

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NANOBEBE US INC.
Petitioner

v.

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

IPR
U.S. Patent No. 11,207,244

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 11,207,244**

Submitted Electronically via the Patent Review Processing System

I.	Mandatory Notices.....	1
A.	Real Party-in-Interest	1
B.	Related Matters under 37 C.F.R. § 42.8(b)(2)	1
C.	Lead and Backup Counsel under 37 C.F.R. § 42.8(b)(3).....	2
D.	Service Information under 37 C.F.R. § 42.8(b)(4).....	2
II.	CLAIM LISTING	3
	CLAIM 21	3
	CLAIM 22	4
	CLAIM 23	4
	CLAIM 24	4
	CLAIM 26	4
	CLAIM 27	4
III.	Requirements Under 37 C.F.R. § 42.104	5
A.	Grounds for Standing	5
B.	Prior Art.....	5
C.	Identification of Challenge.....	5
D.	Discretionary Denial Under 325(d) Is Not Appropriate	6
E.	Discretionary Denial Under <i>Fintiv</i> Is Not Appropriate	8
1.	A stay is likely.....	8
2.	Proximity of the Court’s trial date to final written decision.....	8
3.	Investment in the parallel proceeding	8
4.	Overlap between issues	9
5.	Party status	10
6.	Other circumstances	10
IV.	Overview of the ’244 Patent.....	10
A.	Description of the ’244 Patent.....	10
B.	Relevant File History	14
C.	Priority Date	15

V.	Level of Ordinary Skill in the Art	15
VI.	Claim Construction.....	15
A.	“flex region” (Claim 21)	16
B.	“mouthpiece” (Claims 21, 24, 26).....	16
C.	“flex of the mouthpiece towards and away from a lower portion of the nipple” (Claim 21).....	16
VII.	Summary of the Prior Art	17
A.	<i>Ishimaru</i> (Ex[1008]).....	17
B.	<i>Kurkjian</i> (Ex[1009]).....	19
C.	<i>Atkin</i> (Ex[1010]).....	22
VIII.	Asserted Grounds of Invalidity.....	23
A.	Ground 1: <i>Ishimaru</i> in view of <i>Kurkjian</i> Renders Claims 21, 24, and 26-27 Obvious	23
1.	Motivations to Combine	23
2.	Claim 21	30
3.	Claim 24.....	41
4.	Claim 26.....	43
5.	Claim 27	44
B.	Ground 2: <i>Ishimaru</i> in view of <i>Atkin</i> renders Claims 21-24 and 26- 27 Obvious	44
1.	Motivations to Combine	44
2.	Claim 21	51
3.	Claim 22.....	57
4.	Claim 23.....	59
5.	Claim 24.....	60
6.	Claim 26.....	60
7.	Claim 27	60
IX.	Secondary Considerations	60
X.	Conclusion	61

EXHIBIT LIST

Exhibit No.	Description
1001	U.S. Patent No. 10,952,930 to Rees et al. (the “’930 Patent”)
1002	Prosecution File History for the ’930 Patent
1003	U.S. Patent No. 11,207,244 to Rees et al. (the “’244 Patent”)
1004	Prosecution File History for the ’244 Patent
1005	Declaration of Mr. Brian Silver
1006	U.S. Patent No. 6,032,810 (“ <i>Meyers</i> ”)
1007	G.B. Patent No. 2,250,017 (“ <i>Sepehr</i> ”)
1008	English Translation of J.P. Patent No. 2001-299877 (“ <i>Ishimaru</i> ”), Original Japanese publication of <i>Ishimaru</i> , and Affidavit of Harumi Morota
1009	U.S. Patent No. 2,093,730 (“ <i>Kurkjian</i> ”)
1010	E.P. Patent Pub. No. 0,151,862 (“ <i>Atkin</i> ”)
1011	Complaint in <i>Nanobebe US Inc. v. Mayborn (UK) Limited et al.</i> , Case No. 1:21-cv-08444-GHW, Dkt. 01 (S.D.N.Y.) (“Complaint”)
1012	Answer and Counterclaims in <i>Nanobebe US Inc. v. Mayborn (UK) Limited et al.</i> , Case No. 1:21-cv-08444-GHW, Dkt. 25 (S.D.N.Y.) (“Counterclaims”)
1013	Complaint in <i>Mayborn (UK) Limited et al. v. Comotomo Inc. et al.</i> , Case No. 1:22-cv-00694-PGG, Dkt. 06 (S.D.N.Y.) (“Comotomo Complaint”)
1014	Petition for Inter Partes Review of U.S. Patent No. 10,952,930, filed by <i>Comotomo Inc. et al.</i> , IPR2022-01325 (PTAB) (Comotomo ’930 Petition)
1015	Petition for Inter Partes Review of U.S. Patent No. 11,207,244, filed by <i>Comotomo Inc. et al.</i> , IPR2022-01326 (PTAB) (Comotomo ’244 Petition)
1016	Scheduling Order in <i>Nanobebe US Inc. v. Mayborn (UK) Limited et al.</i> , Case No. 1:21-cv-08444-GHW, Dkt. 22 (S.D.N.Y.) (“Scheduling Order”)
1017	Mayborn’s Claim Construction Brief in <i>Nanobebe US Inc. V. Maybron (UK) Limited et al.</i> , Case No. 1:21-cv-08444-GHW, Dkt. 48 (S.D.N.Y.)

1018	Nanobebe's Claim Construction Response in <i>Nanobebe US Inc. v. Mayborn (UK) Limited et al.</i> , Case No. 1:21-cv-08444-GHW, Dkt. 62 (S.D.N.Y.)
1019	Mayborn's Claim Construction Reply in <i>Nanobebe US Inc. v. Mayborn (UK) Limited et al.</i> , Case No. 1:21-cv-08444-GHW, Dkt. 63 (S.D.N.Y.)
1020	Declaration of Brian Silver for Claim Construction in <i>Nanobebe US Inc. v. Mayborn (UK) Limited et al.</i> , Case No. 1:21-cv-08444-GHW, Dkt. 62 Ex[0029] (S.D.N.Y.)
1021	Lauren A. Watt & Graham C. Phero, <i>Success of Motions to Stay Rising, But Why?</i> , PTAB YEAR IN REVIEW 2019, pp. 25-27
1022	Memo Endorsement to Adjourn Markman Hearing in <i>Nanobebe US Inc. v. Mayborn (UK) Limited et al.</i> , Case No. 1:21-cv-08444-GHW, Dkt. 61 (S.D.N.Y.)

Nanobebe US Inc. (“Petitioner”) petitions for *inter partes* review of Claims 21-24, 26, and 27 of USPN 11,207,244 (“the ’244 Patent”), assigned to Mayborn (UK) Limited, Inc. (“Patent Owner” or “PO”).

I. MANDATORY NOTICES

A. Real Party-in-Interest

Nanobebe US Inc. is the Petitioner and is a real party-in-interest, and is a subsidiary of Nutrits Ltd., which is also a real party-in-interest.

B. Related Matters under 37 C.F.R. § 42.8(b)(2)

Petitioner is aware of the following related matters:

- *Nanobebe US Inc. v. Mayborn (UK) Limited et al.*, Case No. 1:21-cv-08444-GHW (S.D.N.Y.). Petitioner has filed a declaratory judgment of noninfringement against Patent Owner; Patent Owner has counterclaimed asserting infringement of the ’244 Patent and related U.S. Patent No. 10,952,930 (“the ’930 Patent”) against Petitioner (the “District Court Litigation”). Exs.[1011],[1012](Complaint and Counterclaims).
- *Mayborn (UK) Limited et al. v. Comotomo Inc. et al.*, Case No. 1:22-cv-00694-PGG (S.D.N.Y.). Patent Owner has asserted infringement of the ’930 and ’244 Patents against Comotomo Inc. (the “Comotomo Litigation”). Ex[1013](Comotomo Complaint).

- *Comotomo Inc. et al. v. Mayborn (UK) Limited et al.*, IPR2022-01325 (PTAB), and IPR2022-01326 (PTAB). Comotomo Inc. filed concurrent petitions for *inter partes* review of the '930 and '244 Patents. (the "Comotomo Petitions"). Exs.[1014],[1015](Comotomo '930 and '244 Petitions).
- Petitioner filed a petition for *inter partes* review of the '930 Patent, concurrent with this petition.

C. Lead and Backup Counsel under 37 C.F.R. § 42.8(b)(3)

Petitioner provides the following designation of counsel.

LEAD COUNSEL	BACK-UP COUNSEL
Eliot D. Williams (Reg. No. 50,822) Baker Botts L.L.P. 700 K Street, N.W. Washington, D.C., 20001-5692 Tel: 202-639-1334 Eliot.Williams@BakerBotts.com	Matthew A. Engel (Reg. No. 79,196) Baker Botts L.L.P. 30 Rockefeller Plaza New York, NY 10112-4498 Tel: 212-408-2500 Matthew.Engel@BakerBotts.com Brianna L. Potter (Reg. No. 76,748) 1001 Page Mill Road Building One, Suite 200 Palo Alto, CA 94304-1007 Tel: 650-739-7500 Brianna.Potter@BakerBotts.com

D. Service Information under 37 C.F.R. § 42.8(b)(4)

A copy of this entire Petition, including all Exhibits and a Power of Attorney, is being served by Priority Mail Express or by means at least as fast and reliable as

Priority Mail Express, costs prepaid, to the address of the attorney or agent of record for Patent Owner in the district court proceedings regarding the '244 Patent: John S. Goetz, Fish & Richardson P.C., 7 Times Square, 20th Floor, New York, NY 10036; Matthew A. Colvin, Aaron P. Pirouznia, Fish & Richardson P.C., 1717 Main Street, Suite 5000, Dallas, TX 75201, and to the address of the attorney or agent of record at the USPTO: Fish & Richardson P.C., P.O. Box 1022, Minneapolis, MN 55440-1022.

Petitioner consents to service at lead counsel's address provided above and consents to e-mail service, provided it is made to all the following e-mail addresses: eliot.williams@bakerbotts.com, matthew.engel@bakerbotts.com, and brianna.potter@bakerbotts.com. A Power of Attorney is filed concurrently herewith under 37 C.F.R. § 42.10(b).

II. CLAIM LISTING

CLAIM 21

21[PRE]	A drinking vessel comprising:
21[A]	a container comprising a varying internal circumference and an opening into the container; and,
21[B]	a cover assembly configured to couple to the container over the opening, the cover assembly comprising:
21[C]	i. a nipple comprising a mouthpiece configured to allow liquid flow through the nipple to an aperture,
21[D]	a flex region configured to allow flex of the mouthpiece towards and away from a lower portion of the nipple, the mouthpiece defining a bite region,

21[E]	and a flange depending from the lower portion of the nipple defining the nipple circumference furthest from the aperture; and
21[F]	ii. a collar configured to removably couple to the nipple to seal over the opening of the container; and
21[G]	wherein the collar and the lower portion of the nipple together define a downward domed shape that extends outwardly and downwardly from the flex region of the nipple towards a widest circumferential edge of the collar.

CLAIM 22

22	The drinking vessel of claim 21, wherein the container is a trainer cup.
----	--

CLAIM 23

23	The drinking vessel of claim 21, wherein the container comprises a material more rigid than the nipple material.
----	--

CLAIM 24

24	The drinking vessel of claim 21, wherein the cover assembly further comprises an air vent apart from the mouthpiece.
----	--

CLAIM 26

26	The drinking vessel of claim 21, wherein the mouthpiece is located in the center of the nipple.
----	---

CLAIM 27

27	The drinking vessel of claim 21, wherein the teat portion comprises a resilient material.
----	---

III. REQUIREMENTS UNDER 37 C.F.R. § 42.104

A. Grounds for Standing

Petitioner certifies that the '244 Patent is eligible for *inter partes* review and that Petitioner is not barred or otherwise estopped.

B. Prior Art

Ex[1008] – JP Patent No. P2001-299877 (“*Ishimaru*”) was published October 30, 2001. *Ishimaru* is prior art under § 102(a) and § 102(b).

Ex[1009] – U.S. Patent No. 2,093,730 (“*Kurkjian*”) was issued September 21, 1937. *Kurkjian* is prior art under § 102(a) and § 102(b).

Ex[1010] – E.P. Patent No. 151,862 (“*Atkin*”) was issued September 23, 1986. *Atkin* is prior art under § 102(a) and § 102(b).

C. Identification of Challenge

Petitioner requests *inter partes* review of Claims 21-24, 26, and 27 of the '244 Patent under the following grounds.

Ground	Claims	Basis for Challenge
1	21, 24, 26, 27	<i>Ishimaru</i> in view of <i>Kurkjian</i> render the claims obvious under § 103
2	21-24, 26, 27	<i>Ishimaru</i> in view of <i>Atkin</i> render the claims obvious under § 103

Submitted with this Petition is a declaration of Mr. Brian Silver, a qualified technical expert. Ex[1005], ¶¶1–10.

D. Discretionary Denial Under 325(d) Is Not Appropriate

Denial under § 325(d) and *Advanced Bionics* is not appropriate given that the particular combinations of references cited by Petitioner were not presented during examination of the '244 Patent and no similar references to those used as primary references in the combinations that were presented were evaluated during prosecution. Thus both different arguments and different art were presented to the Office. *See Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469 (PTAB Feb. 13, 2020) (Paper 6) (precedential).

The PTAB has chosen not to grant discretionary denial, even where a reference was cited in an IDS, when the record is insufficiently developed as to whether the reference was “previously presented to the Office,” as is the case here. *Sony Interactive Entertainment LLC v. Bot M8, LLC*, Case No. IPR2020-00726 (PTAB Oct. 6, 2020) (Paper 13). Here, while two of the references cited by Petitioner were listed in an IDS (*Ishimaru* and *Atkin*), one of which was discussed as a secondary reference in an Office Action to discuss a dependent claim (*Atkin*), *Kurkjian* was not, and neither the combination of *Ishimaru-Atkin* nor a similar combination was evaluated. Moreover, *Atkin* was not used by the Examiner to reject any claims identical or similar to the one presented in this petition.

Furthermore, factors (c) and (f) of the *Becton Dickinson* factors, in particular, point against discretionary denial here since the references relied on by Petitioner

were mostly listed in a lengthy IDS, demonstrating that the art was not a basis for rejection or otherwise substantively evaluated during prosecution. Supporting that position are the additional evidence and facts presented here in the Petition in the form of an expert report explaining these references, warranting reconsideration of the prior art. *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586 (PTAB Dec. 15, 2017) (Paper 8); *see also, e.g., Advanced Energy Industries v. Reno Technologies*, IPR2021-01397 (PTAB Feb. 16, 2022) (Paper 7), p. 7 (“the Examiner’s consideration of both references appears limited to initialing an IDS”); *Lyft, Inc. v. RideShare Displays, Inc.*, IPR2021-01602 (PTAB April 11, 2022) (Paper 7), pp. 14-15 (stating factor (c) weighs against discretionary denial where the reference was not used as a basis for rejection during prosecution); *Samsung Electronics Co., Ltd. et al. v. Power2B, Inc.*, IPR2021-01190 (PTAB Jan. 6, 2022) (Paper 11), p. 19 (“As for factor (c), the extent to which the asserted art was evaluated during examination, we agree with Petitioner that the record is silent as to any evaluation by the Examiner of Gettemy, short of acknowledgement in an IDS submitted...”); *Advanced Energy Industries Inc. v. Reno Technologies Inc.*, IPR2021-01397 (PTAB Feb. 16, 2022) (Paper 7), pp. 8-9 (stating that an expert’s “testimony is also not so limited that it has no evidentiary value...”).

E. Discretionary Denial Under *Fintiv* Is Not Appropriate

The six factors in considering denial under § 314 strongly favor institution. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (Mar. 20, 2020). The district court case is in early stages, the parties recently completed Claim Construction briefing but no hearing has occurred and no order has issued, and no post-claim construction scheduling order has been entered. Exs.[1017]-[1020](Parties' Claim Construction Briefing).

1. A stay is likely

If an IPR is instituted, a stay of the co-pending litigation is highly likely. The stay motion grant rate in S.D.N.Y is as high as 88%. Ex[1021]. Petitioner intends to seek stay upon filing of the Petition, and if pre-institution stay is not granted, will seek stay upon institution. This factor weighs against discretionary denial.

2. Proximity of the Court's trial date to final written decision

The district court's scheduling order has not set a trial date. Ex[1016]. The expected date for a FWD in this case is July 2024. Other factors will contribute to an extended schedule at the district court. The Markman Hearing is scheduled for February 22, 2023. Ex[1022]. This factor weighs against discretionary denial. *Sand Revolution II, LLC v. Continental Intermodal Grp.—Trucking LLC*, IPR2020-01393, Paper 24 (June 16, 2020).

3. Investment in the parallel proceeding

The co-pending litigation is in its early stages, and the investment in it has been minimal. Patent Owner has answered the declaratory judgment complaint (Ex[1012]), however only limited discovery has occurred. The district court has not issued any substantive orders. The Markman hearing scheduled for February 22, 2023.¹ Ex[1022]. A trial date has not yet been set. Ex[1016]. This factor weighs against discretionary denial.

4. Overlap between issues

The issues will be narrowed in the co-pending litigation due to the estoppel provisions of 35 U.S.C. § 315(e)(2). In the event the District Court sets a scheduling order before institution of this proceeding that would plausibly result in trial occurring before the Board's Final Written Decision, Petitioner will consider filing a stipulation in the District Court to avoid potential overlap between the two proceedings. Petitioner will keep the Board apprised of any developments in this regard via mandatory notices.

¹ Petitioner has advanced theories in the parallel district court proceeding that certain claims of the '930 and '244 Patents are invalid under 35 U.S.C. § 112(b). The arguments expressed herein are expressed with respect to the validity of '930 and '244 Patents with regard to anticipation and/or obviousness, and do not represent an admission or waiver of Petitioner's defenses with regard to 35 U.S.C. § 112(b).

5. Party status

Petitioner is the Declaratory Judgment Plaintiff/Counterclaim Defendant in the litigation. Ex[1012](Counterclaims). This factor is neutral.

6. Other circumstances

The merits of Petitioner's arguments are strong; this factor weighs against discretionary denial.

IV. OVERVIEW OF THE '244 PATENT

A. Description of the '244 Patent

The '244 Patent describes a feeding bottle with flexible region(s) to “provide a more natural feeding by closely mimicking the human breast.” Ex[1001], Abs. A “teat 10” includes a “teat portion 12,” “base portion 14” and “areola portion 16” therebetween. “Flange 18” extends from the base portion “to allow fixing to a feeding bottle.” *Id.*,2:57-60, Fig.1. The base portion may include a one-way air-inlet valve (not shown). *Id.*,2:64. The areola portion 16 includes “flex region 20” comprising grooves around an inner surface of the areola portion which allows flexing of the teat 10. The teat portion 12 is designed to “allow additional flexing of the teat portion relative to the teat as a whole.” *Id.*,3:14-17.

The '244 Patent describes the suckling process, in particular “the infant’s lips 54 contacting the areola portion 16 generally at the flex region 20. As a result, as the infant sucks on the teat, the teat portion [12] and areola portion [16] flex towards and away from one another by virtue of respective collapsing and extending of the flex region [20] around the flexed channels 22.” *Id.*,3:20-34. The back and forth

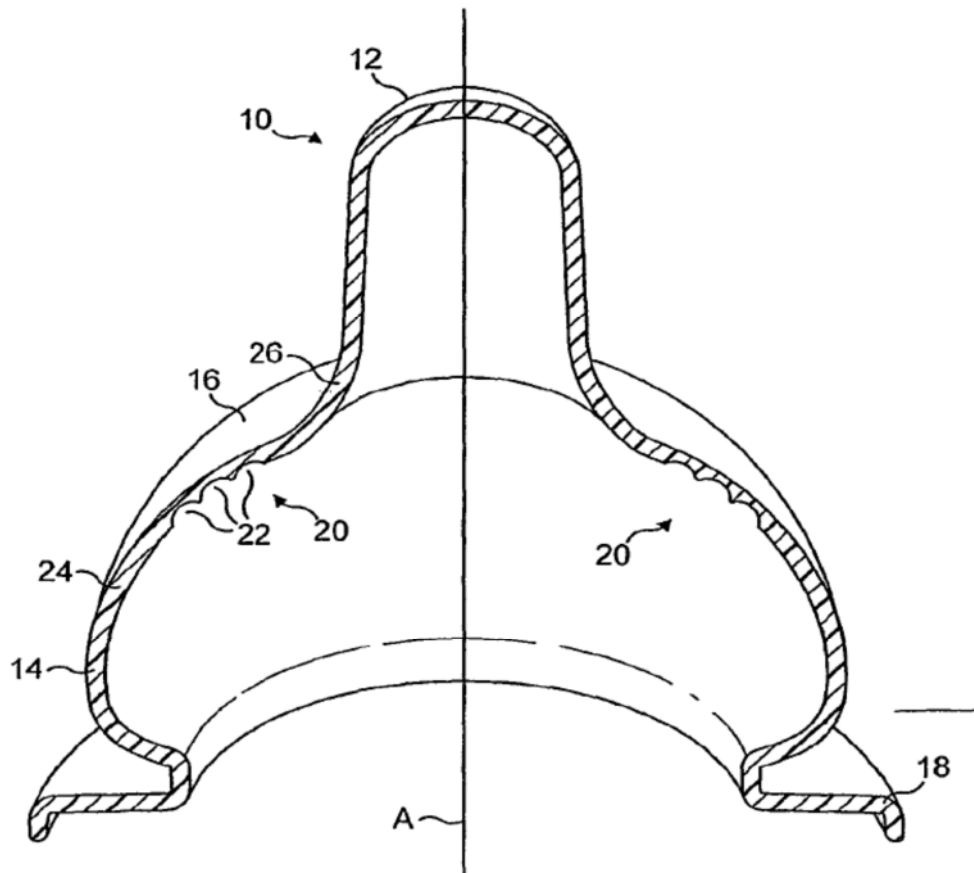
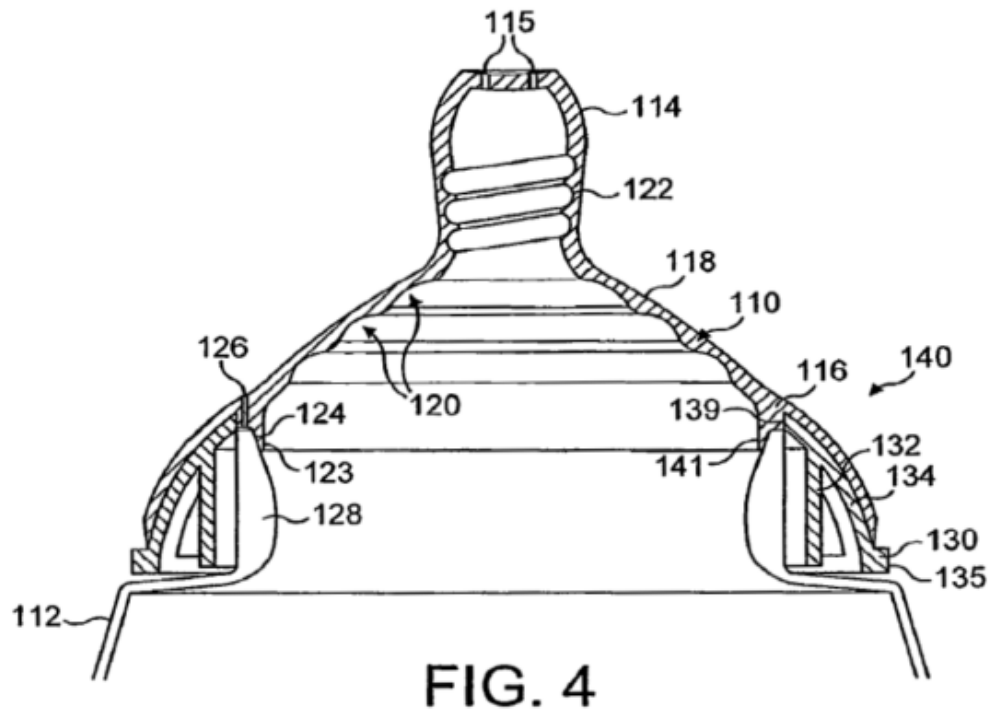


FIG. 1

flexure of teat portion 12 mimics skin movement and stretching. *Id.*,3:35-37.



The '244 Patent further describes a “teat assembly 140” includes a “teat 110” having a “teat portion 114” forming a “nipple,” “a base portion 116” and “an areola region 118” therebetween. *Id.*,3:57-4:10, FIG.4. “The shape of the teat is also similar to the human breast, the base portion 116 being shaped like a breast and having a wide, domed configuration.” *Id.*,4:1-3. The teat 110 is integrally formed with a screw collar 130, *Id.*,4:54-58, wherein the collar “includes an internally threaded cylindrical portion...to connect to the vessel 112.” *Id.*,4:54-5:3.

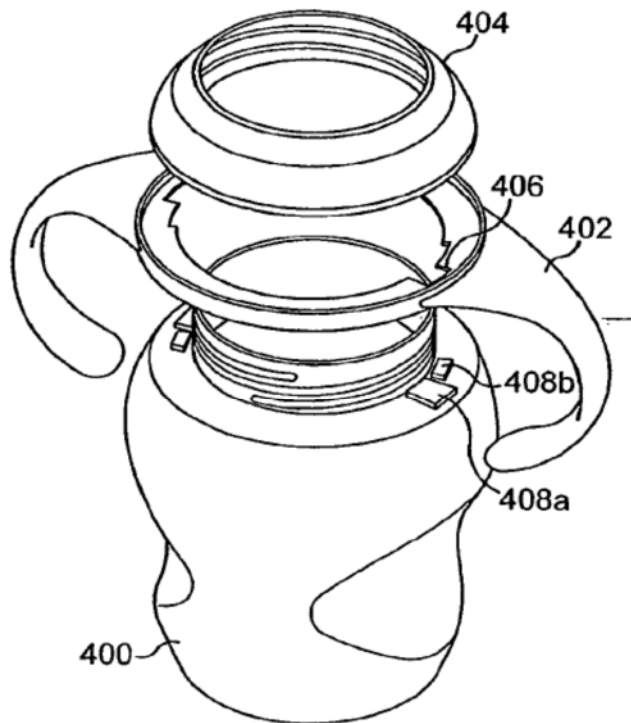


FIG. 7a

A “downward cylindrical flange 141” forms an elastomer sealing ring against the “inner face of the vessel neck 128.” *Id.*,5:12-15, FIG. 4. Teat 110 further includes “discontinuous flap or lip valve portion 123” that “projects down from the flange 141” and “vent passage 126” through the teat to allow air ingress and “reduce[] the risk of colic which can otherwise occur as a result of negative pressure building up in the feeding bottle. *Id.*,1:47-51; 5:15-32, FIG. 4. “[W]hen an infant sucks on the teat, reducing pressure within the vessel, the lip valve 123 will flex away from the neck 128 of the vessel 112. In the region of the vent 126 in the teat 110, this allows

venting between the interior of the vessel and atmosphere through the teat.” *Id.*, 5:22-27.

In FIGs. 7a-7b, the ‘244 Patent shows “a vessel 400 [which] receives a handle portion 402 and a teat screw collar 404, corresponding to the screw collar 130 described above but with the elastomer teat 10 removed for the purposes of clarity.” *Id.*, 5:39-43.

The ‘244 Patent concedes that “teats have been designed to mimic the human breast” which allows stretching of the nipple when an infant sucks on the teat. *Id.*, 1:26-46. The ‘244 Patent also concedes that valved feeding bottles are known in the art, including “slit valves,” “an inner annular resilient flange at its base,” and “a downwardly dependent cylindrical flange at its base which seals against the inner top face of a vessel neck[.]” *Id.*, 1:47-2:5.

B. Relevant File History

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

C. Priority Date

The '244 Patent was filed on March 22, 2021. Ex[1001],(22). The '244 Patent claims priority to the application for U.S. Patent No. 10,952,930, filed on November 24, 2014, which is a continuation of U.S. Patent No. 8,910,810, filed on Feb. 2, 2012, which is a continuation of the application for U.S. Patent No. 8,181,800, filed on June 29, 2005. *Id.*,(63). The '244 Patent also claims priority to the GB application No. 2004/14560, which was filed on June 29, 2004. *Id.*,(30). Patent Owner has not asserted a priority date for the '244 Patent. Petitioner does not take a position regarding the priority date of the '244 Patent for purposes of this petition—because Petitioner relies entirely on prior art that pre-dates June 29, 2004.

V. LEVEL OF ORDINARY SKILL IN THE ART

As of June 29, 2004, a person of ordinary skill in the art (“POSA”) would have a B.S. in Mechanical or Industrial Engineering; Materials Science, Product Design, or equivalent field, with 3-5 years of academic or industry experience with fluid dynamics, or a comparable industry. Ex[1005],¶47. Additional education could compensate for less practical experience and vice versa. *Id.*

VI. CLAIM CONSTRUCTION

Words in a claim are given their ordinary and customary meaning, which is the meaning understood by a POSA at the time of the alleged invention after reading the entire patent. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005);

83 Fed. Reg. No. 197, 51341. (Oct. 11, 2018); 37 C.F.R. 42.100(b). At the district court, the parties recently completed Claim Construction briefing. The parties' disputed terms are noted below. Except where specified, for purposes of this proceeding, whether the terms of the '244 Patent are afforded Patent Owner's or Petitioner's construction, the grounds render the claims obvious.

A. “flex region” (Claim 21)

Petitioner construes this term to mean “a region having characteristics, e.g., grooves or channels, specifically designed to enable flexing.” Ex[1018],21. Patent Owner alleges this term to mean “a region having surface characteristics that control flexing.” *Id.*

B. “mouthpiece” (Claims 21, 24, 26)

Petitioner construes this term to mean “teat portion, i.e., the entire part projecting generally perpendicular to the mouth of the vessel, disposed above the areola portion, which extends into a baby's mouth for feeding.” Ex[1018],24. Patent Owner alleges this term to mean “part projecting generally perpendicular to the mouth of the vessel and disposed above the areola portion.” *Id.*

C. “flex of the mouthpiece towards and away from a lower portion of the nipple” (Claim 21)

Petitioner construes this term to mean “up and down movement of the mouthpiece relative to a lower portion of the nipple.” Ex[1018],25. Patent Owner alleges this term should be afforded its plain meaning. *Id.*

VII. SUMMARY OF THE PRIOR ART

A. *Ishimaru* (Ex[1008])

Ishimaru discloses “an artificial nipple which is more similar to the mother’s nipple...having a nipple trunk [110] and teat portion [120] protruding from this nipple trunk,...wherein the...teat portion 120 and/or the...nipple trunk 110 is provided with an elongate portion 122, which is more easily extensible than other portions.” Ex[1008],Abstract, Fig. 1. “[T]hin walled portions 122, 122 and 122, which are elongation portions with a thin wall, are formed in a groove-like pattern... [wherein] each of the thin-walled portion 122 is formed in a manner that the wall thickness gradually increases from the thinnest portion...and the inner surface 123 of the artificial nipple becomes smooth, forming a wave shape as shown in Fig. 1.” *Id.*,[0041]. Thin walled portions can also be formed in “a spiral shape.” *Id.*,[0060]. Nipple 100 is mounted on a feeding bottle containing milk, and the nipple is inserted into the mouth of the infant who sucks the milk up into the nipple 100. *Id.*,[0043], Fig. 5. “In this state, the tip of the teat portion 120...is in contact with the tip of the

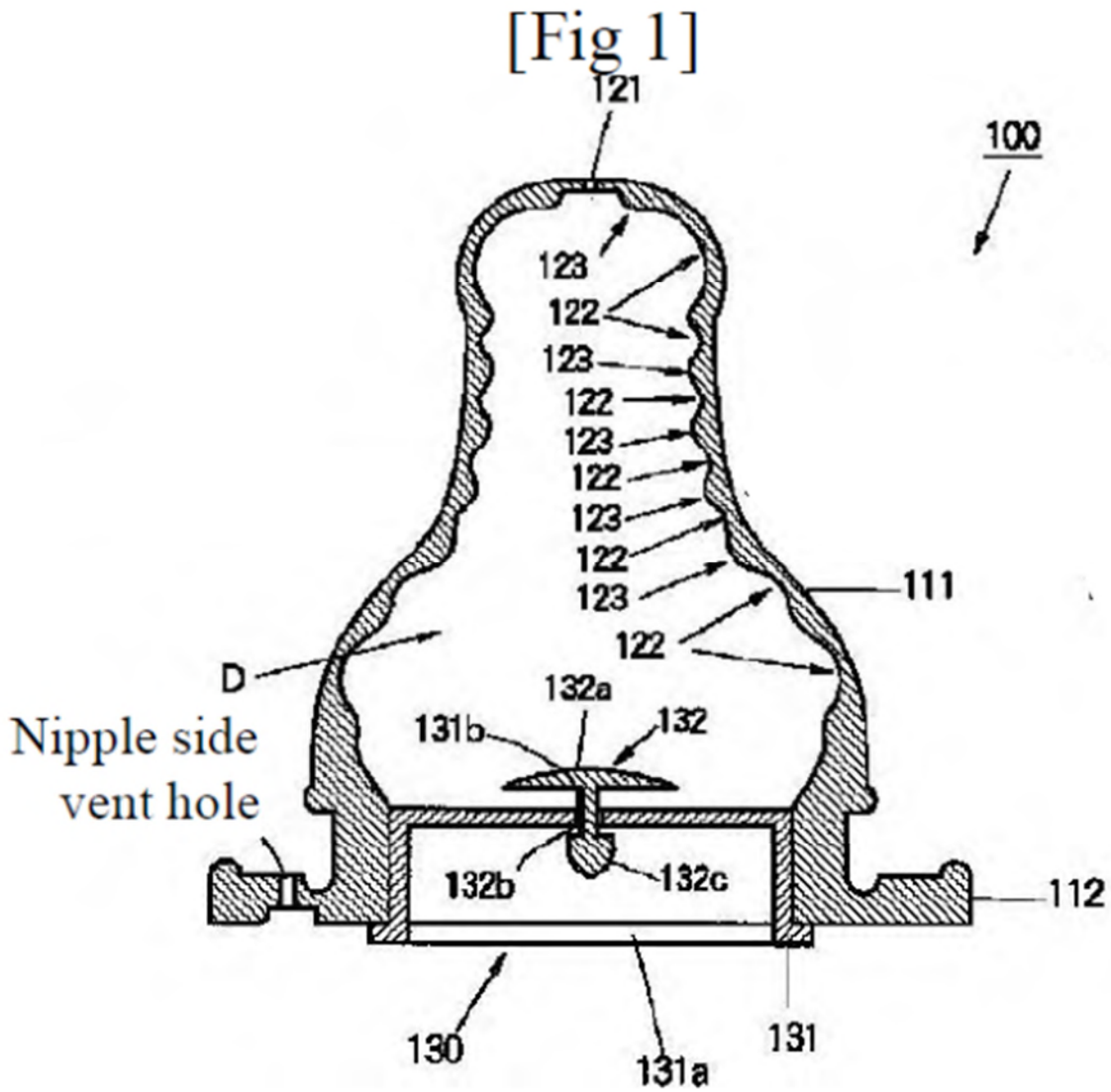


FIG. 1 of Ishimaru

sucking fossa 220 of the infant 200” performing a “suckling movement by peristaltic movement of the tongue.” *Id.*,[0044]. Further, “there is a base portion 112 with a nipple side vent hole, which is a flange portion for connecting to a feeding bottle main body.” *Id.*,[0037].

B. *Kurkjian* (Ex[1009])

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

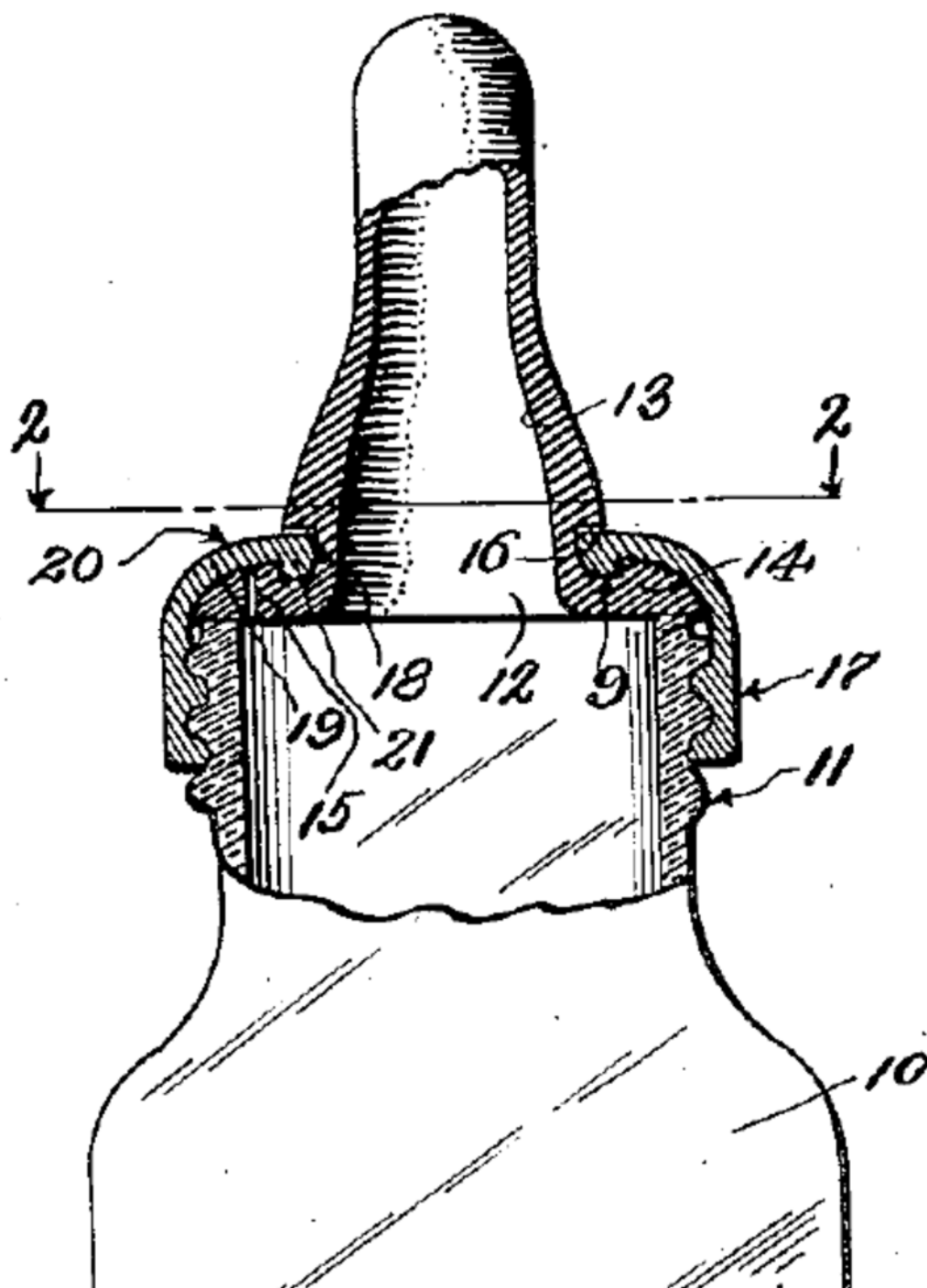


FIG. 1 of Kurkjian

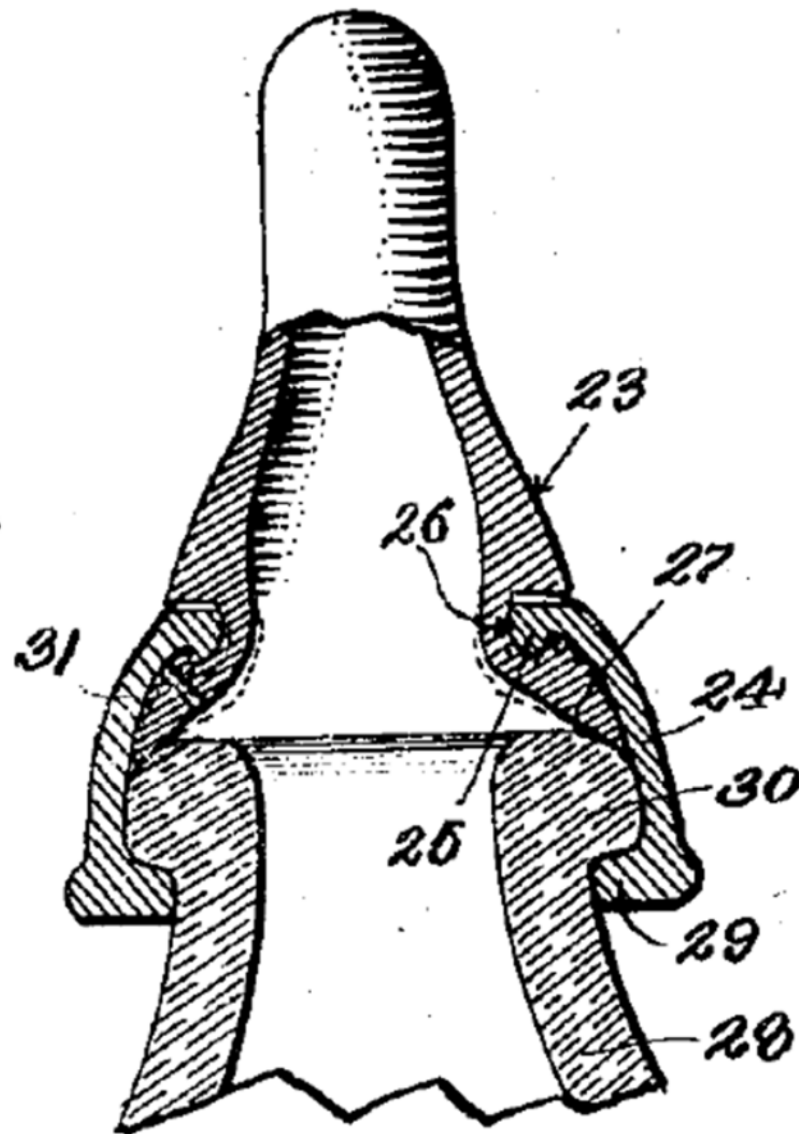
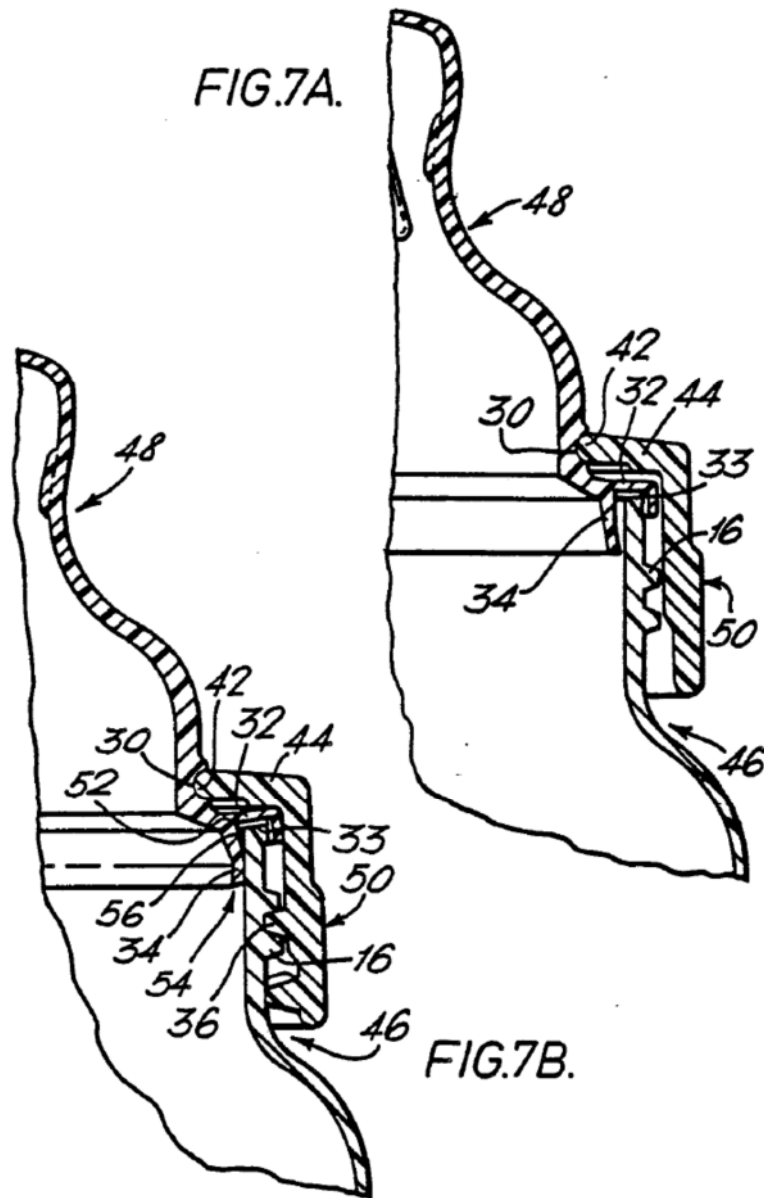


FIG. 6 of Kurkjian

In a modification shown in FIG. 6, the “outer face of the cap 24 preferably conforms to the contour of the nipple 23 and constitutes a continuation thereof to provide a streamline type connection between the nipple 23 and the bottle 28.” *Id.*,3:42-47.

C. *Atkin* (Ex[1010])

Atkin discloses a nipple design to overcome the problem of “teat collapse, especially in the case of the commonly preferred soft teat” by “arranging for [a] lip [valve] to fit with a small clearance inside the bottle neck...such that when the cap is screwed down, it acts on the teat to deform the annular flange.” Ex[1010],1:33-35. *Atkin* discloses in Fig. 7A teat 48 screwed loosely on the bottle neck. “[T]eat flange 32 and inner depending lip 34 are undistorted, with the lip 34 spaced with small radial clearance within the neck of the bottle.” *Id.*,5:55-65. Fig. 7B “shows the effect of tightening the cap/teat subassembly by screwing the cap [50] further...The annular flange 32 is deformed downwardly at its inner end region 52..., [and i]n consequence, the inner depending lip 34 is turned radially outwardly to engage and seal with the interior wall of the bottle neck, as indicated at 54.” *Id.*,5:63-6:9. “The manner in which the depending lip 34 acts as a flap valve, in use of the bottle by a baby, can...be visualized from Figure 7B. External air pressure exists on the...outer side of the lip [34], in space 56, due to free passage of air past the interrupted screwthreads 16, 36 and the radial grooves 33 in the teat flange 32. Consequently, if pressure in the bottle...fall[s] due to feed being sucked out through the teat, the lip 34 is deformed inwardly..., i.e. opening in the manner of a flap valve to let air into the bottle.” *Id.*,6:12-23.



VIII. ASSERTED GROUNDS OF INVALIDITY

A. Ground 1: *Ishimaru* in view of *Kurkjian* Renders Claims 21, 24, and 26-27 Obvious

Ishimaru in view of *Kurkjian* discloses or renders obvious Claims 21, 24, and 26-27 of the '244 Patent.

1. Motivations to Combine

A POSA would have considered *Ishimaru* and *Kurkjian* in the same field of endeavor as they all relate to nursing bottles and nipples that attach thereto. Ex[1005],¶¶355-361; Ex[1009]1:1-8; Ex[1008],[0001]-[0006]. A POSA would be motivated to modify or combine the nipples of *Ishimaru* with one more of the nipple embodiments of *Kurkjian* because they all teach analogous solutions for, and describe the benefits of, realistic, human-like nipples with air vents and collars to provide a durable design that relieves negative pressure in the nipple. Ex[1005],¶¶355-356; Ex[1009],2:35-49,2:54-3:10; Ex[1008],[0005],[0019],[0048],[0061]. *Kurkjian* further discloses that one or more elements of its various embodiments can be combined: “It should be understood that certain detail changes in the mechanical construction, combination and arrangement of parts may be employed without departing from the spirit of the invention, so long as such changes fall within the scope of the appended claims.” Ex[1009],3:70-4:5.

A POSA reading *Ishimaru* would recognize a nipple and vessel design more similar to that of a mother’s nipple, including a nipple trunk and teat portion, which includes an elongate portion comprising thin walls that are more easily extensible. Ex[1008],Abstract, Fig. 1. These thin-walled portions can also be formed in “a spiral shape.” *Id.*,[0060]. Further, “there is a base portion 112 with a nipple side vent hole, which is a flange portion for connecting to a feeding bottle main body.” *Id.*,[0037].

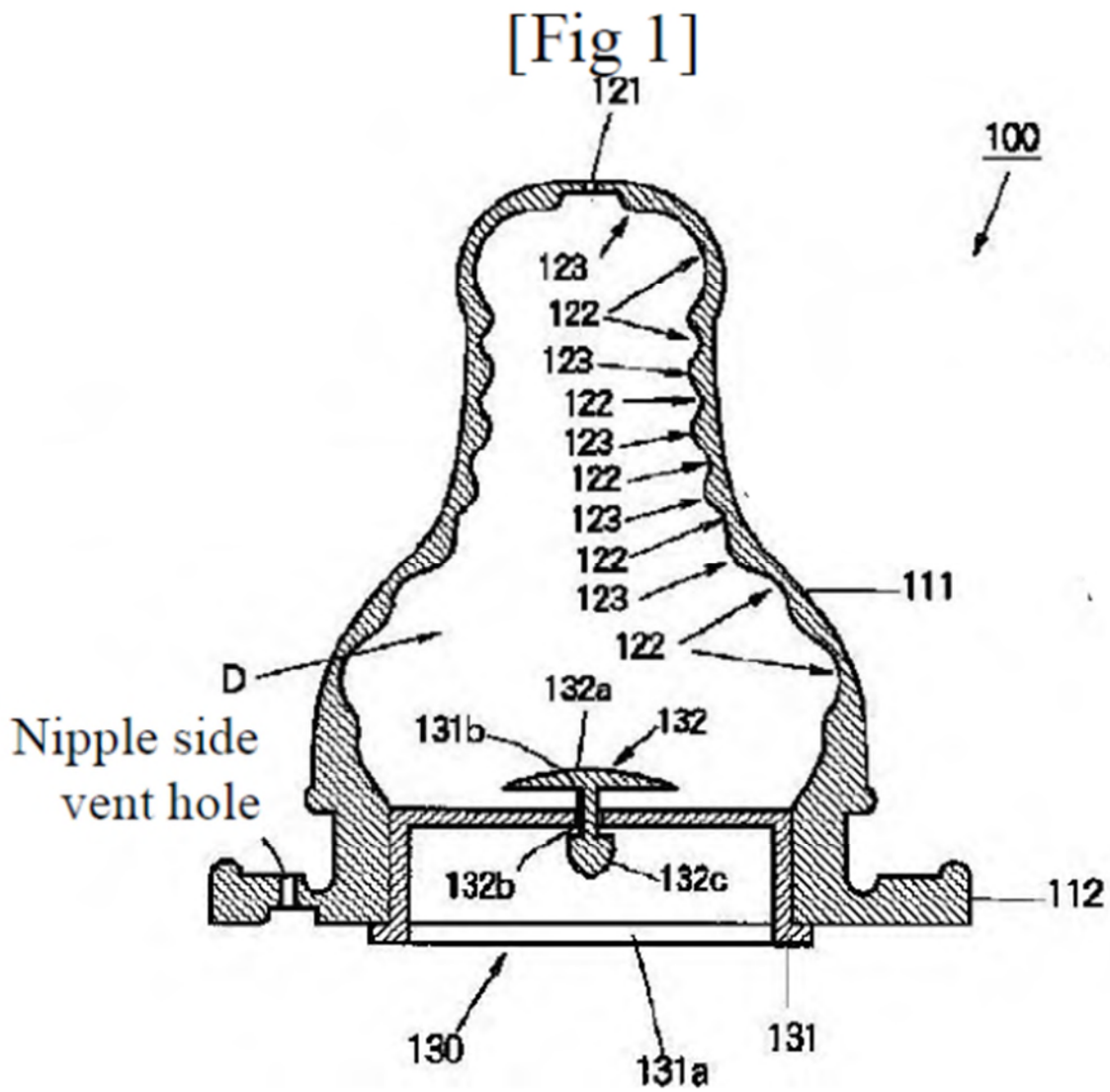


FIG. 1 of Ishimaru

A POSA reading *Kurkjian* would recognize a nipple with a body portion, neck, and annular flange. Ex[1009],1:48-53. The flange includes a “single venting aperture 15 and it should be understood that the flange 14 is integral with the body portion 13 of the nipple.” *Id.* *Kurkjian* also discloses a securing and retraining cap that connects the nipple to the vessel of *Kurkjian*. The “outer face of the cap 24

preferably conforms to the contour of the nipple 23 and constitutes a continuation thereof to provide a streamline type connection between the nipple 23 and the bottle 28.”

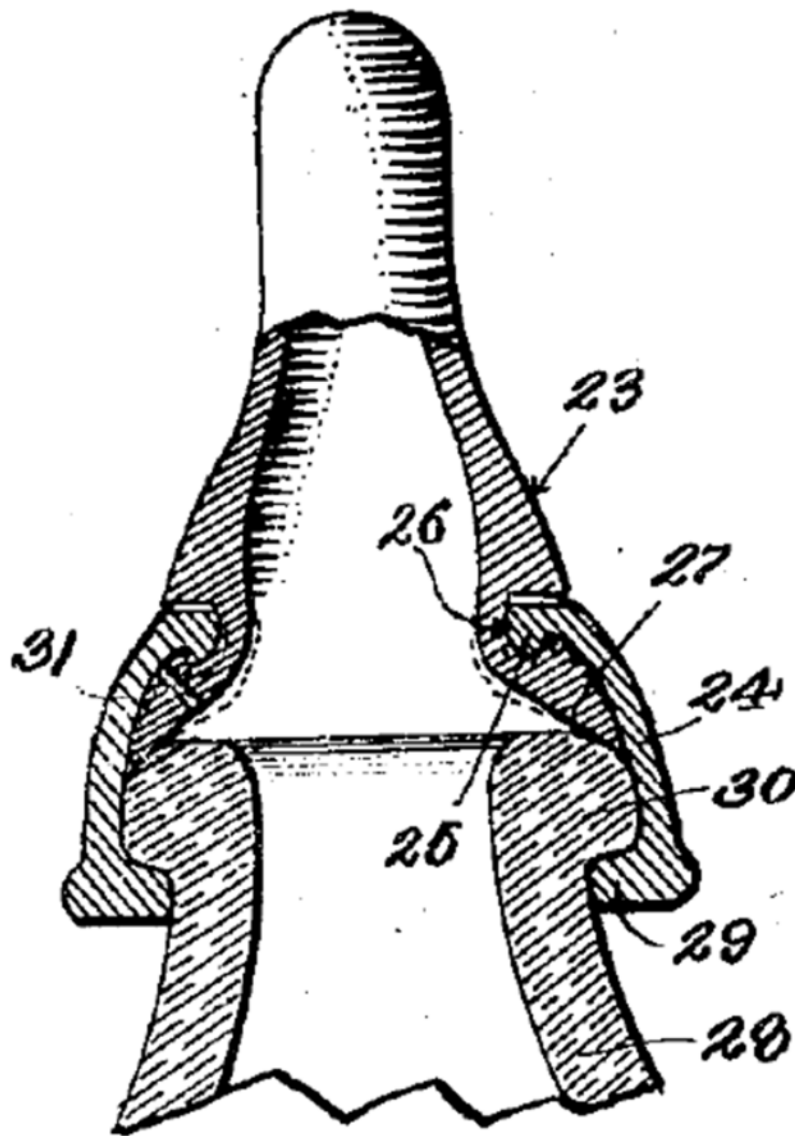


FIG. 6 of Kurkjian

A POSA would have considered *Ishimaru* and *Kurkjian* in the same field of endeavor as they all relate to nursing bottles and nipples that attach thereto. Ex[1005], ¶¶355-361; Ex[1009]1:1:1-8; Ex[1008] at[0001]-[0006]. A POSA would be motivated to modify or combine the nipples of *Ishimaru* with one more of the nipple embodiments of *Kurkjian* because they all teach analogous solutions for, and describe the benefits of, realistic, human-like nipples with air vents and collars to provide a durable design that relieves negative pressure in the nipple. Ex[1005], ¶¶356-359; Ex[1009],2:35-49, 2:54-3:10; Ex[1008], [0005], [0019], [0048], [0061]. *Kurkjian* further discloses that one or more elements of its various embodiments can be combined: “It should be understood that certain detail changes in the mechanical construction, combination and arrangement of parts may be employed without departing from the spirit of the invention, so long as such changes fall within the scope of the appended claims.” Ex[1009],3:70-4:5.

A POSA would be further motivated and find it obvious, to the extent not disclosed by *Ishimaru*, to modify the nipple design of *Ishimaru* as taught by one or more embodiments of *Kurkjian* in order to provide a more realistic, breast-like nipple. Ex[1003], ¶285; Ex[1008],[0004], [0005], [0041], [0061]. Indeed, *Ishimaru* stresses the importance of this to encourage bottle feeding. Ex[1005], ¶357; Ex[1008],[0041]. “By the way, the artificial nipple 10 is mounted to a feeding bottle containing milk, etc., and is given to the infant in place of the mother's breast milk,

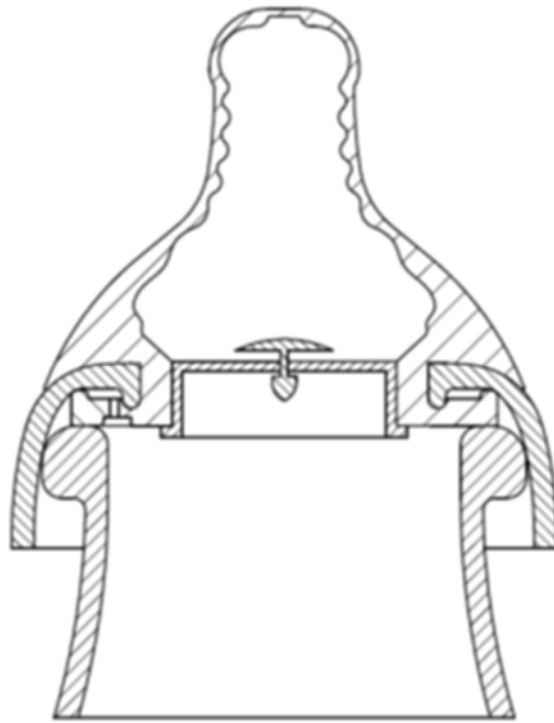
so it is desirable that the artificial nipple 10 should be as similar to the mother's nipple as possible.” Ex[1008],[0005]. “Such an artificial nipple 100 has a shape similar to a mother's breast and nipple as shown in Fig. 1, because it is used when a mother feeds her infant with artificial milk using a feeding bottle, etc., instead of her own breast milk.” Ex[1008],[0040]. A POSA reviewing *Kurkjian* would be motivated to incorporate the domed collar in *Kurkjian* in order to modify the shape of the collar in *Ishimaru* (or mounting cap, as disclosed in *Ishimaru* (Ex[1008],[0054])) to provide a downward doming shape that further improves the aesthetics of the nipple to provide a realistic, breast-like shape. Ex[1005],¶385.

A POSA would be further motivated and find it obvious, to the extent not disclosed by *Ishimaru*, to modify the vessel design as taught by one or more embodiments disclosed in *Kurkjian* in order to provide a more ergonomic and aesthetically pleasing design better suited for *Ishimaru*'s nipple design. Ex[1005],¶358 For example, incorporating *Kurkjian*'s design with varying diameters to improve the nipple and vessel design would result in a vessel with multiple diameters that would optimize vessel volume, user ergonomics, and aesthetic appearance, while also facilitating attachment of a wider, more breast-like nipple though a wide vessel mouth. Ex[1005],¶358.

The example combinations and modifications described represent a known, finite number of identified predictable solutions to solve the problem of designing a

realistic, breast-like nipple that simultaneously equalizes the pressure in the bottle to prevent, for example, nipple collapse and colic. Ex[1009],1:1-8; Ex[1008],[0005],[0007],[0019],[0048].[0061]. A POSA reading *Ishimaru* and *Kurkjian* would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. Ex[1005],¶¶361. A POSA would expect that modifying *Ishimaru*'s nipple in view of *Kurkjian* would provide an aesthetically suitable solution to equalize pressure in the bottle. Ex[1003],¶¶361. Moreover, a POSA would have had a reasonable expectation of success in combining these nipple and vessel design because each would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. *Id.*

After considering the disclosures of both *Ishimaru* and *Kurkjian*, a POSA at the time of the priority date of the '244 Patent would have combined one or more of these features for the reasons stated above and would have been motivated to design a nipple and collar similar to the following:



Ex[1005],¶353. Indeed, this design is largely the breast-like nipple of *Ishimaru* with its stated advantages secured to an ergonomic vessel of *Kurkjian* with its associated teachings regarding collar shape for attaching a nipple to the ergonomic vessel, with its stated advantages, working as expected.

2. Claim 21

(a) 21[PRE]: A drinking vessel comprising:

Ishimaru discloses or renders obvious this limitation. Ex[1005],¶¶362-365. *Ishimaru* discloses “[a] **drinking vessel**.” See Ex[1008],[0001]-[0003]. *Ishimaru* describes “[a]n artificial nipple” “mounted to a feeding bottle.” *Id.*,[0002]. *Ishimaru* teaches, using the feeding bottle, “insert[ing] the artificial nipple 100 into the infant’s mouth to feed milk to the infant.” *Id.*,¶[0043], Fig. 9.

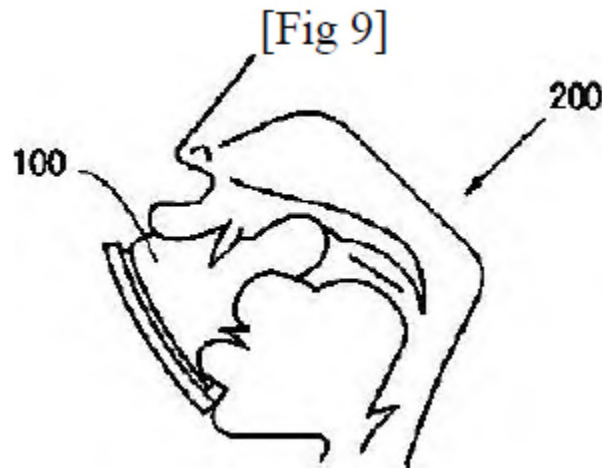


FIG. 9 of Ishimaru

- (b) **21[A]: a container comprising a varying internal circumference and an opening into the container; and,**

Ishimaru does not explicitly disclose “***a container comprising a varying internal circumference and an opening into the container,***” but it would have been obvious to a POSA to modify the vessel disclosed in *Ishimaru* to include multiple internal circumferences. Such a modification is taught at least by *Kurkjian*’s Fig. 1 and teachings of “a resilient flanged nipple to be secured to the mouth of a bottle by means of a retaining cap, and permit the entrance of air into the interior of the bottle, and also prevent the nipple from collapsing inwardly of the retaining cap.” Ex[1005],¶368; Ex[1009],1:1-10. In fact, *Kurkjian*’s claims describe a bottle with “an open outer end” and the figures illustrate both an upper diameter (e.g., near the mouth of the vessel), and a wider, lower diameter (e.g., near the bottom of the

vessel). *Id.* at Claims 1-4, Figs. 1, 6-7 (reproduced above). *See also* annotated Fig. 1 of *Kurkjian* reproduced above.

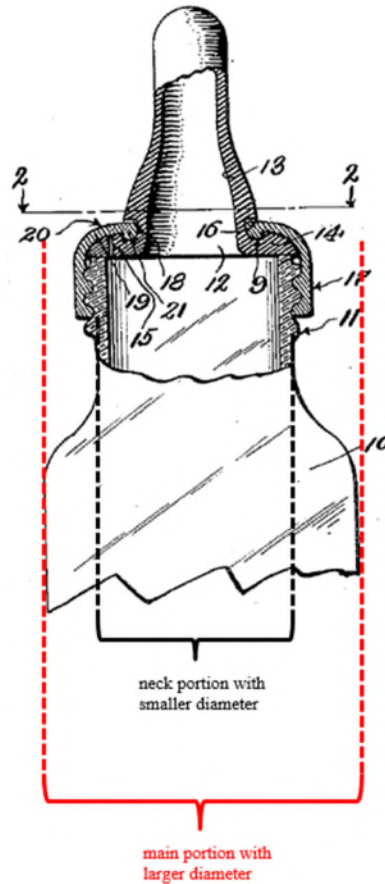


FIG. 1 of Kurkjian (annotated)

A POSA would have been further motivated to implement these elements of *Kurkjian*'s nipple and vessel design into *Ishimaru*'s design— achieving a bottle with multiple diameters that would be more resistant to tipping, be better for hand holding (ergonomics), and be better suited to couple to *Ishimaru*'s wider, realistic, breast-like nipple. *Supra* §VIII.A.1; Ex[1005], ¶369. A POSA reading *Ishimaru* and *Kurkjian* would be motivated to combine and substitute these familiar elements

according to known methods to yield predictable results. *Supra* §VIII.A.1; Ex[1005],¶361. Moreover, a POSA would have had a reasonable expectation of success in combining these designs because each nipple and vessel would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. *Id.*

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

Ishimaru discloses or renders obvious this limitation. Ex[1005],¶¶371-375. *Ishimaru* discloses a cover assembly, i.e., a collar and nipple 100. Ex[1008],[0043],[0054]. *Ishimaru* teaches “the artificial nipple 100 is mounted on a feeding bottle containing, for example, milk.” *Id.*,[0043]. “[O]n the lower side of the nipple trunk 110, there is a base portion 112 with a nipple vent hole, which is a flange portion for connecting to a feeding bottle main body, for example, not shown in the figure.” *Id.*,[0037]. *Ishimaru* further discloses a “detachable feeding bottle mounting cap” . . . “which is used when mounting the artificial nipple 200 to the feeding bottle. In this case, it is a configuration that the lid portion 420 and the base portion can be separated by removing the cap, which allows for easy cleaning, etc.” *Id.*,[0054].

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

Ishimaru discloses or renders obvious this limitation under both Petitioner and Patent Owner's proposed constructions. Ex[1005],¶¶376-386. Under Petitioner's construction of "mouthpiece," *Ishimaru* discloses a "teat portion, i.e., the entire part projecting generally perpendicular to the mouth of the vessel, disposed above the areola portion, which extends into a baby's mouth for feeding." Ex[1015],24. "[T]he tip of the teat portion 120 of artificial nipple 100 is in contact with the tip of the sucking fossa 220 of the infant 200, and the tongue 230 of the infant 200 pushes the artificial nipple upward...[accordingly] when the infant 200 drinks milk through the artificial nipple, he/she performs the suckling movement by peristaltic movement of the tongue, as shown in Fig. 6 to Fig. 7." Ex[1008],[0044]. Figures 5-9 and 20 of *Ishimaru* disclose at least the teat portion of the nipple extending into the baby's mouth for feeding. Ex[1008],Figs.5-9, 20. *Ishimaru*'s Fig. 5 is reproduced below.

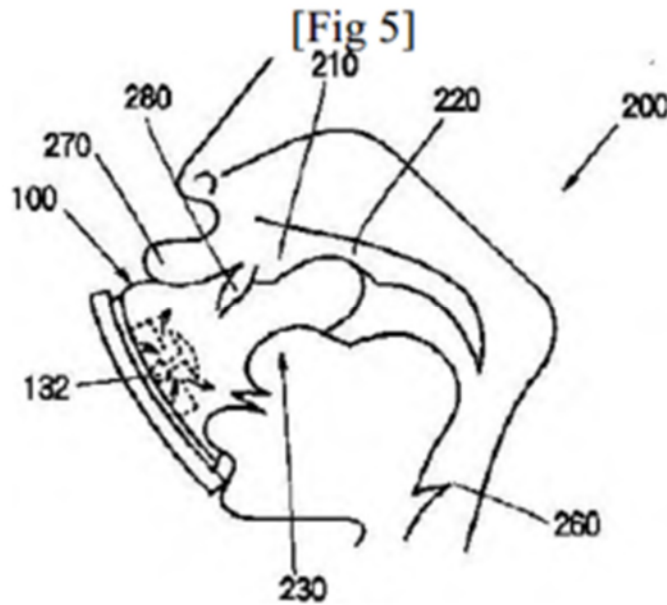


FIG. 5 of Ishimaru

Ishimaru's cover assembly further includes an artificial nipple 10 with an "opening 121," out of which opening milk may spurt and "be led in the direction of the epiglottis 26." Ex[1008],[0003]. Thus, it describes a mouthpiece which allows liquid, e.g., milk, to flow through the nipple to an aperture. Ex[1005],¶380.

The same *Ishimaru* disclosure also discloses this element under Patent Owner's construction, as meaning a "part projecting generally perpendicular to the mouth of the vessel and disposed above the areola portion" for the same reasons explained above. Ex[1018],24; Ex[1005],¶¶376-377.

- (e) **21[D]: a flex region configured to allow flex of the mouthpiece towards and away from a lower portion of the nipple, the mouthpiece defining a bite region,**

Ishimaru discloses or renders obvious this limitation under both Petitioner and Patent Owner's proposed constructions. Ex[1005], ¶¶387-391. Under Petitioner's construction of "flex of the mouthpiece towards and away from a lower portion of the nipple," *Ishimaru* discloses this limitation. Specifically, *Ishimaru* discloses that the nipple further includes a flex region, as shown by the thin-walled portions 122 and inner surfaces 123 of the nipple, which are designed to be flexible. Ex[1008],[0041], *see also* Fig. 1 (reproduced below). Additionally, *Ishimaru* teaches that "thin-walled portions 122, 122 and 122, which are elongation portions with a thin wall, **are formed in a groove-like pattern**, for example, at seven annular locations, as shown in Fig. 1." *Id.* For example, "the peristaltic movement of the tongue 230 of the infant 200 described above will cause these seven thin-walled portions 122 to elongate, and the teat portion 120 and nipple trunk 1120 will also be elongated in the mouth of the infant 200." *Id.*, [0046]. This elongation of the thin-walled portions 122 constitutes a flex of the mouthpiece towards and away from a lower portion of the nipple. Ex[1005], ¶¶388-389.

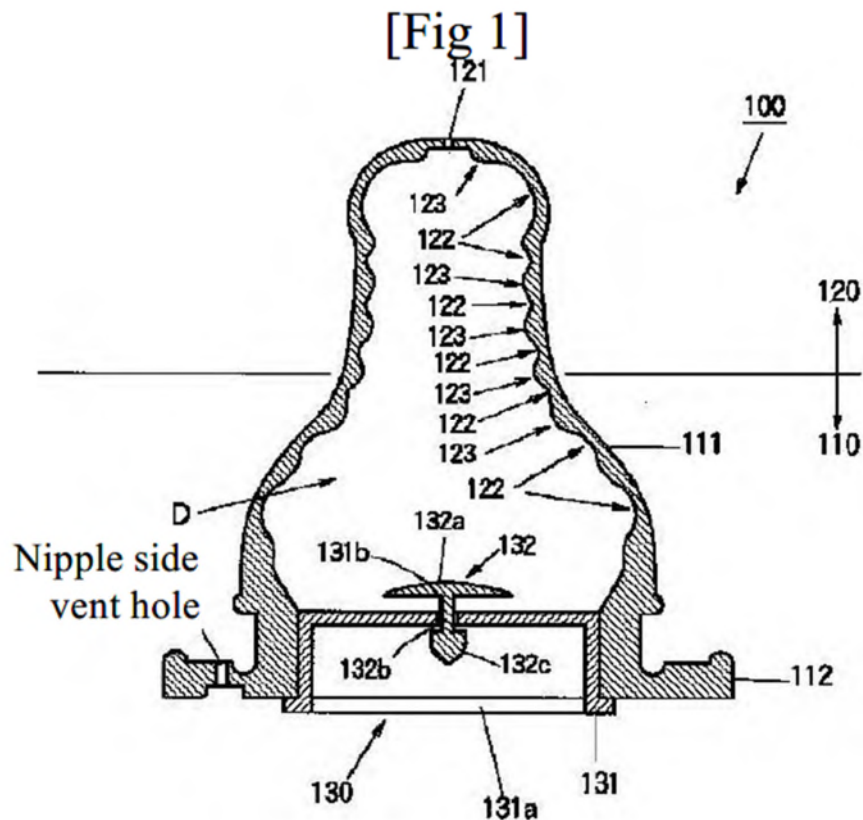


FIG. 1 of Ishimaru (annotated)

The same *Ishimaru* disclosure also discloses this element under Patent Owner's construction, as having its plain meaning, for the reasons explained above.

(f) **21[E]: the mouthpiece defining a bite region**

Ishimaru discloses or renders obvious this limitation. Ex[1005],¶¶392-398. *Ishimaru* teaches “the infant 20 presses the teat portion 12 of the artificial nipple 10 against the sucking fossa 22 on its upper palate 21 by the peristaltic movement of its tongue 23.” Ex[1008],[0003],[0044],[0047]; Figs 5, 8, 20. *Ishimaru* further depicts an infant “biting” a region of the mouthpiece with its upper palate:

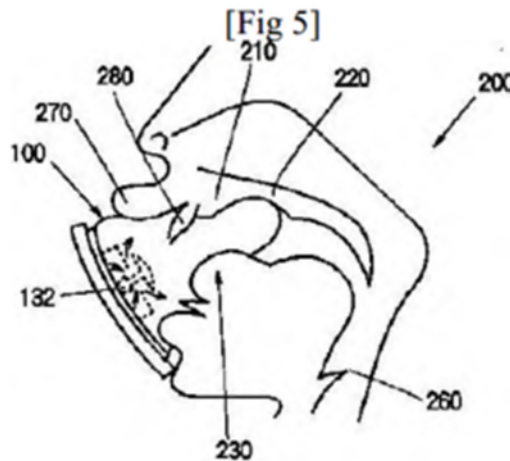


FIG. 5 of Ishimaru

Id., Fig. 5.

A POSA would have understood this region of the mouthpiece that is contacted by the infant to constitute a bite region. Ex[1005],393-396. A POSA would have further understood this from *Ishimaru*'s description of the process of feeding an infant by placing this region in the infant's mouth, and imitating feeding from a mother's breast. ¶¶[0043]-[0044], [0046]; Ex[1005],¶392.

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

Ishimaru discloses or renders obvious this limitation. Ex[1005],¶¶399-404.

Ishimaru discloses "a flange portion for connecting to a feeding bottle main body" which is part of the "base portion 112." Ex[1008],[0037],[0050]. The base portion would include the lower portion of the nipple. As illustrated in annotated Fig. 1

below, base portion 112 at the lower portion of the nipple furthest from the hole at the tip, which defines the nipple circumference. Ex[1008],Fig.1; Ex[1005],¶399.

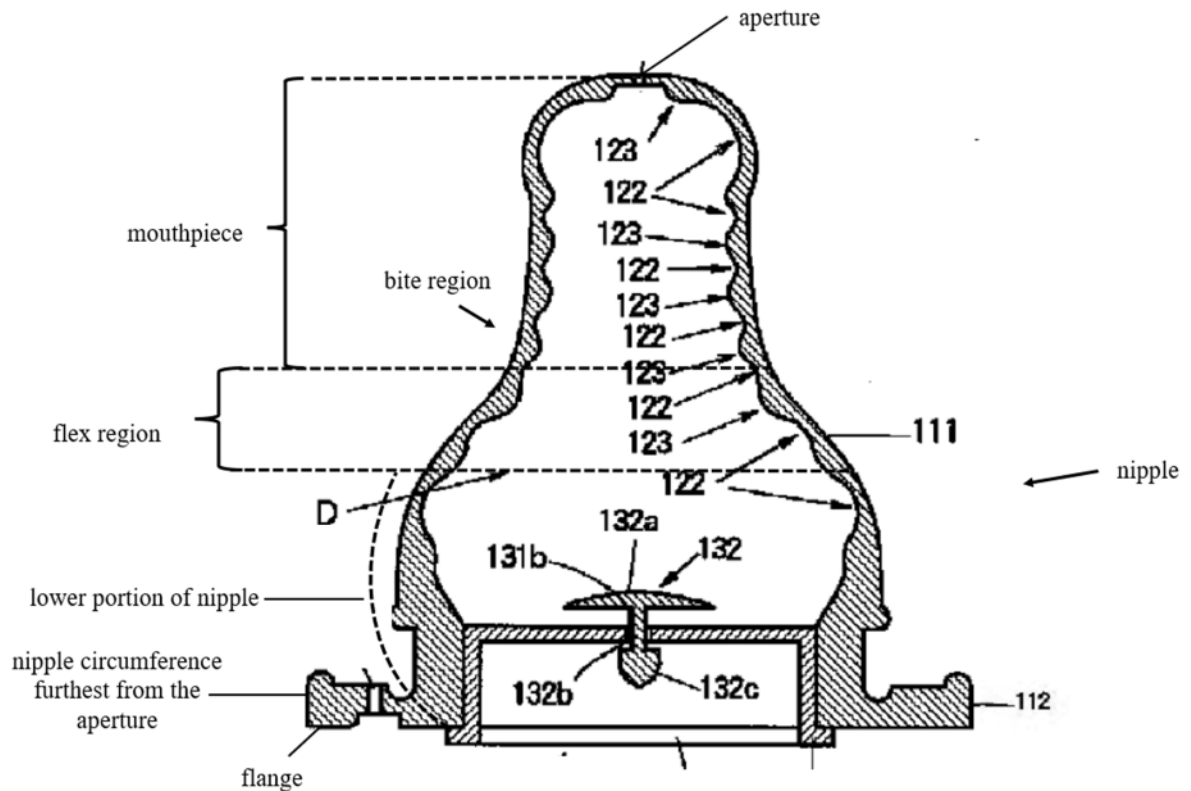


FIG. 1 of Ishimaru (annotated)

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

Ishimaru discloses or renders obvious this limitation. Ex[1005],¶¶405-411.

Ishimaru teaches the cover assembly including a mounting cap creating a seal over the opening of the container, which is used to fix the lid portion 420 with the base portion 112 “using a detachable feeding bottle mounting cap (not shown in the figure), which is used when mounting the artificial nipple 200 to the feeding bottle,”

which allows for easy separation and cleaning. Ex[1008],[0054], *see also id.*,[0058] (describing the same). When modified in accordance with the combination as discussed above, the collar would continue to serve this function.

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

Ishimaru does not explicitly disclose this limitation, but it would have been obvious to a POSA to modify the nipple and detachable feeding bottle mounting cap disclosed in *Ishimaru* to together define a downward domed shape that extends outwardly and downwardly from the flex region of the nipple towards a widest circumferential edge of the collar. Ex[1005],¶¶412-416. A POSA would understand that such an obvious modification would further advance *Ishimaru*'s goal of designing a nipple similar to a human breast (e.g., one with a general domed shape). *Supra* §VIII.A.1; Ex[1005],¶415. Such a modification is explicitly taught by *Kurjian - Kurjian* describes its "securing cap" as having an outer face that **"conforms to the contour of the nipple and constitutes a continuation thereof to provide a streamline type connection** between the nipple 23 and the bottle 28," and accordingly is shown in Figure 6 below as having a sloping outer contour, that together with the nipple, define a downward domed shape. *Id.* at 3:42-47, Fig. 6. Fig. 6 illustrates to a POSA the collar and lower portion of the nipple in a downward

domed shape. Ex[1009] at Fig. 6 (reproduced above); Ex[1005],¶413. A POSA would further have understood that this extension is towards the edge of the collar that has the widest circumference. Ex[1005],415.

A POSA would have been further motivated to implement these elements of *Kurkjian*'s nipple and vessel design into the nipple and vessel design of *Ishimaru*'s design—in order to design “an artificial nipple 100 has a shape similar to a mother's breast and nipple.” *See supra* §VIII.A.1; Ex[1005],¶444; Ex[1008],[0040]; *see also id.*,[0005] (“By the way, the artificial nipple 10 is mounted to a feeding bottle containing milk, etc., and is given to the infant in place of the mother's breast milk, so it is desirable that the artificial nipple 10 should be as similar to the mother's nipple as possible.”) *Supra* §VIII.A.1. Such a design would represent a more domed, smoothly curved shape that more closely resembles a mother's breast. *Id.* A POSA reading *Ishimaru* and *Kurkjian* would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. *Supra* §VIII.A.1; Ex[1005],¶361. Moreover, a POSA would have had a reasonable expectation of success in combining these designs because each nipple and vessel would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. *Id.*

3. Claim 24

- (a) **The drinking vessel of claim 21, wherein the cover assembly further comprises an air vent apart from the mouthpiece.**

Ishimaru discloses the cover assembly having “***an air vent apart from the mouthpiece,***” as illustrated by the “nipple side vent hole” at the base of the nipple trunk, which vent hole is separate from the teat opening 121. Ex[1008],[0037]; Ex[1005],¶¶422-427.

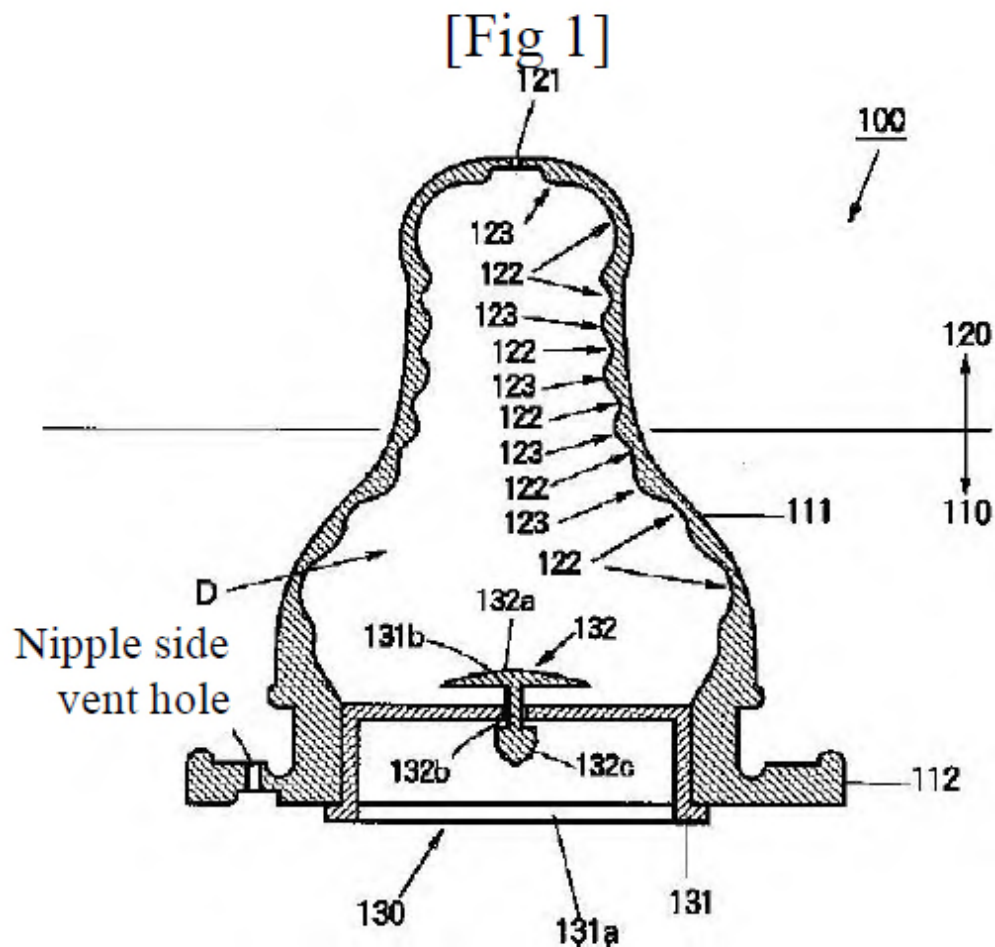


FIG. 1 of Ishimaru (annotated)

4. Claim 26

- (a) The drinking vessel of claim 21, wherein the mouthpiece is located in the center of the nipple.

Ishimaru discloses the mouthpiece being located in the center of the nipple, e.g., as illustrated in Figs., 3, 4, 12, and 13. Ex[1008], Figs. 1, 3, 4, 13; Ex[1005], ¶¶ 428-432.

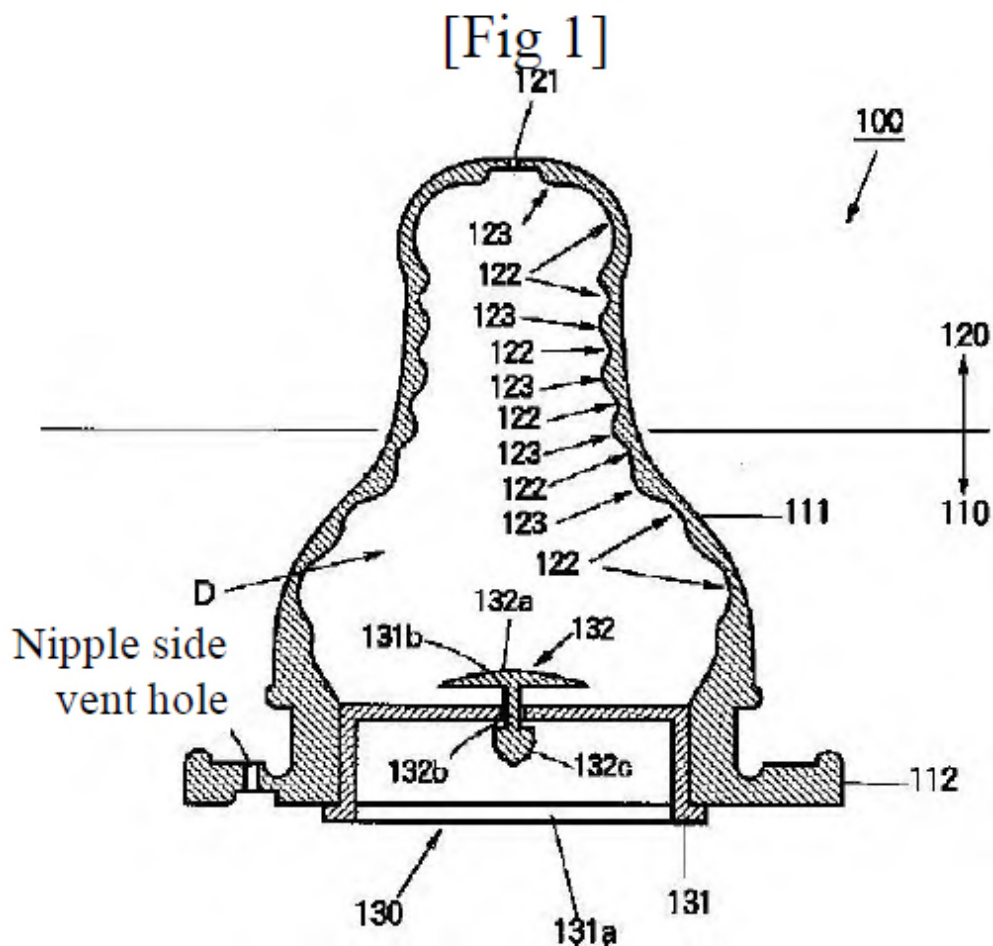
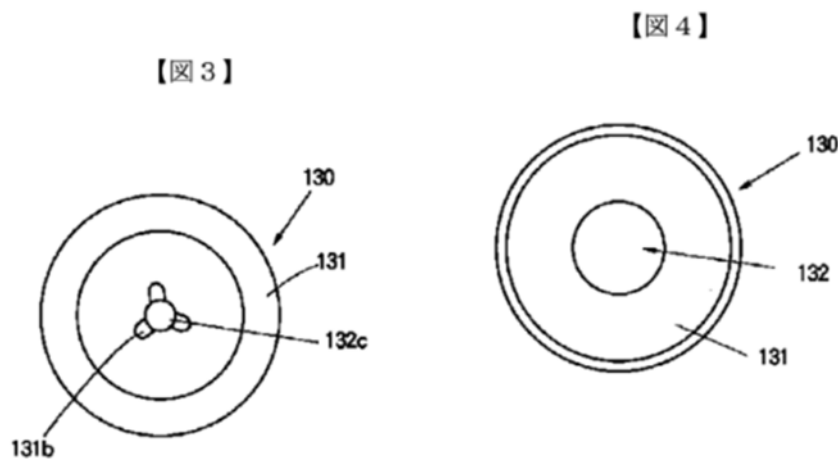


FIG. 1 of Ishimaru (annotated)



FIGS. 3, 4 of Ishimaru

5. **Claim 27**

- (a) **The drinking vessel of claim 21, wherein the teat portion comprises a resilient material.**

Ishimaru discloses the teat portion being a resilient material where it explains that “the artificial nipple 10 is made of silicone rubber.” Ex[1008],[0002]. Ex[1005],¶¶433-437. *Kurkjian* discloses an artificial nipple made of a “flexible material” such as rubber. Ex[1009],1:50-54. POSA would consider silicone rubber to represent a resilient material. Ex[1005],¶434.

B. Ground 2: *Ishimaru* in view of *Atkin* renders Claims 21-24 and 26-27 Obvious

Ishimaru in view of *Kurkjian* discloses or renders obvious Claims 21, 23-24, and 26-27 of the '244 Patent. The Ground 1 analysis of *Ishimaru* is incorporated in the *Ishimaru-Atkin* combination.

1. **Motivations to Combine**

A POSA would have considered *Ishimaru* and *Atkin* in the same field of endeavor as they all relate to nursing bottles and nipples that attach thereto. Ex[1005], ¶¶441-446; Ex[1010], 1:1-12; Ex[1008], [0001]-[0006]. A POSA would be motivated to modify or combine the nipples of *Ishimaru* and *Atkin* because they all teach analogous solutions for, and describe the benefits of, realistic, human-like nipples with air vents and collars to provide a durable design that relieves negative pressure in the nipple. Ex[1005], ¶¶441-442; Ex[1010], 3:16-23, 3:28-33, 6:12-27; Ex[1008], [0005], [0019], [0048], [0061].

A POSA reading *Ishimaru* would recognize a nipple design more similar to that of a mother's nipple, including a nipple trunk and teat portion, which includes an elongate portion comprising thin walls that are more easily extensible. Ex[1005], ¶442; Ex[1008], Abstract, Fig. 1. These thin-walled portions can also be formed in "a spiral shape." *Id.*, [0060]. Further, "there is a base portion 112 with a nipple side vent hole, which is a flange portion for connecting to a feed-ing bottle main body." *Id.*, [0037].

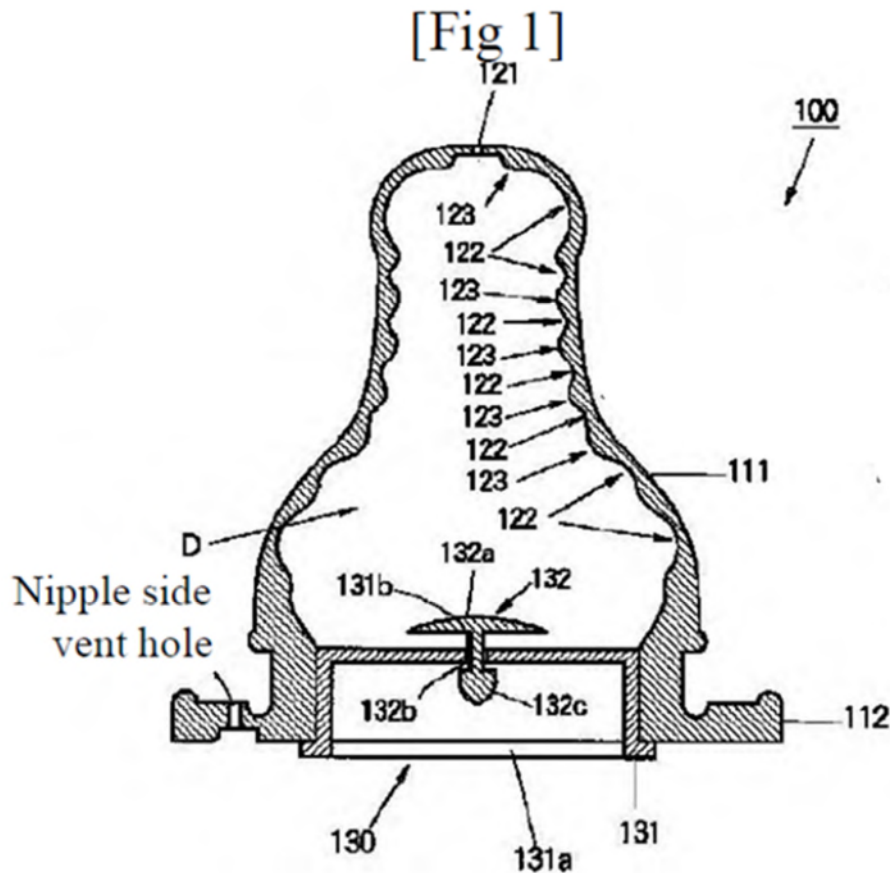
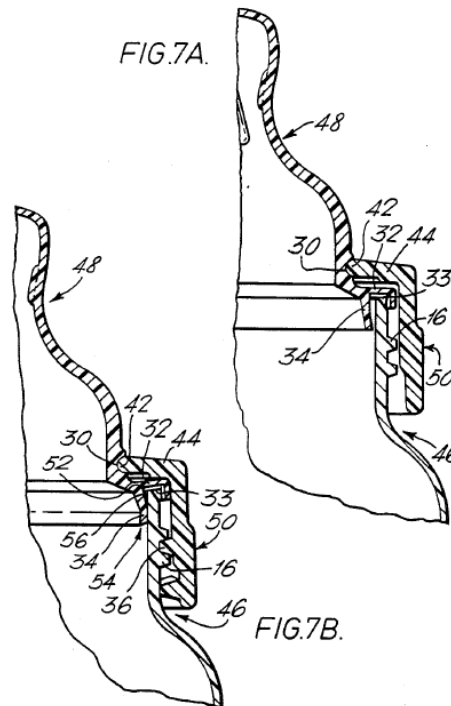


FIG. 1 of Ishimaru (annotated)

A POSA reading *Atkin* would recognize a nipple design to overcomes the problem of “teat collapse, especially in the case of the commonly preferred soft teat” by “arranging for [a] lip [valve] to fit with a small clearance inside the bottle neck...such that when the cap is screwed down, it acts on the teat to deform the annular flange.” Ex[1005],¶156; Ex[1010],1:33-35. *Atkin* further discloses an annular cap for securing the nipple to the vessel: “The annular cap has an internal interrupted screwthread 36 for screwing to the externally threaded bottle neck, and externally the cap is shouldered at 38, being provided with an enlargement 40 on the

wider diameter portion below the shoulder. The enlargement 40 facilitates the screwing and unscrewing of the cap.” Ex[1010],5:32-61; Fig. 5-7.



FIGS. 7A, 7B of Atkin

A POSA reading *Atkin* would further recognize that *Atkin* teaches a vessel with multiple internal circumferences: “the preferred bottle has a capacity in the range 30 to 35 ml per cm height, the neck having a mean diameter of not less than 0.725 of the main portion diameter. The preferred dimensions are a mean diameter of not less than 6 cm for the main cylindrical portion and a neck portion diameter of not less than 4.25 cm. It will thus be appreciated that a bottle having these dimensions for a corresponding total capacity, is shorter and squatter than known bottles. It therefore sits more stably when stood on its base, and is less liable to being

tipped over. In addition, the wider neck facilitates the insertion of food ingredients, as by means of a scoop, and is more readily cleaned internally after use. Furthermore, a larger diameter neck enables the use of a larger teat, enabling use of the bottle by the baby more closely resembling natural feeding.” Ex[1010],3:10-27; Ex[1005],¶¶444.

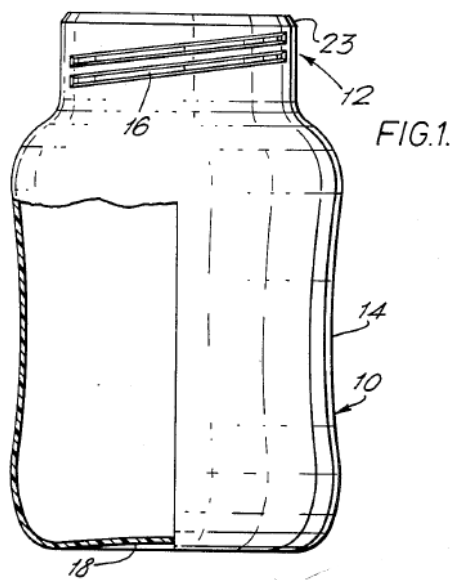


FIG. 1 of Atkin

A POSA would be further motivated and find it obvious, to the extent not disclosed by *Ishimaru*, to modify the nipple design of *Ishimaru* as taught by *Atkin* in order to provide a more realistic, breast-like nipple. Ex[1005],¶¶444-445; Ex[1008],[0004],[0005],[0041],[0061]. Indeed, *Ishimaru* stresses the importance of this to encourage bottle feeding. Ex[1005],¶443; Ex[1008],[0005]. “By the way, the artificial nipple 10 is mounted to a feeding bottle containing milk, etc., and is given

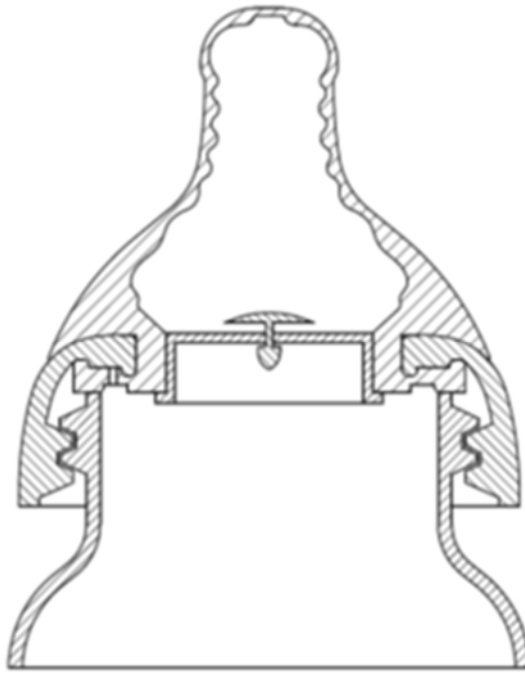
to the infant in place of the mother's breast milk, so it is desirable that the artificial nipple 10 should be as similar to the mother's nipple as possible.” Ex[1008],[0005]. “Such an artificial nipple 100 has a shape similar to a mother's breast and nipple as shown in Fig. 1, because it is used when a mother feeds her infant with artificial milk using a feeding bottle, etc., instead of her own breast milk.” Ex[1008],[0040]. A POSA reviewing *Atkin* would be motivated to incorporate the domed collar in *Atkin* in order to modify the shape of the collar in *Ishimaru* (or mounting cap, as disclosed in *Ishimaru* ([0054])) to provide a downward doming shape that further improves the aesthetics of the nipple to provide a realistic, breast-like shape, as taught by *Ishimaru*. See Ex[1005],¶¶443-444.

A POSA would be further motivated and find it obvious, to the extent not disclosed by *Ishimaru*, to modify the vessel design as taught by one or more embodiments disclosed in *Atkin* in order to provide a more ergonomic, durable, and aesthetically pleasing design better suited for *Ishimaru*'s nipple design. Ex[1005],¶445. For example, incorporating *Atkin* design with varying diameters to improve the nipple and vessel design would result in a vessel with multiple diameters that would optimize vessel volume, user ergonomics, and aesthetic appearance, while also facilitating attachment of a wider, more breast-like nipple though a wide vessel mouth: “Furthermore, a larger diameter neck enables the use of a larger teat,

enabling use of the bottle by the baby more closely resembling natural feeding.”
Ex[1010],3:10-27; Ex[1005],¶445.

The example combinations and modifications described represent a known, finite number of identified predictable solutions to solve the problem of designing a realistic, breast-like nipple that simultaneously equalizes the pressure in the bottle to prevent, for example, nipple collapse and colic. Ex[1005],¶445; Ex[1010], 1:24-45,3:16-23,3:28-33; Ex[1008],[0005],[0007],[0019],[0048],[0061]. A POSA reading *Ishimaru* and *Atkin* would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. Ex[1005],¶446. A POSA would expect that modifying *Ishimaru*’s nipple in view of *Atkin* would provide a more reliable, aesthetically suitable solution to equalize pressure in the bottle. Ex[1005],¶446. Moreover, a POSA would have had a reasonable expectation of success in combining these designs because each nipple and vessel would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. *Id.*

After considering the disclosures of both *Ishimaru* and *Atkin*, a POSA at the time of the priority date of the ’244 Patent would have combined one or more of these features for the reasons stated above and would have been motivated to design a nipple and collar similar to the following:



Ex[1005],¶439. Indeed, this design is largely the breast-like nipple of *Ishimaru* with its stated advantages secured to an ergonomic vessel of *Atkin* with its associated teachings regarding collar shape for attaching a nipple to the ergonomic vessel, with its stated advantages, working as expected.

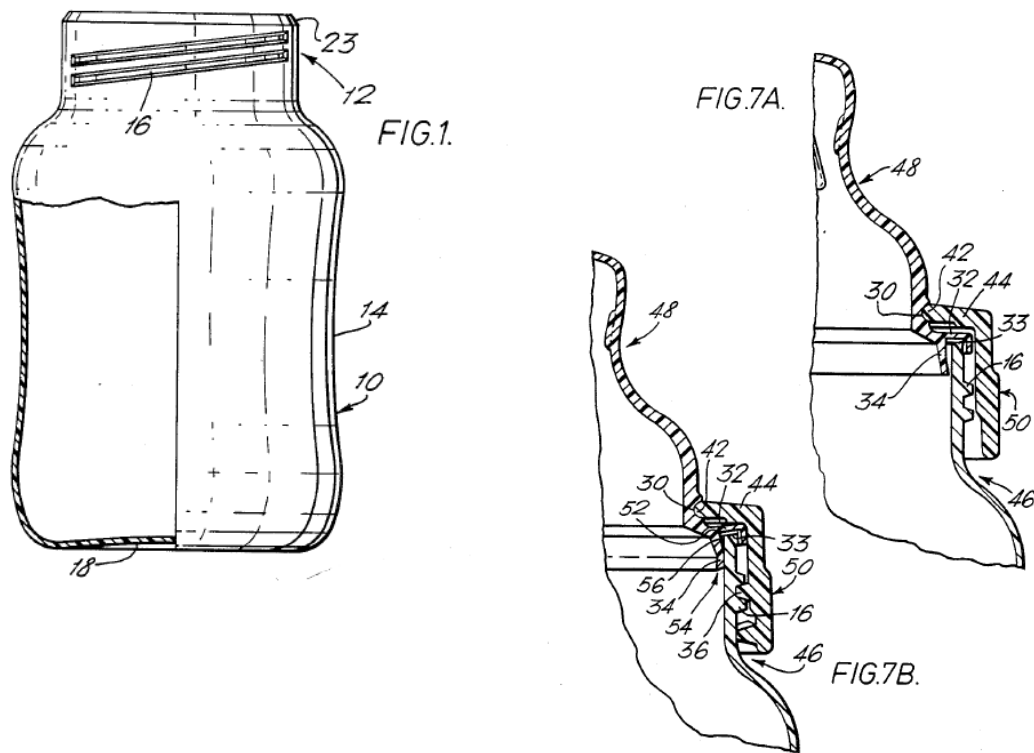
2. Claim 21

(a) 21[Pre]

This limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* VIII.A.2.(a). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005],¶¶447-452.

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

Ishimaru does not explicitly disclose “**a container comprising a varying internal circumference and an opening into the container,**” but it would have been obvious to a POSA to modify the vessel disclosed in *Ishimaru* to include multiple internal circumferences. Ex[1005],¶¶453-461. Such a modification is taught by *Atkin* in light of *Atkin*’s Figs., 1, 7A, 7B, and teachings of a bottle with “a main portion 10 and a neck portion 12. *Id.*, Both portions are generally cylindrical, but the main 40 portion is marginally waisted, as indicated at 14, to facilitate hand holding.” Ex[1010],4:38-41. Specifically, *Atkin* describes its bottle as having “a main portion mean diameter of about 6.75 cm (7 cm maximum top and bottom to 6.5 cm at the centre of the waist) and main portion height to the full capacity mark of about 8 cm.” *Id.*,4:50-57; see Ex[1010],Figs. 1, 7a-7b (reproduced below), 1:12-23; 2:52-62; 1:55-66 (describing a baby bottle having a main portion and a neck portion with different cross-sectional areas), 4:44-63; *Supra* §VIII.B.1; Ex[1005],¶¶444-445.



FIGS. 1, 7A, 7B of Atkin

A POSA would have been further motivated to implement these elements of *Atkin*'s nipple and vessel design into *Ishimaru*'s -design—achieving a bottle with multiple diameters that would be more resistant to tipping, be better for hand holding (ergonomics), and be better suited to couple to *Ishimaru*'s wider, realistic, breast-like nipple. *Supra* §VIII.B.1; Ex[1005], ¶¶444-445. A POSA reading *Ishimaru* and *Kurkjian* would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. *Id.*, ¶446. Moreover, a POSA would have had a reasonable expectation of success in combining these designs because each nipple and vessel would work as in their respective disclosures,

and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. *Id.*

- (c) **21[B]: a cover assembly configured to couple to the container over the opening, the cover assembly comprising:**

This limitation is disclosed or rendered obvious by *Ishimaru*. See *supra* VIII.A.2.(c). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005], ¶¶463-468.

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

This limitation is disclosed or rendered obvious by *Ishimaru*. See *supra* VIII.A.2.(d). The *Ishimaru-Atkin* combination further renders the element obvious, under either the Petitioner or the Patent Owner’s construction of “mouthpiece.” Ex[1005], ¶¶469-475.

- (e) **21[D]: a flex region configured to allow flex of the mouthpiece towards and away from a lower portion of the nipple, the mouthpiece defining a bite region,**

This limitation is disclosed or rendered obvious by *Ishimaru*. See *supra* VIII.A.2.(e). The *Ishimaru-Atkin* combination further renders the element obvious, under either the Petitioner or the Patent Owner’s construction of “mouthpiece.” Ex[1005], ¶¶476-477.

- (f) **21[E]: the mouthpiece defining a bite region,**

This limitation is disclosed or rendered obvious by *Ishimaru*. See *supra* VIII.A.2.(f). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005], ¶¶478-484.

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

This limitation is disclosed or rendered obvious by *Ishimaru*. See *supra* VIII.A.2.(g). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005], ¶¶485-490.

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

This limitation is disclosed or rendered obvious by *Ishimaru*. See *supra* VIII.A.2.(h). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005], ¶¶491-497.

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

Ishimaru does not explicitly disclose this limitation, but it would have been obvious to a POSA to modify the nipple and detachable feeding bottle mounting cap disclosed in *Ishimaru* to together define a downward domed shape that extends outwardly and downwardly from the flex region of the nipple towards a widest circumferential edge of the collar. Ex[1005], ¶¶498-501. A POSA would understand

that such an obvious modification would further advance *Ishimaru's* goal of designing a nipple similar to a human breast (e.g., one with a general domed shape). Ex[1005], ¶¶498-499. Such a modification is taught by *Atkin*: *Atkin* teaches: “The preferred bottle has a capacity in the range 30 to 35 ml per cm height, ***the neck having a mean diameter of not less than 0.725 of the main portion diameter.*** The preferred dimensions are a mean diameter of not less than 6 cm for the main cylindrical portion and a neck portion diameter of not less than 4.25 cm. It will thus be appreciated that a bottle having these dimensions for a corresponding total capacity, is shorter and squatter than known bottles. It therefore sits more stably when stood on its base, and is less liable to being tipped over. In addition, the wider neck facilitates the insertion of food ingredients, as by means of a scoop, and is more readily cleaned internally after use. Furthermore, a larger diameter neck ***enables the use of a larger teat, enabling use of the bottle by the baby more closely resembling natural feeding.*** Ex[1010], 3:10-27 (emphasis added). This downward dome shape would move towards the edge of the collar that has the widest circumference, and a POSA would be motivated to design this collar with this shape in order to create a nipple and collar that more closely resemble a human breast. Ex[1005], ¶499.

A POSA would have been further motivated to implement these elements of *Atkin's* nipple and vessel design into the nipple and vessel design of *Ishimaru's* design— in order to design “an artificial nipple 100 has a shape similar to a mother's

breast and nipple.” Ex[1008],[0040]; *see also id.*,[0005] (“By the way, the artificial nipple 10 is mounted to a feeding bottle containing milk, etc., and is given to the infant in place of the mother's breast milk, so it is desirable that the artificial nipple 10 should be as similar to the mother's nipple as possible”); Ex[1010],3:10-27 (“a larger diameter neck ***enables the use of a larger teat, enabling use of the bottle by the baby more closely resembling natural feeding.***”); *Supra* §VIII.B.1; Ex[1005],¶443-445. Such a design would represent a more domed, smoothly curved shape that more closely resembles a mother’s breast. A POSA reading *Ishimaru* and *Kurkjian* would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. *Supra* §VIII.B.1; Ex[1005],¶446. Moreover, a POSA would have had a reasonable expectation of success in combining these designs because each nipple and vessel would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. *Id.*

3. Claim 22

(a) **The drinking vessel of claim 21, wherein the container is a trainer cup.**

Ishimaru does not explicitly disclose this limitation, but it would have been obvious to a POSA to modify the vessel in *Ishimaru* to comprise a trainer cup. Ex[1005],¶¶502-505. A POSA would understand that using *Ishimaru*’s nipple on

different vessels would represent an obvious modification that would have additional commercial value and applicability to additional markets besides baby bottles. For example, a POSA would be motivated to provide a realistic, breast-like nipple on a vessel that an infant or toddler could hold. Such a design would allow a toddler to learn how to hold their vessel while still obtaining the benefits of the nipple described herein. *Supra* §VIII.B.1; Ex[1005], ¶¶502-503. Such a modification is taught by *Atkin*: “trainer spout has a rim portion 66 at its open end which is stopped against the shoulder 38 on the annular cap when the trainer is push fitted into position. It also has an upstanding eccentric spout 68 having small apertures 70 in its end through which baby feed can be taken by a baby with a sucking and/or drinking technique. Ex[1010], 7:36-42. Specifically, a POSA would have understood *Atkin*’s “cup trainer” to teach a trainer cup. See Ex[1005], ¶502; [1010] at 4:24, Fig. 10 (reproduced below).

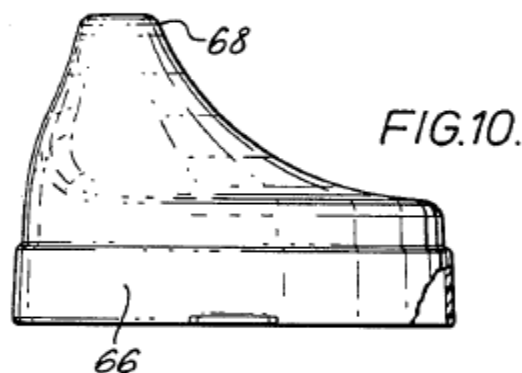


FIG. 10 of Atkin

A POSA would have been further motivated to implement these elements of *Atkin*'s nipple and vessel design into the nipple and vessel design of *Ishimaru*'s design— in order to apply “an artificial nipple 100 has a shape similar to a mother's breast and nipple” to a wide variety of vessels, including bottles, trainer cups, sippy cups, or other similar applications. Ex[1008],[0040]; Ex[1010],3:10-27 (“a larger diameter neck ***enables the use of a larger teat, enabling use of the bottle by the baby more closely resembling natural feeding.***”); *Supra* §VIII.B.5; Ex[1005],¶502. A POSA reading *Ishimaru* and *Atkin* would be motivated to combine and substitute these familiar elements according to known methods to yield predictable results. *Supra* §VIII.B.1; Ex[1005],¶446. Moreover, a POSA would have had a reasonable expectation of success in combining these designs because each nipple and vessel would work as in their respective disclosures, and the references demonstrate that a POSA could have combined the disclosed features with reasonable expectation of success in doing so. *Id.*

4. Claim 23

- (a) **The drinking vessel of claim 21, wherein the container comprises a material more rigid than the nipple material.**

This limitation is disclosed or rendered obvious by *Ishimaru*. *See supra* VIII.A.3(a). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005],¶¶506-510.

5. Claim 24

- (a) **The drinking vessel of claim 21, wherein the cover assembly further comprises an air vent apart from the mouthpiece.**

This limitation is disclosed or rendered obvious by *Ishimaru*. See *supra* VIII.A.4(a). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005], ¶¶510-515.

6. Claim 26

- (a) **The drinking vessel of claim 21, wherein the mouthpiece is located in the center of the nipple.**

This limitation is disclosed or rendered obvious by *Ishimaru*. See *supra* VIII.A.5(a). The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005], ¶¶516-521.

7. Claim 27

- (a) **The drinking vessel of claim 21, wherein the teat portion comprises a resilient material.**

This limitation is disclosed or rendered obvious by *Ishimaru*. See *supra* VIII.A.6(a)[27]. The *Ishimaru-Atkin* combination further renders the element obvious. Ex[1005], ¶¶522-527.

IX. SECONDARY CONSIDERATIONS

Patent Owner has not identified any evidence of secondary considerations of non-obviousness tied to the claimed invention of the '244 Patent. Accordingly, there is no objective evidence of non-obviousness that might warrant a finding that claims

21-24, 26, and 27 are patentable. Ex[1005], ¶493. Furthermore, even if Patent Owner were able to establish any secondary considerations and a proper nexus, any such secondary considerations would be insufficient to overcome the strong case of obviousness presented here. *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).

X. CONCLUSION

Petitioner respectfully request institution of *inter partes* review and cancelation of claims 21-24, 26, and 27 of the '244 Patent as unpatentable.

Respectfully,

BAKER BOTTS L.L.P.

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

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105, the undersigned certifies that on the 13 day of January 2023, the foregoing was provided via Priority Mail Express or by means at least as fast and reliable as Priority Mail Express, postage prepaid, to the Patent Owner and its known representatives by serving the correspondence address of record for the U.S. Patent No. 11,207,244 holder and the patent holder's counsel:

John S. Goetz
Fish & Richardson P.C.
7 Times Square, 20th Floor
New York, NY 10036

Matthew A. Colvin, Aaron P. Pirouznia
Fish & Richardson P.C.
1717 Main Street, Suite 5000
Dallas, TX 75201

165989 - Fish & Richardson P.C.
(Mayborn Group Limited)
P.O. Box 1022
Minneapolis, MN 55440-1022

BAKER BOTTS L.L.P.

/Eliot D. Williams/
Eliot D. Williams (Reg. No. 50,822)
Lead Attorney for Petitioner

Date: January 13, 2023

**CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME
LIMITATION, TYPEFACE REQUIREMENTS, AND TYPE STYLE
REQUIREMENTS**

1. This Petition complies with the type-volume limitation of 14,000 words, comprising 8,902 words, excluding the parts exempted by 37 C.F.R. § 42.24(a).

2. This Petition complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word 2016 in 14-point Times New Roman.

Respectfully submitted,

BAKER BOTTS L.L.P.

/Eliot D. Williams/

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

Lead Attorney for Petitioner

Date: January 13, 2023

700 K Street, N.W.
Washington, D.C., 20001-5692
Tel: 202-639-1334
Eliot.Williams@BakerBotts.com