of the nipple,” as claimed. For example, the grooves are designed to allow the CTN Product’s “flex region” to expand and contract as an infant sucks/suckles on the mouthpiece. When suction is applied, the flex region contracts, allowing the mouthpiece to move away from the base. When suction is released, the flex region expands, allowing the mouthpiece to move back toward the base. This back-and-forth motion of the mouthpiece relative to the base is described as part of the preferred embodiments of the ’244 Patent’s specification. See EX1003 (’244 Pat.), 3:20-43, 4:16-25. As the ’244 Patent explains, the back-and-forth motion of the mouthpiece “mimics very closely the natural movement of the human

breast.” EX1003 (’244 Pat.), 3:35-39, 4:16-25 (“providing a more natural stretching characteristic”).

146. My understanding that the CTN Product’s “flex region” is designed to control flexing in the above-described manner is based on my examination of the product samples that I obtained. For one, I was able to examine the grooves of the “flex region” visually and by touch/feel to confirm that the grooves have a thinner wall thickness than other portions of the nipple, which would facilitate the flexing action described in the ’244 Patent. Given that the CTN Product’s “flex region” mirrors the ’244 Patent’s preferred embodiment structurally, it makes sense that the CTN Product would function the same way.

147. Marketing materials from Mayborn provide another source of information that confirms my analysis. The screenshots below from a video⁹ illustrating the breast-like flexing of the CTN Product demonstrate the above-described back-and-forth movement of the mouthpiece facilitated by the grooves of the “flex region”:

⁹ The URL for this video is: <https://vimeo.com/135953647>.



148. This same video also demonstrates a different type of breast-like flexing action that provides the claimed “flex[ing] of the mouthpiece towards and away from a lower portion of the nipple.” As shown in the screenshots below, the grooves of the “flex region” allow the mouthpiece to bend relative to the lower portion of the nipple. I have confirmed this flexing action using my product samples.



6. [21.E]: the mouthpiece defining a bite region,

149. In the CTN Product, “the mouthpiece defin[es] a bite region,” as claimed. This “bite region” of the “mouthpiece” is placed in the mouth of the infant and may be contacted by the infant’s gums, teeth, or upper palate as the infant sucks/suckles on the mouthpiece.

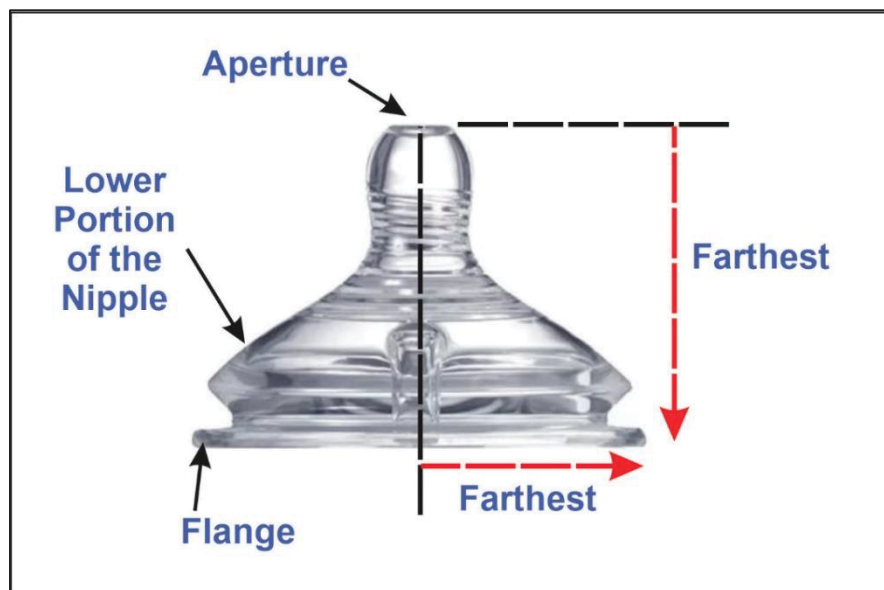


7. [21.F]: and a flange depending from the lower portion of the nipple defining the nipple circumference furthest from the aperture; and,

150. The CTN Product includes “a flange depending from the lower portion of the nipple defining the nipple circumference furthest from the aperture,” as claimed.

151. I have labeled the “flange” and the “lower portion of the nipple” in the annotated picture below. I have also illustrated in the picture how the flange “defin[es] the nipple circumference furthest from the aperture” both radially and

axially because it has the largest diameter and is the bottommost nipple structure. As I noted above, the radial interpretation is how a POSITA would view this language. But my opinion would not change regardless of the interpretation. For example, in addition to the radial and axial directions, the flange circumference is also farthest from the aperture in a direct line or along the contour of the nipple.



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

152. The CTN Product includes “a collar configured to removably couple to the nipple to seal over the opening of the container,” as claimed.

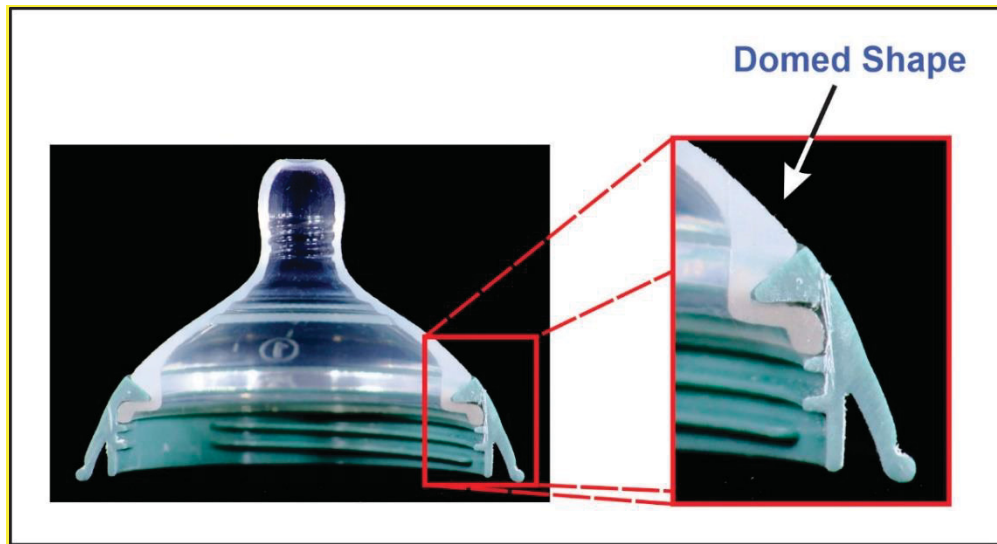
153. As I explained above (*see* ¶¶136-138), the purpose of the “collar” in the CTN Product is to “removably couple to the nipple to seal over the opening of the container.” First, the nipple is assembled to the collar by pulling the nipple through the central bore of the annular collar until the upper lip of the collar is seated in a

groove of the nipple. Next, the user places the nipple-collar assembly over the opening of the bottle to engage the internal threads of the collar and with the mating external threads on the bottle's neck. With the threads engaged, the user screws the collar down on the bottle, clamping the flange of the nipple between the collar and the rim of the bottle to seal the opening.

9. **[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.**

154. The CTN Product includes the feature of “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,” as claimed.

155. As I have explained, the nipple of the CTN Product is assembled to the collar by pulling the nipple through the central bore of the annular collar until the upper lip of the collar is seated in a groove of the nipple. As depicted below, this nipple-collar assembly defines a continuous contour with a “domed shape” that satisfies the District Court’s construction of “wide circular bottom with an arc-shaped cross-sectional profile.”



156. The arc-shaped profile of the nipple-collar assembly is visually apparent from the picture above, and I have confirmed by inspecting my product samples that the width of the assembly is larger than that of a typical nipple from the early 2000s (or before). The '244 Patent's specification explains that the "domed shape" resembles the anatomical shape of a human breast, and that is true of the CTN Product's nipple-collar assembly. *See* EX1003 ('244 Pat.), 4:3-5 ("the base portion 116 being shaped like a breast and having a wide, domed configuration").

C. Patent Owner Mayborn's Closer to Nature Baby Bottle Received Extensive Industry Praise

157. The CTN Product launched 17 years ago in 2006, and it has been praised by the industry ever since. I became aware of the CTN Product in 2008, and I noted the industry's favorable assessment of it at that time. I have also reviewed the declaration and appendices of Steve Parkin, the CEO of Mayborn Group Limited (parent of Mayborn (UK) Limited), who summarized and described a bevy of

industry awards garnered by the CTN Product. *See* EX2032 (Parkin Dec.). Because there is a nexus between these awards and the '244 Patent's claim features (as I will explain in the following section), the awards constitute strong evidence that a POSITA would not have arrived at the claimed invention based on prior art like Ishimaru, Kurkjian, and Atkin.

D. The Industry Praise for Patent Owner Mayborn's Closer to Nature Baby Bottle Has Nexus to the '244 Patent's Claim Features

158. The combination of features recited in the '244 Patent's independent claim 21 are the main impetus behind the industry's extensive praise of the award-winning CTN Product. Specifically, it is my opinion that this praise flows from the synergistic combination of the "flex region" and "domed shape" claim features. I have reached this conclusion for the following reasons.

159. First, I note that there is documentary evidence associating the '244 Patent's "domed shape" and "flex region" claim features with the awards won by the CTN Product. While the documents do not repeat the claim terms "domed shape" and "flex region" verbatim, they nonetheless reflect the beneficial results produced by these features—namely, the breast-like shape achieved via the "domed shape" and the breast-like movement achieved via the "flex region." I have summarized a sampling of this evidence in the table below:

Award	Reference to Claim Features
2016: National Parenting Product Awards	“The Closer to Nature bottle brings mom and baby together for a smooth transition from breast to bottle. <i>The original breast-like nipple mimics the ‘just like mom’ feel and reduces nipple confusion.</i> ” EX2032 (Appendix Q)
2018: Best Baby & Toddler Gear—Feeding Bottle, Bronze & Consumer’s Choice	“Tommee Tippee’s Closer to Nature bottles are inspired by what babies love most: mum. <i>With the most breast-like teat ever made, this bottles flexes like mum</i> and feels like mum because babies prefer it that way.” EX2032 (Appendix O)
2019: Mom’s Choice Awards	“Tommee Tippee’s award-winning Closer to Nature bottle features an <i>easy-latch-on nipple that mimics the flex, stretch and shape of mom’s breast for a natural latch</i> , because babies prefer it that way.” EX2032 (Appendix T)
2019: National Parenting Product Awards	“Evaluation comments: ‘I liked the shape of the nipple and bottle. It looks like a good shape to easily transition from breast to bottle. <i>Its curve and softness are very breast-like.</i> ’” EX2032 (Appendix R)
2019: Daily Mom—Best Baby Essentials	“Tommee Tippee . . . has created the best baby bottle for breast milk, the Closer to Nature Baby Bottle. This baby bottle is shaped like a breast and feels like a breast which is what babies prefer. <i>The breast-like nipple of the Closer to Nature Bottle helps babies both breast and bottle feed without difficulty transitioning between the two.</i> ” EX2032 (Appendix U)
2020: MadeForMums—Baby Bottles, Silver Award Winner	“ <i>Why it’s a winner:</i> “The Closer to Nature bottle from hugely trusted brand Tommee Tippee is <i>shaped to feel more like a breast</i> , making it easier for the baby to latch. The silicone nipple also <i>mimics the natural breast feeding action[.]</i> ” EX2032 (Appendix J)
2021: MadeForMums—Baby Bottles, Silver Award Winner	“ <i>Why it’s a winner:</i> “Described by our mum testers as ‘comfortable to use’ and ‘good quality,’ this bottle impressed our testers with its smooth

	silicone teat and has <i>a breast-like shape.</i> ” EX2032 (Appendix K)
2022: MadeForMums— Baby Bottles, Silver Award Winner	“ <i>Why it’s a winner:</i> “The squeezable soft-touch silicone is designed to feel warm and comforting, just like mum’s skin, and the teat itself is shaped to mimic a breast.” EX2032 (Appendix L)
2023: MadeForMums— Baby Bottles, Gold Award Winner	“ <i>Why it’s a winner:</i> “Marketed by Tommee Tippee as the ‘original breast-like bottle’ with a teat that is shaped like a breast, the Closer to Nature Baby Bottles proved to be a hit with our testers and their babies[.]” EX2032 (Appendix M)
2023: National Parenting Product Awards	“Evaluation comments: . . . ‘The design is made to <i>mimic a human nipple, which is ideal</i> if you have a baby who is primarily nursing.’” EX2032 (Appendix S)
2023: MomTrends—Best Bottle For Newborns	“Plus, [the Closer to Nature bottles] are <i>modeled [sic] after an actual breast so the bottle mimics the natural flex and movement of a mom’s breast</i> to achieve a comfortable feeding for baby. And the compact shape allows your baby to be closer to you too!” EX2032 (Appendix V)
2023: Today’s Parent— Best Bottles for Breastfed Babies	“It’s shaped like a boob, moves like a boob and stretches like a boob—what’s not to love?” “Pros: • <i>Designed to look and feel like a boob</i> • <i>Flexible soft silicone nipple that mimics your own</i>” EX2032 (Appendix W)

160. Second, the combination of the ’244 Patent’s “domed shape” and “flex region” claim features is what makes the CTN Product uniquely effective as an infant feeding device. As I have explained, the “domed shape” and “flex region” features produce the CTN Product’s characteristic breast-like shape and movement. Mimicking the shape and movement of a human breast sets the CTN Product apart

from other baby bottle products in terms of improving the rate at which breastfeeding infants accept an artificial nipple while providing a much-needed solution to the longstanding problem of “nipple confusion.”¹⁰ It makes sense that the CTN Product garnered awards based on these unique characteristics and important advantages. I am not aware of any other baby bottle products before the CTN Product launched in 2006 that combined these “domed shape” and “flex region” features in a similar way, though multiple competitors have since introduced follow-on products. If such a product had been known beforehand, the CTN Product would not have been as revolutionary and lauded by the industry as it was.

161. Of course, the CTN Product includes more than just the “domed shape” and “flex region” features. Other notable aspects of the CTN Product include an ergonomic bottle and a nipple made of soft silicone material with an anti-colic valve. While certainly effective and beneficial, these aspects would not be the main reason for the CTN Product’s awards. They are complimentary of the breast-like characteristics produced by the “domed shape” and “flex region” features. For

¹⁰ Again, nipple confusion is “an infant’s difficulty in achieving the correct oral configuration, latching technique, and suckling pattern necessary for successful breast-feeding after bottle feeding or other exposure to an artificial nipple.” EX2031 (NIPPLE CONFUSION: TOWARD A FORMAL DEFINITION), p.1.

example, anti-colic valves were known and used decades before the CTN Product. But the CTN Product's anti-colic valve is unique at least in part due to its integration with a "domed" nipple-collar assembly. The same is true of the ergonomic bottle, the silicone nipple, and other design features of the CTN Product.

162. Third, the fact that the "domed shape" and "flex region" have remained constant in the CTN Product since its launch 17 years ago strongly suggests that these features are the main impetus of the extensive industry praise. While other aspects have varied over the years—e.g., different bottle sizes, bottle types, colic valves, etc.—the breast-like shape and flex characteristics have remained the same throughout the CTN Product's award-winning history.

XI. ADDITIONAL REMARKS

163. I currently hold the opinions expressed in this declaration. But my analysis may continue, and I may acquire additional information and/or attain supplemental insights that may result in added observations.

164. I hereby declare that all statements made are of my own knowledge are true and that all statements made on information and belief are believed to be true. I further declare that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of the Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this proceeding.

Dated: October 26, 2023

By:

A handwritten signature in dark ink, appearing to read 'T. P. Fletcher', written over a horizontal line.

Timothy P. Fletcher

Appendix A

Tim P. Fletcher

321 Hallock Street, Pittsburgh, PA 15211 USA; Cell: +1 (412) 952-3755; email: tim.fletcher@onebusinessdesign.com

Summary

Innovator with over 30 years' experience developing and managing the development of a wide variety of products for diverse industries. Proven management success in process development and innovation strategies in both private industry and volunteer-based professional organization. Career long experience working with many different professions in many different countries and cultures.

Professional Experience

President/ Design Thinking Facilitator & Trainer

One BusinessDesign, LLC, Pittsburgh, PA, USA November 2014 – Present

- Innovation training and facilitation using Design Thinking methods. Areas include products and services, business model design and organizational change.
- Design patent, utility patent and trade dress expert witness.
- Design Strategy Advisor - a) Develop culture of design thinking within your organization. b) Develop a highly functioning design department within your organization. c) Improve the quality of output you get from your design consultancies. d) Institutionalize a high level design look and feel across your organization (products, graphics, service and strategy).
- Chief Design & Technology Officer – Artesa, previously Revolutionary Electronic Design, LLC (January 2018 to Present) - startup
- Outreach:
 - Presentation: *Visual IP; An Industrial Designer's Value Proposition* – RDU Chapter of IDSA, Raleigh, NC, Sept. 21, 2023.
 - Advocate and co-author - Industrial Designer's Society of America letter of support for The Counterfeit Goods Seizure Act of 2019 to U.S. Senators.
 - Panelist - *After Hoop, what constitutes design patent inventorship and should it be based on utility patent "conception" principals?* Design Day 2022, Washington DC, October 26, 2022.
 - Webinar Presentation - Visual IP - The Value of Design Patents Trade Dress and Copyright – Catalyst Connection, Pittsburgh, PA, Jan. 16, 2019.
 - Presentation – *Visual Intellectual Property: The Value of Design Patents & Trade Dress*. Design in Plastics conference, Detroit, MI, Nov. 6-8, 2017.
 - Cited in *The Other Side of Patents: What Design Can Gain from Looking Beyond the Lawsuits* by Michael Hages. Design Management Review; Volume 27, Issue 4. pp. 20 - 29.
 - Juror and Presenter – Design Turkey Awards and *Design and Business*, Design Week Turkey, Istanbul, Oct. 18-19, 2016
 - Interview - *Making the Connection: The Importance of Linking Manufacturers with Designers and It's All in the JAM*. Made in PA magazine. Winter 2016, Vol 7, Issue 1.
 - Presentation – *Design Matters: Changing Your Business Model By Design*, Pittsburgh Technology Council, Pittsburgh, PA, August 25, 2016
 - Board Member/Secretary - Design House, <http://www.designhousechicago.org/>, Oct. 2015 to Dec. 2018.
 - Presentation – *Design Patent and Trade Dress Overview*. Meetup, Pittsburgh, PA, July 16, 2015.
 - Participant and Moderator - *Design Your Business: Panel Discussion*. CREATE 2015 Festival, Pittsburgh, PA, June 12, 2015.
 - Presentation – *Design Thinking*. Young Presidents Organization meeting, Orlando, FL, March 25, 2015.
 - Teaching – Career Planning for Integrated Innovators. Carnegie Mellon University. Integrated Innovation Institute. Fall 2015 to 2017 semesters. Business Model Development. Carnegie Mellon University. Integrated Innovation Institute. Fall 2016 semester.

Business Development Manager

Daedalus, Pittsburgh, PA USA November 2009 to March 2015

- Responsible for new business sales and marketing for the firm. Employee growth increased by 54%.
- Co-developed and facilitated Design Thinking methods in client projects.

Tim P. Fletcher

321 Hallock Street, Pittsburgh, PA 15211 USA; Cell: +1 (412) 952-3755; email: tim.fletcher@onebusinessdesign.com

- Strategic planning with clients; including voice of the customer, roadmapping, business model design and idea generation.
- Expert Witness – Design patent and trade dress infringement cases.
- Outreach:
 - Juror and Jury Chairperson – Sichuan-Taiwan Industrial Design Awards, Chengdu, China. Dec. 4, 2013.
 - Interview – *Five Minutes with Tim Fletcher* (article about doing business in China). Pittsburgh Business Times. June 5-21, 2011.
 - Juror – Core 77 Design Awards – Research & Strategy category. Rochester, NY. June 4, 2012
 - Advisory Panel – Pittsburgh Technology Council's Creative Technology Network. March 2011 to Dec. 2012.
 - Juror – Red Star Design Awards, Beijing, China. September 27, 2011.
 - Presentation – *Industrial Design in Commercial Markets*. Sino-US Exchange of Industrial Design, F518 Bao'an District, Shenzhen Creative Industry Association, Shenzhen, China. Sept. 22, 2011.
 - Interview - *College Prowler soars after making switch to business model*. Pittsburgh Business Times August 12-18, 2011.
 - Presentation – *Design Thinking; What it is, What it is not and Why it is important*. LKK Design office (Beijing), ZTE headquarters (Shanghai) May 18 and May 27, 2011, Arriba Software (Pittsburgh, PA) April 17, 2013, Wuxi Design Conference (Wuxi, China) May 25, 2013 and Sichuan-Taiwan Industrial Design Awards (Chengdu, China) Dec. 4, 2013.
 - Teaching – Practicing Design (Professional Practices). Carnegie Mellon University. School of Design. Fall 2010 - 2011 semesters.
 - Presentations & Workshops: *Design Thinking*. Carnegie Mellon University, Engineering, Master's Degree in Engineering and Technology Innovation Management. 2011 and 2013; and Tepper School of Business, Entrepreneurship for High Growth Opportunities class. 2010, 2012 and 2013.
 - Presentations & Workshops: *Idea Generation and User Research*. Carnegie Mellon University, Tepper School of Business, Entrepreneurial Boot Camp. 2010 and 2012.
 - Presentation: *A Sheep in Wolf's Clothing: How to be a Design Thinker in an Analytical World*. IDSA Mideast District Conference. Grand Rapids, MI. April, 31, 2010 and IDSA Southern District Conference. Atlanta. April 21, 2012.

Assistant Professor

The Hong Kong Polytechnic University, School of Design, Hong Kong August 2006 to November 2009

- Taught Industrial Design courses for Bachelor level students in Industrial Design and Engineering.
- Developed sales tools to introduce School of Design Research Labs and Centres to US corporations.
- Operations Manager for School of Design Annual (Graduation) Show for 2007 & 2008.
- Consultant on product development management in the University and with external clients.
- Outreach:
 - Presentation - *Design Thinking as a Solution to Strategic Planning* at the following conferences:
 - 2009 Shenzhen Industrial Design Forum. Shenzhen, China. June 14, 2009.
 - 2008 6th China (Wuxi) International Industry Design Expo. Wuxi, China. December 8, 2008.
 - 2008 China International Consumer Electronics Show – Industrial Design Forum. Qingdao, China. July 11, 2008.
 - 2008 First China (Shenzhen) World Industrial Design Forum. Shenzhen, China. May 17, 2008.
 - Interview – Various design topics for ATOP design web site. Shenzhen, China. December 5, 2008.
 - Panel Discussion: *Design*. Education USA-Careers Day. Hong Kong. November 22, 2008.
 - Interview – *Design Expert: Be in China to Assure Quality*. Plastics News; April 22, 2008.
 - Presentation - *Panel Discussion: Appreciating Differences: Teaching International Students*. IDSA Educational Conference. San Francisco, CA, USA. October 20, 2007.
 - Presentation - *We Think Differently; How to Better Communicate with Your Hong Kong/China Partners*. IDSA National Conference. Austin, Texas, USA. September 19, 2006.
 - Moderator (Master of Ceremony) of the Business of Design Week Conference, Hong Kong. 2006, 2007 & 2008.
 - First Round Judge for the Hong Kong Design Centre's *Design for Asia Award (DFA)* 2007.

Tim P. Fletcher

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- First Round Judge for the *Hong Kong Young Design Talent Awards 2006*.
- Article – *It's Socrates vs. Confucius*. *Plastics News*; October 9, 2006.

Director of Design

DAKA Development, Ltd., Hong Kong (Consumer Electronic Company) **September 2005 to April 2006**

- Managed a department of five Industrial Designers and three Graphic Designers.
- Developed company's first Roadmap of new products including launch dates by season and team members by project.
- Developed Industrial Design process guidelines, which improved quality of output.
- Liaised with DAKA Engineering in China and the UK on a daily basis to creatively solve product development issues and maintain schedules.
- Outreach:
 - Presentation: *IP as the Basis of Business for Innovative Companies in Asia*. Danish Patent and Trademark Office. Copenhagen, Denmark. April 26, 2006.
 - Presentation: *Integrating Concepts, Technologies and Design*. HK Design Association's Design Entrepreneur Programme. March 25, 2006.
 - Presentation: *Strategies for Driving New Product Innovation*. Hong Kong Electronic Appliance Manufacturers Association. November 25, 2005.
 - Interview: *Out of the Box*. Hong Kong Trade Development Council. April 10, 2006.
 - Presentations of products to judging panels for design competitions.

Director of Product Development

Elumens Corp., Durham, NC USA (Simulator Product Company) **October 2001 to August 2005**

- Managed the business model change from selling standard product to selling custom solutions from the Product Development aspect.
- Developed concepts and component costs for custom simulator projects for commercial and military applications in US, Europe and Asia. Customers include The Museum of World Religions (Taipei, Taiwan R.O.C.) and US Army 160th SOAR.
- Technical Sales both at Trade Shows and on-site for customers worldwide. Worked to understand customer requirements and communicate how Elumens can meet their needs.
- Developed and maintained a vendor database for components in order to speed up the quoting process for custom projects.
- Researched and tested "off the shelf" materials to reduce costs. An example is finding a suitable Polypropylene for use as a front projection screen that reduced the cost of materials from \$60 per square foot to \$5 per square foot.
- Reviewed existing product lines for cost and part count reductions. Reduced inventory of Projector Stands by 73%.

Vice President/Partner

Gamil Design, Inc.; Raleigh, NC USA (Design Consulting Firm) **June 1998 to March 2001**

- Managed new product development from initial concept sketches through manufacturing for a variety of clients.
- Shared the duties of Office Management, Sales and Marketing of the firm. Brought in new clients located in US, Asia and Europe. Raised International projects from 30% to 50% of total business.
- Co-developed highly detailed quoting, project timeline and customer requirements documentation.
- Designed and developed Sporting Goods, Infant Products, Electronic Equipment and Packaging.
- Outreach:
 - Teaching - Materials and Processes for the Industrial Design program. NC State University College of Design. Spring 1999 semester.

Manager of Product Development – Feeding Division

Evenflo Company, Inc., Piqua, OH USA (Infant Products) **March 1996 to May 1998**

Tim P. Fletcher

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- Designed and developed 7 lines of new products from initial concepts to production. Created timelines, evaluated international and domestic vendors and communicated with all departments as well as vendors. Managed 50 new Disney licensed products into the product line in one year.
- Hired and managed one direct report. Managed projects with 2-4 outside design consultancies a year.
- Developed and managed a \$750K department budget.
- Utilized research being conducted by universities, independent researchers and internal R&D staff in the areas of child development.
- Evaluated concepts from outside sources for inclusion in product lines.
- Developed ISO 9001 procedures for product development, in a team environment. Served as an ISO internal auditor.
- Brought ProE CAD system into the department.

Industrial Designer

Roadmaster, Inc.; Opelika, AL USA (Exercise Equipment) **October 1995 to March 1996**

- Designed and developed a new line of higher end treadmills.

Industrial Designer

Performance, Inc.; Carrboro, NC USA (Bicycle Catalog) **October 1994 to October 1995**

- Designed and developed new Bicycle Accessories, such as tire pumps, automobile rack systems, and water bottle cages as well as packaging structures.
- Managed product development schedules based on introduction in five catalogs per year.

Senior Product Development Specialist – International Division

Gerber Products Company; Fremont, MI USA (Infant Products) **August 1991 to September 1994**

- Designed and developed new infant feeding products from concept to production for both International and Domestic Markets.
- Managed the flow of information regarding new products between manufacturing, product supply and marketing to produce a complete product in a timely manner.
- Evaluated International and Domestic manufacturers.

Design Coordinator

Stahlwood Mfg. Co., Inc.; Youngsville, NC USA (Infant Products) **July 1989 to December 1990**

- Designed new infant products.
- Managed timelines and international and domestic vendor communication.

Professional Development

Founding Board Member (appointed position)

The Institute for Design Science and Public Policy (IDSPP) 2023 to Present

US Government Liaison Officer (appointed position)

Industrial Designers Society of America (IDSA) May 2011 to July 2014

- Research US Government for mutually beneficial design connections and build relationships.
- Work with IDSA National Staff to build programs with the US Government.

Tim P. Fletcher

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International Liaison Officer - Asia (appointed position)

Industrial Design Society of America (IDSA) January 2007 to November 2009

- Wrote newly approved IDSA By-Laws to allow for and manage International Chapters.
- Worked with stakeholders to begin the IDSA China Chapter. The first chapter outside of North America.
- Built relationships and mutually beneficial collaborations between IDSA and Asian design organizations. Including: Promotion of IDEA awards competition to Chinese firms and Design-centered US trips for Chinese manufacturers and brands.
- Interview - *Made In China: IDSA Launches First Asian Chapter*. Design Perspectives. Nov/Dec 2009.
- Interview - Various design topics for the Culture Talk show on CCTV-3. Beijing, China. November 7, 2009.
- Interview - *Industrial design group begins vote to add China chapter*. Plastics News. October 7, 2008.

Chapter VP (elected position)

Industrial Design Society of America (IDSA) January 2005 to December 2006

- Developed management training and seminars for the 28 Chapters in the US and Canada.
- Set up and moderated two Chapter Council meetings per year. The Chapter Council acts as a legislative body that develops policies from the grass roots to be presented to the Board.
- As an IDSA Board Member, I work in a team environment to develop policies for the entire organization.

Southern District VP (elected position)

Industrial Design Society of America (IDSA) January 2003 to December 2004

- Developed management training and seminars for the five Chapter Chairs, covering the states of NC, SC, GA, FL, TN, AL, MS, LA & TX. Through this training and a constant mentorship we have been able to create a very strong IDSA brand in the South.
- Developed and implemented two (2) IDSA Southern District Conferences with an average budget of \$65,000. Duties included developing the conference theme, appointing volunteers to manage areas such as Graphics, Web Site, Treasury, etc. Secured sponsors that contributed \$20,000 to the total budget. Searched and coordinated with an average of 17 speakers per conference.

Carolina Chapter Chair (elected position)

Industrial Design Society of America (IDSA) January 1999 to December 2002

- Managed events and information transfer for the Members in North and South Carolina. Events included a first ever exhibit of the entire Industrial Design process at the Mint Museum of Craft + Design in Charlotte, NC.
- Worked with individual Members to solve IDSA issues and other professional needs.
- As a result membership increased from 78 to 108 members.
- Organized The Designers Life Process' Presentations - a separate "conference within the conference" with presentations and discussions on issues that affect all designers during their professional life, such as unemployment, retiring, changing from profession to teaching and starting your own business. IDSA Southern District Conference 2002.
- Interview - *Fun and Function-Consumer Design Redefines High Style*. Tuscaloosa News. June 25 2000.

Computer Experience

Business – Word, Excel, Project, Access, PowerPoint. Freemind.

Design – Pro Engineer, Rhino, Fusion 360, Illustrator, and Corel Draw.

Travel Experience

Professional: Hong Kong/China, Japan, Northern Ireland, South Korea, Sweden, Switzerland, Taiwan (R.O.C.), Thailand, UK, and extensive US travel.

Personal: Australia, Austria, Belize, British Virgin Islands, Cambodia, Canada, China, Costa Rica, Cuba, Czech Republic, Dominican Republic, Ecuador/Galapagos Islands, Germany, Ghana, Greece, Hungary, India, Italy, Lichtenstein, Lithuania, Malaysia(Borneo), Malta, Mexico, Nicaragua, Northern Cyprus, Panama,

Tim P. Fletcher

321 Hallock Street, Pittsburgh, PA 15211 USA; Cell: +1 (412) 952-3755; email: tim.fletcher@onebusinessdesign.com

Peru, Philippines, Sri Lanka, Switzerland, Thailand, Turkey, UAE, Vietnam, Yugoslavia(1988) and extensive US travel.

Patents

US Design patents – 14; Utility patents – 3. **Europe** Utility patents – 1. **Australia** Utility Patent – 1. **WIPO** Utility patents - 2

Education

IDSA Continuing Education Seminar – How to Serve as an Expert Witness in Design Patent Litigation, April 2015
Masters of Design – Advanced Strategies, Hong Kong Polytechnic University, Kowloon, Hong Kong, November 2008
Bachelor of Environmental Design in Product Design, North Carolina State University, Raleigh, NC, July 1989

Memberships

The Institute for Design Science and Public Policy (IDSPP) 2023 to Present
Industrial Design Society of America (IDSA) 1989 to Present
Intellectual Property Owners Association (IPO) 2017 to Present
The Design Thinking Association – 2020 to Present
Product Development and Management Association (PDMA) 2011 to 2015
Hong Kong Designers Association 2006 to 2009
Design Management Institute 2008 to 2011

Honors

Inducted into the Academy of Fellows, Industrial Designers Society of America, September 2009

Tim P Fletcher's Expert Witness Cases - Complete List

Date	Case Name (underlined notes my client)	Case Number	Client IP Owner	Report	Depo.	Markman Case	Trial/Hearing	Firms & Attorneys
2023	Zhejiang Yuanzheng Auto & Motorcycle Assessories Co., Ltd. v. <u>Arex Industries, Inc.</u> (Design Patent)	United States District Court for the Central District of California, Case No. 2:22-cv-01692-JWH-PD	X	Yes	Yes	N/A	TBD	Plaintiff - InHouse Co. Law Firm (Alexander Chen, Katja M. Grosch, Theodore S. Lee) Defendant - Glacier Law, LLP (Tianyu Ju, Yu Hao Yao)
2023	<u>A&A Global Imports, Inc.</u> v. Lerman Container Corporation (Design Patent)	Inter Parties Review No. : N/A		Yes	No	N/A	No	Petitioner: Blank Rome, LLP (Dipu Doshi and Jonathan England)
2023	<u>Shenzhen Shi Borunxing Wujiu You Xian Gong Si</u> v. The Individuals, Partnerships and Unincorporated Associations Identified on Schedule A (Design Patent)	United States District Court for the Northern District of Illinois, Eastern Division, Civ. A. No. 23-cv-01946	X	Yes	No	No	No	Plaintiff - Glacier Law, LLP (Wei Wang, Ruoting Men, Tao Liu) Defendant - AU LLC (Adam E. Urbanczyk)
2023	<u>Siddhi, LLC</u> v. OPS Labs, LLC. (Utility Patent)	American Arbitration Association AAA Case Number - 01-22-0002-2881	X	Yes	No	N/A	No	Claimant: Ward & Smith, P.A. (Joseph A. Shouten), Respondent: Gravis Law, PLLC (Paul H. Beattie)
2022	<u>Hydrow, Inc.</u> v. iFit Health & Fitness, Inc. (Design Patent and Trade Dress)	United States District Court for the District of Delaware, Case, No. 1:22-cv-00195-CFC	X	Yes	No	N/A	No	Plaintiff: Burns & Levinson LLP (Howard J. Susser & Christopher S. Schultz)
2022	<u>Glam and Glits Nail Design, Inc.</u> vs. IGEL Beauty, LLC, et al (Design Patent)	United States District Court for the Central District of California, Southern Division, Case, No. 8:20-cv-88-JVS (DFMx)	X	Yes	Yes	N/A	TBD	Plaintiff: Lapple Ubell IP Law, LLP - Matthew C. Lapple Defense: Fox Rothchild, LLP - John Shaeffer
2021	<u>Gentex Corporation</u> v. Galvion Ltd., and Galvion, Inc. (Design Patent)	United States District Court for the District of Delaware, Case, No. 1:19-cv-00921-MN	X	Yes	Yes	N/A	No	Plaintiff: Morgan, Lewis & Bockius LLP - Scott D. Sherwin Defense: Shaw Keller LLP, Jason W. Balich
2021	<u>Munchkin, Inc.</u> v TOMY International, Inc. (Utility Patent & Design Patent)	United States District Court for the Northern District of Illinois, Eastern Division, Case, No. 1:18-cv-6337	X	Yes	Yes	N/A	TBD	Plaintiff: Lathrop GPM LLP - Luke Meriwether Defense: Husch Blackwell LLP - Thomas P. Heneghan
2021	<u>Think Green Limited d/b/a Haakaa</u> , v. Medela AG and Medela LLC (Design Patent & Trade Dress)	United States District Court for the Northern District of Illinois, Eastern Division Case, No. 1:21-CV-05445	X	Yes	Yes	N/A	Yes	Plaintiff: Dunlap Bennett & Ludwig PLLC - Robert P. Greenspoon Defense: Marshall, Gerstein & Borun LLP - Michael R. Weiner
2021	<u>J.R. Simplot Company</u> v. McCain Foods USA, Inc. (Design Patent)	United States District Court, District of Idaho, Case No. 1:16-cv-00449-DCN	X	Yes	Yes	N/A	TBD	Plaintiff: Parsons Behle & Latimer - Christopher Cuneo Defense: Jones Day - John C. Evans
2021	<u>Ideavillage Products Corp.</u> , v. Koninklijke Philips N.V. (Design Patent)	Ex Parte Reexamination, Case: PGR2021-00116		Yes	No	N/A	No	Petitioner: Delarosa and Associates - Emil Braca and McAndrews, Held & Malloy, Ltd. - Chris Carani
2021	Certain Batteries and Products Containing Same - <u>for Complainants</u> (Design Patent)	US International Trade Commission Investigation No. 337-TA-1244	X	Yes	No	N/A	N/A	Complainant: Morgan, Lewis & Bockius LLP - Ehsun Forghany
2021	Certain Percussive Massage Devices - <u>for certain Respondents</u> (Design Patent)	US International Trade Commission Investigation No. 337-TA-1206		Yes	Yes	N/A	N/A	Complainant: Lewis Brisbois Bisgaard & Smith LLP - Joshua Curry Respondents: Dentons US LLP - Benjamin Harbuck
2020	<u>J.R. Simplot Company/Simplot Canada (II) Limited</u> - and - McCain Foods Limited (Industrial Design Registration)	Federal Court of Canada, Court File No. T-569-17	X	Yes	N/A	N/A	No	Plaintiff: Smart & Biggar - Daniel Hnatuk Defense: Norton Rose Fulbright Canada LLP/ Jones Day
2020	<u>Golden Eye Media USA, Inc.</u> v. Trolley Bags UK, Ltd and Berghoff International, Inc. (Design Patent)	United States District Court, Southern District of California, Civ. A. No. 3:18-cv-02109-BEN-LL		Yes	Yes	N/A	No	Plaintiff: Insight, LLP. - Cody LeJeune Defense: Honigman LLP, Matthew Mrkoncic
2020	Simplehuman, LLC, v. <u>Itouchless Housewares and Products, Inc.</u> (Trade Dress)	United States District Court, Central District of California, Civ. A. No. 2:19-cv-02351-MWF		Yes	Yes	N/A	No	Plaintiff: Knobbe, Martens, Olson & Bear, LLP. - William Adams Defense: Foley & Lardner LLP - Victor de Gyarfas
2019	<u>Good L Corporation</u> v. Fasteners for Retail, Inc. d/b/a FFR Merchandising (Trade Dress)	US District Court, Middle District of Tennessee, Civil Action No. 3:18-cv-000489	X	Yes	Yes	N/A	No	Plaintiff: Patterson Intellectual Property Law, P.C. - Scott Douglass Defense: Honigman LLP - Mary Hyde
2019	<u>Zuru, LLC (Petitioner)</u> v. LEGO (Patent Owner) (Design Patent)	Ex Parte Reexamination, Ctrl. No. 90/014,339		Yes	N/A	N/A	N/A	Petitioner: Dentons US LLP - Kevin Greenleaf
2018	<u>Pavo Solutions, LLC v. Kingston Technology Company, INC.</u> , (Utility Patent)	US District Court of Central California, Civil Action No. 8:14-cv-01352-JLS-KES		Yes	Yes	Yes	No	Plaintiff: Russ August & Kabat - Minna Y. Chan Defense: Fish & Richardson - Maria Elena Stiteler
2018	AJB Enterprises, LLC, v. <u>BackJoy Orthotics, LLC</u> , (Trade Dress)	US District Court of Connecticut, Civil Action No. 3:16-cv-00758 (VAB)		Yes	Yes	N/A	No	Plaintiff: Handal & Morofsky - Anthony Handal Defense: Perkins Cole LLP - Jonathan Goddard & William Rava
2018	Shenzhen Kean Silicone Product CO., LTD (Petitioner) v. <u>PKOH NYC, LLC (Patent Owner)</u> (Utility Patent)	Inter Parties Review No. IPR2017-01327	X	Yes	No	No	No	Petitioner: Stratum Law LLC - Xiyan Zhang Patent Owner: Sils Cummis & Gross P.C. - Scott Stimpson & Tod M. Melgar
2012	Luv N' Care Ltd. et al. v. <u>Mayborn USA, Inc.</u> (Design Patent)	U.S. District Court, Southern District of New York, Civil Action No. 11-2460		Yes	Yes	No	No	Plaintiff: Goldberg & Cohen - Morris Cohen & Lee Goldberg Defense: Alston and Bird - James Grant & Elizabeth Helmer
2011	Luv N' Care Ltd. et al. v. <u>Jackel International, Ltd. et al.</u> (Design Patent & Trade Dress)	State of Louisiana Parish of Ouachita 4th Judicial District Court, Case No. 10-1891		Yes	Yes	No	No	Plaintiff: Goldberg & Cohen - Morris Cohen & Lee Goldberg Defense: Alston and Bird - James Grant & Elizabeth Helmer

Appendix B

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	Awards	Chapters	Inspire	
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		Promote	MYIDSA	
		Join IDSA		

What is Industrial Design? (/what-is-industrial-design)



Industrial Design Defined

Industrial design (ID) is the professional service of creating and developing concepts and specifications that optimize the function, value and appearance of products and systems for the mutual benefit of both user and manufacturer.

Industrial designers develop these concepts and specifications through collection, analysis and synthesis of data guided by the special requirements of the client or manufacturer. They are trained to prepare clear and concise recommendations through drawings, models and verbal descriptions.

Industrial design services are often provided within the context of cooperative working relationships with other members of a development group. Typical groups include management, marketing, engineering and manufacturing specialists. The industrial designer expresses concepts that embody all relevant design criteria determined by the group.

The industrial designer's unique contribution places emphasis on those aspects of the product or system that relate most directly to human characteristics, needs and interests. This contribution requires specialized understanding of visual, tactile, safety and convenience criteria, with concern for the user. Education and experience in anticipating psychological, physiological and sociological factors that influence and are perceived by the user are essential industrial design resources.

Industrial designers also maintain a practical concern for technical processes and requirements for manufacture; marketing opportunities and economic constraints; and distribution sales and servicing processes. They work to ensure that design recommendations use materials and technology effectively, and comply with all legal and regulatory requirements.

In addition to supplying concepts for products and systems, industrial designers are often retained for consultation on a variety of problems that have to do with a client's image. Such assignments include product and organization identity systems, development of communication systems, interior space planning and exhibit design, advertising devices and packaging and other related services. Their expertise is sought in a wide variety of administrative arenas to assist in developing industrial standards, regulatory guidelines and quality control procedures to improve manufacturing operations and products.

Industrial designers, as professionals, are guided by their awareness of obligations to fulfill contractual responsibilities to clients, protect the public safety, respect the environment and observe ethical business practices.

Related articles:

Now that you have an idea of what Industrial Design is why not explore some more?

Go to the IDSA Design of the Decade Gallery to see what products won the Design of the Decade award this year and how design contributes to business and society by [clicking here](http://www.idsa.org/dod). (<http://www.idsa.org/dod>)

Every year the IDSA runs an award to promote the development of design excellence. This award, the International Design Excellence Award (IDEA) is juried by an independent international group of well recognized designers who work with a set of criteria that have been developed over the 30 years that the IDEA has been running. These criteria are not static because design is not static, it is a young developing profession and as the world changes and requires designers to produce more responsible and more sustainable products so the criteria for excellence shift to reflect these changes in expectations. To see the products that have been awarded over the past 10 years [click here](http://www.idsa.org/Awards). (<http://www.idsa.org/Awards>)

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