Electronic Acknowledgement Receipt

EFS ID:	30176374
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Stephanie Thien Vu/Lea Fong
Filer Authorized By:	Stephanie Thien Vu
Attorney Docket Number:	INCEP-001COD
Receipt Date:	28-AUG-2017
Filing Date:	27-MAR-2014
Time Stamp:	17:00:45
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	Transmittal Letter	INCEP-001COD_IDS_Statement_8-24-17.pdf	18912 208f33b81d9456098bc61527d3731f46318d4ed9	no	2

Warnings:

EX1020
Petitioner Ascentcare ('686 Patent)
Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COD_IDS_1449_8-24-17.pdf	54947 93e89f77ac997cba2aac82e1efd40088f06366e9	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Foreign Reference	EP_3184076.pdf	1862059 7fc2233763ad1f02bf20136a540b4b7cb0741804	no	21
Warnings:					
Information:					
4	Non Patent Literature	EP_17150671_Extended_EP_Search_Report_5-29-17.pdf	769177 0e6bff63e4ca8ad044040074bc053ab7f10f5aea	no	8
Warnings:					
Information:					
		Total Files Size (in bytes):	2705095		

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3732 | Examiner: Hao D. Mai

Serial No.: 14/228,057 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 1983 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH SLIT

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56 and 1.97-1.98

Examiner:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56.

Applicants hereby declare, pursuant to 37 C.F.R. §1.97(e)(1), that each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement.

No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference an admission that it is prior art or pertinent to this application.

The Commissioner is hereby authorized to charge any necessary fee to Account Number 50-1662.

Respectfully submitted,
POLSINELLI LLP

Dated: August 24, 2017

By: _____/Stephanie Vu/_____
Stephanie Vu (Reg. No. 73,063)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
ipdocket@polsinelli.com

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,057	03/27/2014	Thien Nguyen	INCEP-001COD	1983

138718 7590 11/02/2017

Polsinelli LLP
3 Embarcadero Center
Suite 2400
San Francisco, CA 94111

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3732	

NOTIFICATION DATE	DELIVERY MODE
11/02/2017	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):

uspt@polsinelli.com
sfpatent@polsinelli.com

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Office Action Summary	Application No. 14/228,057	Applicant(s) NGUYEN ET AL.	
	Examiner HAO D. MAI	Art Unit 3732	AIA (First Inventor to File) 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 *08/28/2017*.

☐ 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) *1-18* 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) *1-11 and 14-18* is/are rejected.

8)☒ Claim(s) *12-13* 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 _____ 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: _____.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

DETAILED ACTION

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 § 112

2. The following is a quotation of 35 U.S.C. 112(b):
(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 14 is rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Claim 14 recites “the suction” (line 4), which lacks antecedent basis in the claim(s). Note that claim 1 previously recited "when suction is applied..." (claim 1 line 8) which is currently amended to be canceled from claim 1, rendering “the suction” in claim 14 lacking antecedent basis.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-11 and 14-18, are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Hirsch (2006/0063129).**

Regarding claim 1, Hirsch discloses a mouthpiece 20 comprising: a main body portion 22 (Fig. 2; paragraph 49). The main body is configured as a pocket having an interior defined by an anterior wall (best pointed to by reference numeral 54 in Fig. 3) defined by an exterior edge, and a posterior wall (best pointed to by reference numeral 50 in Fig. 4) defined by an exterior edge that corresponds to the exterior edge of the anterior wall. The main body 22 has a side wall (i.e. surrounding edge of the two opposite walls) connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall (Fig. 2).

Regarding the newly recited limitation(s) to the slit, Hirsch discloses the anterior wall 54 having **a slit 66** extending along a longitudinal *and central* axis of the main body portion between opposite ends of the main body (Fig. 2). The slit 66 comprising an opening that allows fluids exterior to the pocket to enter into the interior of the pocket (Fig. 2; paragraph 51).

As to claims 2-3, the posterior wall 50 is shown having a stability bar (best pointed to by reference numeral 82 in Fig. 8A) protruding from an interior surface of the posterior wall 50 and along the longitudinal and central axis of the main body portion; the stability bar is aligned with the slit 66 on the anterior wall 54 (Figs. 2-4, 8A). As to claim 4, note that the claim language "by injection-molded" is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and defined by the recited process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe,* 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Hirsch discloses the end product and the structures thereof as claimed as detailed above,

wherein the main body is formed as one piece. The burden is shifted to applicant to show an unobvious difference between the cited prior art's device and the invention that would have resulted from the injection molding process.

As to claim 5, the device is disclosed to be formed of a flexible, translucent, high heat-resistant, autoclavable silicone-based material of Pebax (paragraph 49). As to claim 6, Figs. 8A-8B show the anterior and posterior walls having different thicknesses. As to claim 7, since the device is disclose to be formed of flexible silicone material (paragraph 49), which would portions of the anterior wall to be pulled open at the slit to expose the interior of the pocket.

As to claim 8, Hirsch discloses the device further comprises a cheek retractor portion 52 having a surface that applies pressure when the mouthpiece is bent, wherein the pressure is based on resilience of the elastomeric material from which the cheek retractor portion is formed. As to claim 9, the cheek retractor portion 52 comprises an extension 52 of the pocket and wherein the slit 66 extends into the extension of the pocket (Fig. 2).

As to claim 10, the device to shown to further comprise a bridge structure 24 comprising a plurality of protrusions (walls of channels 80 and 82, best shown in Fig. 8A) protruding from an interior surface of the posterior wall and substantially extending a distance between the anterior wall and the posterior wall, wherein the bridge structure 24 is not attached to the anterior wall. As to claim 11, the plurality of protrusions of the bridge structure 24 comprises a plurality of spaced contact points, i.e. spaced-apart extending walls of 24 forming channels 80 and 82 (Figs. 8A-8B).

As to claim 14, Hirsch discloses a suction connector portion, e.g. suction tube 114 shown in Figs. 9-10, that connect the interior of the pocket to a vacuum source, wherein activation of the vacuum source applies the suction to the interior of the pocket, wherein fluids

that enter through the slit opening into the interior of the pocket are suctioned toward the vacuum source (Figs. 5-7; paragraph 62).

As to claims 15-18, Hirsch discloses a mouth prop 26 having a bite block portion 94 and a strap portion 108. The bite block portion 94 is shown having an opening 100 corresponding to a plug 86/88 connected to the main body (Fig. 2). The strap portion 108 is capable of fitting around a suction connector portion, e.g. a suction tube (Fig. 2). Particularly to claim 17, the bite block portion 94 and the strap portion 108 is shown to be one piece (Fig. 3). Note that the claim language "injection-molded" is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and defined by the recited process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe,* 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Hirsch discloses the end product and the structures thereof as claimed as detailed above, wherein the bite block portion 94 and the strap portion 108 is shown to be one piece (Fig. 3). The burden is shifted to applicant to show an unobvious difference between the cited prior art's device and the invention that would have resulted from the injection molding process.

Allowable Subject Matter

6. Claims 12-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to the amendments made to the claim(s) have been considered but fail to overcome Hirsch. Regarding the limitation(s) to the slit, note that Hirsch discloses slit 66 extending along a longitudinal *and central* axis of the main body portion between opposite ends of the main body (Fig. 2). The slit 66 comprising an opening that allows fluids exterior to the pocket to enter into the interior of the pocket (Fig. 2; paragraph 51). Please note that the slit was previously considered reference numeral 68.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hao D. Mai whose telephone number is (571) 270-3002. The examiner can normally be reached on Monday-Friday 8:00AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Cris

Rodriguez, at (571) 272-4964. 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 http://pair-direct.uspto.gov. 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.

/Hao D Mai/
Examiner, Art Unit 3732

/Cris L. Rodriguez/
Supervisory Patent Examiner, Art Unit 3732

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,057
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COD

Sheet	1	of	2

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Document Number Number-Kind Code[2](If known)		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	9,084,656	7/21/2015	Hirsch	
		US-	9,358,086	6/7/2016	Hirsch	
		US-	2003/0134253	7/17/2003	Hirsch et al.	
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FOREIGN PATENT DOCUMENTS

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Examiner Signature	/Hao D Mai/	Date Considered	10/30/2017

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 'Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
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	Art Unit	3732
	Examiner Name	Hao D. Mai
Sheet 2 of 2	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Final Office Action mailed 4/24/17	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Office Action mailed 4/12/17	

Examiner Signature	/Hao D Mai/	Date Considered	10/30/2017

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'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

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		US-			
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		CN 102026587	4/20/2011	Dentozone Co. Ltd.		
		CN 102247140	11/23/2011	Third Hospital Xinxiang Medical University		

Examiner Signature	/Hao D Mai/	Date Considered	10/30/2017

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		Chinese Patent Application No. 201480039991.2 First Office Action dated 12/29/16	

Examiner Signature	/Hao D Mai/	Date Considered	10/30/2017

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If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application Number	14/228,057
(use as many sheets as necessary)	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3732
	Examiner Name	Hao D. Mai
Sheet 1 of 1	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Office Action mailed 6/5/17	

Examiner Signature	/Hao D Mai/	Date Considered	10/30/2017

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
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Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COD

Sheet	1	of	2

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Document Number Number-Kind Code[2](If known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-			
		US-			
		US-			
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		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Foreign Patent Document Country Code[3] Number[4] Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6
		EP 3184076	6/28/2017	Incept, Inc.		

Examiner Signature	/Hao D Mai/	Date Considered	10/30/2017

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Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3732
	Examiner Name	Hao D. Mai
Sheet 2 **of** 2	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

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		European Patent Application No. 17150671.0; Extended European Search Report dated 5/19/17	

Examiner Signature	/Hao D Mai/	Date Considered	10/30/2017

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Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14228057	NGUYEN ET AL.
	Examiner	Art Unit
	HAO D MAI	3732

CPC- SEARCHED		
Symbol	Date	Examiner
A61C 17/043, 046	11/16/2015	HDM
Updated Search	05/31/2016	HDM

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
433	91-92, 140	11/16/2015	HDM

* 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 Search	11/16/2015	HDM
Review searches of parent case 14/100323	11/16/2015	HDM
Updated Search	05/31/2016	HDM
Update Search	04/03/2017	HDM
Update Search	10/30/2017	HDM

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14228057	NGUYEN ET AL.
	Examiner	**Art Unit**
	HAO D MAI	3732

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

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

CLAIM		DATE								
Final	Original	11/16/2015	05/31/2016	04/03/2017	10/30/2017					
	1	✓	✓	✓	✓					
	2	✓	✓	✓	✓					
	3	✓	✓	✓	✓					
	4	✓	✓	✓	✓					
	5	✓	✓	✓	✓					
	6	✓	✓	✓	✓					
	7	✓	✓	✓	✓					
	8	✓	✓	✓	✓					
	9	✓	✓	✓	✓					
	10	✓	✓	✓	✓					
	11	✓	✓	✓	✓					
	12	✓	✓	O	O					
	13	✓	✓	O	O					
	14	✓	✓	✓	✓					
	15	✓	✓	✓	✓					
	16	✓	✓	✓	✓					
	17	✓	✓	✓	✓					
	18	✓	✓	✓	✓					
	19	✓	✓	✓	-					
	20	✓	✓	✓	-					

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	("20060063129").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2017/10/30 08:30
L2	1	("20090274991").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2017/10/30 08:59
L3	38	A61C17/04,0208,043.cpc. and (suction same (slit or openning))	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/10/30 09:47
L4	201	A61C17/04,0208,043.cpc. and (suction same (slit or openning or aperture))	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/10/30 09:47
L5	50	A61C17/04,0208,043.cpc. and (suction same (slit or openning or aperture)) and ((slit or openning or aperture) same (longitudinal$2))	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/10/30 09:47
L6	1	("3857181").PN.	USPAT	OR	OFF	2017/10/30 09:52

EAST Search History (Interference)

< This search history is empty>

10/30/2017 9:53:22 AM
C:\Users\hmai1\Documents\EAST\Workspaces\14228057.wsp

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,057
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COD

Sheet	1	**of**	2

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (If known)		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	3,857,181	12/31/1974	Rappaport	
		US-				
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		US-				
		US-				

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Examiner Signature	/Hao D Mai/	Date Considered	10/30/2017

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Based on Form PTO/SB/08A (08-03)

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Solmetex Ex. 2020
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Substitute for Form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*				Application Number	14/228,057
				Filing Date	March 27, 2014
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				Art Unit	3732
				Examiner Name	Hao D. Mai
Sheet	2	**of**	2	Attorney Docket Number	INCEP-001COD

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		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Office Action mailed 11/6/15	
		Docket No. INCEP-001COB U.S. Patent Application 14/228,050; Office Action mailed 11/6/15	
		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Office Action mailed 12/3/15	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Office Action mailed 12/4/15	
		Docket No. INCEP-003DCOA U.S. Patent Application 29/477,887 Office Action mailed 11/127/15	
		Docket No. INCEP-004DCOA U.S. Patent Application 29/477,888 Office Action mailed 12/2/15	

Examiner Signature	/Hao D Mai/	Date Considered	10/30/2017

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Sheet	1	of	2

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		US-	9,788,924	10/17/2017	Nguyen	
		US-				
		US-				
		US-				
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	Examiner Name	Hao D. Mai
Sheet 2 of 2	Attorney Docket Number	INCEP-001COD

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		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Final Office Action mailed 11/2/17	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Final Office Action mailed 10/20/17	

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Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Electronic Acknowledgement Receipt

EFS ID:	30870009
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Stephanie Thien Vu/Lea Fong
Filer Authorized By:	Stephanie Thien Vu
Attorney Docket Number:	INCEP-001COD
Receipt Date:	07-NOV-2017
Filing Date:	27-MAR-2014
Time Stamp:	13:26:42
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	Transmittal Letter	INCEP-001COD_IDS_Statement_11-6-17.pdf	19460 47041550093ffd71dfd3a5901427114d33d57b4a	no	2

Warnings:

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COD_IDS_1449_11-6-17.pdf	55037 921a2009c7ef4be3927ff3eac09a3cd0258ca709	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	74497	

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3732 | Examiner: Hao D. Mai

Serial No.: 14/228,057 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 1983 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH SLIT

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56 and 1.97-1.98

Examiner:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56.

Applicants hereby declare, pursuant to 37 C.F.R. §1.97(e)(2), that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing the certification after having made a reasonable inquiry, no item of information contained in the information disclosure statement was

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known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of the information disclosure statement.

No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference an admission that it is prior art or pertinent to this application.

The Commissioner is hereby authorized to charge any necessary fee to Account Number 50-1662.

Respectfully submitted,
POLSINELLI LLP

Dated: November 6, 2017

By: _____/Stephanie T. Vu/_____
Stephanie T. Vu (Reg. No. 73,063)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
ipdocket@polsinelli.com

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Thien Nguyen et al.	Examiner:	Hao D. Mai
Serial No.:	14/228,057	Group Art No.:	3732
Filed:	March 27, 2014	Conf. No.:	1983
Title:	INTRAORAL DEVICE WITH SLIT	Dkt. No.:	INCEP- 001COD

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

AMENDMENT

In response to the Final Office Action mailed November 2, 2017, please amend the above-identified application as follows. Applicants make the following remarks.

Amendments to the Claims begin on page 2 of this paper.

Remarks/Arguments begin on page 6 of this paper.

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IN THE CLAIMS

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

1. (Currently Amended) A mouthpiece comprising:

a main body portion configured as a pocket having an interior open space having a shape defined by:

an anterior wall defined by an exterior edge, the anterior wall comprising a slit extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion, the slit comprising an opening that allows fluids exterior to the pocket to enter into the interior open space of the pocket along the longitudinal and central axis,

a posterior wall defined by an exterior edge that corresponds to the exterior edge of the anterior wall, and

a side wall [[connecting]] extending from the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall.

2. (Previously Presented) The mouthpiece of claim 1, wherein the posterior wall further includes a stability bar protruding from an interior surface of the posterior wall and along the longitudinal and central axis of the main body portion.

3. (Original) The mouthpiece of claim 2, wherein the stability bar is aligned with the slit on the anterior wall.

4. (Original) The mouthpiece of claim 1, wherein the main body portion is formed by injection-molding as one piece.

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5. (Previously Presented) The mouthpiece of claim 1, wherein a material used to form the main body portion is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

6. (Original) The mouthpiece of claim 1, wherein the anterior wall and the posterior wall have different thicknesses.

7. (Previously Presented) The mouthpiece of claim 1, wherein flexibility of material of the anterior wall allows portions of the anterior wall to be pulled open at the slit to expose the interior of the pocket.

8. (Previously Presented) The mouthpiece of claim 1, further comprising a cheek retractor portion connected to the main body portion and having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

9. (Previously Presented) The mouthpiece of claim 8, wherein the cheek retractor portion comprises an extension of the pocket and wherein the slit extends into the extension of the pocket.

10. (Previously Presented) The mouthpiece of claim 1, further comprising a bridge structure comprising a plurality of protrusions protruding from an interior surface of the posterior wall, wherein the protrusions do not attach to the anterior wall.

11. (Previously Presented) The mouthpiece of claim 10, wherein the protruding bridge structure protrusions comprise a plurality of spaced contact points.

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12. (Previously Presented) The mouthpiece of claim 11, wherein the bridge structure protrusions protrude from the interior surface of the posterior wall in a wave shape, and wherein the contact points are at crests of the wave shape.

13. (Original) The mouthpiece of claim 12, wherein spaces between the contact points are at troughs of the wave shape.

14. (Currently Amended) The mouthpiece of claim 1, further comprising a suction connector portion that connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source applies [[the]] a suction to the interior of the pocket, wherein the fluids that enter through the slit opening into the interior of the pocket are suctioned toward the vacuum source.

15. (Original) The mouthpiece of claim 1, further comprising a detachable mouth prop.

16. (Original) The mouthpiece of claim 15, wherein the detachable mouth prop comprises a bite block portion and a strap portion.

17. (Original) The mouthpiece of claim 16, wherein the bite block portion and strap portion are injection-molded in one piece.

18. (Previously Presented) The mouthpiece of claim 15, wherein the bite block portion comprises an opening corresponding to a plug connected to the main body portion.

19. (Cancelled)

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20. (Cancelled)

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REMARKS

Status of the Claims

The Applicants have amended claims 1 and 14. No new matter has been added. In view of the following remarks, Applicants respectfully submit that the application is in condition for allowance.

Rejections under 35 U.S.C. §112

Claim 14 was rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112, second paragraph, as being indefinite due to an inconsistency in antecedent basis. *Office Action*, 2. The present amendment corrects the inconsistency and Applicants request that the rejection be withdrawn.

Rejections under 35 U.S.C. §102

Claims 1-11, and 14-18 were rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by U.S. Publication No. 2006/0063129 to Hirsch et al., ("*Hirsch*"). *Office Action*, 3. Applicants respectfully submits that *Hirsch* fails to disclose the claimed 'main body portion configured as **a pocket having an interior open space**' and 'slit extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion, **the slit comprising an opening that allows fluids exterior to the pocket to enter into the interior open space** of the pocket **along the longitudinal and central axis**.'

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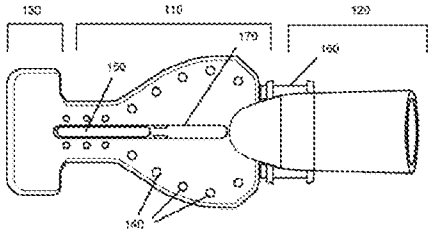

FIG. 1B

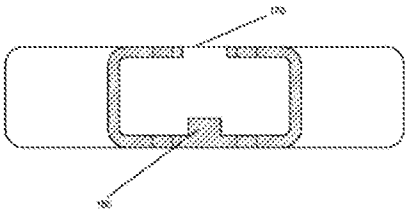

FIG. 6B

As illustrated in the figures provided above, the claimed slit comprising an opening which allows fluids exterior to the pocket to enter into the interior open space of the pocket along the longitudinal and central axis. FIG. 1B is a top view of the mouthpiece, with reference to the slit as element 170 and FIG. 6B is a cross-sectional view of the mouthpiece. As shown in FIG. 6B, the slit opens into the interior open space of the pocket, allowing fluids to freely enter and flow into the open space which extends at least the length of the slit. *Hirsch* fails to disclose such open space or slit.

Hirsch does not disclose a slit extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion and the slit comprising an opening that allows fluids exterior to the pocket to enter into the interior open space of the pocket along the longitudinal and central axis. The *Office Action* points to *Hirsch's* component "66" as a slit and points to FIG. 2, shown below, and paragraph 51 as describing a slit 66 that allows fluids exterior to the pocket to enter into the interior of the pocket. *Office Action*, 3. *Hirsch* explicitly refers to the component "66," however, as a "pair of shallow evacuation channels 66," shown below. *Hirsch* para. [0051].

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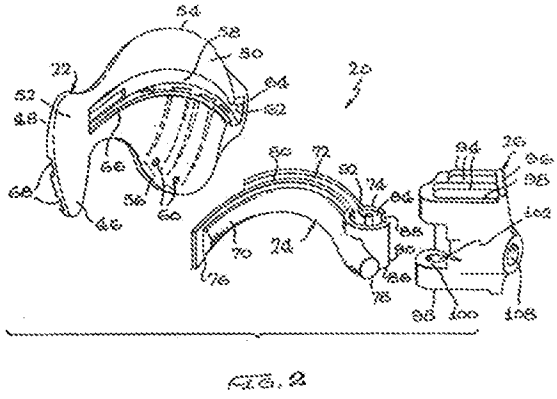
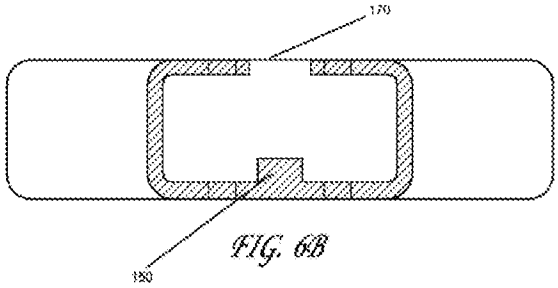
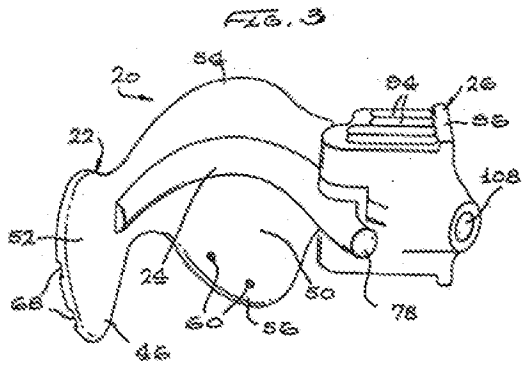
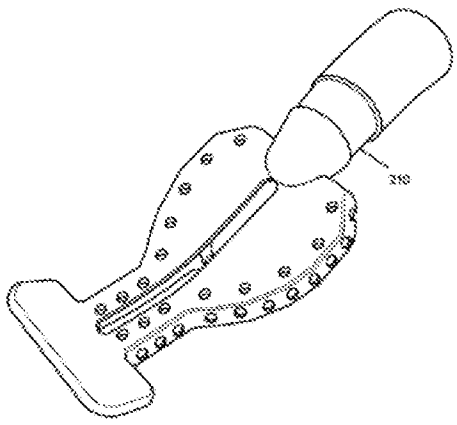
HIRSCH	APPLICANT
	

The pair of shallow evacuation channels 66 does not allow fluids exterior to a pocket to enter into an interior open space of the pocket. When the dispersion piece 24 is inserted into the retractor 22, shown below in FIG. 3, the evacuation channels 66 become fully enclosed. In other words, fluids cannot enter the retractor 22 via the pair of shallow evacuation channels 66 when the dispersion piece 24 is inserted into the retractor 22, as required for use.

HIRSCH	APPLICANT
	

Moreover, *Hirsch* discloses that "fluid is drawn from the tongue area through the evacuation holes 60 and evacuation channels 58." *Hirsch*, para. [0066]. Nowhere does *Hirsch* disclose

drawing fluid from the tongue area through the pair of shallow evacuation channels 66 let alone disclose a slit comprising an opening that allows fluids exterior to the pocket to enter into the interior open space of the pocket. As such, *Hirsch* disclose not a main body portion configured as a pocket having an interior open space and a slit extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion, the slit comprising an opening that allows fluids exterior to the pocket to enter into the interior open space of the pocket along the longitudinal and central axis.

MPEP § 2131 states: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). "Moreover, unless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102. *Net MoneyIn, Inc. v. VeriSign, Inc. 545 F.3d 1359 (Fed Cir. 2008).*" Applicants submit that the limitations allegedly taught by *Hirsch* are not arranged or combined in the same way as recited in the claims. Therefore, the claims are not anticipated under 35 U.S.C. § 102 by *Hirsch*.

Claims 2-11 and 14-18 depend from independent claim 1 and are allowable for at least the same reasons as claim 1. Withdrawal of the rejections for claims 1-11 and 14-18 are respectfully requested.

Not all reasons for allowability and distinctions over the asserted combination of prior art references of record have been discussed, and no inference regarding such should be made.

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Allowable Subject Matter

Claims 12-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants thank the Examiner for allowing Claims 12-13, however, after amendment Applicants believes all claims are allowable for at least the reasons presented above.

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CONCLUSION

Based on the foregoing, it is submitted that Applicants' invention as defined by the claims is patentable over the references of record. Issuance of a Notice of Allowance is solicited.

Applicants' attorney welcomes the opportunity to discuss the case with the Examiner in the event that there are any questions or comments regarding the response or the application.

This response is filed contemporaneously with a Request for After Final Consideration. The Commissioner is hereby authorized to withdraw any fees that may be required or credit any overpayment to Deposit Account 50-1662, referencing the docket number above.

Respectfully submitted,

January 2, 2018

POLSINELLI *LLP*

/ Stephanie T. Vu/

Stephanie T. Vu, Reg. No. 73,063
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
Tel: (415) 248-2116
IPdocket@polsinelli.com

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Doc Code: A.NE.AFCP
Document Description: After Final Consideration Pilot Program Request

PTO/SB/434 (05-13)

CERTIFICATION AND REQUEST FOR CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0

Practitioner Docket No.:	Application No.:	Filing Date:
INCEP-001COD	14/228,057	03-27-2014
First Named Inventor:	**Title:**	
THIEN NGUYEN	INTRAORAL DEVICE WITH SLIT	

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0 (AFCP 2.0) OF THE ACCOMPANYING RESPONSE UNDER 37 CFR 1.116.

1. The above-identified application is (i) an original utility, plant, or design nonprovisional application filed under 35 U.S.C. 111(a) [a continuing application (*e.g.*, a continuation or divisional application) is filed under 35 U.S.C. 111(a) and is eligible under (i)], or (ii) an international application that has entered the national stage in compliance with 35 U.S.C. 371(c).
2. The above-identified application contains an outstanding final rejection.
3. Submitted herewith is a response under 37 CFR 1.116 to the outstanding final rejection. The response includes an amendment to at least one independent claim, and the amendment does not broaden the scope of the independent claim in any aspect.
4. This certification and request for consideration under AFCP 2.0 is the only AFCP 2.0 certification and request filed in response to the outstanding final rejection.
5. Applicant is willing and available to participate in any interview requested by the examiner concerning the present response.
6. This certification and request is being filed electronically using the Office's electronic filing system (EFS-Web).
7. Any fees that would be necessary consistent with current practice concerning responses after final rejection under 37 CFR 1.116, *e.g.*, extension of time fees, are being concurrently filed herewith. [There is no additional fee required to request consideration under AFCP 2.0.]
8. By filing this certification and request, applicant acknowledges the following:
    - Reissue applications and reexamination proceedings are not eligible to participate in AFCP 2.0.
    - The examiner will verify that the AFCP 2.0 submission is compliant, *i.e.*, that the requirements of the program have been met (see items 1 to 7 above). For compliant submissions:
        - The examiner will review the response under 37 CFR 1.116 to determine if additional search and/or consideration (i) is necessitated by the amendment and (ii) could be completed within the time allotted under AFCP 2.0. If additional search and/or consideration is required but cannot be completed within the allotted time, the examiner will process the submission consistent with current practice concerning responses after final rejection under 37 CFR 1.116, *e.g.*, by mailing an advisory action.
        - If the examiner determines that the amendment does not necessitate additional search and/or consideration, or if the examiner determines that additional search and/or consideration is required and could be completed within the allotted time, then the examiner will consider whether the amendment places the application in condition for allowance (after completing the additional search and/or consideration, if required). If the examiner determines that the amendment does not place the application in condition for allowance, then the examiner will contact the applicant and request an interview.
            - The interview will be conducted by the examiner, and if the examiner does not have negotiation authority, a primary examiner and/or supervisory patent examiner will also participate.
            - If the applicant declines the interview, or if the interview cannot be scheduled within ten (10) calendar days from the date that the examiner first contacts the applicant, then the examiner will proceed consistent with current practice concerning responses after final rejection under 37 CFR 1.116.

Signature	Date
/Stephanie T Vu/	January 2, 2018
Name (Print/Typed) Stephanie T Vu	Practitioner Registration No. 73,063

***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, see below*.*

☐ * Total of _____ forms are submitted.

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

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.

Electronic Acknowledgement Receipt

EFS ID:	31377735
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Stephanie Thien Vu/Kristine Goodman
Filer Authorized By:	Stephanie Thien Vu
Attorney Docket Number:	INCEP-001COD
Receipt Date:	02-JAN-2018
Filing Date:	27-MAR-2014
Time Stamp:	12:26:00
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		Response.pdf	362328 edd078ef85135e30fbb1c12edadd587cb58bd5e3	yes	11

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Response After Final Action	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	11

Warnings:					
Information:					
2	After Final Consideration Program Request	AFCP_INCEP-001COD.pdf	207408 214c88bb3fb4fcfd72a008ebe7116ad4ba936dd9	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	569736		

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 14/228,057	Filing Date 03/27/2014	☐ 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 $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ 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

AMENDMENT	01/02/2018	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 18	Minus	** 20	= 0	X $40 =	0
	Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $210 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ 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.

** 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 number found in the appropriate box in column 1.

LIE
/RUBY JOHNSON/

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.**

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Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,057	03/27/2014	Thien Nguyen	INCEP-001COD	1983

138718 7590 02/13/2018

Polsinelli LLP
3 Embarcadero Center
Suite 2400
San Francisco, CA 94111

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3732	

NOTIFICATION DATE	DELIVERY MODE
02/13/2018	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):

uspt@polsinelli.com
sfpatent@polsinelli.com

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	14/228,057	NGUYEN ET AL.	
	Examiner	Art Unit	
	HAO D. MAI	3732	

All participants (applicant, applicant's representative, PTO personnel):

(1) *Hao D. Mai*. (3)_____.

(2) *Tam Thanh Pham*. (4)_____.

Date of Interview: *05 February 2018*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☒102 ☐103 ☒Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *Hirsch*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

At preliminary review, the proposed amendment filed 01/02/2018 appears to have overcome the current ground(s) of rejection because Hirsch does not teach a pocket having an interior open shape having a shaped defined as claimed and that the slit comprising an opening that allows fluids exterior to the pocket to enter into the interior open space. However, a decision on determining allowability could not be made within the guidelines of the After Final Consideration Pilot. .

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/HAO D MAI/ Examiner, Art Unit 3732	

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 14/228,057	**Applicant(s)** NGUYEN ET AL.	
	Examiner HAO D. MAI	**Art Unit** 3732	**AIA (First Inventor to File) Status** No

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

THE REPLY FILED 02 January 2018 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. ☒ The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance;

(2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:

a) ☐ The period for reply expires _____months from the mailing date of the final rejection.

b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection. The current period for reply expires months from the mailing date of *the prior Advisory Action* or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.

Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANT'S FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
   b) ☐ They raise the issue of new matter (see NOTE below);
   c) ☒ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: *See Continuation Sheet*. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5. ☒ Applicant's reply has overcome the following rejection(s): See Continuation Sheet.

6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. ☒ For purposes of appeal, the proposed amendment(s): (a) ☒ will not be entered, or (b) ☐ will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

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

9. ☐ The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

10. ☐ The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

11. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:

_____.

13. ☒ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____

14. ☒ Other: PTO-413B, PTO-2323.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: .
Claim(s) objected to: 12-13.
Claim(s) rejected: 1-11 and 14-18.
Claim(s) withdrawn from consideration: .

/Cris L. Rodriguez/ Supervisory Patent Examiner, Art Unit 3732	/HAO D MAI/ Examiner, Art Unit 3732

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Continuation of 3. NOTE: The proposed amendments to claim 1 raise new issues that would require further consideration and/or search and do not materially reduce or simplify the issues for appeal (e.g. may necessitate new ground(s) of rejection). At preliminary review, the proposed amendments appear to have overcome the current ground(s) of rejection under Hirsch However, a decision on determining allowability could not be made within the guidelines of the After Consideration Program Pilot.

Continuation of 5. Applicant's reply has overcome the following rejection(s): claim 14 under 35 USC 112; and claim 1 under 35 USC 102(b) as being anticipated by Hirsch (2006/0063129).

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	14/228,057	NGUYEN ET AL.	
	Examiner	Art Unit	
	HAO D. MAI	3732	

All participants (applicant, applicant's representative, PTO personnel):

(1) *Hao D. Mai*. (3)_____.

(2) *Tam Thanh Pham*. (4)_____.

Date of Interview: *05 February 2018*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☒102 ☐103 ☒Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *Hirsch*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

At preliminary review, the proposed amendment filed 01/02/2018 appears to have overcome the current ground(s) of rejection because Hirsch does not teach a pocket having an interior open shape having a shaped defined as claimed and that the slit comprising an opening that allows fluids exterior to the pocket to enter into the interior open space. However, a decision on determining allowability could not be made within the guidelines of the After Final Consideration Pilot. .

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Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/HAO D MAI/ Examiner, Art Unit 3732	

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,057
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COD

Sheet	1	of	2

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Document Number Number-Kind Code[2](If known)		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	9,788,924	10/17/2017	Nguyen	
		US-				
		US-				
		US-				
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Foreign Patent Document Country Code[3] Number[4] Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6

Examiner Signature	/Hao D Mai/	Date Considered	02/05/2018

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 'Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3732
	Examiner Name	Hao D. Mai
Sheet 2 of 2	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Final Office Action mailed 11/2/17	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Final Office Action mailed 10/20/17	

Examiner Signature	/Hao D Mai/	Date Considered	02/05/2018

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

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Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

DO NOT ENTER: /HDM/ 02/05/2018

Patent
Atty Dkt No. 084892-514250
Filed Via EFS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Thien Nguyen et al.	Examiner:	Hao D. Mai
Serial No.:	14/228,057	Group Art No.:	3732
Filed:	March 27, 2014	Conf. No.:	1983
Title:	INTRAORAL DEVICE WITH SLIT	Dkt. No.:	INCEP- 001COD

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

AMENDMENT

In response to the Final Office Action mailed November 2, 2017, please amend the above-identified application as follows. Applicants make the following remarks.

Amendments to the Claims begin on page 2 of this paper.

Remarks/Arguments begin on page 6 of this paper.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

AFCP 2.0 Decision	Application No.	Applicant(s)
	14/228,057	NGUYEN ET AL.
	Examiner	Art Unit
	HAO D. MAI	3732

This is in response to the After Final Consideration Pilot request filed 02 January 2018.

1. **Improper Request** – The AFCP 2.0 request is improper for the following reason(s) and the after final amendment submitted with the request will be treated under pre-pilot procedure.

   ☐ An AFCP 2.0 request form PTO/SB/434 (or equivalent document) was not submitted.

   ☐ A non-broadening amendment to at least one independent claim was not submitted.

   ☐ A proper AFCP 2.0 request was submitted in response to the most recent final rejection.

   ☐ Other:

2. **Proper Request**

   A. After final amendment submitted with the request will not be treated under AFCP 2.0.
   The after final amendment cannot be reviewed and a search conducted within the guidelines of the pilot program.

   ☐ The after final amendment will be treated under pre-pilot procedure.

   B. Updated search and/or completed additional consideration.
   The examiner performed an updated search and/or completed additional consideration of the after final amendment within the time authorized for the pilot program. The result(s) of the updated search and/or completed additional consideration are:

   ☐ 1. All of the rejections in the most recent final Office action are overcome and a Notice of Allowance is issued herewith.

   ☐ 2. The after final amendment would not overcome all of the rejections in the most recent final Office action. See attached interview summary for further details.

   ☐ 3. The after final amendment was reviewed, and it raises a new issue(s). See attached interview summary for further details.

   ☒ 4. The after final amendment raises new issues, but would overcome all of the rejections in the most recent final Office action. A decision on determining allowability could not be made within the guidelines of the pilot. See attached interview summary for further details, including any newly discovered prior art.

   ☐ 5. Other:

   Examiner Note: Please attach an interview summary when necessary as described above.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

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First Named Inventor:	Thien Nguyen
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Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COD

Sheet	1	of	2

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		US-	D809,660	2/6/2018	Nguyen	
		US-	2012/0237894	9/20/2012	Maycher et al.	
		US-				
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		US-				

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Foreign Patent Document Country Code[3] Number[4] Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6
		WO 2011/014952	2/10/2011	University of Manitoba		

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 'Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language translation is attached.

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Substitute for Form 1449/PTO	*Complete if Known*	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3732
	Examiner Name	Hao D. Mai
Sheet 2 of 2	Attorney Docket Number	INCEP-001COD

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		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Final Office Action mailed 1/16/18	

Examiner Signature		Date Considered	

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. 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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Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 February 2011 (10.02.2011)

PCT

(10) International Publication Number
WO 2011/014952 A1

(51) International Patent Classification:
A61C 17/08 (2006.01) *A61C 17/12* (2006.01)
A61C 17/06 (2006.01)

(21) International Application Number:
PCT/CA2010/001204

(22) International Filing Date:
4 August 2010 (04.08.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/231,262 4 August 2009 (04.08.2009) US

(71) Applicant *(for all designated States except US)*: **UNIVERSITY OF MANITOBA** [CA/CA]; Technology Transfer Office, 631 Drake Centre, 181 Freedmen Crescent, Winnipeg, Manitoba R3T 2N2 (CA).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **MAYCHER, David, John** [CA/CA]; c/o 674 Granville Street, Vancouver, British Columbia V6C 1Z6 (CA). **PESUN, Igor** [CA/CA]; c/o D227B - 780 Bannatyne Avenue, Winnipeg, Manitoba R3E 0W2 (CA).

(74) Agents: **POLONENKO, Daniel** et al.; Gowling Lafleur Henderson LLP, Box 30, 2300-550 Burrard Street, Vancouver, British Columbia V6C 2B5 (CA).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

[Continued on next page]

(54) Title: DENTAL APPARATUS

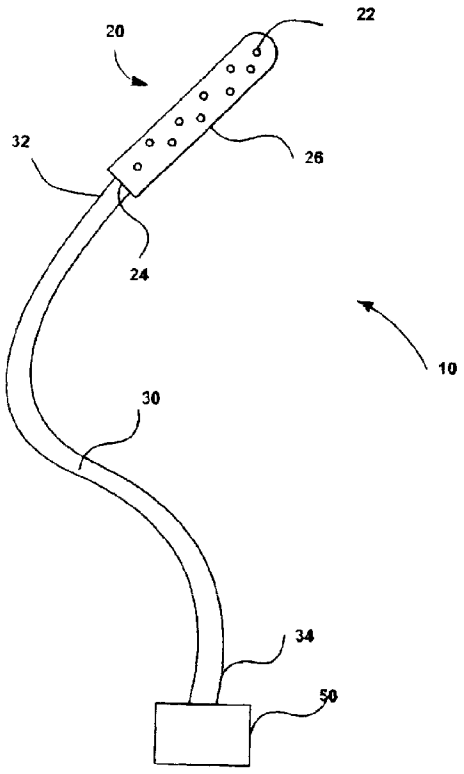

FIG. 1

(57) Abstract: A dental apparatus for removing fluid from a patient's mouth during a dental procedure, the dental apparatus includes an intraoral tip having a wall defining a cavity, the wall having a plurality of apertures and at least one opening, the apertures being distributed over the wall; and a hollow tube coupled to the intraoral tip, the hollow tube for connecting the opening of the intraoral tip to a suction device. The intraoral tip is continuously within the patient's mouth during the dental procedure and the dental apparatus removes fluid from the patient's mouth through the apertures of said intraoral tip. In one embodiment, the dental apparatus further includes a valve for modulating the rate of fluid removal from the patient's mouth. In another embodiment, the dental apparatus further includes a fastener for securing the intraoral tip within the patient's mouth.

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DENTAL APPARATUS

FIELD OF THE INVENTION

[0001] This invention relates to an apparatus for removing fluid from a patient's mouth during dental procedures.

BACKGROUND OF THE INVENTION

[0002] During dental procedures, a patient must sit still with their mouth open to allow a dental professional access inside the oral cavity using a variety of dental instruments. This open, mouth position allows a build-up of salivary fluids in a patient's mouth. In addition, water may be introduced to rinse the mouth during certain dental procedures. This build-up of moisture must be removed from the patient's mouth to prevent gagging, choking or undesirable swallowing.

[0003] Current moisture control devices, known in the art as moisture evacuators, are designed primarily for operation by a heath professional. In some cases, patients may exhibit anxiety over the use of moisture evacuators. One commonly used moisture control device is a saliva ejector, which is generally characterised by large partially-rigid tubing, fixed flow rates and a high degree of suction for quickly removing moisture and debris from a patient's mouth. In operation, a dental professional periodically inserts the tip of the saliva ejector into a patient's mouth to remove fluids and debris. The frequency of insertion is determined by the dental professional and can only occur as opportunities during the dental procedure permit or on an interruption basis when the patient demonstrates obvious discomfort or anxiety. The insertion of a large tube can be uncomfortable and may cause tissue abrasions and bruising. Some currently available dental moisture control device is expensive, and is designed and integrated with other existing dental machinery. Integrated products from sophisticated manufacturers are often not accessible or affordable to all dental practitioners.

SUMMARY OF THE INVENTION

[0004] The embodiments of the present invention relate to an apparatus for moisture control in the oral cavity during dental procedures. The apparatus may be operated by a health professional or a patient. Operation and control of the apparatus by the patient helps reduce anxiety related to oral moisture evacuation by providing the patient with some control over the procedure.

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[0005] One embodiment of the dental apparatus relates to a dental apparatus for removing fluid from a patient's mouth during a dental procedure. The dental apparatus includes an intraoral tip having a wall defining a cavity, and a hollow tube coupled to the intraoral tip. The wall has a plurality of apertures distributed over the wall and at least one opening. The hollow tube connects the opening of the intraoral tip to a suction device. The intraoral tip is continuously placed within the patient's mouth during the dental procedure and the dental apparatus removes fluid from the patient's mouth through the apertures of the intraoral tip.

[0006] According to one aspect, the apertures are evenly distributed between a first end and a second end of the intraoral tip. According to another aspect, the apertures 22 are unevenly distributed between the first end and the second end of the intraoral tip.

[0007] According to one aspect, the rate of fluid removal from the patient's mouth may be adjusted to be about equivalent the salivary flow rate.

[0008] Another embodiment of the dental apparatus further includes a valve for modulating the rate of fluid removal from the patient's mouth. According to one aspect, the valve is located between the intraoral tip and the suction device. According to another aspect, the valve is movable between a plurality of operating positions. According to yet another aspect, the valve is operable by the patient.

[0009] Another embodiment of the dental apparatus further includes a flow control switch in communication with the valve for enabling said patient to control said rate of fluid removal from their mouth. According to one aspect, the flow control switch moves the valve between a plurality of operating positions.

[00010] Another embodiment of the dental apparatus further includes a fastener for securing the intraoral tip within the patient's mouth. According to one aspect, the fastener is selected from the group including dental floss, a ring, a clip, and combinations thereof.

[00011] In one embodiment of the dental apparatus, the diameter of the apertures is from about 0.25 mm to about 3 mm.

[00012] In one embodiment of the dental apparatus, the length of the intraoral tip is from about 5 mm to about 40 mm.

[00013] In one embodiment of the dental apparatus, the internal diameter of the intraoral tip is from about 0.25 mm to about 10 mm.

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[00014] According to one aspect, the intraoral tip is removably or permanently coupled to the hollow tube.

BRIEF DESCRIPTION OF THE DRAWINGS

[00015] Embodiments of the present invention will be described with reference to the following drawings, in which like reference numerals denote like parts:

[00016] Fig. 1 is a top view of a dental apparatus according to an embodiment;

[00017] Fig. 2 is a top view of a dental apparatus according to another embodiment;

[00018] Fig. 3 is a top view of a dental apparatus according to another embodiment;

[00019] Fig. 4 is a schematic view of a dental apparatus of another embodiment received in a patient's mouth;

[00020] Fig. 5 is a top view of an intraoral tip of a dental apparatus according to another embodiment;

[00021] Fig. 6 is a top view of an intraoral tip of a dental apparatus according to another embodiment;

[00022] Fig. 7 is a top view of an intraoral tip of the dental apparatus of Fig. 1;

[00023] Fig. 8 is a top view of a dental apparatus according to another embodiment; and

[00024] Fig. 9 is a cross-sectional view of an intraoral tip of a dental apparatus according to another embodiment.

DETAILED DESCRIPTION OF THE INVENTION

[00025] The embodiments of the present invention relate to a dental apparatus for moisture control in the oral cavity during dental procedures. The dental apparatus enables moisture removal from a patient's mouth.

[00026] Referring to Fig. 1, a dental apparatus according to an embodiment of the present invention is indicated by reference numeral 10. An intraoral tip 20 of the dental apparatus 10 is coupled to a first end 32 of a hollow tube 30. A second end 34 of the hollow tube 30 is connected to a suction device 50 by any suitable connector known to those skilled in the art. The suction device 50 acts as a vacuum. The intraoral tip 20 comprises a wall 26

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defining a cavity 29 and a plurality of apertures 22 (Fig. 9). The apertures 22 of the intraoral tip 20 extend through the wall 26 and are distributed over the wall 26 in a variety of configurations. In one embodiment, the intraoral tip 20 is coupled to the hollow tube 30 by a tube connector (not shown). The tube connector may be a fastener, an adhesive, a sleeve or any other suitable tube connector known to those skilled in the art. Alternatively, the intraoral tip 20 may be coupled to the hollow tube 30 by a fused joint. It would be appreciated by a person skilled in the art that the intraoral tip 20 may be removably coupled to the hollow tube 30 or permanently fixed thereto.

[00027] The apertures 22 are evenly distributed between a first end 27 and a second end 28 of the intraoral tip 20. As shown in Figures 1 and 9, the apertures 22 are provided in a repeating pattern over wall 26 of the intraoral tip 20. The diameter of the apertures 22 may range from about 0.25 mm to about 3 mm.

[00028] The apertures 22 may alternatively be unevenly distributed between the first end 27 and the second end 28 of the intraoral tip 20. The apertures 22 may alternatively be distributed proximate to the first end 27 of the intraoral tip 20. Alternatively, the apertures 22 may be distributed proximate to the second end 28 of the intraoral tip 20.

[00029] The intraoral tip 20 sized for a comfortable fit in a patient's mouth. During a dental procedure, the intraoral tip 20 is placed inside the patient's mouth continuously throughout the duration of the dental procedure. The intraoral tip 20 is generally between about 5 mm and about 40 mm in length and includes an internal diameter of between about 0.25 mm and about 10 mm. The internal diameter may also be referred to as the width for embodiments in which the cross-section of the intraoral tip 20 is not circular. The intraoral tip 20 is made of plastic and is rigid. The intraoral tip 20 may alternatively be made of a collapsible plastic that deforms when pressure is applied to the wall 26 of the intraoral tip 20. The pressure applied may temporarily deform the intraoral tip 20. The intraoral tip 20 is not limited to being made of a plastic material, it may be constructed from any suitable material. In one embodiment, the intraoral tip 20 is made of an autoclavable material. Alternatively, the intraoral tip 20 is made of a non-autoclavable material and is intended for a single use.

[00030] The hollow tube 30 is made of a polymer and is semi-rigid. The hollow tube 30 may alternatively be made of a rigid or flexible polymer material. The hollow tube 30 is not limited to being made of a polymer material, it may be constructed from any suitable material,

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such as plastic, polypropylene, PVC, and polystyrene, for example. The internal diameter of the hollow tube 30 is generally between about 0.25 mm and about 10 mm. In one embodiment, the hollow tube 30 is made of an autoclavable material. Alternatively, the hollow tube 30 is made of a non-autoclavable material and is intended for a single use.

[00031] The suction device 50 applies a vacuum force that causes fluids within the mouth of a patient to be drawn through apertures 22 of the intraoral tip 20, into the cavity 29, through opening 24, and into hollow tube 30 thereby allowing the intraoral tip 20 to remove moisture from a patient's mouth during a dental procedure. The hollow tube 30 defines a passageway for the fluid removed from the patient's mouth. In one embodiment, micro-particles smaller than the diameter of the apertures 22 are removed from the mouth of a patient. Suction devices are well known in the art and therefore will not be described further here.

[00032] Referring to Figure 2, another embodiment of a dental apparatus is indicated by reference numeral 12. The dental apparatus 12 is similar to the dental apparatus 10, however, further includes a valve 40 located between the intraoral tip 20 and the suction device 50. More specifically, the valve 40 is located between the first end 32 and the second end 34 of hollow tube 30. The valve 40 modulates the rate of fluid removal from the patient's mouth through the hollow tube 30 by opening, closing, or partially obstructing the passageway. In one embodiment, the valve 40 has a plurality of operating positions: in a closed position, no flow passes through the valve 40, in a partially open position, some flow passes through the valve 40 and in an open position, a maximum flow passes through the valve 40. The valve 40 is movable between the operating positions by a flow control switch 44 that is operable by the patient. The flow control switch 44 is in communication with the valve 40 and enables the patient to control the rate of fluid removal from their mouth during a dental procedure by selecting the desired operating position of the valve 40.

[00033] The operating positions of the valve 40 regulate the rate of fluid removal from the patient's mouth and may be set so that the partially open position allows a pre-determined amount of flow to pass through the valve 40, or alternatively, the operating positions of the valve 40 may be continuous between the closed position and the open position so that any amount of flow may be allowed to pass through the valve 40.

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[00034] In one embodiment, the flow control switch 44 is a mechanical switch that physically moves the valve 40 between the plurality of operating positions. In one aspect, the mechanical switch is mounted on the hollow tube 30 and applies pressure directly to the hollow tube 30 adjusting the amount of flow through the hollow tube 30. Mechanical flow control switches are well known in the art and therefore will not be described further here. In another embodiment, the flow control switch is an electrical switch that actuates the valve 40. The electrical switch may include "up" and "down" buttons that actuate the valve 40 between the open and closed positions in increments having a pre-determined size. Electrical flow control switches are well known in the art and therefore will not be described further here.

[00035] In one embodiment the valve 40 is operable by one hand of the patient.

[00036] Referring to Figure 3, another embodiment of the dental apparatus is indicated by reference numeral 14. The dental apparatus 14 is similar to the dental apparatus 10 and the dental apparatus 12, however, further includes a fastener 42 for securing the intraoral tip 20 within the mouth of a patient. The fastener 42 generally maintains the intraoral tip 20 in a constant position within the mouth. By restricting movement of the intraoral tip 20 within the mouth, abrasions or bruising on the floor of the mouth, tongue, and cheek areas are generally prevented.

[00037] In one embodiment, the fastener 42, for example dental floss, a ring, or a clip, enables attachment of the intraoral tip 20 to a tooth. Suitable fasteners are exemplified by a knotted or unknotted loop of dental floss, a ring comprising metal and/or plastics and/or composite materials, a clip comprising metal and/or plastics and/or composite materials, and the like. A suitable ring may be resilient or alternative non-resilient. The ring may additionally comprise two or more resilient prongs fashioned to releasingly engage a tooth when pressed thereupon. A suitable clip may comprise two opposing components engaged with a spring, fashioned into a clamp. The fastener 42 is attached to a tooth and the intraoral tip 20 is affixed to the fastener 42 thereby securing the intraoral tip 20 inside the mouth of a patient. Comfortable placement of both the fastener 42 and the intraoral tip 20 may be facilitated by one of the patient or a dental professional. The fastener 42 may be moved from one tooth to another as necessary, depending on the dental procedure and the comfort of the patient. The intraoral tip 20 is continuously fixed by fastener 42 inside the patient's mouth throughout the length of a dental procedure. In one embodiment, the fastener 42 is injection moulded and constructed from resilient synthetic materials. The fastener 42 is alternatively

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made of rigid materials. The fastener 42 may be constructed from any suitable material. A person skilled in the art would understand the dimensions of the fastener 42 are suitable for affixing the fastener 42 to a tooth of a patient. In one embodiment, the fastener 42 is made of an autoclavable material. Alternatively, the fastener is made of a non-autoclavable material and is intended for a single use. In one embodiment, the fastener 42 is securely coupled to the intraoral tip 20. In another embodiment, the fastener 42 may be removably coupled to the intraoral tip 20. In still another embodiment, the fastener 42 may be securely or removably coupled to the tube 30.

[00038] A single-use hollow tube, intraoral tip, and fastener may be sterilized by one of a suitable radiation procedure, exemplified by gamma irradiation or a suitable chemical gas infiltration, exemplified by ethylene oxide infiltration and steam autoclave sterilization.

[00039] When an embodiment of the dental apparatus is in operation, the rate of fluid removal from a patient's mouth is generally at a low rate of fluid removal and does not over-dry the mouth. The rate of fluid removal is the rate at which saliva is being sucked out of the patient's mouth. More desirably, the rate of fluid removal from the patient's mouth is about equivalent the salivary flow rate. Typical salivary flow rates range from between about 0.1 ml/minute and about 0.6 ml/minute, however, a person skilled in the art would understand that salivary flow rates vary between patients. A low rate for fluid removal from a patient's mouth may be achieved by using: a small internal diameter hollow tube 30, where the diameter is between about 0.25 mm and about 10 mm; a valve 40, to control the rate of fluid removal through the hollow tube; a suction device known to those skilled in the art; and combinations thereof.

[00040] Alternative embodiments of the intraoral tip 20 are shown in Fig. 5, Fig. 6 and Fig. 7. The intraoral tip 20 may be circular as shown in Fig. 5, square as shown in Fig. 6, and cylindrical as shown in Fig. 6. The intraoral tip 20 may alternatively be rectangular, ovular, and bulbous. It will be appreciated by a person skilled in the art that the intraoral tip 20 may be any suitable shape and size. In general, the dimensions fall about within the ranges described in relation to the intraoral tip 20 of Fig. 1.

[00041] Referring to Figure 8, another embodiment of a dental apparatus 100 includes a first intraoral tip 200 and a second intraoral tip 202. As shown, the first intraoral tip 200 of the dental apparatus 100 is coupled to a first end 302 of a first hollow tube 300 and the second intraoral tip 202 of the dental apparatus 100 is coupled to a first end 312 of a

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second hollow tube 310. A second end 304 of the first hollow tube 300 and a second end 314 of second hollow tube 310 are connected together and joined to a third hollow tube 320. The third hollow tube 320 is connected to a suction device (not shown) by any suitable connector known to those skilled in the art. Each of the first and second intraoral tips 200, 202 comprise a wall 260 defining a cavity (not shown) and a plurality of apertures 220. The apertures 220 of the intraoral tips 200, 202 extend through the wall 260 and are distributed over the wall 260 in a variety of configurations. In one embodiment, the intraoral tip 200, 202 is coupled to the hollow tube 300, 310 by a tube connector (not shown). It would be appreciated by a person skilled in the art that the intraoral tip 200, 202 may be removably coupled to the hollow tube 300, 310 or permanently fixed thereto.

[00042] In an alternative embodiment, the second end 304 of the first hollow tube 300 connects to a first suction device and the second end 314 of the second hollow tube 310 connects to a second suction device.

[00043] In preparation for use in a dental procedure, the intraoral tip 20 of the dental apparatus of Figure 4 is placed inside a patient's mouth. The intraoral tip 20 is secured within the mouth by fastener 42 continuously for the duration of the dental procedure. The intraoral tip 20 is connected through opening 24 to a suction device 50 by a hollow tube 30. The hollow tube 30 protrudes from the patient's mouth and a length of the hollow tube extends across the body of the patient. The second end 34 of the hollow tube 30 is connected to a suction device 50 by any suitable connector. On beginning the dental procedure, the suction device 50 is turned on and applies suction indirectly to the intraoral tip 20. This suction pressure enables the removal of moisture from the patient's mouth at a low rate of fluid removal, more specifically at a rate of fluid removal about the salivary flow rate of the patient. Fluid within a patient's mouth flows through the apertures 22 and into the cavity 29 of the intraoral tip 20. Fluid exits the intraoral tip 20 through opening 24 and flows into the hollow tube 30. In the event an aperture 22 of the intraoral tip 20 becomes blocked, the plurality of other apertures 22 distributed over the wall 26 of the intraoral tip 20 enable the dental apparatus to function effectively. Where the blockage of an aperture 22 of the intraoral tip 20 is due to the intraoral tip 20 touching the cheek tissue of the patient, the low rate of fluid removal of the dental apparatus generally prevents the patient from incurring abrasions and/or bruising of the cheek tissue. The patient controls the rate of fluid removal by manipulating valve 40. As the patient perceives moisture building up inside their mouth,

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the patient may operate valve 40 to either increase or decrease the rate of fluid removal thereby adjusting the moisture level in their mouth.

[00044] By allowing the patient to control the moisture removal process, anxiety about a health professional-operated moisture control device is removed. The dental apparatus is continuously located in the patient's mouth during a dental procedure so no discomfort is experienced due to repeated insertion and removal of the moisture control device during the dental procedure. In addition, the patient experiences little or no discomfort while the dental apparatus is continuously located in the mouth because of the small size and streamlined shape of the intraoral tip 20. The ability to control the amount of fluid in the mouth further increases the patient's level of comfort so that the patient is able to relax more effectively while undergoing the dental procedure.

[00045] The above-described embodiments have been provided as examples, for clarity in understanding the invention. A person of skill in the art will recognize that alterations, modifications and variations may be effected to the embodiments described above while remaining within the scope of the invention as defined by the claims appended hereto.

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What is claimed is:

1. A dental apparatus for removing fluid from a patient's mouth during a dental procedure, said dental apparatus comprising:

an intraoral tip having a wall defining a cavity, said wall having a plurality of apertures and at least one opening, said apertures being distributed over the wall; and

a hollow tube coupled to said intraoral tip, said hollow tube for connecting said opening of said intraoral tip to a suction device;

wherein said intraoral tip is continuously within said patient's mouth and wherein said dental apparatus removes fluid from said patient's mouth through said apertures of said intraoral tip.

2. A dental apparatus according to claim 1 further comprising a valve for modulating the rate of fluid removal from said patient's mouth.

3. A dental apparatus according to claim 2, wherein said valve is located between said intraoral tip and said suction device.

4. A dental apparatus according to claim 2, wherein said valve has a plurality of operating positions and is moveable between said operating positions.

5. A dental apparatus according to claim 2 further comprises a flow control switch, wherein said flow control switch is in communication with said valve for enabling said patient to control said rate of fluid removal from their mouth.

6. A dental apparatus according to claim 5, wherein said flow control switch moves said valve between a plurality of operating positions.

7. A dental apparatus according to claim 1, wherein the rate of fluid removal from said patient's mouth is about said salivary flow rate.

8. A dental apparatus according to claim 2, wherein said valve is operable by said patient.

9. A dental apparatus according to claim 1 further comprising a fastener for securing said intraoral tip within said patient's mouth.

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10. A dental apparatus according to claim 9, wherein said fastener is selected from the group comprising dental floss, a ring, a clip, and combinations thereof.

11. A dental apparatus according to claim 9, wherein said fastener attaches said intraoral tip to a tooth within said patient's mouth.

12. A dental apparatus according to claim 1, wherein said apertures are evenly distributed between a first end and a second end of said intraoral tip.

13. A dental apparatus according to claim 1, wherein said apertures are unevenly distributed between a first end and a second end of said intraoral tip.

14. A dental apparatus according to claim 1, wherein said apertures are distributed proximate to a first end of said intraoral tip.

15. A dental apparatus according to claim 1, wherein said apertures are distributed proximate to a second end of said intraoral tip.

16. A dental apparatus according to claim 1, wherein a diameter of said apertures is from about 0.25 mm to about 3 mm.

17. A dental apparatus according to claim 1, wherein a length of said intraoral tip is from about 5 mm to about 40 mm.

18. A dental apparatus according to claim 1, wherein an internal diameter of said intraoral tip is from about 0.25 mm to about 10 mm.

19. A dental apparatus according to claim 1, wherein said intraoral tip is removably coupled to said hollow tube.

20. A method for removing fluid from a patient's mouth during a dental procedure, said method comprising:

inserting a dental apparatus into said patient's mouth, said dental apparatus comprising a hollow tube coupled to an intraoral tip, said intraoral tip having a wall defining a cavity, a plurality of apertures provided in said wall and an opening, a first end of a hollow tube being coupled to said opening of said intraoral tip;

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removing fluid from said patient's mouth by operating a suction device, said suction device being coupled to a second end of said hollow tube;

wherein said dental apparatus is operated by said patient to remove fluid from said patient's mouth.

21. A method as claimed in claim 20, further comprising a valve for modulating the rate of fluid removal from said patient's mouth, said valve being adjustable by said patient.

22. A method as claimed in claim 21, wherein said valve is located between said intraoral tip and said suction device.

23. A method as claimed in claim 21, wherein said valve has a plurality of operating positions and is moveable between said operating positions.

24. A method as claimed in claim 21, further comprising a flow control switch, wherein said flow control switch is in communication with said valve for enabling said patient to control said rate of fluid removal from their mouth.

25. A method as claimed in claim 24, wherein said flow control switch is movable by said patient to move said valve between a plurality of operating positions.

26. A method as claimed in claim 21, wherein said the rate of fluid removal from said patient's mouth is about said salivary flow rate.

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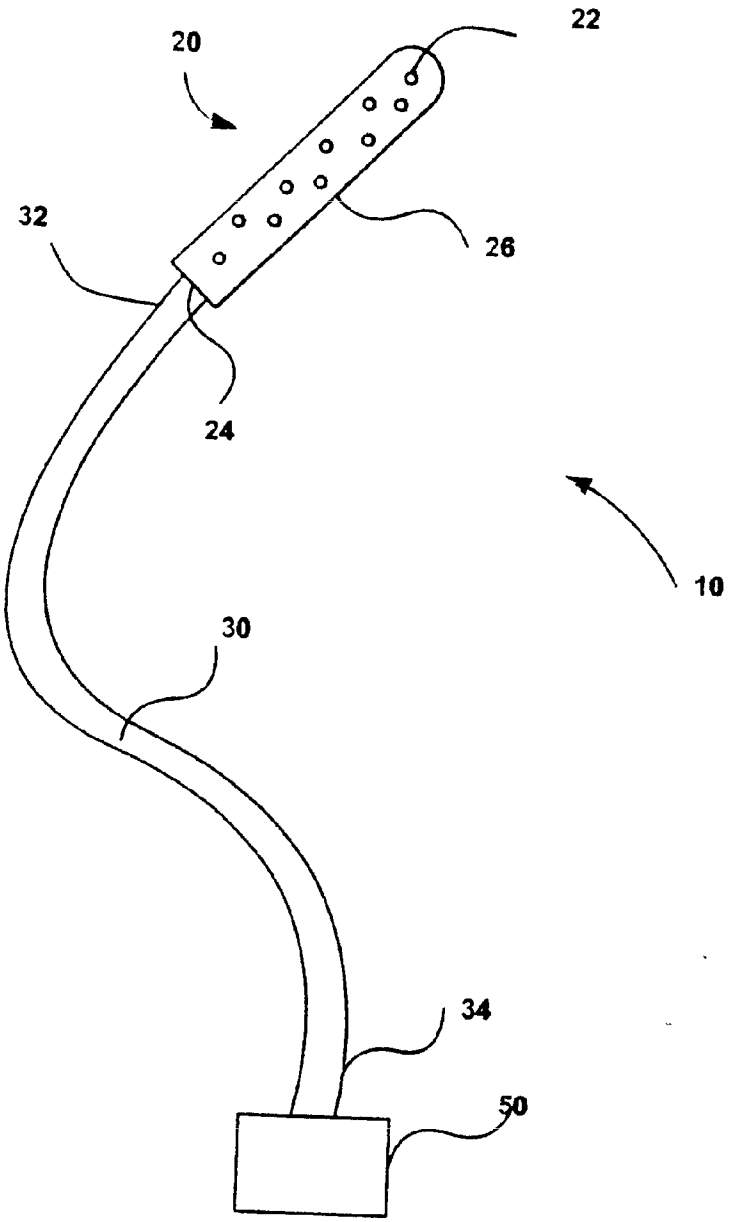

FIG. 1

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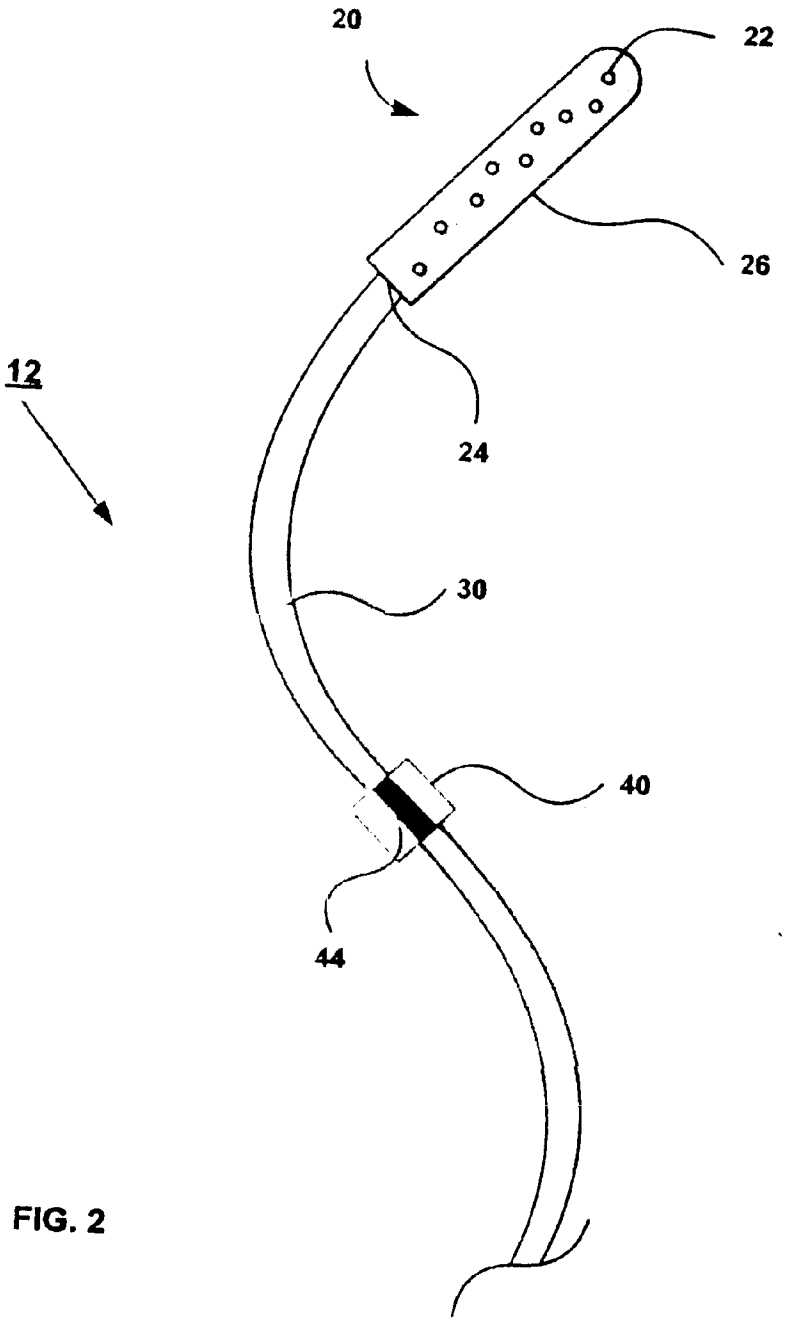

FIG. 2

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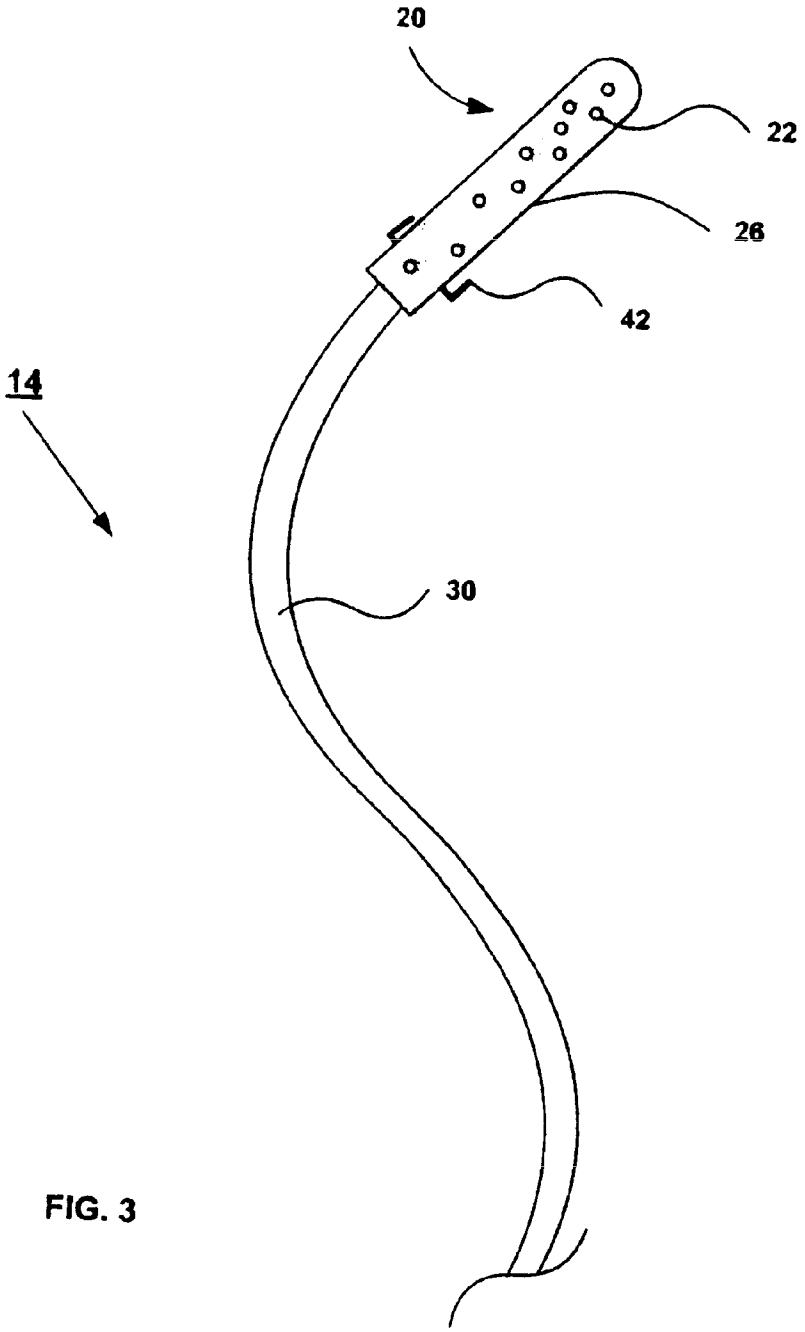

FIG. 3

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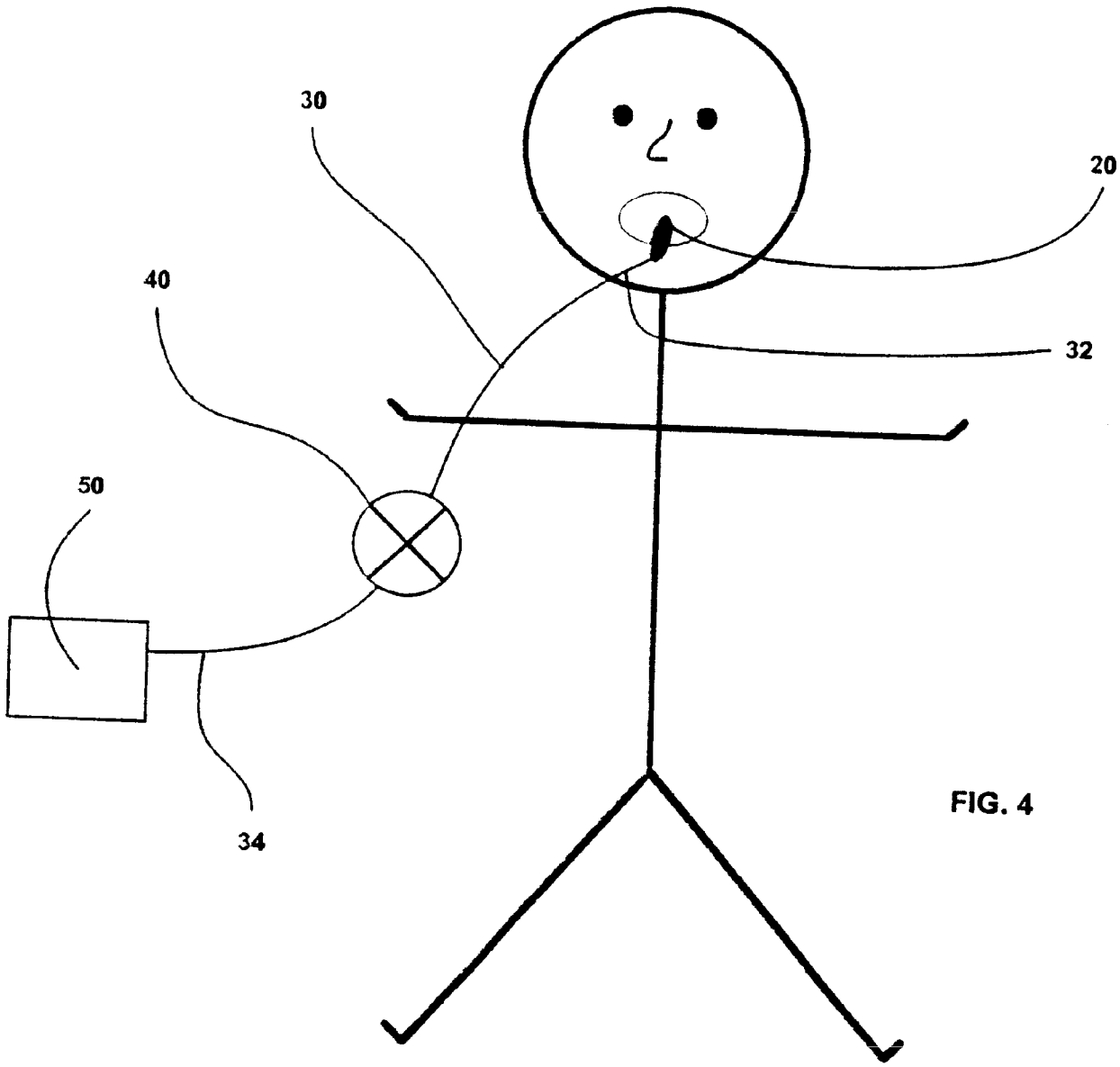

FIG. 4

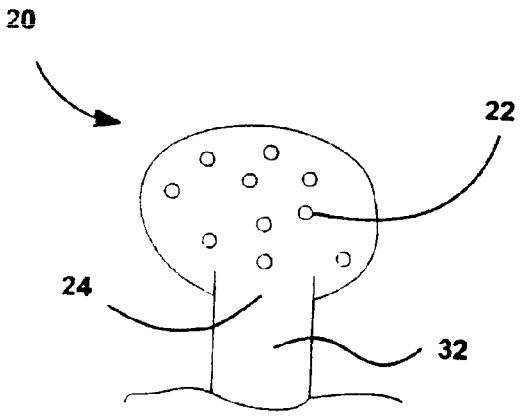

FIG. 5

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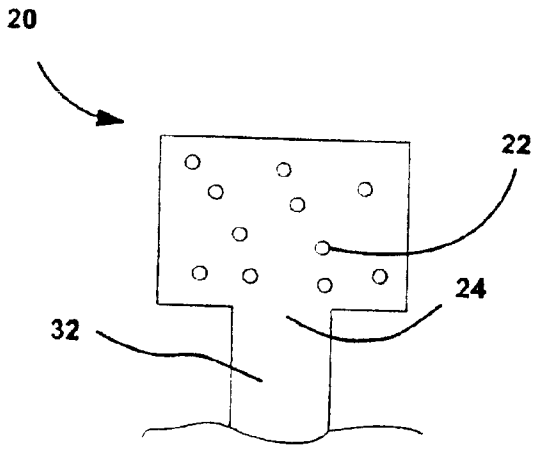

FIG. 6

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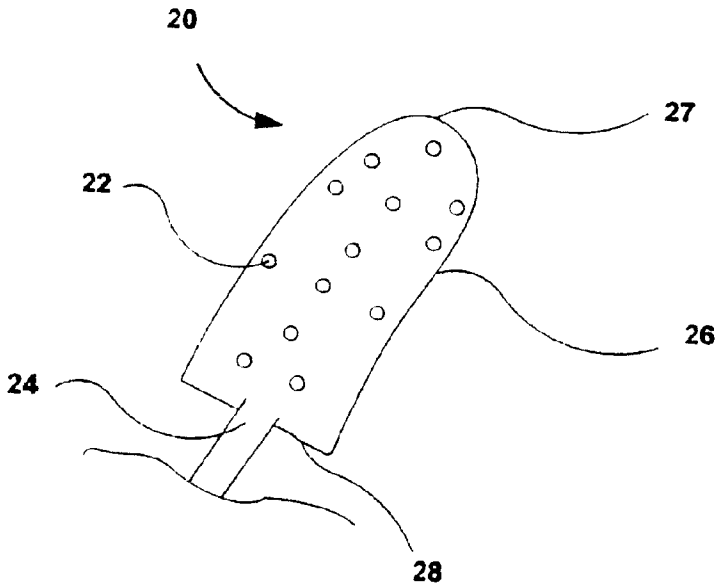

FIG. 7

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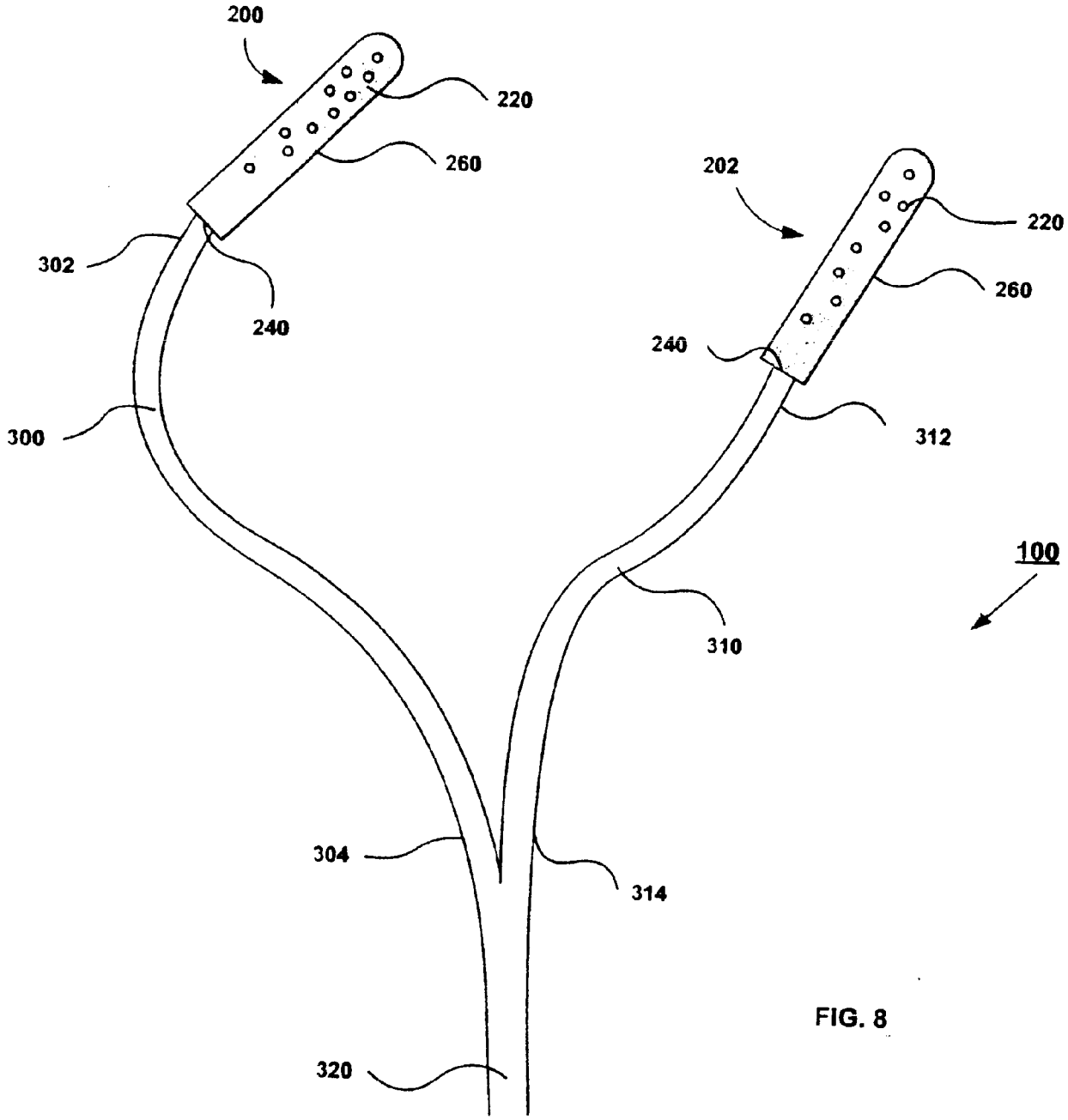

FIG. 8

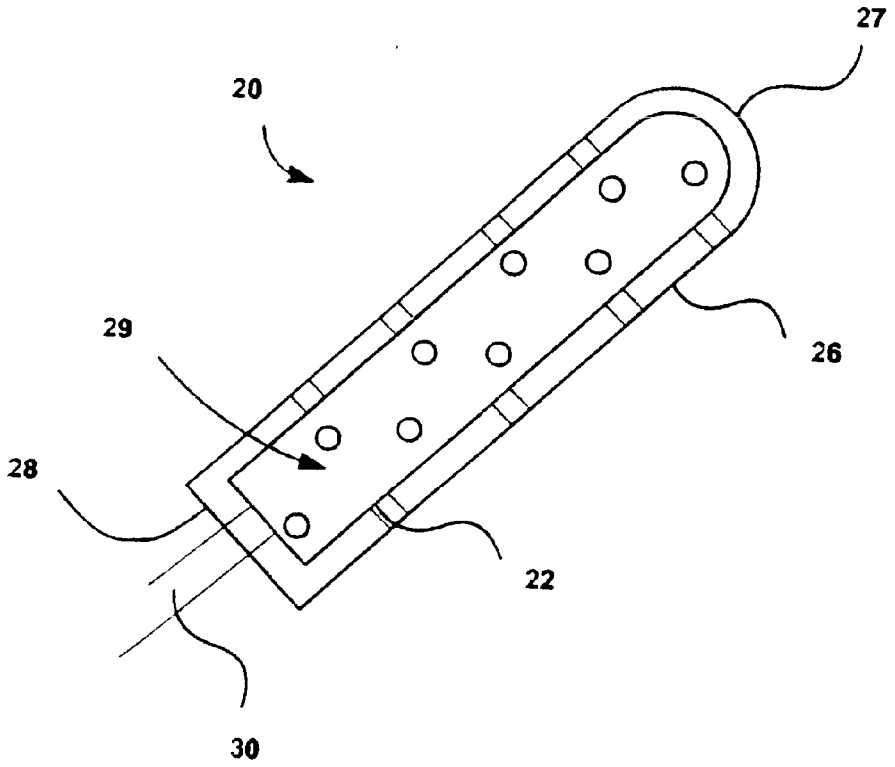

FIG. 9

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Ascentcare Dental Products v. Solmetex - IPR2025-01057
12/26/2010 EAST Version: 3.4.0

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2010/001204

A. CLASSIFICATION OF SUBJECT MATTER
IPC: ***A61C 17/08*** (2006.01) , ***A61C 17/06*** (2006.01) , ***A61C 17/12*** (2006.01)
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC: ***A61C 17/08*** (2006.01) , ***A61C 17/06*** (2006.01) , ***A61C 17/12*** (2006.01)
EC: ***A61C 17/04B***

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)
Database: EPOQUE (Epodoc)
Keywords: N/A

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	JP8196552 A (SHIGA, E. et al.) 06 August 1996 (06-08-1996) *Figures 1-3; Abstract*	1, 7, 9, 10, 11, 12, 14-20 and 26 2-6, 8, 13 and 21-25
X Y	US2507938 A (ASHLEY, S.) 16 May 1950 (16-05-1950) *Whole Document*	1, 7, 9, 10, 11, 12, 14-20 and 26 2-6, 8, 13 and 21-25
X Y	WO02083025 A1 (SULLMAN, R.) 24 October 2002 (24-10-2002) *Figures 7 & 9*	1, 7, 9, 10, 11, 12, 14-20 and 26 2-6, 8, 13 and 21-25
Y	US2006008764 A1 (ABO, T.) 12 January 2006 (12-01-2006) *Figures 1, 6, 7 & 13*	2-6, 8 and 21-25
Y	WO2008072100 A1 (HERSHEY, A. et al.) 19 June 2008 (19-06-2008) *Figures 2A & 2B*	13

[ ] Further documents are listed in the continuation of Box C. [X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
9 November 2010 (09-11-2010)	22 November 2010 (22-11-2010)

Name and mailing address of the ISA/CA	Authorized officer
Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 001-819-953-2476	Zachary Rokosh (819) 956-0848

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Ascentcare Dental Products v. Solmetex - IPR2025-01057
12/26/2010 EAST Version: 3.4.0

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CA2010/001204

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
JP8196552 A	06 August 1996 (06-08-1996)	JP8196552 A	06 August 1996 (06-08-1996)
US2507938A	16 May 1950 (16-05-1950)	US2507938A	16 May 1950 (16-05-1950)
WO02083025A1	24 October 2002 (24-10-2002)	EP1408869A1	21 April 2004 (21-04-2004)
		GB0109560D0	06 June 2001 (06-06-2001)
		GB0208719D0	29 May 2002 (29-05-2002)
		GB2376895A	31 December 2002 (31-12-2002)
		US2004197732A1	07 October 2004 (07-10-2004)
US2006008764A1	12 January 2006 (12-01-2006)	JP2006025870A	02 February 2006 (02-02-2006)
		US7261560B2	28 August 2007 (28-08-2007)
WO2008072100A1	19 June 2008 (19-06-2008)	AU2007331127A1	19 June 2008 (19-06-2008)
		AU2007335842A1	26 June 2008 (26-06-2008)
		CA2670714A1	19 June 2008 (19-06-2008)
		CA2672823A1	26 June 2008 (26-06-2008)
		CN101541257A	23 September 2009 (23-09-2009)
		EP2094183A1	02 September 2009 (02-09-2009)
		EP2094184A2	02 September 2009 (02-09-2009)
		JP2010512821T	30 April 2010 (30-04-2010)
		JP2010512824T	30 April 2010 (30-04-2010)
		KR20090091162A	26 August 2009 (26-08-2009)
		MX2009006072A	16 June 2009 (16-06-2009)
		MX2009006073A	16 June 2009 (16-06-2009)
		US2008145815A1	19 June 2008 (19-06-2008)
		US7625207B2	01 December 2009 (01-12-2009)
		US2008145816A1	19 June 2008 (19-06-2008)
		US2010018536A1	28 January 2010 (28-01-2010)
		WO2008075241A2	26 June 2008 (26-06-2008)
		WO2008075241A3	21 August 2008 (21-08-2008)

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex IPR2025-01057
12 IPR2025-01057 EAST Version: 3.4.0

Electronic Acknowledgement Receipt

EFS ID:	31783767
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Stephanie Thien Vu/Lea Fong
Filer Authorized By:	Stephanie Thien Vu
Attorney Docket Number:	INCEP-001COD
Receipt Date:	14-FEB-2018
Filing Date:	27-MAR-2014
Time Stamp:	12:04:24
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	Transmittal Letter	INCEP-001COD_IDS_Statement_2-14-18.pdf	19433 e2191282d5c62e5410ad4e2fa1a2e129196b4b2d	no	2

Warnings:

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COD_IDS_1449_2-14-18.pdf	55179 7f24ce83dbc6753f9e429c50b0fb7df99f436cc5	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Foreign Reference	WO_2011014952.pdf	1348515 3ae4fe28285fd3a1f9da46b3aa3be9d17f37b410	no	25
Warnings:					
Information:					
			Total Files Size (in bytes):	1423127	

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3732 | Examiner: Hao D. Mai

Serial No.: 14/228,057 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 1983 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH SLIT

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56 and 1.97-1.98

Examiner:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56.

Applicants hereby declare, pursuant to 37 C.F.R. §1.97(e)(2), that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing the certification after having made a reasonable inquiry, no item of information contained in the information disclosure statement was

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of the information disclosure statement.

No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference an admission that it is prior art or pertinent to this application.

The Commissioner is hereby authorized to charge any necessary fee to Account Number 50-1662.

Respectfully submitted,
POLSINELLI LLP

Dated: February 14, 2018

By: _____/Stephanie Vu/_____
Stephanie Vu (Reg. No. 73,063)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
ipdocket@polsinelli.com

PTO/SB/30 (11-17)
Approved for use through 11/30/2020. OMB 0651-0031
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 contains a valid OMB control number.

Request for Continued Examination (RCE) Transmittal

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	14/228,057
Filing Date	03/27/2014
First Named Inventor	Thien Nguyen
Art Unit	3732
Examiner Name	Mai, Hao D.
Attorney Docket Number	INCEP-001COD

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. Submission required under 37 CFR 1.114 Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

   a. [✔] Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

      i. [ ] Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

      ii. [✔] Other Consider arguments in the After Final Response filed on 01/02/18

   b. [ ] Enclosed

      i. [ ] Amendment/Reply

      ii. [ ] Affidavit(s)/ Declaration(s)

      iii. [ ] Information Disclosure Statement (IDS)

      iv. [ ] Other _____

2. Miscellaneous

   a. [ ] Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

   b. [ ] Other _____

3. Fees The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

   a. [✔] The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 50-1662.

      i. [✔] RCE fee required under 37 CFR 1.17(e)

      ii. [✔] Extension of time fee (37 CFR 1.136 and 1.17)

      iii. [ ] Other _____

   b. [ ] Check in the amount of $ _____ enclosed

   c. [ ] Payment by credit card (Form PTO-2038 enclosed)

   d. [ ] Payment by EFS-Web

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature	/Stephanie T Vu/	Date	03/02/2018
Name (Print/Type)	Stephanie T Vu	Registration No.	73,063

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being EFS-Web transmitted to the United States Patent and Trademark Office (USPTO), deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the USPTO on the date shown below.

Signature	/Stephanie T Vu/		
Name (Print/Type)	Stephanie T Vu	Date	03/02/2018

This collection of information is required by 37 CFR 1.114. 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 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 SE ND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop RCE, 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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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Instruction Sheet for RCEs

(not to be submitted to the USPTO)

NOTES:

An RCE is not a new application, and filing an RCE will not result in an application being accorded a new filing date.

Filing Qualifications:

The application must be a utility or plant application filed on or after June 8, 1995. The application cannot be a provisional application, a utility or plant application filed before June 8, 1995, a design application, or a patent under reexamination. See 37 CFR 1.114(e).

Filing Requirements:

Prosecution in the application must be closed. Prosecution is closed if the application is under appeal, or the last Office action is a final action, a notice of allowance, or an action that otherwise closes prosecution in the application (e.g., an Office action under *Ex parte Quayle*). See 37 CFR 1.114(b).

A submission and a fee are required at the time the RCE is filed. If reply to an Office action under 35 U.S.C. 132 is outstanding (e.g., the application is under final rejection), the submission must meet the reply requirements of 37 CFR 1.111. If there is no outstanding Office action, the submission can be an information disclosure statement, an amendment, new arguments, or new evidence. See 37 CFR 1.114(c). The submission may be a previously filed amendment (e.g., an amendment after final rejection).

WARNINGS:

Request for Suspension of Action:

All RCE filing requirements must be met before suspension of action is granted. A request for a suspension of action under 37 CFR 1.103(c) does not satisfy the submission requirement and does not permit the filing of the required submission to be suspended.

Improper RCE will NOT toll Any Time Period:

Before Appeal - If the RCE is improper (e.g., prosecution in the application is not closed or the submission or fee has not been filed) and the application is not under appeal, the time period set forth in the last Office action will continue to run and the application will be abandoned after the statutory time period has expired if a reply to the Office action is not timely filed. No additional time will be given to correct the improper RCE.

Under Appeal - If the RCE is improper (e.g., the submission or the fee has not been filed) and the application is under appeal, the improper RCE is effective to withdraw the appeal. Withdrawal of the appeal results in the allowance or abandonment of the application depending on the status of the claims. If there are no allowed claims, the application is abandoned. If there is at least one allowed claim, the application will be passed to issue on the allowed claim(s). See MPEP 1215.01.

See MPEP 706.07(h) for further information on the RCE practice.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

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.

Electronic Patent Application Fee Transmittal

Application Number:	14228057
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Stephanie Thien Vu/Kristine Goodman
Attorney Docket Number:	INCEP-001COD

Filed as Small 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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	2820	1	950	950
		Total in USD ($)		**950**

Electronic Acknowledgement Receipt

EFS ID:	31948963
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Stephanie Thien Vu/Kristine Goodman
Filer Authorized By:	Stephanie Thien Vu
Attorney Docket Number:	INCEP-001COD
Receipt Date:	02-MAR-2018
Filing Date:	27-MAR-2014
Time Stamp:	19:32:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$950
RAM confirmation Number	030518INTEFSW00004862501662
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	RCE.pdf	187489 a47e4e3a7f36e3fe8969c7d768e1877959582d5b	no	3
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30530 9c32b64ecd3d72c0f2dcc020c3366c4ab6e40e64	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	218019		

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 14/228,057	Filing Date 03/27/2014	☐ 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 $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ 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

AMENDMENT **03/02/2018**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 18	Minus	** 20	= 0	X $50 =	0
Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $230 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ 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.
** 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 number found in the appropriate box in column 1.

LIE
ANTJUAN RIVERA

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 NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,057	03/27/2014	Thien Nguyen	INCEP-001COD	1983

138718 7590 09/07/2018

Polsinelli LLP
3 Embarcadero Center
Suite 2400
San Francisco, CA 94111
UNITED STATES OF AMERICA

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3732	

NOTIFICATION DATE	DELIVERY MODE
09/07/2018	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):

uspt@polsinelli.com
sfpatent@polsinelli.com

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Office Action Summary	Application No. 14/228,057	Applicant(s) NGUYEN ET AL.	
	Examiner HAO D. MAI	Art Unit 3732	AIA (First Inventor to File) 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 *03/02/2018*.

☐ 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) *1-18* 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) *1-18* 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 _____ 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: _____.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/02/2018 has been entered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 4, and 14-18, are rejected under pre-AIA 35 U.S.C. 103 as being unpatentable over Anders et al. (3,768,477) in view of Erickson (3,090,122).**

Regarding claim 1, Anders et al. discloses a mouthpiece 10 comprising: a main body portion 10 (Figs. 1-5). The main body 10 is configured as a pocket having an interior open space having a shape defined by: an anterior/top wall 32 defined by an exterior edge, an posterior/bottom wall 28 defined by an exterior edge, and a side wall (i.e. connection between

the top and bottom walls) extending from the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall (Figs. 1-5).

The anterior/top wall comprises at least one aperture 30 extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion 10, the aperture 30 comprises an opening 30 which fluids exterior to the pocket to enter into the interior opening space of the pocket along the longitudinal and central axis. Note that Anders et al. discloses "*A further plurality of apertures 30 are drilled through the top 32 of the depressor portion 20 and communicate into the hollow portion of the depressor portion 20. Preferably these apertures 30 are grouped more* ***toward the center*** *of the depressor portion 20*." (column 2 lines 56-61, emphasis added). By broadest reasonable interpretation of the claimed "slit" being "a cut" or "an opening", the aperture 30 is considered to be equivalent to the claimed slit extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion.

Alternatively, to give structural limitations "long and narrow" to the claimed "slit", Erickson discloses a mouthpiece having long narrow slits 41 extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion, the slits comprising openings 41 that allows fluids exterior to inner pocket 26 to enter into the interior open space of the pocket 26 along the longitudinal and central axis (Figs. 1-4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Anders et al.'s aperture 30's shape to have long and narrow slit-shape as taught by Erickson as a suitable alternative shape for such aperture allowing for fluid to enter therethrough, yielding the same and or predictable results.

As to claim 4, note that the claim language "by injection-molded" is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and

defined by the recited process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe,* 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Anders et al. discloses the end product and the structures thereof as claimed as detailed above, wherein the mouthpiece's main body 10 is formed as one piece (Fig. 1-5). The burden is shifted to applicant to show an unobvious difference between the cited prior art's device and the invention that would have resulted from the injection molding process.

As to claim 14, Anders et al. discloses a suction connector portion 22 that connect the interior of the pocket to a vacuum source, wherein activation of the vacuum source 16 applies the suction to the interior of the pocket, wherein fluids that enter through the slit opening 30 into the interior of the pocket are suctioned toward the vacuum source (Figs. 1-5).

As to claims 15-18, Anders et al. discloses a mouth prop 14 having a bite block portion (enlarge portion 23 in Fig. 1, or thicker portion 18b Fig. 6) and a strap portion (thinner annular portion). The bite block portion 23 is shown having an opening (inner bore) corresponding to a plug 22 connected to the main body 10 (Figs. 1-5). Note that the claim language "mouth prop", "bite block portion", "strap portion", convey functions or intended use; such recitation convey little, if any, structural limitations. Thus, Anders et al.'s mouth prop 14 having a bite block portion is detachable from mouthpiece 10 as claimed, and is capable of propping opening the mouth; the strap portion 18 is clearly capable of strapping mechanism (Fig. 6). Note that the claim language "injection-molded" (claim 17) is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and defined by the recited process, determination of patentability is based on the product itself. The patentability of a

product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe,* 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Anders et al. discloses the end product and the structures thereof as claimed as detailed above, wherein the bite block portion 23 and the strap portion.

Alternatively, Erickson discloses a detachable mouth prop 12 comprising: a bite block portion, i.e. external surface 12 with dimples 45; and a strap portion, i.e. central aperture to receive tube 11 (Figs. 1 and 4; column 2 line 64 - column 3 line 11). The bite block and strap portions are shown being one piece; the bite block portion comprises an opening corresponding to a plug 11 connected to the main body (Fig. 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Anders et al. by incorporating a detachable mouth prop as taught by Erickson in order to provide a means for propping the mouth opening during a dental procedure.

5. **Claims 2-3 and 5-11 are rejectable under pre-AIA 35 U.S.C. 103 as being obvious over Anders et al. in view of Erickson, and further in view of Hirsch (2006/0063129).**

Regarding claims 2-3 and 6, Anders/Erickson fails to disclose a stability bar as claimed. Hirsch discloses a mouthpiece 20 (Figs. 1-4) comprising: a main body portion 20 which is configured as a pocket having an interior 80/82/34 (best shown in Figs. 8A-8B) defined by an anterior wall 50 (Fig. 3), a posterior wall 50/48 (Fig. 4), and a side wall wall (i.e. surrounding edge of the two opposite walls) connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall. As to claims 2-3 and 6, Hirsch discloses the posterior wall having a thicker thickness (best pointed to by reference numeral 48 in Fig. 4). Such thicker thickness is considered to be equivalent to the claimed stability bar protruding from

an interior surface of the posterior wall (Figs. 8A-8B) and along the longitudinal and central axis of the main body portion. Alternatively and/or additionally, back wall 82/82 is considered to be equivalent to the claimed stability bar protruding from an interior surface of the posterior wall. Both stability bar structures are aligned with slit 80/82 (Figs. 8A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Anders/Erickson by incorporating a thicker thickness or a stability bar to the posterior wall of the mouthpiece as taught by Hirsch in order provide reinforcement to the mouthpiece with reasonable expectation of success.

As to claims 5 and 7, Anders/Erickson fails to disclose the material used to form the main body portion being a flexible, translucent, high heat-resistant, autoclavable silicone-based material as claimed. Hirsch discloses the device is formed of a flexible, translucent, high heat-resistant, autoclavable silicone-based material of Pebax (paragraph 49). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make Anders/Erickson's device from a flexible, translucent, high heat-resistant, autoclavable silicone-based material as taught by Hirsch to be a suitable alternative material for the intended use with reasonable expectation of success. Particularly to claim 7, the modified device formed a flexible silicone-based material would allow portions of the anterior wall to be pulled open at the slit to expose the interior of the pocket. As to claims 8-9, Anders et al. is silent to a cheek retractor as claimed. Erickson discloses cheek retractor portion 27 but fails to disclose such cheek retractor 27 comprises an extension of the pocket. Hirsch discloses a cheek retractor portion 52 having a surface that applies pressure when the mouthpiece is bent, wherein the pressure is based on resilience of the elastomeric material from which the cheek retractor portion is formed; the cheek retractor portion 52 comprises an extension 52 of the pocket and wherein the slit 66 extends into the extension of the pocket (Fig. 2). It would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify Ander/Erickson by incorporating a cheek retractor extension in order to retract cheek tissues away from teeth during a dental procedure as explicitly taught by Hirsch.

As to claims 10-11, Anders/Erickson fails to disclose a bridge structure as claimed. Hirsch discloses the comprising a bridge structure 24 comprising a plurality of protrusions (walls of channels 80 and 82, best shown in Fig. 8A) protruding from an interior surface of the posterior wall and substantially extending a distance between the anterior wall and the posterior wall, wherein the bridge structure 24 is not attached to the anterior wall. The plurality of protrusions of the bridge structure 24 comprises a plurality of spaced contact points, i.e. spaced-apart extending walls of 24 forming channels 80 and 82 (Figs. 8A-8B). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Anders et al. by including such bridge structure as taught by Hirsch into Anders et al.'s device in order to further provide reinforcement to the interior space of the mouthpiece.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§

706.02(l)(1) - 706.02(l)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

7. **Claims 1-18 rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 8,911,232**. Although the claims at issue are not identical, they are not patentably distinct from each other because the difference between the application claims and the patent claims lies in the fact that the patent claims include more elements and are thus much specific. Thus the invention of the patent claims are in effect a “species” of the “generic” invention of the application claims. It has been held that the generic invention is “anticipated” by the “species”. See *In re Goodman*, 29 USPQ2d 2010 (Fed. Cir. 1993). Since the application claims are anticipated by the patent claims, they are not patentably distinct from the patent claims.

Response to Arguments

8. Applicant’s arguments with respect to the amendments made to the claim(s) have been considered and are persuasive as having overcome Hirsch under 35 U.S.C. 102 because Hirsch does not disclose the slit opening allowing fluids to enter into the interior open space of the pocket along the longitudinal and central axis as claimed. However, upon further consideration, the claims are rejected primarily based on Anders et al. and Erickson as detailed above.

Applicant's remarks are held to be responded to in the new ground(s) of rejection of claims 1-11 and 14-18 under Anders et al., Erickson, and Hirsch, as detailed above. Claims 12-13 are not rejected under prior art. All pending claims are rejected under double patenting.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hao D. Mai whose telephone number is (571) 270-3002. The examiner can normally be reached on Monday-Friday 8:00AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Cris Rodriguez, at (571) 272-4964. 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 http://pair-direct.uspto.gov. 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.

/Hao D Mai/
Examiner, Art Unit 3732

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14228057	NGUYEN ET AL.
	Examiner	Art Unit
	HAO D MAI	3732

CPC- SEARCHED		
Symbol	Date	Examiner
A61C 17/043, 046	11/16/2015	HDM
Updated Search	05/31/2016	HDM
Update Search	09/04/2018	HDM

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
433	91-92, 140	11/16/2015	HDM

* 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 Search	11/16/2015	HDM
Review searches of parent case 14/100323	11/16/2015	HDM
Updated Search	05/31/2016	HDM
Update Search	04/03/2017	HDM
Update Search	10/30/2017	HDM
Update Search	09/04/2018	HDM

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,057
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COD

Sheet	1	of	2

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Document Number Number-Kind Code[2](If known)		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	D809,660	2/6/2018	Nguyen	
		US-	2012/0237894	9/20/2012	Maycher et al.	
		US-				
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Foreign Patent Document Country Code[3] Number[4] Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6
		WO 2011/014952	2/10/2011	University of Manitoba		

Examiner Signature	/Hao D Mai/	Date Considered	09/04/2018

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 'Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3732
	Examiner Name	Hao D. Mai
Sheet 2 of 2	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Final Office Action mailed 1/16/18	

Examiner Signature	/Hao D Mai/	Date Considered	09/04/2018

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

This collection of information is required by 37 CFR 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S81	44	("0674650" | "2482116" | "3090122").PN. OR ("3768477").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/09/04 04:46
S82	8	("3742607" | "3768477" | "4015336" | "4081176" | "D239116" | "D277604" | "D659824").PN. OR ("D796044").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/09/04 05:31
S83	15	("3541583").PN. OR ("3742607").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/09/04 05:32
S84	6	("D239116").URPN.	USPAT	OR	OFF	2018/09/04 05:40
S85	19	("3625207" | "3747599" | "3768477" | "3786809").PN. OR ("3877691").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/09/04 05:46
S86	46	("0590460" | "1042133" | "1401646" | "2830371" | "3090122" | "3768477" | "4053984" | "4215984" | "4259067" | "4260378" | "4632093" | "4992046" | "5037298" | "5232362" | "5460524").PN. OR ("6213772").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/09/04 05:56
S87	2	"20060063129"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/09/04 06:11
S88	61	(US-20080053434-$ or US-20080166684-$ or US-20080318183-$ or US-20090123886-$ or US-20110311942-$ or US-20060063129-$ or US-20090274991-$ or US-20010008752-$ or US-20140162209-$ or US-20140212841-$).did. or (US-3090122-$ or US-3802081-$ or US-3924333-$ or US-4053984-$ or US-4192071-$ or US-4215984-$ or US-4259067-$ or US-5078602-$ or US-5094616-$ or US-5152686-$ or US-5232362-$ or US-5516286-$ or US-6974321-$ or US-7293990-$ or US-7611354-$ or US-7748981-$ or US-8029280-$ or US-8057228-$ or US-3171203-$ or US-6022214-$ or US-1122086-$ or US-4802851-$ or US-4017975-$ or US-4167814-$ or US-5513986-$ or US-D495799-$).did. or (US-6267591-$ or US-6338627-$ or US-6908308-$ or US-3768477-$ or US-8297973-$ or US-3877691-$ or US-4718662-$ or US-6213772-$ or US-3396468-$ or US-2111859-$ or US-2937445-$ or US-4024642-$ or US-4425911-$ or US-6652276-$ or US-D796044-$ or US-7938794-$	US-PGPUB; USPAT; USOCR	OR	OFF	2018/09/04 06:12

		or US-5876201-$ or US-6083003-$ or US-D239116-$ or US-3742607-$).did. or (US-2937445-$ or US-2250285-$ or US-2482116-$ or US-0674650-$ or US-3090122-$).did.				
S89	5	S88 and reinforc$4	US-PGPUB; USPAT; USOCR	OR	OFF	2018/09/04 06:13
S90	2	S88 and (reinforcing or reinforcement)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/09/04 06:13
S91	39	("2777248" | "3029513").PN. OR ("4017975").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/09/04 06:14

9/4/2018 10:29:11 AM
C:\Users\hmai1\Documents\EAST\Workspaces\14228057.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14228057	NGUYEN ET AL.
	Examiner	**Art Unit**
	HAO D MAI	3732

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

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

CLAIM		DATE								
Final	Original	11/16/2015	05/31/2016	04/03/2017	10/30/2017	09/04/2018				
	1	✓	✓	✓	✓	✓				
	2	✓	✓	✓	✓	✓				
	3	✓	✓	✓	✓	✓				
	4	✓	✓	✓	✓	✓				
	5	✓	✓	✓	✓	✓				
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	9	✓	✓	✓	✓	✓				
	10	✓	✓	✓	✓	✓				
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	18	✓	✓	✓	✓	✓				
	19	✓	✓	✓	-	-				
	20	✓	✓	✓	-	-				

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3772
	Examiner Name	Hao D. Mai
Sheet 1 of 1	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Office Action mailed 10/5/18	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Office Action mailed 10/4/18	

Examiner Signature		Date Considered	

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

This collection of information is required by 37 CFR 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Electronic Acknowledgement Receipt

EFS ID:	34190162
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Stephanie Thien Vu/Lea Fong
Filer Authorized By:	Stephanie Thien Vu
Attorney Docket Number:	INCEP-001COD
Receipt Date:	05-NOV-2018
Filing Date:	27-MAR-2014
Time Stamp:	10:47:24
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	Transmittal Letter	INCEP-001COD_IDS_Statement_11-5-18.pdf	19170 8e9b321b5d547d6e329566564a9e4c6965ab93aa	no	2

Warnings:

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COD_IDS_1449_11-5-18.pdf	27819 e1e768e53141d805c9fee0097dd911ebe79b7e5e	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	46989	

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772 | Examiner: Hao D. Mai

Serial No.: 14/228,057 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 1983 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH SLIT

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56 and 1.97-1.98

Examiner:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56.

Applicants hereby declare, pursuant to 37 C.F.R. §1.97(e)(2), that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing the certification after having made a reasonable inquiry, no item of information contained in the information disclosure statement was

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of the information disclosure statement.

No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference an admission that it is prior art or pertinent to this application.

Respectfully submitted,
POLSINELLI LLP

Dated: November 5, 2018

By: _____/Stephanie T. Vu/_____
Stephanie T. Vu (Reg. No. 73,063)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
patentdocketing@polsinelli.com

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Thien Nguyen et al.	Examiner:	Hao D. Mai
Serial No.:	14/228,057	Group Art No.:	3732
Filed:	March 27, 2014	Conf. No.:	1983
Title:	INTRAORAL DEVICE WITH SLIT	Dkt. No.:	INCEP- 001COD

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

AMENDMENT

In response to the Non-Final Office Action mailed September 7, 2018, please amend the above-identified application as follows. Applicants make the following remarks.

Amendments to the Claims begin on page 2 of this paper.

Remarks/Arguments begin on page 5 of this paper.

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IN THE CLAIMS

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

1. (Currently Amended) A mouthpiece comprising:

a main body ~~portion~~ configured as a pocket having an interior open space having a shape comprising a wider end portion opposite a narrower end portion, the shape defined by:

an anterior wall defined by an exterior edge, the anterior wall comprising a slit extending [[along]] parallel to a longitudinal and central axis of the main body ~~portion between opposite ends~~ through the wider end portion, and through the narrower end portion of the main body ~~portion~~, the slit comprising an opening that allows fluids exterior to the pocket to enter into the interior open space of the pocket ~~along the longitudinal and central axis,~~

a posterior wall defined by an exterior edge that corresponds to the exterior edge of the anterior wall, and

a side wall connecting extending from the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall.

2. (Currently Amended) The mouthpiece of claim 1, wherein the posterior wall further includes a stability bar protruding from an interior surface of the posterior wall and along the longitudinal and central axis of the main body ~~portion~~.

3. (Original) The mouthpiece of claim 2, wherein the stability bar is aligned with the slit on the anterior wall.

4. (Currently Amended) The mouthpiece of claim 1, wherein the main body ~~portion~~ is formed by injection-molding as one piece.

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5. (Currently Amended) The mouthpiece of claim 1, wherein a material used to form the main body ~~portion~~ is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

6. (Original) The mouthpiece of claim 1, wherein the anterior wall and the posterior wall have different thicknesses.

7. (Previously Presented) The mouthpiece of claim 1, wherein flexibility of material of the anterior wall allows portions of the anterior wall to be pulled open at the slit to expose the interior of the pocket.

8. (Currently Amended) The mouthpiece of claim 1, further comprising a cheek retractor portion connected to the main body ~~portion~~ and having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

9. (Previously Presented) The mouthpiece of claim 8, wherein the cheek retractor portion comprises an extension of the pocket and wherein the slit extends into the extension of the pocket.

10. (Previously Presented) The mouthpiece of claim 1, further comprising a bridge structure comprising a plurality of protrusions protruding from an interior surface of the posterior wall, wherein the protrusions do not attach to the anterior wall.

11. (Previously Presented) The mouthpiece of claim 10, wherein the protruding bridge structure protrusions comprise a plurality of spaced contact points.

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12. (Previously Presented) The mouthpiece of claim 11, wherein the bridge structure protrusions protrude from the interior surface of the posterior wall in a wave shape, and wherein the contact points are at crests of the wave shape.

13. (Original) The mouthpiece of claim 12, wherein spaces between the contact points are at troughs of the wave shape.

14. (Previously Presented) The mouthpiece of claim 1, further comprising a suction connector portion that connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source applies a suction to the interior of the pocket, wherein the fluids that enter through the slit opening into the interior of the pocket are suctioned toward the vacuum source.

15. (Original) The mouthpiece of claim 1, further comprising a detachable mouth prop.

16. (Original) The mouthpiece of claim 15, wherein the detachable mouth prop comprises a bite block portion and a strap portion.

17. (Original) The mouthpiece of claim 16, wherein the bite block portion and strap portion are injection-molded in one piece.

18. (Currently Amended) The mouthpiece of claim 15, wherein the bite block portion comprises an opening corresponding to a plug connected to the main body ~~portion~~.

19. (Cancelled)

20. (Cancelled)

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REMARKS

Status of the Claims

The Applicants have amended independent claim 1 and dependent claims 2, 4, 5, 8, and 18 for consistency. No new matter has been added. In view of the following remarks, Applicants respectfully submit that the application is in condition for allowance.

Rejections under 35 U.S.C. §103

Claims 1, 4 and 14-18 were rejected under pre-AIA 35 U.S.C. 103 as being unpatentable over U.S. Patent No. 3,768,477 to Anders et al. (*"Anders")* in view of U.S. Patent No. 3,090,122 to Erickson, ("*Erickson*"). *Office Action*, 2. Although the Applicant respectfully disagrees, independent claim 1 has been amended to expedite prosecution.

Claim 1 recites, *inter alia*, "a main body comprising a wider end portion opposite a narrower end portion" and "a slit extending parallel to a longitudinal and central axis of the main body through the wider end portion, and through the narrower end portion of the main body." Neither *Anders* nor *Erickson* together or separately teach these features.

Anders teaches a tongue depressing aspirating tip having a tube extending from a handle. *Anders*, Abstract. *Anders* also teaches, as noted by the Examiner on page 3, apertures 30 that are drilled into the depressor tip. However, the apertures 30, as shown below do not teach a slit extending parallel to a longitudinal and central axis of the main body.

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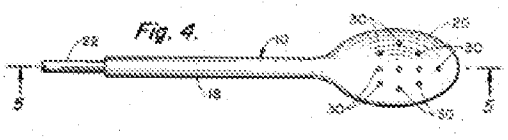
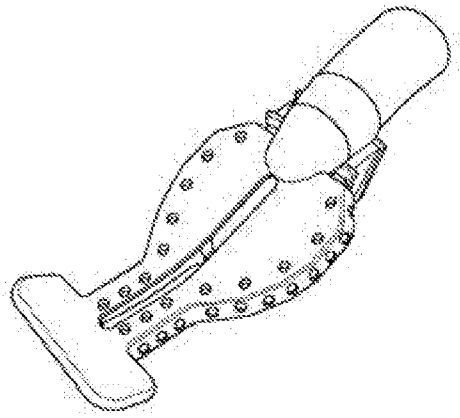
Ascentcare Dental Products v. Solmetex - IPR2025-01057

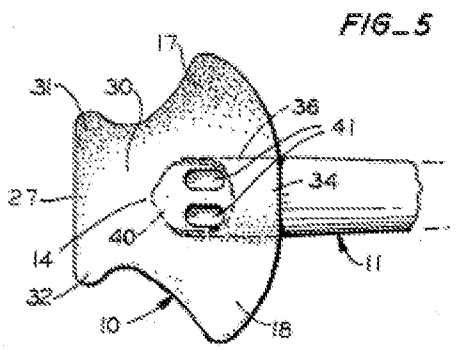
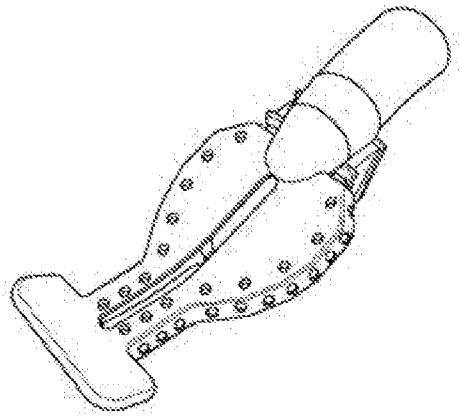
Patent 3,768,477	Current Application
	

The Applicant disagrees with the Examiner's characterization that one of the apertures 30 is equivalent to a slit extending along a longitudinal and central axis of a main body. Merriam-Webster defines a slit as "a long narrow cut or opening."[1] The apertures 30 shown above and by definition are neither a long narrow cut nor a long narrow opening. However, to expedite prosecution, claim 1 has been amended to include "a slit extending **parallel to a longitudinal and central axis** of the main body." None of the apertures 30 shown or described extend parallel to a longitudinal and central axis of a main body portion. As such, *Anders* does not teach "a main body comprising a wider end portion opposite a narrower end portion" and "a slit extending parallel to a longitudinal and central axis of the main body through the wider end portion, and through the narrower end portion of the main body."

Erikson does not cure the deficiencies of *Anders*. *Erikson* teaches a dental appliance having a receptacle with a central depressed portion and a drain. *Erikson*, col. 1, lns. 64-67. *Erikson* also teaches, as noted by the Examiner on page 3, openings 41 to drain liquid and debris from the receptacle, as shown below. *Id.* at col. 2, lns. 20-23.

[1] *Slit* definition, https://www.merriam-webster.com/dictionary/slit, accessed 12/5/18.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Patent 3,090,122	Current Application
	

As shown above, neither of the openings 41 extend between a wider end portion and **through the narrower end portion** of the main body. As such, *Erikson* does not teach "a main body comprising a wider end portion opposite a narrower end portion" and "a slit extending parallel to a longitudinal and central axis of the main body through the wider end portion, and through the narrower end portion of the main body."

Neither *Anders* nor *Erickson*, together or separately, teach "a main body comprising a wider end portion opposite a narrower end portion" and "a slit extending parallel to a longitudinal and central axis of the main body through the wider end portion, and through the narrower end portion of the main body." Thus, withdrawal of the rejection is respectfully requested.

Claims 2-3 and 5-11 were rejected under pre-AIA 35 U.S.C. 103 as being obvious over *Anders* in view of *Erickson*, and further in view of U.S. Publication No. 2006/0063129 to Hirsch (*"Hirsch"*). *Office Action*, 5. Applicants respectfully disagree. Because claims 2-3 and 5-11 depend from independent claim 1, the claims are allowable for at least the same reasons described above. As such, withdrawal of the rejection is respectfully requested.

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Double Patenting

The Office rejected claims 1-18 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of Patent No. 8,911,232. *Office Action*, pg. 8. As the independent claims of the present application have been amended, it is believed that the present rejection of record may no longer be applicable. Should the Examiner wish to maintain the double patenting rejection and otherwise find the application in condition for allowance, the Examiner is respectfully requested to contact the undersigned to discuss subsequent submission of a disclaimer if appropriate.

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CONCLUSION

Based on the foregoing, it is submitted that Applicants' invention as defined by the claims is patentable over the references of record. Issuance of a Notice of Allowance is solicited.

Applicants' attorney welcomes the opportunity to discuss the case with the Examiner in the event that there are any questions or comments regarding the response or the application.

Applicants believe no other fees or petitions are required. However, if any such petitions or fees are necessary, please consider this a request therefor and authorization to charge Deposit Account No. 50-1662 accordingly.

Respectfully submitted,

December 5, 2018

POLSINELLI *LLP*

/ Stephanie T. Vu/

Stephanie T. Vu, Reg. No. 73,063
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
Tel: (720) 931-1166
patentdocketing@polsinelli.com

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Electronic Acknowledgement Receipt

EFS ID:	34496628
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Stephanie Thien Vu/Kristine Goodman
Filer Authorized By:	Stephanie Thien Vu
Attorney Docket Number:	INCEP-001COD
Receipt Date:	05-DEC-2018
Filing Date:	27-MAR-2014
Time Stamp:	17:16:26
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		AmendmentAndResponse.pdf	166635 eb51d92ad87c36da2e42ae5c173fca406ea82682	yes	9

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	4
	Applicant Arguments/Remarks Made in an Amendment	5	9
Warnings:			
Information:			
	Total Files Size (in bytes):	166635	

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New Applications Under 35 U.S.C. 111

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

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New International Application Filed with the USPTO as a Receiving Office

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Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3772
	Examiner Name	Hao D. Mai
Sheet 1 of 1	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Office Action mailed 11/29/18	

Examiner Signature		Date Considered	

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

This collection of information is required by 37 CFR 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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EFS ID:	35008368
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Stephanie Thien Vu/Lea Fong
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	INCEP-001COD_IDS_Statement_2-1-19.pdf	19169 1acebe97b20666f096ff9f10e4ba85ea2ea6ad2c	no	2

Warnings:

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COD_IDS_1449_2-1-19.pdf	27764 e7ca86cef847c483befc2b749a4a5e3aa8b3739f	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	46933	

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772 | Examiner: Hao D. Mai

Serial No.: 14/228,057 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 1983 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH SLIT

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56 and 1.97-1.98

Examiner:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56.

Applicants hereby declare, pursuant to 37 C.F.R. §1.97(e)(2), that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing the certification after having made a reasonable inquiry, no item of information contained in the information disclosure statement was

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known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of the information disclosure statement.

No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference an admission that it is prior art or pertinent to this application.

Respectfully submitted,
POLSINELLI LLP

Dated: February 1, 2019

By: _____/Stephanie T. Vu/_____
Stephanie T. Vu (Reg. No. 73,063)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
patentdocketing@polsinelli.com

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,057	03/27/2014	Thien Nguyen	INCEP-001COD	1983

138718 7590 03/22/2019

Polsinelli LLP
3 Embarcadero Center
Suite 2400
San Francisco, CA 94111

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
03/22/2019	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):

sfpatent@polsinelli.com
uspt@polsinelli.com

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Office Action Summary	Application No. 14/228,057	Applicant(s) Nguyen et al.	
	Examiner HAO D MAI	Art Unit 3772	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 02/01/2019.

☐ 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) 1-18 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) 1-18 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 _____ 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: _____.

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DETAILED ACTION

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 § 112

2. The following is a quotation of 35 U.S.C. 112(b):

> (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

> The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-18 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Claim 1 recites “a wider end portion” and “a narrower end portion” (line 3) without a reference point(s) for the terms “wider” and “narrower”, i.e. wider or narrower compared to what?

All dependent claims are rejected herein based on dependency.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing

date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1, 4, and 14-18, are rejected under pre-AIA 35 U.S.C. 103 as being unpatentable over Anders et al. (3,768,477) in view of Erickson (3,090,122).**

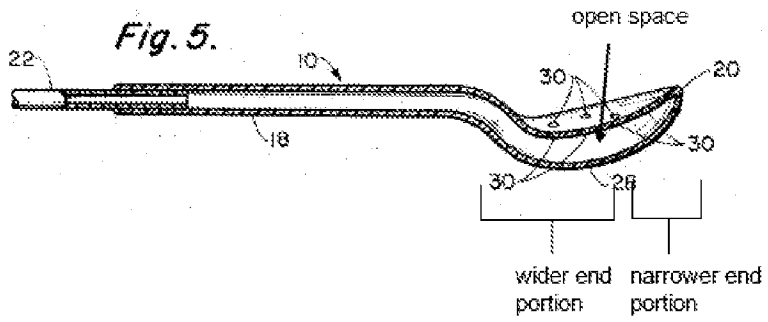
Regarding claim 1, Anders et al. discloses a mouthpiece 10 comprising: a main body portion 10 (Figs. 1-5). The main body 10 is configured as a pocket having an interior open space having a shape defined by: an anterior/top wall 32 defined by an exterior edge, an posterior/bottom wall 28 defined by an exterior edge, and a side wall (i.e. connection between the top and bottom walls) extending from the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall (Figs. 1-5).

The anterior/top wall comprises at least one aperture 30 extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion 10, the aperture 30 comprises an opening 30 which fluids exterior to the pocket to enter into the interior opening space of the pocket along the longitudinal and central axis. Note that Anders et al. discloses "*A further plurality of apertures 30 are drilled through the top 32 of the depressor portion 20 and communicate into the hollow portion of the depressor portion 20. Preferably these apertures 30 are grouped more* ***toward the center*** *of the depressor portion 20.*" (column 2 lines 56-61, emphasis added). By broadest reasonable interpretation of the claimed "slit" being "a cut" or "an opening", the aperture 30 is considered to be equivalent to the claimed slit extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion.

Alternatively, to give structural limitations "long and narrow" to the claimed "slit", Erickson discloses a mouthpiece having long narrow slits 41 extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion, the slits comprising openings 41 that allows fluids exterior to inner pocket 26 to enter into the interior open space of the pocket 26 along the longitudinal and central axis (Figs. 1-4). It would have

been obvious to one of ordinary skill in the art at the time the invention was made to modify Anders et al.'s aperture 30's shape to have long and narrow slit-shape as taught by Erickson as a suitable alternative shape for such aperture allowing for fluid to enter therethrough, yielding the same and or predictable results.

Regarding the newly recited limitation(s) that the interior open space having a shape "comprising a wider end portion opposite a narrower end portion", note that such limitation(s) are very broad since "portion" can be arbitrarily assigned. As such, both Anders et al.'s and Erickson's devices are shown having an interior open space comprising a wider end portion opposite a narrow end portion (see annotated drawing of Anders below), as claimed. The wider end portion and the narrower end portion may be much smaller that the opening/slit 30 as taught by Anders or as modified by Erickson extends through the wider end portion and the narrower end portion, as claimed.



Note that such wider end portion and narrower end portion can be arbitrarily assigned, especially since the claim does not define a reference comparison point for "wider" and "narrower". For example, Erickson's device having an open space within the tapering tube 11, the wider end portion may be assigned as a portion that half of the slit 41 extends toward the larger taper portion of the tube 11, and the narrower end portion may be assigned as a portion of the opposite half of the slit 41 toward the smaller taper portion of the tube 11.

As to claim 4, note that the claim language "by injection-molded" is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and

defined by the recited process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe,* 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Anders et al. discloses the end product and the structures thereof as claimed as detailed above, wherein the mouthpiece's main body 10 is formed as one piece (Fig. 1-5). The burden is shifted to applicant to show an unobvious difference between the cited prior art's device and the invention that would have resulted from the injection molding process.

As to claim 14, Anders et al. discloses a suction connector portion 22 that connect the interior of the pocket to a vacuum source, wherein activation of the vacuum source 16 applies the suction to the interior of the pocket, wherein fluids that enter through the slit opening 30 into the interior of the pocket are suctioned toward the vacuum source (Figs. 1-5).

As to claims 15-18, Anders et al. discloses a mouth prop 14 having a bite block portion (enlarge portion 23 in Fig. 1, or thicker portion 18b Fig. 6) and a strap portion (thinner annular portion). The bite block portion 23 is shown having an opening (inner bore) corresponding to a plug 22 connected to the main body 10 (Figs. 1-5). Note that the claim language "mouth prop", "bite block portion", "strap portion", convey functions or intended use; such recitation convey little, if any, structural limitations. Thus, Anders et al.'s mouth prop 14 having a bite block portion is detachable from mouthpiece 10 as claimed, and is capable of propping opening the mouth; the strap portion 18 is clearly capable of strapping mechanism (Fig. 6). Note that the claim language "injection-molded" (claim 17) is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and defined by the recited process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even

though the prior product was made by a different process. *In re Thorpe,* 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Anders et al. discloses the end product and the structures thereof as claimed as detailed above, wherein the bite block portion 23 and the strap portion.

Alternatively, Erickson discloses a detachable mouth prop 12 comprising: a bite block portion, i.e. external surface 12 with dimples 45; and a strap portion, i.e. central aperture to receive tube 11 (Figs. 1 and 4; column 2 line 64 - column 3 line 11). The bite block and strap portions are shown being one piece; the bite block portion comprises an opening corresponding to a plug 11 connected to the main body (Fig. 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Anders et al. by incorporating a detachable mouth prop as taught by Erickson in order to provide a means for propping the mouth opening during a dental procedure.

6. **Claims 2-3 and 5-11 are rejectable under pre-AIA 35 U.S.C. 103 as being obvious over Anders et al. in view of Erickson, and further in view of Hirsch (2006/0063129).**

Regarding claims 2-3 and 6, Anders/Erickson fails to disclose a stability bar as claimed. Hirsch discloses a mouthpiece 20 (Figs. 1-4) comprising: a main body portion 20 which is configured as a pocket having an interior 80/82/34 (best shown in Figs. 8A-8B) defined by an anterior wall 50 (Fig. 3), a posterior wall 50/48 (Fig. 4), and a side wall (i.e. surrounding edge of the two opposite walls) connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall. As to claims 2-3 and 6, Hirsch discloses the posterior wall having a thicker thickness (best pointed to by reference numeral 48 in Fig. 4). Such thicker thickness is considered to be equivalent to the claimed stability bar protruding from an interior surface of the posterior wall (Figs. 8A-8B) and along the longitudinal and central axis of the main body portion. Alternatively and/or additionally, back wall 82/82 is considered to be equivalent to the claimed stability bar protruding from an interior surface of the posterior wall.

Both stability bar structures are aligned with slit 80/82 (Figs. 8A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Anders/Erickson by incorporating a thicker thickness or a stability bar to the posterior wall of the mouthpiece as taught by Hirsch in order provide reinforcement to the mouthpiece with reasonable expectation of success.

As to claims 5 and 7, Anders/Erickson fails to disclose the material used to form the main body portion being a flexible, translucent, high heat-resistant, autoclavable silicone-based material as claimed. Hirsch discloses the device is formed of a flexible, translucent, high heat-resistant, autoclavable silicone-based material of Pebax (paragraph 49). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make Anders/Erickson's device from a flexible, translucent, high heat-resistant, autoclavable silicone-based material as taught by Hirsch to be a suitable alternative material for the intended use with reasonable expectation of success. Particularly to claim 7, the modified device formed a flexible silicone-based material would allow portions of the anterior wall to be pulled open at the slit to expose the interior of the pocket. As to claims 8-9, Anders et al. is silent to a cheek retractor as claimed. Erickson discloses cheek retractor portion 27 but fails to disclose such cheek retractor 27 comprises an extension of the pocket. Hirsch discloses a cheek retractor portion 52 having a surface that applies pressure when the mouthpiece is bent, wherein the pressure is based on resilience of the elastomeric material from which the cheek retractor portion is formed; the cheek retractor portion 52 comprises an extension 52 of the pocket and wherein the slit 66 extends into the extension of the pocket (Fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ander/Erickson by incorporating a cheek retractor extension in order to retract cheek tissues away from teeth during a dental procedure as explicitly taught by Hirsch.

As to claims 10-11, Anders/Erickson fails to disclose a bridge structure as claimed. Hirsch discloses the comprising a bridge structure 24 comprising a plurality of protrusions (walls

of channels 80 and 82, best shown in Fig. 8A) protruding from an interior surface of the posterior wall and substantially extending a distance between the anterior wall and the posterior wall, wherein the bridge structure 24 is not attached to the anterior wall. The plurality of protrusions of the bridge structure 24 comprises a plurality of spaced contact points, i.e. spaced-apart extending walls of 24 forming channels 80 and 82 (Figs. 8A-8B). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Anders et al. by including such bridge structure as taught by Hirsch into Anders et al.'s device in order to further provide reinforcement to the interior space of the mouthpiece.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(l)(1) - 706.02(l)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

8. **Claims 1-18 rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 8,911,232**. Although the claims at issue are not identical, they are not patentably distinct from each other because the difference

between the application claims and the patent claims lies in the fact that the patent claims include more elements and are thus much specific. Thus the invention of the patent claims are in effect a "species" of the "generic" invention of the application claims. It has been held that the generic invention is "anticipated" by the "species". See *In re Goodman*, 29 USPQ2d 2010 (Fed. Cir. 1993). Since the application claims are anticipated by the patent claims, they are not patentably distinct from the patent claims.

Response to Arguments

9. Applicant's arguments with respect to the amendments made to the claim(s) have been considered but are not persuasive as having overcome Anders and Erickson.

The newly recited limitation(s) that the interior open space having a shape "comprising a wider end portion opposite a narrower end portion" is very broad since "portion" can be arbitrarily assigned. As such, both Anders et al.'s and Erickson's devices are shown having an interior open space comprising a wider end portion opposite a narrow end portion, wherein such wider end portion and narrow end portion can be arbitrarily assigned. For example, Erickson's device having an open space within the tapering tube 11, the wider end portion may be assigned as a portion that half of the slit 41 extends toward the larger taper portion of the tube 11, and the narrower end portion may be assigned as a portion of the opposite half of the slit 41 toward the smaller taper portion of the tube 11.

Applicant's remarks are held to be responded to in the new ground(s) of rejection of claims 1-11 and 14-18 under Anders et al., Erickson, and Hirsch, as detailed above. Claims 12-13 are not rejected under prior art. All pending claims are rejected under double patenting and 35 U.S.C. 112(b).

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened

statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hao D. Mai whose telephone number is (571) 270-3002. The examiner can normally be reached on Monday-Friday 8:00AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Cris Rodriguez, at (571) 272-4964. 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 http://pair-direct.uspto.gov. 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.

/Hao D Mai/
Examiner, Art Unit 3772

/Cris L. Rodriguez/
Supervisory Patent Examiner, Art Unit 3772

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,057	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043, 046	11/16/2015	HDM
Updated Search	05/31/2016	HDM
Update Search	09/04/2018	HDM
Update Search	03/18/2019	HDM

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
433	91-92, 140	11/16/2015	HDM

* 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 Search	11/16/2015	HDM
Review searches of parent case 14/100323	11/16/2015	HDM
Updated Search	05/31/2016	HDM
Update Search	04/03/2017	HDM
Update Search	10/30/2017	HDM
Update Search	09/04/2018	HDM
Update Search	03/18/2019	HDM

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

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,057	Nguyen et al.
	Examiner	**Art Unit**
	HAO D MAI	3772

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

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

CLAIM		DATE								
Final	Original	11/16/2015	05/31/2016	04/03/2017	10/30/2017	09/04/2018	03/18/2019			
	1	✓	✓	✓	✓	✓	✓			
	2	✓	✓	✓	✓	✓	✓			
	3	✓	✓	✓	✓	✓	✓			
	4	✓	✓	✓	✓	✓	✓			
	5	✓	✓	✓	✓	✓	✓			
	6	✓	✓	✓	✓	✓	✓			
	7	✓	✓	✓	✓	✓	✓			
	8	✓	✓	✓	✓	✓	✓			
	9	✓	✓	✓	✓	✓	✓			
	10	✓	✓	✓	✓	✓	✓			
	11	✓	✓	✓	✓	✓	✓			
	12	✓	✓	O	O	✓	✓			
	13	✓	✓	O	O	✓	✓			
	14	✓	✓	✓	✓	✓	✓			
	15	✓	✓	✓	✓	✓	✓			
	16	✓	✓	✓	✓	✓	✓			
	17	✓	✓	✓	✓	✓	✓			
	18	✓	✓	✓	✓	✓	✓			
	19	✓	✓	✓	-	-	-			
	20	✓	✓	✓	-	-	-			

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L12	16	("3541583").PN. OR ("3742607").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2019/03/18 12:18
L13	22	("3541583").URPN.	USPAT	ADJ	OFF	2019/03/18 12:20
L17	3	((spoon suction) same slit)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	OFF	2019/03/18 12:24
L18	141	((spoon suction) same opening)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	OFF	2019/03/18 12:24
L19	4183	A61C17/04,0208,043.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2019/03/18 12:53
L20	873	A61C17/04,0208,043.cpc. and ((opening or slit) and suction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2019/03/18 12:53
L21	16	A61C17/04,0208,043.cpc. and (spoon)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2019/03/18 12:54
L22	94	A61C17/04,0208,043.cpc. and ((longitudinal with opening) and suction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2019/03/18 12:57
S107	2	(("3768477") or ("3090122")).PN.	US-PGPUB; USPAT	OR	OFF	2019/03/17 10:01
S108	16	("3541583").PN. OR ("3742607").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2019/03/17 10:04

EAST Search History (Interference)

< This search history is empty>

3/18/2019 12:58:10 PM
C:\Users\hmai1\Documents\EAST\Workspaces\14228057.wsp

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Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3772
	Examiner Name	Hao D. Mai
Sheet 1 of 1	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Office Action mailed 11/29/18	

Examiner Signature	/Hao D Mai/	Date Considered	03/18/2019

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

This collection of information is required by 37 CFR 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

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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
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/228,057	Filing Date 03/27/2014	☐ 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 $40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $210 =	
☐ 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	06/21/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 18	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 1	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(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".	/CHERYL A CLARK/
*** 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.**

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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	14/228,057	Filing Date	2014-03-27	Docket Number (if applicable)	INCEP-001COD	Art Unit	3772
First Named Inventor	Thien Nguyen			Examiner Name	Hao D Mai		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____ (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 501662

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

Signature of Registered U.S. Patent Practitioner			
Signature	/Stephanie T. Vu/	Date (YYYY-MM-DD)	2019-06-21
Name	Stephanie T. Vu	Registration Number	73063

This collection of information is required by 37 CFR 1.114. 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 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.

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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 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 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.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Thien Nguyen et al.	Examiner:	Hao D. Mai
Serial No.:	14/228,057	Group Art No.:	3772
Filed:	March 27, 2014	Conf. No.:	1983
Title:	INTRAORAL DEVICE WITH SLIT	Dkt. No.:	INCEP- 001COD

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

AMENDMENT

In response to the Final Office Action mailed March 22, 2019, please amend the above-identified application as follows. Applicant makes the following remarks.

Amendments to the Claims begin on page 2 of this paper.

Remarks/Arguments begin on page 5 of this paper.

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IN THE CLAIMS

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

1. (Currently Amended) A mouthpiece comprising:

a main body configured as a pocket having an interior open space having a shape comprising a first ~~wider~~ end portion opposite a second ~~narrower~~ end portion, wherein the first end portion is wider than the second end portion, the shape defined by:

an anterior wall defined by an exterior edge, the anterior wall comprising a slit extending parallel to a longitudinal and central axis of the main body through the first ~~wider~~ end portion, and through the second ~~narrower~~ end portion of the main body, the slit comprising an opening that allows fluids exterior to the pocket to enter into the interior open space of the pocket,

a posterior wall defined by an exterior edge that corresponds to the exterior edge of the anterior wall, and

a side wall connecting extending from the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall; and

a transition portion connected to the main body at the second end portion, the transition portion having an extension of the pocket, the slit extending through the transition portion.

2. (Previously Presented) The mouthpiece of claim 1, wherein the posterior wall further includes a stability bar protruding from an interior surface of the posterior wall and along the longitudinal and central axis of the main body.

3. (Original) The mouthpiece of claim 2, wherein the stability bar is aligned with the slit on the anterior wall.

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4. (Previously Presented) The mouthpiece of claim 1, wherein the main body is formed by injection-molding as one piece.

5. (Previously Presented) The mouthpiece of claim 1, wherein a material used to form the main body is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

6. (Original) The mouthpiece of claim 1, wherein the anterior wall and the posterior wall have different thicknesses.

7. (Previously Presented) The mouthpiece of claim 1, wherein flexibility of material of the anterior wall allows portions of the anterior wall to be pulled open at the slit to expose the interior of the pocket.

8. (Currently Amended) The mouthpiece of claim 1, further comprising a cheek retractor portion connected to the transition portion ~~main body~~ and having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

9. (Previously Presented) The mouthpiece of claim 8, wherein the cheek retractor portion comprises an extension of the pocket and wherein the slit extends into the extension of the pocket.

10. (Previously Presented) The mouthpiece of claim 1, further comprising a bridge structure comprising a plurality of protrusions protruding from an interior surface of the posterior wall, wherein the protrusions do not attach to the anterior wall.

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11. (Previously Presented) The mouthpiece of claim 10, wherein the protruding bridge structure protrusions comprise a plurality of spaced contact points.

12. (Previously Presented) The mouthpiece of claim 11, wherein the bridge structure protrusions protrude from the interior surface of the posterior wall in a wave shape, and wherein the contact points are at crests of the wave shape.

13. (Original) The mouthpiece of claim 12, wherein spaces between the contact points are at troughs of the wave shape.

14. (Previously Presented) The mouthpiece of claim 1, further comprising a suction connector portion that connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source applies a suction to the interior of the pocket, wherein the fluids that enter through the slit opening into the interior of the pocket are suctioned toward the vacuum source.

15. (Original) The mouthpiece of claim 1, further comprising a detachable mouth prop.

16. (Original) The mouthpiece of claim 15, wherein the detachable mouth prop comprises a bite block portion and a strap portion.

17. (Original) The mouthpiece of claim 16, wherein the bite block portion and strap portion are injection-molded in one piece.

18. (Previously Presented) The mouthpiece of claim 15, wherein the bite block portion comprises an opening corresponding to a plug connected to the main body.

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19. (Cancelled)

20. (Cancelled)

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REMARKS

Status of the Claims

The Applicant has amended independent claim 1. No new matter has been added. In view of the following remarks, Applicant respectfully submit that the application is in condition for allowance.

Rejections under 35 U.S.C. §112

Claims 1-18 were rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor regards as the invention. *Office Action*, 2. More specifically, the Office purports that "a wider end portion" and "a narrower end portion" is indefinite. Though the Applicant respectfully disagrees, claim 1 has been amended to recite, "a first end portion opposite a second end portion, wherein the first end portion is wider than the second end portion." Accordingly, withdrawal of the rejection is respectfully requested.

Rejections under 35 U.S.C. §103

Claims 1, 4 and 14-18 were rejected under pre-AIA 35 U.S.C. 103 as being unpatentable over U.S. Patent No. 3,768,477 to Anders et al. ("*Anders*") in view of U.S. Patent No. 3,090,122 to Erickson, ("*Erickson*"). *Office Action*, 2. Although the Applicant respectfully disagrees, independent claim 1 has been amended to expedite prosecution.

Claim 1 recites, *inter alia*, "a main body configured as a pocket having an interior open space having a shape comprising a first end portion opposite a second end portion, wherein the first end portion is wider than the second end portion," "a slit extending parallel to a longitudinal

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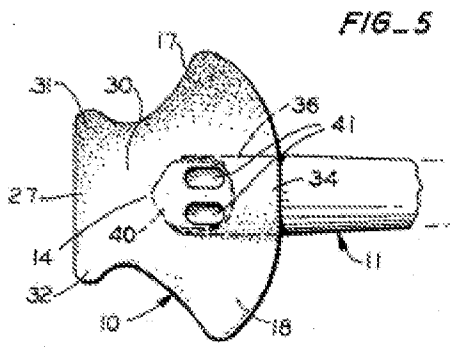
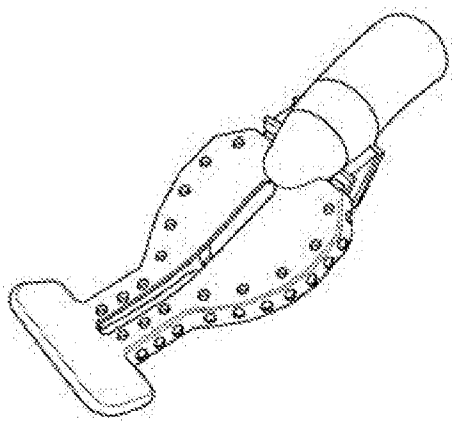
and central axis of the main body through the first end portion, and through the second end portion of the main body," and "a transition portion connected to the main body at the second end portion, the transition portion having an extension of the pocket, the slit extending through the transition portion." Neither *Anders* nor *Erickson* together or separately teach these features.

Anders teaches a tongue depressing aspirating tip having a tube extending from a handle. *Anders*, Abstract. *Anders* also teaches, as noted by the Examiner on page 3, apertures 30 that are drilled into the depressor tip. However, nowhere does *Anders* teach a transition portion connected to a main body at a second end portion, the transition portion having an extension of a pocket of the main body, and a slit extending through the main body portion and the transition portion." As such, *Anders* does not teach "a transition portion connected to the main body at the second end portion, the transition portion having an extension of the pocket, the slit extending through the transition portion."

Erikson does not cure the deficiencies of *Anders*. *Erikson* teaches a dental appliance having a receptacle with a central depressed portion and a drain. *Erikson*, col. 1, lns. 64-67. *Erikson* also teaches openings 41 to drain liquid and debris from the receptacle, as shown below. *Id.* at col. 2, lns. 20-23.

Patent 3,090,122	Current Application
	

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As shown above, neither of the openings 41 extend through a transition portion connected to a main body at a second end portion. Nowhere does *Anders* teach a transition portion connected to a main body at a second end portion, the transition portion having an extension of a pocket of the main body, and a slit extending through the main body portion and the transition portion." As such, *Anders* does not teach "a transition portion connected to the main body at the second end portion, the transition portion having an extension of the pocket, the slit extending through the transition portion."

Neither *Anders* nor *Erickson*, together or separately, teach "a transition portion connected to the main body at the second end portion, the transition portion having an extension of the pocket, the slit extending through the transition portion." Thus, withdrawal of the rejection is respectfully requested.

Claims 2-3 and 5-11 were rejected under pre-AIA 35 U.S.C. 103 as being obvious over *Anders* in view of *Erickson*, and further in view of U.S. Publication No. 2006/0063129 to Hirsch (*"Hirsch"*). *Office Action*, 5. Applicant respectfully disagree. Because claims 2-3 and 5-11 depend from independent claim 1, the claims are allowable for at least the same reasons described above. Further, *Hirsch* does not cure the deficiencies of *Anders* and/or *Erikson*. As such, withdrawal of the rejection is respectfully requested.

Double Patenting

The Office rejected claims 1-18 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of Patent No. 8,911,232. *Office Action*, pg. 8. As the independent claims of the present application have been amended, it is believed that the present rejection of record may no longer be applicable. Should the Examiner wish to maintain the double patenting rejection and otherwise find the application in condition for allowance, the

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Examiner is respectfully requested to contact the undersigned to discuss subsequent submission of a disclaimer if appropriate.

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CONCLUSION

Based on the foregoing, it is submitted that Applicant's invention as defined by the claims is patentable over the references of record. Issuance of a Notice of Allowance is solicited.

Applicant's attorney welcomes the opportunity to discuss the case with the Examiner in the event that there are any questions or comments regarding the response or the application.

A Request for Continued Examination and the corresponding fee are electronically submitted herewith. Applicant believes no other fees or petitions are required. However, if any such petitions or fees are necessary, please consider this a request therefor and authorization to charge Deposit Account No. 50-1662 accordingly.

Respectfully submitted,

June 21, 2019

POLSINELLI *LLP*

/Stephanie T. Vu/

Stephanie T. Vu, Reg. No. 73,063
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
Tel: (720) 931-1166
patentdocketing@polsinelli.com

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Electronic Patent Application Fee Transmittal

Application Number:	14228057
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Stephanie Thien Vu/Wilma Corrales
Attorney Docket Number:	INCEP-001COD

Filed as Small 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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	2820	1	950	950
		Total in USD ($)		**950**

Electronic Acknowledgement Receipt

EFS ID:	36372862
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Stephanie Thien Vu/Wilma Corrales
Filer Authorized By:	Stephanie Thien Vu
Attorney Docket Number:	INCEP-001COD
Receipt Date:	21-JUN-2019
Filing Date:	27-MAR-2014
Time Stamp:	14:19:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$950
RAM confirmation Number	062419INTEFSW00000587501662
Deposit Account	501662
Authorized User	Wilma Corrales

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	INCEP-001COD_RCE.pdf	88946 2037066ed3e6fcbfe81627572a71a3d330bc1d6b	no	3
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
2		INCEP-001COD_Response.pdf	157302 6e4e2ea802ffda29e982f6b5c74115b719fcb1f4	yes	10

Multipart Description/PDF files in .zip description

Document Description	Start	End
Amendment Submitted/Entered with Filing of CPA/RCE	1	1
Claims	2	5
Applicant Arguments/Remarks Made in an Amendment	6	10

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30391 28c2e8c94531be842033462fc6729d18dc442f2f	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	276639	

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 for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,057
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COD

Sheet	1	of	2

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Document Number Number-Kind Code[2](If known)		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	2,019,612	11/5/1935	Langhans et al.	
		US-				
		US-				
		US-				
		US-				
		US-				
		US-				
		US-				
		US-				
		US-				
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		US-				
		US-				
		US-				

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Foreign Patent Document Country Code[3] Number[4] Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 'Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3772
	Examiner Name	Hao D. Mai
Sheet 2 of 2	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Final Office Action mailed 7/15/19	
		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Final Office Action mailed 8/8/19	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Final Office Action mailed 7/11/19	

Examiner Signature		Date Considered	

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

This collection of information is required by 37 CFR 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**
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Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Electronic Acknowledgement Receipt

EFS ID:	37050952
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Stephanie Thien Vu/Lea Fong
Filer Authorized By:	Stephanie Thien Vu
Attorney Docket Number:	INCEP-001COD
Receipt Date:	04-SEP-2019
Filing Date:	27-MAR-2014
Time Stamp:	19:41:28
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	Transmittal Letter	INCEP-001COD_IDS_Statement_9-4-19.pdf	18083 8dacaadec1008fe3e19911b2e089843b3491600a	no	2

Warnings:

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COD_IDS_1449_9-4-19.pdf	55064 2e2df7d40aefa13b369f981dde809b98cfa5eda5	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	73147	

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

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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.

PATENT
INCEP-001COD

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772 | Examiner: Hao D. Mai

Serial No.: 14/228,057 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 1983 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH SLIT

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56 and 1.97-1.98

Examiner:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56.

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No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference an admission that it is prior art or pertinent to this application.

Respectfully submitted,
POLSINELLI LLP

Dated: September 4, 2019

By: _____/Stephanie T. Vu/_____
Stephanie T. Vu (Reg. No. 73,063)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
patentdocketing@polsinelli.com

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
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,057	03/27/2014	Thien Nguyen	INCEP-001COD	1983

138718 7590 10/07/2019

Polsinelli LLP
3 Embarcadero Center
Suite 2400
San Francisco, CA 94111

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
10/07/2019	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):

sfpatent@polsinelli.com
uspt@polsinelli.com

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Office Action Summary	Application No. 14/228,057	Applicant(s) Nguyen et al.	
	Examiner HAO D MAI	Art Unit 3772	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 09/04/2019.

☐ 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) 1-18 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) 1-18 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 _____ 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: _____.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/21/2019 has been entered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

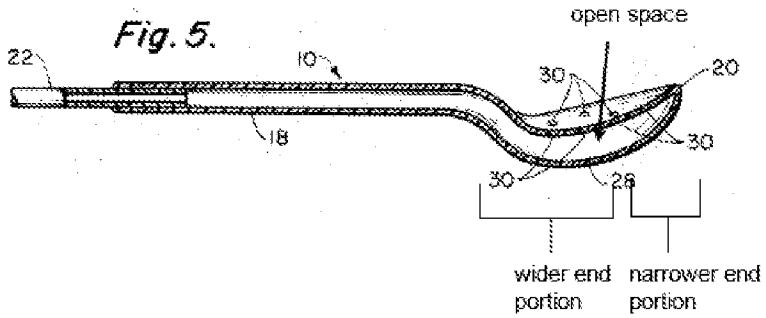
> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-11 and 14-18, are rejected under pre-AIA 35 U.S.C. 103 as being unpatentable over Anders et al. (3,768,477) in view of Hirsch (2006/0063129).**

Regarding claim 1, Anders et al. discloses a mouthpiece 10 comprising: a main body portion 10 (Figs. 1-5). The main body 10 is configured as a pocket having an interior open space having a shape comprising a first/wider end portion and an opposite second/narrower end portion, the shape is defined by: an anterior/top wall 32 defined by an exterior edge, an posterior/bottom wall 28 defined by an exterior edge, and a side wall (i.e. connection between

the top and bottom walls) extending from the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall (Figs. 1-5).

Note that the claim language “portion” allows for broadest reasonable assignment of such claimed portions. Anders et al. includes a transition portion (area toward reference numeral 20) connected to the main body at the second/narrower end portion and having an extension of the pocket (see annotated drawing of Anders et al.’s Fig. 50.



The anterior/top wall comprises at least one aperture 30 extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion 10, the aperture 30 comprises an opening 30 which fluids exterior to the pocket to enter into the interior opening space of the pocket along the longitudinal and central axis. Note that Anders et al. discloses “*A further plurality of apertures 30 are drilled through the top 32 of the depressor portion 20 and communicate into the hollow portion of the depressor portion 20. Preferably these apertures 30 are grouped more* ***toward the center*** *of the depressor portion 20.*” (column 2 lines 56-61, emphasis added). By broadest reasonable interpretation of the claimed “slit” being “a cut” or "an opening”, the aperture 30 is considered to be equivalent to the claimed slit extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion.

Alternatively, to give structural limitations "long and narrow" to the claimed "slit", Hirsch discloses a mouthpiece 20 (Figs. 1-4) comprising: a main body portion 20 which is configured as a pocket having an interior 80/82/34 (best shown in Figs. 8A-8B) defined by an anterior wall

50 (Fig. 3), a posterior wall 50/48 (Fig. 4), and a side wall (i.e. surrounding edge of the two opposite walls) connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall; wherein the anterior wall 50 has a slit 58 extending parallel to a longitudinal and central axis of the main body through the first end portion and through the second end portion of the main body 20 (Fig. 2; paragraph 51). The slit 58 comprising an opening 58 itself as capable of allowing fluids exterior to the pocket to enter into the interior of the pocket therein (Fig. 2, paragraph 51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify at least one of Anders et al.'s apertures 30 to have a slit-shape or incorporate such slit as taught by Hirsch to allow for larger communication between the exterior and interior of the pocket.

Regarding the newly recite limitation, Hirsch discloses a transition portion (neck connection between mouthpiece main body 50 and flange 22), the transition is shown having an extension of the pocket (internal vacuum channel) and the slit 58 extending through the transition/neck portion (Fig. 2). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Anders by including such transition portion and slit extending through the transition portion as taught by Hirsch et al. in order to suction saliva and fluid even at the distal-most areas of the mouth.

As to claims 2-3 and 6, Hirsch discloses the posterior wall having a thicker thickness (best pointed to by reference numeral 48 in Fig. 4). Such thicker thickness is considered to be equivalent to the claimed stability bar protruding from an interior surface of the posterior wall (Figs. 8A-8B) and along the longitudinal and central axis of the main body portion. Alternatively and/or additionally, back wall 82/82 is considered to be equivalent to the claimed stability bar protruding from an interior surface of the posterior wall. Both stability bar structures are aligned with slit 80/82 (Figs. 8A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Anders by incorporating a thicker thickness or a stability

bar to the posterior wall of the mouthpiece as taught by Hirsch in order provide reinforcement to the mouthpiece with reasonable expectation of success.

As to claim 4, note that the claim language "by injection-molded" is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and defined by the recited process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe,* 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Anders et al. discloses the end product and the structures thereof as claimed as detailed above, wherein the mouthpiece's main body 10 is formed as one piece (Fig. 1-5). The burden is shifted to applicant to show an unobvious difference between the cited prior art's device and the invention that would have resulted from the injection molding process.

As to claims 5 and 7, Anders fails to disclose the material used to form the main body portion being a flexible, translucent, high heat-resistant, autoclavable silicone-based material as claimed. Hirsch discloses the device is formed of a flexible, translucent, high heat-resistant, autoclavable silicone-based material of Pebax (paragraph 49). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make Anders device from a flexible, translucent, high heat-resistant, autoclavable silicone-based material as taught by Hirsch to be a suitable alternative material for the intended use with reasonable expectation of success. Particularly to claim 7, the modified device formed a flexible silicone-based material would allow portions of the anterior wall to be pulled open at the slit to expose the interior of the pocket. As to claims 8-9, Anders et al. is silent to a cheek retractor as claimed. Hirsch discloses a cheek retractor portion 52 having a surface that applies pressure when the mouthpiece is bent, wherein the pressure is based on resilience of the elastomeric material from which the cheek retractor portion is formed; the cheek retractor portion 52 comprises an

extension 52 of the pocket and wherein the slit 66 extends into the extension of the pocket (Fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ander by incorporating a cheek retractor extension in order to retract cheek tissues away from teeth during a dental procedure as explicitly taught by Hirsch.

As to claims 10-11, Anders fails to disclose a bridge structure as claimed. Hirsch discloses the comprising a bridge structure 24 comprising a plurality of protrusions (walls of channels 80 and 82, best shown in Fig. 8A) protruding from an interior surface of the posterior wall and substantially extending a distance between the anterior wall and the posterior wall, wherein the bridge structure 24 is not attached to the anterior wall. The plurality of protrusions of the bridge structure 24 comprises a plurality of spaced contact points, i.e. spaced-apart extending walls of 24 forming channels 80 and 82 (Figs. 8A-8B). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Anders et al. by including such bridge structure as taught by Hirsch into Anders et al.'s device in order to further provide reinforcement to the interior space of the mouthpiece.

As to claim 14, Anders et al. discloses a suction connector portion 22 that connect the interior of the pocket to a vacuum source, wherein activation of the vacuum source 16 applies the suction to the interior of the pocket, wherein fluids that enter through the slit opening 30 into the interior of the pocket are suctioned toward the vacuum source (Figs. 1-5).

As to claims 15-18, Anders et al. discloses a mouth prop 14 having a bite block portion (enlarge portion 23 in Fig. 1, or thicker portion 18b Fig. 6) and a strap portion (thinner annular portion). The bite block portion 23 is shown having an opening (inner bore) corresponding to a plug 22 connected to the main body 10 (Figs. 1-5). Note that the claim language "mouth prop", "bite block portion", "strap portion", convey functions or intended use; such recitation convey little, if any, structural limitations. Thus, Anders et al.'s mouth prop 14 having a bite block portion is detachable from mouthpiece 10 as claimed, and is capable of propping opening the

mouth; the strap portion 18 is clearly capable of strapping mechanism (Fig. 6). Note that the claim language "injection-molded" (claim 17) is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and defined by the recited process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe,* 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Anders et al. discloses the end product and the structures thereof as claimed as detailed above, wherein the bite block portion 23 and the strap portion.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(l)(1) - 706.02(l)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

6. **Claims 1-18 rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 8,911,232**. Although the claims at issue are not identical, they are not patentably distinct from each other because the difference between the application claims and the patent claims lies in the fact that the patent claims include more elements and are thus much specific. Thus the invention of the patent claims are in effect a "species" of the "generic" invention of the application claims. It has been held that the generic invention is "anticipated" by the "species". See *In re Goodman*, 29 USPQ2d 2010 (Fed. Cir. 1993). Since the application claims are anticipated by the patent claims, they are not patentably distinct from the patent claims.

Response to Arguments

7. Applicant's arguments with respect to the amendments made to the claim(s) have been considered, but fails to overcome Anders et al. and Hirsch.

Regarding the newly recited limitation, Hirsch discloses a transition portion (neck connection between mouthpiece main body 50 and flange 22), the transition is shown having an extension of the pocket (internal vacuum channel) and the slit 58 extending through the transition/neck portion (Fig. 2). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Anders by including such transition portion and slit extending through the transition portion as taught by Hirsch et al. in order to suction saliva and fluid even at the distal-most areas of the mouth. Note that the independent claim 1 is generally broad; the recited claim language "portion" in "a first end portion", "a second end portion", and "a transition portion" are broad as it does not clearly define boundaries for such portions.

Applicant's remarks are held to be responded to in the new ground(s) of rejection of claims 1-11 and 14-18 under Anders et al. and Hirsch, as detailed above. All pending claims

are rejected under double patenting and 35 U.S.C. 112(b). Claims 12-13 are not rejected under prior art as they contain inventive features, and would be allowable if overcoming double patenting ground(s) of rejection and rewritten in independent form including all of the limitation(s) of the base claim and any intervening claims.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hao D. Mai whose telephone number is (571) 270-3002. The examiner can normally be reached on Monday-Friday 8:00AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Cris Rodriguez, at (571) 272-4964. 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 http://pair-direct.uspto.gov. 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.

/Hao D Mai/
Examiner, Art Unit 3772

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,057	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043, 046	11/16/2015	HDM
Updated Search	05/31/2016	HDM
Update Search	09/04/2018	HDM
Update Search	03/18/2019	HDM
Update Search	10/01/2019	HDM

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
433	91-92, 140	11/16/2015	HDM

* 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 Search	11/16/2015	HDM
Review searches of parent case 14/100323	11/16/2015	HDM
Updated Search	05/31/2016	HDM
Update Search	04/03/2017	HDM
Update Search	10/30/2017	HDM
Update Search	09/04/2018	HDM
Update Search	03/18/2019	HDM
Update Search	10/01/2019	HDM

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,057	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

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

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,057	Nguyen et al.
	Examiner	**Art Unit**
	HAO D MAI	3772

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

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

CLAIM		DATE								
Final	Original	11/16/2015	05/31/2016	04/03/2017	10/30/2017	09/04/2018	03/18/2019	10/01/2019		
	1	✓	✓	✓	✓	✓	✓	✓		
	2	✓	✓	✓	✓	✓	✓	✓		
	3	✓	✓	✓	✓	✓	✓	✓		
	4	✓	✓	✓	✓	✓	✓	✓		
	5	✓	✓	✓	✓	✓	✓	✓		
	6	✓	✓	✓	✓	✓	✓	✓		
	7	✓	✓	✓	✓	✓	✓	✓		
	8	✓	✓	✓	✓	✓	✓	✓		
	9	✓	✓	✓	✓	✓	✓	✓		
	10	✓	✓	✓	✓	✓	✓	✓		
	11	✓	✓	✓	✓	✓	✓	✓		
	12	✓	✓	O	O	✓	✓	✓		
	13	✓	✓	O	O	✓	✓	✓		
	14	✓	✓	✓	✓	✓	✓	✓		
	15	✓	✓	✓	✓	✓	✓	✓		
	16	✓	✓	✓	✓	✓	✓	✓		
	17	✓	✓	✓	✓	✓	✓	✓		
	18	✓	✓	✓	✓	✓	✓	✓		
	19	✓	✓	✓	-	-	-	-		
	20	✓	✓	✓	-	-	-	-		

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,057
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COD

Sheet	1	of	2

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Document Number Number-Kind Code[2](If known)		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	2,019,612	11/5/1935	Langhans et al.	
		US-				
		US-				
		US-				
		US-				
		US-				
		US-				
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		US-				
		US-				

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Foreign Patent Document Country Code[3] Number[4] Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6

Examiner Signature	/Hao D Mai/	Date Considered	10/01/2019

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 'Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3772
	Examiner Name	Hao D. Mai
Sheet 2 of 2	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Final Office Action mailed 7/15/19	
		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Final Office Action mailed 8/8/19	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Final Office Action mailed 7/11/19	

Examiner Signature	/Hao D Mai/	Date Considered	10/01/2019

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	6	"2019612"	USPAT	ADJ	OFF	2019/10/01 10:55
L3	24	A61C17/04,0208,043.cpc. and ((longitudinal with opening) and suction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2019/10/01 10:57
L4	367	A61C17/04,0208,043.cpc. and ((slit or openning or aperture or groove or channel) same (vacuum or suction or communication))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2019/10/01 10:58

EAST Search History (Interference)

< This search history is empty>

10/ 1/ 2019 10:58:40 AM
C:\ Users\ hmai1\ Documents\ EAST\ Workspaces\ 14228057.wsp

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3772
	Examiner Name	Hao D. Mai
Sheet 1 of 1	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Office Action mailed 10/5/18	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Office Action mailed 10/4/18	

Examiner Signature	/Hao D Mai/	Date Considered	10/01/2019

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Thien Nguyen et al.	Examiner:	Hao D. Mai
Serial No.:	14/228,057	Group Art No.:	3772
Filed:	March 27, 2014	Conf. No.:	1983
Title:	INTRAORAL DEVICE WITH SLIT	Dkt. No.:	INCEP- 001COD

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

AMENDMENT

In response to the non-final Office Action mailed October 7, 2019, please amend the above-identified application as follows. Applicant makes the following remarks.

Amendments to the Claims begin on page 2 of this paper.

Remarks/Arguments begin on page 6 of this paper.

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Electronic Acknowledgement Receipt

EFS ID:	38230200
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Stephanie Thien Vu/Rita Christensen
Filer Authorized By:	Stephanie Thien Vu
Attorney Docket Number:	INCEP-001COD
Receipt Date:	07-JAN-2020
Filing Date:	27-MAR-2014
Time Stamp:	18:05:34
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		514250-AMENDMENT.pdf	230856 f1aa13be7cfd4177c2912c1b93e1590d2c397dfd	yes	10

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Applicant Arguments/Remarks Made in an Amendment	6	10
	Claims	2	5
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Warnings:			
Information:			
	Total Files Size (in bytes):	230856	

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.

REMARKS

Status of the Claims

The Applicant has amended claims 1, 7, and 10. No new matter has been added. In view of the following remarks, Applicant respectfully submits that the application is in condition for allowance.

Rejections under 35 U.S.C. §103

Claims 1-11 and 14-18 were rejected under pre-AIA 35 U.S.C. 103 as being unpatentable over U.S. Patent No. 3,768,477 to Anders et al. (*"Anders")* in view of U.S. Patent Publication No. 2006/0063129 to Hirsch, (*"Hirsch"*). *Office Action*, 2. Although the Applicant respectfully disagrees, independent claim 1 has been amended to expedite prosecution.

Claim 1 recites, *inter alia*, "a main body configured as a pocket having a first end opposite a second end, the main body having an interior open space having a shape wider at the first end and narrower at the a second end, wherein the main body connects to a suction connector portion at the first end," "the anterior wall comprising a slit extending parallel to a longitudinal and central axis of the main body from the first end, and through the second end of the main body, the slit comprising an opening that allows fluids exterior to the pocket to enter into the interior open space of the pocket," and "a transition portion connected to and extending from the main body at the second end." Neither *Anders* nor *Hirsch* together or separately teach these features.

Anders teaches a tongue depressing aspirating tip having a tube extending from a handle. *Anders*, Abstract. *Anders* also teaches, as noted by the Examiner on page 3, apertures 30 that are drilled into the depressor tip. However, nowhere does *Anders* teach an anterior wall comprising

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a slit extending parallel to a longitudinal and central axis of a main body from a first end, and through a second end of the main body and a transition portion connected to and extending from the main body at the second end. As such, *Anders* does not teach "a main body configured as a pocket having a first end opposite a second end, the main body having an interior open space having a shape wider at the first end and narrower at the a second end, wherein the main body connects to a suction connector portion at the first end," "the anterior wall comprising a slit extending parallel to a longitudinal and central axis of the main body from the first end, and through the second end of the main body, the slit comprising an opening that allows fluids exterior to the pocket to enter into the interior open space of the pocket," and "a transition portion connected to and extending from the main body at the second end."

Hirsch teaches a dispersion piece 24 slidably received in a receiving channel 62 and an internal evacuation channel 58 that communicate with evacuation holes 60. *Hirsch*, para. [0051]. The Examiner purports that the evacuation channel 58 teaches the claimed slit. *Office Action*, 4. However, as illustrated below in Figs. 2 and 3, the evacuation channel 58 is covered by the dispersion piece 24 when assembled and communication with the outer surface 48 of the retraction is through the evacuation holes 66. *Hirsch*, para. [0051].

Hirsch

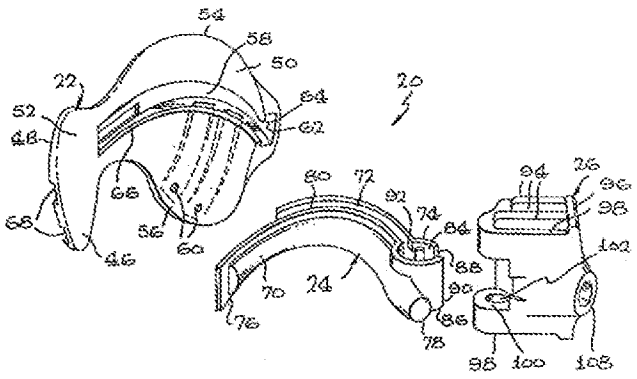

FIG. 2

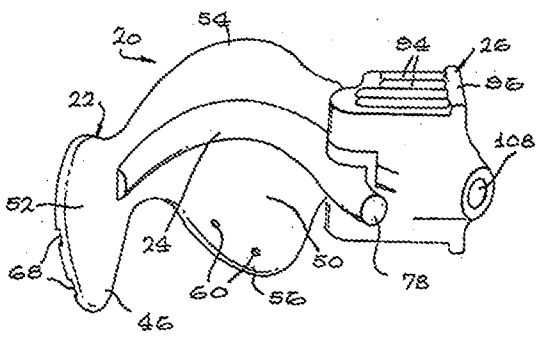

FIG. 3

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As such, nowhere does *Hirsch* teach a "a main body configured as a pocket having a first end opposite a second end, the main body having an interior open space having a shape wider at the first end and narrower at the a second end, wherein the main body connects to a suction connector portion at the first end," "the anterior wall comprising a slit extending parallel to a longitudinal and central axis of the main body from the first end, and through the second end of the main body, the slit comprising an opening that allows fluids exterior to the pocket to enter into the interior open space of the pocket," and "a transition portion connected to and extending from the main body at the second end."

Neither *Anders* nor *Hirsch*, together or separately, teach "a main body configured as a pocket having a first end opposite a second end, the main body having an interior open space having a shape wider at the first end and narrower at the a second end, wherein the main body connects to a suction connector portion at the first end," "the anterior wall comprising a slit extending parallel to a longitudinal and central axis of the main body from the first end, and through the second end of the main body," and "a transition portion connected to and extending from the main body at the second end." Thus, withdrawal of the rejection is respectfully requested.

Because claims 2-11 and 14-18 depend from independent claim 1, the claims are allowable for at least the same reasons described above. As such, withdrawal of the rejection is respectfully requested.

Double Patenting

The Office rejected claims 1-18 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of Patent No. 8,911,232. *Office Action*, pg. 8. As the independent claims of the present application have been amended, it is believed that the present rejection of record may no longer be applicable. Should the Examiner wish to maintain the double patenting rejection and otherwise find the application in condition for allowance, the

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Examiner is respectfully requested to contact the undersigned to discuss subsequent submission of a disclaimer if appropriate.

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CONCLUSION

Based on the foregoing, it is submitted that Applicant's invention as defined by the claims is patentable over the references of record. Issuance of a Notice of Allowance is solicited.

Applicant's attorney welcomes the opportunity to discuss the case with the Examiner in the event that there are any questions or comments regarding the response or the application.

Applicant believes no fees or petitions are required. However, if any such petitions or fees are necessary, please consider this a request therefor and authorization to charge Deposit Account No. 50-1662 accordingly.

Respectfully submitted,

Date: January 7, 2020

POLSINELLI *LLP*

/Stephanie T. Vu/
Stephanie T. Vu, Reg. No. 73,063
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
Tel: (720) 931-1166
patentdocketing@polsinelli.com

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

IN THE CLAIMS

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

1. (Currently Amended) A mouthpiece comprising:

a main body configured as a pocket having a first end opposite a second end, the main body having an interior open space having a shape ~~comprising~~ wider at the [[a]] first end and narrower at the ~~portion opposite a~~ second end ~~portion~~, wherein the main body connects to a suction connector portion at the first end ~~portion is wider than the second end portion~~, the shape defined by:

an anterior wall defined by an exterior edge, the anterior wall comprising a slit extending parallel to a longitudinal and central axis of the main body from ~~through~~ the first end ~~portion~~, and through the second end ~~portion~~ of the main body, the slit comprising an opening that allows fluids exterior to the pocket to enter into the interior open space of the pocket,

a posterior wall defined by an exterior edge that corresponds to the exterior edge of the anterior wall, and

a side wall ~~connecting~~ extending from the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall; and

a transition portion connected to and extending from the main body at the second end ~~portion~~, the transition portion having an extension of the pocket, the slit extending through the transition portion.

2. (Previously Presented) The mouthpiece of claim 1, wherein the posterior wall further includes a stability bar protruding from an interior surface of the posterior wall and along the longitudinal and central axis of the main body.

3. (Original) The mouthpiece of claim 2, wherein the stability bar is aligned with the slit on the anterior wall.

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4. (Previously Presented) The mouthpiece of claim 1, wherein the main body is formed by injection-molding as one piece.

5. (Previously Presented) The mouthpiece of claim 1, wherein a material used to form the main body is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

6. (Original) The mouthpiece of claim 1, wherein the anterior wall and the posterior wall have different thicknesses.

7. (Currently Amended) The mouthpiece of claim 1, wherein flexibility of a material of the anterior wall allows portions of the anterior wall to be pulled open at the slit to expose the interior of the pocket.

8. (Previously Presented) The mouthpiece of claim 1, further comprising a cheek retractor portion connected to the transition portion and having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

9. (Previously Presented) The mouthpiece of claim 8, wherein the cheek retractor portion comprises an extension of the pocket and wherein the slit extends into the extension of the pocket.

10. (Currently Amended) The mouthpiece of claim 1, further comprising a bridge structure comprising a plurality of protrusions protruding from the [[an]] interior surface of the posterior wall, wherein the protrusions do not attach to the anterior wall.

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11. (Previously Presented) The mouthpiece of claim 10, wherein the protruding bridge structure protrusions comprise a plurality of spaced contact points.

12. (Previously Presented) The mouthpiece of claim 11, wherein the bridge structure protrusions protrude from the interior surface of the posterior wall in a wave shape, and wherein the contact points are at crests of the wave shape.

13. (Original) The mouthpiece of claim 12, wherein spaces between the contact points are at troughs of the wave shape.

14. (Previously Presented) The mouthpiece of claim 1, further comprising a suction connector portion that connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source applies a suction to the interior of the pocket, wherein the fluids that enter through the slit opening into the interior of the pocket are suctioned toward the vacuum source.

15. (Original) The mouthpiece of claim 1, further comprising a detachable mouth prop.

16. (Original) The mouthpiece of claim 15, wherein the detachable mouth prop comprises a bite block portion and a strap portion.

17. (Original) The mouthpiece of claim 16, wherein the bite block portion and strap portion are injection-molded in one piece.

18. (Previously Presented) The mouthpiece of claim 15, wherein the bite block portion comprises an opening corresponding to a plug connected to the main body.

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19. (Cancelled)

20. (Cancelled)

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Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,057
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COD

Sheet	1	of	2

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Document Number Number-Kind Code[2](If known)		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	D876,627	2/25/2020	Nguyen	
		US-				
		US-				
		US-				
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Foreign Patent Document Country Code[3] Number[4] Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 'Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3772
	Examiner Name	Hao D. Mai
Sheet 2 of 2	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Office Action mailed 1/10/20	
		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Office Action mailed 1/13/20	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Final Office Action mailed 1/10/20	

Examiner Signature		Date Considered	

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'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Electronic Acknowledgement Receipt

EFS ID:	38979902
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Ruby Lim Chung/Lea Fong
Filer Authorized By:	Ruby Lim Chung
Attorney Docket Number:	INCEP-001COD
Receipt Date:	27-MAR-2020
Filing Date:	27-MAR-2014
Time Stamp:	23:20:10
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	Transmittal Letter	INCEP-001COD_IDS_Statement_3-27-20.pdf	19125 a191c1755e325bc015f67525cf9b62c5c8c09ca1	no	2

Warnings:

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COD_IDS_1449_3-27-20.pdf	55099 bf44365e419d36382f6dac57d455b09d62a9ae85	no	2

Warnings:
Information:
This is not an USPTO supplied IDS fillable form

Total Files Size (in bytes):	74224

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772 | Examiner: Hao D. Mai

Serial No.: 14/228,057 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 1983 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH SLIT

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56 and 1.97-1.98

Examiner:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56.

Applicants hereby declare, pursuant to 37 C.F.R. §1.97(e)(2), that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing the certification after having made a reasonable inquiry, no item of information contained in the information disclosure statement was

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of the information disclosure statement.

No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference an admission that it is prior art or pertinent to this application.

Respectfully submitted,
POLSINELLI LLP

Dated: March 27, 2020

By: _____/Ruby L. Chung/_____
Ruby L. Chung (Reg. No. 76,809)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
patentdocketing@polsinelli.com

Substitute for Form 1449/PTO	*Complete if Known*	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application Number	14/228,057
	Filing Date	March 27, 2014
(use as many sheets as necessary)	First Named Inventor:	Thien Nguyen
	Art Unit	3772
	Examiner Name	Hao D. Mai
Sheet 1 of 1	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Brazilian Patent Application No. BR1120140116377 Preliminary Office Action 1/7/20	

Examiner Signature		Date Considered	

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

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Electronic Acknowledgement Receipt

EFS ID:	39026716
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Ruby Lim Chung/Lea Fong
Filer Authorized By:	Ruby Lim Chung
Attorney Docket Number:	INCEP-001COD
Receipt Date:	01-APR-2020
Filing Date:	27-MAR-2014
Time Stamp:	13:37:08
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	Transmittal Letter	INCEP-001COD_IDS_Statement_4-1-20.pdf	18645 3629cbf5bf96f2e8579d72cc3999d77a51c09aa8	no	2

Warnings:

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COD_IDS_1449_4-1-20.pdf	27678 81d4b6d68e8c3c8dae2ae9f68736b43f0dc40f7b	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Non Patent Literature	INCEP-001BR_Preliminary_OfficeAction_1-7-20.pdf	301942 e0b594728503e7f3ac4addd9016f4faa10621394	no	13
Warnings:					
Information:					
		Total Files Size (in bytes):	348265		

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772 | Examiner: Hao D. Mai

Serial No.: 14/228,057 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 1983 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH SLIT

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Under 37 C.F.R. § 1.56 and 1.97-1.98

Examiner:

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The references cited may be material to examination of the application and are submitted in compliance with the Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56.

Applicants hereby declare, pursuant to 37 C.F.R. §1.97(e)(1), that each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement.

No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference an admission that it is prior art or pertinent to this application.

Respectfully submitted,
POLSINELLI LLP

Dated: April 1, 2020

By: _____/Ruby L. Chung/_____
Ruby L. Chung (Reg. No. 76,809)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
patentdocketing@polsinelli.com

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.
14/228,057	03/27/2014	Thien Nguyen	INCEP-001COD	1983

138718 7590 05/19/2020

Polsinelli LLP
3 Embarcadero Center
Suite 2400
San Francisco, CA 94111

EXAMINER	
MAI, HAO D	

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
05/19/2020	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):

sfpatent@polsinelli.com
uspt@polsinelli.com

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Office Action Summary	Application No. 14/228,057	Applicant(s) Nguyen et al.	
	Examiner HAO D MAI	Art Unit 3772	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 04/01/2020.

☐ 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) 1-18 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) 1-18 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 _____ 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: _____.

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

DETAILED ACTION

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 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-11 and 14-18, are rejected under pre-AIA 35 U.S.C. 103 as being unpatentable over Anders et al. (3,768,477) in view of Hirsch (2006/0063129).**

Regarding claim 1, Anders et al. discloses a mouthpiece 10 comprising: a main body portion 10 (Figs. 1-5). The main body 10 is configured as a pocket having an interior open space having a shape comprising opposite first and second end portions, the shape is defined by: an anterior/top wall 32 defined by an exterior edge, an posterior/bottom wall 28 defined by an exterior edge, and a side wall (i.e. connection between the top and bottom walls) extending from the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall (Figs. 1-5).

The anterior/top wall comprises at least one aperture 30 extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion 10, the aperture 30 comprises an opening 30 which fluids exterior to the pocket to enter into the interior opening space of the pocket along the longitudinal and central axis. Note that Anders et al. discloses "*A further plurality of apertures 30 are drilled through the top 32 of the depressor portion 20 and communicate into the hollow portion of the depressor portion 20. Preferably*

these apertures 30 are grouped more ***toward the center*** *of the depressor portion 20.*" (column 2 lines 56-61, emphasis added). By broadest reasonable interpretation of the claimed "slit" being "a cut" or "an opening", the aperture 30 is considered to be equivalent to the claimed slit extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion.

Alternatively, to give structural limitations "long and narrow" to the claimed "slit", Hirsch discloses a mouthpiece 20 (Figs. 1-4) comprising: a main body portion 20 which is configured as a pocket having an interior 80/82/34 (best shown in Figs. 8A-8B) defined by an anterior wall 50 (Fig. 3), a posterior wall 50/48 (Fig. 4), and a side wall (i.e. surrounding edge of the two opposite walls) connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall; wherein the anterior wall 50 has a slit 58 extending parallel to a longitudinal and central axis of the main body through the first end portion and through the second end portion of the main body 20 (Fig. 2; paragraph 51). The slit 58 comprising an opening 58 itself as capable of allowing fluids exterior to the pocket to enter into the interior of the pocket therein (Fig. 2, paragraph 51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify at least one of Anders et al.'s apertures 30 to have a slit-shape or incorporate such slit as taught by Hirsch to allow for larger communication between the exterior and interior of the pocket.

Regarding the claimed "shape wider at the first end and narrower at the second end, wherein the main body connects to a suction connector portion at the first end" and "a transition portion connected to and extending from the main body at the second end, the transition portion having an extension of the pocket", Hirsch's mouthpiece is shown to have such shape comprising a wider first end 580 connected to a suction connector 570 (Fig. 18A), and a narrower end 390 connected to a transition portion 300 having an extension 300 of the pocket (Fig. 18A). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Anders by adopting such shape as taught by Hirsch

as well known suitable shape for a mouthpiece while yielding the same and/or predictable results.

Note that Hirsch discloses a transition portion (neck connection between mouthpiece main body 50 and flange 22), the transition is shown having an extension of the pocket (internal vacuum channel) and the slit 58 extending through the transition/neck portion (Fig. 2). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Anders by including such transition portion and slit extending through the transition portion as taught by Hirsch et al. in order to suction saliva and fluid even at the distal-most areas of the mouth.

As to claims 2-3 and 6, Hirsch discloses the posterior wall having a thicker thickness (best pointed to by reference numeral 48 in Fig. 4). Such thicker thickness is considered to be equivalent to the claimed stability bar protruding from an interior surface of the posterior wall (Figs. 8A-8B) and along the longitudinal and central axis of the main body portion. Alternatively and/or additionally, back wall 82/82 is considered to be equivalent to the claimed stability bar protruding from an interior surface of the posterior wall. Both stability bar structures are aligned with slit 80/82 (Figs. 8A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Anders by incorporating a thicker thickness or a stability bar to the posterior wall of the mouthpiece as taught by Hirsch in order provide reinforcement to the mouthpiece with reasonable expectation of success.

As to claim 4, note that the claim language "by injection-molded" is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and defined by the recited process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe,* 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Anders et al. discloses the end product

and the structures thereof as claimed as detailed above, wherein the mouthpiece's main body 10 is formed as one piece (Fig. 1-5). The burden is shifted to applicant to show an unobvious difference between the cited prior art's device and the invention that would have resulted from the injection molding process.

As to claims 5 and 7, Anders fails to disclose the material used to form the main body portion being a flexible, translucent, high heat-resistant, autoclavable silicone-based material as claimed. Hirsch discloses the device is formed of a flexible, translucent, high heat-resistant, autoclavable silicone-based material of Pebax (paragraph 49). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make Anders device from a flexible, translucent, high heat-resistant, autoclavable silicone-based material as taught by Hirsch to be a suitable alternative material for the intended use with reasonable expectation of success. Particularly to claim 7, the modified device formed a flexible silicone-based material would allow portions of the anterior wall to be pulled open at the slit to expose the interior of the pocket. As to claims 8-9, Anders et al. is silent to a cheek retractor as claimed. Hirsch discloses a cheek retractor portion 52 having a surface that applies pressure when the mouthpiece is bent, wherein the pressure is based on resilience of the elastomeric material from which the cheek retractor portion is formed; the cheek retractor portion 52 comprises an extension 52 of the pocket and wherein the slit 66 extends into the extension of the pocket (Fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ander by incorporating a cheek retractor extension in order to retract cheek tissues away from teeth during a dental procedure as explicitly taught by Hirsch.

As to claims 10-11, Anders fails to disclose a bridge structure as claimed. Hirsch discloses the comprising a bridge structure 24 comprising a plurality of protrusions (walls of channels 80 and 82, best shown in Fig. 8A) protruding from an interior surface of the posterior wall and substantially extending a distance between the anterior wall and the posterior wall, wherein the bridge structure 24 is not attached to the anterior wall. The plurality of protrusions

of the bridge structure 24 comprises a plurality of spaced contact points, i.e. spaced-apart extending walls of 24 forming channels 80 and 82 (Figs. 8A-8B). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Anders et al. by including such bridge structure as taught by Hirsch into Anders et al.'s device in order to further provide reinforcement to the interior space of the mouthpiece.

As to claim 14, Anders et al. discloses a suction connector portion 22 that connect the interior of the pocket to a vacuum source, wherein activation of the vacuum source 16 applies the suction to the interior of the pocket, wherein fluids that enter through the slit opening 30 into the interior of the pocket are suctioned toward the vacuum source (Figs. 1-5).

As to claims 15-18, Anders et al. discloses a mouth prop 14 having a bite block portion (enlarge portion 23 in Fig. 1, or thicker portion 18b Fig. 6) and a strap portion (thinner annular portion). The bite block portion 23 is shown having an opening (inner bore) corresponding to a plug 22 connected to the main body 10 (Figs. 1-5). Note that the claim language "mouth prop", "bite block portion", "strap portion", convey functions or intended use; such recitation convey little, if any, structural limitations. Thus, Anders et al.'s mouth prop 14 having a bite block portion is detachable from mouthpiece 10 as claimed, and is capable of propping opening the mouth; the strap portion 18 is clearly capable of strapping mechanism (Fig. 6). Note that the claim language "injection-molded" (claim 17) is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and defined by the recited process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe,* 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Anders et al. discloses the end product and the

structures thereof as claimed as detailed above, wherein the bite block portion 23 and the strap portion.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(l)(1) - 706.02(l)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

5. **Claims 1-18 rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 8,911,232**. Although the claims at issue are not identical, they are not patentably distinct from each other because the difference between the application claims and the patent claims lies in the fact that the patent claims include more elements and are thus much specific. Thus the invention of the patent claims are in effect a "species" of the "generic" invention of the application claims. It has been held that the generic invention is "anticipated" by the "species". See *In re Goodman*, 29 USPQ2d 2010 (Fed.

Cir. 1993). Since the application claims are anticipated by the patent claims, they are not patentably distinct from the patent claims.

Response to Arguments

6. Applicant's arguments with respect to the amendments made to the claim(s) have been considered, but fails to overcome Anders et al. and Hirsch.

Regarding the claimed "shape wider at the first end and narrower at the second end, wherein the main body connects to a suction connector portion at the first end" and "a transition portion connected to and extending from the main body at the second end, the transition portion having an extension of the pocket", Hirsch's mouthpiece is shown to have such shape comprising a wider first end 580 connected to a suction connector 570 (Fig. 18A), and a narrower end 390 connected to a transition portion 300 having an extension 300 of the pocket (Fig. 18A). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Anders by adopting such shape as taught by Hirsch as well known suitable shape for a mouthpiece while yielding the same and/or predictable results.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hao D. Mai whose telephone number is (571) 270-3002. The examiner can normally be reached on Monday-Friday 8:00AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Cris Rodriguez, at (571) 272-4964. 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 http://pair-direct.uspto.gov. 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.

/Hao D Mai/
Examiner, Art Unit 3772

/Cris L. Rodriguez/
Supervisory Patent Examiner, Art Unit 3772

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,057	Nguyen et al.
	Examiner	**Art Unit**
	HAO D MAI	3772

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

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

CLAIM		DATE								
Final	Original	11/16/2015	05/31/2016	04/03/2017	10/30/2017	09/04/2018	03/18/2019	10/01/2019	05/11/2020	
	1	✓	✓	✓	✓	✓	✓	✓	✓	
	2	✓	✓	✓	✓	✓	✓	✓	✓	
	3	✓	✓	✓	✓	✓	✓	✓	✓	
	4	✓	✓	✓	✓	✓	✓	✓	✓	
	5	✓	✓	✓	✓	✓	✓	✓	✓	
	6	✓	✓	✓	✓	✓	✓	✓	✓	
	7	✓	✓	✓	✓	✓	✓	✓	✓	
	8	✓	✓	✓	✓	✓	✓	✓	✓	
	9	✓	✓	✓	✓	✓	✓	✓	✓	
	10	✓	✓	✓	✓	✓	✓	✓	✓	
	11	✓	✓	✓	✓	✓	✓	✓	✓	
	12	✓	✓	O	O	✓	✓	✓	✓	
	13	✓	✓	O	O	✓	✓	✓	✓	
	14	✓	✓	✓	✓	✓	✓	✓	✓	
	15	✓	✓	✓	✓	✓	✓	✓	✓	
	16	✓	✓	✓	✓	✓	✓	✓	✓	
	17	✓	✓	✓	✓	✓	✓	✓	✓	
	18	✓	✓	✓	✓	✓	✓	✓	✓	
	19	✓	✓	✓	-	-	-	-	-	
	20	✓	✓	✓	-	-	-	-	-	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,057	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043, 046	11/16/2015	HDM
Updated Search	05/31/2016	HDM
Update Search	09/04/2018	HDM
Update Search	03/18/2019	HDM
Update Search	10/01/2019	HDM

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
433	91-92, 140	11/16/2015	HDM

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

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,057	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor Search	11/16/2015	HDM
Review searches of parent case 14/100323	11/16/2015	HDM
Updated Search	05/31/2016	HDM
Update Search	04/03/2017	HDM
Update Search	10/30/2017	HDM
Update Search	09/04/2018	HDM
Update Search	03/18/2019	HDM
Update Search	10/01/2019	HDM
	05/11/2020	HDM

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
L1	2	(("20060063129") or ("3768477")).PN.	US-PGPUB; USPAT	OR	OFF	2020/05/11 14:34
L2	379	A61C17/04,0208,043.cpc. and ((slit or openning or aperture or groove or channel) same (vacuum or suction or communication))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2020/05/11 14:45

EAST Search History (Interference)

<This search history is empty>

5/11/2020 2:48:15 PM
C:\Users\hmai1\Documents\EAST\Workspaces\14228057.wsp

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 **of** 1

Complete if Known	
Application Number	14/228,057
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Brazilian Patent Application No. BR1120140116377 Preliminary Office Action 1/7/20	

Examiner Signature	/Hao D Mai/	Date Considered	05/11/2020

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

This collection of information is required by 37 CFR 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
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 contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	14228057	Filing Date	2014-03-27	Docket Number (if applicable)	INCEP-001COD	Art Unit	3772
First Named Inventor	Thien Nguyen			Examiner Name	Hao D. Mai		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 501662

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

Solmetex Ex. 2020
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PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
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 contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/Ruby L. Chung/	Date (YYYY-MM-DD)	2020-08-05
Name	Ruby L. Chung	Registration Number	76809

This collection of information is required by 37 CFR 1.114. 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 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.

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

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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 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 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.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Dryshield, LLC
INVENTOR(S):	Thien Nguyen, et al.
APPLICATION NO.:	14/228,057
FILED:	March 27, 2014
TITLE:	INTRAORAL DEVICE WITH SLIT
EXAMINER:	Hao D. Mai
ART UNIT:	3772
CONF. NO.:	1983
ATTY.DKT.NO.:	INCEP-001COD

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COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

RESPONSE H

Examiner Mai:

In response to the office action mailed May 19, 2020 (*Office Action*), the Applicant provides the following **amendments to the claims**, beginning on page **two**. **Applicant's summary of examiner interview** begins on **page six**. The **remarks** and **conclusion** begin on pages **seven** and **twelve**, respectively.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (Currently Amended) A mouthpiece comprising:

a main body configured as a pocket having a first end opposite a second end, the main body having an interior open space having a shape wider at the first end and narrower at the second end, wherein the main body connects to a suction connector portion at the first end, the shape defined by:

an anterior wall configured to face away from a back of a mouth when placed in the mouth of a patient, wherein the anterior wall is defined by an exterior edge, the anterior wall comprising a slit opening extending a longitudinal length parallel to a longitudinal and central axis of the main body, the longitudinal length extending from a middle location of the anterior wall away from the first end[[,]] and ~~through~~ toward the second end of the main body, the slit ~~comprising an~~ opening ~~that allows~~ allowing fluids exterior to the pocket to enter along the longitudinal length into the interior open space of the pocket,

a posterior wall configured to face towards the back of the mouth when placed in the mouth of the patient, wherein the posterior wall is defined by an exterior edge that corresponds to the exterior edge of the anterior wall, and

a side wall extending from the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall; and

a transition portion connected to and extending from the main body at the second end, the transition portion having an extension of the pocket, the longitudinal length of the slit opening extending from the main body through the transition portion.

2. (Previously Presented) The mouthpiece of claim 1, wherein the posterior wall further includes a stability bar protruding from an interior surface of the posterior wall and along the longitudinal and central axis of the main body.

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3. (Original) The mouthpiece of claim 2, wherein the stability bar is aligned with the slit on the anterior wall.

4. (Previously Presented) The mouthpiece of claim 1, wherein the main body is formed by injection-molding as one piece.

5. (Previously Presented) The mouthpiece of claim 1, wherein a material used to form the main body is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

6. (Original) The mouthpiece of claim 1, wherein the anterior wall and the posterior wall have different thicknesses.

7. (Previously Presented) The mouthpiece of claim 1, wherein flexibility of material of the anterior wall allows portions of the anterior wall to be pulled open at the slit to expose the interior of the pocket.

8. (Previously Presented) The mouthpiece of claim 1, further comprising a cheek retractor portion connected to the transition portion and having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

9. (Previously Presented) The mouthpiece of claim 8, wherein the cheek retractor portion comprises an extension of the pocket and wherein the slit extends into the extension of the pocket.

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10. (Previously Presented) The mouthpiece of claim 1, further comprising a bridge structure comprising a plurality of protrusions protruding from the interior surface of the posterior wall, wherein the protrusions do not attach to the anterior wall.

11. (Previously Presented) The mouthpiece of claim 10, wherein the protruding bridge structure protrusions comprise a plurality of spaced contact points.

12. (Previously Presented) The mouthpiece of claim 11, wherein the bridge structure protrusions protrude from the interior surface of the posterior wall in a wave shape, and wherein the contact points are at crests of the wave shape.

13. (Original) The mouthpiece of claim 12, wherein spaces between the contact points are at troughs of the wave shape.

14. (Previously Presented) The mouthpiece of claim 1, further comprising a suction connector portion that connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source applies a suction to the interior of the pocket, wherein the fluids that enter through the slit opening into the interior of the pocket are suctioned toward the vacuum source.

15. (Original) The mouthpiece of claim 1, further comprising a detachable mouth prop.

16. (Original) The mouthpiece of claim 15, wherein the detachable mouth prop comprises a bite block portion and a strap portion.

17. (Original) The mouthpiece of claim 16, wherein the bite block portion and strap portion are injection-molded in one piece.

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18. (Previously Presented) The mouthpiece of claim 15, wherein the bite block portion comprises an opening corresponding to a plug connected to the main body.

19. (Cancelled)

20. (Cancelled)

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APPLICANT'S SUMMARY OF EXAMINER INTERVIEW

The Applicant's representative spoke with the Examiner on June 12, 2020 ("*Examiner Interview*") regarding the 35 U.S.C. 103 rejections of the *Office Action*.

During the *Examiner Interview*, the Applicant's representative noted that one of the 103 references, *Anders,* discloses circular apertures "grouped more toward the center of the depressor portion" which is not the same as 'a slit opening extending a longitudinal length parallel to a longitudinal and central axis of the main body.' *Anders,* col. 2, l. 59-60, FIG. 4. The Applicant's representative further noted that the other 103 reference, Hirsch, discloses "evacuation holes 66" and "evacuation hole 60" that "allow communication of the evacuation channels 58 with the other surface 48 of the retractor 22." *Hirsch*, [0051], FIG. 2. In contrast, the claim discloses 'allowing fluids exterior to the pocket to enter along the longitudinal length into the interior open space of the pocket.'

The Examiner agreed with the Applicant that the proposed amendments overcome the current grounds of rejection but raised another reference, *Erickson* (US 3,090,122), during the interview. The Examiner suggested defining the terms, 'anterior' and 'posterior' of the claims, with respect to the mouth to distinguish the claims from *Erikson*.

The Applicant and the Applicant's representative thank the Examiner for his time and courtesy during the *Examiner Interviews*.

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REMARKS

Status of the Claims

Claims 1-18 are pending. Claim 1 has been currently amended. Support for the amended independent claim 1 can be found in at least paragraphs [0032], [0033], [0036], [0039], FIGS 1A, 1B, and 6B of the *Specification*. The claims reflect subject matter to which the Applicant believes it is entitled to claim. As such, no new matter has been added.

Double Patenting

Claims 1-18 are rejected on the ground of nonstatutory double patenting over claims 1-15 of U.S. Patent No. 8,911,232. *Office Action*, 7. The Applicant has amended the independent claim of the present application and contends that the present rejection of record may no longer be applicable in light of the amendment. Should the Examiner wish to maintain the double patenting rejection and otherwise find the application in condition for allowance, the Examiner is respectfully requested to contact the undersigned to discuss subsequent submission of a disclaimer if appropriate.

Rejections under 35 U.S.C. § 103

Claims 1-11 and 14-18 are rejected under 35 U.S.C. § 103 as being unpatentable over *Anders* (US Patent 3,768,477) in view of *Hirsch* (U.S. Patent Publication 2006/0063129). *Office Action* at 2. The Applicant respectfully disagrees and presents the following remarks.

Claim 1 has been currently amended to recite as follows (emphasis added):

- an anterior wall configured **to face away from a back of a mouth when placed in the mouth of a patient**, wherein the anterior wall is defined by an exterior edge, the anterior wall comprising **a slit opening extending a longitudinal length** parallel to a longitudinal and central axis of the main body, the **longitudinal length extending from a middle location of the anterior wall away from the first**

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end and toward the second end of the main body, the slit opening allowing fluids exterior to the pocket to enter along the longitudinal length into the interior open space of the pocket

The recited limitations find support in the *Specification*, which describes "a longitudinal open slit 170" "extending over approximately two-thirds of the main body on the anterior surface" that "fac[es] the front of the mouth." *Specification*, [0033], [0039]. The slit 170 runs "along the center of the main body across the rectangle and the most of the arrowhead" to "assist in capture and suction of water, saliva and debris, as well as assisting in cleaning and maintenance" as seen below in FIG. 1B. *Id*. at [0039], FIG. 1B.

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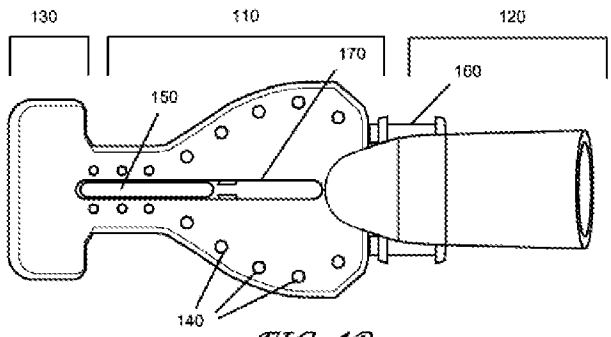

FIG. 1B

The *Office Action* argues that "the aperture 30" of *Anders* is "equivalent to the claimed slit extending along a longitudinal and central axis of the main body portion between opposite ends of the main body portion" "by broadest reasonable interpretation of the claimed 'slit' being a "cut" or "an opening."" *Office Action* at 3.

Anders discloses a "plurality of apertures" that are "grouped more toward the center of the depressor portion," which is not the same as a singular 'slit opening extending a longitudinal length parallel to a longitudinal and central axis of the main body' as claimed. *Anders*, col. 2, l. 59-60, FIG. 4. Moreover, the apertures of *Anders*, single or in a group, do not extend 'a

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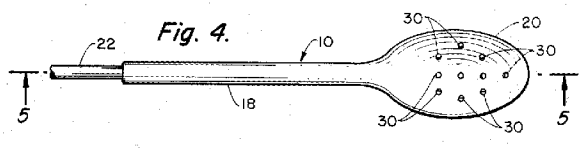
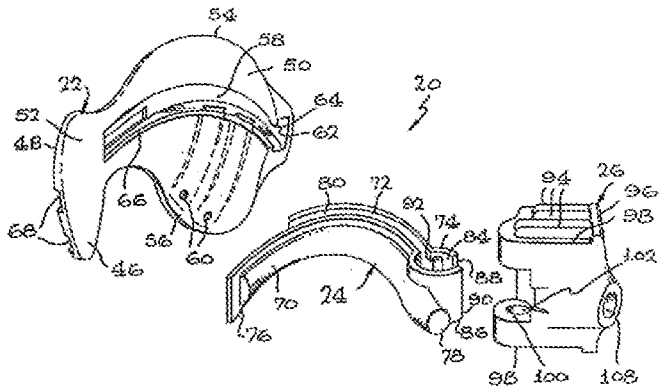
longitudinal length parallel to a longitudinal and central axis of the main body, the longitudinal length extending from a middle location of the anterior wall away from the first end and towards the second end of the main body' as claimed, as seen from FIGS. 1-5 of *Anders*. FIG. 4 of *Anders* simply show that "these apertures 30 are grouped more towards the center" in the circular area of the middle portion of the depressor portion 20. *Id.* at col. 2, l. 59-60.

Hirsch does not cure the deficiency of *Anders*, as *Hirsch* fails to disclose any 'slit opening extending a longitudinal length.' Although the *Office Action* argues that element 58 of *Hirsch* discloses a slit, element 58 of *Hirsch* is actually an "internal evacuation channels 58" that is covered by "a flange 76" and "dispersion piece 24" as seen in FIG. 2. *Office Action* at 3; *Hirsch*, [0051], [0053], [0054], FIG. 2. Instead, *Hirsch* discloses "evacuation holes 66" and "evacuation hole 60" that "allow communication of the evacuation channels 58 with the other surface 48 of the retractor 22." *Hirsch*, [0051], FIG. 2. Thus, the "internal evacuation channels 58" of *Hirsch* does not disclose 'a slit opening' that 'allow[s] fluids exterior to the pocket to enter along the longitudinal length into the interior open space of the pocket' as claimed. *Id.*

ANDERS	HIRSCH
	 FIG. 2

Erickson (U.S. Patent 3,090,122 and mentioned during the *Examiner Interview*) cannot cure the deficiency of *Anders* and *Hirsch*. As seen in FIGS. 1 and 2 of *Erickson* below, the two "openings

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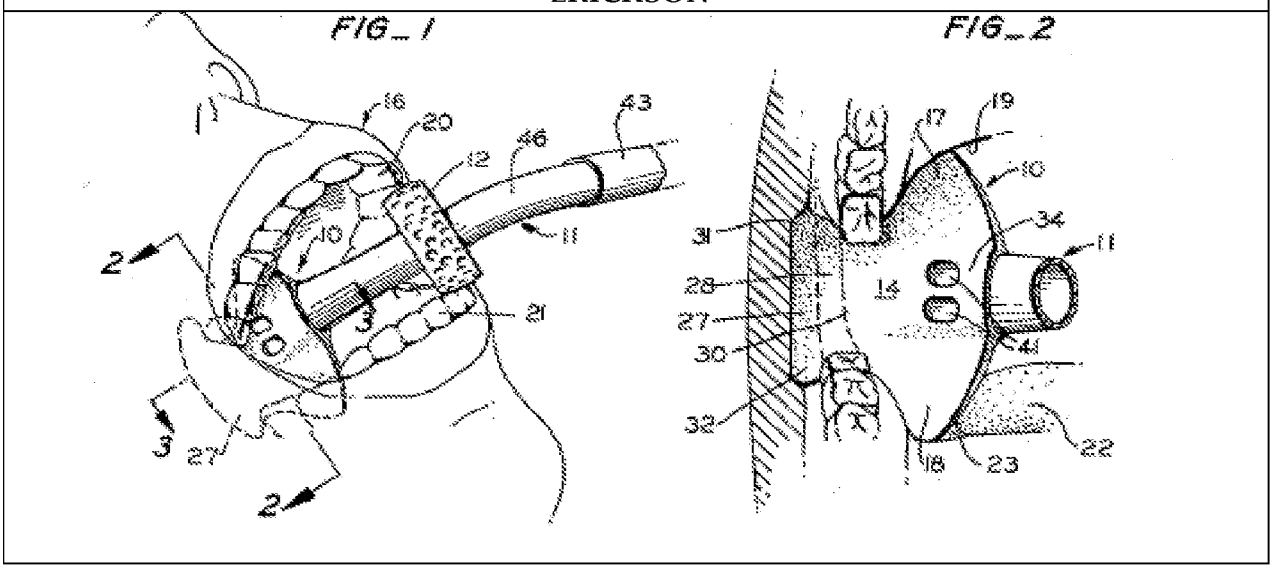
41" are on the "upper portion 34" of the receptacle 10 whereas the "lower portion 35" of the receptacle 10 "is provided with apertures 42 opening laterally outwardly of the underside of the receptacle 10 from the inner end of pocket 26." *Erickson*, col. 2, l. 15-19.

Erickson discloses that "laterally opening aperture 42 is provided to prevent the tongue or other soft tissue from interfering with the drainage" which faces the inside of the mouth cavity and lies adjacent to the tongue. *Id.* at col. 3, l. 50-63. This position of the receptacle 10 of *Erickson* with respect to the tongue is important to create "channel 47" to collect "substantially all saliva, coolant liquid and debris." *Id.* at col. 3, l. 42-49. Thus, "openings 41" faces outside of the mouth cavity as shown in its "proper position" with respect to the mouth cavity in FIG. 2 and cannot disclose 'a slit opening' on the 'an anterior wall configured to face away from a back of a mouth when placed in the mouth of a patient' as claimed. *Id.* at col. 2, l. 36-43.

ERICKSON



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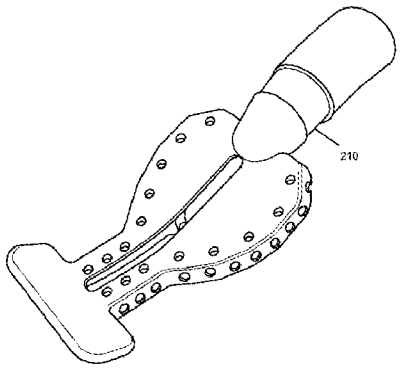

FIG. 2A

In view of the above remarks, the independent claim is patentable over the cited references. Furthermore, because each of the dependent claims incorporates by reference all the limitations of the independent claim from which it depends, the dependent claims are allowable for at least the same reasons. The Applicant therefore respectfully requests that the rejections of the claims under 35 U.S.C. § 103 be withdrawn.

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CONCLUSION

Based on the foregoing remarks, the Applicant respectfully contends that all outstanding rejections and objections have been overcome. Accordingly, it is respectfully submitted that the present application is in condition for allowance.

If the Examiner has any questions regarding the case, the Examiner is invited to contact the Applicant's undersigned representative.

Respectfully submitted,
Dryshield, LLC

August 5, 2020

By: / Ruby Chung /

Ruby Chung (76,809)
POLSINELLI *LLP*
3 Embarcadero Center, Suite 2400
San Francisco, CA 94111
Phone: (415) 248-2121
patentdocketing@polsinelli.com

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Electronic Patent Application Fee Transmittal

Application Number:	14228057
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Ruby Lim Chung/Cheri Houle
Attorney Docket Number:	INCEP-001COD

Filed as Small 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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	2820	1	950	950
		Total in USD ($)		**950**

Electronic Acknowledgement Receipt

EFS ID:	40205842
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Ruby Lim Chung/Cheri Houle
Filer Authorized By:	Ruby Lim Chung
Attorney Docket Number:	INCEP-001COD
Receipt Date:	05-AUG-2020
Filing Date:	27-MAR-2014
Time Stamp:	19:26:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$950
RAM confirmation Number	E202085J26540428
Deposit Account	501662
Authorized User	Cheri Houle

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	INCEP-001COD_RCE_8-5-20.pdf	82745 610b5ce43473da1ef601b9d891589017ceed8192	no	3
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
2		INCEP-001COD_RESP_H_8-5-20.pdf	340307 ae9da57fffdf6dcb2620ed8f2d58d73f417ce9bc	yes	12

Multipart Description/PDF files in .zip description

Document Description	Start	End
Amendment Submitted/Entered with Filing of CPA/RCE	1	1
Claims	2	5
Applicant summary of interview with examiner	6	6
Applicant Arguments/Remarks Made in an Amendment	7	12

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30393 05fa7d7d04aa0de9d2526b4ff15ae4c0ec85a8b7	no	2
Warnings:					
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		Total Files Size (in bytes):	453445		

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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

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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
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/228,057	Filing Date 03/27/2014	☐ 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 $40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $210 =	
☐ 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	08/05/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 18	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 1	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(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.

Substitute for Form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*				Application Number	14/228,057
				Filing Date	March 27, 2014
				First Named Inventor:	Thien Nguyen
				Art Unit	3772
				Examiner Name	Hao D. Mai
Sheet	**1**	**of**	**2**	Attorney Docket Number	INCEP-001COD

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Document Number Number-Kind Code[2](If known)		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	2001/0008752	7/19/2001	Hirsch et al.	
		US-	2017/0156832	6/8/2017	Reyes	
		US-				
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Foreign Patent Document Country Code[3] Number[4] Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 'Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3772
	Examiner Name	Hao D. Mai
Sheet 2 of 2	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		PCT Application No. PCT/US2014/032892 International Preliminary Report on Patentability dated 6/14/6	
		PCT Application No. PCT/US2020/032228 International Search Report and Written Opinion dated 8/12/20	

Examiner Signature		Date Considered	

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

This collection of information is required by 37 CFR 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference INCEP-001PCT	**FOR FURTHER ACTION**	See item 4 below
International application No. PCT/US2014/032892	International filing date *(day/month/year)* 03 April 2014 (03.04.2014)	Priority date *(day/month/year)* 09 December 2013 (09.12.2013)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant INCEPT, INC.		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

	Date of issuance of this report 14 June 2016 (14.06.2016)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Authorized officer Kihwan Moon e-mail: pt01.pct@wipo.int

Form PCT/IB/373 (January 2004)

Solmetex Ex. 2020
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: TAM THANH PHAM
LEWIS ROCA ROTHGERBER LLP
2440 W EL CAMINO REAL, 6TH FLOOR
MOUNTAIN VIEW, CA 94040

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	04 SEP 2014
Applicant's or agent's file reference INCEP-001PCT	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2014/032892	03 April 2014	09 December 2013

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - A41C 17/00, 17/06 (2014.01)
CPC - A41C 17/00 (2014.07)

Applicant INCEPT, INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1 *bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	22 August 2014	Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (July 2011)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2014/032892

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

   ☐ on paper

   ☐ in electronic form

   b. (time)

   ☐ in the international application as filed

   ☐ together with the international application in electronic form

   ☐ subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

Solmetex Ex. 2020
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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2014/032892

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	5-11, 13-18	YES
	Claims	1-4, 12	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-18	NO
Industrial applicability (IA)	Claims	1-18	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1-4 and 12 lack novelty under PCT Article 33(2) as being anticipated by Hirsch et al hereinafter referred to as Hirsch.
Regarding claim 1, Hirsch teaches a dental mouthpiece (intraoral device 20; Fig. 2; para [0042]) composed of a material (Abstract), the dental mouthpiece comprising:
a main body portion (main body portion 50; Fig. 2; para [0047]) comprising a defined pocket (main receiving channel 62; Fig. 2; para [0047]) having an anterior wall (shown in Fig. 3), a posterior wall (shown in Fig. 4), and a side wall (shown in Figs. 5 and 8A-8B) in between the anterior wall and the posterior wall, wherein the anterior wall, the posterior wall, and the side wall define an interior portion of the defined pocket;
a cheek retractor portion (cheek retractor portion 52 of retractor 22; Fig. 2; para [0046]) configured to press against a cheek of a patient when placed in a mouth of the patient (para [0043]), wherein resilience of the material causes the cheek retractor portion to retract a cheek of the patient away from the teeth of the patient (para [0043]); and
a suction connector portion (exit port 108; Fig. 3; para[0058]) for connecting the interior portion of the main body to a vacuum suction source (vacuum source 110; Fig. 1; para [0062]).

Regarding claim 2, Hirsch teaches the mouthpiece of claim 1, wherein the side wall includes a plurality of perforations (evacuation holes 60; Figs. 3-4; para [0047]).

Regarding claim 3, Hirsch teaches the mouthpiece of claim 1, wherein the anterior wall and the posterior wall each includes a plurality of perforations (evacuation holes 60; Figs. 3-4).

Regarding claim 4, Hirsch teaches the mouthpiece of claim 1, wherein the anterior wall further includes a slit along a central axis (shown in Fig. 2 near channels 66).

Regarding claim 12, Hirsch teaches the mouthpiece of claim 1, further comprising a detachable (via pivot pins 92; para [0055]) mouth prop (bite block 26; Fig. 2).

Claims 5, 6, 17 and 18 lack an inventive step under PCT Article 33(3) as being obvious over Hirsch.
Regarding claim 5, Hirsch teaches the mouthpiece of claim 1, further comprising a stability bar (dispersion piece 24; Fig. 3).
Hirsch fails to teach the stability bar protruding from an interior surface of the posterior wall. In Fig. 3, Hirsch shows the stability bar protruding from an interior of the anterior wall.
It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the intraoral device of Hirsch to include the stability bar protruding from the interior wall of the posterior wall, since a mere reversal of essential working parts of a device involves only routine skill in the art. The motivation for doing so would be to provide a mouthpiece that would come in two different configurations, depending on the side of the mouth being examined (para [0045]).
Hirsch further fails to teach wherein a thickness of the stability bar increases resilience of the cheek retractor portion during bending. However, Hirsch teaches a combined thickness when the stability bar is connected to the mouthpiece (using pivot pins 92) (see Figs. 2 and 3 which shows the main body 50 before and after attachment of the stability bar).
Further, Hirsch teaches both the stability bar (dispersion piece 24) and the cheek retractor portion (cheek retractor portion 52) are made of flexible material and are in pivot connection (para [0045]; [0049).
Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the intraoral device of Hirsh with increased resilience of the cheek retractor portion during bending in order to provide a mouthpiece to better accommodate different mouth sizes and shapes.

(Continued in Supplemental Boxes)

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
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Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V

Regarding claim 6, Hirsch teaches the mouthpiece of claim 1, wherein the main body portion, the cheek retractor portion, and the suction connector portion, but lacks the teaching that they are formed by injection-molded as one piece.
However, in an alternate embodiment shown in Fig. 18A, Hirsch teaches intraoral device (200) preferably has a single-piece, integrated homogenous-material, injection-molded construction (para [0074]).
Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the intraoral device of Hirsch, as taught in the alternate embodiment, for the purpose of minimize the cost of construction of each device, thus eliminating the need for reuse.

Regarding claim 17, Hirsch teaches the mouthpiece of claim 1, but lacks the teaching of the suction connector portion comprises a cutout corresponding to a protrusion on a vacuum adapter for an interlocking fit.
However, in alternate embodiment shown in Fig. 18B, Hirsch teaches the suction connector portion (connection section 570) comprises a cutout (slots 630) corresponding to a protrusion (barbs 690) on a vacuum adapter (vacuum-only adapter 230 by way of plug portion 640; Fig. 18B; para [0092]) for an interlocking fit (para [0092]).
Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the intraoral device of Hirsch, as taught in the alternate embodiment, for the purpose of providing a more secure connection between the suction connection portion and the vacuum.

Regarding claim 18, Hirsch teaches the mouthpiece of claim 1, but lacks the teaching of the anterior wall and the posterior wall having different thicknesses.
However, Hirsch teaches the intraoral device "may also come in different sizes...to accommodate different mouth sizes and shapes" (para [0056]). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the intraoral device of Hirsch to include an anterior wall and posterior wall having different thicknesses, for the purpose of providing a device that may accommodate a variety of patients' mouths.

Claim 7 lacks an inventive step under PCT Article 33(3) as being obvious over Hirsch in view of Bowman et al hereinafter referred to as Bowman.
Regarding claim 7, Hirsch teaches the mouthpiece of claim 1, wherein the material used in the injection molding is autoclavable.
Hirsch teaches "the bite piece 26 and dispersion piece 24 are autoclaved" (para [0060]). However, Hirsch lacks the teaching wherein the material used in the injection-molding is a flexible, translucent material.
However, in an alternate embodiment shown in Figs. 18A-18B, Hirsch teaches the "intraoral device is preferably injection molded out of a translucent, flexible...elastomer" (para [0074]).
Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the intraoral device, as taught by the alternate embodiment for the purpose of minimizing construction costs a provide a device that may accommodate many different patients mouths.
Hirsch also fails to teach the mouthpiece wherein the material used in the injection molding is a high heat-resistant, silicone-based material.
Bowman teaches dental positioners where the use of "silicone became very acceptable because of its...resistance to heat" (para [0018]).
It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the intraoral device of Hirsch to include a heat resistant silicone-based material, as taught by Bowman, since selection of a known material on the basis of its suitability for an intended use involves only routine skill in the art. The motivation for doing so would be to provide a device with enhanced efficacy and patient comfort.

Claims 8-10 and 13-16 lack an inventive step under PCT Article 33(3) as being obvious over Hirsch in view Black et al hereinafter referred to as Black.
Regarding claim 8, Hirsch teaches the mouthpiece of claim 1, but lacks the teaching of the mouthpiece further comprising a bridge structure protruding from an interior surface of the posterior wall, the protruding bridge structure comprising a plurality of spaced contact points that keep the anterior wall separated from the posterior wall during suction.
Black teaches an intraoral device comprising a bridge structure (transverse walls 348c; Figs. 23A and 23C) protruding from an interior surface of the posterior wall (posterior layer 348a), the protruding bridge structure comprising a plurality of spaced contact points that keep the anterior wall (anterior layer 348b) separated from the posterior wall during suction (para [0122]).
It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the intraoral device of Hirsch, as taught by Black, for the purpose of providing enhanced efficacy during suction.

Regarding claim 9, Hirsch and Black teach the mouthpiece of claim 8, but lack the teaching wherein the bridge structure protrudes from the interior surface of the posterior wall in a wave shape, and wherein the contact points are at crests of the wave shape.
It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the intraoral device of Hirsch to include bridge structures with the contact points are at crests of the wave shape, since a change in shape of an element involves only routine skill in the art. The motivation for doing so would be to provide enhanced efficacy during suction.

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2014/032892

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:

Regarding claim 10, Hirsch and Black teach the mouthpiece of claim 9, wherein troughs are configured to allow suction through the bridge structure. Black teaches "in this way the channels 342,343 (troughs)...thereby allowing for simultaneous aspiration of debris and fluid" para [0122]). However, Hirsch and Black lack the teaching wherein the bridge structure protrudes from the interior surface of the posterior wall in a wave shape, and wherein the contact points are at crests of the wave shape.
However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the intraoral device of Hirsch to include bridge structures with the contact points are at crests of the wave shape, since a change in shape of an element involves only routine skill in the art. The motivation for doing so would be to provide enhanced efficacy during suction.

Regarding claim 13, Hirsch teaches the mouthpiece of claim 12, but lacks the teaching of wherein the detachable mouth prop comprises a strap configured to fit around the suction connector portion, wherein an external surface of the suction connector portion comprises a notch region corresponding to the strap, and wherein an external surface of the strap is substantially flush with a remaining external surface of the suction connector portion when the strap sits in the notch region.
Hirsch does teache a notch region (plug portion 640) for matingly corresponding to connection section 570 of tube 590; Fig. 18B; para [0092]).
Black teaches an intraoral device comprising a strap (conduit 312; Fig. 20B; para [0114]) configured to fit around the suction connector portion ("neck of tongue..."; para [0114]) wherein an external surface of the suction connector portion (Figs. 23B-23C; neck 346; para [0126]), comprises a region corresponding to the strap, and wherein an external surface of the strap is substantially flush with a remaining external surface of the suction connector portion when the strap sits in the region (para [0126]).
It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the intraoral device of Hirsch, as taught by Black, for the purpose of providing a more secure connection between the mouth prop and suction connection portion.

Regarding claim 14, Hirsch and Black teach the mouthpiece of claim 13, but lack the teaching wherein the strap is injection-molded in a single piece with the mouth prop.
Hirsch teaches the use of injection molding for the intraoral device ("one piece, flexible injection-molded body; Abstract).
It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Hirsch device, since the use of a one piece construction instead of the structure disclosed in the prior art would have required only routine skill in the art. The motivation for doing so would be to provide enhanced efficacy during suction.

Regarding claim 15, Hirsch teaches the mouthpiece of claim 1, but lacks the teaching wherein the suction connector portion further comprises an external plug protrusion corresponding to an opening in a mouth prop associated with the strap.
Black teaches an intraoral device wherein the suction connector portion further comprises an external plug protrusion (longitudinal projection 344; para [0126]) corresponding to an opening (groove 311; Fig. 20D; para [0126]) in a mouth prop associated with the strap (para [0126]). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Hirsch, with the intraoral device as taught by Black, in order to provide a more secure connection at the suction connection portion.

Regarding claim 16, Hirsch and Black teach the mouthpiece of claim 15, wherein the plug protrusion fits into the opening to provide additional crush-resistance and decreased compressibility during biting by the patient.
Hirsch does teach, when adding plug 640 into connection section 570, "the plug...helps keep bite piece 250 from collapsing; para [0092]).
Specifically, Black teaches the plug protrusion (longitudinal projection 344) fits into the opening (groove 311).
It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Hirsch, with the plug protrusion as taught by Black, for the purpose of providing a more secure connection at the suction connection portion.

Claims 11 lacks an inventive step under PCT Article 33(3) as being obvious over Hirsch in view of Oliva et al hereinafter referred to as Oliva.
Regarding claim 11, Hirsch teaches the mouthpiece of claim 1, but lacks the teaching wherein the suction connector portion comprises an internal stop to assist in positioning of a vacuum suction source or a vacuum adaptor.
Oliva teaches a dental instrument that comprises an internal stop (spring-loaded valve stem 239; Fig. 14; col.8, lns. 15-22).
It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the intraoral device of Hirsch to include an internal stop, as taught by Oliva, for the purpose of manually stopping the suctioning during positioning of the vacuum source.

Claims 1-18 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference		FOR FURTHER ACTION
INCEP-005PCT		see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/US 20/32228	08 May 2020 (08.05.2020)	10 May 2019 (10.05.2019)
Applicant DRYSHIELD, LLC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

☒ the international application in the language in which it was filed.

☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 20/32228

A. CLASSIFICATION OF SUBJECT MATTER

IPC - A61B 1/24, A61C 17/00, A61C 17/06, A61C 17/10, A61C 5/14 (2020.01)

CPC - A61B 1/24, A61C 17/00, A61C 17/06, A61C 17/10, A61C 5/14, A61C 5/90

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
See Search History document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
See Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2017/0156832 A1 (Reyes) 8 June 2017 (08.06.2017), entire document	1-20
Y	US 2014/0212838 A1 (Incept, Inc.) 31 July 2014 (31.07.2014), entire document	1-20
A	US 2015/0335409 A1 (Innerlite, Inc.) 26 Novemebr 2015 (26.11.2015), entire document	1-20
A	US 2009/0274991 A1 (Black et al.) 5 November 2009 (05.11.2009), entire document	1-20
A	US 2001/0008752 A1 (Hirsch et al.) 19 July 2001 (19.07.2001), entire document	1-20

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"D" document cited by the applicant in the international application
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
27 JULY 2020	12 AUG 2020
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	Authorized officer Lee Young Telephone No. PCT Helpdesk: 571-272-4300

Form PCT/ISA/210 (second sheet) (July 2019)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: JACEK MAREK WNUK
POLSINELLI LLP
THREE EMBARCADERO CENTER, SUITE 2400
SAN FRANCISCO, CA 94111

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	12 AUG 2020
Applicant's or agent's file reference	FOR FURTHER ACTION
INCEP-005PCT	See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 20/32228	08 May 2020 (08.05.2020)	10 May 2019 (10.05.2019)

International Patent Classification (IPC) or both national classification and IPC

IPC - A61B 1/24, A61C 17/00, A61C 17/06, A61C 17/10, A61C 5/14 (2020.01)

CPC - A61B 1/24, A61C 17/00, A61C 17/06, A61C 17/10, A61C 5/14, A61C 5/90

Applicant DRYSHIELD, LLC

1. This opinion contains indications relating to the following items:

- [x] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [ ] Box No. IV Lack of unity of invention
- [x] Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [ ] Box No. VII Certain defects in the international application
- [x] Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	27 JULY 2020	Lee Young PCT Help Desk Telephone No. 571-272-4300

Form PCT/ISA/237 (cover sheet) (revised January 2019)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 20/32228

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(b)).

3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:

   a. ☐ forming part of the international application as filed:

      ☐ in the form of an Annex C/ST.25 text file.

      ☐ on paper or in the form of an image file.

   b. ☐ furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.

   c. ☐ furnished subsequent to the international filing date for the purposes of international search only:

      ☐ in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).

      ☐ on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

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PCT/US 20/32228

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	1-20	YES
	Claims	none	NO
Inventive step (IS)	Claims	none	YES
	Claims	1-20	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims	none	NO

2. Citations and explanations:
Claims 1-20 lack an inventive step under PCT Article 33(3) as being obvious over US 2017/0156832 A1 to Reyes in view of US 2014/0212838 A1 to Incept, Inc. (hereinafter Incept).

Regarding claim 1, Reyes teaches a dental mouthpiece (see fig. 1-9; para [0022]) the dental mouthpiece comprising: a main body portion at a central part of the mouthpiece having a first end and a second end (fig. 3 see in closed configuration the dental mouthpiece comprises a main body portion which is centrally circular with ends at suction piece 28 and the opposite, tapered distal end; para [0022]; para [0031]), the main body portion having an anterior wall (fig. 3, 5 see anterior wall 32; para [0028]) and a posterior wall (fig. 3, 5 see posterior wall 34; para [0028]), the anterior wall and the posterior wall defining an interior space (fig. 3, 5 see walls 32, 34 define space therebetween when the mouthpiece is closed), at least one connector connecting the anterior wall to the posterior wall (fig. 1 see connector 36/38 on trough 18/20; para [0028]; para [0032]), at least one anterior intervening wall extending from the anterior wall partially towards the posterior wall (fig. 1-5 see anterior intervening wall 8; para [0024]-[0025]), and at least one posterior intervening wall extending from the posterior wall partially towards the anterior wall (fig. 1-5 see posterior intervening wall 10; para [0024]-[0025]), the at least one anterior intervening wall and the at least one posterior intervening wall each having alternating crests and troughs (fig. 1-5 see crests 12 and troughs between crests 12; para [0034]; para [0027]); a suction connector portion connected to the first end (fig. 1-7 see suction connector portion 26; para [0031]), the connector portion connecting the interior space to a vacuum suction source (para [0029]; para [0031]); and a cheek retractor portion connected to the second end (fig. 1-3 see tapered distal end; para [0036]), but does not explicitly teach the dental mouthpiece formed in a curve, the main body at a central part of the curve, the anterior wall inside the curve nor the posterior wall outside the curve. However, in similar art, Incept teaches a dental mouthpiece formed in a curve (see fig. 1A, 1D-E; para [0033]) comprising a main body portion at a central part of the curve (fig. 1E see main body portion at the center of the curve between the left open channel and the right distal tip), the main body portion having an anterior wall inside the curve (fig. 1A-1D see anterior wall inside curve) and a posterior wall outside the curve (fig. 1A-1D see posterior wall outside the curve). Curved shaped of dental mouthpieces are well known in the art for improved fit within the mouth for retracting a cheek. Accordingly, it would have been obvious to a person having ordinary skill in in the art to have shaped the mouthpiece taught by Reyes in a curve as taught by Incept, such that the main body is at a central part of the curve, the anterior wall is inside the curve, and the posterior wall in outside the curve, in order to optimize the shape of the mouthpiece to improve fit in mouth of a patient.

Regarding claim 2, Reyes in view of Incept teach the mouthpiece of claim 1, and Reyes modified by Incept further teaches wherein the at least one connector is a cylindrical shaped pillar (Reyes fig. 1 see connector includes cylindrical shaped pillar 36; para [0032]).

Regarding claim 3, Reyes in view of Incept teach the mouthpiece of claim 1, and Reyes modified by Incept further teaches wherein the at least one connector is a wall spanning longitudinally in the main body portion in the interior space (Reyes fig. 1 see connector includes wall 18/20; para [0028]).

Regarding claim 4, Reyes in view of Incept teach the mouthpiece of claim 1, but Reyes modified by Incept does not explicitly teach the mouthpiece further comprising a bridge structure in the interior space protruding from the posterior wall, wherein the bridge comprises protrusions, wherein the protrusions are battlement-shaped, with spaced crests. However, Incept teaches a mouthpiece comprising a bridge structure in an interior space (fig. 1E see bridge 180; para [0042]), wherein the bridge comprises protrusions (fig. 1E see protruding crests of bridge 180), wherein the protrusions are battlement-shaped, with spaced crests (fig. 1E see spaced crests form a battlement-shape; para [0042]). It would have been obvious to a person having ordinary skill in the art to have included a bridge structure as taught by Incept in the mouthpiece taught by Reyes in order to improve the transfer of fluids to the vacuum connection (see Incept para [0042]), thus improving the suction capabilities of the mouthpiece.

Regarding claim 5, Reyes in view of Incept teach the mouthpiece of claim 4, but Reyes modified by Incept does not explicitly teach wherein the protrusions near the suction connector is in greater height and length. However, Incpet teaches wherein the protrusions near the suction connector are greater in size (see fig. 1E; para [0042]). Furthermore, Incpet teaches the protrusions are shaped to improve the suction of fluids through the interior space (para [0042]). Accordingly, it would have been obvious to a person having ordinary skill in the art to have increased both the height and length of the protrusions near the suction connector in order to improve the suction of fluids through the interior space and thus improve the suction capabilities of the device.

-*-Continued in Supplemental Box-*-

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INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 20/32228

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 4: Regarding claim 4, the claim language is confusing and lacks clarity. Specifically, the recitation "protrusions" lacks proper antecedent basis. In order to give meaning to this claim such that an opinion may be rendered, it has been interpreted to read "The mouthpiece of claim 1, further comprising a bridge structure in the interior space protruding from the posterior wall, wherein the bridge comprises protrusions, wherein the protrusions are battlement-shaped, with spaced crests," which gives proper antecedent basis.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:
-*-Box V.2 - Citations and Explanations-*-

Regarding claim 6, Reyes in view of Incept teach the mouthpiece of claim 4, and Reyes modified by Incept further teaches wherein spaces between the crests are troughs of the battlement shape (see Incept fig. 1A spaces between crests are battlement-shaped troughs; para [0042]).

Regarding claim 7, Reyes in view of Incept teach the mouthpiece of claim 1, but Reyes modified by Incept does not explicitly teach wherein the alternating crests and troughs on the anterior intervening wall and the posterior intervening wall are semi-circle shaped. However, optimization of shape is within the ordinary skill of a person with the art. Furthermore, Reyes teaches the crests and troughs comprise sharp corners (see fig. 1-3; para [0034]; para [0025]-[0027]), but it is well known it the art that sharp corners are difficult and expensive to manufacture. Accordingly, it would have been obvious to a person having ordinary skill in the art to have optimized the shape of the crests and troughs to a semi-circle in order to prevent the presence of sharp corners to improve ease of manufacturing.

Regarding claim 8, Reyes in view of Incept teach the mouthpiece of claim 1, and Reyes modified by Incept further teaches wherein the anterior intervening wall and the posterior intervening wall have varying heights to maintain integrity of the main body portion (Reyes fig. 1-3 see presence of crests 12 and troughs therebetween varies the heights of intervening walls 8, 10 in order to provide integrity to the structure of the interior space; para [0034]).

Regarding claim 9, Reyes in view of Incept teach the mouthpiece of claim 1, and Reyes modified by Incept further teaches wherein the troughs of the anterior intervening wall and the posterior intervening wall decrease in size as the troughs approach the cheek retractor portion (Reyes fig. 1 see troughs between crests 12 become smaller in length as they approach the cheek retractor portion at the distal end).

Regarding claim 10, Reyes in view of Incept teach the mouthpiece of claim 1, and Reyes modified by Incept further teaches wherein the anterior intervening wall and the posterior intervening wall meet at a point where the suction connector meets the main body (Reyes fig. 1-3; para [0034]).

Regarding claim 11, Reyes in view of Incept teach the mouthpiece of claim 1, and Reyes modified by Incept further teaches wherein the anterior intervening wall and the posterior intervening wall meet at a point where the main body meets the cheek retractor portion (Reyes fig. 1-3; para [0034]).

Regarding claim 12, Reyes in view of Incept teach the mouthpiece of claim 1, but Reyes modified by Incept does not explicitly teach further comprising a bite block integrated to the suction connector portion, wherein the bite block provide additional crush-resistance and decreased compressibility during biting by a patient. However, Incept teaches the mouthpiece may provide a bite block (see claim 18-19). Bite blocks are well known in the art to prevent compression of a device entering the mouth cavity and to ensure that the mouth or airway remains open during a procedure. Accordingly, it would have been obvious to a person having ordinary skill in the art to have provided a bite block in the mouthpiece to protect the suction tube and maintain the mouth in an open position during a procedure.

Regarding claim 13, Reyes in view of Incept teach the mouthpiece of claim 1, but Reyes modified by Incept does not explicitly teach wherein the main body portion, the suction connector portion, and the cheek retractor portion are formed by injection-molding as one piece. However, Reyes teaches the device may be manufactured by any simplified process (para [0010]). Furthermore, Incept teaches the mouthpiece may be formed by injection-molding (para [0032]). Injection molding is well known in the art for easy and inexpensive manufacturing of a one-piece polymer. Accordingly, it would have been obvious to a person having ordinary skill in the art to have manufactured the mouthpiece by injection-molding in order to provide a cost-effective production of the device.

Regarding claim 14, Reyes in view of Incept teach the mouthpiece of claim 1, but Reyes modified by Incept does not explicitly teach wherein a material that forms the main body, the suction connector portion, and the cheek retractor portion is a flexible, translucent, high heat-resistant, autoclavable silicon-based material. However, Reyes teaches wherein the material of the mouthpiece is a suitable, flexible polymer (para [0023]). Furthermore, Incept teaches a mouthpiece formed of a flexible, translucent, high heat-resistant, autoclavable silicon -based material (para [0032]). It would have been obvious to a person having ordinary skill in the art to have provided a a flexible, translucent, high heat-resistant, autoclavable silicon-based material to construct the mouthpiece in order to optimize the mouthpiece for strength and manufacturing properties.

Regarding claim 15, Reyes in view of Incept teach the mouthpiece of claim 1, and Reyes modified by Incept further teaches wherein the posterior wall further includes a stability bar protruding from an interior surface of the posterior wall and along a longitudinal axis of the main body (Reyes fig. 1-5 see stability bar 18/20 comprises connector 36/38; para [0028]; para [0032]).

Regarding claim 16, Reyes in view of Incept teach the mouthpiece of claim 15, and Reyes modified by Incept further teaches wherein the at least one connector lies evenly spaced along the stability bar (Reyes fig. 1-5 see stability bar 18/20 comprises connector 36/38; para [0028]; para [0032]).

Regarding claim 17, Reyes in view of Incept teach the mouthpiece of claim 1, but Reyes modified by Incept does not explicitly teach wherein the suction connector portion comprises a cutout corresponding to a protrusion on a vacuum adapter interlocking fit. However, Incept teaches wherein the dental mouthpiece comprises a suction connector (Incept fig. 2A-E see connector 120; para [0045]) which connects to a vacuum source with an interlocking fit by a cutout (Incept see fig. 2A-E cutout 230; para [0045]). It would have been obvious to a person having ordinary skill in the art to have included a interlocking fit to a vacuum source as taught by Incept in the connector portion taught by Reyes in order to improve the integrity of the connector and prevent failure during use.

-*-Continued in next Supplemental Box-*-

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:
-*-Supplemental Box - Box V.2 - Citations and Explanations-*-

Regarding claim 18, Reyes in view of Incept teach the mouthpiece of claim 1, and Reyes modified by Incept further teaches where in the suction connector portion connects to a vacuum source (Reyes para [0030]-[0031]; para [0036]-[0038]), wherein activation of the vacuum source provides suction of fluids from the interior space of the main body (Reyes para [0036]-[0038]).

Regarding claim 19, Reyes in view of Incept teach the mouthpiece of claim 18, and Reyes modified by Incept further teaches wherein the activation of the vacuum source draws fluids from an exterior of the main body through the crests and troughs of the anterior intervening wall and the posterior intervening wall, into the interior space of the main body (Reyes para [0036]-[0038]).

Regarding claim 20, Reyes in view of Incept teach the mouthpiece of claim 1, and Reyes modified by Incept further teaches wherein the cheek retractor portion includes a surface that applies pressure based on resilience of the cheek retractor portion (Reyes fig. 1-5 see outer surface of cheek retractor portion at distal end; para [0036]; para [0023] device is flexible).

Claims 1-20 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used by industry.

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Electronic Acknowledgement Receipt

EFS ID:	41076243
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Ruby Lim Chung/Lea Fong
Filer Authorized By:	Ruby Lim Chung
Attorney Docket Number:	INCEP-001COD
Receipt Date:	10-NOV-2020
Filing Date:	27-MAR-2014
Time Stamp:	18:14:29
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	Transmittal Letter	INCEP-001COD_IDS_Statement_11-10-20.pdf	96941 0d88bd4b8d0d735dc0e762b71c8f5dd8329962f1	no	2

Warnings:

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Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COD_IDS_1449_11-10-20.pdf	223583 a2db590f83a2b8ebff6e19fa69ba12b557934c44	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Non Patent Literature	PCTUS2014032892_InternationalPreliminaryReportOnPatentability_6-14-16.pdf	334202 7b192fb9ea41dea74c303a365c828775974a5c96	no	6
Warnings:					
Information:					
4	Non Patent Literature	PCTUS2020032228_SearchReport_and_WrittenOpinion_8-12-20.pdf	214171 deb3ae7e4c08b757cb43ee6a74d841aba69b704c	no	8
Warnings:					
Information:					
		Total Files Size (in bytes):	868897		

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.

PATENT
INCEP-001COD

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772 | Examiner: Hao D. Mai

Serial No.: 14/228,057 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 1983 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH SLIT

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56 and 1.97-1.98

Examiner:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56.

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No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference an admission that it is prior art or pertinent to this application.

Respectfully submitted,
POLSINELLI LLP

Dated: November 10, 2020

By: _____/Ruby L. Chung/_____
Ruby L. Chung (Reg. No. 76,809)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
patentdocketing@polsinelli.com

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,057	03/27/2014	Thien Nguyen	INCEP-001COD	1983

138718 7590 01/15/2021

Polsinelli LLP
3 Embarcadero Center
Suite 2400
San Francisco, CA 94111

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
01/15/2021	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):

sfpatent@polsinelli.com
uspt@polsinelli.com

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Applicant-Initiated Interview Summary	**Application No.** 14/228,057	**Applicant(s)** Nguyen et al.		
	Examiner HAO D MAI	**Art Unit** 3772	**AIA (First Inventor to File) Status** No	**Page** 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	**Title**	**Type**
HAO D MAI	Examiner	Telephonic
Ruby Chung	Attorney	
Tam Pham	Inventor	

Date of Interview: 11 January 2021

Issues Discussed:

Proposed Amendment(s)

Proposed amendments to recite "a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall..." among other amendments were discussed. At preliminary review, the proposed amendments appear as would overcome the current ground(s) of rejection under Anders in view of Hirsch. Applicant will file supplemental amendment.

/Hao D Mai/ Examiner, Art Unit 3772	

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

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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 14/228,057	Filing Date 03/27/2014	☐ 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 $40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $210 =	
☐ 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	01/27/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 21	Minus	** 20	= 1		x $50 =	50
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $240 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	50

		(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.	
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/JOHN W EPPS/
*** 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.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Doc Code: DIST.E.FILE **Document Description: Electronic Terminal Disclaimer - Filed**	PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce

Electronic Petition Request	**TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT**
Application Number	14228057
Filing Date	27-Mar-2014
First Named Inventor	Thien Nguyen
Attorney Docket Number	INCEP-001COD
Title of Invention	INTRAORAL DEVICE WITH SLIT

☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent Interest
Dryshield, LLC	100%

The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

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9788924

as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:
- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

◉ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request. ○ I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.	
Applicant claims the following fee status: ◉ Small Entity ○ Micro Entity ○ Regular Undiscounted I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.	
THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES I certify, in accordance with 37 CFR 1.4(d)(4) that I am: ◉ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application Registration Number 76809 ○ A sole inventor ○ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application ○ A joint inventor; all of whom are signing this request	
Signature	/Ruby L. Chung/
Name	Ruby L. Chung

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	14228057
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Ruby Lim Chung/Cheri Houle
Attorney Docket Number:	INCEP-001COD

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
STATUTORY OR TERMINAL DISCLAIMER	2814	1	170	170
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**170**

Doc Code: DISQ.E.FILE
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 14228057

Filing Date: 27-Mar-2014

Applicant/Patent under Reexamination: Nguyen

Electronic Terminal Disclaimer filed on January 27, 2021

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt

EFS ID:	41763034
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Ruby Lim Chung/Cheri Houle
Filer Authorized By:	Ruby Lim Chung
Attorney Docket Number:	INCEP-001COD
Receipt Date:	27-JAN-2021
Filing Date:	27-MAR-2014
Time Stamp:	17:23:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$170
RAM confirmation Number	E20211QH23327272
Deposit Account	501662
Authorized User	Cheri Houle

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	33556 940f14ccb6a82ac609fe66dc9c1f97f6a05f0386	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30042 78820b1095df6a426b02c71b61b289c52b7fd038	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	63598		

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Dryshield, LLC
INVENTOR(S):	Thien Nguyen, et al.
APPLICATION NO.:	14/228,057
FILED:	March 27, 2014
TITLE:	INTRAORAL DEVICE WITH SLIT
EXAMINER:	Hao D. Mai
ART UNIT:	3772
CONF. NO.:	1983
ATTY.DKT.NO.:	INCEP-001COD

MAIL STOP AMENDMENT
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

SUPPLEMENTAL RESPONSE

Examiner Mai:

Applicants submit herewith amendments to the claims, beginning on page two. An **examiner interview summary** begins on page **seven.** The **remarks** and **conclusion** appear on **page eight** and **eleven,** respectively. The present response supplements the response filed on August 5, 2020 ("*Response H*") in response to the office action dated May 19, 2020 ("*Office Action*").

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IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (currently amended) A mouthpiece comprising:

a main body ~~configured as a pocket~~ having a first end opposite a second end, the main body including a pocket having an interior ~~open space having~~, wherein the main body is configured in a shape wider at the first end and narrower at the second end, wherein the main body ~~connects to a suction connector portion at the first end, the shape defined by~~ comprises:

~~an anterior~~ a first wall ~~configured to face away from a back of a mouth when placed in the mouth of a patient, wherein the anterior wall is~~ defined by an exterior edge, the ~~anterior~~ first wall comprising a slit opening extending a longitudinal length parallel to a longitudinal and central axis of the main body, the longitudinal length extending from a middle location of the ~~anterior~~ first wall away from the first end and toward the second end of the main body, the slit opening allowing fluids exterior to the pocket to enter along the longitudinal length into the interior ~~open space~~ of the pocket,

a ~~posterior~~ second wall ~~configured to face towards the back of the mouth when placed in the mouth of the patient, wherein the posterior wall is~~ defined by an exterior edge that corresponds to the exterior edge of the ~~anterior~~ first wall, and ~~a side wall extending from the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall; and a transition portion connected to and extending from the main body at the second end, the transition portion having an extension of the pocket, the longitudinal length of the slit opening extending from the main body through the transition portion~~

a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the main body, the bridge structure extending a distance between the first wall and the second wall, wherein the

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protrusions of the bridge structure protrude in a wave shape comprising one or more crests and one or more troughs.

2. (currently amended) The mouthpiece of claim 1, wherein the ~~posterior~~ second wall further includes a stability bar protruding from [[an]] the interior surface of the ~~posterior~~ second wall and along the longitudinal and central axis of the main body, the stability bar aligned with the slit.

3. (cancelled)

4. (previously presented) The mouthpiece of claim 1, wherein the main body is formed by injection-molding as one piece.

5. (previously presented) The mouthpiece of claim 1, wherein a material used to form the main body is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

6. (currently amended) The mouthpiece of claim 1, wherein the ~~anterior~~ first wall and the ~~posterior~~ second wall have different thicknesses.

7. (currently amended) The mouthpiece of claim 1, wherein flexibility of material of the ~~anterior~~ first wall allows portions of the ~~anterior~~ first wall to be pulled open at the slit to expose the interior of the pocket.

8. (currently amended) The mouthpiece of claim 1, further comprising a cheek retractor portion connected to the ~~transition portion and~~ second end of the main body, the cheek retractor portion having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

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9. (cancelled)

10. (currently amended) The mouthpiece of claim 1, ~~further comprising a bridge structure comprising a~~ wherein the plurality of protrusions of the bridge structure ~~protruding~~ protrudes from the interior surface of the ~~posterior~~ second wall, wherein the protrusions do not attach to the ~~anterior~~ first wall, wherein the protrusions comprise a plurality of spaced contact points, and wherein spaces between the contact points are at troughs of the wave shape.

11. – 13. (cancelled)

14. (currently amended) The mouthpiece of claim 1, further comprising a suction connector portion ~~that connects~~ configured to connect the interior of the pocket to a vacuum source~~, wherein activation of the vacuum source applies a suction to the interior of the pocket, wherein the fluids that enter through the slit opening into the interior of the pocket are suctioned toward the vacuum source~~.

15. (currently amended) The mouthpiece of claim 1, further comprising a ~~detachable~~ mouth prop injection-molded in one piece.

16. (currently amended) The mouthpiece of claim 15, wherein the mouth prop is detachable ~~mouth prop~~ and comprises a bite block portion and a strap portion.

17. - 20. (cancelled)

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21. (new) A mouthpiece comprising:

a main body having a first end opposite a second end, the first end wider than the second end, the main body comprising:

a first wall extending from the first end to the second end,

a second wall at a distance from the first wall, the distance corresponding to a space between the first wall and the second wall, wherein the second wall also extends from the first end to the second end, and

a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface within the space between the first wall and the second wall, wherein the protrusions of the bridge structure protrude in a wave shape comprising one or more crests and one or more troughs;

a suction connector extending from the first end of the main body, wherein an evacuation conduit of the suction connector is in communication with the space between the first wall and the second wall; and

a cheek retractor at the second end of the main body.

22. (new) The mouthpiece of claim 21, wherein the protrusions of the bridge structure comprises a plurality of contact points corresponding to the crests of the wave shape, and wherein the troughs correspond to spaces between the contact points.

23. (new) The mouthpiece of claim 21, wherein the first wall and the second wall are bendable, and wherein the bridge structure keeps the first wall separated from the second wall during suction.

24. (new) The mouthpiece of claim 21, wherein at least one of the first wall and the second wall includes one or more perforations.

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25. (new) The mouthpiece of claim 21, further comprising a stability bar extending along a longitudinal axis of the main body between the first end and the second end, wherein a thickness of the stability bar reinforces a resilience of the main body.

26. (new) The mouthpiece of claim 21, wherein the main body is formed by injection-molding as one piece.

27. (new) The mouthpiece of claim 26, wherein at least one of the cheek retractor and suction connector is formed by injection-molding and integral with the main body.

28. (new) The mouthpiece of claim 26, further comprising a stability bar extending along a longitudinal axis of the main body between the first end and the second end, wherein the stability bar is formed by injection-molding and integral with the main body.

29. (new) The mouthpiece of claim 21, further comprising a mouth prop connected to the suction connector.

30. (new) The mouthpiece of claim 21, wherein the suction connector includes a cutout configured to interlock with a corresponding protrusion of a vacuum adapter.

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APPLICANT'S SUMMARY OF EXAMINER INTERVIEW

The Applicant's representative spoke with the Examiner on January 11, 2021 ("*Examiner Interview*") regarding the pending rejections and allowable subject matter to incorporate into the independent claims.

The Examiner agreed with the Applicant that the proposed amendments would overcome the present grounds for rejections and suggested further clarifying amendments. The Applicant has incorporated the Examiner's suggestions into the present amendment and hereby presents the same for formal entry and consideration.

The Applicant and the Applicant's representative thank the Examiner for her time and courtesy during the *Examiner Interview*. The Examiner is invited to contact Applicant's undersigned representative with any further suggestions to finalize the claims for allowance.

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REMARKS

Status of the Claims

Claims 1-18 are pending. Claims 1-3, 6, 7, 10, 12, and 18 been currently amended. New claims 21-30 are added. Support for the amended and new claims can be found in at least paragraph [0040] and FIGs. 1E and 5 of the *Specification*. The amended claims reflect subject matter to which the Applicant believes it is entitled to claim. As such, no new matter has been added.

Double Patenting

Claims 1-18 are rejected on the ground of nonstatutory double patenting over claims 1-15 of U.S. Patent No. 8,911,232. *Office Action*, 7.

In accordance with 37 CFR § 1.321(b) and the Examiner's suggestion in the *Office Action*, the Applicant has timely filed an appropriate terminal disclaimer concurrently with the present response. The Applicant therefore contends that the double patenting rejection has been cured and respectfully requests reconsideration and withdrawal of the double patenting rejection.

Rejections under 35 U.S.C. § 103

Claims 1-11 and 14-18 are rejected under 35 U.S.C. § 103 as being unpatentable over *Anders* (US Patent 3,768,477) in view of *Hirsch* (U.S. Patent Publication 2006/0063129). *Id.* at 2. The Applicant respectfully disagrees and presents the following remarks.

Claim 1 has been currently amended to recite as follows (emphasis added):

> **a bridge structure** that includes **a plurality of protrusions integral with and protruding from an interior surface of the main body**, the bridge structure extending a distance

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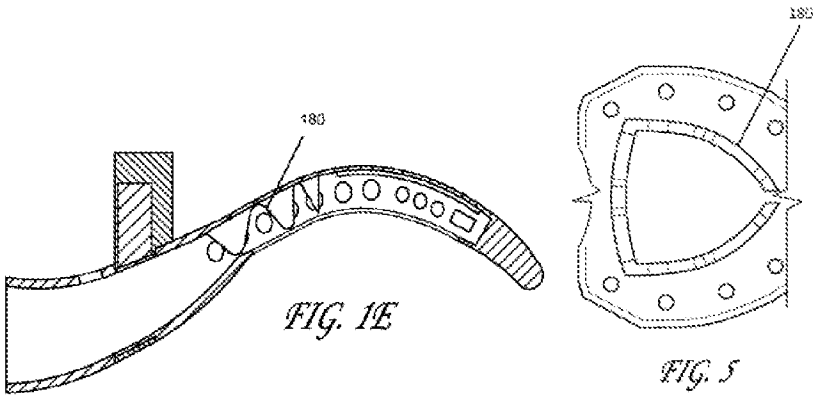
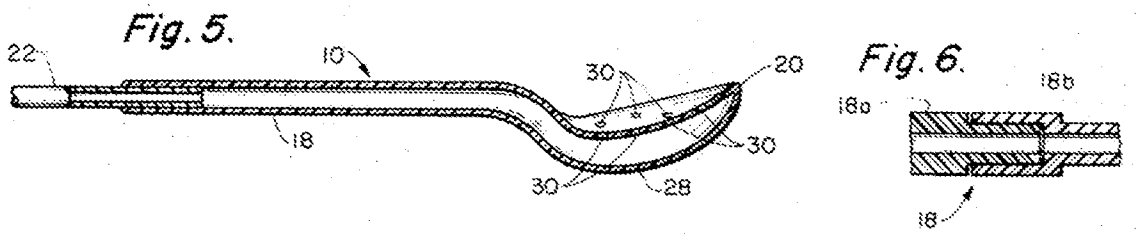
between the first wall and the second wall, wherein the protrusions of the bridge structure protrude in **a wave shape** comprising **one or more crests and one or more troughs**

The recited limitations find support in the *Specification*, which describes "a bridge structure 180 on an interior surface" that includes a "wave-like protrusion that generally corresponds to the distance between the anterior and posterior walls extending substantially (within 1 mm) the full distance at its crest and substantially flush to the surface at its trough." *Specification* at [0040]. In addition, FIGs. 1E and 5 (provided below) illustrate views of such a 'bridge structure' as follows:



Anders fails to disclose the claimed 'bridge structure.' *Anders* discusses a "handle 18," "connector 22," and "depressor portion 20" in FIG. 5 (provided below), which are "substantially hollow" without a plurality of protrusions integral with and protruding from an interior surface of the main body' as claimed. *Anders*, [2:48-56]. The "two portions" of "the handle 18" of *Anders* in FIG. 6 (provided below) similarly fail to disclose any plurality protrusions 'from an interior surface of the main body' as claimed.



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Hirsch similarly fails to disclose the claimed 'bridge structure.' *Hirsch* only discusses "the flaps 320, 33, 340, 350" that "all extend from and share a common, central spine 365" as illustrated in FIG. 19B below. *Hirsch*, [0082], FIG. 19B. Such "central spine 365" of *Hirsch* "extends longitudinally a majority of the length of the retractor 240 and divides the upper half 210 from the lower half 220 of the intraoral device 200," to attach "upper front flap 310," "upper rear flap 320," "lower front flap 330," and "lower rear flap 340." *Id.* In contrast, the claim recites that the 'bridge structure' only protrudes from 'an interior surface of the second wall' and 'not attached to the first wall.' Moreover, *Hirsch* fails to disclose any 'wave shape' protrusion 'protruding from an interior surface of the second wall,' that comprise 'one or more crests and one more troughs' as claimed.

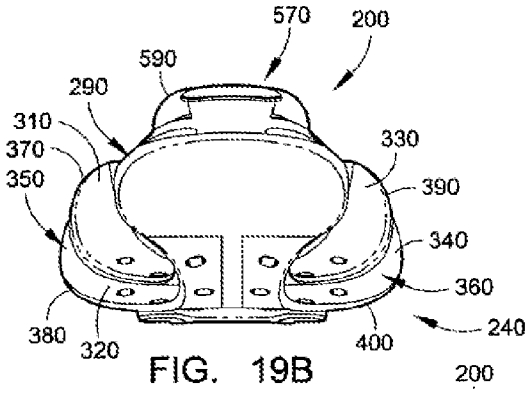

FIG. 19B

Thus, *Anders* and *Hirsch*– individually or in combination – fail to teach '**a bridge structure** that includes **a plurality of protrusions integral with and protruding from an interior surface of the main body**, the bridge structure extending a distance between the first wall and the second wall, wherein the protrusions of the bridge structure protrude in **a wave shape** comprising **one or more crests and one or more troughs**' as claimed.

In view of the above remarks, the independent claims are patentable over the cited references. Furthermore, because each of the dependent claims incorporates by reference all the limitations of the independent claim from which it depends, the dependent claims are allowable for at least the same reasons. The Applicant therefore respectfully requests that the rejections of the claims under 35 U.S.C. § 103 be withdrawn.

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CONCLUSION

Based on the foregoing remarks, the Applicant respectfully contends that all outstanding rejections and objections have been overcome. Accordingly, it is respectfully submitted that the present application is in condition for allowance.

If the Examiner has any questions regarding the case, the Examiner is invited to contact the Applicant's undersigned representative.

Respectfully submitted,
Dryshield, LLC

January 27, 2021

By: / Ruby Chung /
Ruby Chung (76,809)
POLSINELLI *LLP*
3 Embarcadero Center, Suite 2400
San Francisco, CA 94111
Phone: (415) 248-2121
patentdocketing@polsinelli.com

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Electronic Acknowledgement Receipt

EFS ID:	41762917
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Ruby Lim Chung/Cheri Houle
Filer Authorized By:	Ruby Lim Chung
Attorney Docket Number:	INCEP-001COD
Receipt Date:	27-JAN-2021
Filing Date:	27-MAR-2014
Time Stamp:	17:24:49
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		INCEP-001COD_SUPP_RESPONSE_1-27-21.pdf	339606 aede6c73a5863f66a7fa627b3158ad6faa9c985a	yes	11

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Supplemental Response or Supplemental Amendment	1	1
	Claims	2	6
	Applicant summary of interview with examiner	7	7
	Applicant Arguments/Remarks Made in an Amendment	8	11
Warnings:			
Information:			
	Total Files Size (in bytes):	339606	

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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.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,057	03/27/2014	Thien Nguyen	INCEP-001COD	1983

138718 7590 02/03/2021

Polsinelli LLP
3 Embarcadero Center
Suite 2400
San Francisco, CA 94111

EXAMINER	
MAI, HAO D	

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
02/03/2021	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):

sfpatent@polsinelli.com
uspt@polsinelli.com

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NOTICE REQUIRING EXCESS CLAIMS FEES	Application No. 14/228,057	Applicant(s) Nguyen et al.
	Art Unit OMBL	AIA (FITF) Status No

The excess claim(s) filed on 27 January 2021 is/are not accompanied by the appropriate payment of excess claims fees set forth in 37 CFR 1.16(h)-(j) or 1.492(d)-(f). Excess claims fees are required for each claim in independent form in excess of three (§ 1.16(h)), each claim (whether dependent or independent) in excess of twenty (note that § 1.75(c) indicates how multiple dependent claims are considered for fee calculation purposes) (§ 1.16(i)), and each application that contains a multiple dependent claim (§ 1.16(j)).

Since the application is not under a final rejection, applicant is given a time period of **TWO (2) MONTHS** from the mailing date of this notice to submit either: (1) the fee payment of $ 50.00 , or (2) an amendment in compliance with 37 CFR 1.121 that cancels the excess claim(s), in order to avoid ABANDONMENT. Extensions of this time period may be granted under 37 CFR 1.136, unless the excess claim(s) was/were presented in a preliminary amendment.

☐ 1. The funds in Deposit Account No. _____ are insufficient to cover the entire fee due. The balance is due within the time period set forth in this notice. See note below regarding the appropriate service charge.

☐ 2. The Credit Card payment to cover the entire fee due to Account _____ (**Card type + last 4 digits ONLY**) was refused. The balance is due within the time period set forth in this notice. See note below regarding the appropriate service charge.

☑ 3. The amendment that includes the excess claim(s) has not been entered, since applicant has failed to remit (or authorize charge to a Deposit Account or Credit Card) the fee as indicated on the attached Patent Application Fee Determination Record (PTO/SB/06). Remittance or authorization is due within the time period set forth in this notice .

☐ 4. The fee submitted in this application is insufficient. A balance of $ _____ is due for presentation of excess claims (37 CFR 1.16(h)-(j) or 1.492(d)-(f)).

☐ 5. Other.

Explanation (*Provide specific details of the required correction in order to assist the applicant. Indicate whether a service charge has been added to the fee due*): _____

THE AMOUNT OF THE FEE(S) DUE IS SUBJECT TO CHANGE, GENERALLY ON OCTOBER 1 OF EACH YEAR (37 CFR 1.16, 1.21 & 1.492). THE **AMOUNT OF THE FEE(S) DUE IS DETERMINED AS OF THE DATE A COMPLETE REPLY WITH THE APPROPRIATE FEE(S) IS RECEIVED BY THE OFFICE** (37 CFR 1.8 & 1.10). BECAUSE THE AMOUNT DUE IS SUBJECT TO CHANGE, IT IS RECOMMENDED THAT APPLICANT CHECK THE CURRENT FEE SCHEDULE WHICH IS AVAILABLE ON THE USPTOS WEBSITE AT: ***http://www.uspto.gov/web/offices/ac/qs/ope/fees.htm***

Service Charges: There is a $50 service charge for processing each payment refused (including a check returned unpaid) or charged back by a financial institution (37 CFR 1.21(m)). There is a $25.00 service charge for each month when the balance of a deposit account is below $1000 at the end of the month (37 CFR 1.21(b)(2)).

Technical Support Staff (TSS): /JOHN W EPPS/ Phone Number: (571)272-3006

Note to TSS: Please do NOT use this notice if the application is under a final rejection.

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

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 14/228,057	Filing Date 03/27/2014	☐ 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 $40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $210 =	
☐ 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	01/27/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 21	Minus	** 20	= 1		x $50 =	50
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $240 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	50

		(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.	
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/JOHN W EPPS/
*** 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.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Electronic Patent Application Fee Transmittal

Application Number:	14228057
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Ruby Lim Chung/Cheri Houle
Attorney Docket Number:	INCEP-001COD

Filed as Small 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	2202	1	50	50
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**50**

Electronic Acknowledgement Receipt

EFS ID:	41826318
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Ruby Lim Chung/Cheri Houle
Filer Authorized By:	Ruby Lim Chung
Attorney Docket Number:	INCEP-001COD
Receipt Date:	03-FEB-2021
Filing Date:	27-MAR-2014
Time Stamp:	15:02:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$50
RAM confirmation Number	E202123F02560372
Deposit Account	501662
Authorized User	Cheri Houle
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Fee Worksheet (SB06)	fee-info.pdf	29957 c44b5ac545487e4b2f81f827d4d6e5f321036641	no	2

Warnings:

Information:

Total Files Size (in bytes):	29957

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.

OK TO ENTER: /HDM/
05/03/2021

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Dryshield, LLC
INVENTOR(S):	Thien Nguyen, et al.
APPLICATION NO.:	14/228,057
FILED:	March 27, 2014
TITLE:	INTRAORAL DEVICE WITH SLIT
EXAMINER:	Hao D. Mai
ART UNIT:	3772
CONF. NO.:	1983
ATTY.DKT.NO.:	INCEP-001COD

MAIL STOP AMENDMENT
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

SUPPLEMENTAL RESPONSE

Examiner Mai:

Applicants submit herewith amendments to the claims, beginning on page two. An **examiner interview summary** begins on page **seven.** The **remarks** and **conclusion** appear on **page eight** and **eleven,** respectively. The present response supplements the response filed on August 5, 2020 ("*Response H*") in response to the office action dated May 19, 2020 ("*Office Action*").

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	239	A61C17/04,0208,043.cpc. and ((slit or openning or aperture or groove or channel) same (vacuum or suction or communication))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2021/05/03 12:27
L2	19	A61C17/04,0208,043.cpc. and ((longitudinal with opening) and suction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2021/05/03 12:27
S125	1	(12/284900).APP.	USPAT; USOCR	ADJ	OFF	2021/05/03 08:52
S126	57	("20040033468" | "20060063129" | "20070231773" | "20070259307" | "20080318183" | "2111859" | "2937445" | "3090122" | "4024642" | "4167814" | "4259067" | "4425911" | "4583527" | "4802851" | "4906188" | "4975057" | "5152686" | "5232362" | "5366489" | "5438976" | "5496363" | "5513986" | "5516286" | "5588836" | "5725370" | "5762496" | "5873718" | "5924866" | "6022214" | "6149430" | "6213772" | "6244866" | "6338627" | "6379147" | "6575746" | "6634884" | "6652276" | "6655960" | "6939134" | "6974321" | "6981870" | "7293990").PN. OR ("8029280").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2021/05/03 08:52
S127	58	("0594952" | "1004118" | "1067571" | "1152122" | "1516933" | "2671269" | "2731722" | "2924013" | "3090122" | "3512258" | "3777756" | "3924333" | "4024642" | "4701128" | "4975057").PN. OR ("5232362").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2021/05/03 08:56
S128	28	("1986751" | "3090122" | "3148449" | "3426430" | "3631598" | "3777756").PN. OR ("4024642").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2021/05/03 08:59

S129	30	("2436040" | "2574135" | "2603870" | "2830371" | "3102338" | "3256885" | "3453735").PN. OR ("3777756").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2021/05/03 09:02
S130	48	("1471207" | "20060088800" | "20060199147" | "2529499" | "2574135" | "3344523" | "3460255" | "3541583" | "3777756" | "4083115" | "4158916" | "4265621" | "5042473" | "5265591" | "5441410" | "5509802" | "5743736" | "6203321" | "6602072" | "6821118" | "D241984" | "D261677" | "D438933" | "D469847" | "D497667" | "D504947" | "D528653" | "D548335").PN. OR ("D677379").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2021/05/03 09:04
S131	2	(("3758950") or ("4167814")).PN.	US-PGPUB; USPAT	OR	OFF	2021/05/03 10:28
S132	57	("1053965" | "1155342" | "2701916" | "2823455" | "2873528" | "3456348" | "3802081" | "3924333" | "4024642").PN. OR ("4167814").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2021/05/03 10:32

EAST Search History (Interference)

<This search history is empty>

5/3/2021 12:28:26 PM
C:\Users\hmai1\Documents\EAST\Workspaces\14228057.wsp

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,057
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COD

Sheet	1	of	2

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number	Number-Kind Code[2] (If known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	2001/0008752	7/19/2001	Hirsch et al.	
		US-	2017/0156832	6/8/2017	Reyes	
		US-				
		US-				
		US-				
		US-				
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		US-				
		US-				
		US-				
		US-				
		US-				

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document: Country Code[3] Number[4] Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6

Examiner Signature	/Hao D Mai/	Date Considered	05/03/2021

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1]Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Based on Form PTO/SB/08A (08-03)

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3772
	Examiner Name	Hao D. Mai
Sheet 2 of 2	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T[2]
		PCT Application No. PCT/US2014/032892 International Preliminary Report on Patentability dated 6/14/6	
		PCT Application No. PCT/US2020/032228 International Search Report and Written Opinion dated 8/12/20	

Examiner Signature	/Hao D Mai/	Date Considered	05/03/2021

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

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Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2023-01057

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

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First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COD

Sheet	1	of	2

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2](If known)		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	D876,627	2/25/2020	Nguyen	
		US-				
		US-				
		US-				
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		US-				
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6

Examiner Signature	/Hao D Mai/	Date Considered	05/03/2021

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1]Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language translation is attached.

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If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PTO/SB/08A (08-03)

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2023-01057

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3772
	Examiner Name	Hao D. Mai
Sheet 2 of 2	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T[2]
		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Office Action mailed 1/10/20	
		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Office Action mailed 1/13/20	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Final Office Action mailed 1/10/20	

Examiner Signature	/Hao D Mai/	Date Considered	05/03/2021

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

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If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2023-01057

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.
14/228,057	03/27/2014	Thien Nguyen	INCEP-001COD	1983

138718 7590 05/05/2021

Polsinelli LLP
3 Embarcadero Center
Suite 2400
San Francisco, CA 94111

EXAMINER	
MAI, HAO D	

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
05/05/2021	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):

sfpatent@polsinelli.com
uspt@polsinelli.com

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Office Action Summary	Application No. 14/228,057	Applicant(s) Nguyen et al.	
	Examiner HAO D MAI	Art Unit 3772	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 01/27/2021.

☐ 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) 1-2,4-8,10,14-16 and 21-30 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) 1-2. 4-8, 10, 14-16, 21-30 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 _____ 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: _____.

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Terminal Disclaimer

2. The terminal disclaimer filed on 01/27/2021 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent Nos. 8,911,232 and 9,788,924 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 112

3. The following is a quotation of 35 U.S.C. 112(b):

> (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.
>
> The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph: The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 1-2, 4-8, 10, 14-16, and 21-30,** are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Claims 1 and 21 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being incomplete for omitting essential elements, such

omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: a side wall connecting the first/anterior wall and the second/superior wall as disclosed in the Application Figs. 1A, 2A

Claim 1 is rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: how are the first wall, the second wall, and the bridge structure, related to the pocket.

Claims 2 and 10 each recites the limitation "the interior surface of the second wall", which lacks sufficient antecedent basis in the claims. Note that the base claim 1 defines antecedent basis for "an interior surface of the main body" (line 24).

All dependent claims are rejected herein based on dependency.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1-2, 4, 6-8, 14-16, and 21-30, are rejected under 35 U.S.C. 102(b) as being anticipated by Black et al. (2009/0274991).**

Regarding claim 21, Black et al. discloses a mouthpiece (Fig. 26A) comprising a main body 640 having a first end 640a opposite a second end 649, the first end wider

640a than the second end 649 (Fig. 26A). The main body comprises a first wall 64b extending from the first end to the second end, a second wall 648a at a distance from the first wall, the distance corresponding to a space between the first wall and the second wall, wherein the second wall also extends from the first end to the second end (Fig. 26A).

The main body 640 further comprises a bridge structure 448c (shown as dashed lines 448c in Fig. 24A) that includes a plurality of protrusions 448c integral with and protruding from an interior surface within the space between the first wall and the second wall, wherein the protrusions of the bridge structure 448c protrude in a wave shape comprising one or more crests and one or more troughs (Figs. 24A and 26A). Note that Fig. 26A shows the protrusions/walls 448c themselves being crests and channels 443 formed therebetween are troughs.

The mouth piece further comprises a suction connector 546 extending from the first end of the main body, wherein an evacuation conduit 546a of the suction connector is in communication with the space between the first wall and the second wall (Fig. 25A; paragraph 131).

The mouthpiece further comprises a cheek retractor 640B at the second end 649 of the main body (Fig. 26A).

As to claim 22, the protrusions (distal ends) 448c of bridge structure 448c comprises a plurality of contact points corresponding to the crests of the wave shape; and the troughs (channels therebetween) corresponds to spaces between the contact points (Figs. 25A and 26A).

As to claim 23, Black et al. discloses the first wall and the second wall are bendable ("flexible" - abstract) wherein the bride structure keeps the first wall separated from the second wall during suction.

As to claim 24, at least one of the first wall and the second wall includes one or more perforations (Figs. 13, 25A).

As to claim 25, note the stability bar 545, 547 (Fig. 25D) extending along a longitudinal further comprising a stability bar extending along a longitudinal axis of the main body between the first end and the second end, wherein a thickness of the stability bar reinforces a resilience of the main body (Fig. 25; paragraph 137).

As to claim 26-28, note that the claim language "by injection-molding" is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and defined by the recited process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe,* 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Black et al. shows the main body is one piece, and at least one of the cheek retractor and the suction connector, or the stability bar 547, 545, is integral (that is, one-piece) with the main body (Figs. 25-26). The burden is shifted to applicant to show an unobvious difference between Black et al.'s device and the invention that would have resulted from the injection-molding process.

As to claims 29-30, Black et al. further discloses a mouth prop 10 connected to the suction connector 46 (Fig. 3A). The suction connector 46 includes a cutout

47 configured to interlock with a corresponding protrusion of a vacuum adapter. Note that the vacuum adapter and any further limitations thereof are not positively claimed as elements of the invention (mouthpiece) and thus are not given patentable weight.

Regarding claim 1, Black et al. discloses the invention as claimed as detailed above with respect to claim 21. Particularly to claim 1, Black et al. discloses the first wall and the second wall having corresponding (i.e. having generally similar shape or positioned corresponding to each other) exterior edges. Black et al. discloses the first wall 648b having a slit opening 641 (Fig. 26A) extending a longitudinal length parallel to a longitudinal and central axis of the main body; the longitudinal length extending from a middle location of the first wall from the first end and toward the second end of the main body. Note that the term "middle location" is broad and allows for broadest reasonable interpretation as any location in between the first end and second end. The slit opening 641 allows fluids exterior of the pocket to enter along the longitudinal length into the interior of the pocket (Fig. 26A).

As to claim 2, the second wall 648a has a stability bar 645 or 648e protruding from the interior surface of the second wall 648a and along the longitudinal and central axis of the main body; the stability bar aligned with the slit 641. Note that the claim does not define what constitutes as the interior surface of the second wall.

As to claim 4, the main body is shown being one-piece. Regarding the claim language "by injection-molding", see rejection of claims 26-28 above.

As to claim 6, the first wall and second walls are shown having different thicknesses.

As to claim 7, the first wall is disclosed to be made of flexible material (abstract) which allows for the slit to be pulled opened upon applied force.

As to claim 8, note the check retractor 640B at the second end 649 of the main body (Fig. 26A).

As to claim 14, note the suction connector portion 546 configured to connect the interior of the pocket to a vacuum source (Fig. 25A; paragraph 131).

As to claim 15, Black et al. further discloses a mouth prop 10 that is one-piece. Regarding the claim language "by injection-molding", see rejection of claims 26-28 above.

As to claim 16, the mouth prop 10 is shown being detachable and comprises a bite block portion 20 and a strap portion 12 (Fig. 2).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 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 of this title, 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.

8. **Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Black et al. in view of Hirsch et al. (2003/0134253).**

Black et al. fails to disclose the material forming the device being autoclavable silicone-based material. Hirsch discloses a mouthpiece device that is formed of a

flexible, translucent, high heat-resistant, autoclavable silicone-based material of Pebax (paragraph 49). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Black et al. by forming the mouthpiece device from flexible, translucent, high heat-resistant, autoclavable silicone-based material of Pebax as taught by Hirsch et al. to be a suitable alternative thermoplastic material for such mouth piece devices.

Response to Arguments

9. Applicant's arguments with respect to the amendment made to the claims have been considered but are moot because the new ground of rejection does not rely on any reference applied in the prior rejection of record for any teaching or matter specifically challenged in the argument.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hao D. Mai whose telephone number is (571) 270-3002. The examiner can normally be reached on Monday-Friday 8:00AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Cris Rodriguez, at (571) 272-4964. 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 http://pair-direct.uspto.gov. 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.

/Hao D Mai/
Examiner, Art Unit 3772

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,057	Nguyen et al.
	Examiner	**Art Unit**
	HAO D MAI	3772

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

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

CLAIM		DATE								
Final	Original	11/16/2015	05/31/2016	04/03/2017	10/30/2017	09/04/2018	03/18/2019	10/01/2019	05/11/2020	05/03/2021
	1	✓	✓	✓	✓	✓	✓	✓	✓	✓
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3	✓	✓	✓	✓	✓	✓	✓	✓	-
	4	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5	✓	✓	✓	✓	✓	✓	✓	✓	✓
	6	✓	✓	✓	✓	✓	✓	✓	✓	✓
	7	✓	✓	✓	✓	✓	✓	✓	✓	✓
	8	✓	✓	✓	✓	✓	✓	✓	✓	✓
	9	✓	✓	✓	✓	✓	✓	✓	✓	-
	10	✓	✓	✓	✓	✓	✓	✓	✓	✓
	11	✓	✓	✓	✓	✓	✓	✓	✓	-
	12	✓	✓	O	O	✓	✓	✓	✓	-
	13	✓	✓	O	O	✓	✓	✓	✓	-
	14	✓	✓	✓	✓	✓	✓	✓	✓	✓
	15	✓	✓	✓	✓	✓	✓	✓	✓	✓
	16	✓	✓	✓	✓	✓	✓	✓	✓	✓
	17	✓	✓	✓	✓	✓	✓	✓	✓	-
	18	✓	✓	✓	✓	✓	✓	✓	✓	-
	19	✓	✓	✓	-	-	-	-	-	-
	20	✓	✓	✓	-	-	-	-	-	-
	21									✓
	22									✓
	23									✓
	24									✓
	25									✓
	26									✓
	27									✓
	28									✓
	29									✓
	30									✓

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,057	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043, 046	11/16/2015	HDM
Updated Search	05/31/2016	HDM
Update Search	09/04/2018	HDM
Update Search	03/18/2019	HDM
Update Search	10/01/2019	HDM

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
433	91-92, 140	11/16/2015	HDM

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

/Hao D Mai/ Examiner, Art Unit 3772	

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,057	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor Search	11/16/2015	HDM
Review searches of parent case 14/100323	11/16/2015	HDM
Updated Search	05/31/2016	HDM
Update Search	04/03/2017	HDM
Update Search	10/30/2017	HDM
Update Search	09/04/2018	HDM
Update Search	03/18/2019	HDM
Update Search	10/01/2019	HDM
Update Search	05/11/2020	HDM
Update Search	05/03/2021	HDM

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

/Hao D Mai/ Examiner, Art Unit 3772	

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Substitute for Form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*				Application Number	14/228,057
				Filing Date	March 27, 2014
				First Named Inventor:	Thien Nguyen
				Art Unit	3772
				Examiner Name	Hao D. Mai
Sheet	**1**	**of**	**2**	Attorney Docket Number	INCEP-001COD

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Document Number Number-Kind Code[2](If known)		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	D666,726	9/4/2012	Davis et al.	
		US-	D735,858	8/4/2015	Hirsch et al.	
		US-	D737,964	9/1/2015	Jessop et al.	
		US-	D782,047	3/21/2017	Ritter	
		US-	D782,048	3/21/2017	Ritter	
		US-	D787,069	5/16/2017	Ritter	
		US-	D787,070	5/16/2017	Ritter	
		US-	D868,958	12/3/2019	Reyes	
		US-	1,731,322	10/15/2029	Riddle	
		US-	3,758,950	9/18/1973	Krouzian	
		US-	5,009,595	4/23/1991	Osborn	
		US-	5,588,836	12/31/1996	Landis et al.	
		US-	6,241,521	6/5/2001	Garrison	
		US-	9,968,341	5/15/2018	Ritter	
		US-	2020/0352680	11/12/2020	Nguyen	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Foreign Patent Document Country Code[3] Number[4] Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6
		WO 2020/231864	11/19/2020	Dryshield, LLC		

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 'Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3772
	Examiner Name	Hao D. Mai
Sheet 2 of 2	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Final Office Action mailed 11/27/20	
		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Final Office Action mailed 12/22/20	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Final Office Action mailed 4/29/21	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Office Action mailed 11/27/20	
		Docket No. INCEP-004DCOA U.S. Patent Application 29/477,888 Office Action mailed 3/21/17	

Examiner Signature		Date Considered	

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

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(71) Applicant: **DRYSHIELD, LLC** [US/US]; 11230 Grace Avenue, Suite B, Fountain Valley, CA 92708 (US).

(72) Inventors: **NGUYEN, Thien**; 11230 Grace Avenue, Suite B, Fountain Valley, CA 92708 (US). **PHAM, Tam, Thanh**; 11230 Grace Avenue, Suite B, Fountain Valley, CA 92708 (US). **NGUYEN, Ethan**; 11230 Grace Avenue, Suite B, Fountain Valley, CA 92708 (US). **NGUYEN, Lauren**; 11230 Grace Avenue, Suite B, Fountain Valley, CA 92708 (US).

(74) Agent: **CHUNG, Ruby** et al.; Polsinelli LLP, Three Embarcadero Center, Suite 2400, San Francisco, CA 94111 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,

(54) Title: DENTAL MOUTHPIECE

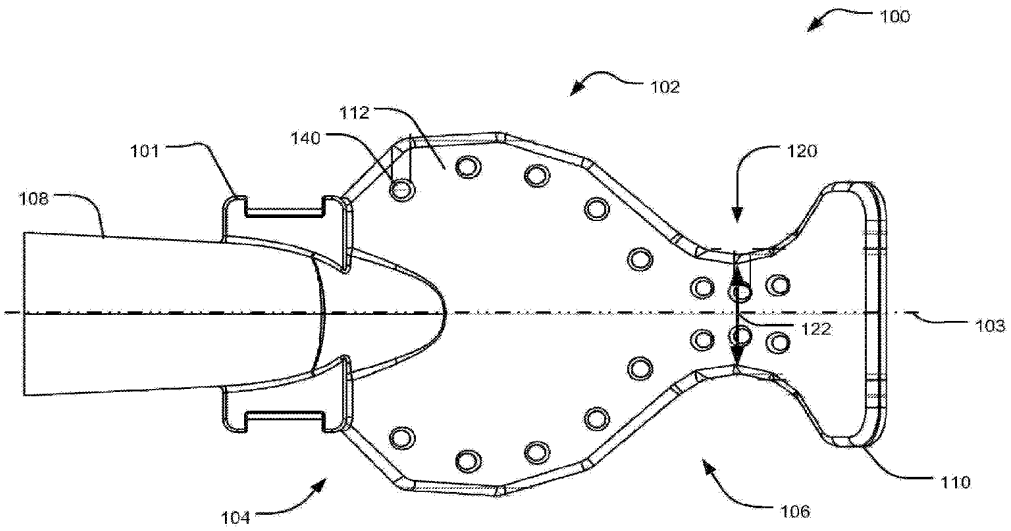

FIG. 1

(57) Abstract: A dental mouthpiece is provided that may be attached to a high-suction dental adapter for the purpose of assisting the dental staff during dental procedures through chair-side, hands-free suction, and isolation. Such a mouthpiece may comprise a main body portion, a cheek retractor portion, and a suction connector portion. In an embodiment, the main body portion, cheek retractor portion, and suction connector portion may be molded in one piece, preferably by injection molding. The main body portion has an anterior wall inside the curve and a posterior wall outside the curve, and an at least one connector connecting the anterior wall and the posterior wall. The main body portion has an anterior intervening wall and the posterior intervening wall in between the anterior and posterior walls. The anterior intervening wall and the posterior intervening walls have alternating crests and troughs.

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[Continued on next page]

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OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) **Designated States** *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

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DENTAL MOUTHPIECE

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims the priority benefit of U.S. Provisional Patent Application Serial No. 62/846,353 filed May 10, 2019 entitled, "Dental Mouthpiece," the disclosures of which are incorporated herein by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0002] The present invention generally relates to the field of dental mouthpieces. More specifically, the present invention relates to intraoral dental suction and isolation mouthpieces.

2. Description of Related Art

[0003] Various mouthpieces are currently used by dental health professionals, dental hygienists, and dental assistants in the field of dentistry. In the past, a dental patient has been treated by a traditional two-person team that comprises a dental professional and a dental assistant. Further, dental treatment may be provided by the team using many different types of dental equipment and materials. Such dental equipment and materials may include such items as an intraoral mirror, a bite block, a slow speed suction ejector, a high speed suction ejector, gauzes, cotton rolls, and dry angles. Each item of dental equipment may be used for different purposes, though some may be used in combination for some types of dental services. As such, a dental professional seeking to provide such dental services may need to use multiple items of such dental equipment. An important role of the dental assistant is therefore to assist the dental professional in coordinating the use of these multiple items of different equipment and materials.

[0004] There is, therefore, a need in the art for improved systems and methods of providing dental services in a more efficient, comfortable, and safe manner to the dental patient.

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SUMMARY OF THE CLAIMED INVENTION

[0005] Embodiments of a dental mouthpiece formed in a curve are disclosed. Such a mouthpiece may comprise of a main body portion at a central part of the curve having a first end and a second end, a suction connector portion connected to the main body portion at the first end, and a cheek retractor portion connected to the main body portion at the second end.

[0006] In some embodiments, the main body portion, the suction connector portion, and the cheek retractor portion may be molded in one piece, preferably by injection molding. In an exemplary embodiment, the mouthpiece may be made of a material that is flexible, translucent, conductive to injection molding, high heat-resistant, and autoclavable. Such a material may include silicone. Because the mouthpiece may be made of a high heat-resistant and autoclavable material, such a mouthpiece may be reusable.

[0007] The main body portion may comprise of an anterior wall inside the curve and a posterior wall outside the curve. The anterior wall and the posterior wall may define an interior space, within which at least one connector connects the anterior wall to the posterior wall. At least one anterior intervening wall extends from the anterior wall partially towards the posterior wall, and at least one posterior intervening wall extends from the posterior wall partially towards the anterior wall. The anterior intervening walls and the posterior intervening walls each has alternating crests and troughs.

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BRIEF DESCRIPTION OF THE FIGURES

[0008] FIG. 1 is a top view of the dental mouthpiece;

[0009] FIG. 2 is an isometric view of a dental mouthpiece shown in FIG. 1;

[0010] FIG. 3 is a rear view of the dental mouthpiece shown in FIG. 1;

[0011] FIG. 4 is a bottom view of the dental mouthpiece shown in FIG. 1;

[0012] FIG. 5 is a coronal top cross section view of the dental mouthpiece shown in FIG. 1; and

[0013] FIG. 6 is a side view of the dental mouthpiece shown in FIG. 1;

[0014] FIG. 7 is a side of the dental mouthpiece shown in FIG. 1 with an anterior wall of the mouthpiece pulled away from a posterior wall of the mouthpiece;

[0015] FIG. 8 is a transverse cross section view of the dental mouthpiece shown in FIG. 1 at the intersection between the suction connector and the main body.

[0016] FIG. 9 is a transverse cross section view of the dental mouthpiece shown in FIG. 1 at the intersection between the suction connector and the main body.

[0017] FIG. 10 is a longitudinal cross section view of an embodiment of the dental mouthpiece shown in FIG. 1 with a wall connector.

[0018] FIG. 11 is a longitudinal cross section view of an embodiment of the dental mouthpiece shown in FIG. 1 with column connectors.

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DETAILED DESCRIPTION

[0019] Embodiments of the present invention may include a mouthpiece that may be attached to a high-suction dental adapter for the purpose of assisting the dental staff during dental procedures through chair-side, hands-free suction, and isolation. Such a mouthpiece may comprise a main body portion, a cheek retractor portion, a suction connector portion, a stability bar, and a bite block. In some embodiments, any combination of the main body portion, cheek retractor portion, suction connector portion, a stability bar and bite block (and sub-portions thereof) may be molded in one piece, preferably by injection molding. In an exemplary embodiment, the mouthpiece may be made of a material that is flexible, resilient, at least translucent, and conducive to injection molding. Such a material may include thermoplastic elastomers known in the art.

[0020] FIG. 1 is a top view of the dental mouthpiece. A dental mouthpiece 100 includes a main body portion 102 having a first end 104 and a second end 106 opposite the first end 104. A longitudinal axis 103 may extend from the first end 104 to the second end 106. In the illustrated embodiment, a suction connector portion 108 may be coupled to the first end 104 and a cheek retractor portion 110 may be coupled to the second end 106, though in other examples the mouthpiece 100 may not have a suction connector portion 108 and/or a cheek retractor portion 110. A bite block 101 may also be integrated to the suction connector portion 108 near the first end 104 of the main body portion 102, though the bite block 101 may be positioned anywhere on the suction connector portion 108.

[0021] The main body portion 101 may include a neck 120 extending from the second end 106 to the cheek retractor portion 110. The neck 120 may have a width 122 that is less than a width of the main body portion 102, a width of the cheek retractor portion 110, and/or a width of the suction connector portion 108, though the width 122 may be greater than the width of the main body portion 102, the cheek retractor portion 110, and/or the suction connector portion 108 in other examples.

[0022] In the illustrated embodiment, the suction connector portion 108, the cheek retractor portion 110, the bite block 101, and the main body portion 102 are constructed as one piece,

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though in other examples each of the suction connector portion 108, the cheek retractor portion 110, the bite block 101, and/or the main body 102 may be separate pieces. For example, in some embodiments, the main body portion 102, the cheek retractor portion 110, and the suction connector portion 108 (and sub-portions thereof) may be molded as one-piece, preferably by injection molding and the bite block 101 may be a separate piece attachable to the suction connector portion 108. In an exemplary embodiment, the mouthpiece 100 may be made of a material that is flexible, resilient, translucent, and conducive to injection molding. Such a material may include thermoplastic elastomer.

[0023] FIG. 2 is an isometric view of a dental mouthpiece shown in FIG. 1. As illustrated in FIG. 2, the main body portion 102 may be shaped in a curve. Because the mouthpiece 100 is made of a flexible and resilient material (e.g., thermoplastic elastomer), the mouthpiece 100 may be bent when placed in a patient's mouth to conform to the shape of the mouth. When properly positioned, the suction connector portion 108 may protrude from one side of the patient's mouth, while the main body portion 102 lies against the back of the patient's mouth, and the cheek retractor portion 110 presses against the patient's cheek on the opposite side of the patient's mouth.

[0024] The cheek retractor portion 110 may be configured to press against and retract a patient's cheek away from the patient's teeth on an opposite side of the patient's mouth than the side from which the connection portion 108 extends. The flexibility of the material used to form the mouthpiece 100 allows for some bending when placed in the patient's mouth, but the resilience of the material further allows the mouthpiece 100 to apply pressure against a part of the patient's mouth when the mouthpiece 100 is released from bending. The material is resilient enough, for example, to allow the cheek retractor portion 110 to press against the inside of the patient's cheek with such pressure being sufficient to move the cheek away from the patient's teeth. The cheek retractor portion 110 is illustrated as a hammerhead distal region, which may be attached to the main body portion 102. The cheek retractor portion 110 may be solid in some examples, though may be hollow in other examples.

[0025] The main body portion 102 may comprise an anterior wall 112 on an inner part of the curve and a posterior wall 114 (also seen in FIG. 4) on an outer part of the curve. The

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anterior wall 112 may face a front of the patient's mouth and the posterior wall 114 may face a back of the patient's mouth. The anterior wall 112 and the posterior wall 114 of the main body portion 102 may be configured in parallel to each other. The anterior wall 112 has a defined shape that may correspond to the defined shape of the posterior wall 114, though the anterior wall 112 may be a different shape than the posterior wall 114 in other examples. The defined shape may be wider at the first end 104 and narrower at the second end 106. In some embodiments, the shape corresponds to a shield shape though the shape may be, for example, a square, a straight line arrow, a rectangle, a star, an oval, a circle, or a shape that generally conforms to the intraoral shape of the patient's mouth. Differently-sized mouthpieces may be provided for differently-sized mouths of adults and children. Part of the shape at the first end 104 may be formed with thicker walls than the rest of the main body portion 102. Such thickening may provide additional stability at the first end 104. When positioned within the mouth of a patient, the anterior wall 112 and the posterior wall 114 are capable of blocking an airway of the patient, while the bite block 101 is positioned between the patient's teeth, the suction connector portion 108 extends from one side of the patient's mouth, and the cheek retractor portion 110 presses against the cheek on the opposite side of the patient's mouth.

[0026] The main body portion 102 may also include openings 140 located on the anterior wall 112 and/or the posterior wall 114. Such openings 140 (e.g., perforations, slit, aperture, etc.) allow for suction of air, fluids, and small debris from the patient's mouth through the openings 140 and into the interior space 126, and into the suction connector portion 108 towards a suction source. The openings 140 may be positioned on a perimeter of the shape of the anterior wall 112 and/or the posterior wall 114. In the same example, the openings 140 may be positioned on either side of the neck 120 on the anterior wall 112 and/or the posterior wall 114. In another example, the openings 140 are apertures. In the same example, the apertures are each the same size, though in other examples some or all of the apertures may be different sizes.

[0027] FIG. 3 is a rear view of the dental mouthpiece shown in FIG 1. As visible in FIG. 3, the suction connector portion 108 may be oval-shaped and also attached to the main body portion 102. The suction connector portion 108 may be formed with thicker walls than the main body portion 102 and configured to attach to a high-suction vacuum adapter and to assist in

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transferring water, saliva, and debris from the interior space 126 to the external adapter for removal. The suction connector portion 108 may also include an internal stop to assist in sliding the mouthpiece onto the adapter to a desired depth.

[0028] The superior wall 116 in FIG. 3 may be used herein to refer to the side that rests against a roof of a patient's mouth when placed therein, and the inferior wall 118 may be used to refer to the side that rests against the floor of the patient's mouth. The superior wall 116 and inferior wall 118 may be formed identically, which may allow for the mouthpiece to change orientation such that the superior wall 116 may appear as the inferior wall 118 and vice versa, in the new orientation. When in use, the superior wall 116 and the inferior wall 118 of the main body portion 101 may serve to protect and separate the top of the mouth and the bottom of the mouth/tongue. In addition, the main body portion 101 may also serve to protect the back of the mouth (e.g., throat and airway) from falling debris.

[0029] FIG. 4 is a bottom view of the dental mouthpiece shown in FIG 1. The anterior wall 112 and the posterior wall 114 may be connected to each other at by at least one connector 124. In some embodiments, the suction connector portion 108 may have a cutout 142 (e.g., which may be shaped as a logo, a rectangular notch, a square notch, or a circular notch, or any shaped notch) providing extra interlocking with a corresponding protrusion (e.g., which may also be shaped as a logo, a rectangular protrusion, a square protrusion, or a circular protrusion, or any shaped protrusion) on an external high-suction vacuum adapter.

[0030] The bite block 101 may be reinforced by bite block openings 141 to create cavities in the bite block to result in a more stable bite block. In an embodiment, the bite block openings 141 may be two parallel rectangular openings that open at the bottom of the bite block. The bite block openings 141 may extend up to the suction connector portion 108 but not extending past the thickness of the suction connector portion 108.

[0031] FIG. 5 is a coronal top cross section view of the dental mouthpiece shown in FIG. 1. The main body portion 102 may include the bridge structure 136 that protrudes from the interior surface 135 of the posterior wall 114, as shown in FIG. 5 and also visible in FIGS. 7 and 8. In some embodiments, the bridge structure 136 may follow the shape of a logo (e.g., an arrowhead or shield). The bridge structure may have a gap at the tip of the arrowhead shape,

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creating an open arc instead of a point of an arrow. In some embodiments, the bridge structure 136 may be centrally-located in the main body portion 110 of the mouthpiece 100. In some examples, such bridge structure 136 may protrude from the interior surface 135 in a wave shape with bridge crests 137 and bridge troughs 138. In other embodiments, the bridge structure 136 may protrude in the shape of battlements or trapezoids. The bridge crests 137 provide a plurality of contact points that are generally separate from the anterior wall 112. The bridge crests 137 near the opening 146 of the suction connector portion 108 may have a greater height than the bridge crests 137 further from the opening 146, as visible in FIGS. 7 and 8. The bridge crests 137 near the opening 146 of the suction connection portion 108 may also be longer than the bridge crests 137 further away from the suction connection portion 108 as shown later in FIG. 8. The bridge troughs 138 may be substantially flush or extend above the interior surface 135. The bridge crests 137 contact the anterior wall 112 during suction to keep the anterior wall 112 spaced away from the posterior wall 114 during suction, thereby preventing collapse of the anterior wall 112 or the posterior wall 114 into the interior space 126 so that debris and/or water can be evacuated through the interior space 126. Meanwhile, the bridge troughs 138 provide gaps that allow for suction of air, fluids, and small debris through the bridge structure 136. In other examples, the bridge structure 136 may be smooth, may include sharp crests and sharp troughs, circular crests and circular troughs, square crests and square troughs, or shape or combination of shapes of crests and troughs.

[0032] The main body portion 102 may further include a stability bar 143, shown in FIG. 5 and also visible in FIG. 7, that extends from approximately the center of the main body portion 102 toward the cheek retractor portion 110. Such stability bar 143 may protrude from the interior surface 135 of the posterior wall 114 along the longitudinal axis 103. In an embodiment, the stability bar 143 begins from the open arc of the bridge structure 136 and continue along the longitudinal axis 103 towards the second end 106 past the neck 120 and ends before reaching the cheek retractor portion 110. The stability bar 143 may protrude from the interior surface 135 of the posterior wall 114 towards the interior surface 113 of the anterior wall 112. The stability bar 143 may be of any height ranging from the height of the interior space 126 or any height less than the interior space 126. In an embodiment, the stability bar 143 may have attached

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connectors 124 at specific locations that may attach the anterior wall 112 to the posterior wall 114. The connectors 124 on the stability bar 143 may assist with retraction, stability, support and curvature of the mouthpiece 100 during suction. In an exemplary embodiment, there may be multiple connectors 124 aligned with the stability bar 143 the stability bar 143, though the stability bar 143 may not be aligned with the at least one connector 124 in other examples.

[0033] FIG. 6 is a side view of the dental mouthpiece shown in FIG. 1. FIG. 6 illustrates the view of the inferior side that rests against the floor of the patient's mouth. The anterior wall 112 and the posterior wall 114 are spaced from each other and define the interior space 126. Other than the at least one connector 124, a stability bar 143, and a bridge structure 136, the interior space 126 is generally open and unobstructed, thereby allowing for suction to flow throughout the interior space 126. The interior space 126 between the anterior wall 112 and the posterior wall 114 generally follows the same defined shape of the anterior wall 112 and the posterior wall 114. In one example, the interior space 126 extends through the neck 120, though in other examples the interior space 126 may not extend through the neck 120. In yet other examples, the interior space 126 extends through the neck 120 and into the cheek retractor portion 120.

[0034] At least one anterior intervening wall 127 may extend from at least one edge 128 of the anterior wall 112 partially towards the posterior wall 114 and may have a thickness that extends from the at least one edge 128 to a mid-point between the anterior wall 112 and the posterior wall 114. The span of such anterior intervening wall 127 therefore may not extend the entire distance between the anterior wall 112 and the posterior wall 114. The thickness of such anterior intervening wall 127 may increase from the cheek retractor portion 110, through the neck 120, and to the first end 104. Such increasing depth may provide for increased rigidity at the first end 104. Such anterior intervening wall 127 may further be ridged in some embodiments, or have a smooth edge in other embodiments. In one example, the anterior intervening wall 127 includes an alternating crest 130 and trough 132. In the illustrated embodiment, the crests 130 are a flat surface and the troughs 132 are a cylindrical cutout surface, though the crests 130 and the troughs 132 may be any shape. In some examples, the crests 130 and the troughs 132 extend the entire depth of the anterior intervening wall 127, though in other examples the crests 130 and/or the troughs 132 may extend partially along the

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anterior intervening wall 127. The crests 130 and the troughs 132 may provide further retraction, stability, support and curvature to the mouthpiece 100.

[0035] The posterior wall 114 may have a corresponding at least one posterior intervening wall 134 that extends from at least one edge 133 of the posterior wall 114 and partially extends towards the anterior wall 112. The posterior intervening wall 134 may likewise exhibit ridges that are the same, a mirror image, or different from the anterior intervening wall 127. In one example, the ridges of the anterior intervening wall 127 may be aligned with the ridges of the posterior intervening wall 134, as shown in FIG. 6. In combination, the anterior intervening wall 127 and the posterior intervening wall 134 and their respective aligned ridges may form an open mesh between the anterior wall 112 and the posterior wall 114. Such open mesh may follow the edges 128, 133 of each of the anterior wall 112 and the posterior wall 114 from the first end 104 to the second end 106. The open mesh between the anterior intervening wall 127 and the posterior intervening wall 134 allows for suction of air, fluids, and small debris from patient's mouth, through the mesh into the interior space 126 and into the suction connector portion 108 towards a suction source.

[0036] The anterior intervening wall 127 may join with the posterior intervening wall 134 at the superior wall 116 and the inferior wall 118 at near the suction connector portion 108 of the main body at the first end 104. The anterior intervening wall 127 may also join with the posterior intervening wall 134 at the superior wall 116 and the inferior wall 118 near the cheek retractor portion 110 at the second end 106. In some embodiments, the anterior intervening wall 127 may join with the posterior intervening wall 134 at the cheek retractor portion 110.

[0037] FIG. 7 is a side of the dental mouthpiece shown in FIG. 1 with an anterior wall of the mouthpiece pulled away from a posterior wall of the mouthpiece. The at least one connector 124 may span the distance between the anterior wall 112 and the posterior wall 114 within the interior space 126. In other words, the connector 124 may be attached to an interior surface 135 of the posterior wall 114 and to an interior surface 113 of the anterior wall 112. The at least one connector 124 may provide structural rigidity to the mouthpiece 100 and may be a pillar, column, wall, or the like. In the illustrated example, the at least one connector 124 includes three connectors, each in the shape of a pillar and linearly spaced from each other.

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[0038] FIG. 8 is a transverse cross section view of the dental mouthpiece shown in FIG. 1. The bridge crests 137 near the opening 146 of the suction connector portion 108 may have a greater height than the bridge crests 137 further from the opening 146. The bridge crests 137 near the opening 146 of the suction connection portion 108 may also be longer than the bridge crests 137 further away from the suction connection portion 108.

[0039] FIG. 9 is a transverse cross section view of the dental mouthpiece in FIG. 1. FIG 9 illustrates where the suction connector attaches to the main body. As visible in FIG. 9, the suction connector portion 108 may be oval-shaped and also attached to the main body portion 102 in a seamless transition until the main body reaches the bridge structure 136, where the bridge crests 137 and the bridge troughs 138 may partially block the opening of the main body portion 102 near the suction connector portion 108. The bite block 101 is attached on the outside of the suction connector portion 108 such a manner that the bite block does not interrupt the opening of the suction connector potion 108.

[0040] The suction connector portion 108 may include an opening 146 (also shown in FIG. 5), that opens into an interior space 126 of the main body portion 102 to allow for fluid communication between the interior space 126 and the suction connector portion 108. At least one suction connector portion wall 144 may extend from the anterior wall 112 to the posterior wall 114 near the opening 146 of the suction connector portion 108 to prevent collapse of the anterior wall 112 and the posterior wall 114 during suctioning. The at least one suction connector portion wall 144 includes a pair of walls positioned on either side of the opening 146 of the suction connector portion 108.

[0041] The bite block 101 may include bite block crests 147 and bite block troughs 148 on either sides of the bite block to create greater traction and support for the bite block. In an embodiment, the bite block crests 147 and bite block troughs 148 may create jagged shape or wave shape on either sides of the bite block, although the bite block crests 147 and bite block troughs 148 may be in any shape.

[0042] FIG. 10 is a cross section view of an embodiment of the dental mouthpiece shown in FIG. 1 with a wall connector. In this embodiment, the connector 124 connects the anterior wall 112 with the posterior wall 114 at the longitudinal axis 103 as a solid wall. The connector 124

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extends from the neck 120 at the second end 106 some distance away from the cheek retractor portion 110 towards the first end 104 along the longitudinal axis 103 and stops near the opening of the bridge structure 136 around the mid-point of the main body portion 102. In other embodiment, the connector 124 may extend along the longitudinal axis 103 and stop anywhere within the interior space 126 of the main body portion.

[0043] FIG. 11 is a longitudinal cross section view of an embodiment of the dental mouthpiece shown in FIG. 1 with column connectors. In this embodiment, the connector 124 connects the anterior wall 112 with the posterior wall 114 at the longitudinal axis 103 as three evenly spaced cylindrical pillars in line with the stability bar 143. A first connector is positioned in the main body portion 102, a second connector is positioned near the neck 120, and a third connector is spaced near the cheek retractor portion 110. The linear spacing of the three connectors may provide additional rigidity to the neck 120, while maintaining a narrow width 122 of the neck 120. In other examples, such connectors 124 may be located in the area where a positioned mouthpiece 100 begins to wrap from one side of the mouth, to the back of the mouth, then to the other side of the mouth, thereby assisting in shaping the mouthpiece 100 to the general intraoral shape of a patient's mouth. In other examples, the at least one connector 124 may include one connector, two connectors, or more than two connectors and each connector may be positioned anywhere on the mouthpiece 100. In one example, the at least one connector 124 is a rib that extends from the main body portion 102, through the neck 120, and to the cheek retractor portion 110.

[0044] The mouthpiece as described herein may be used with a one-piece, autoclavable, high-suction vacuum adapter. Such a high-suction vacuum body adapter may be made of a single homogenous material. Having a single lever design, such a vacuum adapter may function in the same manner as all the current high-suction vacuum evacuators and saliva ejectors in controlling the removal of water, saliva, and debris from the oral cavity to the outside vacuum source. The single lever may be designed to control the removal of water, saliva, and debris from the at least partially enclosed so main body through a single, large evacuation conduit within the suction connector portion.

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[0045] While various embodiments have been described above, it should be understood that they have been presented by way of example only, and not limitation. The descriptions are not intended to limit the scope of the invention to the particular forms set forth herein. Thus, the breadth and scope of a preferred embodiment should not be limited by any of the above-described exemplary embodiments. It should be understood that the above description is illustrative and not restrictive. To the contrary, the present descriptions are intended to cover such alternatives, modifications, and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims and otherwise appreciated by one of ordinary skill in the art. The scope of the invention should, therefore, be determined not with reference to the above description, but instead should be determined with reference to the appended claims along with their full scope of equivalents.

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CLAIMS

WHAT IS CLAIMED:

1. A dental mouthpiece formed in a curve, the dental mouthpiece comprising:

a main body portion at a central part of the curve having a first end and a second end, the main body portion having an anterior wall inside the curve and a posterior wall outside the curve, the anterior wall and the posterior wall defining an interior space, at least one connector connecting the anterior wall to the posterior wall, at least one anterior intervening wall extending from the anterior wall partially towards the posterior wall, and at least one posterior intervening wall extending from the posterior wall partially towards the anterior wall, the at least one anterior intervening wall and the at least one posterior intervening wall each having alternating crests and troughs;

a suction connector portion connected to the first end, the connector portion connecting the interior space to a vacuum suction source; and

a cheek retractor portion connected to the second end.

2. The mouthpiece of claim 1, wherein the at least one connector is a cylindrical shaped pillar.

3. The mouthpiece of claim 1, wherein the at least one connector is a wall spanning longitudinally in the main body portion in the interior space.

4. The mouthpiece of claim 1, further comprising a bridge structure in the interior space protruding from the posterior wall, wherein the protrusions are battlement-shaped, with spaced crests.

5. The mouthpiece of claim 4, wherein the protrusions near the suction connector is in greater height and length.

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6. The mouthpiece of claim 4, wherein spaces between the crests are troughs of the battlement-shape.

7. The mouthpiece of claim 1, wherein the alternating crests and troughs on the anterior intervening wall and the posterior intervening wall are semi-circle shaped.

8. The mouthpiece of claim 1, wherein the anterior intervening wall and the posterior intervening wall have varying heights to maintain integrity of the main body portion.

9. The mouthpiece of claim 1, wherein the troughs of the anterior intervening wall and the posterior intervening wall decrease in size as the troughs approach the cheek retractor portion.

10. The mouthpiece of claim 1, wherein the anterior intervening wall and the posterior intervening wall meet at a point where the suction connector meets the main body.

11. The mouthpiece of claim 1, wherein the anterior intervening wall and the posterior intervening wall meet at a point where the main body meets the cheek retractor portion.

12. The mouthpiece of claim 1, further comprising a bite block integrated to the suction connector portion, wherein the bite block provide additional crush-resistance and decreased compressibility during biting by a patient.

13. The mouthpiece of claim 1, wherein the main body portion, the suction connector portion, and the cheek retractor portion are formed by injection-molding as one piece.

14. The mouthpiece of claim 1, wherein a material that forms the main body, the suction connector portion, and the cheek retractor portion is a flexible, translucent, high heat-resistant, autoclavable silicon-based material.

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15. The mouthpiece of claim 1, wherein the posterior wall further includes a stability bar protruding from an interior surface of the posterior wall and along a longitudinal axis of the main body.

16. The mouthpiece of claim 15, wherein the at least one connector lies evenly spaced along the stability bar.

17. The mouthpiece of claim 1, wherein the suction connector portion comprises a cutout corresponding to a protrusion on a vacuum adapter interlocking fit.

18. The mouthpiece of claim 1, where in the suction connector portion connects to a vacuum source, wherein activation of the vacuum source provides suction of fluids from the interior space of the main body.

19. The mouthpiece of claim 18, wherein the activation of the vacuum source draws fluids from an exterior of the main body through the crests and troughs of the anterior intervening wall and the posterior intervening wall, into the interior space of the main body.

20. The mouthpiece of claim 1, wherein the cheek retractor portion includes a surface that applies pressure based on resilience of the cheek retractor portion.

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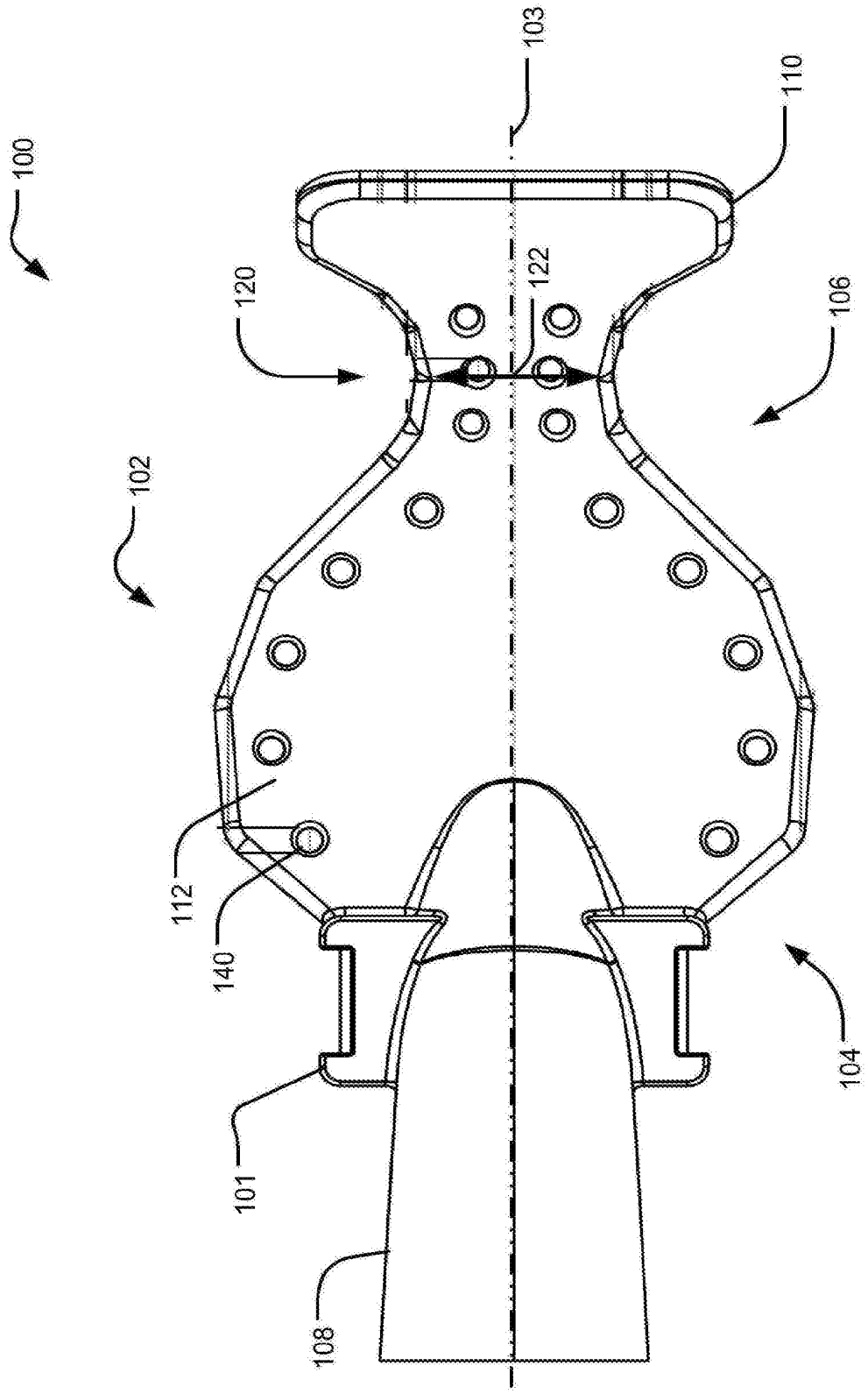

FIG. 1

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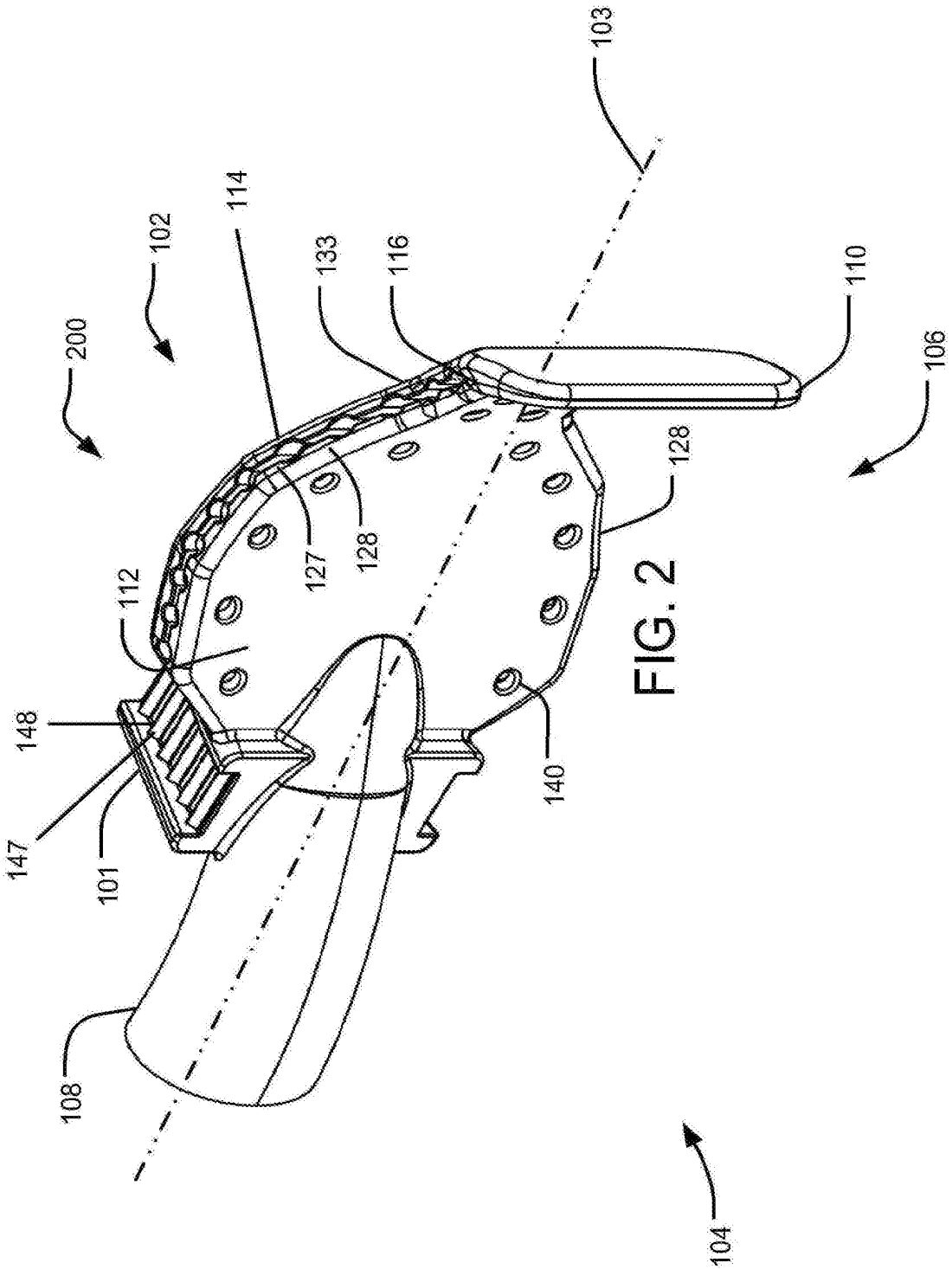

FIG. 2

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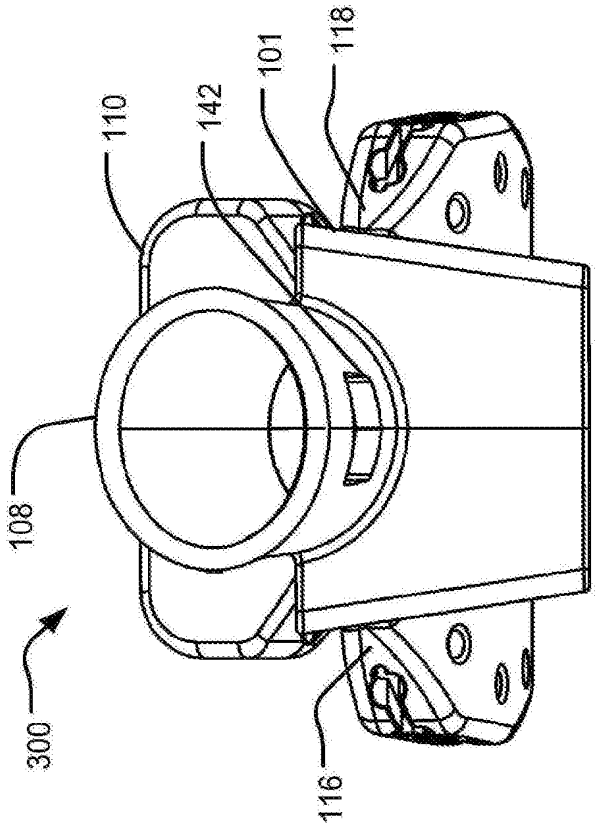

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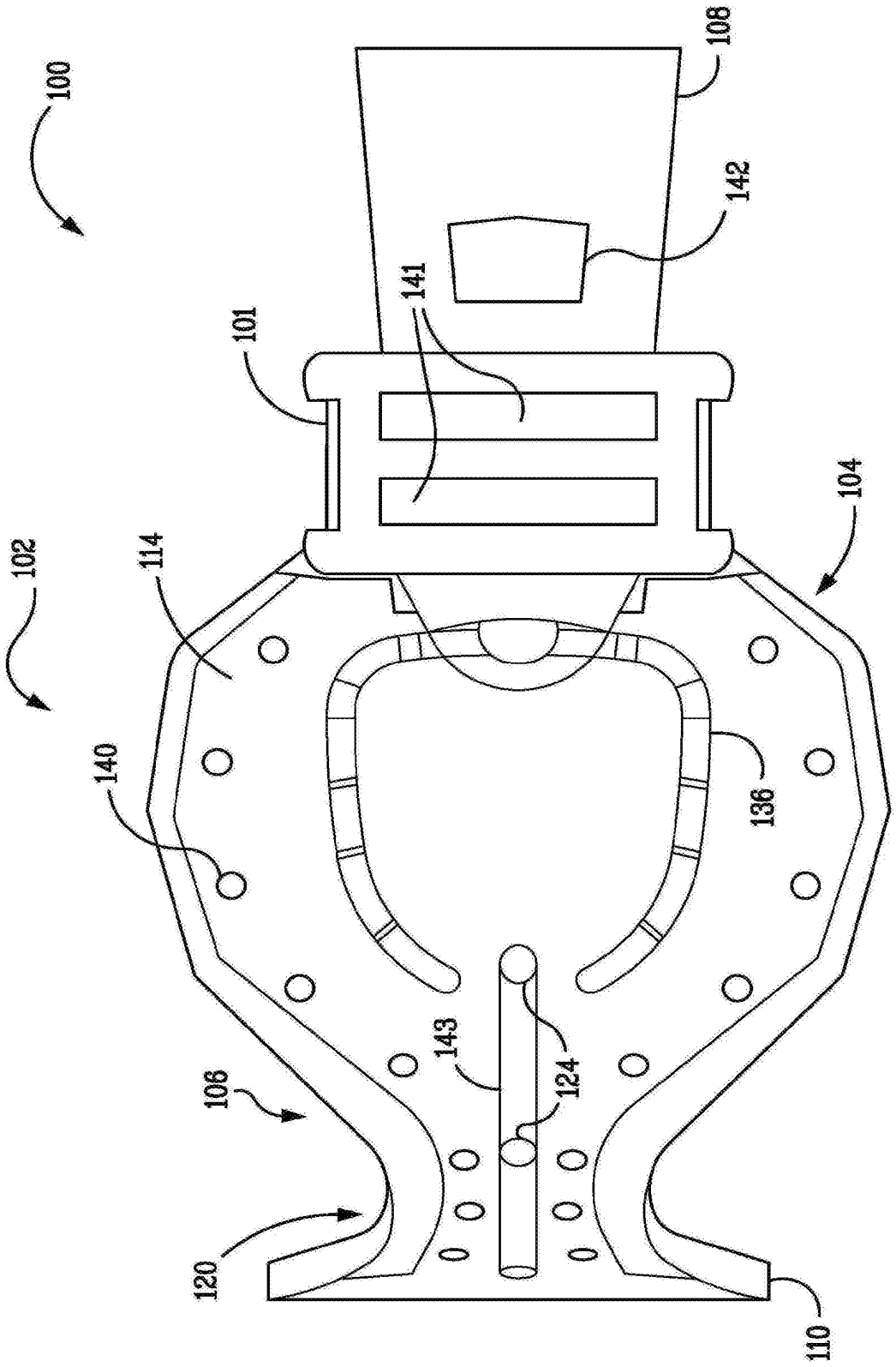

FIG. 4

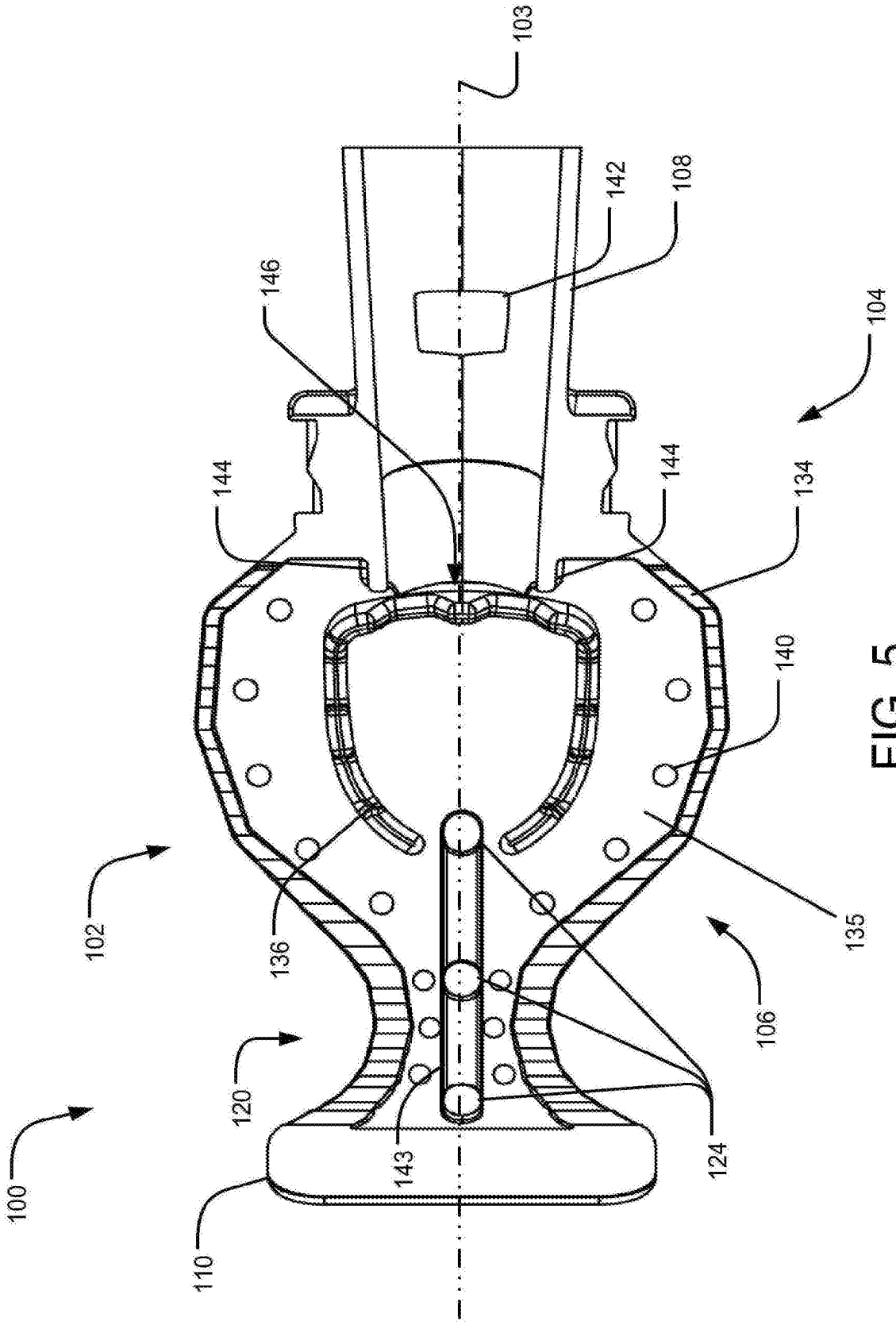
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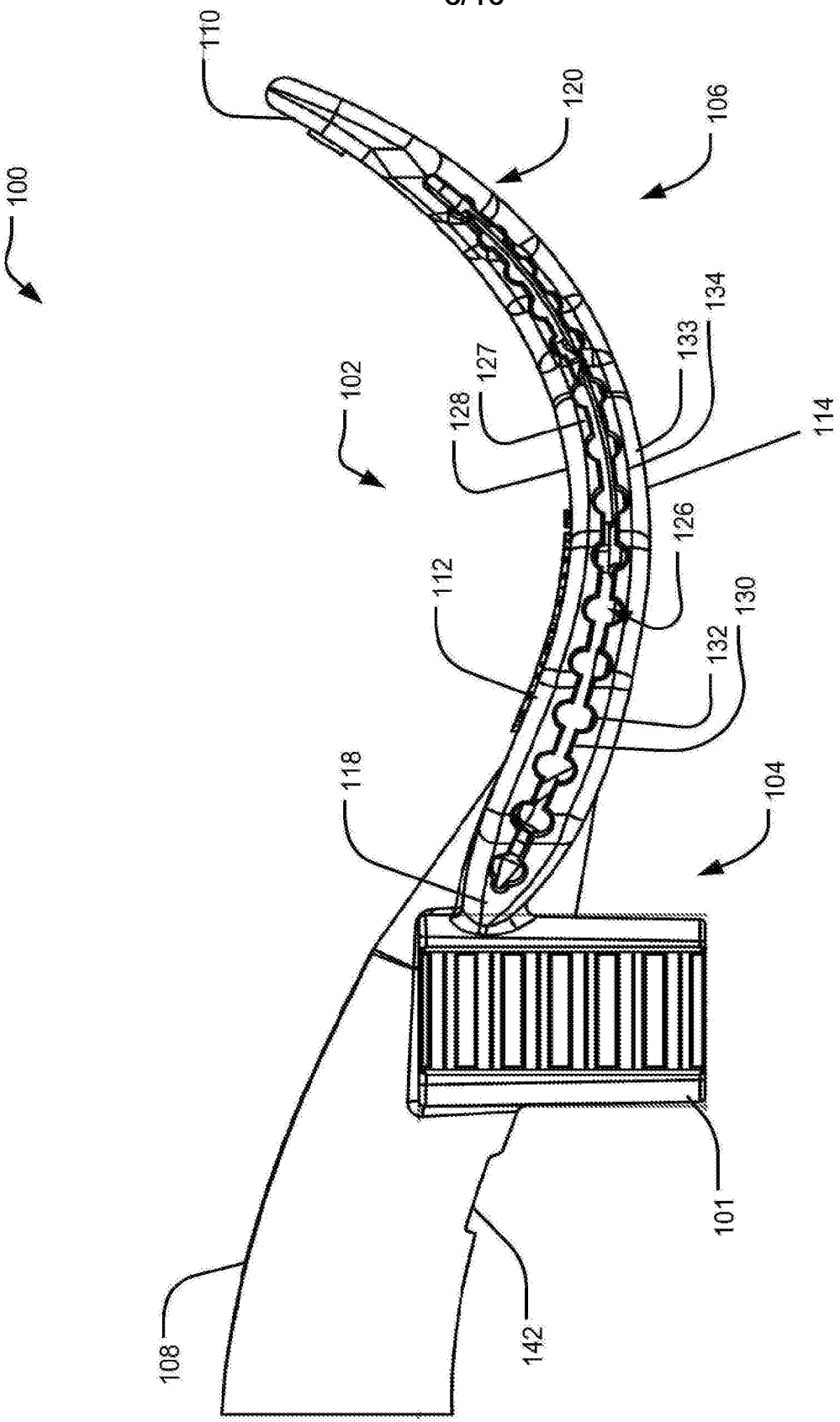
FIG. 5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142
101

FIG. 6

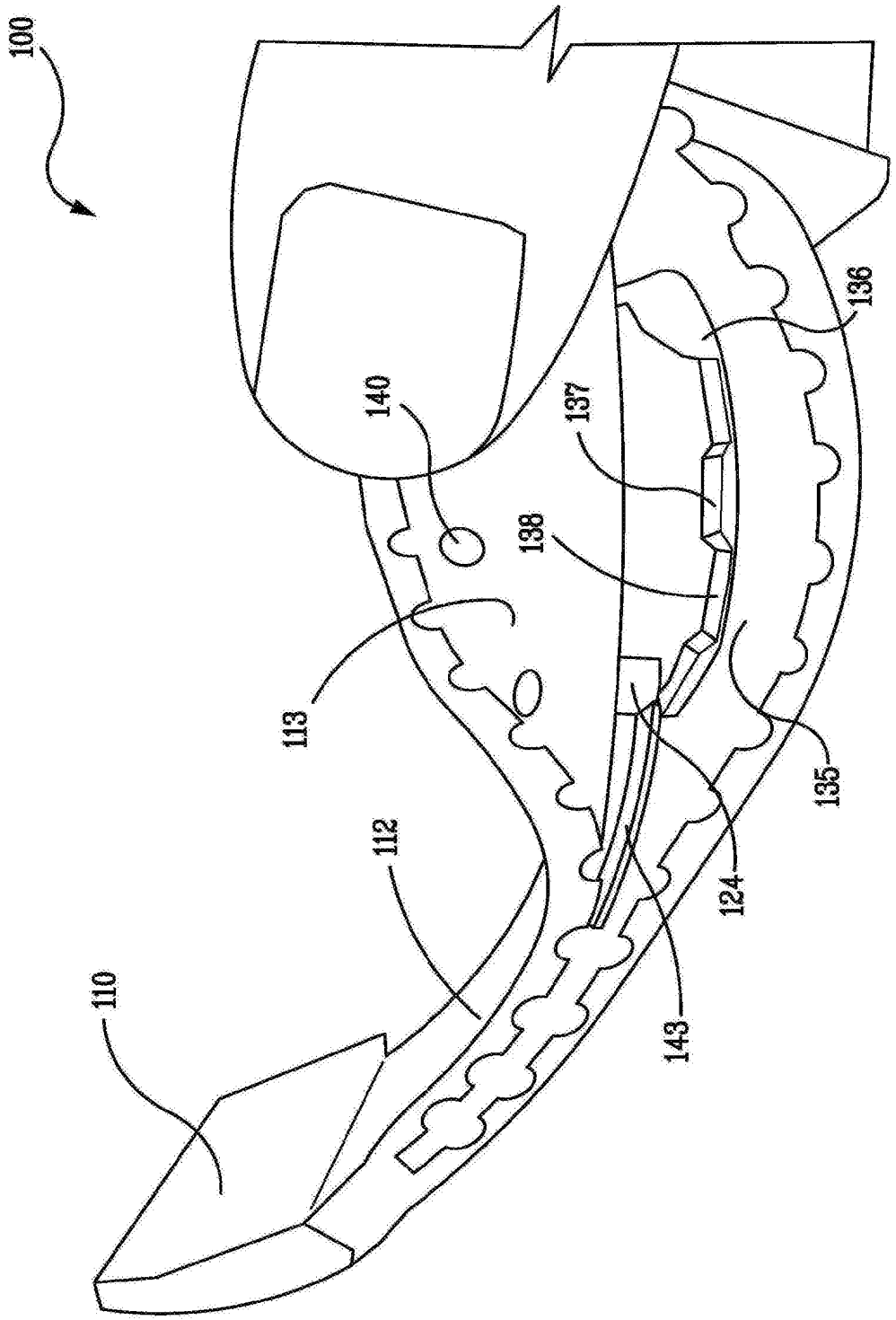

FIG. 7

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

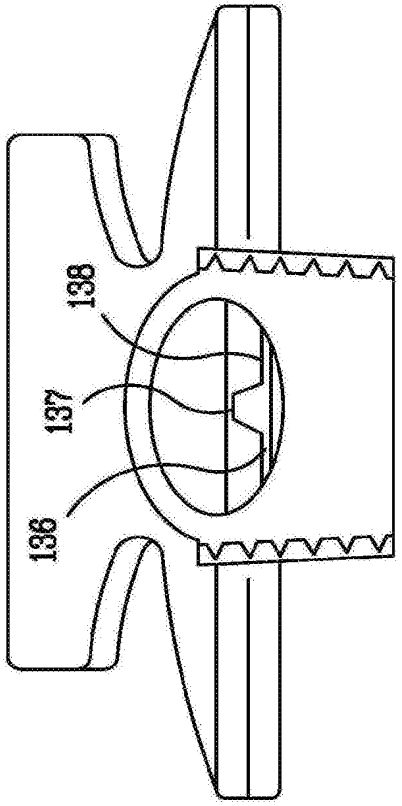

FIG. 8

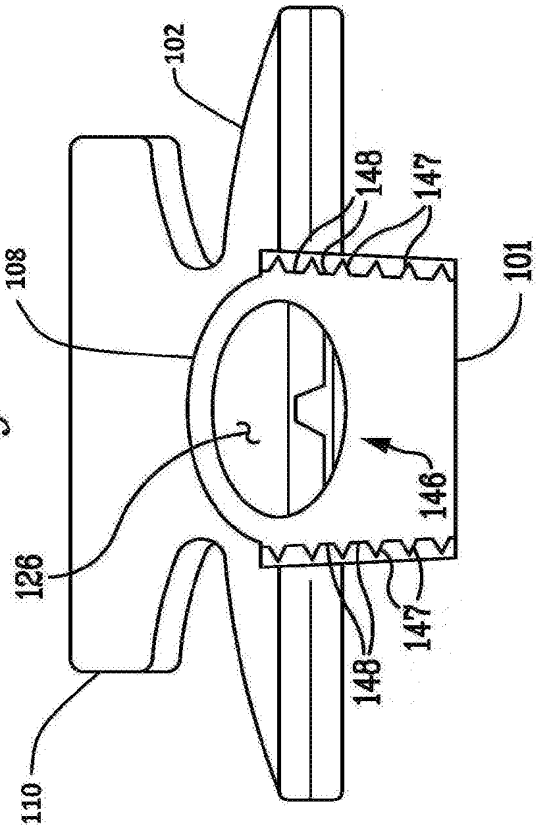

FIG. 9

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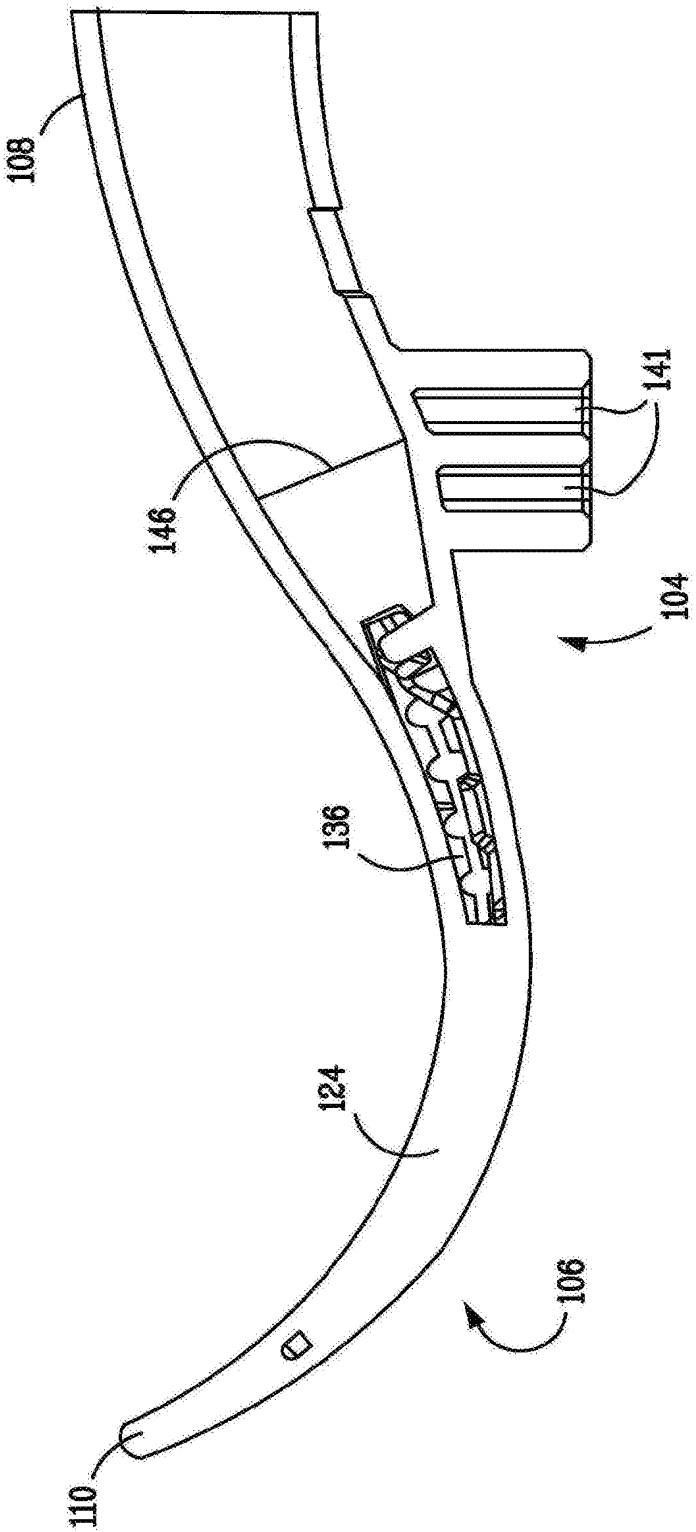

FIG. 10

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

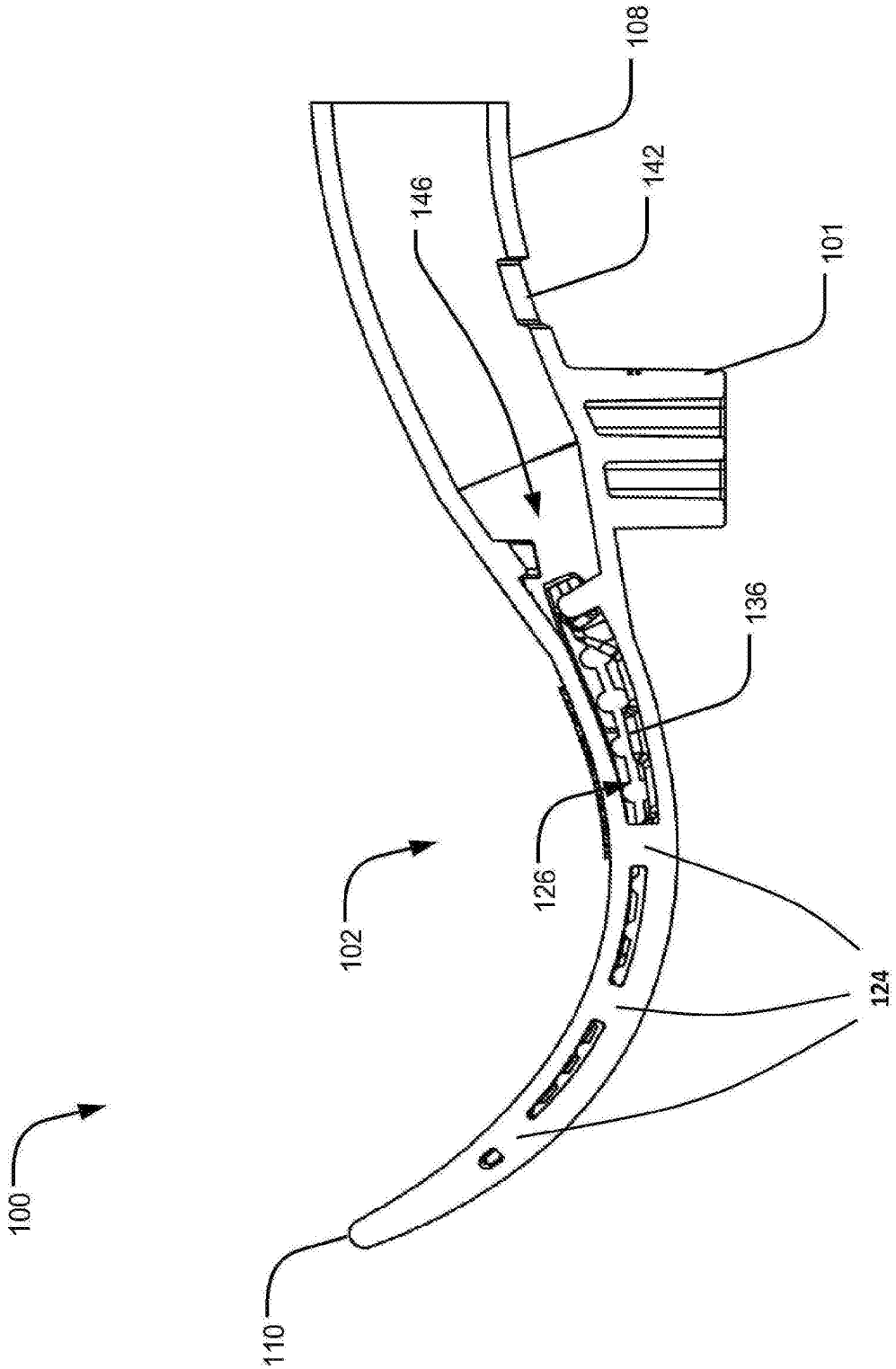

FIG. 11

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 20/32228

A. CLASSIFICATION OF SUBJECT MATTER

IPC - A61B 1/24, A61C 17/00, A61C 17/06, A61C 17/10, A61C 5/14 (2020.01)

CPC - A61B 1/24, A61C 17/00, A61C 17/06, A61C 17/10, A61C 5/14, A61C 5/90

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
See Search History document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
See Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2017/0156832 A1 (Reyes) 8 June 2017 (08.06.2017), entire document	1-20
Y	US 2014/0212838 A1 (Incept, Inc.) 31 July 2014 (31.07.2014), entire document	1-20
A	US 2015/0335409 A1 (Innerlite, Inc.) 26 Novemebr 2015 (26.11.2015), entire document	1-20
A	US 2009/0274991 A1 (Black et al.) 5 November 2009 (05.11.2009), entire document	1-20
A	US 2001/0008752 A1 (Hirsch et al.) 19 July 2001 (19.07.2001), entire document	1-20

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"D" document cited by the applicant in the international application
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
27 JULY 2020	12 AUG 2020
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	Authorized officer Lee Young Telephone No. PCT Helpdesk: 571-272-4300

Form PCT/ISA/210 (second sheet) (July 2019)

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Electronic Patent Application Fee Transmittal

Application Number:	14228057
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Ruby Lim Chung/Lea Fong
Attorney Docket Number:	INCEP-001COD

Filed as Small 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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	130	130
		Total in USD ($)		**130**

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Electronic Acknowledgement Receipt

EFS ID:	42696603
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Ruby Lim Chung/Lea Fong
Filer Authorized By:	Ruby Lim Chung
Attorney Docket Number:	INCEP-001COD
Receipt Date:	12-MAY-2021
Filing Date:	27-MAR-2014
Time Stamp:	18:51:04
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$130
RAM confirmation Number	E20215BI51191218
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	Transmittal Letter	INCEP-001COD_IDS_Statement_5-12-21.pdf	96940 f7aae488226640c41680f3fadb7256bef0835814	no	2
Warnings:					
Information:					
2	Transmittal Letter	INCEP-001COD_List_of_Copending_Apps_5-12-21.pdf	101302 544488326a8b6a04c9792d9878a2a5d7ed68ff6c	no	1
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COD_IDS_1449_5-12-21.pdf	224811 2cfd57b2cefaf79b967ac7b523d93457d816f43a	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
4	Foreign Reference	WO_2020231864.pdf	1224937 94e93fe92cca10548ae9e2f8b8607c11d618a5ef	no	29
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	30272 77c907bcf6595fc1401b1d5622271065a6d53b47	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1678262		

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.

PATENT
INCEP-001COD

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772 | Examiner: Hao D. Mai

Serial No.: 14/228,057 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 1983 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH SLIT

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56 and 1.97-1.98

Examiner:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicant's duty of disclosure as defined by 37 C.F.R. § 1.56.

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No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference an admission that it is prior art or pertinent to this application.

Respectfully submitted,
POLSINELLI LLP

Dated: May 12, 2021

By: _____/Ruby L. Chung/_____
Ruby L. Chung (Reg. No. 76,809)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
patentdocketing@polsinelli.com

PATENT
INCEP-001COD

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772

Examiner: Hao D. Mai

Serial No.: 14/228,057

Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 1983

Customer No.: 138718

Title: INTRAORAL DEVICE WITH SLIT

List of Co-Pending Patents or Patent Applications That May Be Directed Towards Similar Subject Matter

Examiner's Initials	Application Number	Docket Number	First-Named Inventor	Title	Filing Date
	29/782,645	INCEP-006D	Thien Nguyen	MOUTHPIECE	May 7, 2021
	29/780,960	INCEP-007D	Thien Nguyen	MOUTHPIECE MOUTH PROP	April 27, 2021
	29/782,638	INCEP-008D	Thien Nguyen	MOUTHPIECE	May 7, 2021
	29/782,644	INCEP-009D	Thien Nguyen	MOUTHPIECE	May 7, 2021
	29/782,643	INCEP-010D	Thien Nguyen	MOUTHPIECE	May 7, 2021
Examiner's Signature:					Date:

Respectfully submitted,
POLSINELLI LLP

Dated: May 12, 2021

By: _____/Ruby L. Chung/_____
Ruby L. Chung (Reg. No. 76,809)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
patentdocketing@polsinelli.com

UNITED STATES PATENT AND TRADEMARK OFFICE

USPTO Automated Interview Request (AIR)

Aug 3 2021

This paper requesting to schedule and/or conduct an interview is appropriate because:

This submission is requested to be accepted as an authorization for this interview to communicate via the internet. Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with the undersigned concerning scheduling of the interview via video conference, instant messaging, or electronic mail, and to conduct the interview in accordance with office practice including video conferencing.

Name(s):
Ruby Chung

S-signature:
/Ruby Chung/

Registration Number:
76809

U.S. Application Number:
14228057

Confirmation Number:
1983

E-mail Address:
rchung@polsinelli.com

Phone Number:
+1 6507731227

Proposed Time of Interview:
8-10-2021 2:00 PM ET

Alternative Proposed Time(s) of Interview:
8-11-2021 2:00 PM ET

Alternative Proposed Time(s) of Interview:
8-10-2021 3:00 PM ET

Prefered Interview Type:
Telephonic

I am the applicant or applicant's representative for this application.

Topic for Discussion:
Discuss 102 , 103 and 112 rejections of the office action.

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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 14/228,057	Filing Date 03/27/2014	☐ 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 $40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $210 =	
☐ 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	08/05/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 21	Minus	** 21	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $240 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(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".	/JAMES ELLIOTT/
*** 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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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Dryshield, LLC
INVENTOR(S):	Thien Nguyen, et al.
APPLICATION NO.:	14/228,057
FILED:	March 27, 2014
TITLE:	INTRAORAL DEVICE WITH SLIT
EXAMINER:	Hao D. Mai
ART UNIT:	3772
CONF. NO.:	1983
ATTY.DKT.NO.:	INCEP-001COD

MAIL STOP AMENDMENT
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

RESPONSE I

Examiner Mai:

In response to the office action mailed May 5, 2021 (*Office Action*), please consider the following amendments and remarks.

Amendments to the claims begin on page **2.**

A summary of examiner interview begins on page **7**.

Remarks and **conclusion** begin on pages **8** and **12,** respectively.

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IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (currently amended) A mouthpiece comprising:

a main body having a first end opposite a second end, the main body ~~including a pocket~~ having an interior space, wherein the main body is configured in a shape wider at the first end and narrower at the second end, wherein the main body comprises:

a first wall defined by an exterior edge, the first wall comprising a slit opening extending a longitudinal length parallel to a longitudinal and central axis of the main body, the longitudinal length extending from a middle location of the first wall away from the first end and toward the second end of the main body, the slit opening allowing fluids exterior to the ~~pocket~~ interior space to enter along the longitudinal length into the interior ~~of the pocket~~ space,

a second wall defined by an exterior edge that corresponds to the exterior edge of the first wall, the second wall at a distance from the first wall, the distance corresponding to a span of the interior space, and

a connecting wall that connects the first wall to the second wall across the span of the interior space;

a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the ~~main body~~ second wall, the bridge structure extending ~~a distance between~~ through the interior space towards the first wall ~~and the second wall~~, wherein the bridge structure is not attached to the first wall, and wherein the protrusions of the bridge structure protrude in a wave shape comprising one or more crests and one or more troughs.

2. (previously presented) The mouthpiece of claim 1, wherein the second wall further includes a stability bar protruding from the interior surface of the second wall and along the longitudinal and central axis of the main body, the stability bar aligned with the slit.

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3. (cancelled)

4. (previously presented) The mouthpiece of claim 1, wherein the main body is formed by injection-molding as one piece.

5. (previously presented) The mouthpiece of claim 1, wherein a material used to form the main body is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

6. (previously presented) The mouthpiece of claim 1, wherein the first wall and the second wall have different thicknesses.

7. (currently amended) The mouthpiece of claim 1, wherein flexibility of material of the first wall allows portions of the first wall to be pulled open at the slit to expose the interior ~~of the pocket~~ space.

8. (previously presented) The mouthpiece of claim 1, further comprising a cheek retractor portion connected to the second end of the main body, the cheek retractor portion having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

9. (cancelled)

10. (currently amended) The mouthpiece of claim 1, wherein the plurality of protrusions of the bridge structure ~~protrudes from the interior surface of the second wall, wherein the protrusions do not attach to the first wall, wherein the protrusions~~ comprise a plurality of spaced contact points, and wherein spaces between the contact points are at troughs of the wave shape.

11. – 13. (cancelled)

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14. (currently amended) The mouthpiece of claim 1, further comprising a suction connector portion configured to connect the interior ~~of the pocket~~ space to a vacuum source.

15. (previously presented) The mouthpiece of claim 1, further comprising a mouth prop injection-molded in one piece.

16. (previously presented) The mouthpiece of claim 15, wherein the mouth prop is detachable and comprises a bite block portion and a strap portion.

17. - 20. (cancelled)

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

21. (currently amended) A mouthpiece comprising:

a main body having a first end opposite a second end, the first end wider than the second end, the main body comprising:

a first wall extending from the first end to the second end,

a second wall at a distance from the first wall, the distance corresponding to a space between the first wall and the second wall, wherein the second wall also extends from the first end to the second end, [[and]]

a connecting wall that connects the first wall to the second wall across the distance between the first wall and the second wall; and

a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface ~~within the space between the first wall and~~ of the second wall, the bridge structure extending through the interior space towards the first wall, wherein the bridge structure is not attached to the first wall, and wherein the protrusions of the bridge structure protrude in a wave shape comprising one or more crests and one or more troughs;

a suction connector extending from the first end of the main body, wherein an evacuation conduit of the suction connector is in communication with the space between the first wall and the second wall; and

a cheek retractor at the second end of the main body.

22. (currently amended) The mouthpiece of claim 21, wherein the protrusions of the bridge structure ~~comprises~~ comprise a plurality of contact points corresponding to the crests of the wave shape, and wherein the troughs correspond to spaces between the contact points.

23. (previously presented) The mouthpiece of claim 21, wherein the first wall and the second wall are bendable, and wherein the bridge structure keeps the first wall separated from the second wall during suction.

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24. (previously presented) The mouthpiece of claim 21, wherein at least one of the first wall and the second wall includes one or more perforations.

25. (previously presented) The mouthpiece of claim 21, further comprising a stability bar extending along a longitudinal axis of the main body between the first end and the second end, wherein a thickness of the stability bar reinforces a resilience of the main body.

26. (previously presented) The mouthpiece of claim 21, wherein the main body is formed by injection-molding as one piece.

27. (previously presented) The mouthpiece of claim 26, wherein at least one of the cheek retractor and suction connector is formed by injection-molding and integral with the main body.

28. (previously presented) The mouthpiece of claim 26, further comprising a stability bar extending along a longitudinal axis of the main body between the first end and the second end, wherein the stability bar is formed by injection-molding and integral with the main body.

29. (previously presented) The mouthpiece of claim 21, further comprising a mouth prop connected to the suction connector.

30. (previously presented) The mouthpiece of claim 21, wherein the suction connector includes a cutout configured to interlock with a corresponding protrusion of a vacuum adapter.

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

APPLICANT'S SUMMARY OF EXAMINER INTERVIEW

The Applicant's undersigned representative called the examiner by telephone (571-270-3002) and left voicemail messages to schedule an interview with the examiner to discuss the rejections of the *Office Action* on the following dates:

- June 17, 2021
- July 21, 2021
- July 27, 2021
- July 28, 2021
- August 3, 2021

As of today, the examiner did not return any of the foregoing telephone calls. On August 3, the Applicant's representative also submitted a USPTO Automated Interview Request for an examiner interview. The Examiner is invited to call Applicant's representative to schedule an interview regarding the present application.

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REMARKS

Status of the Claims

Claims 1-2, 4-8, 10, 14-16, and 21-30 are pending. Claims 1, 7, 10, 14, 21, and 22 have been currently amended. Support for the amended claims can be found in at least paragraph [0040] and FIGs. 1E and 5 of the *Specification*. The amended claims reflect subject matter to which the Applicant believes it is entitled to claim. As such, no new matter has been added.

Rejections under 35 U.S.C. § 112

Claims 1-2, 4-8, 10, 14-16, and 21-30 are rejected under 35 U.S.C. § 112(b) as being indefinite for failing to particularly point out and distinctly claim the subject matter. *Office Action,* 2.

Specifically, claims 1 and 21 are rejected under 35 U.S.C. § 112(b) as being incomplete for omitting essential elements. *Id.* Claims 1 and 21 has been amended to incorporate 'a connecting wall' limitation, which relates to an element between the first and second wall.

Claim 1 is rejected under 35 U.S.C. § 112(b) as being incomplete for omitting essential structural cooperative relationships of elements. *Id.* at 3. Claim 1 has been amended in part as follows (emphasis added):

> …
>
> a second wall defined by an exterior edge that corresponds to the exterior edge of the first wall, **the second wall at a distance from the first wall**, the distance corresponding to **a span of the of the interior space**, and
>
> a connecting wall that connects the first wall to the second wall across the **span of the interior space**;
>
> a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall, the bridge structure **extending through the interior space towards the first wall**, wherein the bridge structure is not attached to the first wall, wherein the protrusions of the bridge structure protrude in a wave shape comprising one or more crests and one or more troughs.

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The amendments to claim 1 establish the structural relationship between the first wall, the second wall, the bridge structure, the connecting wall, and the interior space.

Claims 2 and 10 are rejected under 35 U.S.C. § 112(b) for lacking sufficient antecedent basis in the claims. *Id.* Claim 1 has been amended to clarify the antecedent basis in claims 2 and 10.

Therefore, the amendments to claims 1 and 21 overcome the rejections under 35 U.S.C. § 112(b). Because each of the dependent claims incorporates by reference all the limitations of the independent claim from which it depends, the dependent claims are allowable for at least the same reasons. Withdrawal of the rejections under 35 U.S.C. § 112(b) is respectfully requested.

Rejections under 35 U.S.C. §§ 102, 103

Claims 1-2, 4, 6-8, 14-16, and 21-30 are rejected under 35 U.S.C. § 112(b) as being anticipated by *Black* (US Patent Publication 2009/0274991). *Id.* at 3. Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Black* in view of *Hirsch* (U.S. Patent Publication 2003/0134253). *Id.* at 7. The Applicant respectfully disagrees and presents the following remarks.

Claim 1 has been currently amended to recite as follows (emphasis added):

> a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall, the bridge structure extending through the interior space towards the first wall, wh**erein the bridge structure is not attached to the first wall,** wherein the protrusions of the bridge structure protrude in **a wave shape** comprising one or more crests and one or more troughs.

The recited limitations find support in the *Specification*, which describes "a bridge structure 180 on an interior surface" that includes a "wave-like protrusion that generally corresponds to the distance between the anterior and posterior walls extending substantially (within 1 mm) the full distance at its crest and substantially flush to the surface at its trough." *Specification* at [0040]. In

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addition, FIGs. 1E and 5 (provided below) illustrate views of such a 'bridge structure' as follows:

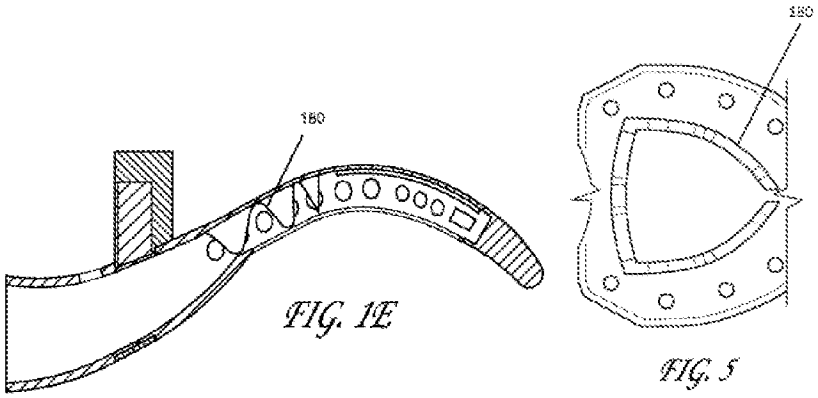

FIG. 1E

FIG. 5

The *Office Action* argues that element 448c of *Black* teaches the claimed 'bridge structure.' *See Office Action* at 4. *Black*, however, discusses that "the proximal flap 440 *a* and/or the distal flap 440 *b* of the tongue shield aspirator 440 may be formed from a first (posterior) layer 448 *a* and a second (anterior) layer 448 *b* which are connected to, but spaced apart from, one another by walls 448 *c*." *Black*, {0130}. As shown in FIG. 24C below, *Black* teaches that a first layer and a second layer are connected to the wall 448c. Thus, *Black* cannot teach 'wherein the bridge structure is not attached the first wall' as claimed.

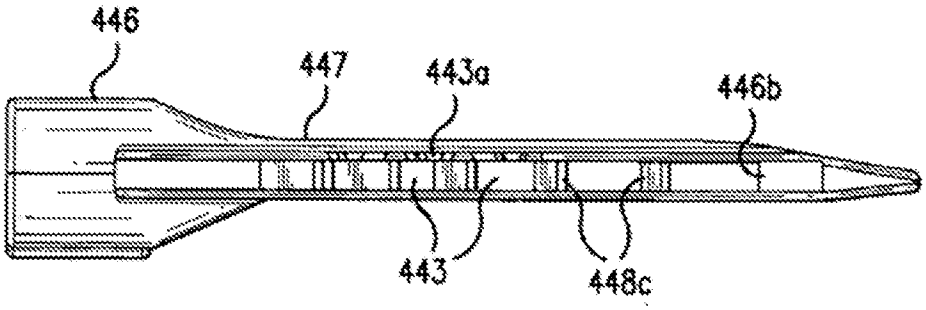

FIG. 24C

Moreover, the walls 448c of *Black* are rectangular columns and do not 'protrude in a wave shape comprising one or more crests and one or more troughs' that protrude from 'an interior surface of the second wall' as claimed. Thus, *Black* cannot teach 'wherein the protrusions of the bridge

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structure protrude in a wave shape comprising one or more crests and one or more troughs' as claimed.

Hirsch cited only in relation to dependent claim 5 to teach a mouthpiece device that is an autoclavable material cannot cure the deficiencies of *Black* with regards to the independent claims.

Thus, *Black* and *Hirsch*– individually or in combination – fail to teach 'a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall, the bridge structure extending through the interior space towards the first wall, wherein the bridge structure is not attached to the first wall, wherein the protrusions of the bridge structure protrude in a wave shape comprising one or more crests and one or more troughs' as claimed.

In view of the above remarks, the independent claims are patentable over the cited references. Furthermore, because each of the dependent claims incorporates by reference all the limitations of the independent claim from which it depends, the dependent claims are allowable for at least the same reasons. The Applicant therefore respectfully requests that the rejections of the claims under 35 U.S.C. § 102 and 103 be withdrawn.

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CONCLUSION

Based on the foregoing remarks, the Applicant respectfully contends that all outstanding rejections and objections have been overcome. Accordingly, it is respectfully submitted that the present application is in condition for allowance.

If the Examiner has any questions regarding the case, the Examiner is invited to contact the Applicant's undersigned representative.

Respectfully submitted,
Dryshield, LLC

August 5, 2021

By: / Ruby Chung /
Ruby Chung (76,809)
POLSINELLI *LLP*
3 Embarcadero Center, Suite 2400
San Francisco, CA 94111
Phone: (415) 248-2121
patentdocketing@polsinelli.com

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Electronic Acknowledgement Receipt

EFS ID:	43433426
Application Number:	14228057
International Application Number:	
Confirmation Number:	1983
Title of Invention:	INTRAORAL DEVICE WITH SLIT
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Ruby Lim Chung/Cheri Houle
Filer Authorized By:	Ruby Lim Chung
Attorney Docket Number:	INCEP-001COD
Receipt Date:	05-AUG-2021
Filing Date:	27-MAR-2014
Time Stamp:	15:42:53
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		INCEP-001COD_RESP_I_8-5-21.pdf	352504 be885297f8b26e87ce9e3477868c1cc27d91de78	yes	12

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	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	6
	Applicant summary of interview with examiner	7	7
	Applicant Arguments/Remarks Made in an Amendment	8	12
Warnings:			
Information:			
	Total Files Size (in bytes):	352504	

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.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,057	03/27/2014	Thien Nguyen	INCEP-001COD	1983

138718 7590 08/19/2021

Polsinelli LLP
3 Embarcadero Center
Suite 2400
San Francisco, CA 94111

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
08/19/2021	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):

sfpatent@polsinelli.com
uspt@polsinelli.com

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Applicant-Initiated Interview Summary	**Application No.** 14/228,057	**Applicant(s)** Nguyen et al.		
	Examiner HAO D MAI	**Art Unit** 3772	**AIA (First Inventor to File) Status** No	**Page** 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	**Title**	**Type**
HAO D MAI	Examiner	Telephonic
Ruby Chung	Attorney	

Date of Interview: 10 August 2021

Issues Discussed:

Proposed Amendment(s)

Claims amendment filed 08/05/2021 was discussed. At preliminary review, the amendment appears to have overcome the current 102 ground(s) of rejection under Black et al. However, new 112 ground(s) of rejection arises due to omission of the definite position of the connecting wall, i.e. connecting the first and second walls along the exterior edges of the first and second walls, defining the interior space of the main body.

/Hao D Mai/ Examiner, Art Unit 3772	

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,057	03/27/2014	Thien Nguyen	INCEP-001COD	1983

138718 7590 11/12/2021

Polsinelli LLP
3 Embarcadero Center
Suite 2400
San Francisco, CA 94111

EXAMINER	
MAI, HAO D	

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
11/12/2021	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):

sfpatent@polsinelli.com
uspt@polsinelli.com

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Office Action Summary	Application No. 14/228,057	Applicant(s) Nguyen et al.	
	Examiner HAO D MAI	Art Unit 3772	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 08/05/2021.

☐ 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) 1-2,4-8,10,14-16 and 21-30 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) 1-2,4-8,10,14-16 and 21-30 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 _____ 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: _____.

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

DETAILED ACTION

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 § 112

2. The following is a quotation of 35 U.S.C. 112(b):

> (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.
>
> The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 1-2, 4-8, 14-16, and 21-30,** are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

- Claims 1 and 21 are incomplete for omitting essential elements and/or essential structural cooperative relationships of elements, such omissions amounting to gaps between the necessary structural connections. See MPEP § 2172.01. The omitted element(s) and/or structural cooperative relationship(s) are: the connecting wall connecting the first wall to the second wall **along the exterior edges thereof**, defining the interior space, as disclosed in the Application Figs. 1A and 2A.

  Currently, the claims allow for misconstruction(s) of the invention, e.g. the mouthpiece may be an open misshaped article with the first and second

walls randomly positioned, connected by a connecting wall which may merely be a thin truss between the first and a second walls.

- Claims 1 and 21 each recites the limitation "the protrusions" (claim 1 line 19; claim 21 line 14), which lacks sufficient antecedent basis in the claims. Note that the claims define antecedent basis "a plurality of protrusions".
- Claim 22 recites "the protrusions" which lacks sufficient antecedent basis.

All dependent claims are rejected herein based on dependency.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-2, 4-8, 14-16, and 21-30, are rejected under 35 U.S.C. 102(b) as being anticipated by Hirsch (2006/0063129).**

Regarding claim 21, Hirsch discloses a mouth piece 20 comprising a main body 20 having a first end (best pointed by reference 50 in Fig. 2) opposite a second end (best pointed by reference numeral 22 in Fig. 2); the first end is wider than the second end.

The main body comprises: a first wall 56 (Fig. 8A) extending from the first end to the second end; a second wall 24 at a distance from the first wall 56, the distance corresponding to a space 34 between the first wall 56 and the second wall 24 (Figs. 8A-8B). The second wall 24 also extends from the first end to the second end (Fig. 2)

There is a connecting wall 62/64 (Fig. 2 - receiving channel 62 with lip 64 for receiving 24) that connects the first wall 54 and second wall 24 across a span therebetween (Fig. 2). That is, the receiving channel 62 with lip 64 is for receiving and therefore connecting second wall 24 to first wall 54 (Fig. 2; paragraph 51).

There is a bridge structure having protrusions (forming 80, 82) protruding from an interior surface of the second wall 24 toward the first wall 56 in a wave shape comprising one or more crests (walls of 80 and 82) and one or more troughs (channels 80, 82) - See Figs. 8A-8B.

The bridge structure (that forms 80/82) of wall 24 extends through the interior space towards the first wall 56, wherein the bridge structure 80/82 is not attached to the first wall 56 (Figs. 2: 8A-8B).

Hirsch further discloses a suction connector 74 extending from the first end of the body, wherein an evacuation conduit 84/86/88/90 of the suction connector 74 is in communication with the space 34 between the first wall 56 and the second wall 24 (Figs. 2, 8A-8B; paragraphs 56-57).

There is a cheek retractor 52 at the second end 22 of the main body (Fig. 2).

As to claim 22, the protrusions (extensions that form 80, 82) of the bridge structure comprise a plurality of contact points (where the extensions 80/82 contact wall 56- Figs. 8A-8B) corresponding to the crests of the wave shape, and wherein the troughs correspond to spaces 80, 82 between the contact points. See Figs. 8A-8B.

As to claim 23, the first wall 56 and the second wall 24 are bendable (paragraphs 49, 53) and wherein the bridge structure keeps the first wall separated from the second wall during suction (Fig. 8B).

As to claim 24, at least one of the first wall and the second wall includes one or more perforations 60 (Figs. 2-3).

As to claim 25, note the thicker portion 48 (Fig. 4) which is equivalent to the claimed stability bar extending along a longitudinal axis of the main body between the first end and the second end, wherein a thickness of the stability bar reinforces a resilience of the main body.

As to claims 26-28, note that the claim language "by injection-molding" is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and defined by the recited process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe,* 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Hirsch et al. shows the main body 20 is one piece, i.e. the cheek retractor 52, the suction connector 74, and the stability bar 48, are integral whole and forming one-piece with the main body 20 (Figs. 3-4).The burden is shifted to applicant to show an unobvious difference between Hirsch et al.'s device and the invention that would have resulted from the injection-molding process.

As to claim 29, note the mouth prop 26 connected to the suction connector 74 (Figs. 2-3). As to claim 30, the suction connector 74 includes a cutout (recesses 88, 90,

Fig.2) capable of interlocking with a corresponding protrusion of a vacuum adapter. Note that the vacuum adapter and the corresponding protrusion are not positively claimed elements of the invention, and thus are not given patentable weight.

Regarding claim 1, Hirsch et al discloses the invention as claimed as detailed above with respect to claim 21. Particularly to claim 1, Hirsch et al discloses the first wall and the second wall having corresponding (i.e. having generally similar shape or positioned corresponding to each other) exterior edges. Hirsch et al. discloses the first wall 56 having a slit opening 66 (Fig. 2) extending a longitudinal length parallel to a longitudinal and central axis of the main body; the longitudinal length extending from a middle location of the first wall from the first end and toward the second end of the main body. Note that the term "middle location" is broad and allows for broadest reasonable interpretation as any location in between the first end and second end. The slit opening 66 allows fluids exterior of the interior space to enter along the longitudinal length into the interior space (Fig. 2; paragraphs 51-52).

As to claim 2, the second wall 24 has a stability bar 76 protruding from the interior surface of the second wall 24 and along the longitudinal and central axis of the main body; the stability bar 76 aligned with the slit 66 (Fig. 2).

As to claim 4, the main body is shown being one-piece. Regarding the claim language "by injection-molding", see rejection of claims 26-28 above.

As to claim 5, Hirsch discloses a mouthpiece device that is formed of a flexible, translucent, high heat-resistant, autoclavable silicone-based material of Pebax (paragraphs 49, 64).

As to claim 6, the first wall 56 and second wall 24 are shown having different thicknesses.

As to claim 7, the first wall 54 is disclosed to be made of flexible material (abstract; paragraphs 49, 53) which allows for the slit to be pulled opened upon applied force.

As to claim 8, note the check retractor 52 at the second end of the main body (Fig. 2).

As to claim 10, the protrusions (extensions that form 80, 82) of the bridge structure comprise a plurality of contact points (where the extensions 80/82 contact wall 56- Figs. 8A-8B) corresponding to the crests of the wave shape, and wherein the troughs correspond to spaces 80, 82 between the contact points. See Figs. 8A-8B.

As to claim 14, note the suction connector portion 74 configured to connect the interior space to a vacuum source (Fig. 2; paragraph 57).

As to claim 15, Hirsch et al. further discloses a mouth prop 26 that is one-piece. Regarding the claim language “by injection-molding”, see rejection of claims 26-28 above.

As to claim 16, the mouth prop 26 is shown being detachable and comprises a bite block portion 94 and a strap portion 100 or 108 (Fig. 2).

Response to Arguments

6. Applicant's arguments with respect to the amendment made to the claims have been considered and are persuasive. Black et al. fail to disclose the bridge structure not being attached to the first wall. Therefore, the ground(s) of rejection under Black et al. have been withdrawn. However, upon further consideration, new ground(s) of rejection in view of Hirsch et al. applies as detailed above.

Applicant's remarks are held to be responded to in the above ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hao D. Mai whose telephone number is (571) 270-3002. The examiner can normally be reached on Monday-Friday 8:00AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Cris Rodriguez, at (571) 272-4964. 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 http://pair-direct.uspto.gov. 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.

/Hao D Mai/
Examiner, Art Unit 3772

/NICHOLAS D LUCCHESI/
Primary Examiner, Art Unit 3772

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,057	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043, 046	11/16/2015	HDM
Updated Search	05/31/2016	HDM
Update Search	09/04/2018	HDM
Update Search	03/18/2019	HDM
Update Search	10/01/2019	HDM

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
433	91-92, 140	11/16/2015	HDM

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

/Hao D Mai/ Examiner, Art Unit 3772	

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,057	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor Search	11/16/2015	HDM
Review searches of parent case 14/100323	11/16/2015	HDM
Updated Search	05/31/2016	HDM
Update Search	04/03/2017	HDM
Update Search	10/30/2017	HDM
Update Search	09/04/2018	HDM
Update Search	03/18/2019	HDM
Update Search	10/01/2019	HDM
Update Search	05/11/2020	HDM
Update Search	05/03/2021	HDM
Update Search	11/06/2021	HDM

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

/Hao D Mai/ Examiner, Art Unit 3772	

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,057	Nguyen et al.
	Examiner	**Art Unit**
	HAO D MAI	3772

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

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

CLAIM		DATE								
Final	Original	11/06/2021								
	1	✓								
	2	✓								
	3	-								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	-								
	10	✓								
	11	-								
	12	-								
	13	-								
	14	✓								
	15	✓								
	16	✓								
	17	-								
	18	-								
	19	-								
	20	-								
	21	✓								
	22	✓								
	23	✓								
	24	✓								
	25	✓								
	26	✓								
	27	✓								
	28	✓								
	29	✓								
	30	✓								

Substitute for Form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*				Application Number	14/228,057
				Filing Date	March 27, 2014
				First Named Inventor:	Thien Nguyen
				Art Unit	3772
				Examiner Name	Hao D. Mai
Sheet	**1**	**of**	**2**	Attorney Docket Number	INCEP-001COD

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Document Number Number-Kind Code[2](If known)		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	D666,726	9/4/2012	Davis et al.	
		US-	D735,858	8/4/2015	Hirsch et al.	
		US-	D737,964	9/1/2015	Jessop et al.	
		US-	D782,047	3/21/2017	Ritter	
		US-	D782,048	3/21/2017	Ritter	
		US-	D787,069	5/16/2017	Ritter	
		US-	D787,070	5/16/2017	Ritter	
		US-	D868,958	12/3/2019	Reyes	
		US-	1,731,322	10/15/2029	Riddle	
		US-	3,758,950	9/18/1973	Krouzian	
		US-	5,009,595	4/23/1991	Osborn	
		US-	5,588,836	12/31/1996	Landis et al.	
		US-	6,241,521	6/5/2001	Garrison	
		US-	9,968,341	5/15/2018	Ritter	
		US-	2020/0352680	11/12/2020	Nguyen	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.'	Foreign Patent Document Country Code[3] Number[4] Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6
		WO 2020/231864	11/19/2020	Dryshield, LLC		

Examiner Signature	/Hao D Mai./	Date Considered	11/06/2021

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 'Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours 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, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Based on Form PTO/SB/08A (08-03)

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,057
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
	Art Unit	3772
	Examiner Name	Hao D. Mai
Sheet 2 of 2	Attorney Docket Number	INCEP-001COD

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T[2]
		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Final Office Action mailed 11/27/20	
		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Final Office Action mailed 12/22/20	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Final Office Action mailed 4/29/21	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Office Action mailed 11/27/20	
		Docket No. INCEP-004DCOA U.S. Patent Application 29/477,888 Office Action mailed 3/21/17	

Examiner Signature	/Hao D Mai/	Date Considered	11/06/2021

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). 'Applicant is to place a check mark here if English Translation is attached.

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If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	256	A61C17/04,0208,043.cpc. and ((slit or openning or aperture or groove or channel) same (vacuum or suction or communication))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2021/11/06 16:09
L2	21	A61C17/04,0208,043.cpc. and ((longitudinal with opening) and suction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2021/11/06 16:10
S135	1	("20090274991").PN.	US-PGPUB; USPAT	OR	OFF	2021/11/06 13:41
S136	1	("20060063129").PN.	US-PGPUB; USPAT	OR	OFF	2021/11/06 13:53
S137	2	(("3758950") or ("4167814")).PN.	US-PGPUB; USPAT	OR	OFF	2021/11/06 13:58

EAST Search History (Interference)

<This search history is empty>

11/6/2021 4:10:38 PM
C:\Users\hmai1\Documents\EAST\Workspaces\14228057.wsp

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
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 contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	14228057
Filing Date	2014-03-27
First Named Inventor	NGUYEN; Thien
Art Unit	3772
Examiner Name	MAI, HAO D
Attorney Docket Number	084892-514250

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	D364456		1995-11-21	SOLNIT; Albert et al.	
	2	D663831		2012-07-17	SIDHU; Jessy S. et al.	
	3	3453735		1969-07-08	BURT; Richard E. et al.	
	4	3516160		1970-06-23	LEFFLER; Dennis F. et al.	

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20040033468		2004-02-19	FISCHER; Dan E. et al.	
	2	20140349249		2014-11-27	REYES; Hari Mark	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	14228057
	Filing Date	2014-03-27
	First Named Inventor	NGUYEN; Thien
	Art Unit	3772
	Examiner Name	MAI, HAO D
	Attorney Docket Number	084892-514250

Examiner Initial*	Cite No	Foreign Document Nu	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	None						☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Docket No. INCEP-001COA U.S. Application 14/228, 046; Non-Final Office Action mailed 10-6-21.	☐
	2	Docket No. INCEP-006D U.S. Application 29/782,645; Non-Final Office Action mailed 10-4-21.	☐
	3	Docket No. INCEP-008D U.S. Application 29/782,638; Non-Final Office Action mailed 10-4-21.	☐
	4	Docket No. INCEP-009D U.S. Application 29/782,644; Non-Final Office Action mailed 10-4-21.	☐
	5	Docket No. INCEP-010D U.S. Application 29/782,643; Non-Final Office Action mailed 10-4-21.	☐
	6	Dryshield brochure. Dryshield.com. Publish date: May 2019. Retrieval date: 15 September 2021. Retrieved from internet: https:// dryshield.com/ds/Brochure_May2019.pdf (Year: 2019).	☐
	7	"Dryshield Presentation (Learn all about Dryshield)" posted by Dryshield Isolation System. Youtube. Posting date: 27 October 2014.Retrieval date: 15 September 2021. Retrieved from internet: https://www.youtube.com/watch?v=fcbpz3ixvis (Year: 2014).	☐

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

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	Art Unit	3772
	Examiner Name	MAI, HAO D
	Attorney Docket Number	084892-514250

	8	"Dryshield (single-use) vs Zryis/Isolite (single-use) mouthpieces" posted by Mark Frias, RDH. Youtube. Posting date: 18 January 2020. Retrieval date: 15 September 2021. Retrieved from internet: https://www.youtube.com/watch?v=uKX9XahO6EY (Year: 2020).	☐
	9	"Dryshield Tutorial - Maximize Your Dryshield Experience" posted by Dryshield Isolation System. Youtube. Posting date: 15 April2015. Retrieval date: 15 September 2021. Retrieved from internet: https://www.youtube.com/watch?v=L2OSYPS8Rc4 (Year: 2015).	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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	First Named Inventor	NGUYEN; Thien
	Art Unit	3772
	Examiner Name	MAI, HAO D
	Attorney Docket Number	084892-514250

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Ruby L. Chung/	Date (YYYY-MM-DD)	2021-11-24
Name/Print	Ruby L. Chung	Registration Number	76809

This collection of information is required by 37 CFR 1.97 and 1.98. 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 1 hour 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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Ascentcare Dental Products v. Solmetex - IPR2025-01057

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 record s.

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 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.

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Ascentcare Dental Products v. Solmetex - IPR2025-01057

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772 | Examiner: Hao D. Mai

Serial No.: 14/228, 057 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 1983 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH SLIT

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56 and 1.97-1.98

Examiner:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicant's duty of disclosure as defined by 37 C.F.R. § 1.56.

Applicants hereby declare, pursuant to 37 C.F.R. §1.97(e)(2), that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing the certification after having made a reasonable inquiry, no item of information contained in the information disclosure statement was

Solmetex Ex. 2020
Ascentcare Dental Products v. Solmetex - IPR2025-01057

known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of the information disclosure statement.

No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference an admission that it is prior art or pertinent to this application.

Respectfully submitted,
POLSINELLI LLP

Dated: November 24, 2021

By: _____/Ruby L. Chung/_____
Ruby L. Chung (Reg. No. 76,809)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
patentdocketing@polsinelli.com