AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 **Director of the U.S. Patent and Trademark Office** **P.O. Box 1450** **Alexandria, VA 22313-1450**	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court 500 Pearl Street, NY NY 10007 on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
1:22-cv-00694	1/26/2022	500 Pearl Street, NY NY 10007

PLAINTIFF	DEFENDANT
MAYBORN (UK) LIMITED, MAYBORN USA, INC., MAYBORN GROUP LIMITED	COMOTOMO INC., COMOTOMO CORPORATION

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	10,952,930	3/23/2021	MAYBORN (UK) LIMITED
2	11,207,244	12/28/2021	MAYBORN (UK) LIMITED
3			
4			
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
Ruby J. Krajick	/s/ P. Canales	1/28/2022

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/208,932	12/28/2021	11207244	40395-0012004	5102

165989 7590 12/08/2021

FISH & RICHARDSON P.C.
(Mayborn Group Limited)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

INVENTOR(s) (Please see PAIR WEB site http://pair.uspto.gov for additional inventors):

Arnold Rees, Newcastle Upon Tyne, UNITED KINGDOM;
Ian Webb, London, UNITED KINGDOM;
Mark Armstrong, Wales, UNITED KINGDOM;
Tom Cotton, London, UNITED KINGDOM;

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Mayborn (UK) Limited, New Castle Upon Tyne, UNITED KINGDOM

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

Substitute Disclosure Form / U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.	Application No.
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	40395-0012004	17/208,932
	Applicant: Mayborn (UK) Limited	
	Filing Date: March 22, 2021	Group Art Unit: 3643

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
	109.	D479606S	9/9/2003	Randolph			
	110.	D486579S	2/10/2004	Dunn			
	111.	D488560S	4/13/2004	Renz et al.			
	112.	D498849S	11/23/2004	Randoph et al.			
	113.	D504723S	5/3/2005	Randoph et al.			
	114.	D504724S	5/3/2005	Randoph et al.			
	115.	D504725S	5/3/2005	Randolph et al.			
	116.	D520142S	5/2/2006	Mallet			
Change(s) applied	117.	D539910	~~4/3/2004~~	Ordonez	04/2007		
to document,	118.	D547874	7/31/2007	Horie et al.			
/M.H.E./	119.	D599028	8/25/2009	Schofield			
9/24/2021	120.	D620125	7/20/2010	Rees et al.			
	121.	D626246	10/26/2010	Rees et al.			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Translation	Class	Subclass
	122.	DE 19716535	11/6/1997	DE			
	123.	DE 19849271	4/27/2000	DE			
	124.	DE 20210121	10/2/2002	DE			
	125.	EP 0151862	8/21/1985	EP			
	126.	EP 0845971	10/24/2001	EP			
	127.	EP 1297814	4/2/2003	EP			
	128.	EP 1310230	5/14/2003	EP			
	129.	GB 0004210	6/13/1912	GB			
	130.	GB 2139903	11/21/1984	GB			
	131.	GB 2154451	9/11/1985	GB			
	132.	GB 2167735	6/4/1986	GB			

Examiner Signature	Date Considered
/ANDREW T KIRSCH/	06/04/2021

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T.K/

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22314-1450

By fax, send to: (571) 273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

165989 7590 09/22/2021

FISH & RICHARDSON P.C.
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/208,932	03/22/2021	Arnold Rees	40395-0012004	5102

TITLE OF INVENTION: BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	12/22/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
KIRSCH, ANDREW THOMAS	3733	215-011500

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

[ ] Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

[ ] "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Fish & Richardson P.C.
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Mayborn (UK) Limited

(B) RESIDENCE: (CITY and STATE OR COUNTRY): New Castle Upon Tyne, United Kingdom

Please check the appropriate assignee category or categories (will not be printed on the patent): [ ] Individual [X] Corporation or other private group entity [ ] Government

4a. Fees Submitted: [X] Issue Fee [ ] Publication Fee (if required) [ ] Advance Order - # of Copies

4b. Method of Payment (*Please first reapply any previously paid fee shown above*):

[X] Electronic Payment via EFS-Web [ ] Enclosed check [ ] Non-electronic payment by credit card (Attach form PTO-2038)

[X] The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account No. 06-1050

5. **Change of Entity Status** (from status indicated above)

[ ] Applicant certifying micro entity status. See 37 CFR 1.29 — **NOTE**: Absent a valid Certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

[ ] Applicant asserting small entity status. See 37 CFR 1.27. — **NOTE**: If the application was previously under micro entity status, checking this box will be taken as a notification of loss of entitlement to micro entity status.

[ ] Applicant changing to regular undiscounted fee status. — **NOTE**: Checking this box will be taken as a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Joshua A. Griswold/ Date November 16, 2021

Typed or printed name Joshua A. Griswold Registration No. 46,310

91481971.doc

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Arnold Rees	Art Unit	:	3733
Application No.	:	17/208,932	Examiner	:	Andrew Thomas Kirsch
Filed	:	March 22, 2021	Confirmation No.	:	5102
			Notice of Allowance Date: September 22, 2021		
Title	:	BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS			

MAIL STOP ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY TO NOTICE OF ALLOWANCE

In response to the Notice of Allowance dated September 22, 2021, enclosed is a completed Part B - Fee(s) Transmittal.

The issue fee is being paid with this reply on the Electronic Filing System. Apply those fees and any other necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: November 16, 2021

/Joshua A. Griswold/
Joshua A. Griswold, Reg. No. 46,310

Customer Number 165989
Fish & Richardson P.C.
Telephone: (214) 747-5070
Facsimile: (877) 769-7945

91481970.doc

Electronic Patent Application Fee Transmittal

Application Number:	17208932
Filing Date:	22-Mar-2021
Title of Invention:	Baby Bottle with Flexible Nipple Regions
First Named Inventor/Applicant Name:	Arnold Rees
Filer:	Joshua A. Griswold/Monica Gamez
Attorney Docket Number:	40395-0012004

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	1501	1	1200	1200

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**1200**

Electronic Acknowledgement Receipt

EFS ID:	44295796
Application Number:	17208932
International Application Number:	
Confirmation Number:	5102
Title of Invention:	Baby Bottle with Flexible Nipple Regions
First Named Inventor/Applicant Name:	Arnold Rees
Customer Number:	165989
Filer:	Joshua A. Griswold/Monica Gamez
Filer Authorized By:	Joshua A. Griswold
Attorney Docket Number:	40395-0012004
Receipt Date:	16-NOV-2021
Filing Date:	22-MAR-2021
Time Stamp:	15:42:07
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$1200
RAM confirmation Number	E2021AFF42323613
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	40395-0012004_Transmittal.pdf	162428 ae2f6cc2cc0084df16cf9fa22a3686746b3dcec8	no	1
Warnings:					
Information:					
2	Post Allowance Communication - Incoming	40395-0012004_ReplyToNOA.pdf	72228 8883cac464c1c1480c877683e373e135f65849c6	no	1
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	38098 e8f8d4e304f1d8d5ada8771e8d218f0aeeb933cf	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	272754		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

165989 7590 09/22/2021

FISH & RICHARDSON P.C.
(Mayborn Group Limited)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER
KIRSCH, ANDREW THOMAS

ART UNIT	PAPER NUMBER
3733	

DATE MAILED: 09/22/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/208,932	03/22/2021	Arnold Rees	40395-0012004	5102

TITLE OF INVENTION: Baby Bottle with Flexible Nipple Regions

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	12/22/2021

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

Nanobebe US Inc., Ex. 1004, Page 10
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

165989 7590 09/22/2021
FISH & RICHARDSON P.C.
(Mayborn Group Limited)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/208,932	03/22/2021	Arnold Rees	40395-0012004	5102

TITLE OF INVENTION: Baby Bottle with Flexible Nipple Regions

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	12/22/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
KIRSCH, ANDREW THOMAS	3733	215-011500

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

Nanobebe US Inc., Ex. 1004, Page 11
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/208,932	03/22/2021	Arnold Rees	40395-0012004	5102

165989 7590 09/22/2021

FISH & RICHARDSON P.C.
(Mayborn Group Limited)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
KIRSCH, ANDREW THOMAS	
ART UNIT	**PAPER NUMBER**
3733	

DATE MAILED: 09/22/2021

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 02/11)

Nanobebe US Inc., Ex. 1004, Page 12
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 17/208,932	Applicant(s) Rees et al.	
	Examiner ANDREW T KIRSCH	Art Unit 3733	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to amendments filed 9/9/2021.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 18-48 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☑ All b) ☐ Some* c) ☐ None of the:

   1. ☑ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/ANDREW T KIRSCH/
Primary Examiner, Art Unit 3733

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Nanobebe US Inc. v. Mayborn (UK) Limited et al.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/208,932	Rees et al.
	Examiner	Art Unit
	ANDREW T KIRSCH	3733

CPC - Searched*		
Symbol	Date	Examiner
A61J 9/04, 11/02, 11/002, 11/0035, 11/005, 11/006, 11/045, 11/04, 9/00	09/15/2021	ATK
A47G 19/2272	09/15/2021	ATK

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventor Check	06/04/2021	ATK
EAST Search	06/04/2021	ATK
Updated EAST Search	09/15/2021	ATK

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
-	See EAST Search History	09/15/2021	ATK

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/208,932	Rees et al.
	Examiner	**Art Unit**
	ANDREW T KIRSCH	3733

CPC						
Symbol					**Type**	**Version**
A61J	/	11	/	006	F	2013-01-01
A61J	/	11	/	0065	I	2013-01-01
A61J	/	11	/	02	I	2013-01-01
A61J	/	11	/	045	I	2013-01-01
A61J	/	11	/	04	I	2013-01-01
A61J	/	17	/	001	A	2015-05-01

CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	31	
/ANDREW T KIRSCH/ Primary Examiner, Art Unit 3733	15 September 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	18	4

U.S. Patent and Trademark Office — Part of Paper No.: 20210915

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/208,932	Rees et al.
	Examiner	**Art Unit**
	ANDREW T KIRSCH	3733

INTERNATIONAL CLASSIFICATION					
CLAIMED					
A61J11/00	/	11	/	00	
A61J11/04	/	11	/	04	

NON-CLAIMED					
	/		/		

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	31	
/ANDREW T KIRSCH/ Primary Examiner, Art Unit 3733	15 September 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	18	4

U.S. Patent and Trademark Office — Part of Paper No.: 20210915

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Nanobebe US Inc. v. Mayborn (UK) Limited et al.

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/208,932	Rees et al.
	Examiner	**Art Unit**
	ANDREW T KIRSCH	3733

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	18	10	27	19	36	28	44								
2	19	11	28	20	48	29	45								
3	20	12	29	21	37	30	46								
4	21	13	30	22	38	31	47								
5	22	14	31	23	39										
6	23	15	32	24	40										
7	24	16	33	25	41										
8	25	17	34	26	42										
9	26	18	35	27	43										

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	31	
/ANDREW T KIRSCH/ Primary Examiner, Art Unit 3733	15 September 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	18	4

U.S. Patent and Trademark Office Part of Paper No.: 20210915

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L14	1,522	kuester	USPAT	OR	OFF	2021/09/15 14:28
L15	36	kuester and nipple	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2021/09/15 14:28
L16	315	a61j11/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2021/09/15 14:32
L17	554	a61j9/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2021/09/15 14:32
L18	480	a61j11/02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2021/09/15 14:33
L19	103	a61j11/0035.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2021/09/15 14:33
L20	123	a61j11/005.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2021/09/15 14:33
L21	101	a61j11/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2021/09/15 14:33
L22	398	a61j11/045.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2021/09/15 14:33
L23	579	a61j11/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2021/09/15 14:33
L24	1,341	a61j9/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2021/09/15 14:33
L25	1,675	a47g19/2272.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2021/09/15 14:33
S1	57	("20060060593" | "5118000" | "6702135" | "20040262320" | "4726616" | "7185783" | "8066144" | "4186844" |	US-PGPUB; USPAT; USOCR;	OR	ON	2017/03/22 21:19

		"4676431" | "5490606" | "5878904" | "20090032545" | "4157609" | "4315574" | "4955501" | "5423448" | "D376456" | "4373849" | "20090179444" | "D351703" | "D422450" | "D351702" | "20110000382" | "8123061" | "7766186").PN.	EPO; JPO; DERWENT			
S2	10	(("HANKEY") near3 ("J")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2017/03/22 21:29
S3	32	("4373849" | "4676431" | "4186844" | "5118000" | "4315574" | "5423448" | "20090032545" | "4157609" | "6702135" | "4955501" | "20060060593" | "20110000382").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/22 21:30
S4	40	("0961780" | "1226511" | "1880250" | "2702142" | "3315828" | "3893722" | "4057020" | "4088071" | "4182530" | "4456141" | "5035563" | "5042856" | "5098250" | "5103994" | "5201434").PN. OR ("5490606").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2017/03/22 21:36
S5	33	("2041038" | "4088071" | "4342402").PN. OR ("4456141").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2017/03/22 21:37
S6	428	b65f1/122.cpc. b65f1/125.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2017/03/22 21:41
S7	14	("3195942" | "3946885").PN. OR ("4373849").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2017/03/22 21:44
S8	2,600	(dumpster refuse) and (fork tine)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/23 15:07
S9	790	(dumpster refuse) and (fork tine) with (lift dump)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/23 15:08
S10	355	(dumpster refuse) same (fork tine) with (lift dump)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/23 15:08
S11	371	b65d90/0033.cpc.	US-PGPUB; USPAT; USOCR;	OR	ON	2017/03/23 17:16

			EPO; JPO; DERWENT			
S12	20	b65d90/0033.cpc. and (dumpster refuse)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/23 17:16
S13	139	b65d90/0033.cpc. and (fork)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/23 17:19
S14	56	(round$2) with corner same clean$4 and (dumpster refuse)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/23 17:37
S15	2	(daniel near3 hankey).in.	US-PGPUB; USPAT; USOCR	OR	ON	2017/03/23 18:12
S16	56	(round$2) with corner same clean$4 and (dumpster refuse)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/23 18:13
S17	438	b65f1/122.cpc. b65f1/125.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2017/09/07 10:58
S18	401	b65d90/0033.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/09/07 10:58
S19	1	"20150314907".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2017/12/09 13:59
S20	1	"5518313".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2017/12/10 19:55
S21	1	"20010000480".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2017/12/10 20:07
S22	1	"3804139" .pn.	US-PGPUB; USPAT; USOCR	OR	ON	2017/12/10 20:32

S23	383	b65f1/122.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2017/12/12 10:47
S24	31	("3217913" | "3504813" | "3669485" | "4088071" | "4290352" | "4373849").PN. OR ("4726616").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 10:47
S25	21	("3122249" | "3136575" | "3230003" | "3315828").PN. OR ("3669485").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 10:49
S26	40	("0814563" | "20020030335" | "20020125151" | "3214506" | "3643993" | "3840141" | "4214670" | "4456141" | "4550849" | "4726616" | "4913301" | "4955501" | "5105967" | "5183180" | "5330071" | "5423448" | "5538158" | "5582322" | "5776405" | "5886068" | "5922267" | "6632064" | "6676175" | "6702135").PN. OR ("7237689").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 10:54
S27	35	("20010052522" | "20030146230" | "20080197645" | "20090179444" | "20100254796" | "4182530" | "4550849" | "4676431" | "4726616" | "4811660" | "5011036" | "5108000" | "5183180" | "5330071" | "5423448" | "5967361" | "6632064" | "7198166" | "7234327" | "7237689" | "7334680" | "7762565" | "8141921" | "D353727" | "D359618" | "D369022" | "D370701" | "D371399" | "D414606" | "D421180" | "D506063" | "D517265" | "D543332" | "D564168" | "D620218").PN. OR ("8322561").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 10:56
S29	269	(trash refuse garbage waste) with (container receptacle dumpster) and (fork prong) same (pocket channel)	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 10:59
S30	39	("2803363" | "2808161" | "3083849" | "3195942" | "3283933" | "3342358").PN. OR ("3643993").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:00
S31	125	("1114321" | "1355213" | "1991965" | "2202675" | "2952379" | "2978136" | "3288319" | "3315800" | "3332319" | "3374915" | "3386218" | "3397496" | "3655087" | "3797691" | "3853238" | "3940007" | "3974616" | "4000827" | "4050604" | "4120551" | "4171059" | "4376593" | "4503973" | "4643314" | "4673087").PN. OR ("4809851").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:08
S32	34	("2624487" | "3009591" | "3416852" | "3616964" | "3623631" | "3823972" | "4335828" | "4416374" | "4550849" |	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:11

		"4917257" | "4969813" | "5114304" | "5230434").PN. OR ("5330071").URPN.				
S33	29	("3623631" | "3823972" | "4136465" | "4335828" | "4416374" | "4445623").PN. OR ("4550849").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:11
S34	14	("20060045680" | "20080197645" | "20080237251" | "20090179444" | "20100089259" | "3669485" | "4550849" | "4798081" | "5089321" | "5183180" | "5330071" | "7237689" | "8141921").PN. OR ("8631940").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:15
S35	21	("3122249" | "3136575" | "3230003" | "3315828").PN. OR ("3669485").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:16
S36	80	("2181150" | "3311257" | "3937355" | "3987829" | "4231482" | "4550849" | "4600113" | "4771940").PN. OR ("5183180").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:18
S37	34	("2624487" | "3009591" | "3416852" | "3616964" | "3623631" | "3823972" | "4335828" | "4416374" | "4550849" | "4917257" | "4969813" | "5114304" | "5230434").PN. OR ("5330071").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:24
S38	67	("2708047" | "2763386" | "2799418" | "3014344" | "3016157" | "3016175" | "3085703" | "3301422" | "3339763" | "3342358" | "3446377" | "3451571" | "3506149" | "3563137" | "3604577" | "3659733" | "3765554" | "3874534" | "3921839" | "4067464" | "4096595" | "4147266" | "4175903" | "4183711" | "4310279" | "4552500" | "4648775" | "4715767" | "Re31060").PN. OR ("5114304").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:25
S39	14	("4405278" | "4726616" | "5762462" | "0530057" | "7871233" | "6379099" | "8550282" | "6296132" | "3270902" | "4676431" | "20100254796" | "4771940" | "5613822" | "7083060").PN.	US-PGPUB; USPAT	OR	OFF	2018/02/20 14:00
S40	1,197	(trash refuse garbage waste) and (fork prong) same (pocket channel)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/02/20 14:03
S41	387	b65f1/122.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 14:11
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S44	33	("3217913" | "3504813" | "3669485" | "4088071" | "4290352" | "4373849").PN. OR ("4726616").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/17 21:31
S45	10	b65f1/122.cpc. and seam	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:33
S46	34	dumpster and weld$4 with seam	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:35
S47	208	refuse and weld$4 with seam	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:36
S48	5,955	(trash garbage waste) and weld$4 with seam	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:39
S49	4,326	(trash garbage waste) and weld$4 with seam and (metal steel)	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:40
S50	864	(trash garbage waste) and weld$4 with seam same (conrner wall) and (metal steel)	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:40
S51	452	(trash garbage waste) and weld$4 with seam same (conrner wall) and (metal steel) with sheet	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:40
S52	1,032	b65d88/54.cpc. B65D88/56.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:48
S53	0	(b65d88/54.cpc. B65D88/56.cpc.) and weld$4 with seam same (conrner wall) and (metal steel) with sheet	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:49
S54	21	(b65d88/54.cpc. B65D88/56.cpc.) and weld$4 with seam	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:49
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S86	850	"215".clas. and (infant baby child) and grip	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:27
S87	129	"215".clas. and (infant baby child) and grip with wall	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:27
S88	255	"215".clas. and (infant baby child) and grip$4 with wall	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:27
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S92	48	"220".clas. and (nipple) and grip$4 with wall	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:35
S93	2	"215".clas. and hourglass with wall same grip$4	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:36
S94	0	"220".clas. and hourglass with wall same grip$4	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:36

S95	0	"220".clas. and hour adj glass with wall same grip$4	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:36
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S97	1,317	"215".clas. and nipple and bottle	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:37
S98	29	"215".clas. and nipple and bottle and waist	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:37
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S106	196	a47g19/2272.cpc. and nipple	US-PGPUB; USPAT; USOCR	OR	ON	2020/10/26 12:46
S107	0	a61j9/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/10/26 13:07
S108	98	a61j11/0035.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/10/26 13:07
S109	111	a61j11/005.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/10/26 13:13
S110	96	a61j11/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/10/26 13:14

S111	305	a61j11/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/10/26 13:51

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L26	0	(vessel container threaded opening middle bottom nipple base teat aperture areola bite collar domed).clm.	USPAT	AND	ON	2021/09/15 14:34
S42	1	(container body lift pocket face oblique interior hexagon prong channel).clm.	USPAT	AND	OFF	2018/02/20 15:08
S56	12	("20060060593" | "20090032545" | "20110000382" | "4157609" | "4186844" | "4315574" | "4373849" | "4676431" | "4955501" | "5118000" | "5423448" | "6702135").PN. OR ("8875932").URPN.	US-PGPUB; USPAT	OR	OFF	2019/09/17 21:28
S112	0	(vessel neck diameter threads body collar domed nipple teat sloping areola flex thinned flange valve).clm.	USPAT	AND	ON	2020/10/26 13:30

9/15/2021 2:34:52 PM
H:\Workspaces\14551783.wsp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Arnold Rees	Art Unit	:	3733
Application No.	:	17/208,932	Examiner	:	Andrew Thomas Kirsch
Filed	:	March 22, 2021	Conf. No.	:	5102
Title	:	BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS			

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY TO ACTION OF JUNE 9, 2021

Please consider the following reply.

Amendments to Claims:
Listing of Claims.

1-17. (Cancelled)

18. (Currently Amended) A feeding vessel, comprising:

a container comprising:

i. a threaded upper portion with an opening into the interior of the container,

ii. a middle portion below the upper portion, and

iii. a bottom portion below the middle portion, wherein the middle portion is tapered inward; and

an assembly configured to mount over the opening of the container, the assembly comprising:

i. a nipple having a base, a teat portion with an aperture, [[and]] an areola portion between the teat portion and the base, and a flange depending from the base defining the nipple circumference furthest from the aperture, wherein the teat portion defines a bite region and the areola portion defines a flex region configured to allow the teat portion to flex towards and away from the areola portion, and

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

wherein the collar and the base of the nipple together define a downward domed shape that extends outwardly and downwardly between the flex region of the nipple and a widest circumferential edge of the collar.

19. (Previously Presented) The feeding vessel of claim 18, wherein the container is a baby bottle container.

20. (Previously Presented) The feeding vessel of claim 18, wherein the internal circumference of the container below the upper portion increases towards the opening.

21. (Previously Presented) The feeding vessel of claim 18, wherein the assembly comprises removable handles.

22. (Previously Presented) The feeding vessel of claim 18, wherein the collar comprises threads configured to couple to corresponding threads of the container.

23. (Previously Presented) The feeding vessel of claim 18, wherein a largest outer diameter of the domed shape is greater than a diameter of the opening of the container.

24. (Previously Presented) The feeding vessel of claim 18, wherein the flex region comprises a plurality of grooves in an inward facing surface of the nipple configured to enable the teat portion and areola portion to flex towards and away from one another by respective collapsing and extending of the flex region in the grooves.

25. (Previously Presented) The feeding vessel of claim 24, wherein the grooves are circumferential.

26. (Previously Presented) The feeding vessel of claim 24, wherein the flex region further comprises a thinned circumferential region in the inward facing surface of the nipple.

27. (Previously Presented) The feeding vessel of claim 18, wherein the nipple comprises an air vent apart from the aperture.

28. (Previously Presented) The feeding vessel of claim 27, wherein the air vent is located in the lower portion of the nipple.

29. (Previously Presented) The feeding vessel of claim 28, wherein the air vent is located proximate the collar when the collar is coupled to the nipple.

30. (Previously Presented) The feeding vessel of claim 27, wherein the air vent is an integrally molded duck-bill valve.

31. (Previously Presented) The feeding vessel of claim 27, wherein the air vent projects into the interior of the container.

32. (Currently Amended) The feeding vessel of claim 18, wherein teat portion has circular symmetry around a central axis ~~the aperture of the teat portion is a slit~~.

33. (Previously Presented) The feeding vessel of claim 18, wherein the domed shape is continuous.

34. (Previously Presented) The feeding vessel of claim 18, wherein an exterior of the teat portion is textured.

35. (Previously Presented) The feeding vessel of claim 18, wherein a circumference of the nipple base is greater than the container opening and configured to overlap the opening and provide an air tight seal.

36. (Previously Presented) The feeding vessel of claim 18, wherein the middle portion of the container comprises two indentations.

37. (Currently Amended) 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, [[and]] 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 [[and]] 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.

38. (Previously Presented) The drinking vessel of claim 37, wherein the container is a trainer cup.

39. (Previously Presented) The drinking vessel of claim 37, wherein the container comprises a material more rigid than the nipple material.

40. (Previously Presented) The drinking vessel of claim 37, wherein the cover assembly further comprises an air vent apart from the mouthpiece.

41. (Previously Presented) The drinking vessel of claim 37, wherein the cover assembly further comprises removable handles.

42. (Previously Presented) The drinking vessel of claim 37, wherein the mouthpiece is located in the center of the nipple.

43. (Currently Amended) The drinking vessel of claim 37, wherein the teat portion comprises a resilient material ~~is mouthpiece widens from the bite region towards the aperture~~.

44. (Previously Presented) The drinking vessel of claim 37, wherein the bite region comprises a groove in an inward facing surface of the nipple configured to pass fluid through the bite region when the bite region is collapsed.

45. (Currently Amended) The drinking vessel of claim [[44]]37, wherein the bite region further comprises a thinned region in the inward facing surface of the nipple ~~circumferential groove is helical~~.

46. (Currently Amended) A feeding vessel, comprising:

a container comprising:

i. a threaded neck portion with an opening into the interior of the container,

ii. a body portion having

1. an upper body portion,

2. a middle body portion below the upper body portion, and

3. a bottom body portion below the middle body portion, wherein the middle body portion has a smaller horizontal cross-section than a horizontal cross-section of both the upper body portion and the bottom body portion; and

an assembly configured to mount over and surround the threaded neck portion, the assembly comprising:

i. a nipple having a teat portion with an aperture, [[and]] an areola portion with an outer surface extending downwardly and outwardly from the teat portion, and a flange depending from the base defining the nipple circumference furthest from the aperture, wherein the teat portion defines a bite region and the areola portion defines a flex region configured to allow the teat portion to flex towards and away from the areola portion, and

ii. a base portion positioned below said areola portion and comprising a threaded collar adapted to threadably engage with said threaded neck portion and removably couple to the nipple to seal over the opening of the container; and

wherein the nipple has an outer surface of elastomeric material that extends from the teat portion to a portion below said areola portion and that is substantially rotationally symmetric

about the central vertical axis of said assembly and has a circumference that continuously and smoothly decreases from a position on said outer surface that is below the areola portion and has a substantially vertical slope to at least a position on said teat portion that has a substantially vertical slope.

47. (Currently Amended) A feeding vessel, comprising:

a container comprising:

i. a threaded neck portion with an opening into the interior of the container,

ii. a body portion having

1. an upper body portion,

2. a middle body portion below the upper body portion, and

3. a bottom body portion below the middle body portion,

wherein the middle body portion has a smaller horizontal cross-section than horizontal cross-section of both the upper body portion and the bottom body portion; and

an assembly configured to mount over and surround the threaded neck portion, the assembly comprising:

i. a nipple having a teat portion with an aperture, and an areola portion with an outer surface extending downwardly and outwardly from the teat portion, and a flange depending from the base defining the nipple circumference furthest from the aperture, wherein the teat portion defines a bite region and the areola portion defines a flex region configured to allow the teat portion to flex towards and away from the areola portion, and

ii. a base portion positioned below said areola portion and comprising a screw collar adapted to threadably engage with said threaded neck portion and removably couple to the nipple to seal over the opening of the container; and

wherein the assembly has an outer surface extending from the teat portion to the base portion that is substantially rotationally symmetric about the central vertical axis of said assembly and has a circumference that continuously and smoothly decreases from a

position on said base portion having a substantially vertical slope to a position on said teat portion having a substantially vertical slope.

48. (New) The feeding vessel of claim 18, wherein the flange comprises a downwardly extending skirt around its circumference.

REMARKS

Applicant has reviewed the application in light of the Non-Final Office Action dated June 9, 2021. Claims 18-48 are pending, with claims 18, 37, 46 and 47 being independent. Claims 18, 37, 46 and 47 have been amended. No new subject matter has been added. Reconsideration of the application in accordance with the following remarks is respectfully requested.

Claim Rejections – 35 U.S.C. §103

Claims 18-23, 33, 35-39, 41-43, 46 and 47 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,032,810 issued to Meyers et al. (hereinafter *"Meyers"*) in view of U.S. Patent No. 6,959,827 issued to Morano et al. (hereinafter *"Morano"*). Claims 24, 25, 26 and 32 are rejected under 35 U.S.C. §103(a) as being unpatentable over Meyers et al. in view of Morano et al. as applied to claim 18, and further in view of U.S. Publication No. 2003/0089676 issued to Uehara et al. (hereinafter *"Uehara"*). Claims 27-31 and 40 are rejected under 35 U.S.C. §103(a) as being unpatentable over Meyers et al. in view of Morano et al. as applied to claim 18, and further in view of U.S. Patent No. 1,510,571 issued to Ware (hereinafter *"Ware"*). Claim 34 is rejected under 35 U.S.C. §103(a) as being unpatentable over Meyers et al. in view of Morano et al. as applied to claim 18, and further in view of U.S. Patent No. 7,134,564 issued to Verbovszky (hereinafter *"Verbovszky"*). Claims 44 and 45 are rejected under 35 U.S.C. §103(a) as being unpatentable over Meyers et al. in view of Morano et al. as applied to claim 18, and further in view of U.S. Patent No. 4,603,150 issued to Atkin et al. (hereinafter *"Atkin"*)[1]. Applicant respectfully traverses these rejections for the reasons set forth below.

As seen in FIGS. 1 and 5 below, Meyers discloses a "one-piece nipple/collar" having a "flexible nipple [] molded over at least a portion of the exterior surface of the collar to form an integral, one-piece unit." [Meyers, Abstract.] In particular, Meyers teaches away from "certain inconveniences" of "nipples [that] must first be disassembled from the collar . . . [and] must be reassembled prior to attaching the same to a nurser bottle . . . [because the] additional handling associated with this process is both time consuming and tedious, and can also led [*sic*] to

[1] Page 13 of the Office Action identifies Atkin as U.S. Patent No. 4,603,150, but such patent was withdrawn. Applicant believes this to be a typographical error, and has addressed U.S. Patent No. 4,613,050 to Atkin cited on the PTO-1449 filed April 7, 2021, instead.

contamination of the nipple and/or collar during reassembly." [Meyers, col. 1:10-21.] Therefore, "[t]he principal objects of the present invention are to provide a one-piece nipple/collar which is more convenient to use, and is easier to clean." [Meyers, col. 1:64-66.] As shown in FIG. 1 and 5 below, in Meyers the "nipple 6 extends along at least a portion of the exterior surface 3 of collar 2 to a termination point 7 that is spaced apart from the interior surface 4 of collar 2 to avoid interference with the fastener 5." [Meyers, col. 3:7-12.]

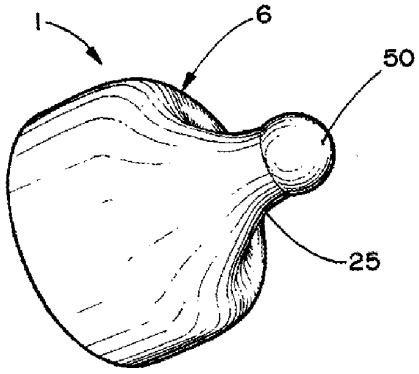


Fig. 1

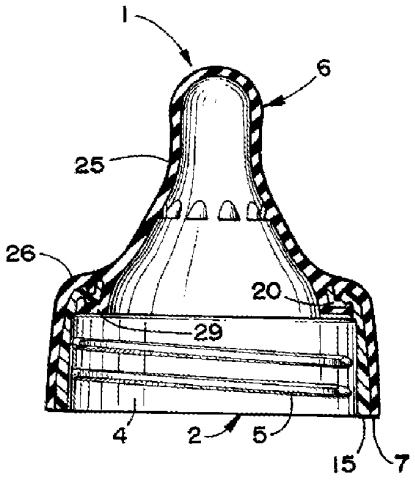


Fig. 5

Meyers, however, has not been shown to disclose a "assembly comprising a nipple having a base, a teat portion with an aperture, an areola portion between the teat portion and the base, and a flange depending from the base defining the nipple circumference furthest from the aperture" and "a collar configured to removably couple to the nipple," as recited by amended independent claim 18. Independent claims 37, 46 and 47 include similar limitations also not shown to be disclosed by Meyers.

Because Meyers is not shown to disclose each and every limitation of independent claims 18, 37, 46 and 47 Applicant respectfully requests withdrawal of this rejection.

The rejections to the dependent claims based on Meyers should be withdrawn for at least the same reasons.

Applicant has recently further become aware of WO 03/013418 issued to Kuester (hereinafter "*Kuester*"). While Kuester lacks many aspects of the claims (e.g., "wherein the collar and the base of the nipple together define a downward domed shape that extends outwardly and downwardly between the flex region of the nipple and a widest circumferential edge of the collar" in amended independent claims 18 and 37 and "and features "middle body portion has a smaller horizontal cross-section than a horizontal cross-section of both the upper body portion and the bottom body portion" and a nipple "that is substantially rotationally symmetric about the central vertical axis" in amended claims 46 and 47), there would be no motivation to combine Kuester with Meyers. Notably, Meyers discloses a "one-piece nipple/collar" where a "flexible nipple is molded over at least a portion of the exterior surface of the collar to form an integral, one-piece unit" [Meyers, Abstract] which teaches away from Kuester where "[a]ir is admitted to the bottle (4) via a flow-limiting slit (18) at the end of a passage (14). . . that extends radially through the [nipple] flange (2) beneath a lug (19) . . . [which is used] . . . to compress the flange (2) so that adjustment of the tightness of the collar (5) varies constriction of the passage 14) for regulation the air-flow into the bottle (4)." [Kuester, Abstract]. Because the nipple and collar in Meyers is one piece, the collar cannot be tightened to regulate the air flow through the nipple flange.

CONCLUSION

Any circumstance in which this response has (a) addressed certain comments of the Examiner does not mean that other comments of the Examiner are conceded, (b) presented arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that any of the Examiner's positions with respect to that claim or other claims are conceded.

Applicant respectfully requests consideration of all filed IDSs not previously considered, by initialing and returning each Form PTO-1449.

If the present application is not allowed and/or if one or more of the rejections is maintained, a telephone conference with the Examiner is hereby requested, and it is further requested that the Examiner contact the undersigned attorney to schedule the telephone conference.

The fees for excess claims are being paid concurrently herewith. No additional fees are believed to be due at this time. However, if this is incorrect, the Commissioner is hereby authorized to charge any necessary fees or credit any overpayments to deposit account 06-1050, referencing the attorney docket number shown above.

Respectfully submitted,

Date: September 9, 2021

/Joshua A. Griswold/
Joshua A. Griswold
Reg. No. 46,310

Customer Number 165989
Fish & Richardson P.C.
Telephone: (214) 747-5070
Facsimile: (877) 769-7945

91462027.doc

Electronic Patent Application Fee Transmittal

Application Number:	17208932
Filing Date:	22-Mar-2021
Title of Invention:	Baby Bottle with Flexible Nipple Regions
First Named Inventor/Applicant Name:	Arnold Rees
Filer:	Joshua A. Griswold/Monica Gamez
Attorney Docket Number:	40395-0012004

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1202	1	100	100
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**100**

Electronic Acknowledgement Receipt

EFS ID:	43726867
Application Number:	17208932
International Application Number:	
Confirmation Number:	5102
Title of Invention:	Baby Bottle with Flexible Nipple Regions
First Named Inventor/Applicant Name:	Arnold Rees
Customer Number:	165989
Filer:	Joshua A. Griswold/Monica Gamez
Filer Authorized By:	Joshua A. Griswold
Attorney Docket Number:	40395-0012004
Receipt Date:	09-SEP-2021
Filing Date:	22-MAR-2021
Time Stamp:	17:40:05
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$100
RAM confirmation Number	E202199H40300010
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		40395-0012004_ROA.pdf	197027 ddf748431477f55ff065915f9bbfa0adc84e6291	yes	12
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	8	
	Applicant Arguments/Remarks Made in an Amendment		9	12	
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	38037 783926f8289503fa46175797017cb6cca6f06f3b	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	235064		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 17/208,932	Filing Date 03/22/2021	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $480 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	09/09/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 31	Minus	** 30	= 1		x $100 =	100
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 4	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	100

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/DAWN BREWER/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/208,932	03/22/2021	Arnold Rees	40395-0012004

CONFIRMATION NO. 5102

165989
FISH & RICHARDSON P.C.
(Mayborn Group Limited)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

PUBLICATION NOTICE



Title: Baby Bottle with Flexible Nipple Regions

Publication No.US-2021-0244622-A1
Publication Date:08/12/2021

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently https://portal.uspto.gov/pair/PublicPair. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Nanobebe US Inc., Ex. 1004, Page 50
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/208,932	03/22/2021	Arnold Rees	40395-0012004	5102

165989 7590 06/09/2021

FISH & RICHARDSON P.C.
(Mayborn Group Limited)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
KIRSCH, ANDREW THOMAS	

ART UNIT	PAPER NUMBER
3733	

NOTIFICATION DATE	DELIVERY MODE
06/09/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Nanobebe US Inc., Ex. 1004, Page 51
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

Office Action Summary	Application No. 17/208,932	Applicant(s) Rees et al.	
	Examiner ANDREW T KIRSCH	Art Unit 3733	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 18-47 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 18-47 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 3/22/2021 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☑ All b)☐ Some** c)☐ None of the:

1.☑ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Nanobebe US Inc., Ex. 1004, Page 52
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Claim Rejections - 35 USC § 103

2. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries for establishing a background for determining obviousness under pre-AIA 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under pre-AIA 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of pre-AIA 35 U.S.C. 103(c) and potential pre-AIA 35 U.S.C. 102(e), (f) or (g) prior art under pre-AIA 35 U.S.C. 103(a).

5. Claims 18-23, 33, 35-39, 41-43, 46, and 47 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,032,810 (Meyers et al. hereinafter) in view of US Patent No. 6,959,827 (Morano et al. hereinafter).

6. In re claim 18, with reference to Figs. 1-14, Meyers et al. discloses: an assembly configured to mount over an opening of a container, the assembly comprising: a nipple having a base (26), a teat portion (6) with an aperture (50), and an areola portion (25) between the teat portion and the base, wherein the teat portion defines a bite region (at arrow 6 in Fig. 5) and the areola portion defines a flex region configured to allow the teat portion to flex towards and away from the areola portion (nipple is flexible, column 4, lines 35-40), and a collar (2) configured to couple the nipple to the container; and wherein the collar and the base of the nipple together define a downward domed shape that extends outwardly and downwardly between the flex region of the nipple and a widest circumferential edge of the collar (at edge 15, see Fig. 5).

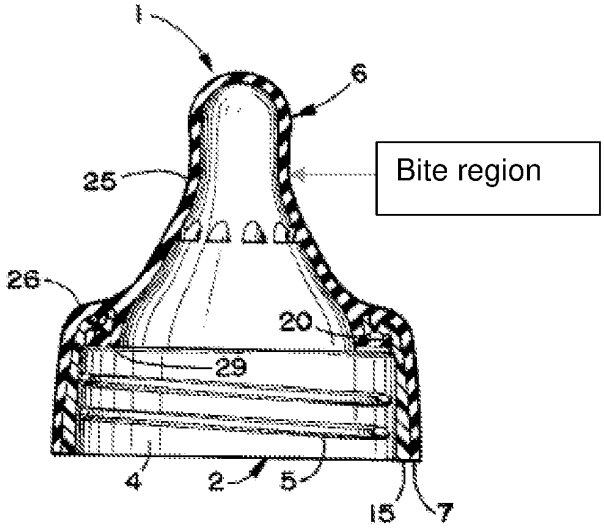


Fig. 5

7. Meyers et al. fails to disclose a container comprising: a threaded upper portion with an opening into the interior of the container, a middle portion below the upper portion, and a bottom portion below the middle portion, wherein the middle portion is tapered inward; the assembly configured to mount over the opening of the container.

8. However, with reference to Figs. 1-4, Morano et al. discloses a container (12) comprising: a threaded upper portion (16, 20) with an opening into the interior of the container, a middle portion (14) below the upper portion, and a bottom portion below the middle portion, wherein the middle portion is tapered inward; and an assembly configured to mount over the opening of the container (See Fig. 2).

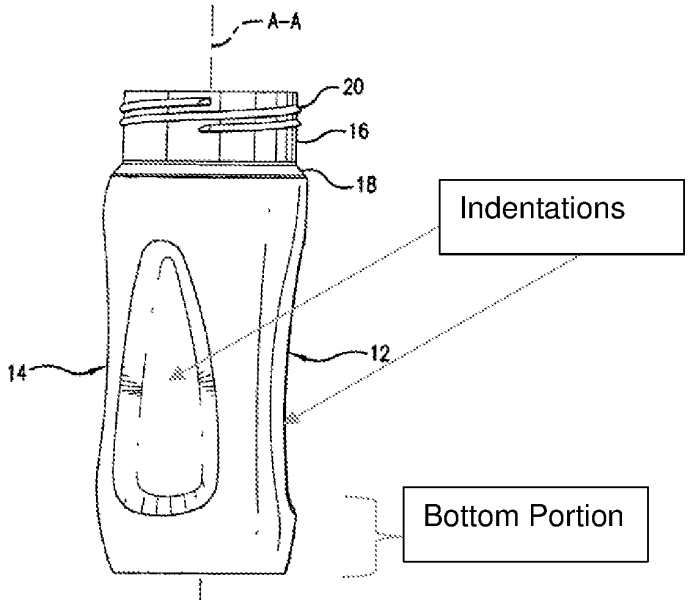


FIG.4

9. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a known container configuration as taught by Morano et al. as the container for the assembly of Meyers et al. for the predictable purposes of providing a vessel for the fluid to be consumed by the user and tapering the middle for facilitating ergonomic grip for a user as would be common knowledge to one of ordinary skill in the art at the time of the invention.

10. In re claim 19, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention including wherein the container is a baby bottle container (Meyers et al., column 3, lines 1-22).

11. In re claim 20, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention including wherein the internal circumference of the container below the upper portion increases towards the opening (see Fig. 4 above, sidewall increases in circumference until neck 16).

12. In re claim 21, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention except wherein the assembly comprises removable handles.

13. However, Morano et al discloses removable handles (22, 50).

14. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have provided removable handles for the vessel of the combination of Meyers et al. in view Morano et al. for the predictable purposes of facilitating gripping by a baby (Morano et al., column 3, lines 35-39).

15. In re claim 22, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention including wherein the collar comprises threads (column 4 lines 51-55) configured to couple to corresponding threads of the container.

16. In re claim 23, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention including wherein a largest outer diameter of the domed shape is greater than a diameter of the opening of the container (opening would fit inside collar, so outer dome of Meyers et al is of larger diameter than bottle opening).

17. In re claim 33, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention including wherein the domed shape is continuous (i.e. dome shape has no sharp transitions from flex region to bottom of base).

18. In re claim 35, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention including wherein a circumference of the

nipple base is greater than the container opening and configured to overlap the opening and provide an air tight seal (see fig. 5, portion 29 overlaps opening).

19. In re claim 36, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention including wherein the middle portion of the container comprises two indentations (See figs. 3 and 4).

20. In re claim 37, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose 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 (i.e. teat/bite region in re claim 1) configured to allow liquid flow through the nipple to an aperture and 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 ii. a collar configured to couple to the nipple and 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 (as re claim 1 above).

21. In re claim 38, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention including wherein the container is a trainer cup (Meyers et al. column 3, lines 13-17).

22. In re claim 39, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention including a flexible nipple material (Meyers et al. teaches elastomer column 4, lines 35-40).

23. Meyers et al. in view of Morano et al. does not disclose wherein the container comprises a material more rigid than the nipple material.

24. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected a known relatively rigid material such as plastic as the material of the container, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice (i.e. allowing for functionality of threads to sealingly hold the collar and container together without excessive flexing which would break the seal). *MPEP 2144.07*. Please note that in the instant application, page 10, lines 16-24, applicant has not disclosed any criticality for the claimed limitations.

25. In re claim 41, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention including wherein the cover assembly further comprises removable handles (as in re claim 21 above).

26. In re claim 42, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention including wherein the mouthpiece is located in the center of the nipple (See Meyers et al. Figs. 5, 11, and 12).

27. In re claim 43, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention including wherein the mouthpiece widens from the bite region towards the aperture (see figs. 1, 5, and 10 where region 25 widens upwards “towards” the aperture, but not necessarily all the way to the aperture).

28. In re claim 46, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention including wherein A feeding vessel,

comprising: a container comprising: i. a threaded neck portion with an opening into the interior of the container, ii. a body portion having an upper body portion, a middle body portion below the upper body portion, and a bottom body portion below the middle body portion, wherein the middle body portion has a smaller horizontal cross-section than a horizontal cross-section of both the upper body portion and the bottom body portion; and an assembly configured to mount over and surround the threaded neck portion, the assembly comprising: i. a nipple having a teat portion with an aperture, and an areola portion with an outer surface extending downwardly and outwardly from the teat portion, wherein the teat portion defines a bite region and the areola portion defines a flex region configured to allow the teat portion to flex towards and away from the areola portion (as in re claim 18 above), and ii. a base portion positioned below said areola portion and comprising a threaded collar adapted to threadably engage with said threaded neck portion (as in re claim 22) ; and wherein the nipple has an outer surface of elastomeric material (as in re claim 18 above) that extends from the teat portion to a portion below said areola portion and that is substantially rotationally symmetric about the central vertical axis of said assembly and has a circumference that continuously and smoothly decreases from a position on said outer surface that is below the areola portion and has a substantially vertical slope to at least a position on said teat portion that has a substantially vertical slope (note that the slope of Meyers et al. always has a vertical component to its direction).

29. In re claim 47, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention including wherein A feeding vessel, comprising: a container comprising: i. a threaded neck portion with an opening into the

interior of the container, ii. a body portion having an upper body portion, a middle body portion below the upper body portion, and a bottom body portion below the middle body portion, wherein the middle body portion has a smaller horizontal cross-section than horizontal cross-section of both the upper body portion and the bottom body portion; and an assembly configured to mount over and surround the threaded neck portion, the assembly comprising: i. a nipple having a teat portion with an aperture, and an areola portion with an outer surface extending downwardly and outwardly from the teat portion, wherein the teat portion defines a bite region and the areola portion defines a flex region configured to allow the teat portion to flex towards and away from the areola portion, and ii. a base portion positioned below said areola portion and comprising a screw collar adapted to threadably engage with said threaded neck portion; and wherein the assembly has an outer surface extending from the teat portion to the base portion that is substantially rotationally symmetric about the central vertical axis of said assembly and has a circumference that continuously and smoothly decreases from a position on said base portion having a substantially vertical slope to a position on said teat portion having a substantially vertical slope (as in re claim 46 above).

30. Claims 24, 25, 26, and 32 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Meyers et al. in view of Morano et al. as applied to claim 18 above, and further in view of US PG Pub No. 2003/0089676 (Uehara et al. hereinafter).

31. In re claims 24, 25, and 26, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention except wherein the flex region comprises a plurality of grooves in an inward facing surface of the nipple configured to

enable the teat portion and areola portion to flex towards and away from one another by respective collapsing and extending of the flex region in the grooves, the grooves are circumferential, and wherein the flex region further comprises a thinned circumferential region in the inward facing surface of the nipple (paragraphs 0150-0151).

32. However, Uehara et al. discloses a nipple wherein a flex region comprises a plurality of grooves (215a) in an inward facing surface of the nipple configured to enable a teat portion and areola portion to flex towards and away from one another by respective collapsing and extending of the flex region in the grooves, the grooves are circumferential, and wherein the flex region further comprises a thinned circumferential region in the inward facing surface of the nipple (see Figs 4 and 15).

33. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the inner shape of the flex region of Meyers et al. in view of Morano et al. with grooves as taught by Uehara et al. for the purposes of allowing the sensation of the user to more accurately simulate that of natural feeding (Uehara et al. paragraph 0160-0162).

34. In re claim 32, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention except that the aperture of the teat portion is a slit.

35. However Uehara et al. discloses that the aperture (216a) is shaped as a slit (paragraph 0149).

36. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the shape of the slit of Meyers et al. in view of

Morano et al. as a linear slit as taught by Uehara et al. for the purposes of allowing the aperture to close and prevent leakage (Uehara et al. paragraph 0213).

37. Claims 27-31, and 40 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Meyers et al. in view of Morano et al. as applied to claim 18 above, and further in view of US Patent No. 1,510,571 (Ware hereinafter).

38. In re claims 27, 28, 29, 30, 31, and 40, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention except wherein the nipple comprises an air vent apart from the aperture, the air vent is located in the lower portion of the nipple, the air vent is located proximate the collar when the collar is coupled to the nipple, the air vent is an integrally molded duck- bill valve, the air vent projects into the interior of the container, and the cover assembly further comprises an air vent apart from the mouthpiece.

39. However, Ware discloses wherein a nipple comprises an air vent (15) apart from the aperture (18), the air vent is located in the lower portion of the nipple (see Fig. 2), the air vent is located proximate a collar (analogous to region 3), the air vent is an integrally molded duck- bill valve (see Figs. 3-5), the air vent projects into the interior of the container (See fig. 2), and the cover assembly further comprises an air vent apart from the mouthpiece.

40. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated a vent as taught by Ware to the assembly of Meyers in view of Morano et al. for the purposes of equalizing pressure within the container as contents are removed (page 2, lines 90-120) via a standalone air vent

which does not rely upon the precise tightness of the closure with the container as would be recognized by one of ordinary skill in the art.

41. Claim 34 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Meyers et al. in view of Morano et al. as applied to claim 18 above, and further in view of US Patent No. 7,134,564 (Verbovszky hereinafter).

42. In re claim 34, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention except wherein an exterior of the teat portion is textured.

43. However, Verbovszky discloses a teat (24) with texture (32).

44. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have provided a texture to the teat such as taught by Verbovszky for the purposes of enticing a baby to drink from the bottle by simulating a human nipple (Column 2, lines 45-56).

45. Claims 44 and 45 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Meyers et al. in view of Morano et al. as applied to claim 18 above, and further in view of US Patent No. 4,603,150 (Atkin et al. hereinafter).

46. In re claims 44 and 45, with reference to the Figs. noted above, Meyers et al. in view of Morano et al. disclose the claimed invention except wherein the bite region comprises a groove in an inward facing surface of the nipple configured to pass fluid through the bite region when the bite region is collapsed, and the groove is helical.

47. However, Atkin et al. discloses a nipple wherein a bite region comprises a groove in an inward facing surface of the nipple configured to pass fluid through the bite region when the bite region is collapsed, and the groove is helical (the groove is along the edge of the rib 31).

48. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated grooves as taught by Barr et al. inside the bite region of Meyers et al. in view of Morano et al. for the purposes of providing stiffening to the bite region, while preventing total collapse of the region, the grooves along the edges of the ribs performing as claimed to pass fluid.

Conclusion

49. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW T KIRSCH whose telephone number is (571)270-5723. The examiner can normally be reached on Mon-Fri, 9a-5p EST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John K Fristoe can be reached on 571-272-4926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ANDREW T KIRSCH/
Primary Examiner, Art Unit 3733

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/208,932	Rees et al.
	Examiner	Art Unit
	ANDREW T KIRSCH	3733

CPC - Searched*		
Symbol	Date	Examiner
A61J 9/04, 11/02, 11/002, , 11/0035, 11/005, 11/006, 11/045, 11/04, 9/00	06/04/2021	ATK
A47G 19/2272	06/04/2021	ATK

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventor Check	06/04/2021	ATK
EAST Search	06/04/2021	ATK

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
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S1	57	("20060060593" | "5118000" | "6702135" | "20040262320" | "4726616" | "7185783" | "8066144" | "4186844" | "4676431" | "5490606" | "5878904" | "20090032545" | "4157609" | "4315574" | "4955501" | "5423448" | "D376456" | "4373849" | "20090179444" | "D351703" | "D422450" | "D351702" | "20110000382" | "8123061" | "7766186").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/22 21:19
S2	10	(("HANKEY") near3 ("J")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2017/03/22 21:29

S3	32	("4373849" | "4676431" | "4186844" | "5118000" | "4315574" | "5423448" | "20090032545" | "4157609" | "6702135" | "4955501" | "20060060593" | "20110000382").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/22 21:30
S4	40	("0961780" | "1226511" | "1880250" | "2702142" | "3315828" | "3893722" | "4057020" | "4088071" | "4182530" | "4456141" | "5035563" | "5042856" | "5098250" | "5103994" | "5201434").PN. OR ("5490606").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2017/03/22 21:36
S5	33	("2041038" | "4088071" | "4342402").PN. OR ("4456141").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2017/03/22 21:37
S6	428	b65f1/122.cpc. b65f1/125.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2017/03/22 21:41
S7	14	("3195942" | "3946885").PN. OR ("4373849").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2017/03/22 21:44
S8	2,600	(dumpster refuse) and (fork tine)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/23 15:07
S9	790	(dumpster refuse) and (fork tine) with (lift dump)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/23 15:08
S10	355	(dumpster refuse) same (fork tine) with (lift dump)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/23 15:08
S11	371	b65d90/0033.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/23 17:16
S12	20	b65d90/0033.cpc. and (dumpster refuse)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/23 17:16
S13	139	b65d90/0033.cpc. and (fork)	US-PGPUB; USPAT; USOCR;	OR	ON	2017/03/23 17:19

			EPO; JPO; DERWENT			
S14	56	(round$2) with corner same clean$4 and (dumpster refuse)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/23 17:37
S15	2	(daniel near3 hankey).in.	US-PGPUB; USPAT; USOCR	OR	ON	2017/03/23 18:12
S16	56	(round$2) with corner same clean$4 and (dumpster refuse)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/03/23 18:13
S17	438	b65f1/122.cpc. b65f1/125.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2017/09/07 10:58
S18	401	b65d90/0033.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2017/09/07 10:58
S19	1	"20150314907".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2017/12/09 13:59
S20	1	"5518313".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2017/12/10 19:55
S21	1	"20010000480".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2017/12/10 20:07
S22	1	"3804139" .pn.	US-PGPUB; USPAT; USOCR	OR	ON	2017/12/10 20:32
S23	383	b65f1/122.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2017/12/12 10:47
S24	31	("3217913" | "3504813" | "3669485" | "4088071" | "4290352" | "4373849").PN. OR ("4726616").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 10:47
S25	21	("3122249" | "3136575" | "3230003" | "3315828").PN. OR ("3669485").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 10:49
S26	40	("0814563" | "20020030335" | "20020125151" | "3214506" | "3643993" | "3840141" | "4214670" | "4456141" |	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 10:54

		"4550849" | "4726616" | "4913301" | "4955501" | "5105967" | "5183180" | "5330071" | "5423448" | "5538158" | "5582322" | "5776405" | "5886068" | "5922267" | "6632064" | "6676175" | "6702135").PN. OR ("7237689").URPN.				
S27	35	("20010052522" | "20030146230" | "20080197645" | "20090179444" | "20100254796" | "4182530" | "4550849" | "4676431" | "4726616" | "4811660" | "5011036" | "5108000" | "5183180" | "5330071" | "5423448" | "5967361" | "6632064" | "7198166" | "7234327" | "7237689" | "7334680" | "7762565" | "8141921" | "D353727" | "D359618" | "D369022" | "D370701" | "D371399" | "D414606" | "D421180" | "D506063" | "D517265" | "D543332" | "D564168" | "D620218").PN. OR ("8322561").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 10:56
S29	269	(trash refuse garbage waste) with (container receptacle dumpster) and (fork prong) same (pocket channel)	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 10:59
S30	39	("2803363" | "2808161" | "3083849" | "3195942" | "3283933" | "3342358").PN. OR ("3643993").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:00
S31	125	("1114321" | "1355213" | "1991965" | "2202675" | "2952379" | "2978136" | "3288319" | "3315800" | "3332319" | "3374915" | "3386218" | "3397496" | "3655087" | "3797691" | "3853238" | "3940007" | "3974616" | "4000827" | "4050604" | "4120551" | "4171059" | "4376593" | "4503973" | "4643314" | "4673087").PN. OR ("4809851").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:08
S32	34	("2624487" | "3009591" | "3416852" | "3616964" | "3623631" | "3823972" | "4335828" | "4416374" | "4550849" | "4917257" | "4969813" | "5114304" | "5230434").PN. OR ("5330071").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:11
S33	29	("3623631" | "3823972" | "4136465" | "4335828" | "4416374" | "4445623").PN. OR ("4550849").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:11
S34	14	("20060045680" | "20080197645" | "20080237251" | "20090179444" | "20100089259" | "3669485" | "4550849" | "4798081" | "5089321" | "5183180" | "5330071" | "7237689" | "8141921").PN. OR ("8631940").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:15

S35	21	("3122249" | "3136575" | "3230003" | "3315828").PN. OR ("3669485").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:16
S36	80	("2181150" | "3311257" | "3937355" | "3987829" | "4231482" | "4550849" | "4600113" | "4771940").PN. OR ("5183180").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:18
S37	34	("2624487" | "3009591" | "3416852" | "3616964" | "3623631" | "3823972" | "4335828" | "4416374" | "4550849" | "4917257" | "4969813" | "5114304" | "5230434").PN. OR ("5330071").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:24
S38	67	("2708047" | "2763386" | "2799418" | "3014344" | "3016157" | "3016175" | "3085703" | "3301422" | "3339763" | "3342358" | "3446377" | "3451571" | "3506149" | "3563137" | "3604577" | "3659733" | "3765554" | "3874534" | "3921839" | "4067464" | "4096595" | "4147266" | "4175903" | "4183711" | "4310279" | "4552500" | "4648775" | "4715767" | "Re31060").PN. OR ("5114304").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/12/12 11:25
S39	14	("4405278" | "4726616" | "5762462" | "0530057" | "7871233" | "6379099" | "8550282" | "6296132" | "3270902" | "4676431" | "20100254796" | "4771940" | "5613822" | "7083060").PN.	US-PGPUB; USPAT	OR	OFF	2018/02/20 14:00
S40	1,197	(trash refuse garbage waste) and (fork prong) same (pocket channel)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/02/20 14:03
S41	387	b65f1/122.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/02/20 14:11
S43	33	("3217913" | "3504813" | "3669485" | "4088071" | "4290352" | "4373849").PN. OR ("4726616").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/17 21:26
S44	33	("3217913" | "3504813" | "3669485" | "4088071" | "4290352" | "4373849").PN. OR ("4726616").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/17 21:31
S45	10	b65f1/122.cpc. and seam	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:33
S46	34	dumpster and weld$4 with seam	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:35

S47	208	refuse and weld$4 with seam	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:36
S48	5,955	(trash garbage waste) and weld$4 with seam	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:39
S49	4,326	(trash garbage waste) and weld$4 with seam and (metal steel)	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:40
S50	864	(trash garbage waste) and weld$4 with seam same (conrner wall) and (metal steel)	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:40
S51	452	(trash garbage waste) and weld$4 with seam same (conrner wall) and (metal steel) with sheet	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:40
S52	1,032	b65d88/54.cpc. B65D88/56.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:48
S53	0	(b65d88/54.cpc. B65D88/56.cpc.) and weld$4 with seam same (conrner wall) and (metal steel) with sheet	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:49
S54	21	(b65d88/54.cpc. B65D88/56.cpc.) and weld$4 with seam	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:49
S55	12	("4373849" | "4676431" | "4186844" | "5118000" | "4315574" | "5423448" | "20090032545" | "4157609" | "6702135" | "4955501" | "20060060593" | "20110000382").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/17 21:54
S57	122	("20020030029" | "20040188373" | "20040226906" | "20050258123" | "3704803" | "4999568" | "5881893" | "6270519" | "7210591" | "7252676" | "D425994" | "D454642" | "1510571" | "20050224444" | "20050247658" | "20070045214" | "20080210655" | "6032810" | "6321931" | "6645228" | "7108676" | "D404138" | "D459815" | "20050184022" | "20050252875" | "20070163983" | "20070278172" | "20080128379" | "20080188894" | "20080314776" | "4834099" | "6959827" | "D444239" | "D464434" | "D465028" | "D520142" | "D626246" | "20050247719" | "20070138121" | "20070272645" | "20080173654" | "3097757" | "3493139" | "5474028" | "7320678" | "7395941" | "D412582" | "D444239" | "D547874" | "2688326" | "20030093120" |	US-PGPUB; USPAT; USOCR	OR	ON	2019/09/18 08:59

		"20040124168" | "20050056611" | "20070221604" | "3990596" | "5678710" | "6032810" | "6161710" | "6883672" | "7243814" | "7828821" | "D405530" | "D421306" | "D488560" | "D498849" | "D504724" | "D539910" | "D599028" | "20030089676" | "20030089676" | "0380835" | "2517457" | "20040256345" | "20050035078" | "20050288712" | "20070021782" | "20070095778" | "20070187419" | "20070283666" | "5544766" | "5706973" | "6981962" | "6994225" | "7185775" | "D384748" | "2588069" | "2517457" | "20030106872" | "20050277987" | "20060011571" | "20090005811" | "20090039046" | "3946888" | "5673806" | "6003698" | "6241110" | "6357620" | "6984688" | "7122045" | "7150370" | "D441870" | "D463567" | "D479606" | "D504723" | "D504725" | "2588069" | "2956702" | "20020063103" | "20030032984" | "20030093120" | "20040026351" | "20070102388" | "20070138709" | "0380835" | "5101991" | "5784999" | "6422415" | "6745912" | "6745912" | "7204386" | "7481324" | "D620125" | "6959827").PN.				
S58	72	("1545436" | "1632854" | "1672734" | "1989060" | "2638094" | "2655920" | "3530979" | "3650270" | "3777753" | "3779413" | "3790017" | "4195638" | "4238040" | "4676386" | "4815615" | "5542922" | "5544766").PN. OR ("6003698").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/18 14:55
S59	81	("1545436" | "1672466" | "1672734" | "1984839" | "2060212" | "2655920" | "2736446" | "2825479" | "3190288" | "3193125" | "3645413" | "3661288" | "3787993" | "3858741" | "4006836" | "4832214" | "5322031" | "5544766" | "5690679" | "D371848").PN. OR ("6032810").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/18 15:20
S60	26	("0605161" | "1146639" | "1573519" | "20040220618" | "20060011572" | "20070068890" | "20070272645" | "20080210655" | "20120074090" | "2517457" | "2588069" | "2956702" | "4505398" | "5114374" | "5544766" | "5553726" | "6032810" | "6645228" |	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/18 15:24

		"6745912" | "8181800").PN. OR ("9561157").URPN.				
S61	8	("2003/0106872").URPN.	USPAT	OR	OFF	2019/09/18 15:31
S62	7	("20030106872" | "20050252875" | "20070102388" | "20090039046" | "6343704").PN. OR ("8708174").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/18 15:32
S63	5	("6343704" | "20040102388" | "20050252875" | "20050252875" | "20030106872" | "20090039046").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/18 15:34
S64	120	("0380835" | "20020030029" | "20020063103" | "20030032984" | "20030093120" | "20030106872" | "20040026351" | "20040124168" | "20040188373" | "20040226906" | "20040256345" | "20050035078" | "20050056611" | "20050184022" | "20050224444" | "20050247658" | "20050247719" | "20050252875" | "20050258123" | "20050277987" | "20050288712" | "20060011571" | "20070021782" | "20070045214" | "20070095778" | "20070102388" | "20070131637" | "20070138121" | "20070138709" | "20070163983" | "20070187419" | "20070221604" | "20070272645" | "20070278172" | "20070283666" | "20080128379" | "20080173654" | "20080188894" | "20080210655" | "20080314776" | "20090005811" | "20090039046" | "2517457" | "2588069" | "2956702" | "3097757" | "3704803" | "3946888" | "3990596" | "4834099" | "4993568" | "5101991" | "5474028" | "5544766" | "5673806" | "5678710" | "5706973" | "5784999" | "5881893" | "6003698" | "6032810" | "6161710" | "6241110" | "6270519" | "6321931" | "6357620" | "6422415" | "6645228" | "6745912" | "6883672" | "6959827" | "6981962" | "6984688" | "6994225" | "7108676" | "7122045" | "7150370" | "7185775" | "7204386" | "7210591" | "7243814" | "7252676" | "7320678" | "7395941" | "7481324" | "7828821" | "8181800" | "8646632" | "D384748" | "D404138" | "D405530" | "D412582" | "D421306" | "D425994" | "D441870" | "D444239" | "D454642" | "D459815" | "D463567" | "D464434" | "D465028" | "D479606" |	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/18 15:35

		"D486579" | "D488560" | "D498849" | "D504723" | "D504724" | "D504725" | "D520142" | "D539910" | "D547874").PN. OR ("D599028" | "D620125" | "D626246").PN. OR ("8910810").URPN.				
S65	1,060	215/11.5	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/18 15:35
S66	13	("6959827" | "4505398" | "2989961" | "20040220618" | "0956741" | "3232466" | "20070131637" | "5117994" | "4613050" | "5881893" | "0956741").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/18 15:36
S67	1	"6997138".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/19 10:27
S68	0	2005/0147778.pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/19 15:24
S69	1	"20050147778".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/19 15:25
S70	7	("20030106872" | "20050252875" | "20070102388" | "20090039046" | "6343704").PN. OR ("8708174").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/29 12:39
S71	48	("0805641" | "1146639" | "1510571" | "2616581" | "2699778" | "3042002" | "3593870" | "4993568" | "5101991" | "Re11086").PN. OR ("5474028").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/29 12:39
S72	34	("3593870" | "4993568" | "5474028" | "Re11086").PN. OR ("5784999").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/29 12:50
S73	7	("20030106872" | "20050252875" | "20070102388" | "20090039046" | "6343704").PN. OR ("8708174").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/29 13:14
S74	23	("1146639" | "20040188373" | "20050252875" | "20070102388" | "20070131637" | "20090200257" | "20100163508" | "20120175335" | "20120265245" | "20140124469" | "2174361" | "2616581" | "3593870" | "3722728" | "4505398" | "4993568" | "5101992" | "6883672" | "8640897" | "8708174").PN. OR ("9750664").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/29 13:15
S75	75	("0556859" | "1146639" | "1573519" | "1683246" | "1733184" | "1759568" | "2105170" | "2174361" | "2269223" | "2366214" | "2388915" | "2588069" | "2616581" | "2699169" | "2709434" |	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/29 13:17

		"2864520" | "2989961" | "2996207" | "3077279" | "3130725" | "3232466" | "3777753").PN. OR ("4505398").URPN.				
S76	14	("0956741" | "20040220618" | "20070131637" | "2989961" | "3232466" | "4505398" | "4613050" | "5117994" | "5881893" | "6959827").PN. OR ("8215504").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/29 13:22
S77	34	("3593870" | "4993568" | "5474028" | "Re11086").PN. OR ("5784999").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/29 13:24
S78	34	("3593870" | "4993568" | "5474028" | "Re11086").PN. OR ("5784999").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/29 13:29
S79	40	("20050252875" | "20070068890" | "20070221604" | "20090014403" | "20090200257" | "20120012550" | "2616581" | "3207349" | "3358864" | "3393817" | "3424157" | "3549036" | "3593870" | "3722728" | "4782975" | "4828141" | "4946062" | "4993568" | "5101991" | "5474028" | "5678710" | "5779071" | "5784999" | "5881893" | "6102245" | "6116457" | "6371315" | "6588613" | "7150370" | "7267245" | "7959021" | "8579132").PN. OR ("8733565").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/29 13:30
S80	15	("1545436").URPN.	USPAT	OR	OFF	2020/04/29 13:43
S81	18	("1545436" | "1562853" | "1714241" | "20030215313" | "3457958" | "3593870" | "3664535" | "4901647" | "6467746" | "7473061" | "7784760" | "8205557" | "D527160").PN. OR ("10080706").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/29 13:56
S82	8	("1714241").URPN.	USPAT	OR	OFF	2020/04/29 13:58
S83	11	"215".clas. and smooth adj texture	USPAT	OR	OFF	2020/04/29 16:24
S84	24	("1998646" | "20040094499" | "20040164043" | "20040188373" | "20050252875" | "20080128379" | "20100163508" | "2628616" | "2736446" | "2980113" | "4613050" | "5797505" | "5881893" | "6371315").PN. OR ("8579132").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/30 12:25
S85	264	"215".clas. and baby and grip	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:26

S86	850	"215".clas. and (infant baby child) and grip	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:27
S87	129	"215".clas. and (infant baby child) and grip with wall	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:27
S88	255	"215".clas. and (infant baby child) and grip$4 with wall	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:27
S89	115	("0954564" | "1693117" | "1713858" | "2569139" | "2831596" | "2959314" | "2986296" | "3105324" | "3746198" | "4557392" | "4570808" | "4700856" | "4941579" | "D003243" | "D063326" | "D082083" | "D114660" | "D121192" | "D145758" | "D146127" | "D149506" | "D167914" | "D174591" | "D178259" | "D189373" | "D193216" | "D198404" | "D198405" | "D214147" | "D230325" | "D232274" | "D259096" | "D282052" | "D283920" | "D286911" | "D287337" | "D320455" | "D320859").PN. OR ("5215203").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/30 12:28
S90	55	("0438937" | "2469489" | "2514744" | "2789002" | "2793778" | "2831596" | "2986296" | "3145867" | "3443710" | "3746198" | "4570808" | "4676387" | "4700856" | "4750630" | "4813556" | "4832213" | "4867325" | "4940151" | "4941579" | "5024341" | "5145077" | "5215203" | "D226688" | "D249076" | "D286911" | "D309781" | "D311063" | "D316754" | "D321936" | "D376430" | "D382968").PN. OR ("6305562").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/30 12:30
S91	61	"215".clas. and (nipple) and grip$4 with wall	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:32
S92	48	"220".clas. and (nipple) and grip$4 with wall	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:35
S93	2	"215".clas. and hourglass with wall same grip$4	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:36
S94	0	"220".clas. and hourglass with wall same grip$4	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:36
S95	0	"220".clas. and hour adj glass with wall same grip$4	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:36
S96	1,578	"215".clas. and nipple	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:36
S97	1,317	"215".clas. and nipple and bottle	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:37
S98	29	"215".clas. and nipple and bottle and waist	US-PGPUB; USPAT	OR	OFF	2020/04/30 12:37

S99	39	("2907539" | "3543976" | "3977638" | "4062510" | "4096977" | "4564957" | "4865239" | "4915337" | "4946119" | "4989811" | "5249770" | "5256834" | "5490618").PN. OR ("5862927").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/30 12:41
S100	536	a61j9/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/04/30 12:48
S101	465	a61j11/02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/04/30 12:48
S102	384	a61j11/045.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/04/30 12:48
S103	540	a61j11/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/04/30 12:48
S104	1,270	a61j9/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/04/30 12:48
S105	1,534	a47g19/2272.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/10/26 12:37
S106	196	a47g19/2272.cpc. and nipple	US-PGPUB; USPAT; USOCR	OR	ON	2020/10/26 12:46
S107	0	a61j9/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/10/26 13:07
S108	98	a61j11/0035.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/10/26 13:07
S109	111	a61j11/005.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/10/26 13:13
S110	96	a61j11/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/10/26 13:14
S111	305	a61j11/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/10/26 13:51
S113	53	(US-20100254796-$ or US-20120199590-$ or US-20100219096-$ or US-20030089676-$ or US-20050252875-$ or US-20060213858-$ or US-20040065635-$ or US-20130200031-$).did. or (US-5490606-$ or US-4373849-$ or US-	US-PGPUB; USPAT; USOCR; DERWENT	OR	OFF	2021/06/04 13:06

		4726616-$ or US-7861880-$ or US-4913301-$ or US-5169195-$ or US-5967361-$ or US-8141921-$ or US-4809851-$ or US-5161709-$ or US-8181807-$ or US-9056717-$ or US-5330071-$ or US-5114304-$ or US-5118000-$ or US-8875932-$ or US-6702135-$ or US-4157609-$ or US-5423448-$ or US-6959827-$ or US-5474028-$ or US-5673806-$ or US-7134564-$ or US-6032810-$ or US-8708174-$ or US-4613050-$).did. or (US-2616581-$ or US-5784999-$ or US-8117990-$ or US-8777028-$ or US-4505398-$ or US-3777753-$ or US-5819991-$ or US-6045254-$ or US-5862927-$).did. or (US-3451453-$ or US-1642853-$ or US-1510571-$ or US-1545436-$ or US-1672734-$ or US-1714241-$).did. or (CA-2118161-$ or US-20120043327-$ or US-20140001783-$ or WO-2010096895-$).did.				
S114	53	(US-20100254796-$ or US-20120199590-$ or US-20100219096-$ or US-20030089676-$ or US-20050252875-$ or US-20060213858-$ or US-20040065635-$ or US-20130200031-$).did. or (US-5490606-$ or US-4373849-$ or US-4726616-$ or US-7861880-$ or US-4913301-$ or US-5169195-$ or US-5967361-$ or US-8141921-$ or US-4809851-$ or US-5161709-$ or US-8181807-$ or US-9056717-$ or US-5330071-$ or US-5114304-$ or US-5118000-$ or US-8875932-$ or US-6702135-$ or US-4157609-$ or US-5423448-$ or US-6959827-$ or US-5474028-$ or US-5673806-$ or US-7134564-$ or US-6032810-$ or US-8708174-$ or US-4613050-$).did. or (US-2616581-$ or US-5784999-$ or US-8117990-$ or US-8777028-$ or US-4505398-$ or US-3777753-$ or US-5819991-$ or US-6045254-$ or US-5862927-$).did. or (US-3451453-$ or US-1642853-$ or US-1510571-$ or US-1545436-$ or US-1672734-$ or US-1714241-$).did. or (CA-2118161-$ or US-20120043327-$ or US-20140001783-$ or WO-2010096895-$).did.	US-PGPUB; USPAT; USOCR; DERWENT	OR	OFF	2021/06/04 13:06
S115	8	S114 and slit	US-PGPUB; USPAT	OR	OFF	2021/06/04 13:06

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S42	1	(container body lift pocket face oblique interior hexagon prong channel).clm.	USPAT	AND	OFF	2018/02/20 15:08
S56	12	("20060060593" | "20090032545" | "20110000382" | "4157609" | "4186844" | "4315574" | "4373849" | "4676431" | "4955501" | "5118000" | "5423448" | "6702135").PN. OR ("8875932").URPN.	US-PGPUB; USPAT	OR	OFF	2019/09/17 21:28
S112	0	(vessel neck diameter threads body collar domed nipple teat sloping areola flex thinned flange valve).clm.	USPAT	AND	ON	2020/10/26 13:30

6/4/2021 5:20:22 PM
C:\Users\akirsch\Documents\EAST\Autosave\~EASTAutoSave.wsp.asv

Bibliographic Data

Application No: 17/208,932

Foreign Priority claimed: (•) Yes ( ) No

35 USC 119 (a-d) conditions met: [✓] Yes [ ] No [ ] Met After Allowance

Verified and Acknowledged: /ANDREW T KIRSCH/ Examiner's Signature [ ] Initials

Title: Baby Bottle with Flexible Nipple Regions

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
03/22/2021	215	3733	40395-0012004
RULE			

APPLICANTS

Mayborn (UK) Limited, New Castle Upon Tyne, UNITED KINGDOM

INVENTORS

Arnold Rees, Newcastle Upon Tyne, UNITED KINGDOM

Ian Webb, London, UNITED KINGDOM

Mark Armstrong, Wales, UNITED KINGDOM

Tom Cotton, London, UNITED KINGDOM

CONTINUING DATA

This application is a CON of 14551783 11/24/2014 PAT 10952930

14551783 is a CON of 13364557 02/02/2012 PAT 8910810

13364557 is a CON of 11630864 09/20/2007 PAT 8181800

11630864 is a 371 of PCT/GB2005/002532 06/29/2005 *

(*) Data provided by applicant is not consistent with PTO record

FOREIGN APPLICATIONS

UNITED KINGDOM GB2004/14560.3 06/29/2004

UNITED KINGDOM GB2005/02599.4 02/08/2005

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STATE OR COUNTRY

UNITED KINGDOM

ADDRESS

FISH & RICHARDSON P.C.

(Mayborn Group Limited)

P.O. BOX 1022

MINNEAPOLIS, MN 55440-1022
UNITED STATES

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$6,160

Substitute Disclosure Form / U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.	Application No.
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	40395-0012004	17/208,932
	Applicant: Mayborn (UK) Limited	
	Filing Date: March 22, 2021	Group Art Unit: 3643

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
	1.	380835	04/10/1888	Ware			
	2.	1510571	10/7/1924	Ware			
	3.	1672734	6/5/1928	Reilly			
	4.	2517457	8/1/1950	Allen			
	5.	2588069	3/4/1952	Allen			
	6.	2688326	9/7/1954	Lerman			
	7.	2956702	10/18/1960	Ransom			
	8.	3097757	7/16/1963	Searer			
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	17.	5544766	8/13/1996	Dunn et al.			
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	26.	6161710	12/19/2000	Dieringer			
	27.	6241110	6/5/2001	Hakim			

Examiner Signature	Date Considered
/ANDREW T KIRSCH/	06/04/2021

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	Filing Date: March 22, 2021	Group Art Unit: 3643

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	38.	6994225	2/7/2006	Hakim			
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	45.	7210591	5/1/2007	Goldman et al.			
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Examiner Signature	Date Considered
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	Applicant: Mayborn (UK) Limited	
	Filing Date: March 22, 2021	Group Art Unit: 3643

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/ANDREW T KIRSCH/	06/04/2021

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Substitute Disclosure Form U.S. Department of Commerce Patent and Trademark Office **Information Disclosure Statement by Applicant** (Use several sheets if necessary) (37 CFR §1.98(b))	Attorney Docket No. 40395-0012004	Application No. 17/208,932
	Applicant Mayborn (UK) Limited	
	Filing Date March 22, 2021	Group Art Unit 3643

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
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/ANDREW T KIRSCH/	06/04/2021

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Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	40395-0012004	17/208,932
	Applicant: Mayborn (UK) Limited	
	Filing Date: March 22, 2021	Group Art Unit: 3643

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Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
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	111.	D488560S	4/13/2004	Renz et al.			
	112.	D498849S	11/23/2004	Randoph et al.			
	113.	D504723S	5/3/2005	Randoph et al.			
	114.	D504724S	5/3/2005	Randoph et al.			
	115.	D504725S	5/3/2005	Randolph et al.			
	116.	D520142S	5/2/2006	Mallet			
	117.	D539910	4/3/2004	Ordonez			
	118.	D547874	7/31/2007	Horie et al.			
	119.	D599028	8/25/2009	Schofield			
	120.	D620125	7/20/2010	Rees et al.			
	121.	D626246	10/26/2010	Rees et al.			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Translation	Class	Subclass
	122.	DE 19716535	11/6/1997	DE			
	123.	DE 19849271	4/27/2000	DE			
	124.	DE 20210121	10/2/2002	DE			
	125.	EP 0151862	8/21/1985	EP			
	126.	EP 0845971	10/24/2001	EP			
	127.	EP 1297814	4/2/2003	EP			
	128.	EP 1310230	5/14/2003	EP			
	129.	GB 0004210	6/13/1912	GB			
	130.	GB 2139903	11/21/1984	GB			
	131.	GB 2154451	9/11/1985	GB			
	132.	GB 2167735	6/4/1986	GB			

Examiner Signature	Date Considered
/ANDREW T KIRSCH/	06/04/2021

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T.K/

Substitute Disclosure Form / U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.	Application No.
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	40395-0012004	17/208,932
	Applicant: Mayborn (UK) Limited	
	Filing Date: March 22, 2021	Group Art Unit: 3643

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Translation	Class	Subclass
	133.	GB 2250017	5/27/1992	GB			
	134.	GB 2351729	1/10/2001	GB			
	135.	GB 2402347	12/8/2008	GB			
	136.	GB 2412114	9/21/2005	GB			
	137.	JP 01313056	12/18/1989	JP			
	138.	JP 02144065	6/1/1990	JP			
	139.	JP 05084279	4/16/1993	JP			
	140.	JP 05115535	5/14/1993	JP			
	141.	JP 2000000288	1/17/2000	JP			
	142.	JP 20001299877	10/30/2001	JP			
	143.	JP 2000135270	5/16/2000	JP			
	144.	JP 2000189496	7/11/2000	JP			
	145.	JP 2000271193	10/3/2000	JP			
	146.	JP 2001009008	1/16/2001	JP			
	147.	JP 2001187117	7/10/2001	JP			
	148.	JP 2001299878	10/30/2001	JP			
	149.	JP 2002011076	1/15/2002	JP			
	150.	JP 2002200144	7/16/2002	JP			
	151.	JP 2002306572	10/22/2003	JP			
	152.	JP 2003144529	5/20/2003	JP			
	153.	JP 2003205018	7/22/2003	JP			
	154.	JP 2004129940	4/30/2004	JP			
	155.	JP 2006068360	3/16/2006	JP			
	156.	JP 20066006809	1/12/2006	JP			
	157.	WO 2000054726	9/21/2000	WO			
	158.	WO 2003092577	11/13/2003	WO			
	159.	WO 2004039304	5/13/2004	WO			

Examiner Signature	Date Considered
/ANDREW T KIRSCH/	06/04/2021

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T.K/

Substitute Disclosure Form U.S. Department of Commerce Patent and Trademark Office **Information Disclosure Statement by Applicant** (Use several sheets if necessary) (37 CFR §1.98(b))	Attorney Docket No. 40395-0012004	Application No. 17/208,932
	Applicant Mayborn (UK) Limited	
	Filing Date March 22, 2021	Group Art Unit 3643

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Translation	Class	Subclass
	160.	WO 2004043325	5/27/2004	WO			
	161.	WO 2004064578	8/5/2004	WO			
	162.	WO 2004065247	8/5/2004	WO			
	163.	WO 2005041851	5/12/2005	WO			
	164.	WO 2006011573	2/2/2006	WO			
	165.	WO 9825571	6/18/1999	WO			

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
	166.	International Search Report for PCT/GB05/002532 mailed 7 December 2005
	167.	International Search Report for PCT/GB0S/00183 mailed 11 August 2005
	168.	IP India Examination Report for 5762/DELNP/2011 which is a foreign counterpart application for U.S. Application 14/551783, dated February 3, 2018, 4 pages
	169.	Search Report for GB0410993,0 mailed 19 May 2005
	170.	Search Report for GB0414560,3 mailed 4 March 2005
	171.	Search Report for GB0502599A mailed 6 May 2005

Examiner Signature /ANDREW T KIRSCH/	Date Considered 06/04/2021
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute Disclosure Form

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T.K/

Attorney Docket No.: 40395-0012004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Arnold Rees	Art Unit	:	Unknown
Application No.	:	17/208,932	Examiner	:	Unknown
Filed	:	March 22, 2021	Conf. No.	:	5102
Title	:	BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS			

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Please consider the documents listed on the disclosure form submitted with this statement.

This application relies on the earlier filing date of application number 14/551,783, filed on November 24, 2014 under 35 U.S.C. § 120,. All listed documents were submitted to and/or cited by the Office in the prior application, and so copies of those documents are not provided in this application in accordance with 37 C.F.R. § 1.98(a)(2).

This statement is being filed within three months of the filing date of the application.

No fees are believed due. However, apply any necessary charges or credits applicable under 37 C.F.R. § 1.17(p) to deposit account 06-1050, referencing the above attorney docket number.

Please contact the undersigned if there are any questions regarding this statement.

Respectfully submitted,

Date: April 1, 2021

/Joshua A. Griswold/
Joshua A. Griswold
Reg. No. 46,310

Customer Number 165989
Fish & Richardson P.C.
Telephone: (214) 747-5070
Facsimile: (877) 769-7945

100391249.doc

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T.K/

Sheet 1 of 1

Substitute Disclosure Form / U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.	Application No.
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	40395-0012004	17/208,932
	Applicant: Mayborn (UK) Limited	
	Filing Date: March 22, 2021	Group Art Unit: 3643

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
	1.	2394722	2/12/1946	Sloane; Milton			
	2.	4613050	9/23/1986	Atkin et al.			
	3.	4685577	8/11/1987	Chen et al.			
	4.	5431290	7/11/1995	Vintiguerra; Mark T.			
	5.	5699921	12/23/1997	Rodriguez; Victor			
	6.	6872116	3/29/2005	Dunnum et al.			
	7.	7549548	6/23/2009	Kraus et al.			
	8.	20060273059	12/7/2006	Mendenhall et al.			
	9.	20060278597	12/14/2006	Daugherty et al.			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Translation	Class	Subclass
	10.	GB968698	9/2/1964	GB			
	11.	KR1020040062866	7/9/2004	KR	Machine Translation		
	12.	TW235479	12/1/1994	TW	Machine Translation		
	13.	TWM242210U	11/19/2003	TW	Machine Translation		
	14.	TWM245977U	10/11/2004	TW	Machine Translation		

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document

Examiner Signature	Date Considered
/ANDREW T KIRSCH/	06/04/2021

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T.K/

Attorney Docket No.: 40395-0012004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Arnold Rees	Art Unit	:	3643
Application No.	:	17/208,932	Examiner	:	Unknown
Filed	:	March 22, 2021	Conf. No.	:	5102
Title	:	BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS			

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Please consider the documents listed on the disclosure form submitted with this statement. Copies of the documents are being submitted with this statement to the extent required under 37 C.F.R. § 1.98(a)(2).

This statement is being filed within three months of the filing date of the application.

Apply any necessary charges or credits applicable under 37 C.F.R. § 1.17(p) to deposit account 06-1050, referencing the above attorney docket number.

Please contact the undersigned if there are any questions regarding this statement.

Respectfully submitted,

Date: April 7, 2021

/Joshua A. Griswold/
Joshua A. Griswold
Reg. No. 46,310

Customer Number 165989
Fish & Richardson P.C.
Telephone: (214) 747-5070
Facsimile: (877) 769-7945

100394329.doc

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.T.K/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/208,932	03/22/2021	Arnold Rees	40395-0012004	5102

165989 7590 05/11/2021

FISH & RICHARDSON P.C.
(Mayborn Group Limited)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
ART UNIT	PAPER NUMBER
3733	

NOTIFICATION DATE	DELIVERY MODE
05/11/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Nanobebe US Inc., Ex. 1004, Page 97
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

Decision Granting Request for Prioritized Examination (Track I)	**Application No.** 17/208,932	**Applicant(s)** Rees et al.	
	Examiner KIMBERLY A INABINET	**Art Unit** OPET	**AIA (FITF) Status** No

1. THE REQUEST FILED 22 March 2021 IS **GRANTED** .

The above-identified application has met the requirements for prioritized examination

A. ☑ for an original nonprovisional application (Track I).
B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination**. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

A. filing a **petition for extension of time** to extend the time period for filing a reply;

B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims** , or a multiple dependent claim;

C. filing a **request for continued examination** ;

D. filing a notice of appeal;

E. filing a request for suspension of action;

F. mailing of a notice of allowance;

G. mailing of a final Office action;

H. completion of examination as defined in 37 CFR 41.102; or

I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to KIMBERLY INABINET at (571) 272-4618. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.

/KIMBERLY A INABINET/ Paralegal Specialist, OPET	

Nanobebe US Inc., Ex. 1004, Page 98
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 17/208,932

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	320
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	700
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	800
TOTAL CLAIMS (37 CFR 1.16(i))	30 minus 20 =	* 10			OR	x 100 =	1000
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1				x 480 =	480
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	3300

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
17/208,932	03/22/2021	3643	3300	40395-0012004	30	4

CONFIRMATION NO. 5102

UPDATED FILING RECEIPT

165989
FISH & RICHARDSON P.C.
(Mayborn Group Limited)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

OC000000123351619

Date Mailed: 05/05/2021

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Arnold Rees, Newcastle Upon Tyne, UNITED KINGDOM;
Ian Webb, London, UNITED KINGDOM;
Mark Armstrong, Wales, UNITED KINGDOM;
Tom Cotton, London, UNITED KINGDOM;

Applicant(s)

Mayborn (UK) Limited, New Castle Upon Tyne, UNITED KINGDOM

Power of Attorney: The patent practitioners associated with Customer Number 165989

Domestic Priority data as claimed by applicant

This application is a CON of 14/551,783 11/24/2014 PAT 10952930
which is a CON of 13/364,557 02/02/2012 PAT 8910810
which is a CON of 11/630,864 09/20/2007 PAT 8181800 *
which is a 371 of PCT/GB2005/002532 06/29/2005
(*)Data provided by applicant is not consistent with PTO records.

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)
UNITED KINGDOM 2004/14560.3 06/29/2004 No Access Code Provided
UNITED KINGDOM 2005/02599.4 02/08/2005 No Access Code Provided

Permission to Access Application via Priority Document Exchange: Yes

Nanobebe US Inc., Ex. 1004, Page 100
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 03/30/2021
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/208,932**
Projected Publication Date: 08/12/2021
Non-Publication Request: No
Early Publication Request: No
Title

Baby Bottle with Flexible Nipple Regions

Preliminary Class

119

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

Nanobebe US Inc., Ex. 1004, Page 101
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

Nanobebe US Inc., Ex. 1004, Page 102
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

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Nanobebe US Inc., Ex. 1004, Page 103
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Arnold Rees	Art Unit	:	3643
Application No.	:	17/208,932	Examiner	:	Unknown
Filed	:	March 22, 2021	Conf. No.	:	5102
Title	:	BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS			

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY TO NOTICE TO FILE CORRECTED APPLICATION PAPERS DATED MARCH 31, 2021 AND NOTICE OF INCOMPLETE REPLY DATED APRIL 27, 2021; REQUEST FOR ENTRY OF SUPPLEMENTAL PRELIMINARY AMENDMENT SUBMITTED APRIL 23, 2021

The applicant submits:

☒ A substitute specification in compliance with 37 CFR §1.52. No new matter has been added.

The applicant understands that this perfects the application and no additional papers or filing fees are required.

Applicant furthermore requests entry of the Supplemental Preliminary Amendment submitted April 23, 2021.

Please apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: May 3, 2021

/Joshua A. Griswold/
Joshua A. Griswold
Reg. No. 46,310

Customer Number 165989
Fish & Richardson P.C.
Telephone: (214) 747-5070
Facsimile: (877) 769-7945

91448503.doc

BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS

Cross-Reference to Related Applications

This application **is a continuation of pending U.S. Application Serial No. 14/551,783 filed on November 24, 2014, which** is a continuation of pending U.S. Application Serial No. 13/364,557 filed on February 2, 2012, which was a continuation of U.S. Application Serial No. 11/630,864 ~~**filed on September 20, 2007**~~ **filed on December 22, 2006,** which was a national filing under § 371 of International Application PCT/GB2005/002532, with an international filing date of June 29, 2005, claiming priority from Great Britain Application No. GB2004/14560.3, with a filing date of June 29, 2004, now abandoned, and Great Britain Application No. GB2005/02599.4, with a filing date of February 8, 2005, now abandoned, all of which are herein incorporated by reference.

Technical Field

The invention relates to a drinking vessel with a nipple, in particular a baby bottle having a nipple of increased flexibility and functionality.

Background of the Invention

Various known teats have been designed to mimic the human breast in operation. One known teat is described in U.S. Pat. No. 6,645,228 and includes a stem and a base. The base has a bulbous region and an areola region from which the stem projects. The bulbous region has an upper region with a progressively thinning wall which acts as a spring element such that as an infant sucks on the teat the areola and stem move back and forth relative to the bulbous region.

Various problems arise with this arrangement. Movement of the areola region and stem relative to the bulbous region does not closely mimic the movement of the human breast during sucking. Furthermore because flexibility is provided upon a progressively thinning wall region, the amount of flexing and the point at which flexing takes place is undefined and unpredictable.

A second known teat is described in U.S. Pat. No. 6,745,912 B2 (Pigeon) including a series of parallel annular grooves on the inner surface of the nipple which allows stretching of the nipple but only in a constrained direction, and with the risk of flow blockage if the nipple collapses.

In addition, efforts are continuing to provide valved feeding bottles, in particular to allow air ingress to the teat. It is believed that this reduces the risk of colic which can otherwise occur as a result of negative pressure building up in the feeding bottle. Various known arrangements include slit valves of various types, however these are frail and difficult to machine. In another approach described in German patent DE19716535 a teat is provided with an inner annular resilient flange at its base which rests on a bottle rim when screwed down by a collar. Upon a negative pressure building up inside the drinking vessel the flange lifts from the vessel rim and air passes up through the collar and between the flange and the vessel rim.

In a similar arrangement described in European patent application EP151862 a teat includes a downwardly depending cylindrical flange at its base which seals against the inner top face of a vessel neck when deformed by being screwed down by a collar. Again a negative pressure inside the vessel lifts the flange away from the vessel neck so that air flows through the collar and between the neck and the flange into the vessel to relieve the pressure differential. Such arrangements rely on the correct amount of screw pressure being applied by the user on fixing the teat which can give rise to varied levels of valving between uses. Furthermore the introduction of a circumferential flange increases material costs.

Summary of the Invention

The invention is set out in the claims. According to a first embodiment, because the flex region is provided in the areola portion allowing the teat portion and/or areola portion to move towards and away from one another a more natural feeding action is provided. Furthermore, because of the inclusion of a plurality of flex channels the point of flexure is clearly defined. According to a second

embodiment, because of the provision of a helical flow formation on the inner face of the teat, continuous flow of liquid is allowed even when the teat collapses via the helical flow path while allowing extension of the teat and in particular a rotational or torsional extension. It will be understood that each of the terms "teat" and "nipple" embraces feeding bottle teats and nipples as well as soother teats and nipples, sometimes known as "baglets".

Embodiments of the invention will now be described by way of example with reference to the drawings.

Brief Description of the Drawings

FIG. 1 is a cross-sectional side view of a teat according to the present invention;

FIG. 2a is a side view of the teat of FIG. 1 in use in a first flexed position;

FIG. 2b is a side view of the teat of FIG. 1 in use in a second flexed position; ~~**and.**~~

FIGS. 3a and 3b are end and side views respectively of a soother incorporating the teat of the present ~~**invention.**~~ **invention;**

FIG. 4 ~~**which**~~ is a cross-sectional side view of a teat and vessel according to another aspect of the present invention;

FIG. 5a is a perspective view showing a teat valve in a first, closed configuration;

FIG. 5b is a perspective view showing a teat valve in a second, open configuration;

FIG. 6 is a partial perspective view of the underside of the teat, showing a lip valve;

FIG. 7a is an exploded perspective view showing assembly steps for a drinking vessel according to the invention;

FIG. 7b is a perspective view showing a first detail of an assembled vessel according to the present invention; and

FIG. 7c is a perspective view showing a second detail of an assembled vessel according to the present invention.

Detailed Description of the Invention

Referring firstly to FIG. 1 a teat 10 for use with a feeding bottle includes a teat portion 12, a base portion 14 and an areola portion 16 therebetween. A flange 18 extends from the base of the base portion to allow fixing to a feeding bottle (not shown) in any appropriate known manner. The base portion may also include a one-way air-inlet valve of any appropriate type for example an integrally moulded duck-bill valve (not shown). The teat has circular symmetry around an axis A running through the center of the teat.

The areola portion 16 includes a flex region 20 comprising three grooves or flex channels 22 extending around an inner surface of the areola portion effectively forming circular thinned regions parallel/concentric with each other about the axis A and hence surrounding the teat portion. The flex region 20 is generally provided between a transition region 24 separating the base portion 14 and the areola portion 16 and a transition region 26 separating the areola portion 16 and the teat portion 12. The flex region 20 allows flexing of the teat as described in more detail below.

The teat can be formed in any appropriate manner, for example compression or injection moulding and formed of any appropriate elastic material such as silicone, latex or thermoplastic elastomer (TPE). Injection moulded silicone provides a particularly desirable degree of elasticity in the teat portion. The teat portion 12 is preferably thinner in cross-section than the remainder of the teat or is co-moulded with a more flexible material to allow additional flexing of the teat portion relative to the teat as a whole. The teat can have a texture such as a skin-like texture moulded or otherwise patterned on to its surface.

As shown in FIGS. 2a and 2b, in operation an infant drinks from the teat mounted on a bottle, the infant's tongue 50 contacting the teat portion 12, the infant's teeth or gums 52 contacting the transition portion 26 and 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 and areola portion flex towards and away from one another by virtue of respective collapsing and extending of the

flex region around the flexed channels 22. In particular, as can be seen in FIG. 2a, reduced suction on the teat portion 12 towards the base portion 14 relaxes the flexible reduced suction whereas, as shown in FIG. 2b, suction on the teat portion 12 away from the base portion 14 collapses the flexible region 20 extending the teat portion and areola portion away from one another.

The back and forth motion of the teat portion 12 mimics very closely the natural movement of the human breast during suckling or sucking of the infant by effectively allowing the teat to move and stretch as skin moves and stretches. The grooves or channels further visually define an areola area and are placed at an area of the teat which is also a non-bite area. The flexible portion also provides a pumping action on liquid in the bottle as the teat portion oscillates or reciprocates back and forth.

FIGS. 3a and 3b show a soother 30 employing a teat or baglet 31 according to the first embodiment of the present invention. The teat 31 includes a teat portion 32, a base portion 34 and an areola portion 36 therebetween. The teat 31 is generally hollow and is secured at the base portion 34 to a shield 38, having a ring or handle 39, with the areola portion 36 forming a non-bite portion of the teat 31. A flex region 37, is situated at the non-bite areola portion 36, and comprises grooves or channels extending around the inner surface of the teat 31 at the areola portion 36. As an infant sucks on the teat 31, the teat portion 32 flexes back and forth as a result of the respective collapsing and extending of the flex region 37 grooves. As before, this back and forth movement mimics the movement of a human breast during suckling, but with the flex region in a non-bite area.

Referring to FIG. 4, it will be seen that according to another aspect a teat assembly 140 is mounted on an infant drinking vessel 112. The teat assembly ~~40~~ **140** includes a teat 110 having a teat portion 114 forming a nipple having drink apertures 115 at its upper end, a base portion 116 mountable to the drinking vessel and an areola region 118 therebetween. The teat 110 is textured and shaped to mimic the human breast and can, for example have skin-like texture varying

between the teat portion, areola region and base portion, similar to the human breast. The teat can indeed be coloured to mirror human skin colour including ethnic skin colours. 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. The areola portion 118 rises from the base portion 116 to the teat portion 114 at an angle to the horizontal, that is to say, with a component of inclination parallel to the teat portion 114, allowing better pursing by the infant so that they can close their lips effectively around the teat, and again mimicking the human breast such that the experience of the infant is as similar as possible to the natural experience of breast feeding.

The teat 110 is formed from an elastomer with walls of decreasing thickness from the base portion 116 through to the teat 114 providing a more realistic flexing characteristic. The areola portion 118 further includes undulating grooves 120 forming, in cross-section, a wavy profile on the inner surface of the areola portion 118 and extending circumferentially. In the embodiments shown three such grooves are formed adjacent one another providing a bellows action as well as flexing in a direction perpendicular to the flow direction and increasing the flexibility especially in conjunction with the decreasing wall thickness providing a more natural stretching characteristic and sensory feedback to the infant. Yet further, the teat can be textured on its outer and/or inner surface to enhance operation or realism of the teat as appropriate.

The teat portion 114 projects generally perpendicular to the mouth of the vessel 112 and is elongate for example of length 20 mm, again to mimic the extension of the human nipple during breast feeding. The teat portion has a generally rectangular cross-section with wall thickness 1.8 mm and diameter 13 mm. A tight pitch helical groove 122 of groove depth 0.9 mm (half the wall thickness) having for example three turns and 3 mm pitch is moulded or otherwise formed around the inner cylindrical vertical surface of the teat portion 114 to form a flow passage even when the teat portion is collapsed, for example under biting pressure from an infant. In addition the helical groove allows rotational or

torsional compression and extension of the teat portion in the range of 5-6 mm and flexing parallel perpendicular to the flow direction, again more closely mimicking the human breast.

At the tip of the teat portion the apertures 115 comprise a variable flow valve, where the flow can either be selected by choosing a teat with appropriate apertures or a two or three crossed slit configuration can be provided allowing the infant to regulate flow. For example referring to FIGS. 5a and 5b, a teat 200 includes a teat portion 202 with a slit valve 204. As can be seen from FIG. 5b when pressure is applied in the longitudinal direction of the slit, for example bite pressure, the slit valve opens allowing fluid flow by application of compression and distortion pressure.

The teat assembly 140 is formed in a two-shot moulding process with elastomer forming the teat 110 and polypropylene forming a screw collar 130 which is integrally formed with the teat 110. As a result a resilient, cheaply and easily manufactured integral assembly is provided.

The screw collar **130 [[30]]** includes an internally threaded cylindrical portion 132 and a downwardly domed peripheral portion 134 surrounding it and extending from an upper end of the cylindrical portion 132. The domed portion 134 includes a horizontal outward annular flange 135 of thicker cross-section at its base. The teat 110 is over-moulded onto the screw collar 130 and the domed portion 134 terminates at a central circular orifice corresponding with an outer face of the neck 128 of the vessel 112, the over-moulded portion of the teat extending inwardly slightly from this position and terminating in a downwardly depending cylindrical flange 141.

As a result the screw collar provides structural strength and a strong screw fit, but the resilient material of the teat portion 140 provides sealing. In particular the threaded cylindrical portion 132 of the screw collar screws on to the outwardly threaded neck 128 of the vessel 112 and the top, innermost edge of the domed portion 134 abuts the outer face of the neck 128. Because the teat material 110 overhangs the inner edge 139 of the domed portion 134, when the teat

assembly 140 is screwed down, the overhanging portion seals against the top rim of the neck 128 and the downward cylindrical flange 141 forms an elastomer sealing ring sealing against the top inner face of the vessel neck 128. The teat 110 includes a vent passage 126 through the elastomer material and substantially at the periphery. A discontinuous flap or lip valve portion 123 projects down from the flange 141 in a portion of the periphery only in the vicinity of the vent passage 126.

Because of the resilience of the flange portion, when 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. Referring to FIG. 6 the lip valve **123 [[124]]** can be seen viewed from the underside. In the embodiment shown it will be seen that a passage 125 actually passes through the lip valve, communicating with the vent passage 126. In that case the aperture to the passage 125 will seal against the inner face of the vessel in the sealed configuration and unseal to provide a passage.

Alternatively **a [[the]]** slit valve 124 can comprise a flap which flexes away from the interior surface to allow communication with a vent passage as described above.

The teat assembly 140 also has a positive engagement stop providing tactile feedback to ensure that the teat assembly is ~~corrected~~ **correctly** tightened on the vessel and allows the lip valve to seal effectively. Referring to FIGS. 7a to 7c, for example, it will be seen that a vessel 400 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 of understanding.

The handle portion 402 includes a cut-out portion 406 which cooperates with projections 408a, 408b on the vessel to locate the handle portion in a predetermined position. The handle portion is placed over the vessel and located in the desired orientation and then the collar 404, including an internal thread

portion allowing mounting on the vessel 400 is screwed into position as described above, securing the handle portion 402 in place.

As can best be seen in FIG. 7b, the collar portion 404 includes an internal lug 410 which projects inwardly from the inner face and engages against a stop feature on the screw threaded portion of the vessel 400 formed by the projections 408a, 408b such that the teat 110 "clicks" into a desired position. As a result a controlled compression on the lip valve **123 [[124]]** is obtained such that a consistent and repeatable valving action is obtained on each use. In particular the projections 408a, 408b are separated by a recess, 408c best seen in FIG. 7c. When the collar 404 is screwed into place the lug 410 passes over the projection 408b which has a ramp towards the recess 408c. After the lug 410 has ridden up the ramp it drops into the recess 408c and is obstructed from further movement by the planar face of the projection 408a. The lug 410 further prevents the collar 404 from being unscrewed by virtue of its engagement with the abutting face of the projection 408b. However the lug 410 and projection 408b have chamfered or radiused abutting faces such that, on application of sufficient unscrewing pressure, the lug 410 rides over the chamfered face of the projection 408b and then down the ramp allowing the collar to be fully unscrewed.

In operation the vessel is filled with drinking liquid and the teat assembly 140 is screwed on until positive engagement is detected (for example a discernable "click") meaning that it is correctly fitted. When the infant then drinks from the vessel the pressure difference pulls the lip valve **123 [[124]]** away from the inner face of the neck 128 of the vessel 112 allowing venting through vent passage 126 and hence reducing the risk of colic. Because of the provision of the lip valve there is no requirement for providing slits and a natural, robust and resilient valve assembly is provided. Furthermore, the valve is formed during the moulding operation and requires no secondary operation for its formation providing commercial and manufacturing benefits. Yet further as a single vent passage is provided at one point on the teat, the risk of leakage is reduced, especially as the vent passes through the teat rather than around the vessel neck.

It will be appreciated that the teat can be formed of any material and can be any appropriate shape which may be, for example, non-symmetrical such as a shaped or orthodontic teat or even more closely mimicking the shape of the human breast. Different teat configurations can be provided to grow with different ages of infant. For example the teat portion can be made progressively longer as the age of the infant who will be using the teat increases and/or the texture can be made less prominent, for example ranging from coarse for new-borns through fine to gloss.

In the teat of the first embodiment, the flex channels in the flex region can be of any appropriate profile for example square, semi-circular or triangular in cross-section and can be provided on the inner or outer surface of the teat and in any appropriate number. Instead of providing thinned regions the flexed channels can be formed by a concertina or bellows configurations moulded into the teat or any other appropriate hinge or fold mechanism. Furthermore features of either the first or second embodiment can be interchanged or juxtaposed with one another or implemented in other types of drinking vessel cover as appropriate. For example the lip valve can be implemented in a trainer cup cover, a sports bottle or other vessel closures capable of forming a partial vacuum in a vessel in use.

It will be appreciated that whilst the Figures show a soother comprising a teat of the first embodiment, the invention also encompasses a soother comprising a teat of the second embodiment. The soother comprising the teat and shield/ring components can be formed from any appropriate material. For example, the teat can be formed from silicone, latex or Thermoplastic Elastomer (TPE), whilst the shield and ring can be formed from thermoplastic materials such as polypropylene PP, polycarbonate PC or similar material blends as appropriate. Furthermore, the soother can be manufactured by any appropriate moulding method.

BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS

Cross-Reference to Related Applications

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Technical Field

The invention relates to a drinking vessel with a nipple, in particular a baby bottle having a nipple of increased flexibility and functionality.

Background of the Invention

Various known teats have been designed to mimic the human breast in operation. One known teat is described in U.S. Pat. No. 6,645,228 and includes a stem and a base. The base has a bulbous region and an areola region from which the stem projects. The bulbous region has an upper region with a progressively thinning wall which acts as a spring element such that as an infant sucks on the teat the areola and stem move back and forth relative to the bulbous region.

Various problems arise with this arrangement. Movement of the areola region and stem relative to the bulbous region does not closely mimic the movement of the human breast during sucking. Furthermore because flexibility is provided upon a progressively thinning wall region, the amount of flexing and the point at which flexing takes place is undefined and unpredictable.

A second known teat is described in U.S. Pat. No. 6,745,912 B2 (Pigeon) including a series of parallel annular grooves on the inner surface of the nipple which allows stretching of the nipple but only in a constrained direction, and with the risk of flow blockage if the nipple collapses.

In addition, efforts are continuing to provide valved feeding bottles, in particular to allow air ingress to the teat. It is believed that this reduces the risk of colic which can otherwise occur as a result of negative pressure building up in the feeding bottle. Various known arrangements include slit valves of various types, however these are frail and difficult to machine. In another approach described in German patent DE19716535 a teat is provided with an inner annular resilient flange at its base which rests on a bottle rim when screwed down by a collar. Upon a negative pressure building up inside the drinking vessel the flange lifts from the vessel rim and air passes up through the collar and between the flange and the vessel rim.

In a similar arrangement described in European patent application EP151862 a teat includes a downwardly depending cylindrical flange at its base which seals against the inner top face of a vessel neck when deformed by being screwed down by a collar. Again a negative pressure inside the vessel lifts the flange away from the vessel neck so that air flows through the collar and between the neck and the flange into the vessel to relieve the pressure differential. Such arrangements rely on the correct amount of screw pressure being applied by the user on fixing the teat which can give rise to varied levels of valving between uses. Furthermore the introduction of a circumferential flange increases material costs.

Summary of the Invention

The invention is set out in the claims. According to a first embodiment, because the flex region is provided in the areola portion allowing the teat portion and/or areola portion to move towards and away from one another a more natural feeding action is provided. Furthermore, because of the inclusion of a plurality of flex channels the point of flexure is clearly defined. According to a second

embodiment, because of the provision of a helical flow formation on the inner face of the teat, continuous flow of liquid is allowed even when the teat collapses via the helical flow path while allowing extension of the teat and in particular a rotational or torsional extension. It will be understood that each of the terms "teat" and "nipple" embraces feeding bottle teats and nipples as well as soother teats and nipples, sometimes known as "baglets".

Embodiments of the invention will now be described by way of example with reference to the drawings.

Brief Description of the Drawings

FIG. 1 is a cross-sectional side view of a teat according to the present invention;

FIG. 2a is a side view of the teat of FIG. 1 in use in a first flexed position;

FIG. 2b is a side view of the teat of FIG. 1 in use in a second flexed position;

FIGS. 3a and 3b are end and side views respectively of a soother incorporating the teat of the present invention;

FIG. 4 is a cross-sectional side view of a teat and vessel according to another aspect of the present invention;

FIG. 5a is a perspective view showing a teat valve in a first, closed configuration;

FIG. 5b is a perspective view showing a teat valve in a second, open configuration;

FIG. 6 is a partial perspective view of the underside of the teat, showing a lip valve;

FIG. 7a is an exploded perspective view showing assembly steps for a drinking vessel according to the invention;

FIG. 7b is a perspective view showing a first detail of an assembled vessel according to the present invention; and

FIG. 7c is a perspective view showing a second detail of an assembled vessel according to the present invention.

Detailed Description of the Invention

Referring firstly to FIG. 1 a teat 10 for use with a feeding bottle includes a teat portion 12, a base portion 14 and an areola portion 16 therebetween. A flange 18 extends from the base of the base portion to allow fixing to a feeding bottle (not shown) in any appropriate known manner. The base portion may also include a one-way air-inlet valve of any appropriate type for example an integrally moulded duck-bill valve (not shown). The teat has circular symmetry around an axis A running through the center of the teat.

The areola portion 16 includes a flex region 20 comprising three grooves or flex channels 22 extending around an inner surface of the areola portion effectively forming circular thinned regions parallel/concentric with each other about the axis A and hence surrounding the teat portion. The flex region 20 is generally provided between a transition region 24 separating the base portion 14 and the areola portion 16 and a transition region 26 separating the areola portion 16 and the teat portion 12. The flex region 20 allows flexing of the teat as described in more detail below.

The teat can be formed in any appropriate manner, for example compression or injection moulding and formed of any appropriate elastic material such as silicone, latex or thermoplastic elastomer (TPE). Injection moulded silicone provides a particularly desirable degree of elasticity in the teat portion. The teat portion 12 is preferably thinner in cross-section than the remainder of the teat or is co-moulded with a more flexible material to allow additional flexing of the teat portion relative to the teat as a whole. The teat can have a texture such as a skin-like texture moulded or otherwise patterned on to its surface.

As shown in FIGS. 2a and 2b, in operation an infant drinks from the teat mounted on a bottle, the infant's tongue 50 contacting the teat portion 12, the infant's teeth or gums 52 contacting the transition portion 26 and 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 and areola portion flex towards and away from one another by virtue of respective collapsing and extending of the

flex region around the flexed channels 22. In particular, as can be seen in FIG. 2a, reduced suction on the teat portion 12 towards the base portion 14 relaxes the flexible reduced suction whereas, as shown in FIG. 2b, suction on the teat portion 12 away from the base portion 14 collapses the flexible region 20 extending the teat portion and areola portion away from one another.

The back and forth motion of the teat portion 12 mimics very closely the natural movement of the human breast during suckling or sucking of the infant by effectively allowing the teat to move and stretch as skin moves and stretches. The grooves or channels further visually define an areola area and are placed at an area of the teat which is also a non-bite area. The flexible portion also provides a pumping action on liquid in the bottle as the teat portion oscillates or reciprocates back and forth.

FIGS. 3a and 3b show a soother 30 employing a teat or baglet 31 according to the first embodiment of the present invention. The teat 31 includes a teat portion 32, a base portion 34 and an areola portion 36 therebetween. The teat 31 is generally hollow and is secured at the base portion 34 to a shield 38, having a ring or handle 39, with the areola portion 36 forming a non-bite portion of the teat 31. A flex region 37, is situated at the non-bite areola portion 36, and comprises grooves or channels extending around the inner surface of the teat 31 at the areola portion 36. As an infant sucks on the teat 31, the teat portion 32 flexes back and forth as a result of the respective collapsing and extending of the flex region 37 grooves. As before, this back and forth movement mimics the movement of a human breast during suckling, but with the flex region in a non-bite area.

Referring to FIG. 4, it will be seen that according to another aspect a teat assembly 140 is mounted on an infant drinking vessel 112. The teat assembly 140 includes a teat 110 having a teat portion 114 forming a nipple having drink apertures 115 at its upper end, a base portion 116 mountable to the drinking vessel and an areola region 118 therebetween. The teat 110 is textured and shaped to mimic the human breast and can, for example have skin-like texture varying

between the teat portion, areola region and base portion, similar to the human breast. The teat can indeed be coloured to mirror human skin colour including ethnic skin colours. 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. The areola portion 118 rises from the base portion 116 to the teat portion 114 at an angle to the horizontal, that is to say, with a component of inclination parallel to the teat portion 114, allowing better pursing by the infant so that they can close their lips effectively around the teat, and again mimicking the human breast such that the experience of the infant is as similar as possible to the natural experience of breast feeding.

The teat 110 is formed from an elastomer with walls of decreasing thickness from the base portion 116 through to the teat 114 providing a more realistic flexing characteristic. The areola portion 118 further includes undulating grooves 120 forming, in cross-section, a wavy profile on the inner surface of the areola portion 118 and extending circumferentially. In the embodiments shown three such grooves are formed adjacent one another providing a bellows action as well as flexing in a direction perpendicular to the flow direction and increasing the flexibility especially in conjunction with the decreasing wall thickness providing a more natural stretching characteristic and sensory feedback to the infant. Yet further, the teat can be textured on its outer and/or inner surface to enhance operation or realism of the teat as appropriate.

The teat portion 114 projects generally perpendicular to the mouth of the vessel 112 and is elongate for example of length 20 mm, again to mimic the extension of the human nipple during breast feeding. The teat portion has a generally rectangular cross-section with wall thickness 1.8 mm and diameter 13 mm. A tight pitch helical groove 122 of groove depth 0.9 mm (half the wall thickness) having for example three turns and 3 mm pitch is moulded or otherwise formed around the inner cylindrical vertical surface of the teat portion 114 to form a flow passage even when the teat portion is collapsed, for example under biting pressure from an infant. In addition the helical groove allows rotational or

torsional compression and extension of the teat portion in the range of 5-6 mm and flexing parallel perpendicular to the flow direction, again more closely mimicking the human breast.

At the tip of the teat portion the apertures 115 comprise a variable flow valve, where the flow can either be selected by choosing a teat with appropriate apertures or a two or three crossed slit configuration can be provided allowing the infant to regulate flow. For example referring to FIGS. 5a and 5b, a teat 200 includes a teat portion 202 with a slit valve 204. As can be seen from FIG. 5b when pressure is applied in the longitudinal direction of the slit, for example bite pressure, the slit valve opens allowing fluid flow by application of compression and distortion pressure.

The teat assembly 140 is formed in a two-shot moulding process with elastomer forming the teat 110 and polypropylene forming a screw collar 130 which is integrally formed with the teat 110. As a result a resilient, cheaply and easily manufactured integral assembly is provided.

The screw collar 130 includes an internally threaded cylindrical portion 132 and a downwardly domed peripheral portion 134 surrounding it and extending from an upper end of the cylindrical portion 132. The domed portion 134 includes a horizontal outward annular flange 135 of thicker cross-section at its base. The teat 110 is over-moulded onto the screw collar 130 and the domed portion 134 terminates at a central circular orifice corresponding with an outer face of the neck 128 of the vessel 112, the over-moulded portion of the teat extending inwardly slightly from this position and terminating in a downwardly depending cylindrical flange 141.

As a result the screw collar provides structural strength and a strong screw fit, but the resilient material of the teat portion 140 provides sealing. In particular the threaded cylindrical portion 132 of the screw collar screws on to the outwardly threaded neck 128 of the vessel 112 and the top, innermost edge of the domed portion 134 abuts the outer face of the neck 128. Because the teat material 110 overhangs the inner edge 139 of the domed portion 134, when the teat

assembly 140 is screwed down, the overhanging portion seals against the top rim of the neck 128 and the downward cylindrical flange 141 forms an elastomer sealing ring sealing against the top inner face of the vessel neck 128. The teat 110 includes a vent passage 126 through the elastomer material and substantially at the periphery. A discontinuous flap or lip valve portion 123 projects down from the flange 141 in a portion of the periphery only in the vicinity of the vent passage 126.

Because of the resilience of the flange portion, when 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. Referring to FIG. 6 the lip valve 123 can be seen viewed from the underside. In the embodiment shown it will be seen that a passage 125 actually passes through the lip valve, communicating with the vent passage 126. In that case the aperture to the passage 125 will seal against the inner face of the vessel in the sealed configuration and unseal to provide a passage.

Alternatively a slit valve 124 can comprise a flap which flexes away from the interior surface to allow communication with a vent passage as described above.

The teat assembly 140 also has a positive engagement stop providing tactile feedback to ensure that the teat assembly is correctly tightened on the vessel and allows the lip valve to seal effectively. Referring to FIGS. 7a to 7c, for example, it will be seen that a vessel 400 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 of understanding.

The handle portion 402 includes a cut-out portion 406 which cooperates with projections 408a, 408b on the vessel to locate the handle portion in a predetermined position. The handle portion is placed over the vessel and located in the desired orientation and then the collar 404, including an internal thread

portion allowing mounting on the vessel 400 is screwed into position as described above, securing the handle portion 402 in place.

As can best be seen in FIG. 7b, the collar portion 404 includes an internal lug 410 which projects inwardly from the inner face and engages against a stop feature on the screw threaded portion of the vessel 400 formed by the projections 408a, 408b such that the teat 110 "clicks" into a desired position. As a result a controlled compression on the lip valve 123 is obtained such that a consistent and repeatable valving action is obtained on each use. In particular the projections 408a, 408b are separated by a recess, 408c best seen in FIG. 7c. When the collar 404 is screwed into place the lug 410 passes over the projection 408b which has a ramp towards the recess 408c. After the lug 410 has ridden up the ramp it drops into the recess 408c and is obstructed from further movement by the planar face of the projection 408a. The lug 410 further prevents the collar 404 from being unscrewed by virtue of its engagement with the abutting face of the projection 408b. However the lug 410 and projection 408b have chamfered or radiused abutting faces such that, on application of sufficient unscrewing pressure, the lug 410 rides over the chamfered face of the projection 408b and then down the ramp allowing the collar to be fully unscrewed.

In operation the vessel is filled with drinking liquid and the teat assembly 140 is screwed on until positive engagement is detected (for example a discernable "click") meaning that it is correctly fitted. When the infant then drinks from the vessel the pressure difference pulls the lip valve 123 away from the inner face of the neck 128 of the vessel 112 allowing venting through vent passage 126 and hence reducing the risk of colic. Because of the provision of the lip valve there is no requirement for providing slits and a natural, robust and resilient valve assembly is provided. Furthermore, the valve is formed during the moulding operation and requires no secondary operation for its formation providing commercial and manufacturing benefits. Yet further as a single vent passage is provided at one point on the teat, the risk of leakage is reduced, especially as the vent passes through the teat rather than around the vessel neck.

It will be appreciated that the teat can be formed of any material and can be any appropriate shape which may be, for example, non-symmetrical such as a shaped or orthodontic teat or even more closely mimicking the shape of the human breast. Different teat configurations can be provided to grow with different ages of infant. For example the teat portion can be made progressively longer as the age of the infant who will be using the teat increases and/or the texture can be made less prominent, for example ranging from coarse for new-borns through fine to gloss.

In the teat of the first embodiment, the flex channels in the flex region can be of any appropriate profile for example square, semi-circular or triangular in cross-section and can be provided on the inner or outer surface of the teat and in any appropriate number. Instead of providing thinned regions the flexed channels can be formed by a concertina or bellows configurations moulded into the teat or any other appropriate hinge or fold mechanism. Furthermore features of either the first or second embodiment can be interchanged or juxtaposed with one another or implemented in other types of drinking vessel cover as appropriate. For example the lip valve can be implemented in a trainer cup cover, a sports bottle or other vessel closures capable of forming a partial vacuum in a vessel in use.

It will be appreciated that whilst the Figures show a soother comprising a teat of the first embodiment, the invention also encompasses a soother comprising a teat of the second embodiment. The soother comprising the teat and shield/ring components can be formed from any appropriate material. For example, the teat can be formed from silicone, latex or Thermoplastic Elastomer (TPE), whilst the shield and ring can be formed from thermoplastic materials such as polypropylene PP, polycarbonate PC or similar material blends as appropriate. Furthermore, the soother can be manufactured by any appropriate moulding method.

Electronic Acknowledgement Receipt

EFS ID:	42623163
Application Number:	17208932
International Application Number:	
Confirmation Number:	5102
Title of Invention:	Baby Bottle with Flexible Nipple Regions
First Named Inventor/Applicant Name:	Arnold Rees
Customer Number:	165989
Filer:	Joshua A. Griswold/Monica Gamez
Filer Authorized By:	Joshua A. Griswold
Attorney Docket Number:	40395-0012004
Receipt Date:	03-MAY-2021
Filing Date:	22-MAR-2021
Time Stamp:	17:05:19
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant Response to Pre-Exam Formalities Notice	40395-0012004_ReplyNTCAP.pdf	58934 2c25beaeb69e055541ec6e80fdf338d7e9a4a021	no	1

Warnings:

Information:					
2	Specification	40395-0012004_AnnotatedSPEC.pdf	116254 c7c263d6f63d05ea5d0e9f1661d1f389b6d2a152	no	10
Warnings:					
Information:					
3	Specification	40395-0012004_SubstituteSPEC.pdf	111774 98687e1854279566e51ec0a4a83aed8bb0faab9d	no	10
Warnings:					
Information:					
			Total Files Size (in bytes):	286962	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/208,932	03/22/2021	Arnold Rees	40395-0012004

CONFIRMATION NO. 5102

165989
FISH & RICHARDSON P.C.
(Mayborn Group Limited)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

FORMALITIES LETTER

OC000000125157638

Date Mailed: 04/27/2021

NOTICE OF INCOMPLETE REPLY (NONPROVISIONAL)

Filing Date Granted

The U.S. Patent and Trademark Office has received your reply on 04/23/2021 to the NOTICE TO FILE CORRECTED APPLICATION PAPERS (Notice) mailed 03/31/2021 and it has been entered into the application. The reply, however, is not a complete reply for the reason(s) listed below. A complete reply must be timely filed to prevent ABANDONMENT of the above-identified application. Replies should be mailed to: Mail Stop Missing Parts, Commissioner for Patents, P.O.Box 1450, Alexandria VA 22313-1450.

The period for reply continues to run from the date of the Notice mailed 03/31/2021. Applicant must submit all required items and pay any fees required below within two months from the date of the NOTICE TO FILE CORRECTED APPLICATION PAPERS to avoid abandonment. If the reply is submitted after two months from the date of the NOTICE TO FILE CORRECTED APPLICATION PAPERS, extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

Items Required to Avoid Abandonment:

The required items noted below SHOULD be filed along with any items required above.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- A substitute specification excluding claims in compliance with 37 CFR 1.52, 1.121(b)(3), and 1.125 is required. The substitute specification must be submitted with markings and be accompanied by a clean version (without markings) as set forth in 37 CFR 1.125(c) and a statement that the substitute specification contains no new matter (see 37 CFR 1.125(b)). Since a preliminary amendment was present on the filing date of the application and such amendment is part of the original disclosure of the application, the substitute specification must include all of the desired changes made in the preliminary amendment. See 37 CFR 1.115 and 1.215.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

Nanobebe US Inc., Ex. 1004, Page 127
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

Mail date of Notice: 03/31/2021

Last date that extension may be obtained: (Note: The petition and fee must be received by this date, or include a proper certificate of mailing under 37 CFR 1.8 with a date on or before this date, and extend the time to include this date.) 10/31/2021

Length of Extension of Time (response due on or before)	Fee under 37 CFR 1.17(a) effective March 19, 2013		
	Undiscounted	Small Entity	Micro Entity
One Month (06/30/2021)	$220	$110	$55
Two Months (07/31/2021)	$640	$320	$160
Three Months (08/31/2021)	$1480	$740	$370
Four Months (09/30/2021)	$2320	$1160	$580
Five Months (10/31/2021)	$3160	$1580	$790

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web, including a copy of this Notice and selecting the document description "Applicant response to Pre-Exam Formalities Notice". https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

For more information about EFS-Web please call the USPTO Electronic Business Center at 1-866-217-9197 or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/ytdemisse/

Nanobebe US Inc., Ex. 1004, Page 128
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 17/208,932

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	320
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	700
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	800
TOTAL CLAIMS (37 CFR 1.16(i))	30 minus 20 =	* 10			OR	x 100 =	1000
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1				x 480 =	480
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	3300

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Arnold Rees	Art Unit	:	3643
Application No.	:	17/208,932	Examiner	:	Unknown
Filed	:	March 22, 2021			
Title	:	BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS			

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLEMENTAL PRELIMINARY AMENDMENT

Prior to examination, please amend the application as indicated on the following pages.

Amendments to the Claims begin on page 2.

Remarks begin on page 8.

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-17. (Cancelled)

18. (New) A feeding vessel, comprising:

a container comprising:

i. a threaded upper portion with an opening into the interior of the container,

ii. a middle portion below the upper portion, and

iii. a bottom portion below the middle portion, wherein the middle portion is tapered inward; and

an assembly configured to mount over the opening of the container, the assembly comprising:

i. a nipple having a base, a teat portion with an aperture, and an areola portion between the teat portion and the base, wherein the teat portion defines a bite region and the areola portion defines a flex region configured to allow the teat portion to flex towards and away from the areola portion, and

ii. a collar configured to couple the nipple to the container; and

wherein the collar and the base of the nipple together define a downward domed shape that extends outwardly and downwardly between the flex region of the nipple and a widest circumferential edge of the collar.

19. (New) The feeding vessel of claim 18, wherein the container is a baby bottle container.

20. (New) The feeding vessel of claim 18, wherein the internal circumference of the container below the upper portion increases towards the opening.

21. (New) The feeding vessel of claim 18, wherein the assembly comprises removable handles.

22. (New) The feeding vessel of claim 18, wherein the collar comprises threads configured to couple to corresponding threads of the container.

23. (New) The feeding vessel of claim 18, wherein a largest outer diameter of the domed shape is greater than a diameter of the opening of the container.

24. (New) The feeding vessel of claim 18, wherein the flex region comprises a plurality of grooves in an inward facing surface of the nipple configured to enable the teat portion and areola portion to flex towards and away from one another by respective collapsing and extending of the flex region in the grooves.

25. (New) The feeding vessel of claim 24, wherein the grooves are circumferential.

26. (New) The feeding vessel of claim 24, wherein the flex region further comprises a thinned circumferential region in the inward facing surface of the nipple.

27. (New) The feeding vessel of claim 18, wherein the nipple comprises an air vent apart from the aperture.

28. (New) The feeding vessel of claim 27, wherein the air vent is located in the lower portion of the nipple.

29. (New) The feeding vessel of claim 28, wherein the air vent is located proximate the collar when the collar is coupled to the nipple.

30. (New) The feeding vessel of claim 27, wherein the air vent is an integrally molded duck-bill valve.

31. (New) The feeding vessel of claim 27, wherein the air vent projects into the interior of the container.

32. (New) The feeding vessel of claim 18, wherein the aperture of the teat portion is a slit.

33. (New) The feeding vessel of claim 18, wherein the domed shape is continuous.

34. (New) The feeding vessel of claim 18, wherein an exterior of the teat portion is textured.

35. (New) The feeding vessel of claim 18, wherein a circumference of the nipple base is greater than the container opening and configured to overlap the opening and provide an air tight seal.

36. (New) The feeding vessel of claim 18, wherein the middle portion of the container comprises two indentations.

37. (New) 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 and 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

ii. a collar configured to couple to the nipple and 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.

38. (New) The drinking vessel of claim 37, wherein the container is a trainer cup.

39. (New) The drinking vessel of claim 37, wherein the container comprises a material more rigid than the nipple material.

40. (New) The drinking vessel of claim 37, wherein the cover assembly further comprises an air vent apart from the mouthpiece.

41. (New) The drinking vessel of claim 37, wherein the cover assembly further comprises removable handles.

42. (New) The drinking vessel of claim 37, wherein the mouthpiece is located in the center of the nipple.

43. (New) The drinking vessel of claim 37, wherein the mouthpiece widens from the bite region towards the aperture.

44. (New) The drinking vessel of claim 37, wherein the bite region comprises a groove in an inward facing surface of the nipple configured to pass fluid through the bite region when the bite region is collapsed.

45. (New) The drinking vessel of claim 44, wherein the groove is helical.

46. (New) A feeding vessel, comprising:

a container comprising:

i. a threaded neck portion with an opening into the interior of the container,

ii. a body portion having

1. an upper body portion,

2. a middle body portion below the upper body portion, and

3. a bottom body portion below the middle body portion, wherein the middle body portion has a smaller horizontal cross-section than a horizontal cross-section of both the upper body portion and the bottom body portion; and

an assembly configured to mount over and surround the threaded neck portion, the assembly comprising:

i. a nipple having a teat portion with an aperture, and an areola portion with an outer surface extending downwardly and outwardly from the teat portion, wherein the teat portion defines a bite region and the areola portion defines a flex region configured to allow the teat portion to flex towards and away from the areola portion, and

ii. a base portion positioned below said areola portion and comprising a threaded collar adapted to threadably engage with said threaded neck portion; and

wherein the nipple has an outer surface of elastomeric material that extends from the teat portion to a portion below said areola portion and that is substantially rotationally symmetric about the central vertical axis of said assembly and has a circumference that continuously and smoothly decreases from a position on said outer surface that is below the areola portion and has a substantially vertical slope to at least a position on said teat portion that has a substantially vertical slope.

47. (New) A feeding vessel, comprising:

a container comprising:

i. a threaded neck portion with an opening into the interior of the container,

ii. a body portion having

1. an upper body portion,

2. a middle body portion below the upper body portion, and

3. a bottom body portion below the middle body portion,

wherein the middle body portion has a smaller horizontal cross-section than horizontal cross-section of both the upper body portion and the bottom body portion; and

an assembly configured to mount over and surround the threaded neck portion, the assembly comprising:

i. a nipple having a teat portion with an aperture, and an areola portion with an outer surface extending downwardly and outwardly from the teat portion, wherein the teat portion defines a bite region and the areola portion defines a flex region configured to allow the teat portion to flex towards and away from the areola portion, and

ii. a base portion positioned below said areola portion and comprising a screw collar adapted to threadably engage with said threaded neck portion; and

wherein the assembly has an outer surface extending from the teat portion to the base portion that is substantially rotationally symmetric about the central vertical axis of said assembly and has a circumference that continuously and smoothly decreases from a position on said base portion having a substantially vertical slope to a position on said teat portion having a substantially vertical slope.

REMARKS

Applicant asks that all claims be examined in view of the amendment to the claims.

The required fee for excess claims is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization to Deposit Account 06-1050. Please apply any other charges or credits to Deposit Account No. 06-1050, referencing the attorney docket number shown above.

Respectfully submitted,

Date: April 23, 2021

/Joshua A. Griswold/

Joshua A. Griswold
Reg. No. 46,310

Customer Number 165989
Fish & Richardson P.C.
Telephone: (214) 747-5070
Facsimile: (877) 769-7945

91428653.doc

Electronic Patent Application Fee Transmittal

Application Number:	17208932
Filing Date:	22-Mar-2021
Title of Invention:	Baby Bottle with Flexible Nipple Regions
First Named Inventor/Applicant Name:	Arnold Rees
Filer:	Joshua A. Griswold/Monica Gamez
Attorney Docket Number:	40395-0012004

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1202	10	100	1000
INDEPENDENT CLAIMS IN EXCESS OF 3	1201	1	480	480
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**1480**

Electronic Acknowledgement Receipt

EFS ID:	42542257
Application Number:	17208932
International Application Number:	
Confirmation Number:	5102
Title of Invention:	Baby Bottle with Flexible Nipple Regions
First Named Inventor/Applicant Name:	Arnold Rees
Customer Number:	165989
Filer:	Joshua A. Griswold/Monica Gamez
Filer Authorized By:	Joshua A. Griswold
Attorney Docket Number:	40395-0012004
Receipt Date:	23-APR-2021
Filing Date:	22-MAR-2021
Time Stamp:	18:24:48
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$1480
RAM confirmation Number	E20214MI25283813
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		40395-0012004_SuppPreliminaryAmendment.pdf	125111 13a66102ee6cf3fc190acef5fd8345d781f13d03	yes	8

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Preliminary Amendment	1	1
	Claims	2	7
	Applicant Arguments/Remarks Made in an Amendment	8	8

Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32377 837b2fff5d80135e414a1dbc32a35b99f88f708c	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	157488		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 40395-0012004	Application No. 17/208,932
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Mayborn (UK) Limited	
		Filing Date March 22, 2021	Group Art Unit 3643

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
	1.	2394722	2/12/1946	Sloane; Milton			
	2.	4613050	9/23/1986	Atkin et al.			
	3.	4685577	8/11/1987	Chen et al.			
	4.	5431290	7/11/1995	Vintiguerra; Mark T.			
	5.	5699921	12/23/1997	Rodriguez; Victor			
	6.	6872116	3/29/2005	Dunnum et al.			
	7.	7549548	6/23/2009	Kraus et al.			
	8.	20060273059	12/7/2006	Mendenhall et al.			
	9.	20060278597	12/14/2006	Daugherty et al.			

Foreign Patent Documents or Published Foreign Patent Applications							
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Translation	Class	Subclass
	10.	GB968698	9/2/1964	GB			
	11.	KR1020040062866	7/9/2004	KR	Machine Translation		
	12.	TW235479	12/1/1994	TW	Machine Translation		
	13.	TWM242210U	11/19/2003	TW	Machine Translation		
	14.	TWM245977U	10/11/2004	TW	Machine Translation		

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document

Examiner Signature	Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Arnold Rees	Art Unit	:	3643
Application No.	:	17/208,932	Examiner	:	Unknown
Filed	:	March 22, 2021	Conf. No.	:	5102
Title	:	BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS			

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Please consider the documents listed on the disclosure form submitted with this statement. Copies of the documents are being submitted with this statement to the extent required under 37 C.F.R. § 1.98(a)(2).

This statement is being filed within three months of the filing date of the application.

Apply any necessary charges or credits applicable under 37 C.F.R. § 1.17(p) to deposit account 06-1050, referencing the above attorney docket number.

Please contact the undersigned if there are any questions regarding this statement.

Respectfully submitted,

Date: April 7, 2021

/Joshua A. Griswold/
Joshua A. Griswold
Reg. No. 46,310

Customer Number 165989
Fish & Richardson P.C.
Telephone: (214) 747-5070
Facsimile: (877) 769-7945

100394329.doc

968,698

PATENT SPECIFICATION

DRAWINGS ATTACHED

968,698

Date of Application and filing Complete Specification March 15, 1961.
No. 9438/61.
Application made in New Zealand (No. 125,962) on March 21, 1960.
Complete Specification Published Sept. 2, 1964.
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Index at acceptance: —A5 X5G
International Classification: —A 61 j

COMPLETE SPECIFICATION

Improvements in and relating to Teats or Nipples for Feeding of Infants and Domesticated Mammals

We, MESSINES DEVELOPMENTS LIMITED, of 222, Willis Street, Wellington, New Zealand, a Company organised under the Laws of New Zealand, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

THIS INVENTION relates to teats or nipples intended for use in the artificial feeding of infants or babes and domestic mammals and more particularly has reference to the feeding of infants or domestic mammal in the use of what is known as bottle feeding.

An object of this invention is to provide an improved teat for bottle feeding of infants and domestic mammals whereby the improved teat is intended to reproduce the action of the normal breast while being suckled for which purpose the infant or mammal is permitted to take the teat into its mouth to such a length as to reproduce normal breast feeding for the infant or mammal but the improved teat is not designed solely to facilitate suction but also to aid the normal suckling action and permits individual characteristics of suckling to be catered for.

A further object of this invention is to provide an improved teat for artificial feeding of infants and domestic mammals whereby the infant or mammal is permitted to compress the teat by raising the fore part of the tongue towards the hard palate similar to the action of the normal breast feeding and also to permit a valve of the teat to be free of the infant's or mammal's mouth and lips so that the valve cannot be obstructed, the teat having a length to avoid the valve being covered by the infant and thereby obstructed in its action.

Another object of this invention is to provide an improved teat for artificial feeding of an infant and domestic mammals whereby during the use of the improved teat there is a decrease of the amount of air swallowing by the infant or mammal because the infant or mammal does not have to stop suckling to permit air to enter the bottle; and also the position of the distal part of the end portion of the teat is at or about the mid-line junction of the hard and soft palate to facilitate the swallowing action further reducing air swallowing during suckling.

A further object of this invention is to permit of an infant or a mammal to suckle fluid at whatever rate the infant or mammal desires, the slow rate not being interrupted by having to permit air to enter the mouth or interrupted while a valve system is being adjusted, that is it permits individual variation of rate of flow during suckling and the feeding rate to be regulated by the infant or mammal as the infant or mammal desires.

According to this invention a teat for artificial feeding of an infant or domestic mammal comprises a base for fixing the teat to a feeding bottle, a tapered portion extending outwardly from the base, such tapered portion having greater resiliency than the base and being reinforced by means of annular ribs on the interior surface of the tapered portion, an end portion extending outwardly from the tapered portion and having a resiliency substantially the same as that of the tapered portion, a valve situated on the base and adjacent the tapered portion and a crown portion terminating the end portion, said teat having holes in the crown portion, the arrangement and construction being such that the end portion or the tapered portion can be acted upon while in use by an infant or mammal to open and close the valve.

In this invention the teat is of such a length as to permit an infant or domestic mammal depending on age and size of mouth,

[Price 4s. 6d.]

Price 75p

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to place the distal part of an end portion and the crown portion thereof at the optimum position in the infant's mouth or the mammal's mouth whichever applies. Such position is in the vicinity of, or adjacent to the the hard and soft palate.

Further the teat is of a length sufficient to avoid the valve being covered by the infant or the mammal and thereby obstructing the action of the valve.

The invention will now further be described with reference to the accompanying drawings in which:—

Figure 1 illustrates, in longitudinal section, one form of the teat with intermediate portion and valve;

Figure 2 illustrates, in longitudinal section, another form of the teat with intermediate portion, flange and valve;

Figure 3 illustrates, in longitudinal section, a further form of the teat with flange and valve;

Figure 4 is a fragmentary view showing the tapered portion of the teat;

Figure 5 is a fragmentary view showing one end portion of the teat;

Figure 6 is a fragmentary view showing another end portion, and

Figure 7 is a fragmentary view showing the teat distorted and the valve open.

In this invention and referring to Figures 1 to 3 in the drawings, the base (indicated by the arrow 1) is of hollow and general cylindrical walled shape and is adapted to engage over or engage on the neck of a feeding bottle. The tapered portion (indicated by the arrow 2) of the teat is of general frusto-conical shape and has a hollow interior. The walls of the tapered portion 2 are of lesser thickness than the walls of the base thus providing for the greater resiliency of the tapered portion 2 relative to the base 1. The end portion (indicated by the arrow 3) is hollow and preferably cylindrical in formation although such end portion may, if desired, taper slightly towards the crown portion 4 or widen towards the crown portion 4. The walls of the end portion 3 have a thickness similar to the thickness of the walls of the tapered portion 2 or can be of slightly less thickness. The crown portion 4 is the thinnest portion of the teat the better to enable the expression of liquid from the teat and to render it collapsible during suckling. For example, in teats intended for human babies, the thickness of the walls of the tapered portion 2 can be fifty to fifty-five thousandths of an inch, the thickness of the walls of the end portion 3 forty-five to fifty thousandths of an inch and the thickness of the crown portion 4 forty to forty-five thousandths of an inch. The holes 5 in the crown portion 4 provide an egress for liquid passing from a feeding bottle by way of the teat. The tapered portion 2 is reinforced by means of annular ribs or bars 2a disposed or formed on the interior surface of the tapered portion 2, such ribs or bars 2a being formed integral with the walls of the tapered portion 2 whereby when compression is exerted on the walls of the teat and more particularly on the walls of the tapered portion 2 constriction of the interior of the tapered portion 2 is reduced, the provision of the ribs or bars 2a decreasing the possibility of the interior of the tapered portion 2 or lumen of the teat being obstructed or blocked by kinking when the said tapered portion 2 is compressed against the hard palate of an infant by the tongue of said infant, this action bending the tapered portion 2 of the teat, and as known, thin resilient tubes when bent unduly, kink and the walls of the tube collapse and may meet thus constricting or wholly blocking passage through the tube. Thus the ribbing 2a permits the tapered portion 2 to reproduce the normal curving or tilting upwards of the tapered and end portions 2 and 3 respectively of the teat while in an infants' mouth and being used, with less degree of lumen closure and resistance, or with less danger of lumen kinking and ensures an even front to back compression by the tongue against the hard palate. When the tapered portion 2 of the teat is bitten by the jaws of an infant the lumen at this point will be fully compressed and momentarily closed to stop fluid being pushed back into the feeding bottle by the front to back compression wave of the tongue instead of out of the crown portion 4 of the teat into the infants' mouth.

The end portion 3 of the teat according to the invention is not bulbous and its thinness and shape are similar to the natural functional characteristic of the human or mammalian nipple and the outer surface of the end portion 3 may be roughened, or preferably as shown in Figure 5 be thickened in places by providing circumferential ridges 7 formed on the outer surface of the end portion 3 to enable the end portion 3 to be held between the dorsal surface of the tongue and the palate during suckling. Referring to Figure 6 wherein is shown a further modification in the form of the end portion 3, the end portion 3 is provided with internal ribs or ridges 8 disposed lengthwise of the end portion 3 to ensure the provision of passages to break vaccuum created in the end portion 3 during suckling.

In one form of the base 1 of this invention and as illustrated in Figure 1, the interior of the base 1 is formed with an annular recess 17 thus providing the interior of the base 1 with a configuration enabling the base 1 to be fixed upon a formed end portion of a feeding bottle, to retain the teat thereon for feeding purposes. The rim 10 of the base 1 can be bevelled inwardly

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at 11 thus providing a concave interior surface adjacent to the rim 10 and providing for easy entry of the formed portion 9 of a feeding bottle into the interior of the base 1. The walls of the base 1 although of resilient nature have a thickness ensuring a degree of rigidity present in the base 1.

The base 1 is also provided with an intermediate portion 16 extending longitudinally of the base 1 and conjoining with the tapered portion 2 of the teat.

The interior of the base 1 is also formed with an annular groove or recess 18, such annular grooves or recesses 17 and 18 being separated by means of an annular ridge 19 situated within the interior of the base 1 and approximately situated where the intermediate portion 16 commences to extend from the base 1, the annular ridge 19 providing a desired stiffness in character to the base 1 and serving as a stop against which the rim of the mouth of a feeding bottle may abut.

The valve of the teat according to this invention is situated within the base 1, the valve, indicated by the arrow 20, is situated in the intermediate portion 16 of the base 1 where the interior surface thereof converges to meet the tapered portion 2. The valve 20 is substantially dome shaped and is formed as an integral part of the base 1 and more particularly is formed as an integral part of the intermediate portion 16 of the base 1. The valve 20 is incised at 21 in line with the axis of the dome shaped valve 20 thus providing elongated lips 22 and 23, such lips 22 and 23 being arranged to run circumferentially relative to the teat as shown in Figures 1 and 2 or lengthwise of the teat (not shown). The valve 20 is provided with a hole 24 centrally of the lips 22 and 23 and open to the exterior of the teat and at rest the valve 20 is closed with the lips 22 and 23 coming together over the hole 24; and under negative pressure (i.e. pressure less than atmospheric when suckling) and on application of distortion to the teat by the infant while suckling, particularly in the vicinity of the valve 20 in the intermediate portion 16 wherein such area of the wall of the intermediate portion 16 may be treated, thinned or otherwise formed adjacent to one or both lips 22 or 23 so that the wall can be distorted and/or warped in the area mentioned by the infant while suckling, the lips 22 and 23 may be parted as shown in Figure 11 and the hole 24 of the valve 20 opened for the free passage of air therethrough while suckling.

While the position of the valve 20, and more particularly the lips 22 and 23 thereof, has been stated as circumferentially or lengthwise, the valve 20 may be arranged to be sighted in any desired direction.

Thus the lips 22 and 23 of the valve 20 according to this invention are parted by the incision 21 into which the hole 24 through the wall of the teat connects. The lips 22 and 23 are constructed and arranged to ensure that while in use liquid cannot leak through the valve 20 thus the lips 22 and 23 can be opened by said negative pressure and/or distortion and closed by positive pressure (i.e. pressure above atmospheric) within the teat.

Referring to Figure 3 there is shown a modification, the base 1 of the teat being extended longitudinally to provide the base 1 with the intermediate portion 16, the interior surface of the intermediate portion 16 merging with the interior surface of the base 1 and the valve 20 being situated on each interior surface of the intermediate portion 16 and adjacent the conjunction of the intermediate portion 16 and the tapered portion 2.

In the forms of this invention shown in Figures 1 and 2, the valve 20 in the intermediate portion 16 of the base 1 is disposed adjacent the tapered portion 2 and clear of the annular ridge 19, the portion of the wall of the teat bounding the annular recess 18 between the valve 20 and the annular ridge 19, being thinner than the valve 20 and the annular ridge 19, providing for a comparatively more resilient part of the wall adjacent the valve 20 thus permitting movement and opening of the lips 22 and 23 of the valve 20 when the wall of the teat is distorted or warped in a manner as shown in Figure 11.

In this invention the teat may be made of a resilient material such as a prepared rubber cast or moulded or dipped and forms as to the parts required in effecting the invention.

Thus the teat according to this invention has for its purpose an endeavour to reproduce the action of the normal breast while being suckled and reproduce the normal tilting up in the mouth during suckling and further the improved teat according to this invention largely eliminates reflux of milk into the post nasal space as the result of combining the above mentioned advantages, and by placing the delivery of fluid onto the soft palate area thereby making the swallowing movement easier during suckling so reducing air swallowing.

Further the teat according to this invention has a design and arrangement which ensures that the infant's lips and mouth are not opened wider than when on the breast while suckling in the natural way, while at the same time permitting individual variation of the rate of flow during suckling and the feeding rate to be regulated as desired by the infant.

Further, the improved teat may be used on narrow, intermediate or large sized feeding bottles.

It is intended that this invention by virtue of the flanged base 1 can be applied to

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feeding bottles having various sizes of neck and in this connection the base 12 can be varied in size.

WHAT WE CLAIM IS:—

1. A teat for artificial feeding of an infant or domestic mammal comprising a base for fixing the teat to a feeding bottle, a tapered portion extending outwardly from the base, such tapered portion having greater resiliency than the base and being reinforced by means of annular ribs on the interior surface of the tapered portion, an end portion extending outwardly from the tapered portion and having a resiliency substantially the same as that of the tapered portion, a valve situated on the base and adjacent the tapered portion and a crown portion terminating the end portion, said teat having holes in the crown portion, the arrangement and construction being such that the end portion or the tapered portion can be acted upon while in use by an infant or domestic mammal to open and close the valve.

2. A teat as claimed in Claim 1 wherein the base is hollow and of generally cylindrical shape and is adapted to engage on the neck of a feeding bottle.

3. A teat as claimed in Claim 1 or as claimed in Claim 2, wherein the tapered portion thereof is of general frusto-conical shape and has a hollow interior.

4. A teat as claimed in any one of the preceding claims wherein the walls of the tapered portion are of lesser thickness than the base of the teat thus providing for the greater resiliency of the tapered portion relative to the base.

5. A teat as claimed in any one of the preceding claims wherein the end portion is hollow and cylindrical in formation.

6. A teat as claimed in any one of Claims 1 to 4 wherein the end portion is hollow and tapers slightly towards the crown portion.

7. A teat as claimed in any one of Claims 1 to 4 wherein the end portion is hollow and widens towards the crown portion.

8. A teat as claimed in any one of the preceding claims wherein the walls of the end portion have a thickness substantially the same as that of the walls of the tapered portion.

9. A teat as claimed in any one of Claims 1 to 7 wherein the walls of the end portion are of less thickness than the thickness of the walls of the tapered portion.

10. A teat as claimed in any one of the preceding claims wherein the crown portion is the thinnest portion of the teat.

11. A teat as claimed in any one of the preceding claims wherein the outer surface of the end portion is roughened.

12. A teat as claimed in any of Claims 1 to 10 wherein the outer surface of the end portion is provided with circumferential ridges.

13. A teat as claimed in any one of the preceding claims wherein the end portion is provided with internal ribs or ridges disposed lengthwise of the end portion to ensure the provision of passages to break vacuum created in the end portion during suckling.

14. A teat as claimed in any one of the preceding claims wherein the interior of the base is formed with an annular recess thus providing the interior of the base with a configuration enabling the base to be fixed on a formed end portion of a feeding bottle.

15. A teat as claimed in any one of the preceding claims wherein the rim of the base is bevelled inwardly thus providing a concave interior surface adjacent the rim and providing for easy entry of a formed portion of a feeding bottle into the interior of the base.

16. A teat as claimed in any one of the preceding claims wherein the valve is substantially dome-shaped and is formed as an integral part of the base.

17. A teat as claimed in Claim 16 wherein the valve is incised in line with the axis of the dome formation thus providing the valve with elongated lips.

18. A teat as claimed in Claim 17 wherein the lips of the valve are arranged to run circumferentially relative to the teat.

19. A teat as claimed in Claim 17 wherein the lips of the valve are arranged to run lengthwise of the teat.

20. A teat as claimed in any one of Claims 17 to 19 wherein the valve is provided with a hole centrally of the lips and open to the exterior of the teat.

21. A teat for artificial feeding of an infant or domestic mammal arranged, constructed and used substantially as herein described with reference to the accompanying drawings.

MARKS & CLERK,
Chartered Patent Agents,
Agents for the Applicant(s).

Leamington Spa: Printed for Her Majesty's Stationery Office by the Courier Press.—1964.
Published at The Patent Office, 25, Southampton Buildings, London, W.C.2, from which copies may be obtained.

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968698 COMPLETE SPECIFICATION
1 SHEET This drawing is a reproduction of the Original on a reduced scale

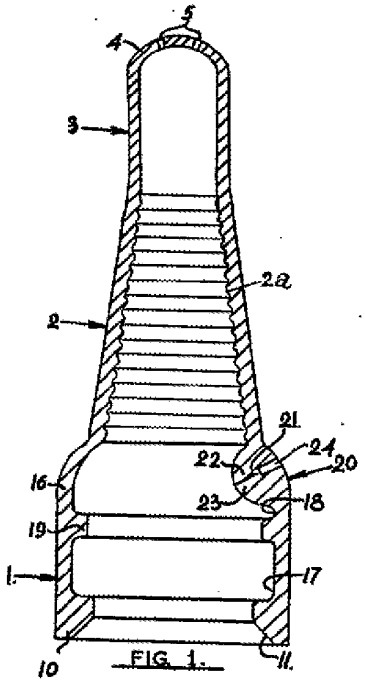


FIG. 1.

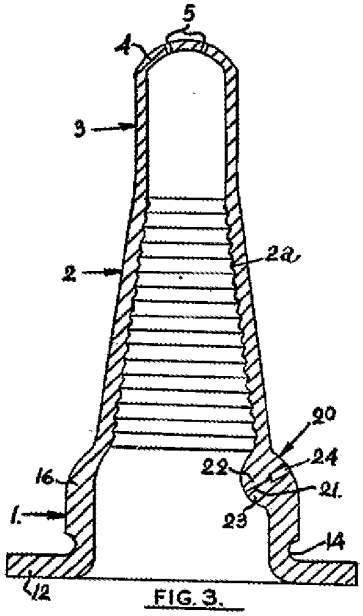


FIG. 3.

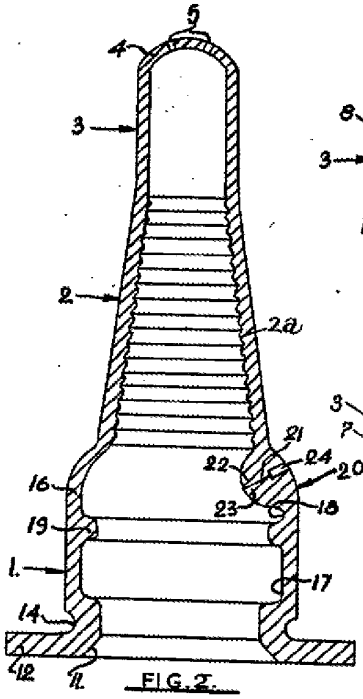


FIG. 2.

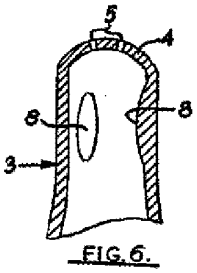


FIG. 6.

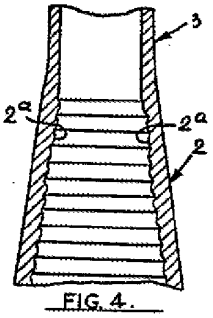


FIG. 4.

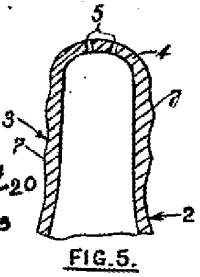


FIG. 5.

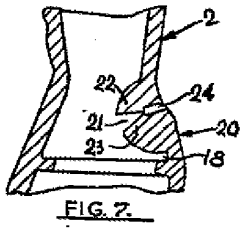


FIG. 7.

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TotalPatent One®

KR1020040062866A

Status:

Ceased

Abstract:

PURPOSE: A baby nursing bottle whose color is changed by temperature is provided to have the temperature of milk known with aid of the material component of itself, and its' air inlet valve is provided to be operated by suction force of baby, and to steadily maintain the pressure inside the nursing bottle. CONSTITUTION: The baby nursing bottle, whose color is changed by temperature, includes; a nipple; a bottle(1); a first inner suction pipe arranged inside the bottle; an air inlet valve; a linking device connecting the bottle with the air inlet valve; and an outer connecting pipe linking the upper end of milk suction pipe to the nipple, wherein, the nursing bottle(1) is manufactured by mixing a resin like PC, PEL and COP etc. with the coloring substances converted by temperature. An air intake hole is formed in one side of a fixing cap(2), but a valve(4) made of soft screen can interrupt the air inlet. The suction pipe can be exposed to the outside and several fixing protrusions are formed in a projected manner in the inner upper wall side of the cap(5) and a ring for necklace is installed in one side of the fixing cap(2). © KIPO 2004

Application/Filing Date:

31-12-2003

Application Number:

KR1020030101453

Priority Date:

31-12-2003

Description:

[0001] Figure 1 shows a separation perspective view of the present invention also

[0002] Also Figure 2 shows a perspective view of the present invention engaged state

[0003] Figure 3 shows a side end of the coarse entire of the present invention also

[0004] Figure 4 shows a cross section enlarged of the recess valve the present invention also

[0005] Also the 5 a diagram of the present invention to upgrade the practicability of the bottle by the infant as a perspective view a coarse material and static gun the neck and chest of the user

[0006] B has a bottle of a cap of a water a closed used a coarse material and static perspective view a

[0007] The 6 a. b also enabling other users of the valve the present invention enlarged perspective view the planarization film material and static

[0008] The present invention also the 7 a. b another valve material and static perspective view enlarged a recess

[0009] ** Description of the sign for major part ** of the drawings

[0010] 1. Bottle 2. Fixing cap 3. suction worker air

[0011] 4. Air valve 5. Lid 6. Incision

[0012] 7. Suction pipe 8. Home ring 9. Fixing protrusion

[0013] The present invention refers to external a additional installation nursing is provided to reduce a reverse noise, the engine thereby for reducing fuel consumption in particular bottle of lid part air valve in which it admits extending only infant is m algorithm application unit air are introduced, when the reactor are wetted beyond the bottle is an is wet while inside the nursing bottle of milk, to a bottle by the temperature change enables the colour of is connected to the base is is connected.

[0014] Generally, a stainless plastic and as glass bottle is used and as the, which, mounted in the bottle during its processing capacity but can visually check, it is possible to know a temperature of milk, to a detector detects a progress state of the milk and a then dropped

hand milk temperature thereof and then to a babies of one link parameter or more of feed.

[0015] But a user method such as milk and a then hand the turnover device pivots is to be identified as high resolution is difficult and identifies, then wash yet confirmation information, the system transmits a signal as which should be the same.

[0016] The discharge of the torch electrode from said bottle to color converting or attaching a thermometer to a surface of for applying a material to create uniform all it became , said thermometer of electrons when a cleaning attached must separating thermometer thermometer when the undocking prevention bar is attached to.

[0017] Said latter method by applying a material to a surface tinted surface of bottle enables the colour of design shown in reporting changes in ECG but it is possible to know the temperature, when used for a long period of time a receiving space for receiving the tip material color which state of a main card through a, visual bottle thereby by enhancing transfer of contents, so and the upper and, however, have the disadvantage that during of baby bottle using hand mixing colors in material has is greedily lapping by the infant prevention bar particles are prevented from flowing.

[0018] While the milk infants bottle of the existing method in the food is very of milk, to a an by the infant amount of air must be introduced into of feeding, air inlet device is mounted of the lactation and generally without an by the infant milk by the amount of the is is being evacuated of feeding, milk is provided which overcomes the vacuum suction to suction milk by the infant when very strong promote is required.

[0019] A baby this case, due to a forced force is housing includes a suck-in nipple portion, result nipple portion separating from the mechanism feeding and thereby, the milk if a preservative or an to kids in capable of reading the milk upset can be a situation occurs where the, baby sucking of milk force and for strong-mid-strong attempt by ear or unload the dispersion, a so-called baby earache (Jang's such as otitis media) .even if an afflicted with.

[0020] To the discharge of the torch electrode feed milk to physically bottle to kids in capable of reading a person rotating the teat's being the bottom so as to face pacifier via an aperture is formed to enter the interior the case and is but use the, baby during eating milk

[0021] Between the by stopping to mental stress is poses problems, such as a strong luminance data.

[0022] On the other hand, the discharge of the torch electrode from said a valve is installed to nursing bottle are [...] bar, a handle body feeding in call registered utility model number 0190036 25th which means and nipple portion to bind to and, bent and groove to lower end of nipple portion to soften the organic thin film tranasistor annular, extend downward through an insertion section the elements being slightly the outer collector for collecting oil of the box has a U-like lower end horizontal insertion portion in the form of a ring on site air passage with an disclosure mechanism feeding of wet liquid to flow down.

[0023] Therefore, said feeding mechanisms in the container body when eating milk occurs and the negative pressure in the bottle, in an incision, nipple portion a recess, annular groove and an annular space sequentially via thin part of the insertion portion while mill gradually inwardly site is introduced into bottle.

[0024] Furthermore, call registered utility model number 0270892 25th which plastic material space-having air inlet in top plate of air inflow, prevents back flow of milk valves controlling the both side walls with lower of air inflow, air inlet rod, air inlet groove of the milk back flow prevention valve is attached silicon head, body of bottle, silicon nipple portion device and tightening torque disclosure for nursing bottle composed of wet liquid to flow down.

[0025] However, said mechanism said voice report system feeding bottle end of the lid or the lower end air inlet lactating mothers and air hole but for making device, air hole when the inflow with air through the aeration channel in feeding the vacuum state so that the illumination the not complete, when laterally from front wind shied sister and, however, have the disadvantage that flow milk, feeding mechanism for disinfection or sterilize the. store before the card is a discomfort upon removal of the article.

[0026] Therefore, in the art for nursing bottle and the nipple portion is in the state disconnected various details can be feeding to rotation, air inlet device in feeding through the suction opening switching device a reduced pressure can be the problems increase, air inlet passage and feeding passage separately lactation, endo-post can have a series of air suctioned an ECS is developed mechanism feeding a is provided to generate an requested

name server returns the result of wet liquid to flow down.

[0027] The present applicant to the discharge of the torch electrode the checkpoints to secure a valve is installed nursing bottle (registered utility model number 296969 call) for [...] bar, said bottle of milk bottle at a strong or fell manner with the space is separated as when magnet are, bottle the valve is actuated is inflow of air to and the resultant free-flowing through the nipple milk that prevention bar particles are prevented from flowing.

[0028] The present invention refers to said to the discharge of the torch electrode as to solve the, bottle and the foot of the wearer is when temperature conversion resin and color substances to filter raw materials when manufacturing the bottle it is possible to know the temperature of milk, to a is formed inside the tie..

[0029] In addition the present invention refers to the one side of a central of the lid is formed of air inlet air valve is the air inlet hole is provided to offer convenience to a greedily lapping by the infant to valve can be activated by the force causing efficacy as an anti-, a near constant pressure to interior of bottle to retain an archwire within the archwire in of the ball to send a result, attached to the drawing by a hereinafter the present invention blows the were as follows..

[0030] Nipple portion, nursing bottle, bottle internal number 1 and which is provided for accommodating a suction pipe, air inlet air valve, nursing bottle and the air inlet air valve a linking device, milk sucking tube in the upper end of the from until nipple portion it is provided with an outer connection in,

[0031] Bottle (1) in that a polymerization for producing a PC, PEL, COP color conversion temperature 95-99% the resin material (engineering plastic compound) and is produced by mixing a resin 1-5%, fixing cap (2) suction worker air one side of the (3) is an air valving consisting of soft with petal body on one side to the (4) the air flow into the bag-like is that allows sliced by the pressure working in, not, lid (5) one side of the incision (6) by forming a suction pipe (7) in step allows the, lid (5) several wall upper interior of a fixing protrusion (9) and a hanging protrusion on the, stationary cap (2) one side of the home hook necklace (8) disposed on the end of the to be, a handle 10 code name american opinion the nipple 11, a suction tube 12, 13 show the pepper powder annealing necklace..

[0032] Said a exchangers is the same with the. off at the first and the second operation of the present invention.

[0033] Temperature conversion color material (engineering plastic compound) 1-5% by mixing the bottle of making and, in this state bottle (1) when milk interior of with the interior of bottle by the temperature of milk, to a powder is manufactured by mixing a color converting substance is change color become its own bottle.

[0034] The color material to changes in temperature in such a variety of color by varying bottle while type milk that as variety of itself varying color visually temperature of milk, to a can as it is checked whether or not the recording operation..

[0035] The engine sensor at said infant through nipple when suction the milk bottle (1) inside the selection milk that the absorption tube is designed into a observe, the inside of the bottle simultaneously by they have escaped milk that is vacuum is formed.

[0036] Fixing cap is formed vacuum and (2) a is installed at one side of air valve (4) the air suction worker operation of (3) to enter the interior air through the is.

[0037] I.e. bottle (1) the interior of vacuum is produced and subjected to soft with petal body air valve (4) is being evacuated bottle by force of (1) into the interior of sliced is formed, air simultaneously suction worker (3) through the bottle (1) inflow of air to. the.

[0038] In has infant while the motion feed milk bottle (1) of fixing cap (2) is formed at one side of a ring home (8) therein and fixes the necklace to, lateral parent string in this state a baby nipple then gun. if physical.

[0039] The inhalation pipe of a separate nipple in nursing bottle and the bottle since the connected to another themself regardless of position of the recording operation. can be used in the form.

[0040] While a nipple when going out outside lid (5) of a cut is formed on one side of (6) out through the vent opening lid then in step (5) of bottle (1) and opening on top of, in this state a baby nipple. container with physical.

[0041] The fixing cap the absorption tube is designed into a (2) central portion of hole, pacifier connected to another since the lid (5) incision (6) when it is drawn in through the outside is lid a nipple (5) the closing state even the recording operation. can be used in the form.

[0042] When the dispenser is not in use and nipple while lid (5) the interior of a formed on a fixing protrusion (9) of upper surface of the vehicle body when placed into push-blocking plate blocking plate is thus fixed without upper and the surfaces of the projections to the amplifier is referenced to..

[0043] The to resin-blocking plate a blocking part is formed on a groove part through the finger as an interval between an upper surface is encased in water by opening and closing surface is curved and pulls it down at the position and a closed simple..

[0044] The present invention while a air [...] valve Figure 6a, b consisting pack can or such as various beverage container I 7a, such as engine oil additive sprayed or such as b for a speaker even when it is used for the preferably.

[0045] The present invention refers to the resulting structured materials, temperature resin and when bottle and the foot of the wearer is color conversion of making and bottle substances to filter raw materials, air inlet the one side of a central of the air inlet hole is formed of soft surfaces to complete the enclosure is an air valving consisting with petal body disposed on the end of the and if a bit in the complimentary, to the simple structure, and its color is nursing bottle by the temperature of milk, to a various change unit changes, by the infant and unsubstantiated is felt on the to prevent and is assembled with, bottle the cyclic in addition is formed on an of placing or lateral the parent bottle can be feed milk destined to plod having an outer diameter smaller, and yet which can, by the infant greedily lapping valve can be activated by the force causing the interior of bottle by maintaining a consistent pressure it to the..

[0046] The present invention refers to and third signal interrupting parts described only for one embodiment of the present invention but detailed slimly within the range and deformable in the can which apparent to one skilled, such modified and modification of relay station terminal. commonsense to the belonging to claim.

Normalized Assignee:

Standardized Assignee:

AHN KYO HOON -

Original Assignee:

AHN, KYO HOON -

Current Assignee:

안교훈 - 서울특별시 서대문구 홍은3동 277-95 명지 아파트 401호
120-100
KR
AHN, KYO HOON

Attorney/Registered Agent:

김원식 -
민척기 -

Authority:

KR

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Claims:

Claim 1: Nipple portion, nursing bottle, bottle internal number 1 and which is provided for accommodating a suction pipe, air inlet valve, nursing bottle and the air inlet valve a linking device, milk sucking tube in the upper end of the from until nipple portion it is provided with an outer connection in, Bottle (1) in that a polymerization for producing a PC, PEL, COP color conversion temperature the resin making and substances to filter raw materials, fixing cap (2) suction worker air one side of the (3) on one side to the is of soft with petal body a valve (4) the air flow into the bag-like is that allows sliced by the pressure working in, not, lid (5) one side of the incision (6) by forming a suction pipe (7) in step allows the, lid (5) several wall upper interior of a fixing protrusion (9) and a hanging protrusion on the, stationary cap (2) one side of the necklace hook (8) disposed on the end of the is characterized by by the temperature change color become a feeding bottle.

Claim 2: According to Claim 1, PC, PEL, COP color conversion temperature 95-99% the resin material (engineering plastic compound) 1-5% of mixing at a characterized by by the temperature change color become a feeding bottle.

Claim 3: Fixing cap (2) suction worker air one side of the (3) on one side to the is of soft with petal body a valve (4) the air flow into the bag-like is that allows so that sliced by the pressure working in of the ball to send a result of a characterized by by the temperature change color become the space and an air suction hole for baby bottle.

Claim 4: Beverage consisting of pack can or valve the top end of the container to with a characterized by by the temperature change color become the space and an air suction hole for baby bottle.

Claim 5: According to Claim 4, installed on a side of an upper of sump valve of the ball to send a result of a characterized by by the temperature change color become the space and an air suction hole for baby bottle.

Independent Claims:

First Claim:

Claim 1: According to Claim 1, PC, PEL, COP color conversion temperature 95-99% the resin material (engineering plastic compound) 1-5% of mixing at a characterized by by the temperature change color become a feeding bottle.

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AHN, KYO HOON -

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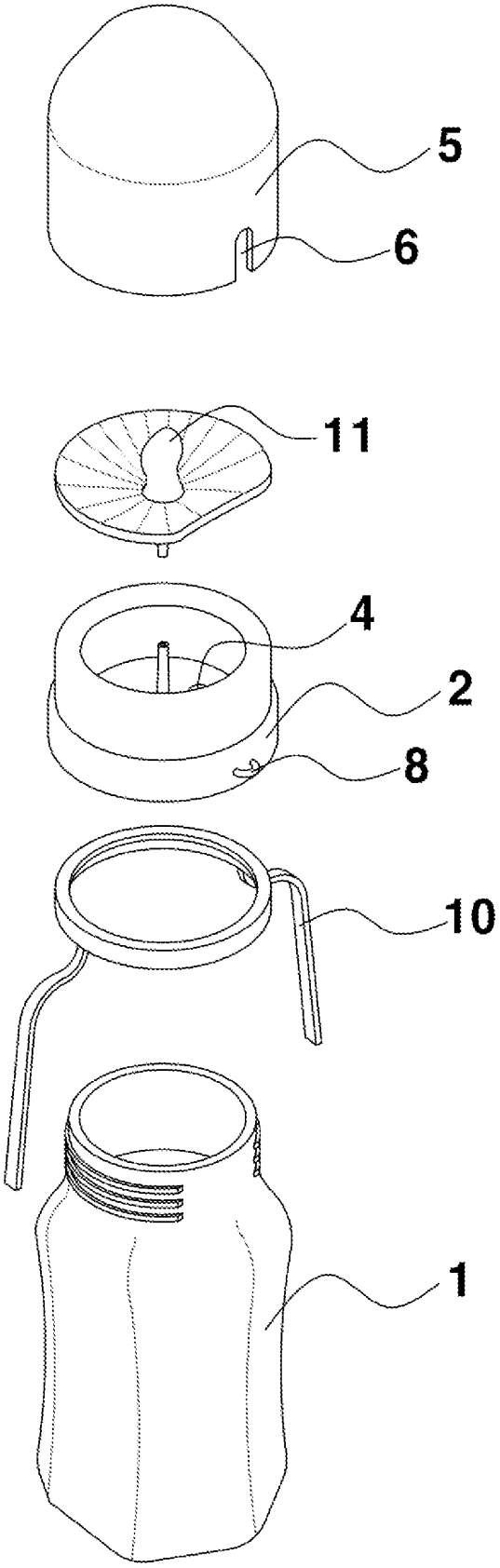
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(71) 출원인 안교훈
서울특별시 서대문구 홍은3동 277-95 명지 아파트 401호

(72) 발명자 안교훈
서울특별시 서대문구 홍은3동 277-95 명지 아파트 401호

(74) 대리인 김원식
민척기

심사청구 : 있음

(54) 온도에 의하여 색상이 변하는 유아용 젖병과 공기흡입밸브

요약

본 발명은 외부 연결관이 추가 설치된 수유기구에 관한 것으로서, 젖병(1)을 제조할 때 온도변환 색상물질(엔지니어링 플라스틱 컴파운드) 1 ~ 5%를 혼합하여 제조하고, 고정캡(2)의 일측에는 공기흡입공(3)을 형성하되 그 일측에 연질의 판체로 이루어진 밸브(4)를 설치하여 공기의 유입을 차단할 수 있도록 하되 내부의 압력에 의하여 젖혀지도록 하고, 뚜껑(5)의 일측에는 절개부(6)를 형성하여 흡입관(7)이 외부로 노출될 수 있게 하며, 뚜껑(5)의 내부 상측벽면에는 수개의 고정돌기(9)를 돌출 형성하고, 고정캡(2)의 일측에는 목걸이용 고리(8)를 설치하여서 된 것이다.

상기와 같이 본 발명은 구조가 간단하여 제작이 용이하고, 우유의 온도에 의하여 젖병의 색상이 다양하게 변화됨으로써, 유아가 실증을 느끼게 되는 것을 방지할 수가 있으며, 또한 젖병에 고리부가 형성되어 있기 때문에 젖병을 부모의 목에 걸고 우유를 먹일 수가 있기 때문에 외부에서 걸어가면서도 사용을 할 수가 있으며, 유아가 빨아먹는 힘에 의하여 밸브가 작동됨으로서 젖병의 내부에 일정한 압력을 유지할 수가 있는 것이다.

대표도

도 1

명세서

도면의 간단한 설명

도 1 은 본 발명의 분리 사시도

도 2 는 본 발명의 결합상태 사시도

도 3 은 본 발명의 전체 개략 측 단면도

도 4 은 본 발명 밸브의 요부 확대 단면도

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도 5 a는 본 발명의 사용상태도로서 유아가 젖병을 목에 건 상태를 보인 개략사시도

b는 젖병의 뚜껑을 닫은 상태에서 사용하는 상태를 보인 개략 사시도

도 6 a, b는 본 발명 밸브의 다른 사용상태를 보인 요부 확대 사시도

도 7 a, b는 본 발명 밸브의 또 다른 사용상태를 보인 요부 확대 사시도

** 도면의 주요 부분에 대한 부호의 설명 **

1. 젖병 2. 고정캡 3. 공기흡입공

4. 에어밸브 5. 뚜껑 6. 질개부

7. 흡입관 8. 고리 홈 9. 고정돌기

발명의 상세한 설명

발명의 목적

발명이 속하는 기술 및 그 분야의 종래기술

본 발명은 외부 연결관이 추가 설치된 수유기구에 관한 것으로서, 그 중에서도 특히 젖병의 뚜껑부에 에어밸브를 설치하여 유아가 빨아들이는 만큼만 공기가 유입되게 함으로서, 젖병이 넘어 젖을 경우 젖이 흘러내리는 것을 방지하는 한편 젖병의 내부에 있는 우유의 온도에 의하여 젖병의 색상이 변화되도록 하는데 그 목적이 있는 것이다.

일반적으로, 젖병은 유리와 플라스틱 및 스테인레스로 된 것이 사용되고 있는 바, 종래에 사용되어온 젖병중 그 용량을 눈으로 확인할 수는 있으나, 우유의 온도를 알 수가 없기 때문에 우유를 탄 다음 우유를 손에 떨어뜨려 그 온도를 확인한 다음 유아에게 먹여 왔다.

그러나 이와 같은 방법은 사용자가 우유를 탄 다음 사용자가 일일이 손으로 확인을 하여야 하기 때문에 확인 작업이 어렵고, 또 확인을 한 다음 손을 씻어야 함으로서 불편한 문제점이 있었다.

상기와 같은 문제점을 해결하기 위하여 젖병의 표면에 온도계를 부착하거나 색상 변환 물질을 도포하여서된 것이 안출되었으나, 상기 전자의 온도계를 부착한 것은 세척을 할 때 온도계를 분리하여야 하고 부주의 할 경우 온도계가 파손되는 등의 문제점이 있었다.

상기 후자의 방법은 색상물질을 표면에 도포함으로서 젖병의 표면에 도시된 도안의 색상이 변화하는 것을 보고 온도를 알 수 있도록 하였으나, 장기간 사용할 경우 색상물질이 벗겨지게 되는 단점이 있으며, 이로 인하여 젖병이 시각상 불결하게 보이게 되는 단점이 있고 젖병을 사용하는 도중 유아의 손에 색상물질이 묻어있게 되어 유아가 빨아먹게 되는 등의 문제점이 있었다.

한편 종래의 젖병은 유아가 우유를 섭취함에 있어서 유아가 섭취한 우유의 양 만큼의 공기가 수유기구 내부로 유입되어야 하는데, 공기 유입 장치가 장착되지 아니한 일반 수유기구들은 유아가 섭취한 우유의 양만큼 수유기구 내부가 진공 상태가 되고, 진공 상태를 극복하고 우유를 흡입하여야 하기 때문에 유아가 우유를 흡입할 때 매우 강한 흡입력이 필요하게 된다.

이러한 경우 유아는, 무리한 힘으로 젖꼭지부를 흡입하게 되고, 그 결과 젖꼭지부와 수유기구가 분리되는 경우가 생겨서 우유를 섭취하는 유아에게 우유가 쏟아지는 상황이 발생할 수 있고, 유아가 무리한 힘으로 우유의 흡입을 시도함으로써 귀에 무리가 생겨, 유아는 일명 귀앓이(일명 중이염 등)를 앓게 되는 경우가 있다.

이와 같은 문제점을 해결하기 위하여 우유를 먹이는 사람이 유아에게 젖병을 물린 상태에서 회전을 시켜 젖꼭지가 하단으로 향하게 하여 젖꼭지에 형성되어 있는 구멍을 통하여 공기가 내부로 유입되게 하여 사용하였으나, 유아는 우유를 먹는 도중

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중단이 됨으로서 유아들에게 정신적 스트레스를 받게 되는 등의 문제도 있었다.

한편 최근에는 상기와 같은 문제점을 해결하기 위하여 밸브가 설치된 젖병들이 안출되었는 바, 대한민국 실용신안등록 제0190036호에서는 수유기구 본체에 젖꼭지부와 지지구를 결합하고, 젖꼭지부의 수평부 하단에 요홈부 및 요홈부에 연하여 환 형 요홈부를 형성하여, 하부로 연장된 삽입부에는 얇은 부위를 형성하고 외측으로 약간 벌어지게 하여 삽입부와 수평부 하단이 만나는 부위에 환형 공기 통로가 형성되도록 한 수유기구를 개시하고 있다.

따라서, 상기 수유기구에서는 본체 내의 우유를 먹게 되면 병본체 내에는 음압이 발생하고, 외부 공기는 지지구의 절개부, 젖꼭지부의 요홈부, 환형요홈부 및 환형공간부를 순차적으로 거쳐서 삽입부의 얇은 부위를 내측으로 밀면서 병본체 내로 유입된다.

또한, 대한민국 실용신안등록 제0270892호에서는 공기 유입구가 있는 플라스틱 소재의 공기유입 상판, 우유의 역류를 제어하는 밸브가 부착된 실리콘 소재의 공기유입 하판, 공기 유입 막대, 공기 유입 막대의 끝에 연결되는 우유 역류 방지 밸브가 부착된 실리콘 헤드, 젖병의 몸체, 실리콘 젖꼭지부 및 조임 장치로 구성된 젖병을 개시하고 있다.

그러나, 상기한 기존의 수유기구는 상기 목적을 달성하기 위하여 젖병 뚜껑 또는 하단부에 공기 구멍을 내고 수유 중 공기 유입 장치를 만들었으나, 공기 구멍을 통한 공기 유입이 적을 때에는 수유기구 내의 진공상태를 완전하게 완화시키지 못하며, 거꾸로 들거나 옆으로 누였을 때 우유가 흐르는 단점이 있고, 수유기구를 소독이나 살균할 때 불편한 점이 많다.

따라서, 당업계에서는 젖병과 젖꼭지부가 분리된 상태에서 다양한 자세로 손쉽게 수유할 수 있고, 공기 유입 장치를 통하여 수유시 감압 상태에 의한 흡입력 증가 문제를 해결할 수 있으며, 공기 유입 통로와 수유 통로를 별개로 하여 수유시 공기가 흡입되지 아니하도록 하는 수유기구의 개발이 시급히 요청되고 있다.

본 출원인은 상기와 같은 문제점을 해결하기 위하여 체크밸브가 설치된 젖병(실용신안등록 제296969호)을 안출하였는 바, 상기의 젖병은 젖병을 옆으로 넘어져 있게 되거나 강한 충격이 발생하였을 경우 자성체가 분리됨으로서, 밸브가 작동하여 젖병의 내부로 공기가 유입되어 우유가 젖꼭지를 통하여 흘러나오게 되는 등의 문제점이 있었다.

발명이 이루고자 하는 기술적 과제

본 발명은 상기와 같은 문제점을 해결하기 위하여 안출한 것으로서, 젖병을 제작할 때 온도변환 수지와 함께 색상물질을 혼합하여 젖병을 제조함으로서 우유의 온도를 알 수 있도록 한 것이다.

또한 본 발명은 뚜껑의 중앙부 일측에는 공기 유입공을 형성하되 그 공기 유입공을 에어밸브가 밀폐되도록 설치하여 유아가 빨아먹는 힘에 의하여 밸브가 작동되도록 한 것으로서, 젖병의 내부에 일정한 압력을 유지할 수 있도록 하여서 된 것으로, 이하 본 발명을 첨부된 도면에 의하여 상세히 설명하면 다음과 같다.

발명의 구성 및 작용

젖꼭지부, 젖병, 젖병 내부에 설치되는 제1 내부 흡입관, 공기 유입 에어밸브, 젖병과 공기 유입 에어밸브를 결합시키는 연결장치, 우유 흡입관의 상단부로 부터 젖꼭지부까지 연결되는 외부 연결관이 설치된 것에 있어서,

젖병(1)을 제조할 때 PC, PEL, COP등의 수지95 ~99%에 온도변환 색상물질(엔지니어링 플라스틱 컴파운드) 1 ~ 5%수지를 혼합하여 제조하고, 고정캡(2)의 일 측에는 공기흡입공(3)을 형성하되 그 일측에 연질의 판체로 이루어진 에어밸브(4)를 설치하여 공기의 유입을 차단할 수 있도록 하되 내부의 압력에 의하여 젖혀지도록 하고, 뚜껑(5)의 일측에는 절개부(6)를 형성하여 흡입관(7)이 외부로 노출될 수 있게 하며, 뚜껑(5)의 내부 상측벽면에는 수개의 고정돌기(9)를 돌출 형성하고, 고정캡(2)의 일측에는 목걸이용 고리 홈(8)를 설치하여서 된 것으로, 미설명 부호 10은 손잡이 11은 젖꼭지, 12는 흡입관, 13은 목걸이용 줄을 보인 것이다.

상기와 같이 된 본 발명의 작동을 설명하면 다음과 같다.

온도변환 색상물질(엔지니어링 플라스틱 컴파운드) 1 ~ 5%를 혼합하여 젖병을 제조하고, 이 상태에서 젖병(1)의 내부에 우유를 넣게되면 우유의 온도에 의하여 젖병의 내부에 혼합되어 있는 색상 변환 물질에 의하여 젖병 자체의 색상이 변하게 된다.

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이때 색상물질은 온도의 변화에 의하여 여러 가지의 색상으로 변함으로서 우유가 식을 동안 젖병 자체가 여러 가지의 색상으로 변함으로서 부모가 우유의 온도를 눈으로 식별할 수가 있는 것이다.

상기와 같은 상태에서 젖꼭지를 통하여 유아가 우유를 흡입할 경우 젖병(1)의 내부에 있던 우유가 흡입관을 통하여 흘러가게 되고, 이와 동시에 젖병의 내부는 우유가 빠져나간 만큼 진공이 형성하게 된다.

이와 같이 진공이 형성되면 고정캡(2)의 일측에 설치되어 있는 에어밸브(4)가 작동하여 공기흡입공(3)을 통하여 공기를 내부로 유입하게 된다.

즉 젖병(1)의 내부에 진공이 발생함과 동시에 연질의 판체로 이루어져 있는 에어밸브(4)가 진공의 힘에 의하여 젖병(1)의 내부로 젖혀지게 되고, 이와 동시에 공기흡입공(3)을 통하여 젖병(1)의 내부로 공기가 유입하게 되는 것이다.

한편 유아를 안은 상태에서 우유를 먹이고자 할 경우 젖병(1)의 고정캡(2) 일측에 형성되어 있는 고리 홈(8)에 목걸이 줄을 고정하고, 이 상태에서 줄을 부모의 목에 건 다음 젖꼭지를 유아에게 물리면 되는 것이다.

이때 젖꼭지는 별도의 흡입관으로 젖병과 연결되어 있기 때문에 젖병의 위치와는 상관없이 사용할 수가 있는 것이다.

한편 외부로 외출할 경우 젖꼭지를 뚜껑(5)의 일측에 형성되어 있는 절개부(6)를 통하여 외부로 노출되게 한 다음 뚜껑(5)을 젖병(1)의 상부에 체결하여 고정하고, 이 상태에서 젖꼭지를 유아에게 물리면 되는 것이다.

이때 흡입관을 고정캡(2)의 중앙부 상측과 젖꼭지에 연결되어 있기 때문에 뚜껑(5)의 절개부(6)를 통하여 외측으로 인출됨으로 젖꼭지를 뚜껑(5)을 닫은 상태에서도 사용할 수가 있는 것이다.

한편 젖꼭지를 사용하지 않을 경우 뚜껑(5)의 내부에 돌출 형성되어 있는 고정돌기(9)의 상측으로 차단판을 밀어 넣으면 차단판이 고정돌기의 상측에 걸려 고정하게 된다.

이때 차단판을 수지로 형성되어 있기 때문에 차단판에 형성되어 있는 홈부분을 통하여 손가락을 상측으로 집어넣어 당기게되면 차단판이 휘어지면서 간단하게 인출하게 되는 것이다.

한편 본 발명에 설치되는 공기흡용 밸브는 도 6a, b에서와 같이 캔이나 팩으로 이루어진 각종 음료수 용기나 도 7a, b에서와 같이 석유나 엔진 오일 첨가제 등을 넣을 수 있는 기름통에 이용하여도 바람직하다.

발명의 효과

이상과 같이 본 발명은 젖병을 제작할 때 수지와 함께 온도 변환 색상물질을 혼합하여 젖병을 제조하고, 뚜껑의 중앙부 일측에는 공기 유입공을 형성하되 그 공기 유입공을 연질의 판체로 이루어진 에어밸브가 밀폐되도록 설치하여서 된 것으로서, 구조가 간단하여 제작이 용이하고, 우유의 온도에 의하여 젖병의 색상이 다양하게 변화됨으로써, 유아가 실증을 느끼게 되는 것을 방지할 수가 있으며, 또한 젖병에 고리부가 형성되어 있기 때문에 젖병을 부모의 목에 걸고 우유를 먹일 수가 있기 때문에 외부에서 걸어가면서도 사용을 할 수가 있으며, 유아가 빨아먹는 힘에 의하여 밸브가 작동됨으로서 젖병의 내부에 일정한 압력을 유지할 수가 있는 것이다.

이상에서와 같이 본 발명은 기재된 구체 예에 대해서만 상세히 설명되었지만 본 발명의 기술 사상 범위 내에서 다양한 변형 및 수정이 가능함은 당업자에게 있어서 명백한 것이며, 이러한 변형 및 수정이 첨부된 특허청구범위에 속함은 당연한 것이다.

(57) 청구의 범위

청구항 1.

젖꼭지부, 젖병, 젖병 내부에 설치되는 제1 내부 흡입관, 공기 유입 밸브, 젖병과 공기 유입 밸브를 결합시키는 연결장치, 우유 흡입관의 상단부로 부터 젖꼭지부까지 연결되는 외부 연결관이 설치된 것에 있어서,

젖병(1)을 제조할 때 PC, PEL, COP등의 수지에 온도변환 색상물질을 혼합하여 제조하고, 고정캡(2)의 일측에는 공기흡입공(3)을 형성하되 그 일측에 연질의 판체로 이루어진 밸브(4)를 설치하여 공기의 유입을 차단할 수 있도록 하되 내부의 압력에 의하여 젖혀지도록 하고, 뚜껑(5)의 일측에는 절개부(6)를 형성하여 흡입관(7)이 외부로 노출될 수 있게 하며, 뚜껑(5)의 내부 상측벽면에는 수개의 고정돌기(9)를 돌출 형성하고, 고정캡(2)의 일측에는 목걸이용 고리(8)를 설치하여서 된 것을 특징으로 하는 온도에 의하여 색상이 변하는 유아용 젖병.

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청구항 2.
제 1 항에 있어서, PC, PEL, COP등의 수지95 ~ 99%에 온도변환 색상물질(엔지니어링 플라스틱 컴파운드) 1 ~ 5%를 혼합하여서 된 것을 특징으로 하는 온도에 의하여 색상이 변하는 유아용 젖병.

청구항 3.
고정캡(2)의 일측에는 공기흡입공(3)을 형성하되 그 일측에 연질의 판체로 이루어진 밸브(4)를 설치하여 공기의 유입을 차단할 수 있도록 하되 내부의 압력에 의하여 젖혀지도록 하여서 된 것을 특징으로 하는 온도에 의하여 색상이 변하는 유 아용 젖병의 공기흡입밸브.

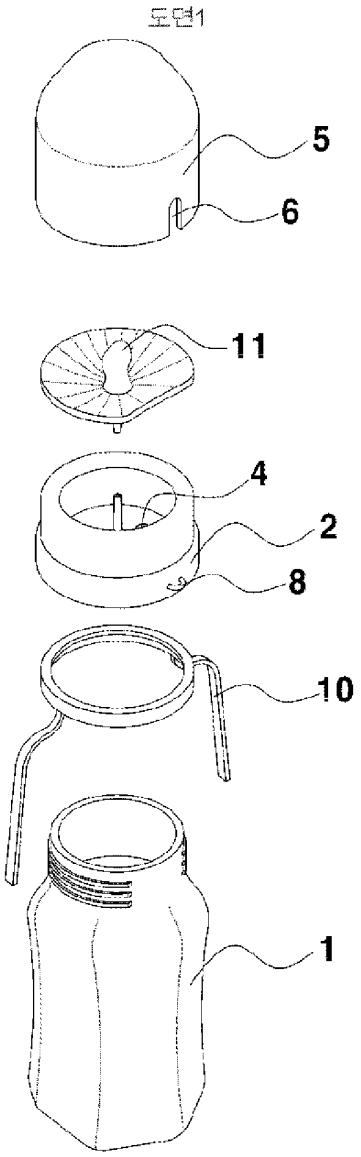
청구항 4.
밸브를 캔이나 팩으로 이루어진 음료용기의 상단부에 설치하여서 된 것을 특징으로 하는 온도에 의하여 색상이 변하는 유아용 젖병의 공기흡입밸브.

청구항 5.
제 4 항에 있어서, 밸브를 기름통의 상부 일측에 설치하여서 된 것을 특징으로 하는 온도에 의하여 색상이 변하는 유아용 젖병의 공기흡입밸브.

도면

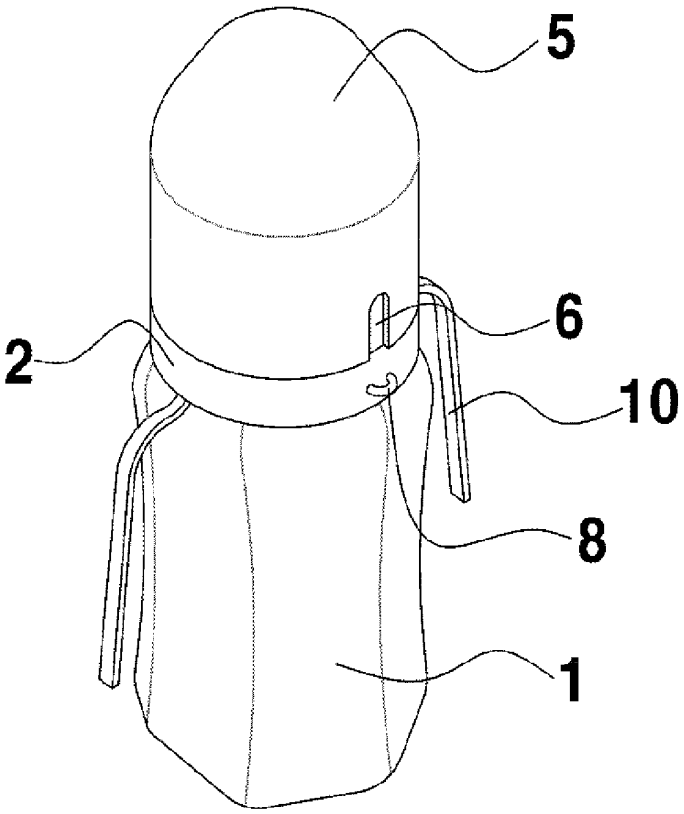
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도면1

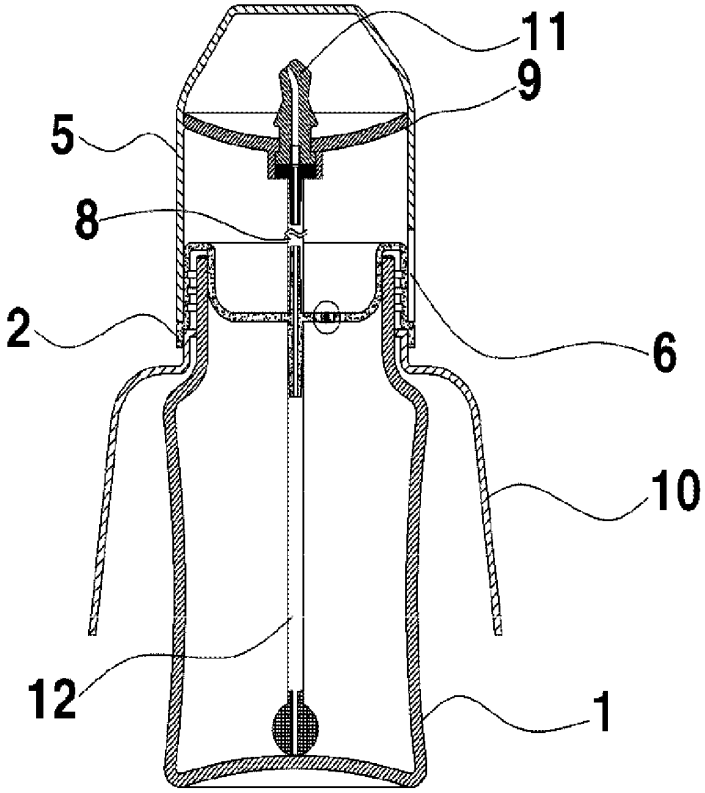


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도면2

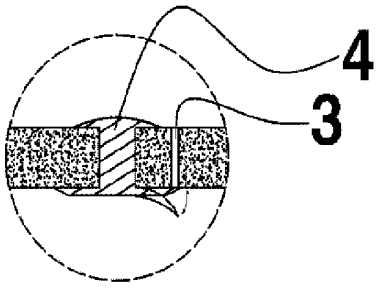


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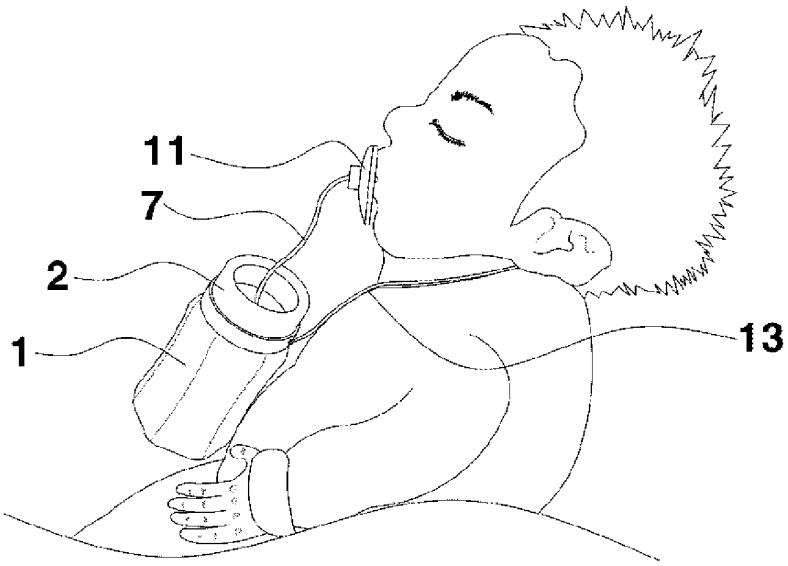


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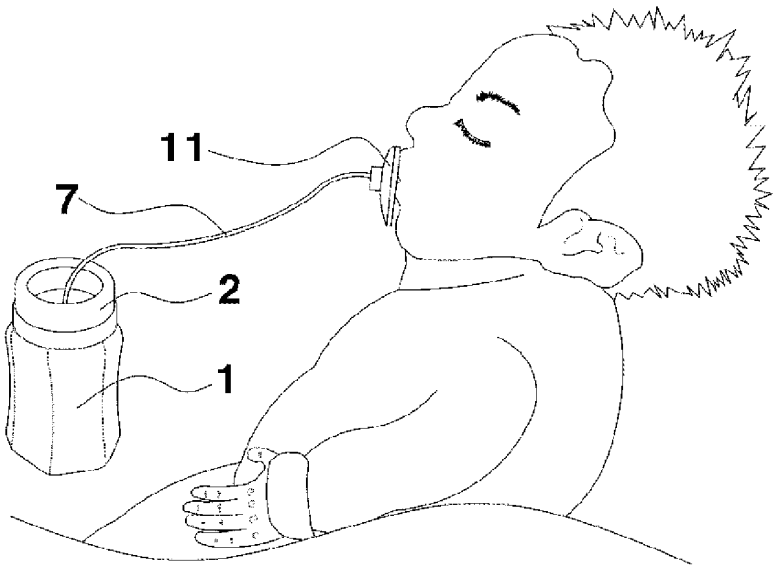
도면4



도면5a

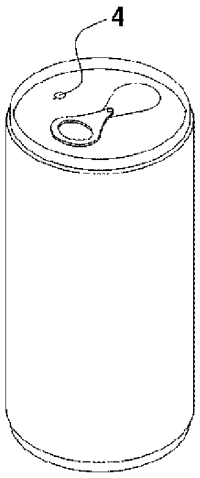


도면5b

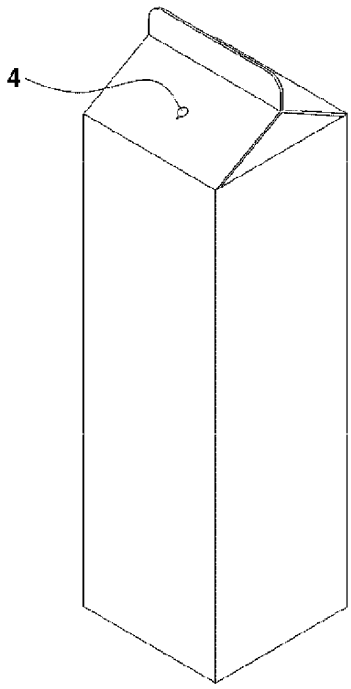


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도면6a

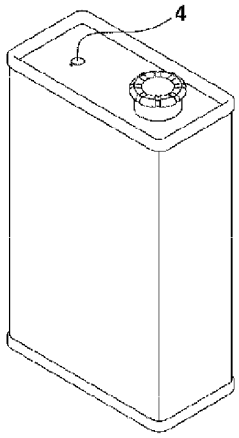


도면6b

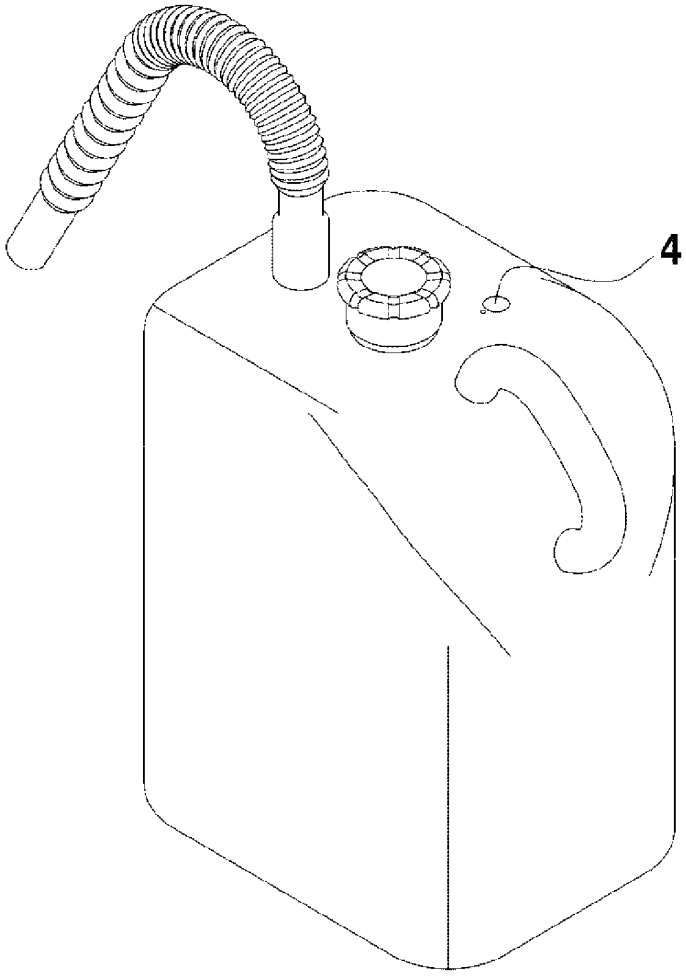


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도면7a



도면7b



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發明 新型 專利說明書

一、發明創作名稱	中文	奶瓶進氣輔助孔道之構造
	英文	
二、發明創作人	姓名	許　黎　泰
	國籍（國籍）	中　華　民　國
	住、居所	高雄縣大寮鄉大發工業區大有二街九號
三、申請人	姓名（名稱）	會展實業股份有限公司
	國籍（國籍）	中　華　民　國
	住、居所（事務所）	高雄縣大寮鄉大發工業區大有二街九號
	代表人姓名	許　忠　義

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Nanobebe US Inc., Ex. 1004, Page 173
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五、創作說明（1）

本案創作係有關於一種奶瓶進氣輔助孔道之構造，尤指一種可輔助奶嘴進氣孔，以提供進氣更為順暢，進而達到令奶水之吸食得以更為流暢之奶瓶進氣輔助孔道構造者。

按，習用之奶瓶進氣孔均直接設於奶嘴上，而由於奶嘴乃係由一種矽膠材質所成型製成，該矽膠則因材質柔韌，致使設於奶嘴上之進氣孔常因奶嘴受較大幼兒之非正確使用吸吮，或受其他外力之擠壓變形，而造成進氣孔之非適時啓閉，進而產生奶水之自進氣孔滲漏流出缺失發生，或者將造成進氣孔之不能適時啓閉，而產生空氣無法進入奶瓶內，進而造成吸食奶水之不流暢者。

為解決上述之缺失，雖然有第七五二一一〇四八號「奶瓶之結構改良」專利案與第七八二〇〇五八一號「具有氣閥之奶瓶」專利案被設計而出，並經核准專利在案，惟查，該兩專利之進氣孔均設於奶瓶之瓶底，則除了構造均為繁複，而對於元件較無拆組觀念之家庭主婦而言，即有造成清洗不便之缺失發生外，尤其，進氣孔設於瓶底，其於使用時很容易受未溶化之奶粉糰、較粗之麥粉顆粒、果粒所沈澱阻塞或卡置，以致發生奶水逆流滲漏或失去進氣作用之缺失。

本案創作之目的，即在於改進上述之缺失，以提供一種令奶瓶之進氣更為順暢之奶瓶進氣輔助孔道構造者。

（請先閱讀背面之注意事項再填寫本頁）

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五、創作說明（ 2）

有關於本案創作為達到創作目的所運用之技術手段及其構造，茲謹再配合附圖所示之實施例，詳細說明如下：

如第一圖所示，本案創作主要係於奶嘴 1 之底座 2 旋合於奶瓶 3 上時，於瓶口 31 上墊置一圓形座片 4 所構成。

其中，該圓形座片 4（請同時參閱第二圖）之中央形成一貫穿孔 41，並向上延伸有一凸牆 42，且該圓形座片 4 上設有一環形凹槽 43，而於凹槽 43 之適當位置向下延伸有一管柱 44，該管柱 44 上則套設有一軟質套管 45（例如由矽膠、橡膠或軟質塑膠等材質所製成），並於套管 45 上設有切縫 46，該切縫 46 可為一字形或為十字型，且經實驗結果發現該切縫 46 以設於套管 45 靠近瓶壁一側之管壁上，並成向上傾斜設置為最佳者；又，於圓形座片 4 之外緣設有一水平延伸之凸唇 47，並於凸唇 47 上設有若干凹槽 48 與環形凹槽 43 貫通。

於使用時，當圓形座片 4 藉由奶嘴 1 之底座 2 旋合於奶瓶 3 之瓶口 31 後，該圓形座片 4 之凸唇 47 恰為被墊置於瓶口 31 上且凸牆 42 並可貼密於奶嘴 1 之內側壁上，則當奶瓶 3 內之空氣壓力小於瓶外之大氣壓力時，該套管 45 之切縫 46 即會自行開啓，同時令瓶外之空氣依循底座 2 與瓶口 31 之旋合螺紋 21、32 間隙（如第三圖所示），再經凹槽 48、環形凹槽 43、管柱 44 而自啓閉之切縫 46

（請先閱讀背面之注意事項再填寫本頁）

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五、創作說明（ 3

進入奶瓶3內，以平衡奶瓶3之內、外空氣壓力差，進而可提供奶水更順暢的被吸食者。

從以上之所述及附圖所示之實施例中可知，由於本案創作之圖形座片4係為一單獨之元件而設置於瓶口31上，因此其除了在使用上不會因奶嘴1受較大幼兒之非正確使用吸吮，或奶嘴1受其他外力之擠壓變形而連動變形，而可防止套管45之切縫自行啓開，進而可杜絕奶水之滲漏缺失發生外，且其構造簡單、按裝容易，而可提供方便拆組清洗使用，以符合奶瓶之衛生使用設計原則，再由於套管45係提高設於瓶口31位置，並成向上傾斜設於靠近瓶壁之管壁上，因此可防止未溶化之奶粉糰、較粗之麥粉顆粒與果粒因沈澱而阻塞或卡置於切縫46或空氣對流凹槽48、環形凹環43內，而可達到防止進氣之不順及奶水滲流而出之缺失發生者。

由是，本案創作所運用之技術手段及其所構成之空間形態確可達到創作之目的，而提供奶瓶之進氣更為順暢，使用上具有顯著之實用性，且確為創作人所首先創作，則本案創作誠已符合新型專利之「首先創作」與「實用」要件，爰依法提出專利申請，並祈賜專利為禱。

圖式簡單說明：

第一圖：本案創作之立體分解構造圖。

第二圖：本案創作之詳細剖視構造圖及其使用示意圖。

第三圖：本案創作之空氣流道示意圖。

（請先閱讀背面之注意事項再填寫本頁）

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四、中文創作摘要（創作之名稱：　　）

奶瓶進氣輔助孔道之構造

本案創作係為一種奶瓶進氣輔助孔道之構造，其係藉由奶嘴之底座旋合於奶瓶上時，於瓶口上墊置有一圓形座片所構成，其中，藉由該圓形座片上設有一軟質套管所形成之單向進氣閥門，令奶瓶內、外產生空氣壓力差時，該閥門得以自行啓開，使空氣順暢進入奶瓶內，並使奶水被流暢的吸食，且藉由圓形座片之成單獨元件設計，令軟質套管上之閥門不會受外力之連動而產生變形之缺失發生，以避免閥門之非適時開啓與關閉，而產生奶水滲漏或吸食不順缺失發生者。

英文創作摘要（創作之名稱：　　）

附註：本案已向　　國（地區）申請專利，申請日期：　　案號：

（請先閱讀背面之注意事項再填寫本頁各欄）

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A7
B7
C7
D7

六、申請專利範圍

1.一種奶瓶進氣輔助孔道之構造，其係藉由奶嘴之底座旋合於奶瓶上時，於瓶口上墊置有一圖形座片所構成，而其特徵乃在於：該圖形座片之中央形成一貫穿孔，並向上延伸有一凸牆，且設有一環形凹環，而於環形凹槽之下方延伸有管柱，該管柱上則套設有一軟質套管，並於該套管上設有切縫，又於圖形座片之外緣設有一水平延伸之凹唇，並於凹唇上設有若干凹槽與環形凹槽相通，嗣當奶瓶內之空氣壓力小於瓶外大氣壓力時，套管上之切縫即可自行啓閉，以令空氣得以依循凸唇上之凹槽、環形凹槽、管柱與切縫進入瓶體內，以達到提供進氣更為順暢，進而令奶水之吸食更為流暢者。

2.依上述申請專利範圍第1項所述之奶瓶進氣輔助孔道之構造，其中，該套管上設之切縫以向上傾斜設於靠近瓶壁之管壁上為最佳者。

（請先閱讀背面之注意事項再填寫本頁）

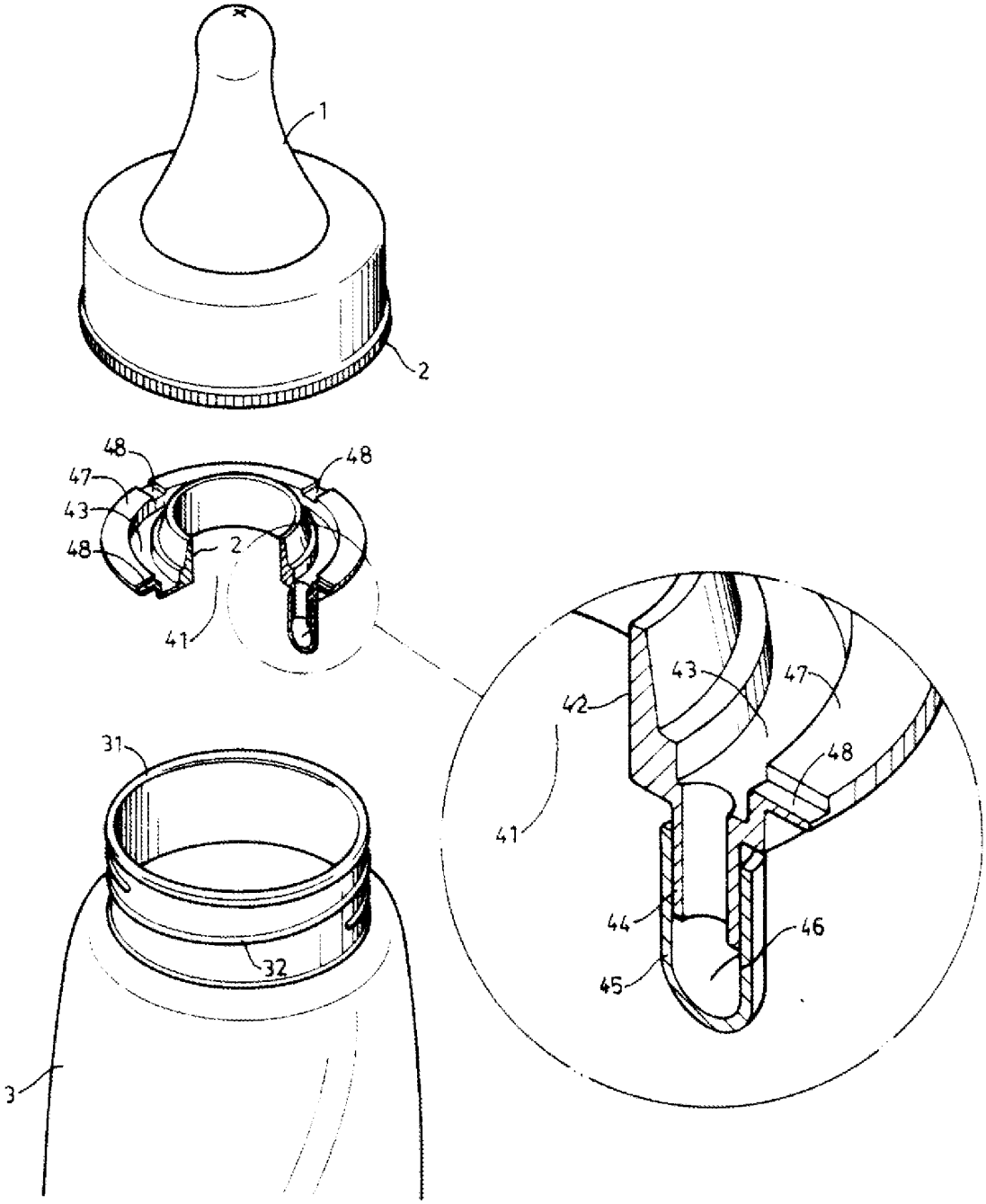
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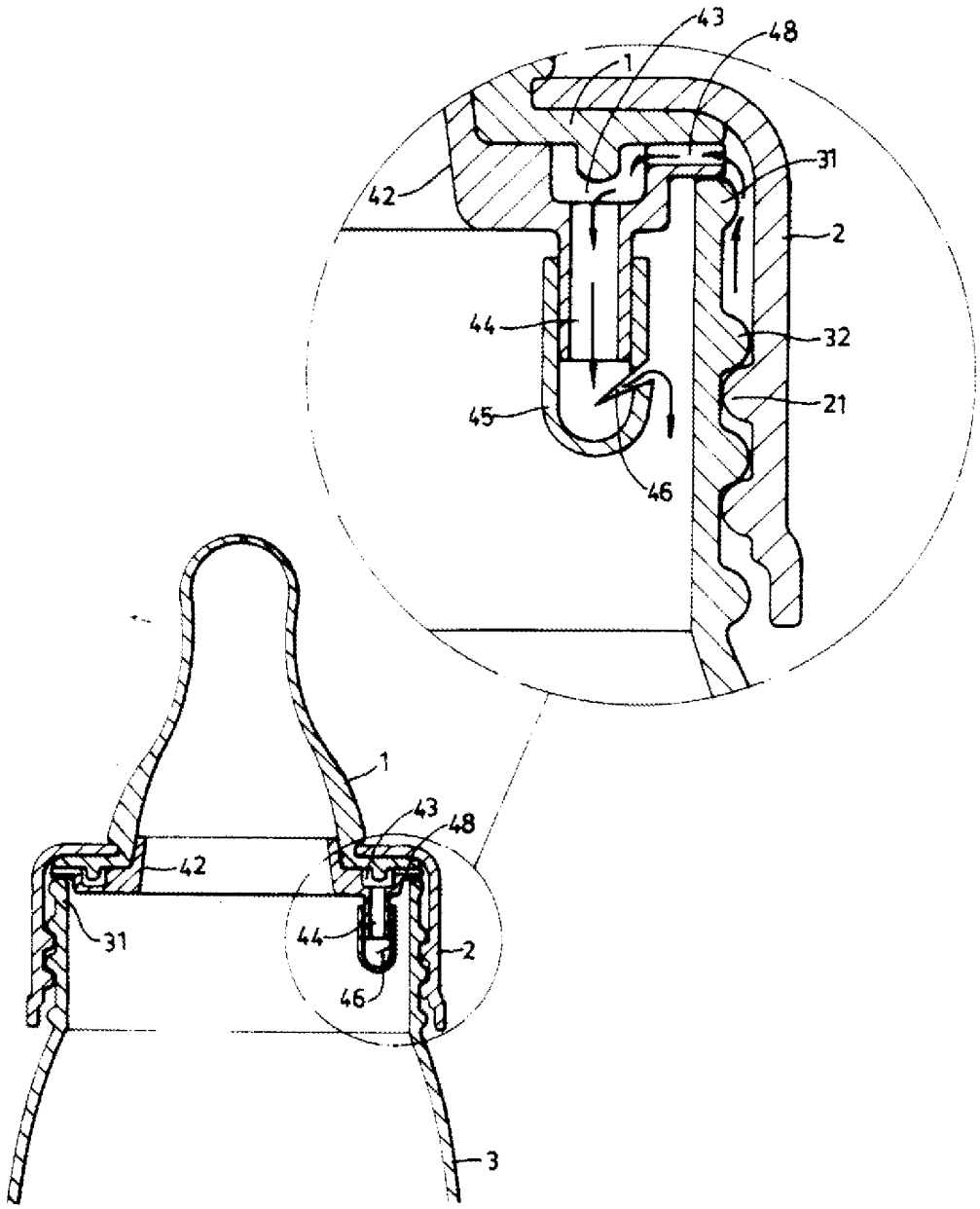
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第 1 圖

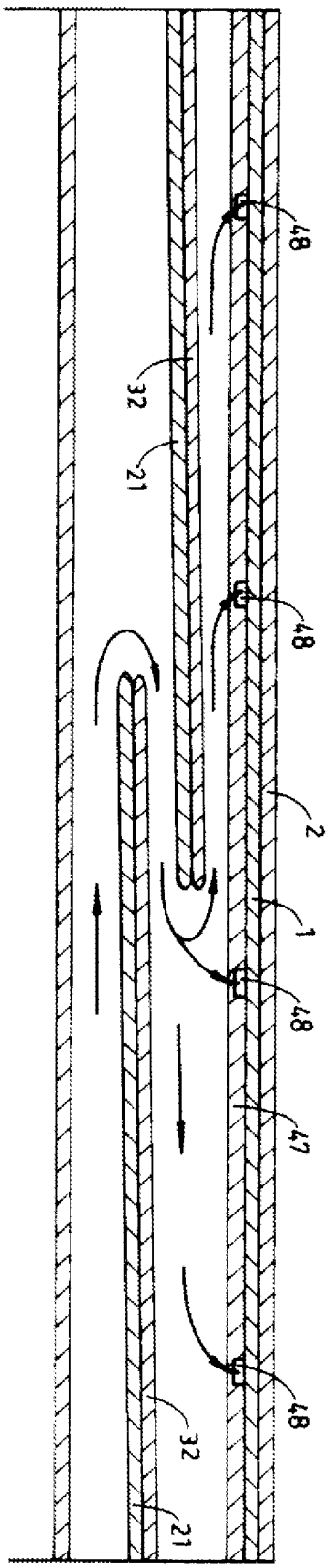
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第 2 圖

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第 3 図

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TotalPatent One®

TWM242210U

Status:

Ceased

Abstract:

The creation of the anti-air expansion improved nipple structure, cutting the nipple are integrally formed with, the bottom edge and the pushing collects ; characterized in that: the bottom edge of the button with the contact of the face of the bottle is provided with a plurality of convex bars, and a convex strip and the strips can be formed between the air intake passage for air convection; by the design, in order to really reduce the intake air amount in the bottle, in order to reach the milk at the same time prevent the baby suck air into the abdomen of the phenomenon of air expansion; and because the design can make the air intake to reduce in (but does not affect the infant to suck mainly smooth degree), can correspond to control the velocity of flow of the fluid in the feeding bottle, and stable flow rate, in order to prevent the baby milk is choking or choked of the possible, with a high use safety, nipple structure better practicability.

Application/Filing Date:

19-11-2003

Application Number:

TW092220433

Priority Date:

19-11-2003

Description:

Description of Element

The creative:

A... nipple

10... suction head

11... converging part

12... the bottom edge of the button,

13... strips

14... air intake channel

B... feeding bottle

20... bottle cap

21... the top edge of the bottle

Known:

40... nipple body

41... ring

42... air inlet valve

43... air inlet

44... valve

Description of Drawings

1st Figure is the structure of the three-dimensional map of the nipple.

2nd Figure is the plan section view of the nipple structure.

3rd Figure is the exploded view of the feeder structure.

4th Figure is the schematic diagram of the structure, the use state.

5th Figure is nipple structure of the well known three-dimensional Figure.

6th Figure is of the well known sectional view of the nipple structure.

[Invention belongs to the technical field]

The invasive as an anti-air expansion improved nipple structure, in particular to a prevent the baby for a long time with a nipple structure and design of the air expansion.

[Prior art]

Select \"nipple\" to provide baby suck fluid food product. Such as the 5th, six as shown, is a known nipple structure cut-away views of the stereogram and structure, the nipple body 40 of the ring 41 is provided with an integrally formed on the one-way air intake provides air the air inlet valve 42, the air inlet valve 42 hollow center in an appropriate length, the upper end of the ring 41 to form a through the air inlet 43, and its bottom is a shower of semi-spherical, and the bottom of the air intake valve with a sharp edge cutting with a valve 44 are.

Such design of the nipple, to the baby suck feeding bottle in the food in the fluid in the, nipple body 40 by direct compression and deformation, air is entering the perforation at the, ring 41 is arranged on the air inlet 43 directly in an appropriate length the air inlet valve of a hollow body 42 in and enters the milk, infant be smoothly suck liquid in the bottle.

But because the air inlet 43 is connected with a proper length in the tube body, and can be directly to the hollow pipe end splits supposes of the air inlet valve 42, with the smooth a

passage, the air can in very easily enter the milk bottle, although it can reach the pressure in the the baby, however, if large intake air amount of the air, the food relative to the outflow of the fluid in increased equivalent also, when the baby is easy to cause the burden of use, and have been of the possibility of milk is choking or choked. Also the air intake quantity is large, the air in the liquid to produce a large number of bubble, at the same time suck baby in of a large number of bubble suction, is easy to cause the infant abdomen inflation.

[The purpose of the creation]

In view of this, the known against the nipple structure is easily caused in the various use on perfect difficult is missing and, by long-term study of time in this case is the improved, the period of efficacy of a good can be reached, in order to comply with the needs of the majority of users.

The anti-air expansion is a improved nipple structure, cutting the nipple are integrally formed with, the bottom edge and the pushing collects , silom convex at the bottom end of the suction head of a concavely collects , and the converging portion to the bottom edge of the button is provided with a ring; characterized in that: the bottom edge of the button with the contact of the face of the bottle is provided with a plurality of convex bars, and a convex strip and the strips can be formed between the air intake passage for air convection.

whence is , is the main purpose is to: provide an improved nipple structure for preventing air expansion, by the design, in order to really reduce the intake air amount in the bottle, in order to reach the milk at the same time prevent the baby suck suction excess air, and in order to prevent the baby's generating abdominal flatulence for the purpose.

Another purpose of the system is to: provide an improved nipple structure for preventing air expansion, by the design, in addition to the can be reduced in the air intake flow, thereby correspondingly control the velocity of flow of the fluid food in the bottle and flow, in order to prevent the infant is choking or choked in the possible.

[Embodiment]

First of all, please fit refer to 1st, b as shown, is the cut-away views of the stereogram and nipple structure, integrated with the nipple to form a hollow central A, silom convex the suction head 10 a location grooves are set on the bottom end of the collects 11, the collects 11 can be used for milk bottle cap 20 corresponding to the fastening, device, the collects 11 is provided with a time delay corresponding to the bottom end of the relatively large diameter of the bottom edge of the button 12 ; characterized in that: the bottom edge of the button 12 the top of the milk bottle B 21 corresponding to a plurality of convex bars 13 is arranged on the contact surface, the protruding strip 13 and the convex strip 13 formed between the air intake channel 14.

When in assembling, the bottle nipple A the 20 corresponding to the assembling (shown 3rd), the collects 11 clamped the bottle cap 20 in the central perforation. When the bottle cap 20 of good B top edge of the bottle to bottle 21 when, due to the nipple A to the soft material, the bottom edge of the button 12 will completely the top of the milk bottle B 21 against the.

Such as 4th as shown, is the schematic using state structure, when an infant sucks the nipple when A, nipple A by direct compression and deformation, air comprises a bottle cap 20 A collects the nipple 11 enters the clearance between the, 13 by the strips 13 with the raised strips formed between the air intake passage 14 into the feeding bottle in B, baby be smoothly suck liquid in the bottle.

When the infant to suck the fluid in when the food is milk, milk bottle B fluid for the same direction of flow (to the infant oral direction), and the bottom edge of the button 12 the top of the milk bottle B 21 and because the pressure between the corresponding to the change of the attraction, a plurality of convex bars 13 by the setting, the bottom edge of the button 12 the top of the milk bottle B 21 corresponding to adsorption, there are still raised line 13 and the convex strip 13 formed between the air intake channel 14 can be used for gas flows into the bottle. By this creative design, can be effective to reduce the intake air amount in the milk bottle B, in order to reach the milk at the same time prevent the baby suck suction excess air, and then reach the abdominal flatulence effect produced prevent the infant.

And because in the creation, appartus A the bottom edge of the bottom of the nipple 12 of the ribs 13 and the convex strip 13 will be formed by several air admission channel 14, can provide gas convection, and the result of this is to reduce the intake air amount in B (but does not affect the infant to suck mainly smooth degree), can be correspondingly controls the feeding bottle B the velocity of flow of the fluid in, and the stability of the flow, in order to prevent the baby milk is choking or choked of the possible, with a high use safety, nipple structure better practicability.

the synthesis states , provision of the creative implementation can achieve the expected efficacy of use, and the specific structure of the same, not only has not been reflected in the same type of products in, has not yet disclosed also in the application of the former, Makoto has been completely in accordance with the provisions of the Patent, by model Patent applications whence legally , urge earnestly request your review, and kindly granting Patent, the am [...].

However, what has been described above, is only the a preferred embodiment, when not limited to the scope of the implementation of the creation, according to the all creative Patent application range and creation of the content specification equivalent variation and modification made, should still belong to the scope of coverage of the Patent.

The creative for connecting the above-mentioned purpose, the adopted technological means and other effects of the, to take but a preferred practical embodiment, and the-schema described as follows, so that review members is easier to understand the generating:

Description of Drawings

1st Figure is the structure of the three-dimensional map of the nipple.

2nd Figure is the plan section view of the nipple structure.

3rd Figure is the exploded view of the feeder structure.

4th Figure is the schematic diagram of the structure, the use state.

5th Figure is nipple structure of the well known three-dimensional Figure.

6th Figure is of the well known sectional view of the nipple structure.

Note the main component symbols

The creative:

A... nipple

10... suction head

11... converging part

12... the bottom edge of the button,

13... strips

14... air intake channel

B... feeding bottle

20... bottle cap

21... the top edge of the bottle

Known:

40... nipple body

41... ring

42... air inlet valve

43... air inlet

44... valve

Designated representative map

A... nipple

13... strips

14... air intake channel

B... feeding bottle

20... bottle cap

Normalized Assignee:

Standardized Assignee:

YANG FENG HUEI - Taiwan, Republic of China (R.O.C.), TW

Original Assignee:

YANG FENG-HUEI - Taiwan, Republic of China (R.O.C.), TW

Current Assignee:

YANG FENG-HUEI - TW
楊鋒輝 - 臺南市東區東門路二段二六一號

Attorney/Registered Agent:

Authority:

TW

Backward Patent Citations (0):

Forward Patent Citations (0):

Claims:

Claim 1: 1. An anti-air expansion improved nipple structure, the nipple soft transparent colloid material cutting integrally formed with, the bottom edge and the pushing collects , silom convex at the bottom end of the suction head of a concavely collects , and the converging portion is provided with a ring to the bottom edge of the button, the button with the contact of the bottom edge of the bottle is provided with a plurality of convex bars, and a convex strip and the strips can be formed between an air inlet for air convection chlorine gas channel.

Claim 2: 2. As the 1st range of Patent application \"improved nipple structure inflatable-proof\"; wherein: the raised lines and the intake passage is set the length of the can be done with an appropriate capacity change.

Independent Claims:

First Claim:

Claim 1: 1. An anti-air expansion improved nipple structure, the nipple soft transparent colloid material cutting integrally formed with, the bottom edge and the pushing collects , silom convex at the bottom end of the suction head of a concavely collects , and the converging portion is provided with a ring to the bottom edge of the button, the button with the contact of the bottom edge of the bottle is provided with a plurality of convex bars, and a convex strip and the strips can be formed between an air inlet for air convection chlorine gas channel.

IPC:

7A 61J 11/02 A
A61J11 / 02

USPC:

Designated States:

Family:

Domestic	Main	Complete	Extended
TWM242210U	TWM242210U	TWM242210U	TWM242210U

Inventor:

YANG FENG-HUEI - Taiwan, Republic of China (R.O.C.), TW

Legal Status(INPADOC):

2010-06-21, MM4K, ANNULMENT OR LAPSE OF A UTILITY MODEL DUE TO NON-PAYMENT OF FEES, -, C

Legal Status(Post Issuance):

Legal Status(Standardized):

Status:

Event	Date	Description
Filed	2003-11-19	FILED
Granted	2004-09-01	GRANTED
Ceased	2010-06-21	ANNULMENT OR LAPSE OF A UTILITY MODEL DUE TO NON-PAYMENT OF FEES

Ownership:

From Date	To Date	Original Assignee	Standardized Assignee	Normalized Assignee
2003-11-19		YANG FENG-HUEI	YANG FENG HUEI	
2003-11-19		楊鋒輝	楊鋒輝	

Payment Status:

Date	Status	Event Code	Description
2010-06-21	Fee not paid	MM4K	ANNULMENT OR LAPSE OF A UTILITY MODEL DUE TO NON-PAYMENT OF FEES

Opposition:

Miscellaneous:

PCT Application:

/

PCT Publication:

/

Priority Number(s):

TW092220433

Publication Date:

01-09-2004

Title:

Improved structure of nipple capable of preventing formation of air pocket

Examiner:

US Related Applications:

PDF Link:

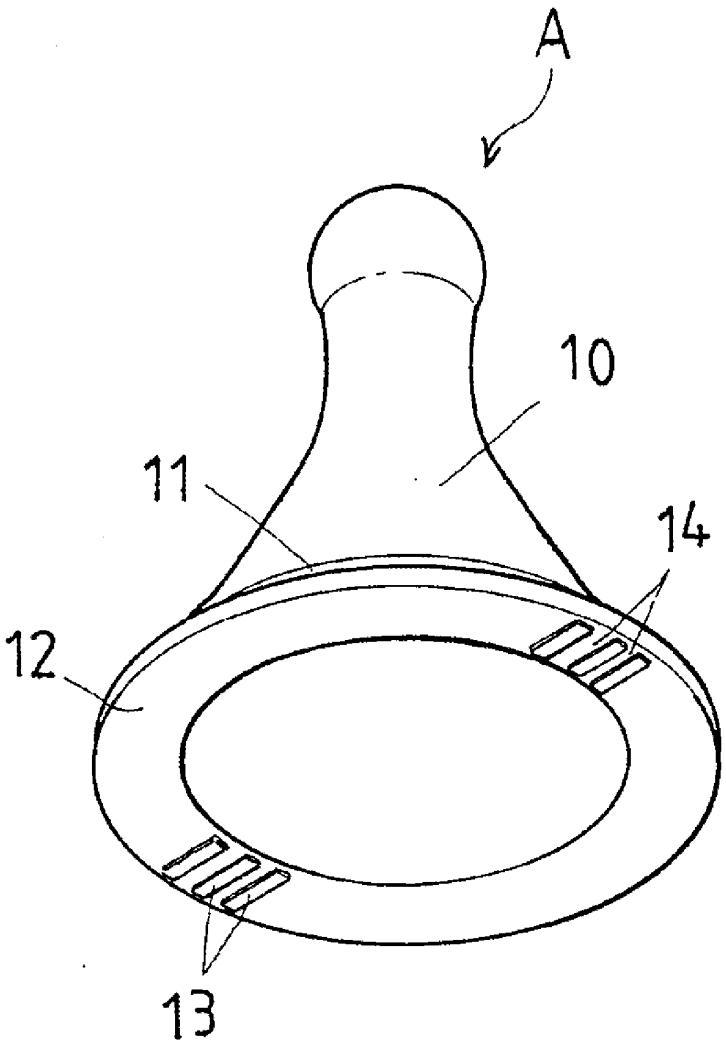
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Annotation:

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公告本

申請日期： 92-11-19	IPC分類 A61J 11/02
申請案號： 92220433	

(以上各欄由本局填註)

新型專利說明書 M242210

一、新型名稱	中文	防氣脹奶嘴結構改良
	英文	
二、創作人（共1人）	姓名（中文）	1. 楊鋒輝
	姓名（英文）	1.
	國籍（中英文）	1. 中華民國 TW
	住居所（中文）	1. 台南市東門路二段261號
	住居所（英文）	1.
三、申請人（共1人）	名稱或姓名（中文）	1. 楊鋒輝
	名稱或姓名（英文）	1.
	國籍（中英文）	1. 中華民國 TW
	住居所（營業所）（中文）	1. 台南市東門路二段261號 （本地址與前向貴局申請者不同）
	住居所（營業所）（英文）	1.
	代表人（中文）	1.
	代表人（英文）	1.

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一、本案已向

國家(地區)申請專利	申請日期	案號	主張專利法第一百零五條準用第二十四條第一項優先權
無			

二、□主張專利法第一百零五條準用第二十五條之一第一項優先權:

申請案號:

無

日期:

三、主張本案係符合專利法第九十八條第一項□第一款但書或□第二款但書規定之期間

日期:

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四、創作說明（1）

【發明所屬之技術領域】

本創作為一種防氣脹奶嘴結構改良，尤指一種具防止嬰兒於長時間吸吮而產生氣脹之奶嘴結構設計。

【先前技術】

『奶嘴』係以提供嬰兒便於吸食流質食物之產物。如第五、六圖所示，係為習知奶嘴結構之立體圖及結構剖視圖，該奶嘴本體４０之環翼４１上一體成型而設有一提供空氣單向進氣之進氣閥４２，該進氣閥４２概呈一適當長度之中空管體，其上端形成一貫通環翼４１之進氣口４３，而其底端為半圓球形之封閉面，並於進氣閥之底端以鋒利之刀刃剖切有一閥門４４者。

而如此種設計之奶嘴，於嬰兒吸食奶瓶中的流質食物時，奶嘴本體４０受到直接的壓迫而變形，空氣由奶瓶蓋中央處之穿孔進入，再由環翼４１上所設之進氣口４３直接通過呈一適當長度之中空管體的進氣閥４２而進入奶瓶中，嬰兒即能順利的吸食瓶中的流質食物。

但因該進氣口４３連通一適當長度之中空管體後，並直接可通往中空管體末端所剖設之進氣閥４２，此一通路順暢無比，空氣可以很容易的進入奶瓶中，雖可達成保持奶瓶中的壓力，但若空氣的進氣量大，相對的奶瓶中流質食物的流出量亦等量增加，很容易造成嬰兒吸食時的負擔，並有被多量的牛奶嗆著或嗆鼻的可能。又進氣量大，空氣於流質食物中產生大量的泡泡，嬰兒於吸食之同時將大

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四、創作說明（2）

量的泡泡吸入，很容易造成嬰兒腹脹氣的毛病。

【本創作之目的】

有鑑於此，本創作係針對習知奶嘴結構中所容易造成種種之使用上缺失及難盡完美之處，經長期時間之研究改良後係創本案，期能達成一良好使用功效，以符合廣大使用者之需求。

本創作係為一種防氣脹奶嘴結構改良，該奶嘴一體成型有吸吮頭、收束部及頂掣底緣，隆凸狀之吸吮頭底端凹設有一收束部，而該收束部對應設有一環頂掣底緣；其特徵在於：該頂掣底緣與奶瓶瓶口接觸之該面對應設有若干凸條，而凸條與凸條間形成一可供空氣對流之進氣通道。

爰是，本創作之主要目的係在於：提供一種防氣脹奶嘴結構改良，藉本創作之設計，以確實降低進入奶瓶中之進氣量，以達成防止嬰兒吸食牛奶之同時吸入多餘的空氣，並以防止嬰兒產生腹部氣脹為目的。

本創作之另一目的係在於：提供一種防氣脹奶嘴結構改良，藉本創作之設計，除了可降低進入奶瓶中之進氣量外，藉此對應控制瓶中流體食物的流速及流量，以防止嬰兒發生嗆著或嗆鼻的可能。

【實施方式】

首先，請配合參閱第一、二圖所示，係為本創作奶嘴結構之立體圖及剖視圖，一體成型之奶嘴A中央形成中空

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四、創作說明（3）

狀，隆凸狀之吸吮頭１０底端部凹設有一收束部１１，該收束部１１可供奶瓶蓋２０對應卡掣、裝置，該收束部１１底端對應延設有一較大徑之頂掣底緣１２；其特徵在於：該頂掣底緣１２與奶瓶Ｂ瓶口頂緣２１對應接觸面上設有若干凸條１３，該凸條１３與凸條１３間形成進氣通道１４。

於組裝時，係將奶嘴Ａ與瓶蓋２０對應組裝（第三圖所示），該收束部１１則卡掣於瓶蓋２０中央穿孔中。當該瓶蓋２０對應螺設於奶瓶Ｂ瓶口頂緣２１時，因該奶嘴Ａ係以軟性材質所製，其頂掣底緣１２則會完全與奶瓶Ｂ瓶口頂緣２１頂靠。

如第四圖所示，係為本創作結構使用狀態示意圖，當嬰兒吸吮奶嘴Ａ時，奶嘴Ａ受到直接的壓迫而變形，空氣由瓶蓋２０與奶嘴Ａ收束部１１間之間隙進入，再由凸條１３與凸條１３間所形成之進氣通道１４進入奶瓶Ｂ中，嬰兒即能順利的吸食瓶中的流質食物。

當嬰兒吸食奶瓶中的流質食物時，奶瓶Ｂ流體之流向為同一方向（往嬰兒的口腔方向），且該頂掣底緣１２與奶瓶Ｂ瓶口頂緣２１間因壓力的變化而對應相吸，藉本創作若干凸條１３的設置，使該頂掣底緣１２與奶瓶Ｂ瓶口頂緣２１對應吸附時，仍有凸條１３與凸條１３間所形成

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四、創作說明（4）

之進氣通道１４可供氣體流入瓶中。藉本創作之設計，可有效的降低進入奶瓶Ｂ中之進氣量，以達成防止嬰兒吸食牛奶之同時吸入多餘的空氣，進而達成防止嬰兒產生腹部氣脹效果。

且因本創作中，奶嘴Ａ底部頂掣底緣１２所設之凸條１３與凸條１３會所形成數道進氣通道１４，可提供氣體對流，且因本創作可使進入奶瓶Ｂ中之進氣量降低（但並不影響嬰兒吸食的順暢程度為主），可對應控制奶瓶Ｂ中流體的流速、及流量的穩定性，以防止嬰兒被多量的牛奶噎著或嗆鼻的可能，實為一具使用安全性高、實用性佳之奶嘴結構。

綜合所述，本創作實施例確能達到所預期之使用功效，又其所揭露之具體構造，不僅未曾見諸於同類產品中，亦未曾公開於申請前，誠已完全符合專利法之規定與要求，爰依法提出新型專利之申請，懇請惠予審查，並賜准專利，則實感德便。

惟以上所述者，僅為本創作之較佳實施例，當不能以此限定本創作實施之範圍，即大凡依本創作申請專利範圍及創作說明書內容所作之等效變化與修飾，皆應仍屬本創作專利涵蓋之範圍內。

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圖式簡單說明

有關本創作為達上述目的，所採用之技術手段及其他功效，茲舉較佳可行實施例，並配合圖式說明如下，俾使審查委員更易於瞭解本創作之產生：

圖式之簡單說明

第一圖　係本創作奶嘴結構之立體圖。

第二圖　係本創作奶嘴結構之剖視圖。

第三圖　係本創作奶瓶結構之分解圖。

第四圖　係本創作結構使用狀態示意圖。

第五圖　係習知奶嘴結構之立體圖。

第六圖　係習知奶嘴結構之剖視圖。

圖號之簡單說明

本創作：

A	奶嘴	10	吸吮頭
11	收束部	12	頂掣底緣
13	凸條	14	進氣通道
B	奶瓶	20	瓶蓋
21	瓶口頂緣		

習知：

40	奶嘴本體	41	環翼
42	進氣閥	43	進氣口
44	閥門		

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四、中文創作摘要　（創作名稱：防氣脹奶嘴結構改良）

本創作係有關一種防氣脹奶嘴結構改良，該奶嘴一體成型有吸吮頭、收束部及頂掣底緣；其特徵在於：該頂掣底緣與奶瓶瓶口接觸之該面對應設有若干凸條，而凸條與凸條間形成一可供空氣對流之進氣通道；藉本創作之設計，以確實降低進入奶瓶中之進氣量，以達成防止嬰兒吸食牛奶之同時吸入多餘的空氣而產生腹部氣脹的現象；且因本創作之設計可使進入奶瓶中之進氣量降低（但並不影響嬰兒吸食的順暢程度為主），可對應控制奶瓶中流體的流速、及流量穩定，以防止嬰兒被多量的牛奶嗆著或嗆鼻的可能，實為一具使用安全性高、實用性佳之奶嘴結構。

五、英文創作摘要　（創作名稱：）

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六、指定代表圖

（一）、本案代表圖為：第___三___圖

（二）、本案代表圖之元件代表符號簡單說明：

A　奶嘴　13　凸條

14　進氣通道　B　奶瓶

20　瓶蓋

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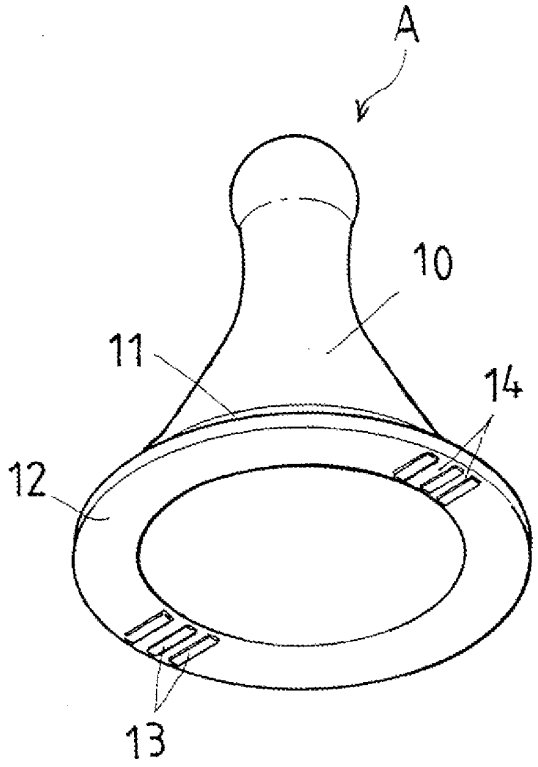
五、申請專利範圍

1．一種防氣脹奶嘴結構改良，該奶嘴軟質透明膠材一體成型有吸吮頭、收束部及頂掣底緣，隆凸狀之吸吮頭底端凹設有一收束部，而該收束部對應設有一環頂掣底緣，於該頂掣底緣與奶瓶瓶口接觸之該面對應設有若干凸條，而凸條與凸條間形成一可供空氣對流之進氣氣道者。

2．如申請專利範圍第一項所述『防氣脹奶嘴結構改良』；其中：該凸條及進氣通道設置多寡可隨奶瓶之容量而做一適當之變化。

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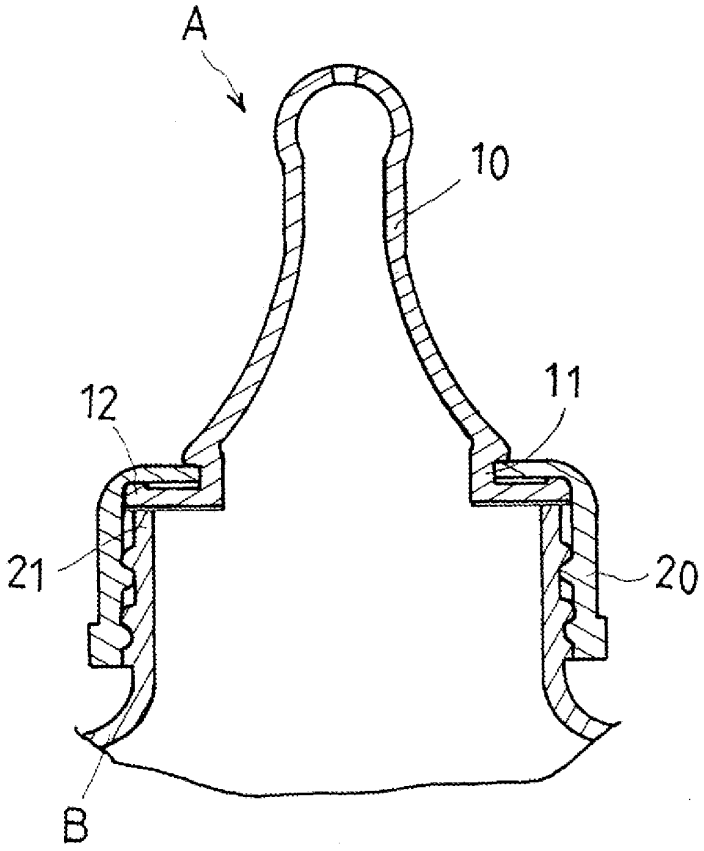
圖式



第一圖

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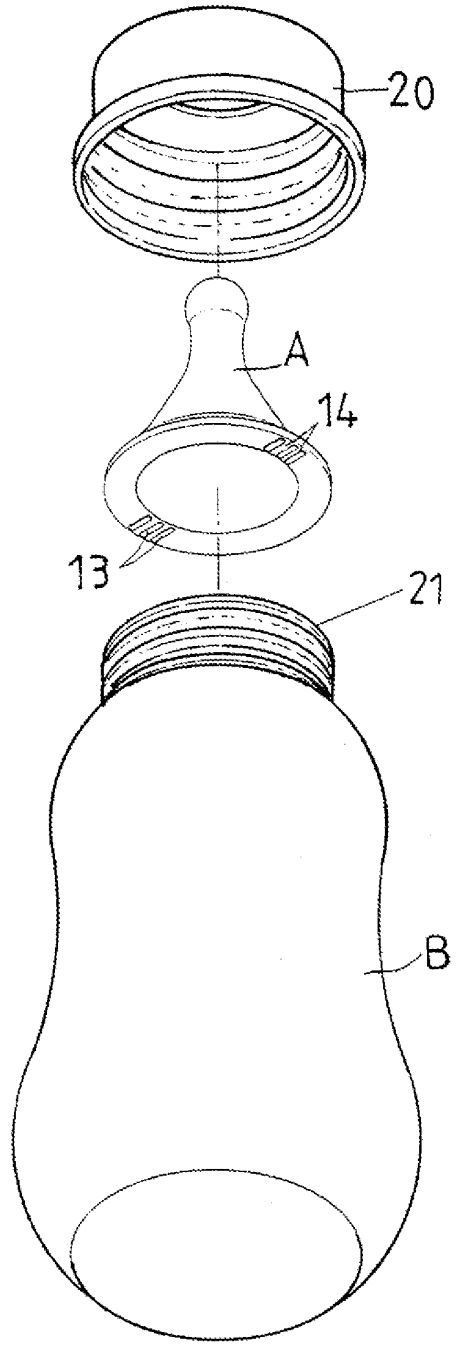
圖式



第二圖

Nanobebe US Inc., Ex. 1004, Page 205
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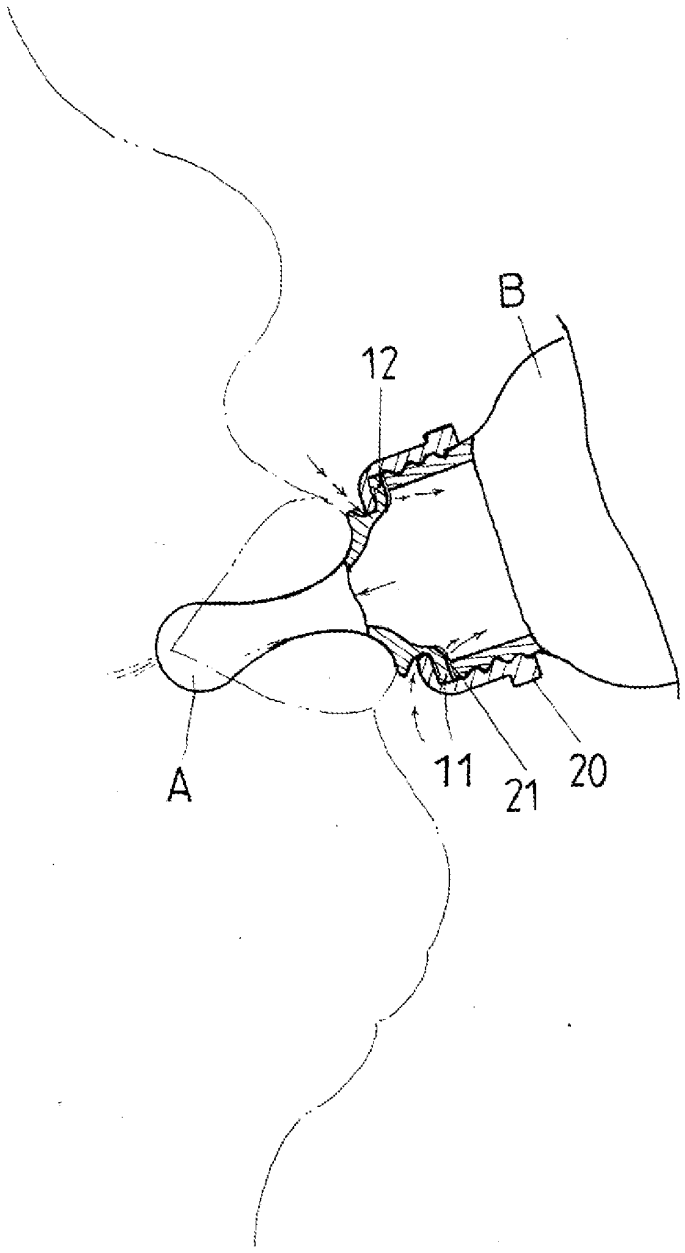
圖式



第三圖

Nanobebe US Inc., Ex. 1004, Page 206
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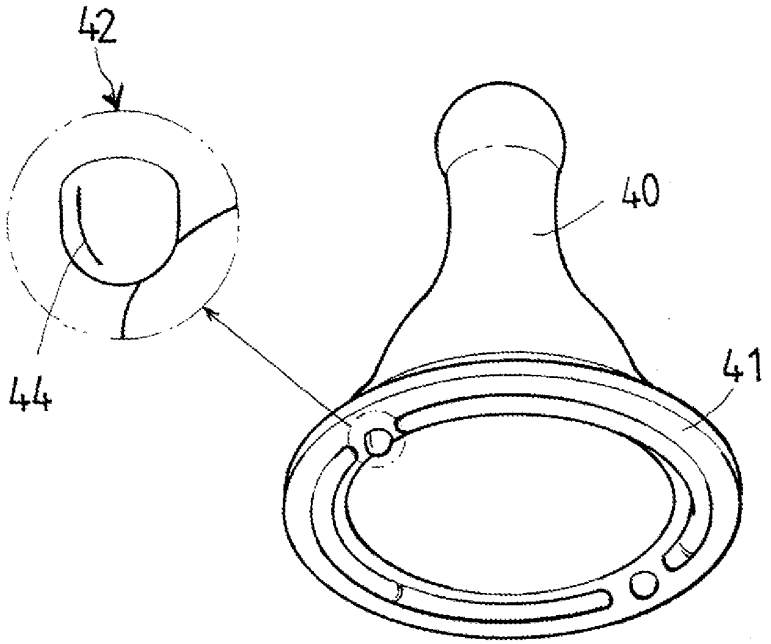
圖式



第四圖

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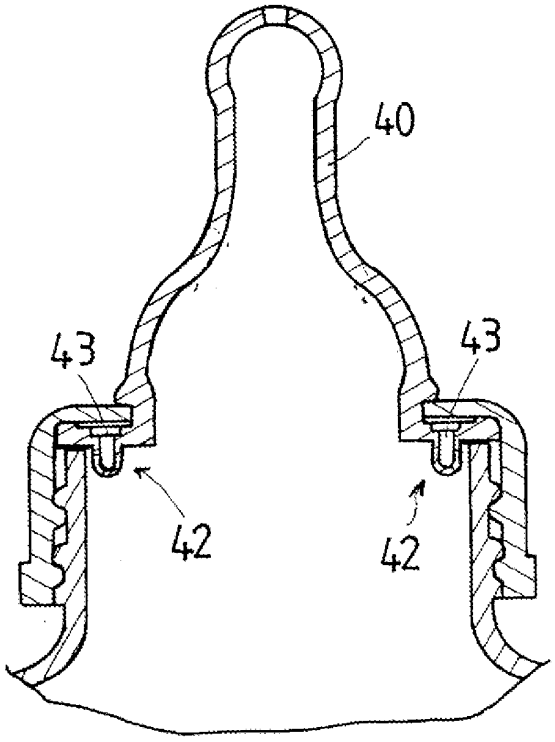
圖式



第五圖

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圖式



第六圖

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TotalPatent One®

TWM245977U

Status:

Ceased

Abstract:

The nipple is a improved structure of an air inlet valve (four), mainly on the ring on the nipple body and is provided with a one-way air intake provides air an air inlet valve, the air inlet valve plats of an appropriate length of the hollow circular pipe cylinder, the upper end of the ring to form a through the air inlet, and the bottom end of a turnplate, for, the air inlet valve and with a sharp edge cutting with a valve, this valve is becomeslongitudinal splits is arranged on the side wall of the air inlet valve, and the valve to the intake valve corresponding to the inner wall of the feeding bottle splits supposes in to the oil side; thereby, and can provide a smooth air intake, and will not cause milk counterflow leakage are nipple air inlet valve structure.

Application/Filing Date:

22-09-2003

Application Number:

TW092217005

Priority Date:

22-09-2003

Description:

Description of Element

[Conventional part]

10... nipple body

12... air inlet valve

14... sealing surface

20... feeding bottle

[Part in this case]

30... nipple body

32... air inlet valve

34... sealing surface

40... feeding bottle

11... ring

13... air inlet

15... valve

31... ring

33... air inlet

35... valve

Description of Drawings

1st Figure is a three-dimensional structural diagram of a conventional nipple.

2nd Figure is the combination of conventional involute helicoids with a bottle nipple

structure diagram, and the partial enlarged schematic diagram of the air intake valve.

3rd Figure is the conventional air inlet valve action schematic diagram of the nipple.

4th Figure is the conventional nipple and the milk bottle into an inclined feed infants the schematic diagram of the part.

5th Figure is the three-dimensional structure diagram.

6th Figure is the nipple and the the structure diagram combined involute helicoids, and its air inlet valve structure diagram of the local amplification.

7th Figure is the creation of a nipple with a bottle into an inclined feed infants the schematic diagram of the part.

[Model belongs to the technical field]

The nipple of the improved structure of an air inlet valve (IV), in particular to the nipple for feeding bottle to be improved, in order to provide a can be smoothly intake, and will not cause milk counterflow leakage are nipple air inlet valve structure.

[Prior art]

Such as 1st, b, c as shown, the nipple to provide a conventional milk smooth sucking, is the same on the nipple body 10 the ring 11 integrally formed on the one-way air intake is provided with a supply air the air inlet valve 12, the air inlet valve 12 of an appropriate length center of hollow circular pipe cylinder, the upper end of the ring 11 to form a through the air inlet 13, and its bottom is a shower of semi-spherical 14, the semi-spherical child in tobaccos 14 the central with a sharp edge cutting with a valve 15:by the fact that it is, the valve 15 is closed for is assumes (such as 2nd as shown), and when the bottle 20 and be of the milk in the bottle pressure is less than the air in the bottle when the pressure of the outer space, the

valve 15 will be opened automatically (such as the 3rd shown), enable the air to enter the bottle bottle outside, and balanced within the bottle, air pressure outside, and then to provide milk smooth the shoe.

The air inlet valve of the above-mentioned conventional nipple 12 structure, although it can provide the air intake effect to a certain extent, and is widely used so far; only looks up , the valve 15 of the semi-spherical erectly tobaccos 14 to the two sides of the central symmetrical splits supposes , the position of the air inlet valve the 12 the whole structure is strong, so that the valve 15 will be too small if skiving is not easy to be opened automatically generated (as shown in Figure line 3rd), caused by the lack of intake air is not smooth, and then will cause the infant to suck those of; but if the valve 15 cutting too, the two ends of the sealing spherical of more than half a circle 14 (such as the 3rd map shown in imaginary line), it will be very easily in the valve 15 after automatically open, due to having too large an opening of the milk generated when closing the counter-flow leakage deletion occurs ; therefore, how to cut an appropriate size of the valve 15 has been bafflingly book industry.

Furthermore, such as 4th as shown, as the milk bottle 20 in to feed infants must into an inclined part, the valve 15 will, in turn, presents toward on shape , therefore the unfused particles in the milk (fruit or fruit juice in) of the valve will be very easy to card 15 is, caused by valve 15 bodies is not normal, and then cause milk of the counter-current leakage deletion occurred.

[Model content]

The purpose, of the nipple lies in improving the above-mentioned conventional an air inlet valve with the deletion, is to provide a smooth air intake, and will not cause milk counterflow leakage are nipple air inlet valve structure.

To achieve the above purpose, the nipple body can integrally formed wings of the ring is provided with a supply air and an air inlet valve for one-way air intake, the air inlet valve plats of an appropriate length of the hollow circular pipe cylinder, the upper end of the ring to form a through the air inlet, and the bottom end of a turnplate, for, the air inlet valve and with a sharp edge cutting with a valve, this valve is becomeslongitudinal splits is arranged on the

side wall of the air inlet valve, and the valve to the intake valve corresponding to the inner wall of the feeding bottle splits supposes in to the oil side; thereby, and can provide a smooth air intake, and will not cause milk counterflow leakage are nipple air inlet valve structure.

[Embodiment]

To achieve the purpose of the use of the technical means and the structure is characterized in, and herewith the 5th to 7th map with the embodiment shown, the detailed description is as follows:

Such as 5th as shown, the basic structure of the conventional similar affects of the nipple, and the nipple body 30 of the ring 31 is provided with an integrally formed on the one-way air intake provides air the air inlet valve 32, the air inlet valve 32 of an appropriate length center of hollow circular pipe cylinder, the upper end of the ring 31 to form a through the air inlet 33, and its bottom is a turnplate, 34, and the air inlet valve 32 with a sharp edge cutting on a valve 35 are; however, the main structure is characterized in that it is: the valve 35 (please refer to the 6th shown) is becomeslongitudinal splits is arranged on the air inlet valve 32 are on the side wall surfaces of the, tomotsugu, because the air inlet valve 32 is a hollow round pipe column, the hollow circular pipe cylinder of the transverse structure stress, the valve 35 can reach easily the pieces of the inlet gas and better closed, enters at the present the valve 35 can be smoothly air intake, and the temperature of the milk will not take place are missing the counter-flow leakage.

Furthermore, because the valve 35 is becomeslongitudinal splits is arranged on the air inlet valve 32 on the side wall surface, so that when the feeding bottle 40 into an inclined feed infants the inverted sheets (please refer to the 7th as shown), the valve 35 will assumes the dynasty to the side, and can prevent the temperature of the milk in the particle the unfused (fruit or fruit juice in) of the valve shaft 15 is, and then can prevent valve 15 the opening of the normally shape is not; in particular, the valve 35 corresponding to the feeding bottle splits supposes in 40 of the inner wall of the air inlet valve 32 is relatively good on the side wall surface.

Ergo, from the above mentioned of the embodiment shown in the Figure can be known, the

technical means employed and its structure can achieve the purpose of creating, and provides a smooth air intake, and will not cause milk counterflow leakage nipple air inlet valve structure; therefore, the conventional can be assuredly improved nipple air inlet valve with the deletion, with obvious and practicability and advancement, and the are never had, Makoto complies with model Patent the elements, whence legally application for Patent, and Patent prays bestowsbegging , to [...] it.

From the above mentioned-schema the the embodiment shown, the case of creating the use of technological means and the structure is characterized in, indeed can achieve the purpose of creating, and providing a more practical nature and progress of the nose, and it is first of all created first, there is not have been, Makoto complies with model Patent the elements, whence legally the applications, and patents prays bestows for supplication.

However, what has been described above, is only the case of the embodiment of the creation, is not to be limited by the scope of the implementation of the creation, according to the case of all creative the specification and the scope of the Patent application for the equivalent structural variation and modification, the case should be still covered by the scope of the art.

Description of Drawings

1st Figure is a three-dimensional structural diagram of a conventional nipple.

2nd Figure is the combination of conventional involute helicoids with a bottle nipple structure diagram, and the partial enlarged schematic diagram of the air intake valve.

3rd Figure is the conventional air inlet valve action schematic diagram of the nipple.

4th Figure is the conventional nipple and the milk bottle into an inclined feed infants the schematic diagram of the part.

5th Figure is the three-dimensional structure diagram.

6th Figure is the nipple and the the structure diagram combined involute helicoids, and its air inlet valve structure diagram of the local amplification.

7th Figure is the creation of a nipple with a bottle into an inclined feed infants the schematic diagram of the part.

Note the main component symbols

[Conventional part]

10... nipple body

12... air inlet valve

14... sealing surface

20... feeding bottle

[Part in this case]

30... nipple body

32... air inlet valve

34... sealing surface

40... feeding bottle

11... ring

13... air inlet

15... valve

31... ring

33... air inlet

35... valve

Designated representative map

30... nipple body

32... air inlet valve

34... sealing surface

40... feeding bottle

31... ring

33... air inlet

35... valve

Normalized Assignee:

Standardized Assignee:

SHIU LI TAI - Taiwan, Republic of China (R.O.C.), TW

Original Assignee:

SHIU LI-TAI - Taiwan, Republic of China (R.O.C.), TW

Current Assignee:

SHIU LI-TAI - TW

許黎泰 - 高雄縣大寮鄉大有二街九號

Attorney/Registered Agent:

Authority:

TW

Backward Patent Citations (0):

Forward Patent Citations (0):

Claims:

Claim 1: 1. A nipple of improved structure of the intake valve (IV), its attached to nipple body and wings of the ring is provided with a one-way air intake provides air an air inlet valve, the air inlet valve center of the length of a hollow circular pipe cylinder, the upper end of the ring to form a through the air inlet, and the bottom end of a turnplate, for, the air inlet valve and with a sharp edge cutting a valve ; and is characterized in that it is the same: the valve is becomeslongitudinal splits the side wall surface of the front end of the air inlet valve.

Claim 2: 2. Improved structure of an air inlet valve of the nipple (four) according to Claim 1, wherein the feeding bottle splits supposes in the valve to the intake valve corresponding to the inner wall of the oil on the side wall surface.

Claim 3:

Independent Claims:

First Claim:

Claim 1: 1. A nipple of improved structure of the intake valve (IV), its attached to nipple body and wings of the ring is provided with a one-way air intake provides air an air inlet valve, the air inlet valve center of the length of a hollow circular pipe cylinder, the upper end of the ring to form a through the air inlet, and the bottom end of a turnplate, for, the air inlet valve and with a sharp edge cutting a valve ; and is characterized in that it is the same: the valve is becomeslongitudinal splits the side wall surface of the front end of the air inlet valve.

IPC:

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A61J11 / 04

USPC:

Designated States:

Family:

Domestic	Main	Complete	Extended
TWM245977U	TWM245977U	TWM245977U	TWM245977U

Inventor:

SHIU LI-TAI - Taiwan, Republic of China (R.O.C.), TW

Legal Status(INPADOC):

2013-07-11, MM4K, ANNULMENT OR LAPSE OF A UTILITY MODEL DUE TO NON-PAYMENT OF FEES, -, C

Legal Status(Post Issuance):

Legal Status(Standardized):

Status:

Event	Date	Description
Filed	2003-09-22	FILED
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Ceased	2013-07-11	ANNULMENT OR LAPSE OF A UTILITY MODEL DUE TO NON-PAYMENT OF FEES

Ownership:

From Date	To Date	Original Assignee	Standardized Assignee	Normalized Assignee
2003-09-22		SHIU LI-TAI	SHIU LI TAI	
2003-09-22		許黎泰	許黎泰	

Payment Status:

Date	Status	Event Code	Description
2013-07-11	Fee not paid	MM4K	ANNULMENT OR LAPSE OF A UTILITY MODEL DUE TO NON-PAYMENT OF FEES

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Miscellaneous:

PCT Application:

/

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TW092217005

Publication Date:

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Title:

Improved structure of air inlet valve for nipple

Examiner:

US Related Applications:

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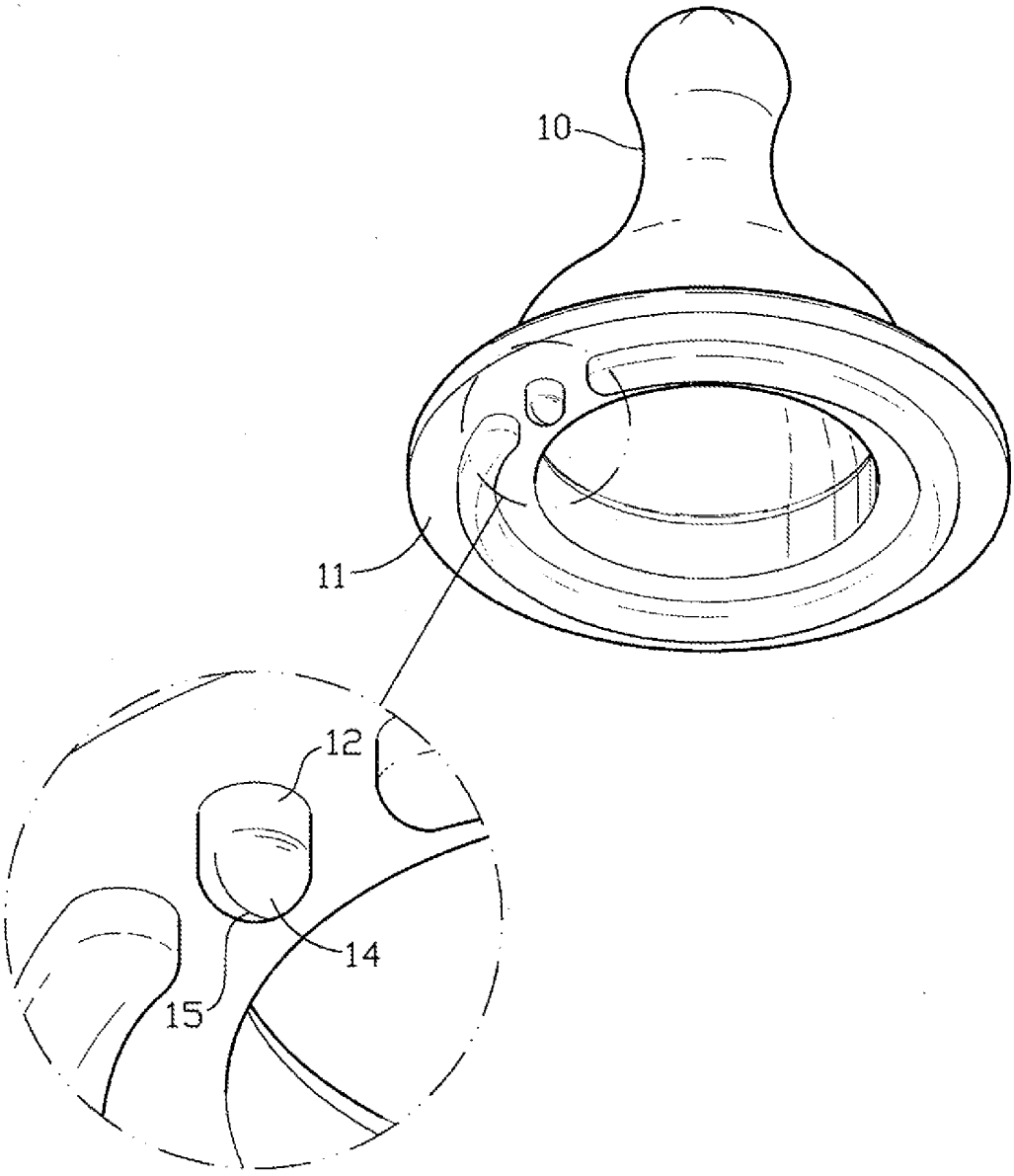
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Annotation:

Document Link:

TWM245977U

Clipped Image:



第 一 圖

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申請案號：92217005	

公告本

（以上各欄由本局填註）

新型專利說明書 M245977

一、新型名稱	中文	奶嘴之進氣閥改良構造（四）
	英文	
二、創作人（共1人）	姓名（中文）	1. 許黎泰
	姓名（英文）	1.
	國籍（中英文）	1. 中華民國 TW
	住居所（中文）	1. 831高雄縣大寮鄉大有二街九號
	住居所（英文）	1.
三、申請人（共1人）	名稱或姓名（中文）	1. 許黎泰
	名稱或姓名（英文）	1.
	國籍（中英文）	1. 中華民國 TW
	住居所（營業所）（中文）	1. 831高雄縣大寮鄉大有二街九號 （本地址與前向貴局申請者相同）
	住居所（營業所）（英文）	1.
	代表人（中文）	1.
	代表人（英文）	1.

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一、本案已向

國家(地區)申請專利	申請日期	案號	主張專利法第一百零五條準用第二十四條第一項優先權
無			

二、□主張專利法第一百零五條準用第二十五條之一第一項優先權:

申請案號:

無

日期:

三、主張本案係符合專利法第九十八條第一項□第一款但書或□第二款但書規定之期間

日期:

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四、創作說明（1）

【新型所屬之技術領域】

本創作係有關一種奶嘴之進氣閥改良構造（四），尤指針對奶瓶用奶嘴予改良，以提供一種可順暢進氣，且不會造成奶水逆流滲漏之奶嘴進氣閥構造者。

【先前技術】

如第一、二、三圖所示，習用之奶嘴為提供奶水之順利吸食，其乃於奶嘴本體10之環翼11上一體成型設有一提供空氣單向進氣之進氣閥12，該進氣閥12概呈一適當長度之中空圓形管柱體，其上端形成一貫通環翼11之進氣口13，而其底端為半圓球形之封閉面14，嗣於半圓球形之封閉面14中央以鋒利之刀刃剖切有一閥門15；由是，該閥門15於平時乃呈閉合狀（如第二圖所示），而當奶瓶20內之奶水被吸食而產生瓶內空氣壓力小於瓶外空氣壓力時，該閥門15即會自動張開（如第三圖所示），俾使瓶外之空氣進入瓶內，而平衡瓶內、外之空氣壓力，進而得以提供奶水順利被吸食者。

上述習用奶嘴之進氣閥12構造，雖可提供一定程度之進氣效果，而被廣泛使用至今；惟查，由於閥門15係自半圓球形之封閉面14中央對稱的向兩側剖設，其位置恰為進氣閥12整體結構應力最強之處，以致於該閥門15若剖切太小將會產生不易自動張開（如第三圖實線所示），而造成進氣不順暢之缺失，並進而將造成嬰幼兒之吸食困難者；但若將該閥門15剖切太大使其兩端超過半圓球形之封閉面14（如第三圖假想線所示），則很容易在閥門15自動張開後，

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四、創作說明 (2)

因過大的開口而來不及閉合時產生奶水之逆流滲漏缺失發生者；因此，如何剖切一適當大小之閥門15一直困擾著業者。

再者，如第四圖所示，由於奶瓶20在餵食嬰幼兒時必須成一傾斜倒立狀，此時閥門15將反過來呈朝上狀，因此奶水中未溶化之顆粒(或果汁中之果粒)將很容易卡於閥門15上，而造成閥門15呈不正常的開啟狀，進而造成奶水之逆流滲漏缺失發生者。

【新型內容】

本創作之目的，即在於改善上述習用奶嘴之進氣閥所具有之缺失，而提供一種可順暢進氣，且不會造成奶水逆流滲漏之奶嘴進氣閥構造者。

為達上述之目的，本創作主要係於奶嘴本體之環翼上一體成型而設有一提供空氣單向進氣之進氣閥，該進氣閥概呈一適當長度之中空圓形管柱體，其上端形成一貫通環翼之進氣口，而其底端為一封閉面，並於進氣閥以鋒利之刀刃剖切有一閥門，該閥門係成縱向剖設於進氣閥之側壁面上，且該閥門以剖設於對應奶瓶內壁之進氣閥側壁面上為較佳者；藉此，而可提供一順暢進氣，且不會造成奶水逆流滲漏之奶嘴進氣閥構造者。

【實施方式】

有關本創作為達到目的所運用之技術手段及其構造特徵，茲謹再配合第五圖至第七圖所示之實施例，詳細說明如下：

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四、創作說明（3）

如第五圖所示，本創作之基本構造概與習用之奶嘴大同小異，而於奶嘴本體30之環翼31上一體成型而設有一提供空氣單向進氣之進氣閥32，該進氣閥32概呈一適當長度之中空圓形管柱體，其上端形成一貫通環翼31之進氣口33，而其底端為一封閉面34，並於進氣閥32上以鋒利之刀刃剖切有一閥門35者；惟，本創作之主要構造特徵乃在於：

該閥門35（請參閱第六圖所示）係成縱向剖設於進氣閥32之側壁面上者，嗣，由於進氣閥32係為一中空圓形管柱體，因此藉由中空圓形管柱體之橫向結構應力，令閥門35可達到容易之張開進氣及較佳之閉合性，進而令該閥門35可順暢的進氣，且不會發生奶水之逆流滲漏缺失者。

再，由於該閥門35係成縱向剖設於進氣閥32之側壁面上，因此當奶瓶40成一傾斜倒立狀來餵食嬰幼兒時（請參閱第七圖所示），該閥門35將呈朝向側面，而可防止奶水中未溶化之顆粒（或果汁中之果粒）卡於閥門15上，進而可防止閥門15呈不正常的開啟狀者；尤其，該閥門35以剖設於對應奶瓶40內壁之進氣閥32側壁面上為較佳。

由是，從以上之所述及附圖所示之實施例中可知，本創作所運用之技術手段及其構造確可達到創作之目的，而提供一種順暢進氣，且不會造成奶水逆流滲漏之奶嘴進氣閥構造；因此，本創作確可改善習用奶嘴進氣閥所具有之缺失，而具有顯著之實用性與進步性，且為未曾有過者，誠已符合新型專利之要件，爰依法提出專利申請，並祈賜專利為禱，至感德便。

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四、創作說明（4）

從以上之所述及圖式所示之實施例可知，本案創作所運用之技術手段及其構造特徵，確可達到創作之目的，而提供一更具實用性與進步性之洗鼻器構造，且其確為創作人首先創作，為未曾有過者，誠已符合新型專利之要件，爰依法出申請，並祈賜專利為禱。

惟以上所述者，僅為本案創作之可行實施例，並不能以之限定本案創作實施之範圍，舉凡依本案創作說明書及申請專利範圍所為之等效結構變化與修飾，皆應仍屬本案創作所涵蓋之範圍內。



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圖式簡單說明

第一圖係習用奶嘴之立體構造圖。

第二圖係習用奶嘴與奶瓶之組合剖視構造圖，及其進氣閥之局部放大示意圖。

第三圖係習用奶嘴之進氣閥動作示意圖。

第四圖係習用奶嘴與奶瓶成一傾斜倒立狀餵食嬰幼兒之示意圖。

第五圖係本創作之立體構造圖。

第六圖係本創作奶嘴與奶瓶之組合剖視構造圖，及其進氣閥之局部放大構造圖。

第七圖係本創作奶嘴與奶瓶成一傾斜倒立狀餵食嬰幼兒之示意圖。

圖式中元件代表符號簡單說明：

【習用部份】

10	奶嘴本體	11	環翼
12	進氣閥	13	進氣口
14	封閉面	15	閥門
20	奶瓶		

【本案部份】

30	奶嘴本體	31	環翼
32	進氣閥	33	進氣口
34	封閉面	35	閥門
40	奶瓶		

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四、中文創作摘要　（創作名稱：奶嘴之進氣閥改良構造（四））

本創作係為一種奶嘴之進氣閥改良構造（四），主要係於奶嘴本體之環翼上一體成型而設有一提供空氣單向進氣之進氣閥，該進氣閥概呈一適當長度之中空圓形管柱體，其上端形成一貫通環翼之進氣口，而其底端為一封閉面，並於進氣閥以鋒利之刀刃剖切有一閥門，該閥門係成縱向剖設於進氣閥之側壁面上，且該閥門以剖設於對應奶瓶內壁之進氣閥側壁面上為較佳者；藉此，而可提供一順暢進氣，且不會造成奶水逆流滲漏之奶嘴進氣閥構造者。

五、英文創作摘要　（創作名稱：）

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六、指定代表圖

（一）、本案代表圖為：第六圖

（二）、本案代表圖之元件代表符號簡單說明：

30	奶嘴本體	31	環翼
32	進氣閥	33	進氣口
34	封閉面	35	閥門
40	奶瓶		

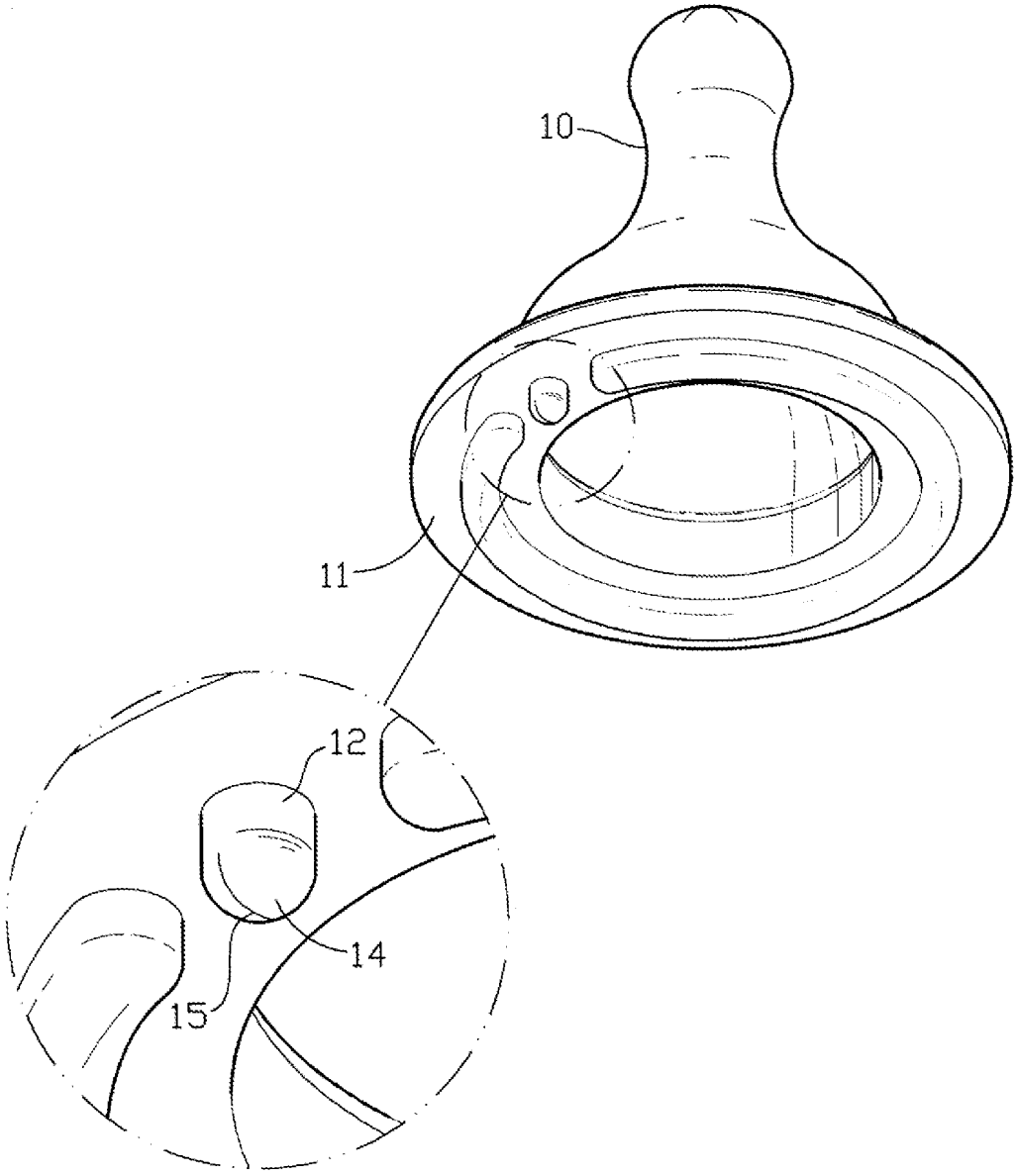
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五、申請專利範圍

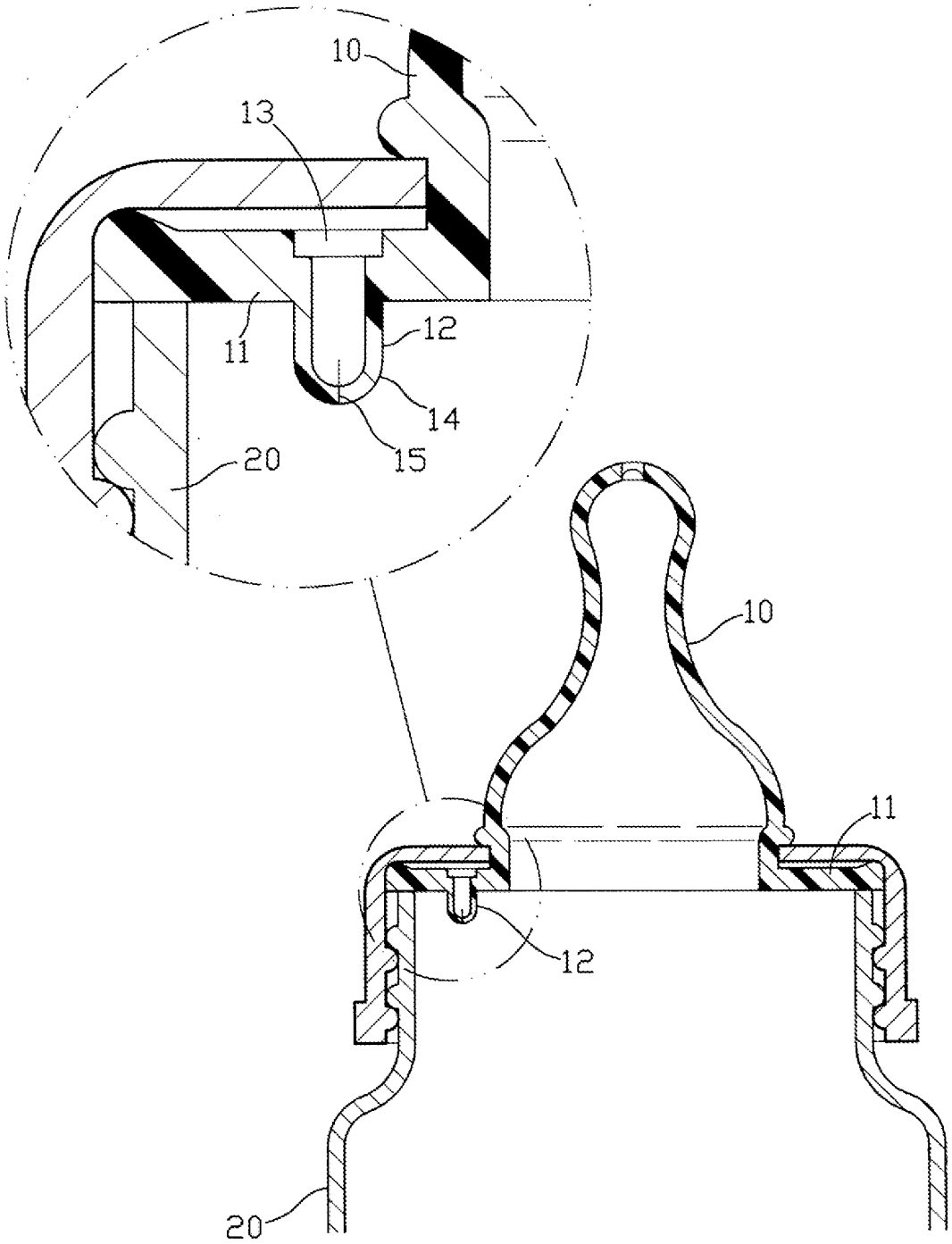
1. 一種奶嘴之進氣閥改良構造（四），其係於奶嘴本體之環翼上一體成型而設有一提供空氣單向進氣之進氣閥，該進氣閥概呈一適當長度之中空圓形管柱體，其上端形成一貫通環翼之進氣口，而其底端為一封閉面，並於進氣閥以鋒利之刀刃剖切有一閥門者；而其特徵乃在於：該閥門係成縱向剖設於進氣閥之側壁面上者。
2. 如申請專利範圍第1項所述之奶嘴之進氣閥改良構造（四），其中該閥門以剖設於對應奶瓶內壁之進氣閥側壁面上為較佳者。

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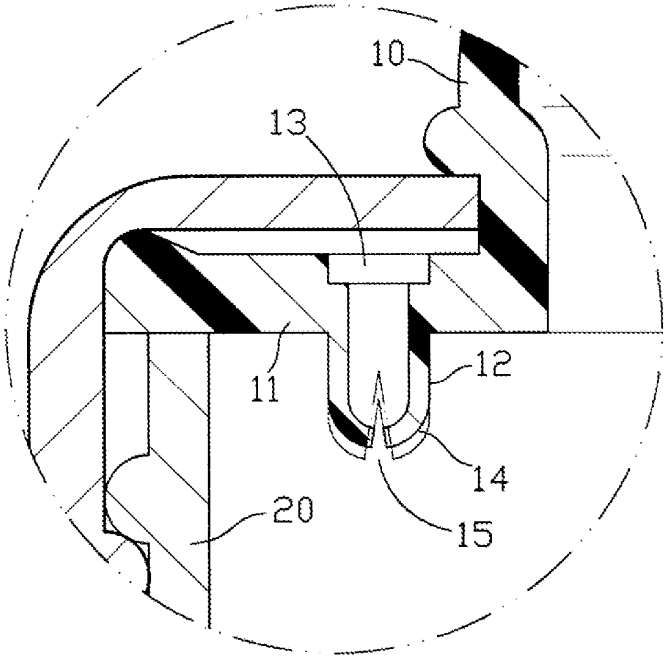
第 一 圖

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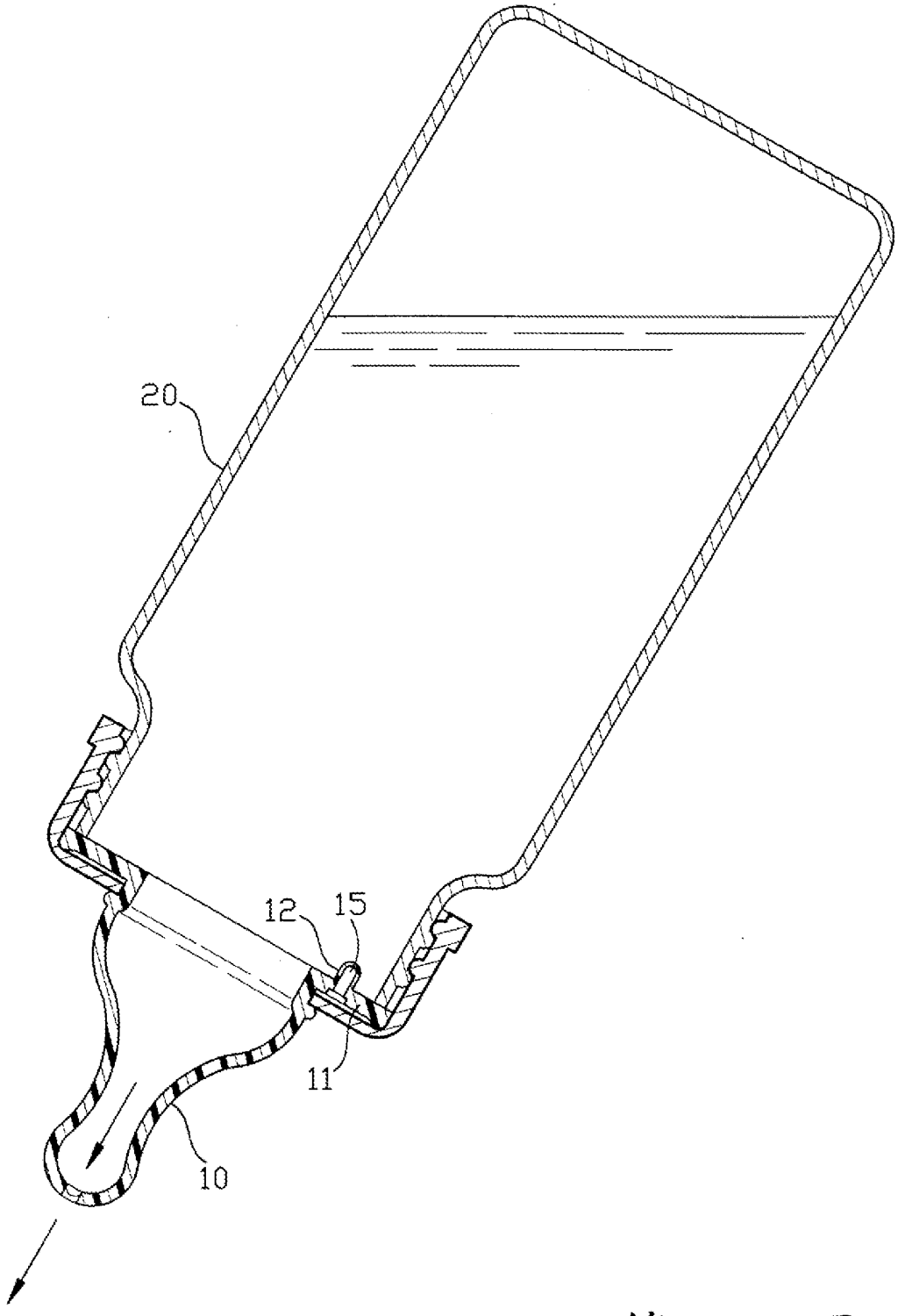
第 二 圖

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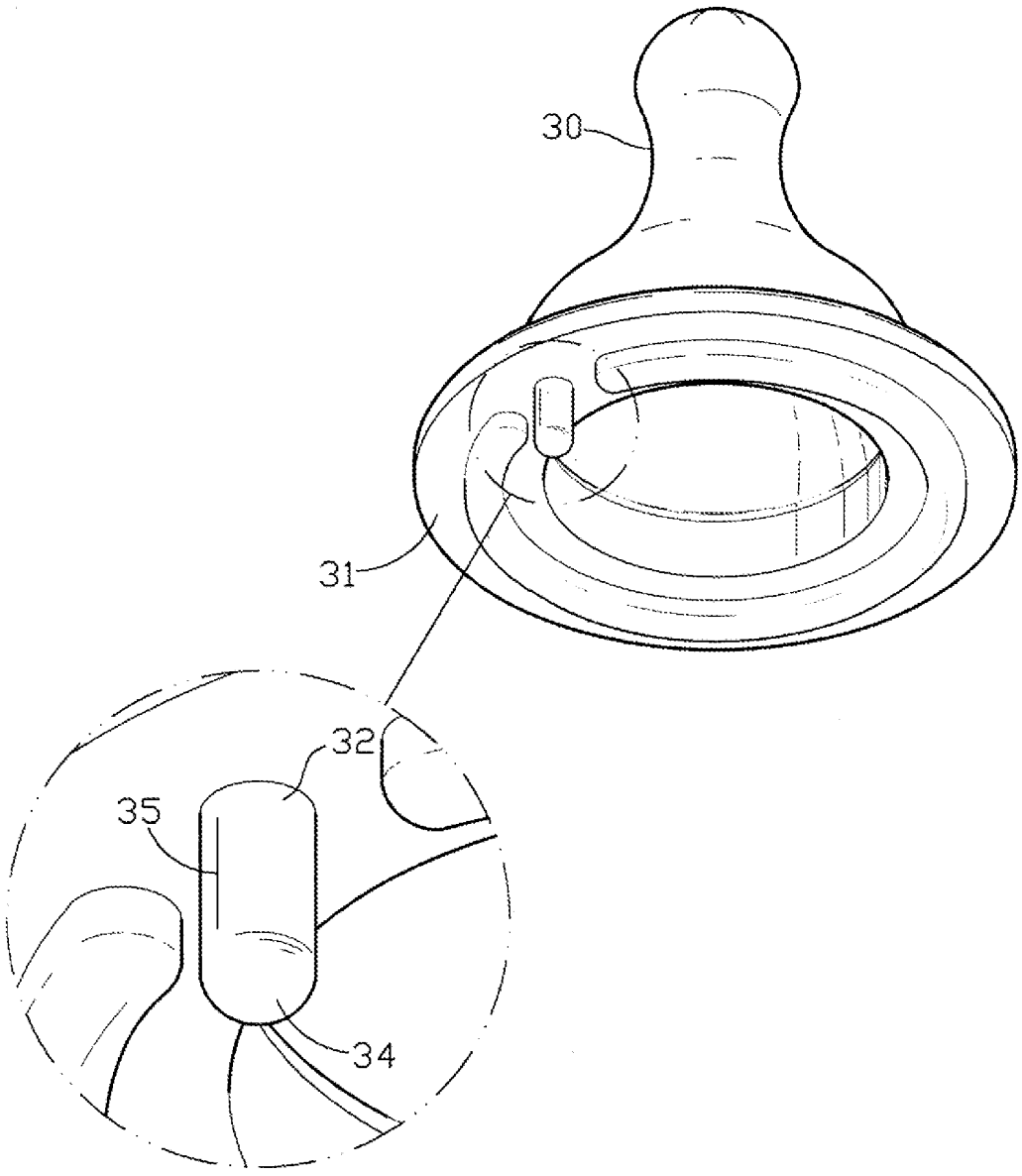
第 三 圖

Nanobebe US Inc., Ex. 1004, Page 234
Nanobebe US Inc. v. Mayborn (UK) Limited et al.



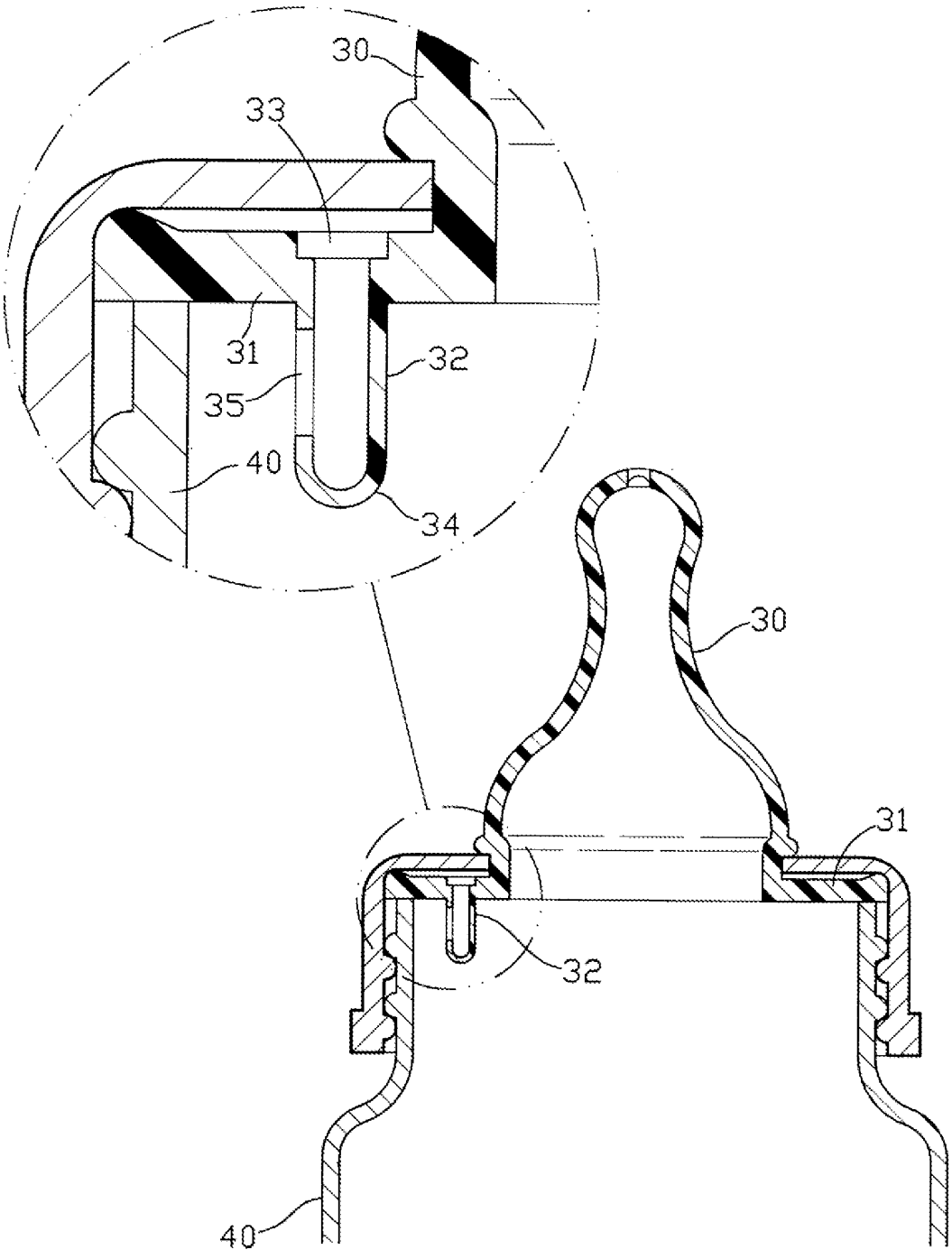
第 四 圖

Nanobebe US Inc., Ex. 1004, Page 235
Nanobebe US Inc. v. Mayborn (UK) Limited et al.



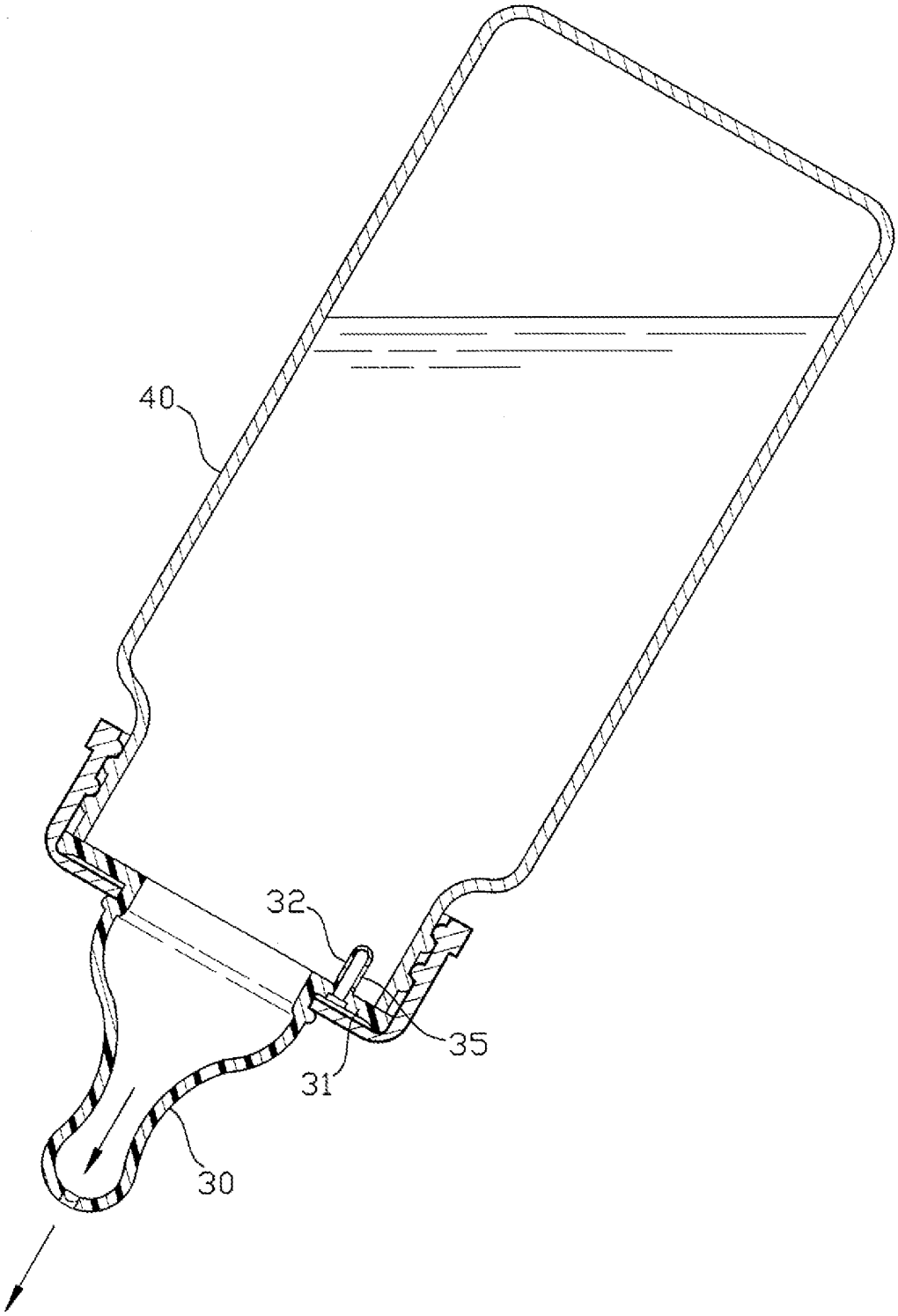
第 五 圖

Nanobebe US Inc., Ex. 1004, Page 236
Nanobebe US Inc. v. Mayborn (UK) Limited et al.



第 六 圖

Nanobebe US Inc., Ex. 1004, Page 237
Nanobebe US Inc. v. Mayborn (UK) Limited et al.



第 七 圖

Nanobebe US Inc., Ex. 1004, Page 238
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

Electronic Acknowledgement Receipt

EFS ID:	42394535
Application Number:	17208932
International Application Number:	
Confirmation Number:	5102
Title of Invention:	Baby Bottle with Flexible Nipple Regions
First Named Inventor/Applicant Name:	Arnold Rees
Customer Number:	165989
Filer:	Joshua A. Griswold/Anna Siwek
Filer Authorized By:	Joshua A. Griswold
Attorney Docket Number:	40395-0012004
Receipt Date:	07-APR-2021
Filing Date:	22-MAR-2021
Time Stamp:	17:52:50
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS_40395-0012004.pdf	139288 74537dde344d14564566107f4ff3725b0ddf3354	no	2

Warnings:

Information:					
This is not an USPTO supplied IDS fillable form					
2	Foreign Reference	GB968698A.pdf	843200 9f51be6e30e052116bae0438e306b1e07253fdd9	no	5
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4	Foreign Reference	TW235479U.pdf	697650 877c729f1f4126c61220d81ca81f3076f2bdb413	no	9
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5	Foreign Reference	TWM242210U.pdf	5736666 8fe20ee40010da3105e57cdaf63173c43e534ddb	no	28
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6	Foreign Reference	TWM245977U.pdf	6029264 2048fbea84d208dc08fc09b40ad56cc1dd418a39	no	29
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		Total Files Size (in bytes):	19212756		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

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Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 40395-0012004	Application No. 17/208,932
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Mayborn (UK) Limited	
		Filing Date March 22, 2021	Group Art Unit 3643

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
	1.	380835	04/10/1888	Ware			
	2.	1510571	10/7/1924	Ware			
	3.	1672734	6/5/1928	Reilly			
	4.	2517457	8/1/1950	Allen			
	5.	2588069	3/4/1952	Allen			
	6.	2688326	9/7/1954	Lerman			
	7.	2956702	10/18/1960	Ransom			
	8.	3097757	7/16/1963	Searer			
	9.	3493139	2/3/1970	Faddoul et al.			
	10.	3704803	12/5/1972	Ponder			
	11.	3946888	3/30/1976	Tonkin			
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	14.	4993568	2/19/1991	Morifuji et al.			
	15.	5101991	4/7/1992	Monifuji et al.			
	16.	5474028	12/12/1995	Larson et al.			
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	18.	5673806	10/7/1997	Busnel			
	19.	5678710	10/21/1997	Sheu			
	20.	5706973	1/13/1998	Robbins, III et al.			
	21.	5784999	7/28/1998	Larson et al.			
	22.	5862927	1/26/1999	Tebeau			
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	24.	6003698	12/21/1999	Morano			
	25.	6032810	3/7/2000	Meyers et al.			
	26.	6161710	12/19/2000	Dieringer			
	27.	6241110	6/5/2001	Hakim			

Examiner Signature	Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

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		Filing Date March 22, 2021	Group Art Unit 3643

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
	28.	6270519	8/7/2001	Botts			
	29.	6321931	11/27/2001	Hakim et al.			
	30.	6357620	3/19/2002	Hakim			
	31.	6422415	7/23/2002	Manganiello			
	32.	6645228	11/11/2003	Renz			
	33.	6745912	6/8/2004	Uehara et al.			
	34.	6883672	4/26/2005	Dunn et al.			
	35.	6959827	11/1/2005	Morano et al.			
	36.	6981962	1/3/2006	Lenkersdorf			
	37.	6984688	1/10/2006	Gu			
	38.	6994225	2/7/2006	Hakim			
	39.	7108676	9/19/2006	Loging			
	40.	7122045	10/17/2006	Randolph et al.			
	41.	7134564	11/14/2006	Verbovszky			
	42.	7150370	12/19/2006	Pyun			
	43.	7185775	3/6/2007	Decal			
	44.	7204386	4/17/2007	Hakim			
	45.	7210591	5/1/2007	Goldman et al.			
	46.	7243814	7/17/2007	Hakim			
	47.	7252676	8/7/2007	Williams			
	48.	7320678	1/22/2008	Ruth et al.			
	49.	7395941	7/8/2008	Hong			
	50.	7481324	1/27/2009	Almonte			
	51.	7828821	11/9/2010	Renz			
	52.	8708174	4/29/2014	Itzek			
	53.	20020030029	3/14/2002	Hakim			
	54.	20020063103	5/30/2002	Kiernan			

Examiner Signature	Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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		Filing Date March 22, 2021	Group Art Unit 3643

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
	55.	20030032984	2/13/2003	Hakim			
	56.	20030089676	5/15/2003	Uehara et al.			
	57.	20030093120	5/15/2003	Renz			
	58.	20030106872	6/12/2003	Lin			
	59.	20040026351	2/12/2004	Dunn et al.			
	60.	20040124168	7/1/2004	Silver			
	61.	20040188373	9/30/2004	Lewis et al.			
	62.	20040226906	11/18/2004	Peterson			
	63.	20040256345	12/23/2004	Lundquist			
	64.	20050035078	2/17/2005	Lieberman et al.			
	65.	20050056611	3/17/2005	Hakim			
	66.	20050184022	8/25/2005	Dunn et al.			
	67.	20050224444	10/13/2005	Akihiro			
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	69.	20050247719	11/10/2005	Loging			
	70.	20050252875	11/17/2005	Sheu et al.			
	71.	20050258123	11/24/2005	Silver			
	72.	20050277987	12/15/2005	Randolph et al.			
	73.	20050288712	12/29/2005	Hakim			
	74.	20060011571	1/19/2006	Silver			
	75.	20070021782	1/25/2007	Inoue et al.			
	76.	20070045214	3/1/2007	Jennings			
	77.	20070095778	5/3/2007	Catton			
	78.	20070102388	5/10/2007	Lewis et al.			
	79.	20070131637	6/14/2007	Tamura et al.			
	80.	20070138121	6/21/2007	Sterling et al.			
	81.	20070138709	6/21/2007	Sabree et al.			

Examiner Signature	Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 40395-0012004	Application No. 17/208,932
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Mayborn (UK) Limited	
		Filing Date March 22, 2021	Group Art Unit 3643

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
	82.	20070163983	7/19/2007	Hsu			
	83.	20070187419	8/16/2007	Hakim			
	84.	20070221604	9/27/2007	Hakim			
	85.	20070272645	11/29/2007	Ito et al.			
	86.	20070278172	12/6/2007	Hakim			
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	89.	20080173654	7/24/2008	Hakim			
	90.	20080188894	8/7/2008	Hakim			
	91.	20080210655	9/4/2008	Rees et al.			
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	93.	20090005811	1/1/2009	DuChesne et al.			
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	95.	20150083685	3/26/2015	Rees et al.			
	96.	D384748S	10/7/1997	Dunn			
	97.	D404138S	1/12/1999	Meyers et al.			
	98.	D405530S	2/9/1999	Manganiello et al.			
	99.	D412582S	8/3/1999	Morano			
	100.	D421306S	2/29/2000	Meyers et al.			
	101.	D425994	5/30/2000	Hakim			
	102.	D441870S	5/8/2001	Randolph			
	103.	D444239S	6/26/2001	Kobayashi et al.			
	104.	D454642	3/19/2002	Hakim			
	105.	D459815S	7/2/2002	Pastucha			
	106.	D463567S	9/24/2002	Morano			
	107.	D464434S	10/15/2002	Morano			
	108.	D465028S	10/29/2002	Renz			

Examiner Signature	Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Nanobebe US Inc., Ex. 1004, Page 245
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 40395-0012004	Application No. 17/208,932
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Mayborn (UK) Limited	
		Filing Date March 22, 2021	Group Art Unit 3643

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
	109.	D479606S	9/9/2003	Randolph			
	110.	D486579S	2/10/2004	Dunn			
	111.	D488560S	4/13/2004	Renz et al.			
	112.	D498849S	11/23/2004	Randoph et al.			
	113.	D504723S	5/3/2005	Randoph et al.			
	114.	D504724S	5/3/2005	Randoph et al.			
	115.	D504725S	5/3/2005	Randolph et al.			
	116.	D520142S	5/2/2006	Mallet			
	117.	D539910	4/3/2004	Ordonez			
	118.	D547874	7/31/2007	Horie et al.			
	119.	D599028	8/25/2009	Schofield			
	120.	D620125	7/20/2010	Rees et al.			
	121.	D626246	10/26/2010	Rees et al.			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Translation	Class	Subclass
	122.	DE 19716535	11/6/1997	DE			
	123.	DE 19849271	4/27/2000	DE			
	124.	DE 20210121	10/2/2002	DE			
	125.	EP 0151862	8/21/1985	EP			
	126.	EP 0845971	10/24/2001	EP			
	127.	EP 1297814	4/2/2003	EP			
	128.	EP 1310230	5/14/2003	EP			
	129.	GB 0004210	6/13/1912	GB			
	130.	GB 2139903	11/21/1984	GB			
	131.	GB 2154451	9/11/1985	GB			
	132.	GB 2167735	6/4/1986	GB			

Examiner Signature	Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 40395-0012004	Application No. 17/208,932
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Mayborn (UK) Limited	
		Filing Date March 22, 2021	Group Art Unit 3643

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Translation	Class	Subclass
	133.	GB 2250017	5/27/1992	GB			
	134.	GB 2351729	1/10/2001	GB			
	135.	GB 2402347	12/8/2008	GB			
	136.	GB 2412114	9/21/2005	GB			
	137.	JP 01313056	12/18/1989	JP			
	138.	JP 02144065	6/1/1990	JP			
	139.	JP 05084279	4/16/1993	JP			
	140.	JP 05115535	5/14/1993	JP			
	141.	JP 2000000288	1/17/2000	JP			
	142.	JP 20001299877	10/30/2001	JP			
	143.	JP 2000135270	5/16/2000	JP			
	144.	JP 2000189496	7/11/2000	JP			
	145.	JP 2000271193	10/3/2000	JP			
	146.	JP 2001009008	1/16/2001	JP			
	147.	JP 2001187117	7/10/2001	JP			
	148.	JP 2001299878	10/30/2001	JP			
	149.	JP 2002011076	1/15/2002	JP			
	150.	JP 2002200144	7/16/2002	JP			
	151.	JP 2002306572	10/22/2003	JP			
	152.	JP 2003144529	5/20/2003	JP			
	153.	JP 2003205018	7/22/2003	JP			
	154.	JP 2004129940	4/30/2004	JP			
	155.	JP 2006068360	3/16/2006	JP			
	156.	JP 20066006809	1/12/2006	JP			
	157.	WO 2000054726	9/21/2000	WO			
	158.	WO 2003092577	11/13/2003	WO			
	159.	WO 2004039304	5/13/2004	WO			

Examiner Signature	Date Considered

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Substitute Disclosure Form U.S. Department of Commerce Patent and Trademark Office **Information Disclosure Statement by Applicant** (Use several sheets if necessary) (37 CFR §1.98(b))	Attorney Docket No. 40395-0012004	Application No. 17/208,932
	Applicant Mayborn (UK) Limited	
	Filing Date March 22, 2021	Group Art Unit 3643

Foreign Patent Documents or Published Foreign Patent Applications							
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Translation	Class	Subclass
	160.	WO 2004043325	5/27/2004	WO			
	161.	WO 2004064578	8/5/2004	WO			
	162.	WO 2004065247	8/5/2004	WO			
	163.	WO 2005041851	5/12/2005	WO			
	164.	WO 2006011573	2/2/2006	WO			
	165.	WO 9825571	6/18/1999	WO			

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	166.	International Search Report for PCT/GB05/002532 mailed 7 December 2005
	167.	International Search Report for PCT/GB0S/00183 mailed 11 August 2005
	168.	IP India Examination Report for 5762/DELNP/2011 which is a foreign counterpart application for U.S. Application 14/551783, dated February 3, 2018, 4 pages
	169.	Search Report for GB0410993,0 mailed 19 May 2005
	170.	Search Report for GB0414560,3 mailed 4 March 2005
	171.	Search Report for GB0502599A mailed 6 May 2005

Examiner Signature	Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Arnold Rees	Art Unit	:	Unknown
Application No.	:	17/208,932	Examiner	:	Unknown
Filed	:	March 22, 2021	Conf. No.	:	5102
Title	:	BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS			

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Please consider the documents listed on the disclosure form submitted with this statement.

This application relies on the earlier filing date of application number 14/551,783, filed on November 24, 2014 under 35 U.S.C. § 120,. All listed documents were submitted to and/or cited by the Office in the prior application, and so copies of those documents are not provided in this application in accordance with 37 C.F.R. § 1.98(a)(2).

This statement is being filed within three months of the filing date of the application.

No fees are believed due. However, apply any necessary charges or credits applicable under 37 C.F.R. § 1.17(p) to deposit account 06-1050, referencing the above attorney docket number.

Please contact the undersigned if there are any questions regarding this statement.

Respectfully submitted,

Date: April 1, 2021

/Joshua A. Griswold/
Joshua A. Griswold
Reg. No. 46,310

Customer Number 165989
Fish & Richardson P.C.
Telephone: (214) 747-5070
Facsimile: (877) 769-7945

100391249.doc

Electronic Acknowledgement Receipt

EFS ID:	42370314
Application Number:	17208932
International Application Number:	
Confirmation Number:	5102
Title of Invention:	Baby Bottle with Flexible Nipple Regions
First Named Inventor/Applicant Name:	Arnold Rees
Customer Number:	165989
Filer:	Joshua A. Griswold/Anna Siwek
Filer Authorized By:	Joshua A. Griswold
Attorney Docket Number:	40395-0012004
Receipt Date:	05-APR-2021
Filing Date:	22-MAR-2021
Time Stamp:	17:53:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS_1449_40395-0012004.pdf	173820 0a9e3538acf7d559504194a9fe9d7b30645a8758	no	8

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New International Application Filed with the USPTO as a Receiving Office

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/208,932	03/22/2021	Arnold Rees	40395-0012004

CONFIRMATION NO. 5102

165989
FISH & RICHARDSON P.C.
(Mayborn Group Limited)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

FORMALITIES LETTER

OC000000124486812

Date Mailed: 03/31/2021

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given **TWO MONTHS** from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

The required item(s) identified below must be timely submitted to avoid abandonment:

- A substitute specification excluding claims in compliance with 37 CFR 1.52, 1.121(b)(3), and 1.125 is required. The substitute specification must be submitted with markings and be accompanied by a clean version (without markings) as set forth in 37 CFR 1.125(c) and a statement that the substitute specification contains no new matter (see 37 CFR 1.125(b)). Since a preliminary amendment was present on the filing date of the application and such amendment is part of the original disclosure of the application, the substitute specification must include all of the desired changes made in the preliminary amendment. See 37 CFR 1.115 and 1.215.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

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Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

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P.O. Box 1450
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Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/ngfissha/

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 17/208,932

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	320
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	700
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	800
TOTAL CLAIMS (37 CFR 1.16(i))	17 minus 20 =	*			OR	x 100 =	0.00
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*				x 480 =	0.00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1820

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)	OR	RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
17/208,932	03/22/2021	3643	1820	40395-0012004	17	3

CONFIRMATION NO. 5102

165989
FISH & RICHARDSON P.C.
(Mayborn Group Limited)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

FILING RECEIPT



Date Mailed: 03/31/2021

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Arnold Rees, Newcastle Upon Tyne, UNITED KINGDOM;
Ian Webb, London, UNITED KINGDOM;
Mark Armstrong, Wales, UNITED KINGDOM;
Tom Cotton, London, UNITED KINGDOM;

Applicant(s)

Mayborn (UK) Limited, New Castle Upon Tyne, UNITED KINGDOM

Power of Attorney: The patent practitioners associated with Customer Number 165989

Domestic Priority data as claimed by applicant

This application is a CON of 14/551,783 11/24/2014 PAT 10952930
which is a CON of 13/364,557 02/02/2012 PAT 8910810
which is a CON of 11/630,864 09/20/2007 PAT 8181800 *
which is a 371 of PCT/GB2005/002532 06/29/2005
(*)Data provided by applicant is not consistent with PTO records.

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)
UNITED KINGDOM 2004/14560.3 06/29/2004 No Access Code Provided
UNITED KINGDOM 2005/02599.4 02/08/2005 No Access Code Provided

Permission to Access Application via Priority Document Exchange: Yes

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Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 03/30/2021
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/208,932**
Projected Publication Date: To Be Determined - pending completion of Corrected Papers
Non-Publication Request: No
Early Publication Request: No
Title

Baby Bottle with Flexible Nipple Regions

Preliminary Class

119

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

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countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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Doc Code: PA..
Document Description: Power of Attorney

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Application Number	
Filing Date	March 22, 2021
First Named Inventor	Arnold Rees
Title	Baby Bottle with Flexible Nipple Regions
Art Unit	
Examiner Name	
Attorney Docket Number	40395-0012004

SIGNATURE of Applicant or Patent Practitioner

Signature	/Joshua A. Griswold/	Date (Optional)	
Name	Joshua A. Griswold	Registration Number	46,310
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 165989

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

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OR

☐ The address associated with Customer Number:

OR

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Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Mayborn (UK) Limited

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	
Name	James Taylor		
Title	Chief Financial Officer, Mayborn (UK) Limited		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Arnold Rees	Art Unit	:	Unknown
Application No.	:	Unknown	Examiner	:	Unknown
Filed	:	March 22, 2021			
Title	:	BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS			

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRELIMINARY AMENDMENT

Prior to examination, please amend the application as indicated on the following pages.

Amendments to the Specification:

Please replace the paragraph beginning at page 1, line 4 with the following amended paragraph:

This application is a continuation of pending U.S. Application Serial No. 14/551,783 filed on November 24, 2014, which is a continuation of pending U.S. Application Serial No. 13/364,557 filed on February 2, 2012, which was a continuation of U.S. Application Serial No. 11/630,864 ~~filed on September 20, 2007~~ filed on December 22, 2006, which was a national filing under § 371 of International Application PCT/GB2005/002532, with an international filing date of June 29, 2005, claiming priority from Great Britain Application No. GB2004/14560.3, with a filing date of June 29, 2004, now abandoned, and Great Britain Application No. GB2005/02599.4, with a filing date of February 8, 2005, now abandoned, all of which are herein incorporated by reference.

Please replace the description of Figures 2b, 3a, 3b and 4, beginning on page 3 line 12, with the following amended paragraphs:

-- FIG. 2b is a side view of the teat of FIG. 1 in use in a second flexed position; ~~and.~~

FIGS. 3a and 3b are end and side views respectively of a soother incorporating the teat of the present ~~invention.~~ invention;

FIG. 4 ~~which~~ is a cross-sectional side view of a teat and vessel according to another aspect of the present invention; --

Please replace the paragraph beginning on page 5, line 20, with the following amended paragraph:

-- Referring to FIG. 4, it will be seen that according to another aspect a teat assembly 140 is mounted on an infant drinking vessel 112. The teat assembly ~~40~~ 140 includes a teat 110 having a teat portion 114 forming a nipple having drink apertures 115 at its upper end, a base portion 116 mountable to the drinking vessel and an areola region 118 therebetween. The teat 110 is textured and shaped to mimic the human breast and can, for example have skin-like texture varying between the teat portion, areola region and base portion, similar to the human breast. The teat can indeed be coloured to mirror human skin colour including ethnic skin colours. 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. The areola portion 118 rises from the base portion 116 to the teat portion 114 at an angle to the horizontal, that is to say, with a component of inclination parallel to the teat portion 114, allowing better pursing by the infant so that they can close their lips effectively around the teat, and again mimicking the human breast such that the experience of the infant is as similar as possible to the natural experience of breast feeding. --

Please replace the paragraph beginning at page 7, line 13 with the following amended paragraph:

The screw collar 130 [[30]] includes an internally threaded cylindrical portion 132 and a downwardly domed peripheral portion 134 surrounding it and extending from an upper end of the cylindrical portion 132. The domed portion 134 includes a horizontal outward annular flange 135 of thicker cross-section at its base. The teat 110 is over-moulded onto the screw collar 130 and the domed portion 134 terminates at a central circular orifice corresponding with an outer face of the neck 128 of the vessel 112, the over-moulded portion of the teat extending inwardly slightly from this position and terminating in a downwardly depending cylindrical flange 141.

Please replace the paragraph beginning at page 8, line 5 with the following amended paragraph:

Because of the resilience of the flange portion, when 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. Referring to FIG. 6 the lip valve 123 [[124]] can be seen viewed from the underside. In the embodiment shown it will be seen that a passage 125 actually passes through the lip valve, communicating with the vent passage 126. In that case the aperture to the passage 125 will seal against the inner face of the vessel in the sealed configuration and unseal to provide a passage.

Please replace the paragraph beginning at page 8, line 14 with the following amended paragraph:

Alternatively a [[the]] slit valve 124 can comprise a flap which flexes away from the interior surface to allow communication with a vent passage as described above.

Please replace the paragraph beginning on page 8, line 17, with the following amended paragraph:

-- The teat assembly 140 also has a positive engagement stop providing tactile feedback to ensure that the teat assembly is ~~corrected~~ correctly tightened on the vessel and allows the lip valve to seal effectively. Referring to FIGS. 7a to 7c, for example, it will be seen that a vessel 400 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 of understanding. --

Please replace the paragraph beginning at page 8, line 29 with the following amended paragraph:

As can best be seen in FIG. 7b, the collar portion 404 includes an internal lug 410 which projects inwardly from the inner face and engages against a stop feature on the screw threaded portion of the vessel 400 formed by the projections 408a, 408b such that

the teat 110 "clicks" into a desired position. As a result a controlled compression on the lip valve 123 [[124]] is obtained such that a consistent and repeatable valving action is obtained on each use. In particular the projections 408a, 408b are separated by a recess, 408c best seen in FIG. 7c. When the collar 404 is screwed into place the lug 410 passes over the projection 408b which has a ramp towards the recess 408c. After the lug 410 has ridden up the ramp it drops into the recess 408c and is obstructed from further movement by the planar face of the projection 408a. The lug 410 further prevents the collar 404 from being unscrewed by virtue of its engagement with the abutting face of the projection 408b. However the lug 410 and projection 408b have chamfered or radiused abutting faces such that, on application of sufficient unscrewing pressure, the lug 410 rides over the chamfered face of the projection 408b and then down the ramp allowing the collar to be fully unscrewed.

Please replace the paragraph beginning at page 9, line 16 with the following amended paragraph:

In operation the vessel is filled with drinking liquid and the teat assembly 140 is screwed on until positive engagement is detected (for example a discernable "click") meaning that it is correctly fitted. When the infant then drinks from the vessel the pressure difference pulls the lip valve 123 [[124]] away from the inner face of the neck 128 of the vessel 112 allowing venting through vent passage 126 and hence reducing the risk of colic. Because of the provision of the lip valve there is no requirement for providing slits and a natural, robust and resilient valve assembly is provided. Furthermore, the valve is formed during the moulding operation and requires no secondary operation for its formation providing commercial and manufacturing benefits. Yet further as a single vent passage is provided at one point on the teat, the risk of leakage is reduced, especially as the vent passes through the teat rather than around the vessel neck.

REMARKS

Applicant asks that all claims be examined in view of the amendment to the claims.

No fees are believed to be due. However, please apply any deficiencies or any other required fees or any credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: March 22, 2021

/Joshua A. Griswold/

Joshua A. Griswold
Reg. No. 46,310

Customer Number 165989
Fish & Richardson P.C.
Telephone: (214) 747-5070
Facsimile: (877) 769-7945

91441363.doc

Doc Code: TRACK1.REQ
Document Description: TrackOne Request

PTO/AIA/424 (03-14)

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e) (Page 1 of 1)

First Named Inventor:	Arnold Rees	Non provisional Application Number (if known):	
Title of Invention:	Baby Bottle with Flexible Nipple Regions		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1), the prioritized examination fee set forth in 37 CFR 1.17(c), and if not already paid, the publication fee set forth in 37 CFR 1.18(d) have been filed with the request. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.

2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims.

3. The applicable box is checked below:

I. ☒ Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)

i. (a) The application is an original non provisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.

---OR---

(b) The application is an original non provisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.

ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, **or** the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.

II. ☐ Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)

i. A request for continued examination has been filed with, or prior to, this form.
ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
iii. The application is an original non provisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /Joshua A. Griswold/	Date March 22, 2021
Name (Print/Typed) Joshua A. Griswold	Practitioner Registration Number 46,310

Note: *This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.**

☐ *Total of _____ forms are submitted.

91441393.doc

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant *(i.e.,* GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Nanobebe US Inc., Ex. 1004, Page 268
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS

Cross-Reference to Related Applications

This application is a continuation of pending U.S. Application Serial No. 13/364,557 filed on February 2, 2012, which was a continuation of U.S. Application Serial No. 11/630,864 filed on September 20, 2007 which was a national filing under § 371 of International Application PCT/GB2005/002532, with an international filing date of June 29, 2005, claiming priority from Great Britain Application No. GB2004/14560.3, with a filing date of June 29, 2004, now abandoned, and Great Britain Application No. GB2005/02599.4, with a filing date of February 8, 2005, now abandoned, all of which are herein incorporated by reference.

Technical Field

The invention relates to a drinking vessel with a nipple, in particular a baby bottle having a nipple of increased flexibility and functionality.

Background of the Invention

Various known teats have been designed to mimic the human breast in operation. One known teat is described in U.S. Pat. No. 6,645,228 and includes a stem and a base. The base has a bulbous region and an areola region from which the stem projects. The bulbous region has an upper region with a progressively thinning wall which acts as a spring element such that as an infant sucks on the teat the areola and stem move back and forth relative to the bulbous region.

Various problems arise with this arrangement. Movement of the areola region and stem relative to the bulbous region does not closely mimic the movement of the human breast during sucking. Furthermore because flexibility is provided upon a progressively thinning wall region, the amount of flexing and the point at which flexing takes place is undefined and unpredictable.

A second known teat is described in U.S. Pat. No. 6,745,912 B2 (Pigeon) including a series of parallel annular grooves on the inner surface of the nipple which allows stretching of the nipple but only in a constrained direction, and with the risk of flow blockage if the nipple collapses.

In addition, efforts are continuing to provide valved feeding bottles, in particular to allow air ingress to the teat. It is believed that this reduces the risk of colic which can otherwise occur as a result of negative pressure building up in the feeding bottle. Various known arrangements include slit valves of various types, however these are frail and difficult to machine. In another approach described in German patent DE19716535 a teat is provided with an inner annular resilient flange at its base which rests on a bottle rim when screwed down by a collar. Upon a negative pressure building up inside the drinking vessel the flange lifts from the vessel rim and air passes up through the collar and between the flange and the vessel rim.

In a similar arrangement described in European patent application EP151862 a teat includes a downwardly depending cylindrical flange at its base which seals against the inner top face of a vessel neck when deformed by being screwed down by a collar. Again a negative pressure inside the vessel lifts the flange away from the vessel neck so that air flows through the collar and between the neck and the flange into the vessel to relieve the pressure differential. Such arrangements rely on the correct amount of screw pressure being applied by the user on fixing the teat which can give rise to varied levels of valving between uses. Furthermore the introduction of a circumferential flange increases material costs.

Summary of the Invention

The invention is set out in the claims. According to a first embodiment, because the flex region is provided in the areola portion allowing the teat portion and/or areola portion to move towards and away from one another a more natural feeding action is provided. Furthermore, because of the inclusion of a plurality of flex channels the point of flexure is clearly defined. According to a second

embodiment, because of the provision of a helical flow formation on the inner face of the teat, continuous flow of liquid is allowed even when the teat collapses via the helical flow path while allowing extension of the teat and in particular a rotational or torsional extension. It will be understood that each of the terms "teat" and "nipple" embraces feeding bottle teats and nipples as well as soother teats and nipples, sometimes known as "baglets".

Embodiments of the invention will now be described by way of example with reference to the drawings.

Brief Description of the Drawings

FIG. 1 is a cross-sectional side view of a teat according to the present invention;

FIG. 2a is a side view of the teat of FIG. 1 in use in a first flexed position;

FIG. 2b is a side view of the teat of FIG. 1 in use in a second flexed position; and.

FIGS. 3a and 3b are end and side views respectively of a soother incorporating the teat of the present invention.

FIG. 4 which is a cross-sectional side view of a teat and vessel according to another aspect of the present invention;

FIG. 5a is a perspective view showing a teat valve in a first, closed configuration;

FIG. 5b is a perspective view showing a teat valve in a second, open configuration;

FIG. 6 is a partial perspective view of the underside of the teat, showing a lip valve;

FIG. 7a is an exploded perspective view showing assembly steps for a drinking vessel according to the invention;

FIG. 7b is a perspective view showing a first detail of an assembled vessel according to the present invention; and

FIG. 7c is a perspective view showing a second detail of an assembled vessel according to the present invention.

Detailed Description of the Invention

Referring firstly to FIG. 1 a teat 10 for use with a feeding bottle includes a teat portion 12, a base portion 14 and an areola portion 16 therebetween. A flange 18 extends from the base of the base portion to allow fixing to a feeding bottle (not

shown) in any appropriate known manner. The base portion may also include a one-way air-inlet valve of any appropriate type for example an integrally moulded duck-bill valve (not shown). The teat has circular symmetry around an axis A running through the center of the teat.

The areola portion 16 includes a flex region 20 comprising three grooves or flex channels 22 extending around an inner surface of the areola portion effectively forming circular thinned regions parallel/concentric with each other about the axis A and hence surrounding the teat portion. The flex region 20 is generally provided between a transition region 24 separating the base portion 14 and the areola portion 16 and a transition region 26 separating the areola portion 16 and the teat portion 12. The flex region 20 allows flexing of the teat as described in more detail below.

The teat can be formed in any appropriate manner, for example compression or injection moulding and formed of any appropriate elastic material such as silicone, latex or thermoplastic elastomer (TPE). Injection moulded silicone provides a particularly desirable degree of elasticity in the teat portion. The teat portion 12 is preferably thinner in cross-section than the remainder of the teat or is co-moulded with a more flexible material to allow additional flexing of the teat portion relative to the teat as a whole. The teat can have a texture such as a skin-like texture moulded or otherwise patterned on to its surface.

As shown in FIGS. 2a and 2b, in operation an infant drinks from the teat mounted on a bottle, the infant's tongue 50 contacting the teat portion 12, the infant's teeth or gums 52 contacting the transition portion 26 and 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 and areola portion flex towards and away from one another by virtue of respective collapsing and extending of the flex region around the flexed channels 22. In particular, as can be seen in FIG. 2a, reduced suction on the teat portion 12 towards the base portion 14 relaxes the flexible reduced suction whereas, as shown in FIG. 2b, suction on the teat portion 12 away from the base portion 14 collapses the flexible region 20 extending the teat portion

and areola portion away from one another.

The back and forth motion of the teat portion 12 mimics very closely the natural movement of the human breast during suckling or sucking of the infant by effectively allowing the teat to move and stretch as skin moves and stretches. The grooves or channels further visually define an areola area and are placed at an area of the teat which is also a non-bite area. The flexible portion also provides a pumping action on liquid in the bottle as the teat portion oscillates or reciprocates back and forth.

FIGS. 3a and 3b show a soother 30 employing a teat or baglet 31 according to the first embodiment of the present invention. The teat 31 includes a teat portion 32, a base portion 34 and an areola portion 36 therebetween. The teat 31 is generally hollow and is secured at the base portion 34 to a shield 38, having a ring or handle 39, with the areola portion 36 forming a non-bite portion of the teat 31. A flex region 37, is situated at the non-bite areola portion 36, and comprises grooves or channels extending around the inner surface of the teat 31 at the areola portion 36. As an infant sucks on the teat 31, the teat portion 32 flexes back and forth as a result of the respective collapsing and extending of the flex region 37 grooves. As before, this back and forth movement mimics the movement of a human breast during suckling, but with the flex region in a non-bite area.

Referring to FIG. 4, it will be seen that according to another aspect a teat assembly 140 is mounted on an infant drinking vessel 112. The teat assembly 40 includes a teat 110 having a teat portion 114 forming a nipple having drink apertures 115 at its upper end, a base portion 116 mountable to the drinking vessel and an areola region 118 therebetween. The teat 110 is textured and shaped to mimic the human breast and can, for example have skin-like texture varying between the teat portion, areola region and base portion, similar to the human breast. The teat can indeed be coloured to mirror human skin colour including ethnic skin colours. 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. The areola portion 118 rises from the base portion 116 to the teat portion 114 at an angle to the horizontal, that is to say, with a component of inclination parallel to the teat portion 114, allowing better pursing by the infant so that they can close their lips effectively around the teat, and again mimicking the human breast such that the experience of the infant is as similar as possible to the natural experience of breast feeding.

The teat 110 is formed from an elastomer with walls of decreasing thickness from the base portion 116 through to the teat 114 providing a more realistic flexing characteristic. The areola portion 118 further includes undulating grooves 120 forming, in cross-section, a wavy profile on the inner surface of the areola portion 118 and extending circumferentially. In the embodiments shown three such grooves are formed adjacent one another providing a bellows action as well as flexing in a direction perpendicular to the flow direction and increasing the flexibility especially in conjunction with the decreasing wall thickness providing a more natural stretching characteristic and sensory feedback to the infant. Yet further, the teat can be textured on its outer and/or inner surface to enhance operation or realism of the teat as appropriate.

The teat portion 114 projects generally perpendicular to the mouth of the vessel 112 and is elongate for example of length 20 mm, again to mimic the extension of the human nipple during breast feeding. The teat portion has a generally rectangular cross-section with wall thickness 1.8 mm and diameter 13 mm. A tight pitch helical groove 122 of groove depth 0.9 mm (half the wall thickness) having for example three turns and 3 mm pitch is moulded or otherwise formed around the inner cylindrical vertical surface of the teat portion 114 to form a flow passage even when the teat portion is collapsed, for example under biting pressure from an infant. In addition the helical groove allows rotational or torsional compression and extension of the teat portion in the range of 5-6 mm and flexing parallel perpendicular to the flow direction, again more closely mimicking the human breast.

At the tip of the teat portion the apertures 115 comprise a variable flow valve, where the flow can either be selected by choosing a teat with appropriate apertures or a two or three crossed slit configuration can be provided allowing the infant to regulate flow. For example referring to FIGS. 5a and 5b, a teat 200 includes a teat portion 202 with a slit valve 204. As can be seen from FIG. 5b when pressure is applied in the longitudinal direction of the slit, for example bite pressure, the slit valve opens allowing fluid flow by application of compression and distortion pressure.

The teat assembly 140 is formed in a two-shot moulding process with elastomer forming the teat 110 and polypropylene forming a screw collar 130 which is integrally formed with the teat 110. As a result a resilient, cheaply and easily manufactured integral assembly is provided.

The screw collar 30 includes an internally threaded cylindrical portion 132 and a downwardly domed peripheral portion 134 surrounding it and extending from an upper end of the cylindrical portion 132. The domed portion 134 includes a horizontal outward annular flange 135 of thicker cross-section at its base. The teat 110 is over-moulded onto the screw collar 130 and the domed portion 134 terminates at a central circular orifice corresponding with an outer face of the neck 128 of the vessel 112, the over-moulded portion of the teat extending inwardly slightly from this position and terminating in a downwardly depending cylindrical flange 141.

As a result the screw collar provides structural strength and a strong screw fit, but the resilient material of the teat portion 140 provides sealing. In particular the threaded cylindrical portion 132 of the screw collar screws on to the outwardly threaded neck 128 of the vessel 112 and the top, innermost edge of the domed portion 134 abuts the outer face of the neck 128. Because the teat material 110 overhangs the inner edge 139 of the domed portion 134, when the teat assembly 140 is screwed down, the overhanging portion seals against the top rim of the neck 128 and the downward cylindrical flange 141 forms an elastomer sealing ring

sealing against the top inner face of the vessel neck 128. The teat 110 includes a vent passage 126 through the elastomer material and substantially at the periphery. A discontinuous flap or lip valve portion 123 projects down from the flange 141 in a portion of the periphery only in the vicinity of the vent passage 126.

Because of the resilience of the flange portion, when 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. Referring to FIG. 6 the lip valve 124 can be seen viewed from the underside. In the embodiment shown it will be seen that a passage 125 actually passes through the lip valve, communicating with the vent passage 126. In that case the aperture to the passage 125 will seal against the inner face of the vessel in the sealed configuration and unseal to provide a passage.

Alternatively the slit valve 124 can comprise a flap which flexes away from the interior surface to allow communication with a vent passage as described above.

The teat assembly 140 also has a positive engagement stop providing tactile feedback to ensure that the teat assembly is corrected tightened on the vessel and allows the lip valve to seal effectively. Referring to FIGS. 7a to 7c, for example, it will be seen that a vessel 400 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 of understanding.

The handle portion 402 includes a cut-out portion 406 which cooperates with projections 408a, 408b on the vessel to locate the handle portion in a predetermined position. The handle portion is placed over the vessel and located in the desired orientation and then the collar 404, including an internal thread portion allowing mounting on the vessel 400 is screwed into position as described above, securing the handle portion 402 in place.

As can best be seen in FIG. 7b, the collar portion 404 includes an internal

lug 410 which projects inwardly from the inner face and engages against a stop feature on the screw threaded portion of the vessel 400 formed by the projections 408a, 408b such that the teat 110 "clicks" into a desired position. As a result a controlled compression on the lip valve 124 is obtained such that a consistent and repeatable valving action is obtained on each use. In particular the projections 408a, 408b are separated by a recess, 408c best seen in FIG. 7c. When the collar 404 is screwed into place the lug 410 passes over the projection 408b which has a ramp towards the recess 408c. After the lug 410 has ridden up the ramp it drops into the recess 408c and is obstructed from further movement by the planar face of the projection 408a. The lug 410 further prevents the collar 404 from being unscrewed by virtue of its engagement with the abutting face of the projection 408b. However the lug 410 and projection 408b have chamfered or radiussed abutting faces such that, on application of sufficient unscrewing pressure, the lug 410 rides over the chamfered face of the projection 408b and then down the ramp allowing the collar to be fully unscrewed.

In operation the vessel is filled with drinking liquid and the teat assembly 140 is screwed on until positive engagement is detected (for example a discernable "click") meaning that it is correctly fitted. When the infant then drinks from the vessel the pressure difference pulls the lip valve 124 away from the inner face of the neck 128 of the vessel 112 allowing venting through vent passage 126 and hence reducing the risk of colic. Because of the provision of the lip valve there is no requirement for providing slits and a natural, robust and resilient valve assembly is provided. Furthermore, the valve is formed during the moulding operation and requires no secondary operation for its formation providing commercial and manufacturing benefits. Yet further as a single vent passage is provided at one point on the teat, the risk of leakage is reduced, especially as the vent passes through the teat rather than around the vessel neck.

It will be appreciated that the teat can be formed of any material and can be any appropriate shape which may be, for example, non-symmetrical such as a

shaped or orthodontic teat or even more closely mimicking the shape of the human breast. Different teat configurations can be provided to grow with different ages of infant. For example the teat portion can be made progressively longer as the age of the infant who will be using the teat increases and/or the texture can be made less prominent, for example ranging from coarse for new-borns through fine to gloss.

In the teat of the first embodiment, the flex channels in the flex region can be of any appropriate profile for example square, semi-circular or triangular in cross-section and can be provided on the inner or outer surface of the teat and in any appropriate number. Instead of providing thinned regions the flexed channels can be formed by a concertina or bellows configurations moulded into the teat or any other appropriate hinge or fold mechanism. Furthermore features of either the first or second embodiment can be interchanged or juxtaposed with one another or implemented in other types of drinking vessel cover as appropriate. For example the lip valve can be implemented in a trainer cup cover, a sports bottle or other vessel closures capable of forming a partial vacuum in a vessel in use.

It will be appreciated that whilst the Figures show a soother comprising a teat of the first embodiment, the invention also encompasses a soother comprising a teat of the second embodiment. The soother comprising the teat and shield/ring components can be formed from any appropriate material. For example, the teat can be formed from silicone, latex or Thermoplastic Elastomer (TPE), whilst the shield and ring can be formed from thermoplastic materials such as polypropylene PP, polycarbonate PC or similar material blends as appropriate. Furthermore, the soother can be manufactured by any appropriate moulding method.

WHAT IS CLAIMED IS:

1) A feeding bottle comprising:

a) a nipple having:

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

a base portion having a wall thickness in a domed configuration,

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

a flange having a downwardly depending cylindrical portion and connected to the base portion,

a vent passage extending through the base portion,

the vent passage having an air valve below a top edge of a collar, and

the flange being arranged to seal with a vessel;

b) the vessel having:

an open top with a first diameter,

a body with a second diameter,

the body being connected with the open top, and

the first diameter of the open top being less than the second diameter of the body;

c) the collar having:

an internally threaded cylindrical portion,

a downwardly domed peripheral portion surrounding and extending from the cylindrical portion, and

d) the nipple being secured to the vessel with the flange of the nipple being captured between the collar and the open top of the vessel.

2) The feeding bottle of claim 1 wherein the vessel has two indentations.

3) The feeding bottle of claim 1 wherein the flange forms an elastomer sealing ring sealing against the top of the vessel.

4) The feeding bottle of claim 1 wherein the open top of the vessel comprises a vessel neck.

5) The feeding bottle of claim 1 wherein the open top of the vessel comprises an outwardly threaded vessel neck.

6) The feeding bottle of claim 1 wherein the internally threaded cylindrical portion of the collar is sized to mate with the open top of the vessel.

7) The feeding bottle of claim 1 wherein the collar comprises polyproplyene.

8) The feeding bottle of claim 1 wherein the air valve is a one-way air-inlet valve.

9) A feeding bottle comprising:

a) a nipple having:

a teat portion including an aperture,

a base portion having a domed configuration,

a flange having a downwardly depending cylindrical portion and

connected to the base portion,

a vent passage extending through the base portion,

the vent passage having an air valve below a top edge of a collar, and

the flange being arranged to seal with a vessel;

b) the vessel having:

an open top with a first diameter,

a body with a second diameter,

the body being connected with the open top, and

the first diameter of the open top being less than the second diameter of the body;

c) the collar having:

an internally threaded cylindrical portion,

a downwardly domed peripheral portion surrounding and extending from the cylindrical portion,

the domed peripheral portion having a horizontal outward annular flange at its base, and

d) the nipple being secured to the vessel with the flange of the nipple being captured between the collar and the open top of the vessel.

10) The feeding bottle of claim 9 wherein the horizontal outward annular flange is thicker than the domed peripheral portion.

11) The feeding bottle of claim 9 wherein the diameter of the horizontal

outward annular flange is less than the diameter of the vessel body.

12) The feeding bottle of claim 9 wherein the domed peripheral portion terminates at a central circular orifice corresponding with the open top of the vessel.

13) A feeding bottle comprising:

a) a nipple having:

a teat portion having a groove around its inner cylindrical vertical surface and a flow valve,

a base portion having a domed configuration,

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

a flange having a downwardly depending cylindrical portion and connected to the base portion,

a vent passage extending through a periphery of the base portion,

the vent passage having an air valve, and

the flange being arranged to seal with a vessel;

b) the vessel having:

an open top with a first diameter,

a body with a second diameter,

the body being connected with the open top, and

the first diameter of the open top being less than the second diameter of the body;

c) the collar having:

an internally threaded cylindrical portion,

a downwardly domed peripheral portion extending from the cylindrical portion, and

d) the nipple being secured to the vessel with the flange of the nipple being captured between the collar and the open top of the vessel.

14) The feeding bottle of claim 13 wherein a outer surface of the teat portion has a first texture and a outer surface of the areola portion has a second texture.

15) The feeding bottle of claim 13 wherein an inner surface of the areola portion has at least one groove extending circumferentially.

16) The feeding bottle of claim 13 wherein the teat walls decrease in thickness from the base portion through to the teat portion.

17) The feeding bottle of claim 13 wherein the air valve is located below a top edge of the collar.

Abstract of the Disclosure

According to a first embodiment, a feeding bottle comprises a vessel, collar, and nipple. The nipple comprises a base portion, a teat portion, an areola portion allowing movement of the teat portion towards and away from the base portion. According to a second embodiment, a feeding bottle comprises a vessel, collar, nipple and handle portion removeably secured to the vessel by the collar. The invention includes a flexible region or regions to provide a more natural feeding by closely mimicking the human breast.

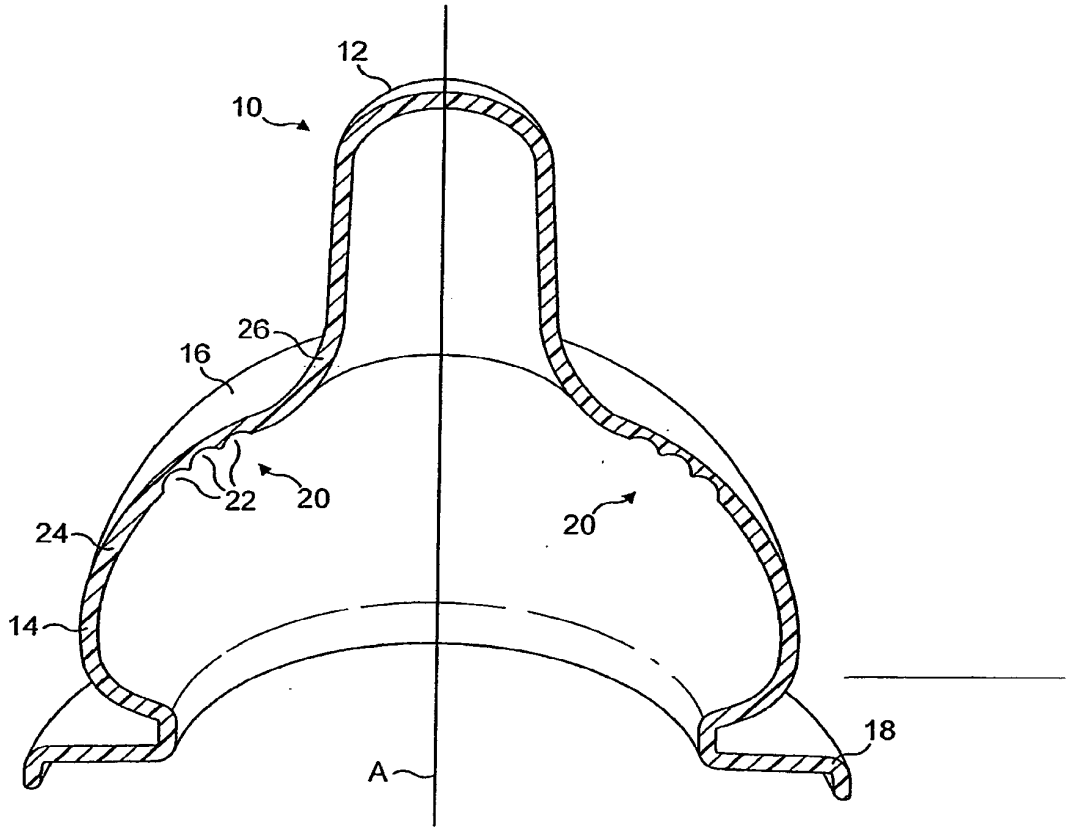


FIG. 1

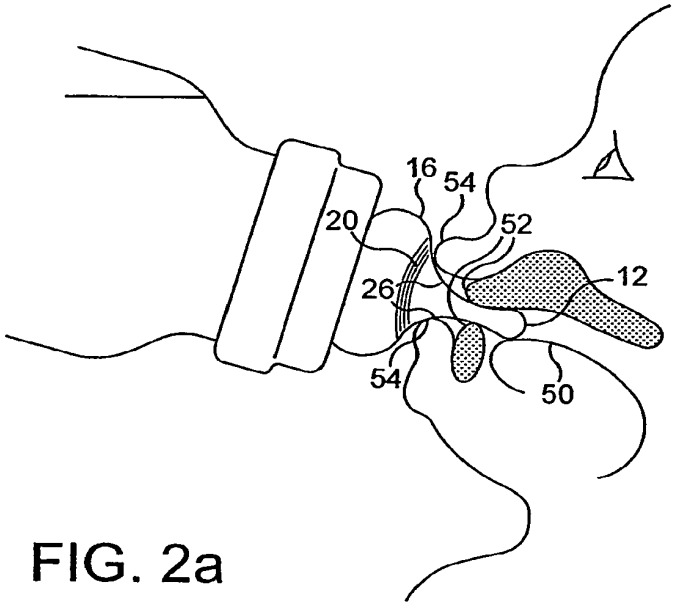


FIG. 2a

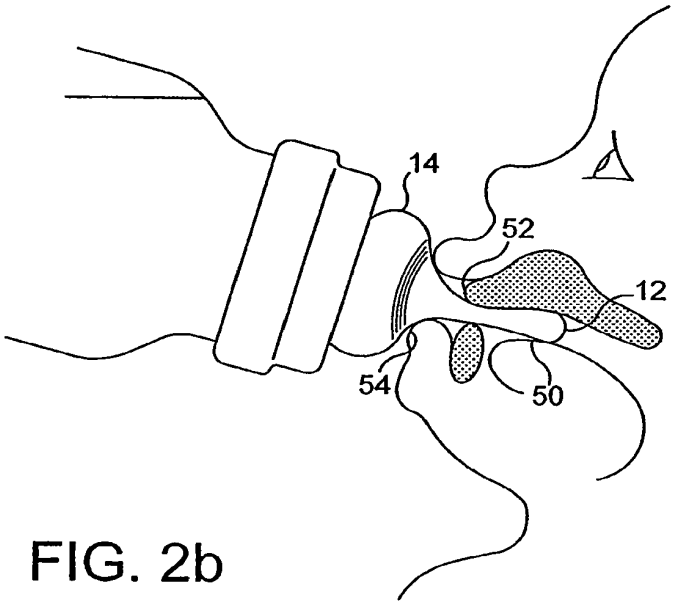


FIG. 2b

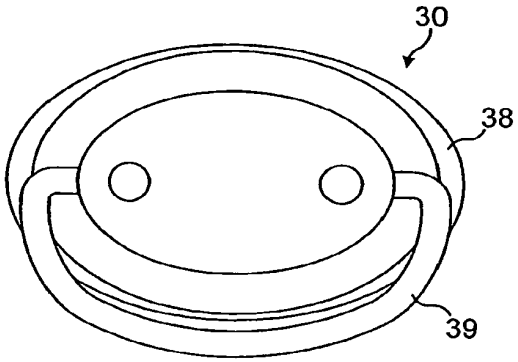


FIG. 3a

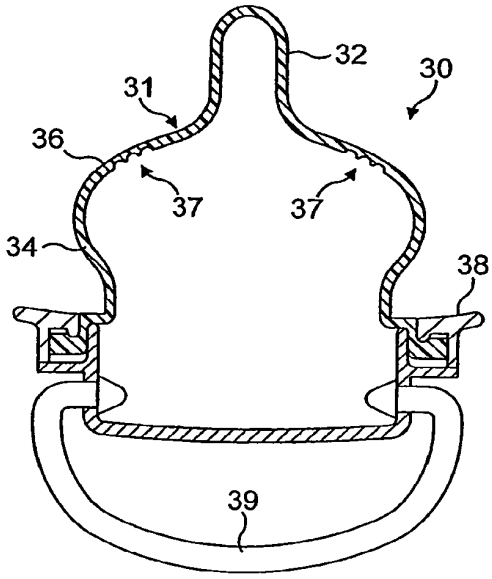


FIG. 3b

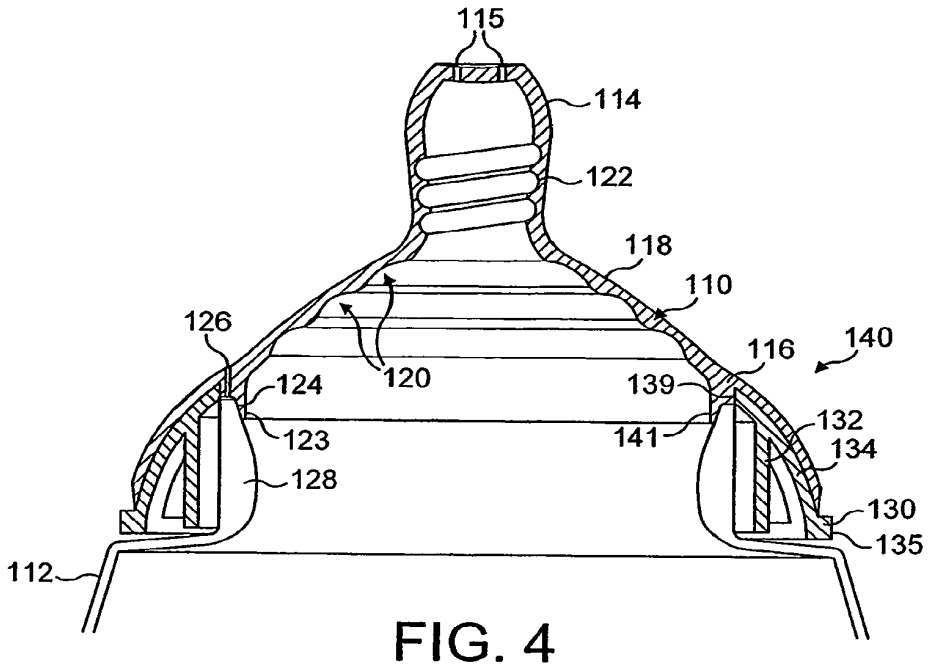


FIG. 4

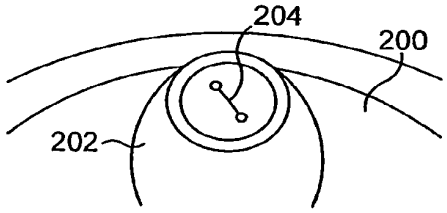


FIG. 5a

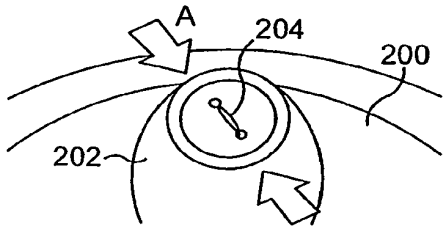


FIG. 5b

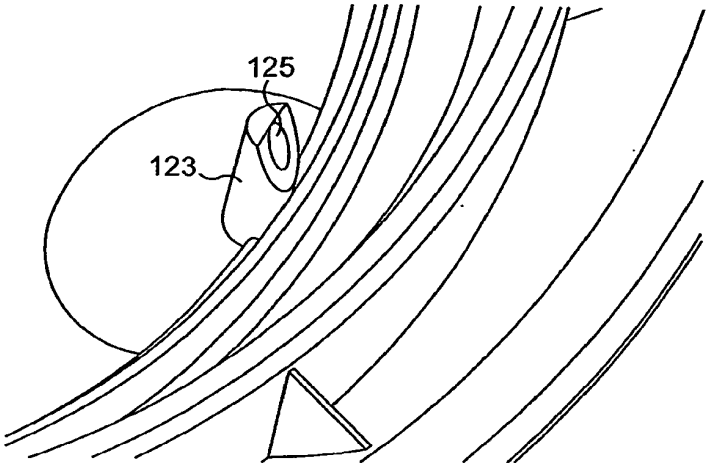


FIG. 6

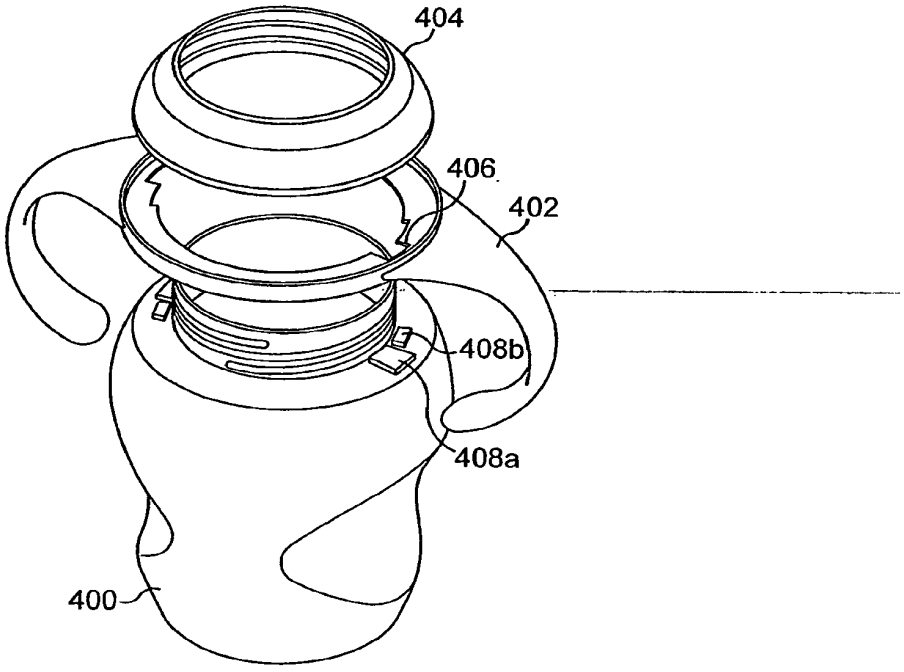


FIG. 7a

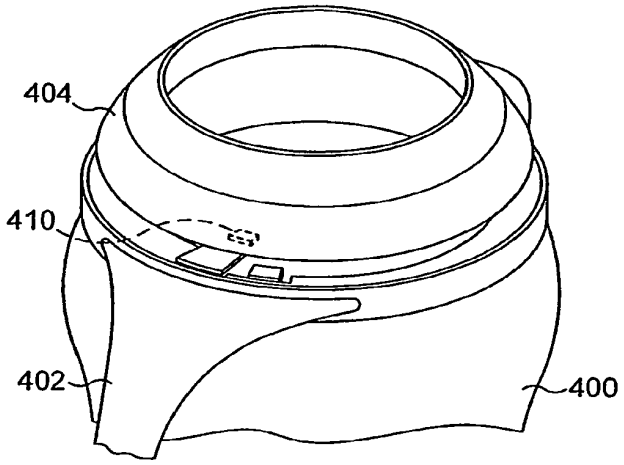


FIG. 7b

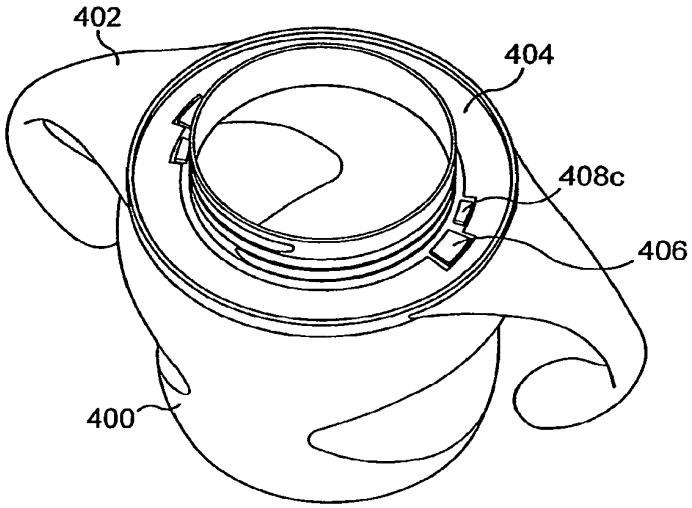


FIG. 7c

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	Baby Bottle With Flexible Nipple Regions

As the below named inventor, I hereby declare that:

This declaration is directed to:

- ☐ The attached application, or
- ☒ United States application or PCT international application number 14/551,783 filed on November 24, 2014.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Arnold Rees Date (Optional): 17 JUNE 2015

Signature: [signature]

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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LEGAL NAME OF INVENTOR

Inventor: Ian Webb Date (Optional): 16 JUNE 2015.

Signature: [signature]

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting he completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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LEGAL NAME OF INVENTOR

Inventor: Mark Armstrong Date (Optional): 16 June 2015

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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LEGAL NAME OF INVENTOR

Inventor: Tom Cotton Date (Optional): _____

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	40395-0012004
	Application Number	
Title of Invention	Baby Bottle with Flexible Nipple Regions	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Arnold		Rees	

Residence Information (Select One) US Residency ● Non US Residency Active US Military Service

City	Newcastle Upon Tyne	Country of Residence [i]	GB

Mailing Address of Inventor:

Address 1	9 Melmerby Close, Gosforth		
Address 2			
City	Newcastle Upon Tyne	State/Province	OT
Postal Code	NE3 5JA	Country [i]	GB

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Ian		Webb	

Residence Information (Select One) US Residency ◉ Non US Residency Active US Military Service

City	London	Country of Residence [i]	GB

Mailing Address of Inventor:

Address 1	4 Leinstar Mews		
Address 2			
City	London	State/Province	OT
Postal Code	W2 3E4	Country [i]	GB

Inventor 3 Remove

Legal Name

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	40395-0012004
	Application Number	
Title of Invention	Baby Bottle with Flexible Nipple Regions	

Prefix	Given Name	Middle Name	Family Name	Suffix
	Mark		Armstrong	

Residence Information (Select One) US Residency ◉ Non US Residency Active US Military Service

City	Wales	Country of Residence [i]	GB

Mailing Address of Inventor:

Address 1	Pont Yr Afon Gam		
Address 2			
City	Ffestiniog	State/Province	OT
Postal Code	LL414PS	Country [i]	GB

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Tom		Cotton	

Residence Information (Select One) US Residency ◉ Non US Residency Active US Military Service

City	London	Country of Residence [i]	GB

Mailing Address of Inventor:

Address 1	131 Ashtonville Street		
Address 2			
City	London	State/Province	OT
Postal Code	SWI 85 AQ	Country [i]	GB

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	165989		
Email Address	apsi@fr.com	Add Email	Remove Email

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Nanobebe US Inc. v. Mayborn (UK) Limited et al.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	40395-0012004
	Application Number	
Title of Invention	Baby Bottle with Flexible Nipple Regions	

Application Information:

Title of the Invention	Baby Bottle with Flexible Nipple Regions		
Attorney Docket Number	40395-0012004	**Small Entity Status Claimed** ☐	
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	6	**Suggested Figure for Publication (if any)**	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	● Customer Number	US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	165989		

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	40395-0012004
	Application Number	
Title of Invention	Baby Bottle with Flexible Nipple Regions	

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending	Remove

Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	14/551783	2014-11-24

Prior Application Status	Patented	Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14/551783	Continuation of	13/364557	2012-02-02	8910810	2014-12-16

Prior Application Status	Patented	Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13/364557	Continuation of	11/630864	2006-12-22	8181800	2012-05-22

Prior Application Status	Abandoned	Remove

Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
11/630864	a 371 of international	PCT/GB2005/002532	2005-06-29

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
2004/14560.3	GB	2004-06-29	

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
2005/02599.4	GB	2005-02-08	

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Nanobebe US Inc. v. Mayborn (UK) Limited et al.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	40395-0012004
	Application Number	
Title of Invention	Baby Bottle with Flexible Nipple Regions	

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

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Nanobebe US Inc. v. Mayborn (UK) Limited et al.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	40395-0012004
	Application Number	
Title of Invention	Baby Bottle with Flexible Nipple Regions	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Nanobebe US Inc., Ex. 1004, Page 300
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

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	Application Number	
Title of Invention	Baby Bottle with Flexible Nipple Regions	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 — Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
● Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	Mayborn (UK) Limited

Mailing Address Information For Applicant:

Address 1	Mayborn House Balliol Business Park		
Address 2			
City	New Castle Upon Tyne	**State/Province**	
Country	GB	Postal Code	NE12 8 EW
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Nanobebe US Inc., Ex. 1004, Page 301
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

PTO/AIA/14 (02-18)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	40395-0012004
	Application Number	
Title of Invention	Baby Bottle with Flexible Nipple Regions	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Remove

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Joshua A. Griswold/			Date (YYYY-MM-DD)	2021-03-22
First Name	Joshua A.	Last Name	Griswold	Registration Number	46,310

Additional Signature may be generated within this form by selecting the Add button. Add

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	40395-0012004
	Application Number	
Title of Invention	Baby Bottle with Flexible Nipple Regions	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Nanobebe US Inc., Ex. 1004, Page 304
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

FISH.
FISH & RICHARDSON

Street Address
Fish & Richardson P.C.
1717 Main Street
Suite 5000
Dallas, TX 75201

Mail Address
P.O. Box 1022
Minneapolis, MN 55440-1022

214 747 5070 main
877 769 7945 fax

March 22, 2021

Attorney Docket No.: 40395-0012004

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Presented for filing is a new continuation patent application for prioritized examination of:

Inventor(s): ARNOLD REES, IAN WEBB, MARK ARMSTRONG AND TOM COTTON

Title: BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS

Enclosed are the following papers, including those required to receive a filing date under 37 CFR 1.53(b):

	Pages
Specification	10
Claims	5
Abstract	1
Declaration	4
Drawing(s)	6

Enclosures:

— Application Data Sheet, 10 pages.
— Preliminary amendment, 6 pages.
— Power of Attorney, 2 pages.
— Certification and Request for Prioritized Examination (Track I), 2 pages

Basic Filing Fee	$320
Search Fee	$700
Examination Fee	$800
Publication fee	$0
Track I processing fee	$140
Track I prioritized examination fee	$4200

Nanobebe US Inc., Ex. 1004, Page 305
Nanobebe US Inc. v. Mayborn (UK) Limited et al.

Total Claims 17	over 20	**0 x $100**	$0
Independent Claims 3	over 3	**0 x $480**	$0
Fee for Multiple Dependent claims			$0
Application size fee for each 50 pages over 100 Total Sheets: 22 x .75 - 100/50 = 0x			$0
Total Filing fee			$6160

Please apply any necessary charges or credits to Deposit Account 06-1050, referencing the attorney docket number shown above.

I hereby authorize the USPTO to communicate in response to email communications from the undersigned and practitioners under Customer No. 165989 in accordance with 37 CFR 1.33 and 37 CFR 1.34 concerning any subject matter of this application via email. I understand that a copy of these communications will be made of record in the application file. (MPEP 502.03).

If this application is considered to be incomplete, or if a telephone conference would otherwise be helpful, call the undersigned at (214) 747-5070.

Send all correspondence to:

165989
Customer Number

Respectfully submitted,

/Joshua A. Griswold/

Joshua A. Griswold
Registration No. 46,310

Enclosures

JYG/mng
91441395.doc

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS
First Named Inventor/Applicant Name:	Arnold Rees
Filer:	Joshua A. Griswold/Monica Gamez
Attorney Docket Number:	40395-0012004

Filed as Large Entity

Filing Fees for Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	320	320
UTILITY SEARCH FEE	1111	1	700	700
UTILITY EXAMINATION FEE	1311	1	800	800
REQUEST FOR PRIORITIZED EXAMINATION	1817	1	4200	4200
Pages:				
Claims:				
Miscellaneous-Filing:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
PROCESSING FEE, EXCEPT PROV. APPLS.	1830	1	140	140
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**6160**

Electronic Acknowledgement Receipt

EFS ID:	42248491
Application Number:	17208932
International Application Number:	
Confirmation Number:	5102
Title of Invention:	BABY BOTTLE WITH FLEXIBLE NIPPLE REGIONS
First Named Inventor/Applicant Name:	Arnold Rees
Customer Number:	165989
Filer:	Joshua A. Griswold/Monica Gamez
Filer Authorized By:	Joshua A. Griswold
Attorney Docket Number:	40395-0012004
Receipt Date:	22-MAR-2021
Filing Date:	
Time Stamp:	19:03:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$6160
RAM confirmation Number	E20213LJ04002477
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	TrackOne Request	40395-0012004_TrackOneRequest.pdf	147742 d1aca4bfda15d4d6bc4c670ed93ced4fdc11bc45	no	2
Warnings:					
Information:					
2		40395-0012004_Application.pdf	1210817 91824daac2b772c9f9013dbc52f40101d71e2ecb	yes	16

Multipart Description/PDF files in .zip description

Document Description	Start	End
Specification	1	10
Claims	11	15
Abstract	16	16

Warnings:					
Information:					
3	Drawings-only black and white line drawings	40395-0012004_Drawings.pdf	671828 70e33b66f455857445746c7994cad3995bb001d2	no	6
Warnings:					
Information:					
4	Oath or Declaration filed	40395-0012004_Declarations.pdf	496975 ad380c4af7a604a4021d848ff16e166eed050d8a	no	4
Warnings:					
Information:					
5	Application Data Sheet	40395-0012004_ADS.pdf	1256725 f1c8409c753abd2d95ae9e01c9fd40bb7e04547d	no	10

Warnings:					
Information:					
6	Power of Attorney	40395-0012004_POA.pdf	275738 3ed2b8a5b0496e39cb82731e4a3101b963e4c8d8	no	2
Warnings:					
Information:					
7		40395-0012004_PreliminaryAmendment.pdf	82828 53ca87eb12865a84d3fbd6a138025d3002d3979a	yes	6
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Preliminary Amendment		1	1	
	Specification		2	5	
	Applicant Arguments/Remarks Made in an Amendment		6	6	
Warnings:					
Information:					
8	Transmittal of New Application	40395-0012004_Transmittal.pdf	97848 e6bc719c6a62245e0fa7413d01bb2b07094f0c10	no	2
Warnings:					
Information:					
9	Fee Worksheet (SB06)	fee-info.pdf	40333 ec70cf8fe7fda2b0ff03c57ca121e06d8001a122	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	4280834		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.